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## CONFERENCE ABSTRACTS

This document contains abstracts of parallel oral sessions, education symposium, workshops and posters presented at the 48th Annual Scientific Meeting of the Society for Academic Primary Care which was held in Exeter, 3-5 July 2019.

Individual abstracts can also be viewed on-line by visiting <https://sapc.ac.uk/conference/2019#schedule> and clicking on the individual presentation or workshop titles.

## CONTENTS

1. Education Symposium (3rd July)
2. Prize plenary abstracts (presented on Friday 5th July)
3. Parallel orals, workshops, posters

### Guide to programme numbering in section 3

Parallel orals or workshops

1A.1 = the first presentation in parallel session Mental health 1, the second presentation is 1A.2 etc

If a programme number is followed by a, b or c this indicates a shorter presentation

## Posters

There were two poster sessions so posters either begin with P1 or P2.

Parallel sessions including workshops

## Wednesday 3rd July 2019

Parallel session 1	Session title
1A	Mental health 1
1B	Cardiovascular conditions
1C	Cancer 1
1D	Women's health
1E	Primary health care (Astana Declaration)
1F workshop	Setting up a Primary care Academic Collaborative for Trainees (PACT): Sharing ideas for a proof of concept study
1G creative session	Humanities in healthcare

Parallel session 2	Session title
2A	Sexual health and contraception
2B	Diabetes
2C	Infections
2D	Child health
2E	Workforce
2F workshop	Early Career Solution Room
2G workshop	Hot off the press: the very latest on primary care publishing and open access

Parallel session 3	Session title
3A	Mental health 2
3B	Prescribing 1
3C	Quality of care and patient safety
3D	Musculoskeletal conditions
3E	Dementia
3F workshop	Developing Patient-Centred diagnosis as a tool for the new clinical generalist
3G workshop	How can decision modelling help us to evaluate the clinical- and cost-effectiveness of diagnostic strategies in primary care?

Parallel session 4	Session title
4A	Prescribing 2
4B	Hypertension
4C	Cancer 2
4D	Respiratory conditions
4E	Information technology
4F workshop	From continuity of care to continuity in education: Exploring longitudinal integrated clerkships in the UK
4G workshop	A vision for academic primary care in the UK after the 2018 Astana Declaration for Primary Health Care

Parallel session 5	Session title
5A	Transitions of care
5B	Lightning talks
5C	Physical exercise
5D	Education
5E	Multimorbidity
5F workshop - creative	Enlarging human understanding through the arts
5G workshop	Identifying the top 10 primary care research priorities from SAPC stakeholder using a modified Delphi method

Parallel session 6	Session title
6A	Heart failure
6B	Mental health 3
6C	Cancer 3
6D	Undergraduate education
6E	Consultation
6F workshop	What is a pragmatic trial and how do I do a good one?
6G workshop	Impact, advocacy and outcomes - applying the evidence base to active change

Parallel session 7	Session title
7A	Rheumatological conditions
7B	Information technology 2
7C	Ageing
7D	Person-centred care
7E	Hard to reach groups
7F workshop	Cultivating an environment of social accountability: academic primary care for the future
7G workshop	What are the opportunities to foster and nurture Quality Improvement in General Practice for medical students, GP trainees and GPs?

### Post-conference workshops

8A.1 workshop	Big results from brief consultations. Using Focussed Acceptance and Commitment therapy (FACT) in primary care
8B.1 workshop	'Equivalence' - the evolution of primary care in secure environments
8C.1 workshop	Exploring Primary Care physical activity interventions using LEGO® SERIOUS PLAY®

## Symposium - how can undergraduate medical education improve recruitment to family medicine?

*Presenter: Hugh Alberti, Stuart Cole, Val Wass, Alex Harding*

*Authors:*

### Institutions

### Abstract

#### Rationale and aim

The provision of family medicine has well documented advantages and is an international healthcare priority. However, recruitment into family medicine is problematic. Evidence suggests that the overall quantity of undergraduate experience in family medicine can positively affect recruitment (Alberti et al., 2017). However, very little is known about the quality of this experience and how it may affect recruitment.

This symposium brings together leading policy makers and researchers in the field and aims to provide an opportunity to review and develop initiatives to improve undergraduate teaching quality in family practice that may result in enhanced recruitment.

This will be achieved through:

Sharing and evaluating curricular innovations in the UK following the Wass report (Wass et al., 2016)

Development and implementation of national guidelines for undergraduate family practice (UGFP) teaching (Harding et al., 2018)

Summary of discussions regarding development of international guidelines for UGFP at recent international conferences

Progress on developing an international set of guidelines for UGFP

Initial evaluation of national and international attempts to improve undergraduate family practice teaching indicates that a major challenge is uncertainty about the identity of family practice. This issue extends to such fundamental matters as: What to call family practice? and what are its intellectual underpinnings?

Part of the discussion will therefore aim to address these questions as they are directly related to the subject matter of the conference as a whole.

The symposium will feature a brief overview from the chair, followed by 4 x 5-10 minute presentations with discussion after each presentation and finally a summary and action plan regarding next steps. The 4 presentations are as follows:

#### Presentation details

**Presentation 1** Sharing and evaluating curricular innovations in the UK following the Wass report (Hugh Alberti - Newcastle)

SAPC are currently in the data collection stage of a survey of all medical schools regarding teaching in family practice. The lead author (Hugh Alberti) will present initial findings. These will be of particular interest following the publication of the Wass Report 3 years ago, calling for progress to be made in UGFP education in order to improve recruitment. The symposium therefore represents one of the first chances to assess progress being made following the publication of the Wass report and to plan further steps.

**Presentation 2** Development and implementation of national guidelines for undergraduate family practice (UGFP) teaching (Stuart Cole - Exeter)

Before systematic teaching and learning can take place, the subject matter must be delineated. Only then can conversations regarding teaching quality take place. The subject matter of UGFP has recently addressed and a set of national guidelines for teaching produced (Harding et al., 2018). Research evaluating these guidelines will be presented. Initial results indicate that there is a wide disparity nationally among senior teaching planners regarding what family practice is and therefore what a curriculum should be. Discussion will focus on delineating this disparity and exploring the reasons behind this.

**Presentation 3** Summary of discussions regarding development of international guidelines for UGFP at recent international conferences (Prof Val Wass - Keele - chair wonca education group)

This presentation looks at progress being made towards design of an international set of guidelines for UGFP teaching. In order to achieve international consensus, a series of discussions have taken place at international conferences gauging opinion on UGFP from around the world. A thematic analysis of these discussions will be presented with major themes identified. Again, initial evaluation indicates a wide disparity internationally in viewpoints - extending even as far as what to call family medicine.

**Presentation 4** Progress on developing an international set of guidelines for UGFP (Prof Alex Harding - Exeter - co-chair UK heads of teachers)

Following on from presentation 3, this presentation summarises the work to date in developing a set of international guidelines. This includes amalgamation of literature review of work in the field, a summary of current expert opinion and discussion on the process of guideline generation.

## References

- ALBERTI, H., RANGLES, H. L., HARDING, A. & MCKINLEY, R. K. 2017. *Exposure of undergraduates to authentic GP teaching and subsequent entry to GP training: a quantitative study of UK medical schools*. *Br J Gen Pract*, *bjgp17X689881*.
- HARDING, A., HAWTHORNE, K. & ROSENTHAL, J. 2018. *Teaching General Practice; Guiding Principles for Undergraduate General Practice Curriculum in UK Medical Schools*, London, Royal College of General Practitioners.
- WASS, V., GREGORY, S. & PETTY-SAPHON, K. 2016. *By choice-not by chance: supporting medical students towards future careers in general practice*. London: Health Education England and the Medical Schools Council

## SECTION 2

### Prize Plenary 1

#### How appropriate are current primary care responses to poverty-related mental distress?

*Presenter: Felicity Thomas*

*Authors: Lorraine Hansford, Joseph Ford, Rose McCabe, Katrina Wyatt, Richard Byng*

#### Institutions

University of Exeter, University of Plymouth, City University

#### Abstract

##### Problem

Poverty and deprivation create and exacerbate mental distress, resulting in high use of primary health care within low-income communities. In addition to placing time and resource pressures on GPs, doctors increasingly face practical, social and moral responsibilities as gatekeepers to welfare support for this population group. This can create challenges for

doctors and patients, and raises important questions over the medicalisation of poverty-related distress. The DeStress study aimed to understand how treatments for common mental health conditions are prescribed and used in low-income communities in response to poverty-related distress; whether such approaches are considered effective by the patients and the doctors concerned; and what alternatives could be put in place.

##### Approach

The ESRC funded DeStress project has undertaken sixteen focus groups with residents in low-income communities (n=97), interviewed family doctors (n=10) and low-income patients (n=80), and has undertaken conversational analysis of video recordings of primary care consultations for mental health (n=52). The research adopted a co-creative approach, in which residents from low-income communities (experts by experience) worked alongside health professionals and representatives from third sector groups to identify key research questions for investigation, analyse the data, joint-present at conferences and make recommendations on more effective consultations and other approaches for patients experiencing poverty-related distress.

##### Findings

Patients from low-income communities experience a range of challenges accessing mental health support, and when they do, they often feel that it is inappropriate to their needs. Use of conversational and narrative analysis identified widespread dissatisfaction with the medical model for mental health amongst GPs and low-income patients, yet GPs felt they had few options available to them that did not exacerbate the over-medicalisation of poverty-related distress. Despite high levels of prescribing, we found a low level of endorsement by GPs for antidepressants and IAPT, with negative implications for both patient wellbeing and GP stress and burnout. New community-based models such as peer-support and social prescribing to address causes of distress were mooted. There were differences in views as to how these should be supported.

##### Consequences

Current primary care responses to common mental health conditions over-medicalise poverty-related distress and can be unhelpful for GPs and patients. GPs need to be supported to adopt a role that recognises the bio-psycho-social and is aware of non-medical forms of support for patients experiencing poverty-related distress. Responsibility for poverty-related distress needs diluting away from GPs to other sectors, as well as to communities themselves. Engaging with low-income communities in a meaningful manner can help to ensure that patients feel better able to discuss their concerns and understand and contribute to the diverse forms of treatment and support that are available in primary care and beyond.

##### Funding Acknowledgement

The DeStress project was funded by the Economic and Social Research Council (ref. ES/N018281/1) and Health Education England. We are very grateful for this support.

### Prize Plenary 2

#### Is chlamydia testing in general practice sustainable when financial incentives and external audit plus feedback are removed? ACCEPT-able: a cluster randomised controlled trial

*Presenter: Anna Wood*

*Authors: Anna Wood<sup>1</sup> Jane Gunn<sup>1</sup> Sabine Braat<sup>2</sup> Callum Jones<sup>2</sup> Meredith Temple-Smith<sup>1</sup> Mieke van Driel<sup>3</sup> Matthew Law<sup>4</sup> Basil Donovan<sup>4</sup> Christopher Fairley<sup>5</sup> John Kaldor<sup>4</sup> Rebecca Guy<sup>4</sup> Nicola Low<sup>6</sup> Liliana Bulfone<sup>7</sup> Jane S Hocking<sup>2</sup>*

## Institutions

<sup>1</sup>Department of General Practice, University of Melbourne <sup>2</sup>Melbourne School of Population and Global Health, University of Melbourne, Australia <sup>3</sup>Primary Care Clinical Unit, University of Queensland, Australia <sup>4</sup>Kirby Institute, University of New South Wales, Australia <sup>5</sup>Central Clinical School, Monash University, Australia <sup>6</sup>University of Bern, Switzerland. <sup>7</sup>Deakin University, Australia

## Abstract

### Problem

Financial incentives (FI) and audit plus feedback (A+F) are often used by governments to motivate and improve general practitioner (GP) performance. Removing or reducing incentive payments is often undertaken with insufficient evidence of the impact on GP clinical practice.

The Australian Chlamydia Control Evaluation Pilot (ACCEPT), in a cluster-randomised controlled trial (RCT), evaluated an intervention to increase chlamydia testing among 16-29 year old patients attending general practices in four Australian States. As part of a complex multi-faceted intervention, GPs in the intervention group received a FI of \$5-\$8 per chlamydia test and a quarterly A+F report of their chlamydia testing rates, discussed with GPs by researchers in face-to-face meetings. The objective of this current study, ACCEPT-able, was to examine the effects of removal of these measures on chlamydia testing.

### Approach

At the end of the ACCEPT trial, we designed ACCEPT-able, a new 2x2 factorial cluster-RCT. ACCEPT intervention general practices were re-randomised to four groups: remove A+F and retain FI, remove FI and retain A+F, remove both A+F and FI, or retain both FI and A+F. The main comparisons were: removal versus retention of FI and removal versus retention of A+F. The primary outcome was the absolute difference in chlamydia testing rates (proportion with 95% confidence intervals, CI, of 16-29 year old patients tested for chlamydia within a 12-month period) at year 2 compared with baseline, estimated using mixed-effect logistic regression models accounting for clustering at the clinical level.

### Findings

A total of 55 general practices were re-randomised. Chlamydia testing decreased in all general practices across the four groups. In groups where FI was removed, testing decreased from 20.0% to 11.7% and where FI was retained, from 20.1% to 14.4%. There was no evidence of a treatment effect between the groups (difference = 2.6% 95% CI: -0.1, 5.7). In groups where A+F was removed, chlamydia testing rates decreased from 20.8% to 11.5% and where A+F was retained, from 19.7% to 14.8%. There was a larger reduction in chlamydia testing when A+F was removed than when it was retained (difference = 4.4%, 95% CI: 1.1, 7.8).

### Consequences

Chlamydia testing rates fell in all general practices after the end of the ACCEPT intervention, but when A+F was removed, chlamydia testing decreased more than when FI was removed. Providing feedback and discussing performance might therefore be more important than modest incentive payments. These results suggest the removal of interventions aimed to modify GP performance can have a negative impact on subsequent performance and thus patient outcomes. These results highlight the challenges for policy makers and require consideration in their decision making.

### Funding Acknowledgement

The authors report no disclosure of interest for this trial. The trial was funded by National Health and Medical Research Council (1063597)

## SECTION 2

### 1A.1

## Is community pharmacy a missed opportunity in suicide prevention?

*Presenter: Hayley Gorton*

*Authors: Donna Littlewood, Christine Lotfallah, Matthew Spreadbury, Kai-Ling Wong, Patricia Gooding, Darren Ashcroft*

## Institutions

The University of Manchester

## Abstract

### Problem

The contribution of primary care is central to suicide and self-harm prevention strategies in the UK. Community pharmacies are a core contributor to primary care with 1.8 million people visiting a pharmacy in England each day. However, they are seldom mentioned in these strategies. Public Health England names pharmacists as "partners in effective suicide prevention" and the Scottish Government include pharmacists in their 2018 plan for mandatory suicide prevention training. However, the current training level and experience of community pharmacy staff in suicide and self-harm prevention is unknown. We therefore aimed to establish the current and potential role of community pharmacy teams in suicide and self-harm awareness and prevention, and identify any potential training requirements.

### Approach

We recruited 25 community pharmacy staff who worked in the North West of England, using purposive sampling. This included pharmacists, pharmacy technicians, dispensing or counter assistants and delivery drivers. We conducted face-to-face, semi-structured qualitative interviews and identified emerging themes using inductive, latent, thematic analysis. No new codes were generated from the last three interviews, signalling that the data were saturated.

### Findings

Many pharmacy staff members shared an example of their involvement in the care of someone who was suicidal or self-harming. The extent of the involvement varied and some had no examples of such interactions. No participants had received specific training on suicide or self-harm but all welcomed the suggestion of participating in training. The emerging themes of (i) Relationship with patient and (ii) Pharmacy environment were seen as facilitators which, if supported by (iii) Training, could support an enhanced role by community pharmacy teams through: (iv) Opportunities for contact, (v) Facilitated referral pathway and (vi) Restricting access to means.

### Consequences

We report on the first UK study to investigate the role of community pharmacy teams in suicide and self-harm prevention. Community pharmacy teams have some experience in suicide and self-harm prevention, but have no formal training and rely upon referral and signposting to help people. If supported by adequate training, community pharmacy teams considered themselves to be suitable contributors to the suicide and self-harm and identified opportunities to do so. Community pharmacy teams are therefore important features in the battery of suicide prevention approaches in primary care.

### Funding Acknowledgement

This study was funded by the National Institute for Health Research

through the Greater Manchester Patient Safety Translational Research Centre (NIHR Greater Manchester PSTRC), grant No. PSTRC-2016-003. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR, or the Department of Health and Social Care. The funders had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

## 1A.2

### What are the mental health needs of the UK Central and Eastern European Community? A mixed-methods involvement and engagement strategy

*Presenter: Aaron Poppleton*

*Authors: Aaron Poppleton, Nusrat Husain, Aneez Esmail, Caroline Sanders*

#### Institutions

Centre for Primary Care, University of Manchester; Global Mental Health and Cultural Psychiatry Research Group, University of Manchester.

#### Abstract

##### Problem

UK resident Central and Eastern European nationals (UK-CEE) experience a higher prevalence of affective disorders, alcohol misuse, mental health stigma, and death through suicide. Community risk factors for poor mental health include home nation prevalence, in addition to migration, socioeconomic, and Brexit related marginalisation and psychological strain. Despite the significant community size (~2 million), little is known about community health beliefs and attitudes surrounding mental health presentation and management within UK primary care. Understanding variations in mental health presentations and morbidity is essential to culturally adapt GP management and improve outcomes. We are conducting a multi-stranded public, stakeholder, and clinician engagement and involvement strategy to evaluate the mental health primary care gap within this marginalised community.

##### Approach

Our approach incorporates: 1) Public and Patient Involvement (PPI) health forums within Romanian and Lithuanian communities in line with INVOLVE and GRIPP2 criteria. 2) A researcher and stakeholder engagement forum (21/02/19) exploring the state of UK-CEE research. Formalised discussion topics relating to UK-CEE community well-being, mental health and primary care engagement; the research impact of Brexit; and cultural adaptation of self-harm and suicide prevention. Informed by an initial literature review, the forum is coordinating a scoping review on perceptions of mental health and primary care management within the UK CEE community. Rapidly mapping available evidence and core concepts will inform further translational mental health research within this field. 3) A cross-sectional survey to assess UK GP perceptions of CEE migrants' mental health presentations and management. The survey intends to identify: the point of 'drop off' within the clinical pathway; barriers and facilitators to mental health presentation; steps to optimise mental health engagement with community members; and GP experience, knowledge, and confidence in addressing CEE mental health.

##### Findings

Outcomes to date include: 1) Discussion of PPI topics including community mental health perceptions and perceived needs; variation amongst CEE nationals; defining meaningful community involvement

and outcomes; and potential research recruitment, design, and dissemination strategies for a in-depth exploration of community health beliefs. Themes expressed include: significant perceived mental health and suicide stigma; the importance of valued community leader or member endorsement; variable primary care satisfaction; and preference for one-on-one exploration of mental health beliefs, experience, and health service usage. 2) Defining a broad review search strategy to identify English and CEE language mental health publications and grey literature; 3) Development of the clinician survey and recruitment strategy. Interim findings expected by June 2019.

#### Consequences

This complementary public/stakeholder, researcher, and clinician involvement and engagement strategy will inform development of a large scale mixed-method exploration and evaluation of UK-CEE mental health beliefs. Outcomes will direct development of community co-designed culturally adapted mental health management and risk stratification tools/resources for use within primary care.

#### Funding Acknowledgement

Dr Aaron Poppleton is funded by NIHR as part of an In Practice Fellowship in General Practice.

## 1A.3

### "Talking, talking, talking for me, even though it helped me understand, it didn't heal": informing development of a trauma-informed mindfulness intervention for supporting survivors of domestic abuse with post-traumatic stress disorder

*Presenter: Gemma Halliwell*

*Authors: Sophie Bates, Alison Gregory, Claire Hawcroft, Alice Malpass, Kate Pitt, Natalia Lewis*

#### Institutions

Centre for Academic Primary Care, Bristol Medical School (PHS), University of Bristol, National Institute for Health Research Bristol Biomedical Research Centre, University Hospitals Bristol NHS Foundation Trust and University of Bristol.

#### Abstract

##### Problem

Domestic violence and abuse (DVA) is a major public health and clinical problem experienced by 1 in 4 women. The most frequent mental health consequence of DVA is posttraumatic stress disorder (PTSD). Survivors of DVA represent a distinctive patient group due to the chronicity and complexity of their trauma and the specific impact of the DVA trauma on affect regulation, changes in consciousness, sense of self, relationships and belief systems. Evidence suggests that whilst evidence-based trauma-focussed psychological interventions for the treatment of PTSD are effective, attrition rates are high due to exposure work content, which not all participants find tolerable. In contrast to trauma-focused approaches, mindfulness-based interventions do not include exposure work and could be more acceptable to survivors of DVA. Mindfulness-based interventions have recently received increased attention within the research on PTSD. The preliminary evidence from small-scale studies is encouraging. Recent systematic review identified the need for further modification of mindfulness interventions for PTSD and further RCTs of the modified intervention with large adequately randomised samples without ongoing psychotherapy. We aimed to

understand how to adapt a standard mindfulness-based cognitive therapy (MBCT) course to make it trauma-informed and acceptable for DVA survivors. We also wanted to understand how best to recruit and retain DVA survivors into a feasibility trial of trauma-informed MBCT.

### Approach

We conducted semi-structured interviews with professionals delivering psychological therapies to patients with experience of trauma (n=13) and survivors of DVA who have accessed therapies (n=7). Participants were recruited through professional networks, DVA networks and snowballing. Interviews explored participants previous experience of therapies and the suitability of a mindfulness approaches for the DVA population. We also explored what adaptations would be needed to the standard MBCT manual to make this safe and acceptable for DVA survivors with PTSD. The interviews were audio-recorded, professionally transcribed and analysed using the framework method. Areas of agreement or difference within and across professional and survivor groups were put together in a framework.

### Findings

We identified several key themes: time out of abusive relationship, accessing concurrent therapies, mindfulness pathway (when mindfulness may be appropriate), understanding mindfulness, relevance of mindfulness to survivors of DVA, psychological and practical readiness, orientation session and practical arrangements. Several themes demonstrated differing perspectives within and across the groups: inclusion of intervention participants with poor English, substance misuse, and suicidal ideation; timing of the mindfulness course on the recovery pathway; therapist qualifications and experience; therapist-survivor relationship.

### Consequences

Qualitative findings will feed into evidence synthesis to inform co-production of a prototype trauma-informed MBCT course (TI-MBCT) in collaboration with mindfulness practitioners. The prototype TI-MBCT course will be tested in a feasibility trial to evaluate the feasibility of conducting a definitive trial on the effectiveness and cost-effectiveness of trauma-informed MBCT to reduce PTSD symptoms in DVA population.

### Funding Acknowledgement

This study was supported by the NIHR Biomedical Research Centre at University Hospitals Bristol NHS Foundation Trust and the University of Bristol. The views expressed in this publication are those of the authors and not necessarily those of the NHS, the National Institute for Health Research or the Department of Health.

## 1A.4

### Diagnosing and managing work-related mental health conditions in general practice - new Australian Clinical Practice Guidelines

*Presenter: Danielle Mazza*

*Authors: Danielle Mazza (1), Samantha Chakraborty (1), Bianca Brijnath (1, 2), Heather Nowak, Cate Howell, Trevor Brott, Michelle Atchison, David Gras, Justin Kenardy, Seyram Tawia, Richard Buchanan*

### Institutions

(1) Department of General Practice, Monash University, (2) National Ageing and Research Institute, (3) Mental Health Australia, (4) General practitioner, RACGP, (5) General practitioner, (6) Psychiatrist, RANZCP, (7) Occupational physician, RACP (8) Clinical psychologist, APS (9) Comcare, (10) Office of Industrial Relations -Qld

## Abstract

### Problem

Mental health conditions are among the leading causes of long term work incapacity and absenteeism. General practitioners (GPs) are almost always involved in diagnosing and managing patients with work-related mental health conditions. However, GPs face clinical challenges that hinder their ability to provide optimal care to these patients and have requested advice to assist them to address these challenges. We aimed to develop an Australian clinical guideline to assist GPs with diagnosing and managing patients with work-related mental health conditions.

### Approach

The guideline was developed according to Australian National Health and Medical Research Council standards. First, clinical questions were based on clinical dilemmas faced in practice. Next, a systematic review of the literature was undertaken for each question. Then, the body of evidence for each question was graded according to Grading of Recommendations Assessment, Development and Evaluation (GRADE). A draft guideline was developed by a multidisciplinary Guideline Development Group, and was made available for public consultation between January and March 2018. Finally, the guideline was revised following the consultation and was assessed by independent methodologists and content experts prior to receiving NHMRC approval and RACGP and ACRRM endorsement.

### Findings

Eleven evidence-based recommendations and 19 statements based on consensus provide advice on the diagnosis and management of work-related mental health conditions in general practice, specifically regarding:

- tools to assist diagnosis and assessment of severity of a mental health condition
  - assessing if a patient is developing a comorbid or secondary mental health condition
  - assessing if the mental health condition has arisen from work
  - conveying a diagnosis of a mental health condition to a patient
  - undertaking effective management of the condition to improve personal recovery
  - considering if the patient can work in some capacity
  - communicating with the patient's workplace
  - managing mental health conditions with comorbid substance misuse
  - considering why a patient's mental health condition is not improving
  - managing a patient whose mental health condition is not improving
- This guideline will enhance care and improve health outcomes by encouraging
- utilisation of appropriate tools to assist the diagnosis and assess the severity of mental health conditions
  - the assessment of factors that can lead to the development of a mental health condition
  - more comprehensive clinical assessments
  - the use of existing high-quality guidelines to inform the clinical management of mental health conditions
  - consideration of a patient's work capacity
  - appropriate communication with workplace
  - collaboration with other health professionals.

## Consequences

This guideline is the first to address the clinical complexities associated with diagnosing and managing work-related mental health conditions in general practice. This guideline will provide GPs with the best available evidence, to assist in diagnosing and managing patients with work-related mental health conditions. Implementation of the guideline will be facilitated through tailored implementation activities.

## Funding Acknowledgement

This work was supported by the Australian Government Department of Jobs and Small Business and Comcare, Office of Industrial Relations – Queensland Government, State Insurance Regulatory Authority (NSW), ReturntoWorkSA and WorkCover WA.

## 1A.5

### Implementing work-related Mental health guidelines in general PRactice (IMPRovE): Protocol for a pragmatic stepped-wedged cluster-randomised controlled trial

*Presenter: Samantha Chakraborty*

*Authors: Danielle Mazza (1), Alex Collie (2), Justin Kenardy (3), Bianca Brijnath (4), Duncan Mortimer (5), Joanne Enticott (1), Michael Kidd (6), Lyndal Trevena (7), Samantha Chakraborty (1)*

## Institutions

(1) Department of General Practice, Monash University, (2) Insurance Work and Health Research Group Monash University, (3) School of Psychology, University of Qld (4) National Aging and Research Institute (5) Centre for Health Economics, Monash University (6) Chair of Family and Community Medicine, University of Toronto (7) Discipline of General Practice, University of Sydney

## Abstract

### Problem

In 2018, 61% of UK employees experienced mental health issues due to work or where work was a related factor. Internationally, the incidence of mental health conditions (MHCs) is similarly common. General practitioners (GPs) have an important and complex role in the recovery of patients with work-related MHCs. They undertake the initial assessment of patients, initiate a management plan and provide ongoing care. They also provide advice to patients about compensation claims processes and make judgements about the work-relatedness of a MHC and a patient's capacity to work. Many GPs are under-resourced and ill-equipped to deal with the considerable clinical uncertainties and system complexities they face in facilitating recovery and return-to-work for these patients. In response, our team has developed a new evidence-based clinical guideline on the diagnosis and management of work-related MHCs in general practice. This trial aims to test an implementation strategy for the clinical guideline.

### Approach

We will undertake a pragmatic cluster randomised controlled trial using a stepped-wedge approach to evaluate whether the IMPROvE intervention (comprising academic detailing, resource provision, and support through a digital community of practice) improves implementation of the guideline in general practice, as well as outcomes for patients. We will assess GP practice at baseline, post-intervention (12 months) and follow-up (24 months). We will also assess health and return-to-work outcomes of participating patients

at baseline, 6 months and 12 months following the initial GP consultation. Cost-effectiveness of the intervention will be determined, and we will plan for sustainability and national scale-up.

## Findings

The trial commenced in April 2019 and is in the establishment phase. The trial builds on a body of work undertaken with key stakeholders defining the role of GPs in compensable injury, exploring their concerns and the development of evidence-based guidelines to address them.

## Consequences

This project aims to change both practice and policy. Anticipated changes include:

- improvements in primary care through the implementation of an evidence-based clinical guideline that equips Australia's GPs with real-world, evidence-based knowledge, resources and networks to enhance their confidence and improve their care
- improvements in patient health and return-to-work outcomes as a result of improved care received from GPs. In turn, we expect this will reduce health service utilization and promote retention in the workplace, thus reducing compensation claims
- sustainable change through co-creation and national scale up. This intervention will demonstrate how a health system, researchers and policy makers can work with GPs to facilitate the translation of research into clinical practice. Such an approach may be applied to the implementation of other high quality evidence in general practice. This engagement combined with a rigorous evaluation processes and measurable feasibility and economic value means that the intervention (if proven) can be nationally rolled out by compensation system partners.

## Funding Acknowledgement

This work is supported by the National Health and Medical Research Council Partnerships Grant Scheme, Australian Government Department of Jobs and Small Business, Comcare, State Insurance Regulatory Authority (NSW), iCare, WorkSafeVictoria, ReturntoWorkSA, WorkCover WA and Beyond Blue.

## 1A.6a

### Impact on the use and cost of other services following intervention by an inpatient Pathway Homeless Team in an acute mental health Trust

*Presenter: Zana Khan*

*Authors: Professor Paul McCrone, Sophie Koehne*

## Institutions

South London and Maudsley NHS Foundation Trust, Kings College London

## Abstract

### Problem

This study describes how the KHP Pathway homeless team had an impact on the use and cost of in patient and other services. The Pathway model had never been tried in a mental health trust, and there had never been an economic analysis to evaluate service use before and after intervention.

## Approach

We wanted to investigate whether the use of the KHP Pathway homeless team had an impact on the use and cost of other services. Ideally this would be assessed through a trial or other controlled study. This was not feasible in this case because of limited referral numbers and limited evaluation resources. It was agreed to use a simple before and after design which was both feasible and practical to undertake. Service use was measured using an adapted version of the Client Service Receipt Inventory (CSRI). Using the CSRI, data were collected at baseline and 3- and 6-month follow-up on whether services had been used in the previous three months and if so, how often. Unit costs of services were then attached to the service use data.

## Findings

During the first 3-month follow-up period over half the participants saw a GP with an increase in the proportion seeing a psychiatrist, social worker and a mental health nurse. Attendance at A&E was substantially lower than at baseline. The mean total service cost was £818 at baseline and £414 at 3 months.

## Consequences

Previous evidence supports the role and value of specialist homeless health teams in secondary care in improving health and housing outcomes in homeless inpatients. While there is frequently a desire to focus solely on the economic benefits of new models of care, the KHP Pathway Homeless Team at SLaM supports the role of these services in mental health Trusts. It confirms that effective person-centred care in inclusion health groups, underpinned by values of equity and parity of care, can also offer value to health care systems and services and gives the patient the best opportunity to break the cycle of homelessness. Wider issues impacting the health of homeless and other inclusion health groups cannot be ignored. Austerity has driven cuts to public health, and substance use disorders services, mental health provision, appropriate housing availability, welfare support and chronic underfunding and fragmentation of health and social care. These factors are directly limiting the ability of sectors to work cohesively and of specialist services, such as the Pathway teams to achieve the best outcomes for patients.

## Funding Acknowledgement

We would like to acknowledge the support from the Guy's and St. Thomas' and Maudsley charities and to KCL and the Institute of Psychiatry in funding and supporting the pilot Pathway Homeless Team at SLaM and service evaluation.

## 1A.6b

### Perspectives of clinicians on switching antipsychotics to improve the physical health of people with schizophrenia: a qualitative study

*Presenter: Annabel Nash*

*Authors: Annabel Nash, Saeed Farooq, Tom Kingstone, Paul Campbell*

## Institutions

Keele University, Midlands Partnership Foundation Trust

## Abstract

### Problem

People with schizophrenia have an increased risk of diabetes mellitus (DM) and metabolic syndrome, and are at much greater risk of dying prematurely compared to the general population. The increased risk

is multifactorial, including lifestyle factors such as diet, low levels of activity, and smoking. However, a major risk factor for metabolic syndrome and diabetes is the antipsychotic medication prescribed to control symptoms, and specifically the type of anti-psychotic, with some conferring a higher risk of metabolic syndrome compared to others.

An expert consensus statement on the management of metabolic syndrome associated with antipsychotic use recommended that switching to a low-risk drug is considered when a patient gains 7% of the initial weight or develops hyperglycaemia, hyperlipidaemia, hypertension or other clinically significant cardiovascular or metabolic adverse effect. There are, however, a number of challenges in implementing switching in clinical practice, including lack of knowledge in health care professionals (HCPs) about the potential benefits of switching, a lack of guidance on optimum switching practice, and unknown acceptability of switching for people with schizophrenia.

## Approach

NHS ethics and HRA approvals gained.

A qualitative study involving semi-structured interviews with people with schizophrenia as well as HCPs from primary and secondary care [including psychiatrists, mental health nurses (Ns) and general practitioners (GPs)] in the West Midlands and North West England. A patient and public (PPI) advisory group contributed to the topic guides. Interviews were digitally recorded with consent and transcribed verbatim. Analysis was conducted by members of the research team, using the principles of constant comparison. The PPI advisory group will meet to discuss data analysis and plan dissemination.

## Findings

Data generation is in progress. Initial analysis of transcripts of 3 Psychiatrists, 3 Ns and 2 GPs suggests the following themes: awareness of metabolic side-effects of antipsychotic drugs; lack of clarity over individual responsibility versus a team effort to suggest a change in medication; making the decision to switch versus maintaining the status quo; communicating the decision to switch. Barriers to switching included concern over the risk of relapse if medication was effectively treating mental health symptoms, absence of symptoms due to physical health problems, and the perception that patients are reluctant to change medication. Lack of a support network for the patient was perceived to influence treatment decisions. Clinician uncertainty was evident across the data-sets.

## Consequences

Findings illustrate an interplay between uncertainty, understanding, responsibility and decision-making, resulting in reluctance to suggest making a switch to a lower-risk antipsychotic to improve physical health. This is made more complex by care across multiple interfaces. All clinicians suggested the need for the development of a protocol to guide switching.

Data generation is continuing, with recruitment of people with schizophrenia to explore their knowledge and experiences of switching.

## Funding Acknowledgement

The study was partially funded by Sunovion Pharmaceuticals.



## 1A.6c

### A patient-student co-creation quality improvement project raising mental health awareness in an Arab patient population in a primary care setting

*Presenter: Nour Houbby, Aida Abdelwahed*

*Authors: Aida Abdelwahed, Sonia Kumar*

#### Institutions

Imperial College London

#### Abstract

##### Problem

The literature recognises the stigmatisation of mental health in Arab patient populations and the lack of awareness of culturally appropriate resources available. During a ten-week placement in primary care (in year 3 of MBBS) as part of a quality improvement project, we conducted a needs analysis exploring the negative perceptions attached to Mental Health in the Arab community and lack of exposure to community appropriate sources of help, both acting as barriers to seeking patient's support. The aim of our uniquely angled co-creation project was therefore to create, with Arab patients from the GP Practice, an informative and inclusive 'stop-motion' Mental Health animation video to address the stigmatisation and lack of awareness of mental health services in Arab communities in a culturally sensitive and language appropriate way, moving away from traditional intervention mediums.

##### Approach

We selected 10 Arab patients with either current or past mental health issues to conduct a needs analysis and co-create with us (students) an animation video for viewing in the GP waiting room. The storyline and characters featured in the video were inspired by real patient experiences making them relevant and directly applicable to the GP's Arab-centric patient demographic. Our qualitative study design facilitated the exploration of perceptions in three study populations using questionnaires: 1) patients who were involved in this co-creation project 2) Patient in the waiting room of their perceptions having watched the animation video 3) Staff at the practice of their views of having such a resource for this patient group.

##### Findings

We will present results from our initial needs analysis and results from evaluative questionnaires currently being administered to the three study populations above. At the time of the presentation we will have collected and analysed the data in these three groups, presenting key themes that emerge.

##### Consequences

This novel quality improvement project has wider implications for both medical education and service delivery. Involvement in such meaningful assessments has great implications for medical students learning about the wider sociocultural determinants of health giving them opportunities to make a direct difference to patient care with responsibility. This intervention demonstrates how a video can influence potential shifts in perceptions of Mental Health within Arab communities increasing their access to the healthcare system. Creation of such a Mental Health intervention also highlights the use of a digital platform as an engaging method to encourage inclusivity and understanding at the level of the individual and the wider community rather than traditional practice based leaflets. Lastly, encouraging other GP Practices or clinical commissioning groups to adopt such a holistic

approach to other areas of patient education would facilitate a more collaborative approach between healthcare professionals and patients equalising the power dynamics and health inequalities seen in certain ethnic groups.

#### Funding Acknowledgement

## 1B.1

### STAREE, a randomised controlled trial of atorvastatin vs. placebo for disability free survival and adverse cardiovascular events in the over 70s.

*Presenter: Mark Nelson*

*Authors: MR Nelson (1, 2), S Spark (2), CM Reid (2, 3), JJ McNeil (2), S Zoungas (2) on behalf of the STAREE Investigator Group.*

#### Institutions

(1) 1. Menzies Institute for Medical Research, University of Tasmania, Hobart TAS, Australia, 2 Department of Epidemiology and Preventive Medicine, Monash University, Melbourne VIC, Australia, 3. School of Public Health, Curtin University, Perth WA, Australia.

#### Abstract

##### Problem

Statin use for primary prevention is recommended based on absolute CVD event risk. Most aged individuals are at high risk but have not been included in clinical trials addressing the balance of risk and benefits of statins for CVD and other important health outcomes.

##### Approach

Recruitment of 18,000 participants is underway through the recruitment of general practitioners as co-investigators using the same model as the recently completed ASPREE study (N = 19,114). In summary clinical records are screened by eligibility criteria and letters of invitation from their own GP are sent to patients requesting they call a toll-free contact number. On calling participants are further screened and given an appointment with a research assistant at the practice. At this visit informed consent is obtained and eligibility is checked, which includes a placebo run-in. Compliance is confirmed at a follow-up visit in 4 weeks.

##### Findings

As of 25/2/19 more than 2700 GPs have enrolled as co-investigators in all Australian states. Around 176,000 letters have been sent, 14,036 telephone interviews conducted and 6,526 have consented to be in the trial at a face-to-face screening visit. 4,709 participants have been randomised into the trial.

##### Consequences

STAREE will address the evidence gap in statin use for primary prevention in the aged. It will either justify its already common use or eliminate another ineffective medication from a population already burdened with polypharmacy. An opportunity exists for the UK primary care sector to participate in this trial.

#### Funding Acknowledgement

National Health and Medical Research Council of Australia.

## 1B.2

### Hiding in plain sight: impairments after TIA and minor stroke

Presenter: Grace Turner

Authors: Jonathan Mant, Robbie Foy, Lou Atkins, Melanie Calvert

#### Institutions

University of Birmingham, University of Cambridge, University of Leeds, University of Central London

#### Abstract

##### Problem

Despite good functional recovery, many patients experience 'hidden' impairments after transient ischaemic attack (TIA) and minor stroke, such as anxiety, depression, fatigue and cognitive impairment. Whilst the current healthcare pathway for these patients focuses on stroke prevention, care for other long-term problems is not routinely given. Without proper treatment, patients with these long-term problems may experience worse quality of life and difficulties resuming work and their activities. This study explored: (i) the long-term impacts of TIA/minor stroke, (ii) current healthcare and follow-up and (iii) barriers to and facilitators of a new follow-up pathway, from the perspective of patients and healthcare providers.

##### Approach

Semi-structured qualitative interviews with (i) people who have experienced a TIA/minor stroke (n=12) and (ii) healthcare providers from primary, secondary and community care (n=24). Interviews explored:

- Experiences of post-TIA impairments, follow-up and access to support;
- Perspectives on how to improve follow-up. Findings

Three themes emerged: (1) residual problems post-TIA/ minor stroke; (2) impact of TIA/ minor stroke on lives; and (3) sources of support. 1. Residual problems: Fatigue and anxiety/ depression were reported by most participants. Other problems included: cognitive impairment; loss of confidence; change in personality (e.g. increased anger); physical weakness; speech and vision impairments. 2. Impact on lives: TIA/ minor stroke brought some families closer together, but for other patients it caused relationships to break down. Many patients struggled to return to work and one lost their job as a result of mild cognitive impairment. 3. Sources of support: There was huge variation in follow-up support between hospitals and individual clinicians. In general, nurses and AHPs were more holistic compared to doctors who had a medical focus. Many patients sought support from the internet, family/ friends and employers.

##### Consequences

Residual problems after TIA/ minor stroke are diverse and can have significant impacts on people's lives and return to work. There is huge variation in follow-up and many patients experience little or no support. There is a need for holistic care which goes beyond medical management and a standardised follow-up pathway. Findings will inform development of a new follow-up pathway which will be tested in a feasibility study.

##### Funding Acknowledgement

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Research (NIHR) (and Health Education England if applicable). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health.

## 1B.3

### Contrast of results from ASPREE participants previously taking or not taking regular aspirin prior to trial commencement.

Presenter: Mark Nelson

Authors: MR Nelson (1, 2), RL Woods (2), G Polekhina (2), CM Reid (2, 3), AM Murray (4), B Kirpach (5), RC Shah, (6), M Ernst (7), E Richmond (8), JE Lockery (2), R Wolfe (2), AM Tonkin (2), N Stocks (9), JJ McNeil (2) on behalf of the ASPREE Investigator Group.

#### Institutions

1. Menzies Institute for Medical Research, University of Tasmania, Hobart TAS, Australia. 2. School of Public Health and Preventive Medicine, Monash University, Melbourne VIC, Australia. 3. School of Public Health, Curtin University, Perth WA, Australia. 4. Division of Geriatrics, Department of Medicine, Hennepin County Medical Center and University of Minnesota, Minneapolis MN, U.S. 5. Berman Cen

#### Abstract

##### Problem

The ASPREE study, an N of 19,114 randomised controlled trial of low dose aspirin vs. placebo for disability free survival in the elderly, showed no benefit and possible harm. This has been interpreted as only relevant to the initiation of the drug. Clinicians and patients alike need guidance on the safety of stopping aspirin in those who are already taking the drug without overt cardiovascular disease.

##### Approach

An intention to treat analysis of regular aspirin users prior to trial entry randomised to placebo arm (cessation) or aspirin arm (continuation) for a median of 4.7 years. Cox proportional-hazards models were used to compare results between the aspirin group and the placebo group. Hazard ratios were calculated for death from any cause and for death related to specific causes. Cumulative incidences were used to show the risk of death related to each specific cause, with stratification according to trial group and with allowance for the competing risk of death from the other causes.

##### Findings

2094 were taking aspirin prior to study entry of whom 1053 were randomised to aspirin and 1041 to placebo. There were 70 deaths in the aspirin arm and 79 in the placebo arm (Hazard Ratio = 0.86, 95% Confidence Interval from 0.62 to 1.19). There were differing trends in cancer deaths (38 vs. 32, HR=1.15 and 95%CI: 0.72, 1.85) compared to both CVD deaths (11 vs 27, HR=0.24 and 95%CI: 0.05, 1.14) and coronary heart disease deaths (5 vs 14, HR=0.35 and 95%CI: 0.12, 0.96). Excess cancer deaths were driven by lung cancer (11 vs. 6). Cumulative incidence plots for cancer mortality suggests that adverse risk is reduced quickly on cessation compared with continued aspirin use. Cumulative incidence for CVD death and events showed a delayed adverse effect for ceasing aspirin. Cumulative incidence for major bleeding showed no difference. Limitation of possible survival bias as 4-week placebo run in phase may have to CVD events not captured in-trial.

## Consequences

Ceasing low dose aspirin after the age of 70 in those without a clinical indication for use (i.e. CVD secondary prevention) showed both adverse (CVD) and beneficial (cancer) effects. The findings need to be interpreted in light of the main findings and suggest aspirin cessation may be a reasonable strategy in an age group with a high drug burden.

## Funding Acknowledgement

National Institutes for Aging (US), National Cancer Institute (US), National Health and Medical Research Council of Australia.

## 1B.4

### Is there an association between ethnicity and incidence of dementia post-stroke? A cohort study using the UK Clinical Practice Research Datalink

*Presenter: Suhail Ismail Shiekh*

*Authors: Suhail Ismail Shiekh, Harriet Forbes, Rohini Mathur, Liam Smeeth, Charlotte Warren-Gash*

## Institutions

The London School of Hygiene & Tropical Medicine

## Abstract

### Problem

The UK has over 1.2 million stroke survivors. Stroke is a major risk factor for dementia and is more common in ethnic minority groups. Some dementia risk factors such as hypertension and diabetes are also more common among ethnic minority groups and the proportion of elderly individuals from Black, Asian and other ethnic minorities (BAME) is set to increase in the future. We aimed to explore whether dementia incidence in adult stroke survivors differs by ethnicity, and to understand whether any differences are due to modifiable factors.

### Approach

Using the UK Clinical Practice Research Datalink (CPRD) and linked Hospital Episode Statistics (HES) data, we conducted a cohort study among patients aged 40 years or more who had an incident stroke between 2005 and 2016. Patient follow-up started three months post-stroke until the earliest of either incident diagnosis of dementia, transfer out or practice, death, or end of study period. Ethnicity was defined using a previously used algorithm. Our study outcome was incident dementia based on clinical diagnoses recorded in CPRD or HES. We fitted multivariable Cox proportionate hazard models to estimate ethnic differences in the risk of post-stroke dementia, adjusting for major clinical and social confounders, taking the White ethnic group as the reference category and using age-at-stroke as the timescale.

### Findings

Of 76,388 patients with an incident stroke, 15,996 were excluded as they developed dementia or transferred out within 3 months of stroke, or had pre-existing dementia at the time of the stroke. 45,474 of the remaining 60,392 patients (75%) had ethnicity information so were included in our study (mean age at stroke 72.6 years, 49% female). 43,526 (95.7%) were from the White ethnic group, 885 (2%) South Asian, 543 (1.2%) Black, and 520 (1.1%) Mixed/Other. Median follow-up was 3.26 years and 4,624 (10.2%) developed post-stroke dementia. Compared to the White ethnic group, there was good evidence that those of South Asian ethnicity were 30% less likely to be diagnosed

with dementia (adjusted Hazard Ratio (HR) 0.70, 95%CI 0.54-0.90), while there was no evidence of an association with being from Black ethnic group (adjusted HR 0.85, 95%CI 0.63-1.15) or of Mixed/Other ethnicity (adjusted HR 0.72, 95%CI 0.51-1.03).

## Consequences

There was strong evidence that South Asians were at reduced risk of a dementia diagnosis post-stroke. There was also some indication the risk was reduced in Black and Mixed/Other ethnic groups, however the study was limited by small numbers. Mechanisms for this association remain unclear and we are currently exploring factors potentially influencing our results such as ethnic differences in premature exit from the study. Better understanding of this relationship could help in targeting interventions in communities most at risk of dementia post-stroke.

## Funding Acknowledgement

Suhail Ismail Shiekh is funded through a Wellcome Intermediate Clinical Fellowship held by Charlotte Warren-Gash (201440\_Z\_16\_Z).

## 1B.5

### Development and external validation of a novel clinical tool to predict low-density lipoprotein cholesterol (LDL-C) response for Statin OPTimisation (SOP Tool) in parallel population-cohorts in the United Kingdom and Hong Kong

*Presenter: Stephen Weng*

*Authors: Ralph K Akyea, Kenneth KC Man, Wallis CY Lau, Nadeem Qureshi, Joe Kai, Barbara Iyen, Joseph Edgar Blais, Esther W Chan, Chung Wah Siu, Ian CK Wong*

## Institutions

University of Nottingham, University College London, University of Hong Kong

## Abstract

### Problem

One in two individuals prescribed statins for primary prevention of cardiovascular disease do not derive the intended therapeutic benefit of lowered cholesterol levels. Despite the vast number of people on statins and their high variability in cholesterol-lowering response, approaches to identify these individuals and predict their therapeutic response are lacking. The aim of this large, international study was to determine factors associated with sub-optimal LDL-C response to statins; and to derive and externally validate a clinical algorithm to predict sub-optimal LDL-C response to statins.

### Approach

354,187 patients treated with statins (9/3/1990 – 6/7/2016) were identified from electronic health record (EHR) databases, from the United Kingdom (UK) Clinical Practice Research Datalink (CPRD) and the Hong Kong (HK) Clinical Data Analysis & Reporting System (CDARS). Patients were free from cardiovascular disease at baseline, with baseline LDL-C measured within 12 months prior to the initiation of statins, and at least one follow-up LDL-C measured within 24 months after initiation of statins. Two methods were used to develop multivariable models: standard logistic regression, and a deep-learning machine-learning algorithm, using data from the UK CPRD. The models were validated using two separate cohorts of patients in UK CPRD

and HK CDARS. Sub-optimal statin response at 24 months, defined as less than a 40% reduction in baseline LDL-C level (based on national guidelines). Model performance was assessed by discrimination, measured by area under the receiver operating characteristic curve (AUC).

### Findings

Study cohorts comprised 183,283 patients from UK and 170,904 from HK for external validation. Incidence rates for cardiovascular disease (CVD) were higher in sub-optimal statin responders (UK: 18.97 per 1000 person-years, 95% CI 18.33 – 19.63; HK: 17.36 per 1000 person-years, 95% CI 17.06 – 17.67) compared to optimal statin responders (UK: 16.18 per 1000 person-years, 95% CI 15.59 – 16.79; HK: 16.68 per 1000 person-years, 95% CI 16.28 – 17.09). Age, atrial fibrillation, diabetes, dyslipidemias, statin potency, treated hypertension, number of prescribed medications, baseline LDL-C level, corticosteroids and other lipid lowering medications were associated with LDL-C response. Discrimination for the logistic model were 0.703 (95% CI, 0.699 to 0.707) for the UK validation cohort and 0.677 (95% CI 0.675 to 0.680) for the HK validation cohort. The deep-learning model using the same risk factors showed similar discrimination to the logistic model in UK (0.703, 95% CI 0.699 to 0.707) and HK (0.680, 95% CI 0.678 to 0.683) validation cohorts.

### Consequences

Patients prescribed statins who do not achieve optimal LDL-C response have an increased incidence of CVD. A clinical algorithm developed and validated internationally across populations, has shown consistency and accuracy in predicting sub-optimal LDL-C response to statins. The algorithm uses predictors routinely available in EHRs and could enhance appropriate cholesterol management by identifying those less likely to benefit from statins.

### Funding Acknowledgement

This study was internally funded and supported by the University of Nottingham, University College London, and University of Hong Kong.

## 1B.6

### Impact of inter-arm blood pressure difference on cardiovascular risk estimation in primary care

*Presenter: Sinead McDonagh*

*Authors: Sinead TJ McDonagh, Ben Norris, A Jayne Fordham, Maria R Greenwood, Suzanne H Richards, John L Campbell, Christopher E Clark*

### Institutions

University of Exeter Medical School, Royal Devon and Exeter NHS Foundation Trust, Mid Devon Medical Practice, University of Leeds

### Abstract

#### Problem

The majority of cardiovascular events occur in people at low to intermediate estimated risk. Prediction of cardiovascular risk may be refined by taking account of novel risks markers. We have found that an inter-arm blood pressure difference (IAD) is an independent risk marker for cardiovascular events, after adjustment for QRISK2, Atherosclerotic Cardiovascular Disease (ASCVD), or Framingham cardiovascular risk scores. The National Institute for Health and Care Excellence currently recommends QRISK2 thresholds of >10% and >20% for initiation of statin and/or blood pressure lowering treatment as primary prevention of cardiovascular disease. Taking account of IAD therefore offers the

potential for improved individual cardiovascular risk prediction, by reclassifying people across these 10-year risk thresholds. This study modelled the impact of adjusting cardiovascular risk prediction scores for IAD in a primary care population free of existing disease.

### Approach

People aged 45-75 years, free of cardiovascular disease, had bilateral blood pressure measured simultaneously, three times, with a Microlife Watch BP Office device during National Health Service (NHS) Health Checks in one rural general practice in Devon, England. Systolic IAD was defined as mean right minus mean left systolic blood pressure. QRISK2, ASCVD and Framingham risk scores were calculated and adjusted using hazard ratios for IAD derived from our INTERPRESS-IPD Collaboration analyses, based on data from over 57,000 records. Unadjusted and adjusted risk scores were classified according to 10% and 20% risk thresholds and the proportions reclassified were reported. Analyses were carried out using Stata v15.0.

### Findings

Data existed for 334 participants [mean (standard deviation): age 57.4 (9.3) years, blood pressure 132/79 (14/8.5) mmHg]. Systolic IAD was  $\geq 10$  mmHg for 31 (9.3%) participants. Mean risk scores were: QRISK2 8.0 (6.7), ASCVD 6.9 (6.5) and Framingham 10.7 (8.1) before adjustment for IAD, and 8.9 (7.7), 7.1 (6.7) and 11.2 (8.5), respectively, following adjustment. Overall, 18 (5%) participants were reclassified from below to above the 10% or 20% QRISK2 risk thresholds; corresponding figures for ASCVD and Framingham were 3 (1%) and 10 (3%), respectively. For individuals with initial risk scores between 8% and 9.9% only, numbers reclassified above 10% for QRISK2 were 13/35 (37%), ASCVD 3/29 (10%) and Framingham 7/38 (18%).

### Consequences

Our findings confirm that, by taking account of systolic IAD, individual cardiovascular risk estimates for people attending NHS Health Checks can be refined. Using this approach individual evidence-based decisions on interventions for primary prevention of cardiovascular disease can be discussed. This could facilitate targeting of treatment to those at greater than expected cardiovascular risk, particularly when unadjusted risk scores are close to treatment thresholds. This study also confirms the known tendency of Framingham scores to over-estimate risk in an English cohort in comparison to the UK derived QRISK2 score.

### Funding Acknowledgement

## 1B.7a

### Do these data apply to me? Examining the applicability of trials assessing strategies for optimal management of blood pressure to older patients in UK primary care

*Presenter: Mark Lown*

*Authors: James Sheppard, Jenni Burt, Mark Lown, Eleanor Temple, Rebecca Lowe, Hannah Ashby, Oliver Todd, Bethany Diment, Sarah Oliver, Julie Allen, Gary Ford, Carl Heneghan, FD Richard Hobbs, Sue Jowett, Paul Little, Jonathan Mant, Jill Mollison, Rupert Payne, Mar*

### Institutions

University of Oxford, University of Cambridge, University of Southampton, University of Leeds, University of Leeds, University of Bristol

## Abstract

### Problem

There is debate as to what extent older patients ( $\geq 80$  years) should be treated for high blood pressure. Existing trials show that blood pressure lowering in this population is effective at preventing stroke and heart failure but also results in an increased risk of adverse events. However, it has been suggested that these studies enrolled healthier patients, who are less representative of the general population and more likely to benefit from treatment. This study aimed to compare the characteristics of patients eligible for three blood pressure management trials and assess the likelihood of eligibility for each trial based on common characteristics of older patients.

### Approach

Cross-sectional study of data extracted from the medical records of 15,376 patients aged  $\geq 80$  years, registered to 24 general practices in the south of England. Anonymised patient data relating to the eligibility criteria for two previous medication intensification trials (HYVET, SPRINT) and one medication reduction trial (OPTiMISE) were extracted. Patients eligible for each trial were defined according to criteria specified in each trial protocol. Descriptive statistics were used to define the characteristics of each trial population. A logistic regression model was constructed to estimate predictors of eligibility for each trial, with practice included as a random effect.

### Findings

Approximately 268 (1.7%), 5,290 (34.4%) and 3,940 (25.6%) patients were eligible for HYVET, SPRINT and OPTiMISE trials respectively. There was little overlap in eligibility for each trial (1.0% were eligible for HYVET and SPRINT; 0% were eligible for HYVET and OPTiMISE; 10.2% were eligible for SPRINT and OPTiMISE). Patients eligible for OPTiMISE were comparable to the general population in terms of frailty (eFI 0.12 [OPTiMISE] vs 0.11 [general population]), but had more morbidities (4 vs 3) and cardiovascular medications prescribed (4 vs 2). Patients in HYVET and SPRINT were less frail, multi-morbid and prescribed less cardiovascular medications. Overall, increasing frailty and a history of cardiovascular disease reduced the likelihood of being eligible for any trial.

### Consequences

Patients eligible for OPTiMISE appear to best represent the population aged  $\geq 80$  years attending UK primary care. Increasing frailty and/or multi-morbidity reduce the likelihood of eligibility for all three blood pressure trials. Caution should be exercised when applying the results from randomised controlled trials to management of blood pressure in frail and multi-morbid patients.

### Funding Acknowledgement

This work was funded by the NIHR Oxford CLAHRC and School for Primary Care Research

## 1B.7b

### Exercise-Based Cardiac Rehabilitation Improves Exercise Capacity and Health-Related Quality of Life in People with Atrial Fibrillation: A Systematic Review and Meta-Analysis of Randomised and Non-Randomised Trials

*Presenter: Jeffrey Lambert*

*Authors: Neil Smart, Nicola King, Jeffrey Lambert, Melissa Pearson, John Campbell, Signe Risom, Rod Taylor*

### Institutions

University of Exeter, University of New England, University of Plymouth, University College Copenhagen, University of Glasgow

## Abstract

### Problem

Atrial fibrillation (AF) is the most common cardiac arrhythmia, associated with increased risks of stroke, heart failure, dementia, and death. Exercise based cardiac rehabilitation (CR) may be effective at improving exercise capacity, health related quality of life (HRQoL) and a range of other clinical outcomes for patients with AF.

### Approach

To undertake a systematic review and meta-analysis of the impact of exercise-based CR targeted at patients with AF. We searched PubMed, EMBASE and the Cochrane Library of Controlled Trials using key terms related to exercise-based CR and AF. Randomised and non-randomised controlled trials were included if they compared the effects of an exercise-based CR intervention to a control group. Meta-analyses of outcomes were conducted where appropriate.

### Findings

The 9 randomised trials included 959 (483 exercise-based CR vs. 476 controls) patients with various types of AF. There were improvements in HRQoL (mean SF-36 mental component score: 4.00, 95% CI: 0.26 to 7.74;  $p=0.04$  and mean SF-36 physical component score: 1.82, 95% CI 0.06 to 3.59;  $p=0.04$ ) and exercise capacity (mean peak  $\text{VO}_2$ : 1.59 ml/kg/min 95% CI: 0.11 to 3.08;  $p = 0.04$ ; mean 6-minute walk test: 46.9 metres, 95% CI: 26.4 to 67.4;  $p < 0.001$ ) for exercise-based CR. Improvements were also seen in AF symptom burden and markers of cardiac function.

### Consequences

Further high quality multicentre randomised trials are needed to clarify the impact of exercise-based CR on key patient and health system outcomes including HRQoL, mortality, hospitalisation and costs and how these effects may vary across AF sub-groups.

### Funding Acknowledgement

National Institute for Health Research (NIHR) under its NIHR Senior Investigator award (Grant Reference Number NF-SI-0514-10155).

## 1B.7c

### Can a co-produced, assertive care intervention reduce cardiovascular disease risk in people living with severe mental illness in the primary care setting? The Assertive Cardiac Care Trial

*Presenter: Victoria Palmer*

*Authors: Jane Gunn, Matthew Lewis, John Furler, Carol Harvey, Mahesh Jayaram, Patty Chondros, David Osborn*

#### Institutions

The Department of General Practice Melbourne Medical School The University of Melbourne, The Department of Psychiatry Melbourne Medical School The University of Melbourne, University College London

#### Abstract

##### Problem

An established evidence base shows that people with severe mental illnesses have higher risk for cardiovascular disease (CVD) which contributes to an established 10-20 year mortality gap when compared with the public. Current research indicates that many of the factors for increased CVD risk in people living with severe mental illness are modifiable such as diet, exercise, reductions in blood pressure, high cholesterol, smoking and alcohol use. To address current unmet needs in this population, we co-produced an intervention using assertive community treatment and motivational interviewing principles combined with dedicated nurse and general practitioner care over 12 months to be tested in the primary care setting.

##### Approach

Addressing CVD risk calls for a focus on multiple rather than single risk factors, and to deliver targeted CVD risk assessment combined with tailored pharmacological and non-pharmacological interventions with proactive follow-up, monitoring and treatment intensification as required. Assertive Cardiac Care delivers this with trained nurses facilitating guided conversations to identify goals, provide regular face to face, phone and technology-mediated support over 12 months. General practitioners are engaged in care planning, medication and reviews. Five hundred and fifty eligible adults aged 35-75 years old, with a diagnosis of schizophrenia, psychosis, delusional disorder, bipolar disorder, or major depression will be recruited from Australian primary care settings. Eligible participants will be invited to a nurse facilitated Healthy Heart check to determine the 5-year absolute cardiovascular disease risk, then they will be individually randomised to the intervention or an active control group (n=252 per group). The active control will receive heart health information, and a referral to their general practitioner to follow up.

##### Findings

The primary outcome is 2% difference between intervention and active control in mean 5-year risk for cardiovascular disease using the Australian Absolute Risk Calculator. Assessments will be conducted at baseline, six months and twelve months. Secondary outcome measures include individual cardiovascular risk factors, patient activation, empowerment, quality of life, medication adherence and health economics at 6 and 12 months.

##### Consequences

There is growing consensus that co-produced interventions may have more potential to reach and engage people living with severe mental illness, but we need an evidence base to inform decision making in

these areas. Findings cost-effective ways to address the high CVD risk in this group is essential. If this intervention can reduced CVD risk it will be suitable for wider implementation in the primary care setting.

#### Funding Acknowledgement

Assertive Care is funded by the National Health and Medical Research Council from 2018-2022.

## 1C.1

### How do patients engage with cancer information? An observational study of GP waiting rooms

*Presenter: Joanne Reeve*

*Authors: Trish Green, Judith Dyson, Liz Mitchell, Stephen Duffy, Una Macleod*

#### Institutions

Academy of Primary Care, Hull York Medical School; Policy Research Unit in Cancer Awareness, Screening and Early Diagnosis

#### Abstract

##### Problem

It is routine practice to offer health information to the captive audience of patients in a GP waiting room. Yet little research has examined what patients do with that information. Studies to date focus on the impact of waiting spaces on mood (Clapton 2016). Maskell's 2018 survey identified that patients find information unattractive or uninteresting. But little is currently known about how patients engage with health information in waiting rooms in practice. This study seeks to explore how information in waiting rooms is planned and managed, and what really happens while patients wait for appointments. We focus on cancer symptom information as a critical case through which to examine this phenomenon.

##### Approach

Sample - 16 practices with diverse demographics and building layouts across four UK regions. Data collection - 80 hours of observations in waiting rooms, 32 semi-structured interviews with staff, and a patient questionnaire. Observation sessions recorded all patient activities taking place in the waiting room seating area. Posters in the waiting room specified practice involvement in a research study but the observer role was not made known. Staff interviews focused on information provision strategies and resources, spatial layouts, and expectations about patient engagement with information. Findings from content analysis and thematic analysis of these data were used to develop a questionnaire investigating patients' perceptions of engaging with information in waiting rooms. This will be distributed to 3,600 patients who had recently attended for consultations across the 16 practices.

##### Findings

Three key themes emerged. 1) Patient engagement with information varied widely: average waiting times varied and patient activities centred around mobile phone use, watching JX displays or screens for call-in, talking with companions or interacting with children. Variation in engagement was related to spatial layout, the pace of call-ins, and the choice of 'distractions' in the room. 2) Patient engagement and staff expectations about information use were mismatched. Observations did not support staff optimism about information utility. 3) For cancer symptom information, findings demonstrated barriers and facilitators related to uptake. Barriers included the focus of information displays

on seasonal illnesses, practice protocols, and health issues directly linked to practice outcomes such as preventative screening. Facilitators included national cancer campaigns and targeted practice-level engagement by cancer charities.

### Consequences

More innovative approaches to information provision are required to enable the effective use of waiting room space to deliver health messages.

### Funding Acknowledgement

Department of Health

## 1C.2

### Making contacts count? Views of patients and practitioners on cancer risk discussions in primary care: a qualitative interview study

*Presenter: David Nicholas Blane*

*Authors: Sara Macdonald, Kate O'Donnell*

### Institutions

Institute of Health & Wellbeing, University of Glasgow

### Abstract

#### Problem

In the UK, nearly 600,000 cancer cases could have been avoided in the last five years if people had healthier lifestyles, with the principle modifiable risk factors being smoking, obesity, alcohol and inactivity. In theory, GPs are well placed to discuss and support health behaviour change related to these risk factors, in keeping with the WHO's renewed declaration for primary health care. To support such discussions, researchers in Cambridge developed a personalised cancer risk calculator and found there was enthusiasm for its use in general practice. It is unclear, however, if practitioners in the less affluent context of Glasgow, where health literacy and life expectancy are lower (and the prevalence of multiple unhealthy behaviours is higher) hold the same views. The aim of this study is to explore the views and experiences of patients and practitioners (GPs and practice nurses) in relation to cancer prevention and cancer risk discussions in general practice, particularly in more deprived areas.

#### Approach

Qualitative study involving semi-structured interviews. In the first stage, a purposive sample of 10 primary care practitioners (5 GPs and 5 practice nurses) were recruited from a range of practices, based on practice list size (small, medium, large) and deprivation status (low, medium, high). In the second stage, 16 patients aged 30 to 60 from participating practices were recruited, if they had 2 or more of: current smoker, obesity, diabetes, hypertension, coronary heart disease. People with a history of cancer or deemed unsuitable to take part by their GP were excluded. The theoretical frameworks of candidacy and normalisation process theory informed data analysis.

#### Findings

This is work in progress, but findings from practitioner interviews suggest mixed views about the potential utility of personalised cancer risk tools in routine primary care consultations, with concerns about time constraints and opportunity costs, especially in more deprived areas, and about uncertain evidence of benefit.

### Consequences

Health behaviour change is complex and the provision of information alone is unlikely to have significant effects. The views of those affected – patients and practitioners – must be taken into account before the introduction of any new technologies in general practice.

### Funding Acknowledgement

This research was funded by the Royal College of General Practitioners (RCGP) Scientific Foundation Board (SFB).

## 1C.3

### Using conversation analysis to explore communication of cardiovascular disease and cancer risk in primary care

*Presenter: Katie Mills*

*Authors: Charlotte Albury, Rebecca Barnes, Robbie Duschinsky, Simon Griffin, Juliet A Usher-Smith*

### Institutions

University of Cambridge, University of Oxford, University of Bristol

### Abstract

#### Problem

The communication of cardiovascular disease (CVD) risk to patients is incorporated into many clinical guidelines and the NHS Health Checks programme. Similar models predicting risk of cancer have been developed but are much less widely used. Studies in CVD show that healthcare professionals (HCPs) adopt a range of approaches when communicating risk. The aim of this study is to use conversation analytic (CA) methods to explore the range of language and communication techniques used by HCPs when discussing risk of CVD and cancer with patients, and the way these different approaches shaped patient decisions about lifestyle change and medication.

#### Approach

Patients were recruited from 5 GP practices in the East of England. HCPs were trained to give patients their estimated risk of cancer in addition to their CVD risk within NHS Health Checks. Questionnaire data was collected from patients, immediately and 3 months after the consultation, on intention to change behaviour and take prescribed medications. 30 intervention consultations were recorded with patient and healthcare professional consent and transcribed verbatim. Extended sequences of talk immediately preceding and through the communication of CVD and cancer risk were identified and transcribed in further detail according to Jeffersonian conventions. On completion of follow-up data collection in March 2019, potential relationships between the qualitative CA findings and the quantitative questionnaire data will be explored.

#### Findings

CA analysis is currently underway. The analysis is focused on the recurrent practices through which actions are designed, sequences are organized, and activities associated with the intervention are accomplished. Preliminary findings indicate to deliver CVD and cancer risk and recommend lifestyle changes often required delicacy. HCPs were observed to orient to this delicacy using linguistic resources and bodily conduct. HCP engagement in 'online commentary' whilst collecting key data or measurements was also observed to shape patient expectations prior to risk communication. We noted that there

were distinct activity phases that HCPs needed to jointly achieve with patients, such as information gathering, risk calculation, and advice-giving. Results showed that the ordering of these activities affected the smooth running of the consultation. Advice-giving before risk was calculated often meant that the advice was not tailored to patients' individual needs [for behaviour change], whilst placing this activity at the end of a consultation provided the means for a clinically effective endpoint.

### Consequences

To our knowledge this will be the first application of CA methods to examine risk communication between HCPs and patients during NHS Health Checks. Through examining different communication practices and their sequential trajectories and their relationship to patient reported behaviour change intentions, more or less 'successful' ways of communicating patient risk may be identified. These findings may then be used in evidence-based communication training for HCPs on the delivery of risk information to patients.

### Funding Acknowledgement

This abstract presents independent research funded by the National Institute for Health Research School for Primary Care Research (NIHR SPQR). The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.

## 1C.4

### A meta-ethnography of cultural influences on cancer-related psychological interventions

*Presenter: Dipesh Gopal*

*Authors: Karen Pilkington (1), Sheila Donovan (2), Elisavet Moschopoulou (2), Dipesh Gopal (2), Kam Bhui (2), Trudie Chalder (3), Imran Khan (2), Steph Taylor (2), Damien Ridge (4) on behalf of the SURECAN Investigators*

### Institutions

1. University of Portsmouth, 2. Queen Mary University of London, 3. Kings College London, 4. University of Westminster

### Abstract

#### Problem

Two million people in the UK are living with or beyond cancer and a third of them report poor quality of life (QoL) due to problems such as fatigue, fear of cancer recurrence and concerns about returning to work. Our trial, Survivors' Rehabilitation Evaluation after CANcer (SURECAN), aims to develop and evaluate a new talking therapy based on Acceptance and Commitment Therapy for people who have completed treatment for cancer, but are experiencing poor QoL. We conducted a systematic review and meta-ethnography of cultural influences on cancer-related psychological interventions in order to inform the design of a culturally sensitive intervention that will better appeal to ethnically diverse populations. The papers included in the study reported here focused on black and minority ethnic (BME) experiences.

#### Approach

Nine major databases were systematically searched for qualitative studies of minority ethnic groups (as specified in the UK census) describing their experiences of using oncological or mental health services. In the first stage of the meta-ethnography, studies focused on experiences of UK services were selected. Two reviewers working independently screened titles and abstracts to identify potentially

eligible studies and two reviewers subsequently assessed full-texts for relevance. Recurring concepts were identified and first order (participant) and second order (authors' interpretations) constructs extracted by three reviewers. Third order constructs (the review team's interpretations) will be identified iteratively and via group analytical sessions. Interpretations will be presented to the wider research team for confirmation of congruence, and a report on the full findings of the synthesis produced. The review protocol was registered at PROSPERO 2018 CRD42018107695.

### Findings

The search resulted in 11,142 unique citations, and 28 papers met the inclusion criteria. Interim analysis of 20 papers yielded 10 preliminary themes (recurring concepts). Key influences on patients' experiences of healthcare include health beliefs, aspects of the patient-practitioner relationship (such as power imbalances, degree of person-centredness), the role of family (including guiding access to care), stigma, the role of spirituality and religion, as well as language and communication issues not accommodated by services. Tertiary order constructs will be developed in the final phase of the project.

### Consequences

The results of this study have implications for the development of interventions that are suitable for diverse patient groups in the UK society. Our findings can inform clinicians', researchers' and policy makers' understanding of the kinds of understanding and support required in order to develop services and trials suitable to the needs of BME patients.

### Funding Acknowledgement

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## 1C.5

### Use of hormone replacement therapy and risk of breast cancer

*Presenter: Yana Vinogradova*

*Authors: Carol Coupland, Julia Hippisley-Cox*

### Institutions

University of Nottingham, University of Oxford

### Abstract

#### Problem

Hormone replacement therapy (HRT) relieves adverse symptoms experienced by some women during menopause. Although treatments are helpful, they may be associated with increased risks of developing breast cancer. Evidence for increased risks among women using HRT is, however, mixed. Studies have differed in terms of age profiles, durations of follow-up and exposures to different HRT treatments. Many studies have investigated the different drugs only as a single class, and lack of evidence – particularly for progestogens – is noted in the 2015 National Institute of Health and Clinical Excellence guideline on menopause. Our large-scale, comprehensive study investigated breast cancer risks associated with all drug formulations commonly used in HRT treatments in the UK.



## Approach

A nested case-control study based on the general female population used clinical records from UK general practices contributing to the QResearch database. 72,731 women aged between 40 and 79 had a primary breast cancer diagnosed between 1998 and 2018. These cases were matched by year of birth and general practice to 325,046 female controls alive at the time of case diagnosis (the index date). Women with previous breast cancer diagnoses were excluded. Exposure to HRT drugs was based on prescriptions before the index date, excluding the last year. Associations with duration and with gaps in exposure since last use were investigated. Conditional logistic regression was used to calculate odds ratios adjusted for smoking, ethnicity, body-mass index and co-morbidities associated with increased breast cancer risk or use of HRT.

## Findings

21,195 (29%) cases and 86,825 (27%) controls had used HRT drugs in the relevant exposure period. 26% of exposed cases and 30% of exposed controls were prescribed oestrogen-only therapy and 74% and 70% respectively were prescribed a combined therapy. Overall compared to no use, there was no increased risk associated with exposures of less than one year of HRT use, but exposures over one year were associated with steadily increasing risks, reaching 35% (95% confidence interval 1.30 to 1.39) for 5 to 10 years of exposure. Oestrogen-only therapy (estradiol or conjugated equine oestrogen) was associated with a 1% (0.6% to 1.8%) increased risk per additional year of use. Each additional year of exposure to progestogens was associated with a 5% (4% to 6%) increased risk for levonorgestrel or norethisterone and 6% (5% to 7%) for medroxyprogesterone acetate. Two years after discontinuation, increased risks for oestrogens had disappeared, but the risks for progestogens remained significant.

## Consequences

In one of the largest-ever studies of breast cancer and HRT treatments, increasing exposures were associated with increased risks, mostly attributable to progestogen use. The findings should help doctors and patients in their choice of hormonal therapy, particularly for women already having increased breast cancer risk.

## Funding Acknowledgement

Not funded.

## 1C.6a

### **SURvivors' Rehabilitation Evaluation after CANcer (SURECAN): using Acceptance & Commitment Therapy plus physical activity and work support (ACT+) for those who choose them, to help people living with and beyond cancer**

*Presenter: Stephanie Taylor*

*Authors: Dipesh Gopal (1), Trudie Chalder (2), Imran Khan (1), Elisavet Moschopoulou (1), Sheila Donovan (1), Steph Taylor (1) on behalf of the SURECAN Investigators*

## Institutions

1. Queen Mary University of London, 2. Kings College London

## Abstract

### Problem

Two million people in the UK are living with and beyond cancer (here

called "cancer survivors" for brevity). Around a third have a diminished quality of life (QoL). Cancer survivors are also much less likely to be in employment than their peers who have not experienced cancer. Previous research suggests that the psychological intervention, cognitive behavioural therapy, and exercise may improve the QoL of cancer survivors. We will develop an intervention for cancer survivors based on Acceptance and Commitment Therapy (ACT) - a psychological intervention that puts patients' views about what they value most in their lives at the heart of the therapy, in order to improve their quality of life. ACT helps patients to accept what they cannot change (e.g. that cancer might recur) and commit themselves to goals they are able to achieve, based on their own values (e.g. becoming closer to loved ones). Since we know that exercise is helpful and work is important to many patients, we will integrate ACT with options for physical activity and work support, if these are deemed important by the patient (thus our intervention is: ACT+). Aim: To develop, pilot and evaluate a novel, person-centred, psychological intervention ("ACT+"), based on Acceptance and Commitment Therapy, for people who have received or are receiving treatment for cancer with curative intent but are experiencing poor quality of life.

## Approach

Our methodology involves several connected workstreams:

- 1) A qualitative meta-ethnographic synthesis of cultural influences on psychological interventions for cancer survivors, to help us design ACT+ to be acceptable and useful in culturally diverse populations.
- 2) Development and refinement of ACT+ therapy: using interviews with patients, therapists, and clinicians in addition to training therapies to deliver ACT+ in a pre-pilot study.
- 3) A multi-centre RCT of ACT+ versus routine treatment (n=344) in patients who are living with and beyond breast, colorectal, prostate, haematological and head and neck cancers, (including an internal pilot (n=45) to test recruitment and running).
- 4) A therapy process evaluation including qualitative methods to explore experience of ACT+ amongst participants and therapists and a quantitative assessment of moderators and mediators of treatment effect.

## Findings

The project is ongoing, we will present findings from the qualitative work and pre-pilot study and how these have influenced the development and delivery of ACT+ therapy.

## Consequences

We hope that by the trial end in 2023, we will be able to determine if ACT+ is effective, safe, culturally acceptable, and cost-effective in improving the well-being of those living with and beyond cancer.

## Funding Acknowledgement

Funded by the NIHR Programme Grants for Applied Research (RP-PG-0616-20002). The views expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

## 1C.6b

### To what extent can Multidisciplinary Diagnostic Centres respond to the referral requirements of patients with non-specific but concerning symptoms?

*Presenter: Veronique Poirier*

*Authors: Clare Pearson, Dave Chapman, Karen Fitzgerald*

#### Institutions

Cancer Research UK-PHE partnership, Cancer Research UK, Cancer Research UK

#### Abstract

##### Problem

Patients presenting with non-specific but concerning symptoms (NSCS) often do not fit referral criteria for specific tumour pathways. Consequently 'Accelerate, Coordinate, Evaluate' (ACE) projects piloted Multi-disciplinary Diagnostic Centres (MDCs) to address the needs of these patients. Their remit was to assess the potential to achieve earlier diagnosis of cancers or other diseases for complex patients with NSCS.

To build a more comprehensive picture of the diagnostic needs of these patients, primary care information was obtained from the National Cancer Diagnosis Audit (NCDA). This overview will present findings of the NCDA analysis and the overall evaluation from the MDC pilots.

##### Approach

1/NCDA data for cancers diagnosed in England in 2014 were linked with additional National Cancer Registration and Analysis Service datasets. Patients with NSCS were identified using the referral criteria developed by the MDCs. A NSCS (only included NSCS) and a non-NSCS cohort were created.

2/A dataset was agreed across the MDC programme and focused on demographic, diagnostic process of cancers and incidental diseases. Ten pilot sites were in Airedale, Greater Manchester, Leeds, London and Oxford. Analysis was based on MDC referrals up to 31st July 2018.

##### Findings

1/ There were 2,865 records in the NSCS cohort vs 10,333 in the non-NSCS cohort. Compared to non-NSCS patients, NSCS patients had additional consultations in primary care before referral with 13% having 5 or more vs 7%. They had more primary care ordered investigations including blood tests and imaging. They experienced higher percentage of emergency presentations (34% vs 16%) and less early stage cancers 33% vs 55%.

The median interval times in days were 11 vs 2 for primary care interval, 47 vs 38 for diagnosis interval and 28 vs 24 for referral to diagnosis.

2/Across the MDCs, 2,961 patients presented with comorbidities from mild (43%) to moderate and severe (27%). The main symptoms were weight loss (63%), abdominal pain (30%) and nausea and loss of appetite (28%). 35% of cases mentioned GP gut feeling as a reason for referral.

239 cancers were recorded giving an 8% conversion rate at programme level. The main tumour types were upper-GI tract and Lung (22% each). 27% of tumours presented at early stage. The median interval time for GP referral to cancer diagnosis was 19 days. A third of the referrals resulted in non-cancer diagnoses.

#### Consequences

The NCDA analysis helps us to understand that patients with NSCS are more likely to experience longer pathways with more primary care investigations and consultations before referral than those with more obvious symptoms.

Results from the MDC evaluation highlight their usefulness in providing a rapid diagnostic pathway for patients with non-specific but concerning symptoms that is well configured to diagnose hard to detect cancers.

#### Funding Acknowledgement

## 1D.1

### Reaching everyone in general practice with the IRIS+ domestic violence training and support programme: Challenges and opportunities

*Presenter: Eszter Szilassy*

*Authors: Kate Pitt, Jessica Roy, Emma Williamson, Gene Feder*

#### Institutions

University of Bristol

#### Abstract

##### Problem

While knowledge of the impact of domestic violence and abuse (DVA) on health is increasing, there is considerable scope to address system barriers to DVA identification within the general practice setting and enhance clinicians' ability to respond appropriately to affected families. The IRIS+ intervention aimed to increase the safety and wellbeing of victims of DVA by improving that response. This paper presents some of the key findings of the feasibility study and will explore clinician and patient engagement, issues around feasibility, acceptability, implementation, as well as future research directions.

##### Approach

The IRIS+ feasibility study builds on the successful IRIS model and is part of the REPROVIDE programme of research on healthcare responses to DVA. The original IRIS model was focused on the needs of women survivors of DVA. Tested in a randomised controlled trial, IRIS has been implemented nationally in the UK in 35 areas. The objective of the IRIS+ intervention was to improve the identification and management of DVA in general practice by facilitating disclosure, referral, documentation and follow-up care of female and male patients who may have experienced DVA as victims or perpetrators and their children. The aim of the IRIS+ study was to develop and deliver the intervention (training and referral to specialist DVA advocacy support programme) and evaluate its feasibility, acceptability and utility with a mixed method design. Like the original IRIS model, IRIS+ was based on a close partnership with a specialist DVA agency. IRIS+ provides an example of an evidence-based multi-component intervention that has been developed with multi-professional input and has been evaluated for feasibility using mixed methods: secondary data extraction, semi-structured interviews, questionnaires.

##### Findings

Our process evaluation led to an understanding of practice level and contextual factors enhancing and blocking the implementation of the IRIS+ intervention, also revealing potential new mechanisms for strengthening direct identification and referral of children exposed to

DVA and men experiencing or perpetrating DVA, particularly extensive 3rd party reports of DVA in the medical record. The pilot of IRIS+ found that delivery of the intervention was feasible and proved acceptable to general practices and to those patients who were identified as experiencing DVA and referred to the IRIS+ hub. Moreover, it was feasible to measure outcomes in this vulnerable population in the IRIS+ hub setting. Identification and referral of children exposed to DVA is a breakthrough in the general practice setting. However, we did not demonstrate the feasibility of identifying and referring men exposed to or perpetrating DVA.

### Consequences

Implications of these findings for the next phase of research and for wider implementation will be discussed.

### Funding Acknowledgement

IRIS+ is part of the REPROVIDE research programme and is funded by the UK National Institute of Health Research (NIHR) programme grants for applied research (PGfAR) funding stream.

This abstract describes independent research funded by the National Institute for Health Research (NIHR). The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.

## 1D.2

### How can a global research group support research capacity building in low- and middle-income country settings, in the field of violence against women and healthcare research?

*Presenter: Claire Hawcroft*

*Authors: Abdulsalam Alkaiyat, Loraine Bacchus, Ana Flavia D'Oliveira, Gene Feder, Thilini Rajapakse, Poonam Rishal, Amira Shaheen*

### Institutions

University of Bristol, An-Najah National University, London School of Hygiene and Tropical Medicine, University of Sao Paulo, University of Peradeniya, Kathmandu University

### Abstract

#### Problem

Violence against women is, according to the WHO, a public health emergency. Worldwide, 1 in 3 women experience intimate partner violence and the impact on maternal, sexual, child and mental health can be profound and enduring. The declaration of Astana states that Primary Health Care should be people-centred and gender-sensitive, with a public-health approach prioritised. The WHO recommends a clinical and health system response to violence against women, but there is limited evidence to guide intervention development in low and middle income settings.

#### Approach

HERA (Healthcare responding to violence and abuse) is an NIHR funded global research group aiming to develop appropriate health system responses to violence against women in low- and middle-income countries. The lead institutions are based in the UK with research partners in Occupied Palestinian Territories (OPT), Brazil, Nepal and Sri Lanka. We want to make capacity building an explicit outcome of our research group work. A participatory workshop was held which included members from all country teams (7 from UK, 4 from OPT, 2 from Brazil,

3 from Nepal and 4 from Sri Lanka). During this workshop we defined our underlying shared values, identified existing research barriers, considered the role of specific capacity building activities and explored methods for monitoring and evaluation.

### Findings

The team identified key values that should underpin our ongoing capacity building work: mutual learning, respect, fair opportunity, clear boundaries, honesty and transparency. Current research barriers identified related to methodological expertise, access to training courses, information technology resources and English-language skills for academic writing and knowledge mobilisation. Hierarchy of knowledge and the potential for power imbalances between lead UK institutions and country partners was discussed. Existing areas of partner country expertise were highlighted, with opportunities for enhanced mutual learning between country teams proposed. Methods for monitoring and evaluating the capacity building programme were agreed. Capacity building will be embedded as a core aspect of the research group work and discussed at monthly management meetings. Quantitative indicators will be measured at baseline and intervals, and relate to research capacity at the individual, organizational, national/regional and research network level. Qualitative semi-structured interviews with researchers will generate richer experiential data to inform and refine both the capacity building programme and its ongoing evaluation.

### Consequences

Capacity building is an important outcome of global health research group work. In sharing ownership and responsibility for the capacity building agenda between partner countries, we hope that the impact and sustainability of capacity building activities will be enhanced.

### Funding Acknowledgement

Healthcare Responding to Violence and Abuse. Funded by two research grants. The Medical Research Council (MRC) Global Challenges Research Fund (GCRF) Foundation Award 2017 to 2019 & the NIHR Global Health Research Group Award 2018 to 2021.

## 1D.3

### Exploring women's experiences of perinatal anxiety: a qualitative study.

*Presenter: Tom Kingstone*

*Authors: Victoria Silverwood, Athula Sumathipala, Annabel Nash, Jacquelyn Walsh-House, Carolyn Chew-Graham*

### Institutions

Research Institute for Primary Care and Health Sciences, Keele University; Keele Medical School, Keele University; Midlands Partnership NHS Foundation Trust, Staffordshire.

### Abstract

#### Problem

Perinatal Anxiety (PNA) is anxiety that occurs during pregnancy or up to 12 months post-partum. Global prevalence PNA is estimated to be over 15% and at least as common as depression over this time period. PNA can adversely impact both mother and child, with potential implications for long-term health such as negative obstetric, foetal and neonatal outcomes. Despite this, research into PNA has received less attention than depression during this period and, as such, has been identified as a priority by the National Institute for Health and Care Excellence. This

study aimed to explore the views and experiences of women who had experienced PNA.

### Approach

A qualitative study utilising semi-structured interviews to explore lived experiences of PNA. NHS ethical approval obtained. Women with self-reported experience of PNA were recruited via social media, local parent support groups, children's centres and NHS services (primary and secondary care) and invited to participate in a semi-structured interview (face-to-face, telephone or Skype). The interview topic guide was informed by existing literature, findings from a previous study exploring healthcare professional (HCP) perspectives, and was modified iteratively to explore emerging themes during analysis. Interviews were digitally recorded with consent, transcribed and anonymised prior to analysis. Thematic analysis using principles of constant comparison is underway. Emerging themes are to be agreed through discussion within the research team. Data collection will continue until data saturation is achieved. A Patient and Public Involvement and Engagement (PPIE) group informed development of the research idea, helped to draft the initial topic guide, a lay summary and other public facing study documents for the ethics application. We will meet with the PPIE team again to discuss findings.

### Findings

Initial analysis highlights three emerging themes: women's experiences of PNA are highly individualised (experiences were linked to prior expectations, pregnancy journeys, and support networks), coping and management strategies, and the value of establishing relationships with HCPs. Fear of disclosing symptoms to others due to stigma and potential loss of control was apparent across all themes.

### Consequences

Women report experiencing anxiety at different times in the perinatal period with a range of contributing factors described. Becoming a mother had implications for self-identity which contributed to anxiety, along with societal expectations around parenthood. Coping strategies and ways to manage PNA were discussed with positive support from partner, family and friends being identified as being important. However, familial support networks also inadvertently contributed to anxiety. Women's access to and satisfaction with encounters with HCPs were varied. Fear and stigma presented major barriers to disclosure and management of maternal mental health problems.

### Funding Acknowledgement

Research supported by Midlands Partnership NHS Foundation Trust  
VS: NIHR funded Academic Clinical Fellow in General Practice  
CCG: WM CLAHRC

## 1D.4

### Systematic review of non-RCT studies to compare the safety of nicotine replacement therapy (NRT) use and smoking in pregnancy

*Presenter: Lauren Taylor*

*Authors: Tim Coleman, Tom Coleman-Haynes, Katarzyna Campbell, Sue Cooper*

### Institutions

University of Nottingham

## Abstract

### Problem

Smoking in pregnancy can lead to adverse health effects for mothers and their offspring. Stopping smoking in pregnancy is therefore an important public health target. Nicotine replacement therapy (NRT) is recommended for women who are unable to stop smoking with non-pharmacological interventions. Systematic review of RCT data has found no evidence that NRT is harmful in pregnancy. In this study we systematically reviewed non-RCT data to further investigate the safety of NRT use in pregnancy compared to smoking. Using non-RCT studies with larger sample sizes gives higher statistical power, reducing the risk of type 1 error that might be experienced when studying rare outcomes in RCTs.

### Approach

A study protocol has been registered on PROSPERO. Systematic searches were performed using the MEDLINE, CINAHL, Embase, PsycINFO, CAB Abstracts, Social Sciences Citation Index and Economic and Social Research Council databases. Non-RCT studies of any design describing NRT use in pregnancy and reporting maternal, fetal or infant health outcomes were included. Once articles had been screened by two reviewers, the data was extracted and studies were quality assessed using a modified Newcastle-Ottawa scale. Data was requested from authors where there was insufficient detail to include the study or where further data was required for analysis. Analysis is ongoing; data will be meta-analysed where possible and other results will be described narratively.

### Findings

After duplicate removal and full text screening was completed, 21 studies were included. Nine were large epidemiological cohorts of women using NRT as part of routine healthcare; 12 were smaller cohorts with interventional administration of NRT prior to outcome measurements. Quality of epidemiological studies was better (median score of 7/8; 4/7 for interventional cohorts); generally interventional studies did not describe the selection of their cohorts very well. The epidemiological studies with lower quality scores failed to validate self-reported outcomes by cross-referencing with medical records. Outcome measures were preterm birth, gestational age at birth, birthweight, delivery complications, stillbirth, infantile colic, congenital anomalies, strabismus, maternal side effects from NRT and fetal or maternal observations during nicotine administration. The interventional cohorts' methods including the route and dose of NRT used were too dissimilar to pool the outcome data. Meta-analysis of data from epidemiological studies will be attempted for the following outcomes: congenital anomalies, low birthweight, preterm birth and stillbirth. Full results of these will be presented.

### Consequences

With ongoing analysis of our review data we hope to establish whether or not NRT is associated with any adverse maternal or infant health outcomes when it is used in pregnancy. Gaining further knowledge on the safety of NRT in pregnancy is likely to improve maternal confidence in, and adherence to treatment, which could increase smoking cessation rates.

### Funding Acknowledgement

## 1D.5

### Interconception care in general practice: a qualitative exploratory study

Presenter: *Elodie Bernard*

Authors: *Cathy Watson, Danielle Mazza*

#### Institutions

Department of General Practice, School of Primary and Allied Health Care, Faculty of Medicine, Nursing and Health Sciences, Monash University

#### Abstract

##### Problem

There is increasing recognition that poor pregnancy and birth outcomes are linked to a woman's health status prior to conception. Women who experience an adverse pregnancy outcome are predisposed to a recurrence of these issues in future pregnancies. The interconception period, that is the time between pregnancies, provides an opportunity to address maternal lifestyle and behavioural risk factors, institute chronic disease management and plan timing of future pregnancies in order to optimise outcomes and reduce morbidity and mortality. Interconception care (ICC) requires systematic identification of women at high risk, communication and integration of care between tertiary hospitals and primary care practitioners and a multidisciplinary approach. General practitioners (GPs) are critical to the delivery of ICC however little is known about GP understanding and experiences of ICC. We aimed to explore GP knowledge, attitudes and practices with regards to ICC.

##### Approach

A qualitative study was conducted with 18 GPs working in metropolitan Melbourne, Australia. GPs were recruited using purposeful sampling. Semi-structured telephone interviews were conducted to explore GP knowledge, perspectives and experiences of ICC. Interviews were audio-recorded and transcribed verbatim. Data were analysed using thematic analysis facilitated by the Framework Method.

##### Findings

GPs were unfamiliar with the term 'interconception care'. GPs conceptualised ICC as routine care of childbearing age women as opposed to interventions aimed specifically at optimising a subsequent pregnancy. Participants reported key priorities in the interconception period across three domains of postpartum care, well-woman care and pre-pregnancy care. GPs reported providing ICC opportunistically beyond the six-week postpartum visit and identified well-baby checks as a key contact point with mothers. GPs perceived lack of engagement in ICC from mothers with high competing demands and questioned whether women prioritised health optimisation for a subsequent pregnancy whilst raising a young child. GPs also reported time constraints and a lack of clarity on the content and timing of ICC as provider barriers. Continuity of care and education materials for women and GPs were viewed as facilitators to ICC.

##### Consequences

Our exploratory study found that 'interconception care' is not a recognised concept amongst GPs. The opportunistic delivery and lack of priority given to it together with GP knowledge and patient barriers to delivery mean that ICC is currently not being delivered in a way to maximise outcomes. Our findings require confirmation in larger studies. Research to evaluate women's perspectives on ICC together with the views of hospital staff are also necessary to better understand how ICC delivery can be improved.

##### Funding Acknowledgement

## 1D.6

### An Exploration of the Views and Training Status of GPs in Ireland on Termination of Pregnancy Following its Legalisation

Presenter: *Raymond O'Connor*

Authors: *Jane O'Doherty; Eimear Spain; Michael O'Mahony*

#### Institutions

Graduate Entry Medical School, University of Limerick, Ireland

#### Abstract

##### Problem

In May 2018, abortion laws in Ireland were liberalised allowing medical abortion for the first time. It was envisaged that Irish General practitioners (GPs) would provide this service. There has been no formal scientific study on the attitudes and knowledge of Irish GPs on this topic. We aimed to elicit the views and level of preparedness of Irish GPs to carry out their proposed role in providing medical abortion services in Ireland.

##### Approach

222 practising GPs were surveyed. Participants are affiliated with the Graduate Entry Medical School (GEMS) in the University of Limerick, as well as graduates of the University Specialist Training Programme in General Practice.

##### Findings

The response rate was 57% (127/222). 93.7% of GPs were willing to share abortion information with their patients. 48.0% would be willing to prescribe abortion pills before 12 weeks gestation, with 37.0% unwilling to do so. 40.9% of respondents believed that such a service should not be part of general practice, with a further 17.3% indicating uncertainty. 72.4% believed that those who do not wish to be part of the process should be entitled to a conscientious objection (CO) but should also be obliged to refer a woman to a participating doctor. 82.7% of GPs had no training in this area of practice, with 3.2% indicating that they had sufficient training. The majority of respondents feel that necessary support services such as counselling are not currently available.

##### Consequences

Exploring the views and experiences of GPs in Ireland on this topic reveals many issues which need to be resolved before the service can be rolled out in a safe manner. It will be vital for state and professional bodies to provide appropriate education and guidance.

##### Funding Acknowledgement

Nil

## 1E.1

### Primary care transformation – achievable aim or a unicorn in disguise?

*Presenter: Kate O'Donnell*

*Authors: Shadrach Dare, Kristina Saunders, Karen Wood, Yvonne Cunningham, Hamish Foster, Bhautesh Jani, Barbara Nicholl, Frances Mair, and the Primary Care Transformation Fund Evaluation Team*

#### Institutions

General Practice & Primary Care, Institute of Health & Wellbeing, University of Glasgow

#### Abstract

##### Problem

Health systems across many countries are attempting to address issues of access, demand and cost containment by reforming or developing primary care, as re-affirmed in the Astana Declaration. Increasingly, re-design is badged as 'primary care transformation'. However, what does that mean? Is policy clear about which aspects of a health system should be targeted and can research evidence inform that re-design? As part of a programme of work evaluating primary care transformation in Scotland, we aimed to analyse the research and policy evidence to understand; (1) what is primary care transformation; (2) what areas of delivery does it address; and (3) what are the enablers and barriers of primary care transformation.

##### Approach

Systematic scoping review of research literature focused on primary care transformation from 1996 to 2018, which included new models of care, new ways of working, and service integration. Papers included had to report on reviews or syntheses of data across multiple sites. The policy review focused on the UK; we searched Department of Health, NHS England, Scottish Government and NHS Scotland sites from 2013 onwards, as well as key organisations such as the Health Foundation, and the National Audit Office. Analysis used the Framework approach and was underpinned by Normalisation Process Theory to explore how 'primary care transformation' is understood, who is involved, what resources are required and how it is evaluated.

##### Findings

We screened 404 papers, including 18 full text papers and 15 policy documents. There was no agreed definition of 'primary care transformation' although it was generally described as 'profound' and/or 'significant' change from usual ways of working. Staff roles and relationships; increasing the patient-centeredness of services; and changing payment systems (especially in systems funded by insurance systems) were all areas targeted. Transformation often relied on new uses of IT, but this was often as much a barrier as an enabler. High level commitment to change, team working, adequate and sustainable resourcing were key facilitators. Conversely, resistance from staff, lack of time and sustainable resourcing were barriers. National policy highlighted new ways of working and the importance of IT in achieving transformational change, but with little in the way of strategies to achieve these aims or consideration of the resources or time required.

##### Consequences

Internationally, Governments are looking to primary care to meet the needs of ageing and increasingly multimorbid, complex patient populations. Transforming care is referred to as a mantra. However, to date, the evidence of what works, in what contexts is not well incorporated into policy and there is often a lack of recognition of

the resources required for sustainable change. Researchers and policymakers need to work more closely together to align research evidence with policy needs.

#### Funding Acknowledgement

Funded by Scottish School of Primary Care

## 1E.2

### Migration, vulnerability and wellbeing: exploring outcomes and barriers of access for asylum seekers and undocumented migrants

*Presenter: Antje Lindenmeyer*

*Authors: Laurence Lessard-Phillips, Lucy Jones, Jenny Phillimore*

#### Institutions

University of Birmingham (AL, LLP, JP), Doctors of the World UK (LJ)

#### Abstract

##### Problem

Little is known about the reported health and wellbeing of undocumented migrants and asylum seekers and the factors that may contribute to shaping this.

##### Approach

Doctors of the World UK is an advocacy group offering primary care and advice to excluded people; a large majority of users of their clinics are undocumented (58%) while 15% are current asylum seekers. We use 6 years of data about service users (N=8,489) to look at their self-reported health and wellbeing profile and the types of barriers to fulfilment of their physical and mental wellbeing (e.g. access to healthcare).

##### Findings

Data collected by clinic volunteers includes self-reported health and wellbeing, life context (work, housing) and any attempts to access healthcare. The reported general health profile of the service users is a lot worse than what is reported in the general population (e.g. 36% rated their health as very good or good, compared with 81% in the 2011 census), with asylum seekers having lower reported general and psychological health. Economic hardship is a reality for an overwhelming majority of the service users, as are difficulties in accessing healthcare services.

##### Consequences

The data provides us with valuable information on health and wellbeing of this vulnerable group, especially with regard to exploring the multidimensionality of wellbeing for groups facing vulnerability. The results are especially relevant in identifying areas of concern and practical steps to be taken to improve access to primary healthcare.

#### Funding Acknowledgement

The study has been funded by a grant from the Nuffield Foundation

## 1E.3

### The heterogeneous health state profiles of high-risk healthcare utilizers and their longitudinal healthcare service utilization and mortality patterns

Presenter: Shawn Choon Wee Ng

Authors: Yu Heng Kwan, Lian Leng Low

#### Institutions

Duke-NUS Medical School, Singapore General Hospital, Singapore Regional Health Services

#### Abstract

##### Problem

Patients at high risk of hospital readmissions are vulnerable during transitions of care. Segmentation of such heterogeneous patients into relatively homogenous, distinct subgroups help facilitate healthcare resource planning and the development of effective interventions. We aimed to apply a data-driven latent class analysis (LCA) to segment a transitional care program population and validate its discriminative ability on 30- and 90-day longitudinal hospital readmission and mortality data.

##### Approach

We extracted data from the H2H program for all adult patients enrolled from June to November 2018. LCA was used to determine the number and characteristics of latent subgroups that best represented these data. The derived models were assessed based on model fit and clinical interpretability. 30- and 90-day hospital readmission and all-cause mortality from date of enrolment were compared across classes. Regression analysis was performed to assess predictive ability of class membership on hospital readmission and mortality.

##### Findings

We included 752 patients in total, with 68% of the population above 65 years old and 52.4% female. A 3-class best fit model was selected with the following classes: Class 1 "Frail, cognitively impaired and physically dependent", Class 2, "Pre-frail, but physically independent" and Class 3 "Physically independent". The three classes had significantly distinct demographics, medical and socioeconomic characteristics ( $p < 0.05$ ) as well as 30- and 90-day all-cause readmission ( $p < 0.05$ ) and mortality ( $p < 0.01$ ). Class 1 patients were the most vulnerable, having the highest age-adjusted 90-day readmissions (OR= 2.2, 95% CI: 1.34-3.61,  $p = 0.0077$ ), and 30- (OR= 7.06, 95% CI: 1.94-25.71,  $p = 0.0056$ ) and 90-day mortality (OR= 11.57, 95% CI: 4.88-27.46,  $p < 0.0001$ ).

##### Consequences

We demonstrated the applicability of LCA in identifying 3 unique patient subgroups with distinct longitudinal hospital readmission patterns and mortality risk amongst high-risk patients. This provides important information for tailoring future post-acute care interventions. Class 1 in particular, necessitates intensive intervention in order to ameliorate its high healthcare burden.

##### Funding Acknowledgement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## 1E.4

### Professional Drivers Exposure to Black Carbon in London, the Diesel Exposure Mitigation Study

Presenter: Lois Holliday

Authors: Shanon Lim, Benjamin Barratt, Lois Holliday, Christopher Griffiths, Ian Mudway

#### Institutions

Environmental Research Group; King's College London, Centre for Primary Care and Public Health; Queen Mary University of London

#### Abstract

##### Problem

Despite the health risks of diesel engine exhaust, minimal research has been undertaken to quantify the exposures of professional drivers. To address this, we examined exposures of professional drivers in London under a range of occupational settings, vehicle types and driving conditions.

##### Approach

GPS-linked black carbon (BC) sensors were provided to 130 drivers (taxi drivers, couriers, heavy freight, waste removal and emergency services) for 96 hours, with measurements every minute. Drivers also completed a questionnaire, detailing their ventilation preferences, vehicle type and their number of working hours per day.

##### Findings

Average driver exposure to BC was 3x higher at work ( $3.5 \pm 2.9 \mu\text{g}/\text{m}^3$ ) compared to periods at home ( $1.1 \pm 0.7 \mu\text{g}/\text{m}^3$ ). During work, drivers experienced high spikes in exposure, often exceeding  $100 \mu\text{g}/\text{m}^3$ . The highest exposed drivers were taxi drivers ( $6.0 \pm 4.6 \mu\text{g}/\text{m}^3$ ), while the lowest were those in the emergency service ( $2.0 \pm 0.7 \mu\text{g}/\text{m}^3$ ). Window position influenced BC exposures, with concentrations being 2.5x higher for drivers with windows open versus closed. Across the same monitoring period ambient BC concentrations were  $2.5 \pm 1.8 \mu\text{g}/\text{m}^3$  at a London roadside and  $0.8 \pm 0.7 \mu\text{g}/\text{m}^3$  at the London background.

##### Consequences

We have performed the largest study of driver exposures to a proxy of diesel exposure (BC) in an urban environment. These data confirm the very high exposures experienced by professional drivers in their working lives, but also indicate that simple measures, such as closing vehicle windows can significantly reduce exposures. Driver exposures to BC were not related to measurements made at central monitoring sites.

##### Funding Acknowledgement

IOSH funding received

## 1E.5

### Exploring the variation of patient-reported outcome scores across time for patients with multiple conditions: a mixed methods longitudinal study

*Presenter: Antoinette Davey*

*Authors: Colin Green, Jose Valderas*

#### Institutions

University of Exeter

#### Abstract

##### Problem

The effect of the timing of administration or completion of patient-reported outcome measurements (PROMs) has not been studied in detail. This is despite there being evidence of the rhythmic fluctuations of symptoms people with chronic conditions experience at different time-points, making these fluctuations time-dependent (Smolensky et al 1999). Such fluctuations in symptoms can influence response to diagnostic tests and therapeutic interventions (Buttgereit et al 2015). An initial scoping review confirmed time-dependent variation in PRO scores across different chronic conditions, although there was a lack of research qualitatively exploring explanations in the variations and potential implications of time-dependent variation when collecting and interpreting PROMs data in clinical settings.

##### Approach

This is a mixed methods, longitudinal study spanning 9 months. The study includes interviews with 12 patients recruited from a GP practice. Patients were eligible if they were over 18 years old, diagnosed with 2 or more of the following conditions: asthma, depression and/or osteoarthritis, and able to participate in interviews. Eligible patients were asked to complete paper/electronic generic and disease-specific (only those relating to their existing conditions) patient-reported outcome measurements including PROMIS-10, Patient Health Questionnaire (PHQ-9), Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and the Asthma Quality of Life Questionnaire (AQLQ), a week prior to their interview. Interviews focused on their PRO scores, factors that influenced their scoring during the week prior to the interview, and what external (socially determined) and internal (mood, cognitive function) factors could impact on how they report/reflect on their symptoms.

##### Findings

A total of 17 patients with varying comorbidities of asthma, osteoarthritis and depression. Preliminary results indicated that fluctuations of PRO scores on the disease-specific PROMs occur at different times of the day, with pain/stiffness for osteoarthritis patients at its worst in the morning and evening, asthma symptoms and depressive symptoms worse in the morning. This was influenced by external factors, mainly what activities they were involved with and weather conditions (e.g. increased pollen count). Recall of their experience of their health condition is affected by current health status, any recent attacks or hospitalisations, and mood. Additional analyses are being conducted on the interviews with full results to be presented at the conference.

##### Consequences

The results pose potential questions regarding when PROMs should be administered, how timing of administration can affect scores and how

variability of scores should be interpreted. Consideration needs to be given to the factors impacting on patient's appraisal process of their chronic condition(s) when completing PROMs. Further implications will be considered during the talk.

#### Funding Acknowledgement

## 1E.6a

### Providing care to former refugees through mainstream general practice in Southern New Zealand: what are the perspectives of general practitioners and practice nurses?

*Presenter: Tim Stokes*

*Authors: Lauralie Richard, Georgia Richardson, Chrystal Jaye, Tim Stokes*

#### Institutions

University of Otago

#### Abstract

##### Problem

Health systems face growing pressure to respond effectively to the needs of refugees, internationally and in New Zealand (NZ). Primary health care (PHC) professionals are faced with the challenging task of endeavouring to meet these needs, often with limited support. Research investigating refugee health delivery from the viewpoint of service providers is critical to identify opportunities for service improvement and transformative change of local health systems, yet NZ evidence is lacking for PHC. This study explored the perspectives of general practitioners (GPs) and practice nurses caring for refugees through mainstream general practice in NZ.

##### Approach

This study relied on a qualitative exploratory design. Fifteen semi-structured interviews were conducted with GPs and practice nurses from general practices enrolled in the Dunedin Refugee Resettlement programme, in the Southern health region of NZ's South Island. Interviews were audio recorded, transcribed and validated. Transcripts were subjected to thematic analysis

##### Findings

Three themes relating to PHC for refugees were identified: relational engagement with refugees, refugee health care delivery, and providers' professional role shaped by complexity. Building meaningful relational connections involved acknowledging refugees' journeys by "getting to know them as people" and listening to their stories of dislocation, resilience and success. Putting aside professional assumptions about "what is best to do" and avoiding "treating everybody the same" reflected cultural sensitivity and a rich understanding of cultural difference. Participants encountered challenges in providing care to refugees with respect to time-limited consultations, variable use of interpreter services, fragmentation of care, adaptability of delivery arrangements and lack of appropriate health infrastructure. The business model of NZ general practice was also perceived as compromising the system's responsiveness to refugees and equity of access to services. Addressing the complex needs of refugees across the determinants of health led providers to engage further with the social dimension of their role. Providing care to refugees involved a lot of "behind the scenes" work which often remained invisible and contributed to a perceived lack of value. Challenges of complexity were managed through adapting delivery arrangements to make



things work for refugee patients, but this would rely on the variable commitment of each general practice and providers' willingness to help based on moral responsibility. Sustaining these efforts in the long run was expressed as a concern.

### Consequences

This study provides rich context-specific findings that will benefit the local health system and inform practice improvement to enhance responsiveness to the needs of refugees. These findings highlight the importance of relationship-centred care to foster culturally appropriate practice. The findings raise concerns about the fit of the mainstream general practice model to meet the complex needs of refugees. Providers' goodwill to adapt services as best they can without appropriate resources can lead to professional distress and practice disempowerment.

### Funding Acknowledgement

This study was supported by a Dean's Bequest Research grant, Dunedin School of Medicine, University of Otago.

## 1E.6b

### Area-Level Linkages to Enrich Primary Care Electronic Health Data for Research

*Presenter: Tarita Murray-Thomas*

*Authors: Susan Hodgson, Elizabeth Crellin, Kirsty Syder, Sonam Sadrangani, Shivani Padmanabhan*

### Institutions

Clinical Practice Research Datalink (CPRD), Medicines and Healthcare products Regulatory Agency, London UK

### Abstract

#### Problem

Clinical Practice Research Datalink (CPRD) collects de-identified patient data from a network of general practitioner (GP) practices across the UK. These longitudinal data, encompassing >35 million patient lives, are available for research into drug safety, use of medicines, health policy, health care delivery and disease risk factors. Linkage of these primary care data to a range of health and health-relevant contextual data further enriches their research value. Here we describe area-level linkages recently made available in CPRD and review their application in research studies of drug safety, care utilisation and public health.

#### Approach

Patient and GP practice postcodes were mapped to lower layer super output area (LSOA, England/Wales, average 1,600 population), super output area (SOA, Northern Ireland, average 2,100 population) or datazone (DZ, Scotland, population 500-1,000). Linkage to practice-level Rural-Urban classification was made to support research where access to services, employment and educational opportunities might be an important confounder. Inclusion of the individual domains of the Index of Multiple Deprivation (IMD) - housing, employment, income, access to services, education, crime, and living environment - was implemented to facilitate research requiring a more nuanced adjustment for aspects of material deprivation; within England, correlations between practice-level quintiles of IMD and the IMD domains range from 0.36-0.89. Linkage to Carstairs 2011 Index provided an alternative index of material deprivation, which, unlike IMD, is comparable between England, Wales and Scotland, with application in studies drawing on populations from across these countries.

### Findings

1615 GP practices contributing to CPRD's primary care database (January 2019) were linked to these area-level measures, representing 19.5, 18.2, 10.8, and 7.9% of GP practices in England, Wales, Scotland and Northern Ireland, respectively. Since being made available in June 2018, protocols requesting linkage to these area-level variables have included a study looking at the influence of patient and practice-level factors associated with vaccine uptake, and a study assessing the social and demographic characteristics of high cost patients in primary and secondary care. The next release of linkage data will include linkage of these area-level measures to patient postcode for eligible patients, permitting further exploration of the influence of these important contextual variables on population health, care delivery and policy outcomes, at a more granular level.

### Consequences

The research value of electronic health datasets, like those held by CPRD, can be enhanced via linkage to other health and health-relevant datasets. Area-level data can provide a context within which health care is delivered, act as a proxy for socioeconomic status, and support the planning and targeting of health and social care services.

### Funding Acknowledgement

All authors are employed full time by CPRD, which receives cost-recovery funding from external organisations for access to research data and services outside the remit of the submitted work

## 1E.6c

### Social prescribing and wellbeing promotion: how to ensure access to all?

*Presenter: Nadja van Ginneken*

*Authors: Mark Gabbay, Chris Dowrick, Katie Bristow*

### Institutions

University of Liverpool (all authors)

### Abstract

#### Problem

The NHS has made social prescribing (SP) a priority. There is a discrepancy in SP definitions ranging from a primary care referral pathway to social and wellbeing interventions to community-empowerment strategies built on asset-based development. There is growing research suggesting a range of wellbeing and social interventions are effective. The recent 5 year GP forward view has advocated for new link workers in primary care to help navigate patients to the right practical support and wellbeing activities. However the evidence is scarce about what is the most acceptable, feasible and effective SP models in the UK. Questions also remain unanswered on whether these interventions are best linked to primary care or universal parallel interventions. This research project aims to understand which models of social prescribing linked to primary care are most acceptable, feasible and effective, and accessible to all, with a focus on the hard-to-reach populations. The hard to reach are defined as those who have difficulty in accessing services (due to language, cultural/ethnic, poverty, emotional or age barriers).

#### Approach

The approach over the next 2 years will consist of: Firstly, a set of narrative literature reviews including published and grey literature will be conducted to describe the characteristics and impact of: a/ the models for addressing access and availability of services for the hard-

to-reach; b/ the psychological intervention models for helping people address their improvement in wellbeing and access to practical support; and c/ models to deliver social and wellbeing interventions. Secondly, in depth interviews and focus groups will be conducted with 15 patients from primary care (of which 7-8 will be from hard-to-reach populations), 15 health and wellbeing professionals (GPs, nurses, those conducting SP interventions) and 5 policy stakeholders. Questions will focus on people's definition of social prescribing, on patients' needs, perceived solutions and how acceptable they find their existing SP provision. Thirdly, between 8 to 10 social prescribing initiatives in the UK will be chosen to compare different approaches. These will be chosen purposively following the literature review and snowballing to cover different types of models: universal services for all and those targeted at the most vulnerable, health authority commissioned services vs local GP/social partnerships, and those linked exclusively to primary care and those that are not. These case studies will use both quantitative and qualitative methods to evaluate their effectiveness (clinical, social and financial), and describe their characteristics, their functioning and wider impact (observations and interviews).

### Findings

Funding applications to conduct this research are underway.

### Consequences

The findings of this research will allow a/ to better understand the accessibility and acceptability of SP interventions; b/ to assess the feasibility and effectiveness of interventions. This could guide further SP policy planning and SP initiatives on which models may be most appropriate.

### Funding Acknowledgement

## 1F.1

### Setting up a Primary care Academic Collaborative for Trainees (PACT): Sharing ideas for a proof of concept study

*Presenter: Polly Duncan*

*Authors: Debbie Sharp, Rupert Payne, Jessica Watson, Sam Merriel, Ebrahim Mulla, Dipesh Gopal, Ian Bennett-Britton, Sam Hodgson*

#### Institutions

#### Abstract

Polly Duncan is an NIHR In-Practice Fellow in Bristol and Chair of PACT – a UK-wide network of GP trainees and First5 GPs tasked with collectively designing and taking part in large-scale high impact research projects. The workshop is an exciting opportunity to share ideas for a pilot study to test the PACT model.

The pilot study will focus on housebound patients and the purpose of the workshop is to tease out the important research questions for this group of patients and to brainstorm how we can answer these questions using the PACT model. There is potential to combine methods (e.g. a search of the electronic GP record, a case-note review of consultation entries, patient surveys and practice surveys) to yield rich information about this under-researched group of patients and the type of care they are getting from their GP practices. The workshop will provide an opportunity to think through some of the potential challenges, such as how to identify housebound patients, and the question of 'What's in it for the trainee?'

Intended audience:

GP trainees, GP ACFs, First5 GPs, senior academic GPs

### Funding Acknowledgement

## 1G.1

### Poems on Male Eating Disorders (EDs): A Creative Approach to Articulate, Communicate and Understand Male EDs in an Interdisciplinary Therapy and Research Context

*Presenter: Gail Allsopp*

*Authors:*

#### Institutions

University of Nottingham

#### Abstract

##### Introduction

The positive outcomes of bible/poetry therapy in treatment and education are well documented (Mazza 2017, Crawford et al 2015, McCarthy et al 2011). The use of literature and poetry can give a creative outlet for personal stories by sufferers, carers, friends and family, to aid the process of recovery and importantly, give medical practitioners, therapists and carers much needed insight into personal narratives of illness that reach beyond medical case vignettes.

##### The project

'Hungry for Words: an interdisciplinary approach to articulating, communicating and understanding male anorexia nervosa', has gathered poems, written by men and boys affected by eating disorders, their carers and family members. The poems are testimony to the power of poetry to articulate and communicate experiences of illness and recovery, including anorexia and bulimia nervosa, binge eating disorder and over-exercising. As an additional creative process, the poems have been brought to life on camera by people who represent members of the medical/ charitable professions with whom we would like to encourage males with eating disorders to engage, including a GP, ED charity support worker and mental health nurse.

##### Why is this important?

The aim is to raise awareness in the primary care environment of male eating disorders, using the clients own words through the power of poetry. By focusing on the experiences of these men and boys, we aim to address the difficulties we have with the perception of EDs as a 'female only' disease. By allowing them a voice, using their own written words, (articulated on video through the professionals), the hope is to change the perception of EDs as a "female only" disease in the public and medical domains which can hinder or delay diagnosis, treatment and early intervention and to raise awareness in the primary care environment of male eating disorders, using their own words through the power of poetry.

##### Methods

Our presentation and resulting discussions with delegates will outline how the individual poems situate experiences of eating disorders within a wider framework of experiences that include: mental health, fear, shame, personal relationships, (lack of) control, everyday life, consumer culture, references to socio-historical contexts, other literatures and art forms – including nursery rhymes and children's stories – and highly individual or more established symbols. In addition, the particular form and presentation of the poems often add to or reflect their content, e.g. through a controlled or chaotic metre, a thin or thick font or the sparsity of the words on paper.

## Summary

Our creative presentation emphasizes the potential of poetry to give insights into personal experiences and wider cultural perceptions of male eating disorders for the general practitioner, highlighting its presence in men and so raising awareness.

## Funding Acknowledgement

### 1G.2

## The opaque consultation, an illustration of the Doctor as Drug

*Presenter: Chris Clark*

*Authors:*

### Institutions

University of Exeter

### Abstract

I have been a member of a small GP group throughout my general practice career. Each year we took two days away, often at the old Atlantic Hotel Polzeath, to reflect on and refresh our practice and ourselves. Around the Millennium we worked with a writer; one brief on the day was to write a short piece describing an encounter at work. My response was the dialogue presented, intended at the time to light heartedly paraphrase one, or a few, of my recent confusing encounters. I was trying to capture occasions when a consultation has a seemingly comprehensible beginning and end, but one is left feeling unsure as to what has taken place, and what use one has been to the patient – a nagging feeling that things could have gone better.

Consultations addressing vague or unexplained symptoms can be challenging. After many years of hindsight I now reflect on this piece as a metaphor for “the doctor as drug”. Balint introduced this concept in his seminal 1957 book, illustrating the concept that doctors unconsciously as well as consciously deliver psychotherapeutic benefit to their patients within the consultation. Although much criticised since, the recognition of this psychosocial component remains essential to current practice. A non-judgmental and empathetic approach is a pre-requisite to transactions at this level, as illustrated by Carl Rogers’ definition of “unconditional positive regard”. Ballatt and Campling have built on this, comprehensively summarising how kindness can facilitate, and indeed is essential to, effective dialogue with both patients and colleagues.

But do these consultations do any good? The doctor’s feelings arguably don’t matter if the patient has left feeling better. Dowrick, in his Helen Lester Memorial Lecture to this Society in 2016, wonderfully illustrated the longer term positive outcomes of remaining engaged with individuals, at times quite troubled, whose individual consultations appeared at the time to be accruing no discernible benefit. Continuity of care itself, as exemplified in that lecture, has also been associated with a wider range of benefits including reduced mortality rates.

So the doctor’s perception of success or otherwise in the consultation must remain the doctor’s, but not necessarily the patient’s, concern. I originally titled this piece “Can we start again?”. I no longer feel that such consultations need to be revised, and now fully recognise the unconscious and empathic elements of such an encounter. However expressions of gratitude for what can feel, at best, an adequate consultation continue to remind me of the privileged position that we occupy as general practitioners. We are, to coin Berger’s words, fortunate indeed.

## Funding Acknowledgement

### 1G.3

## The backplot - an academic life through poetry

*Presenter: Amanda Howe*

*Authors:*

### Institutions

University of East Anglia

### Abstract

Throughout my career I have written poems. A few have been published: most have been private reflections on significant moments, encounters and settings. Themes include clinical; societal; professional.

## Funding Acknowledgement

### 1G.4

## Brian

*Presenter: Deborah Swinglehurst*

*Authors:*

### Institutions

Queen Mary University London

### Abstract

I was inspired to write this poem an example of the role of ‘witness to suffering’ that Iona Heath sets out in her wonderful paper “The Mystery of General Practice”. This consultation was mostly about Brian witnessing the suffering of his dying wife and the importance to him of being available and by her side in her last days, however exhausting. He was perplexed and frustrated at his own limits, and fearful of the future. But this consultation was also about me in my role as witness to Brian’s suffering, and my parallel sense of perplexity and frustration at my own limits. My key resource – communication – was not available to me in the usual way. And I acknowledge a sense of guilt that I am no longer practising as a GP 24/7 like I used to. I felt an awkward dissonance between the silent solemnity in the room and the vivacious, expansive gestures of the sign language interpreter, who was at the same time both behind me (and visible only out of the corner of my eye) and between us (as a mediator of communication) as we all struggled through the consultation together, improvising to the best of our ability. The encounter prompted me to consider what it must be like to live a life in the silence of deafness, especially at times when life is creating so much emotional noise and turmoil...and what it must be like inviting an interpreter into some of life’s most intimate moments.

## Funding Acknowledgement

### 1G.5

## Living with long-QT syndrome

*Presenter: Katharine Wallis*

*Authors:*

### Institutions

### Abstract

Congenital long-QT syndrome is caused by a gene mutation. The mutation causes delayed repolarisation of the heart, reflected in a

prolonged QT interval on an ECG. A long-QT interval is associated with an increased risk of sudden cardiac death. Long-QT syndrome is one of the causes of sudden cardiac death in young athletes. The risk of death with long-QT is increased by activities such as swimming, vigorous exercise, loud noises, and sudden frights, although most people with long-QT who die suddenly die during their sleep. People with long-QT syndrome are often asymptomatic. My fit healthy brother died suddenly and unexpectedly in bed one night at the age of 33 years, leaving a wife and three small children. We have subsequently discovered that we have one of the gene mutations that causes long-QT syndrome running in our family. This video (10 minutes) presents the story of a patient in my practice who has congenital long-QT syndrome, told in her own words. It tells the story of her road to diagnosis, what it is like to live with symptomatic long-QT and the risk of sudden death, and the effect that the diagnosis and treatment have had on her life. The video also presents information about congenital long-QT and an interview with a cardiologist who specialises in the diagnosis and management of inherited cardiac diseases.

"<https://vimeo.com/221219989>". View the video

### Funding Acknowledgement

## 1G.6

### The Body as Seed (and other poems)

Presenter: Louise Younie

Authors:

#### Institutions

Queen Mary University London

#### Abstract

A seed is planted on the earth

Dull, brown, of what worth?

The life within is yet unknown

What will it be when fully flown?

Not the hair or curve of breast

Not eyelashes or scars on the chest

Not the space where ovaries were

And neither memory lost in the air

More than disease or suffering can steal

More than death would put to ill

More than yet is seen or known

What will it be when fully flown?

This presentation involves a series of cancer poems exploring the embodied and particular sufferings and hopes of a clinician mother who journeyed through cancer after the birth of her daughter.

### Funding Acknowledgement

## 2A.1

### How effective are general practice interventions aimed at increasing chlamydia testing? A systematic review of behaviour change techniques

Presenter: Sophie Pach

Authors: Dr Sophie Pach, Mr Mark J Kiss, Dr John Saunders, Prof Greta Rait, Prof Jackie Cassell, Dr Lorraine K McDonagh

#### Institutions

University College London, Whittington Health NHS Trust London, University of Saskatchewan Canada, Public Health England, University of Brighton

#### Abstract

##### Problem

Chlamydia is the most common bacterial sexually transmitted infection. Over 126,000 diagnoses were made in England last year, the majority of which were amongst people aged 15-24 years. Chlamydia is often asymptomatic, but can lead to serious sequelae. Testing and early treatment are necessary to prevent adverse consequences and stop onward transmission.

The aim of this systematic review was to: 1) examine the effectiveness of interventions to increase chlamydia testing in general practice, and 2) identify behaviour change techniques used within previous chlamydia testing interventions.

##### Approach

Seven databases were searched (January 2000-October 2018) using search terms relating to context (general practice), outcomes (testing rates), and intervention (chlamydia testing). Data regarding study design and key findings were extracted. Relative risk ratios (RR) were calculated, and a meta-analysis was conducted (six randomized controlled trials [RCTs] that provided adequate information for statistical comparison). Finally, the Behaviour Change Techniques Taxonomy (BCTTv1) was used to categorise and explore techniques used.

##### Findings

664 papers were identified and screened; 20 were included. Interventions focused on clinician education (five studies), alternative specimen collection (four studies), patient education (three studies), prompts (one study), incentives (clinician and/or patient; three studies) and multi-faceted (four studies). Prompts had a modest statistically significant effect in one study. Two out of five studies using practitioner education reported small statistically significant effects, but this was only sustained long-term in one study. Alternative specimen collection (e.g., postal screening, testing with smear tests) was only effective in specific contexts, however, the methods and results were difficult to extrapolate to the wider population. Two studies demonstrated small effects with patient incentives (vouchers), whereas a financial incentive for general practitioners was not effective. Two out of four multi-faceted interventions had a statistically significant effect on chlamydia testing. Patient education appeared to be the least effective approach as no interventions achieved a significant effect.

Of 93 possible BCTs, 25 were used across 20 studies. Of 16 domains, 13 were included with the "Goals and Planning" domain featuring most prominently. The most commonly utilized BCTs were "instruction on how to perform a behaviour", and "information about health consequences".

## Consequences

It appears that multi-faceted interventions promoting easy, systematic testing have the greatest effectiveness in increasing chlamydia testing in primary care. Conversely, the least successful interventions used purely patient education suggesting interventions should focus on primary care providers, rather than placing the onus young people to request tests. This review suggests that using a variety of BCTs can lead to considerable success in interventions. However, too few papers gave sufficient details of the intervention to fully examine the BCTs used. The use of more theory-based interventions would help to identify successful techniques in order to shape better future interventions.

## Funding Acknowledgement

This review is an independent research by the National Institute for Health Research. The research is funded by the National Institute for Health Research Health Protection Research Unit (NIHR HPRU) in Blood Borne and Sexually Transmitted Infections at University College London in partnership with Public Health England and in collaboration with the London School of Hygiene and Tropical Medicine (grant number: HPRU-2012-10023). The views expressed in this presentation are those of the authors and not necessarily those of the NHS, the National Institute for Health Research, the Department of Health, or Public Health England.

## 2A.2

### Contraceptive counselling in areas of high teenage pregnancy: a study of General Practitioners' insights

*Presenter: Greasha Rathnasekara*

*Authors: Dr Cathy Watson, Prof Danielle Mazza*

#### Institutions

Department of General Practice, School of Primary and Allied Health Care, Faculty of Medicine, Nursing and Health Sciences, Monash University

#### Abstract

##### Problem

There are negative social, economic and health outcomes associated with unintended teenage pregnancy. While the rates of teenage pregnancy in Australia have declined overall, there still exists geographical areas of relative high-risk. Effective contraception can prevent unintended pregnancies and general practitioners (GPs) are the first-line providers of prescription contraceptives in Australia. The delivery of contraceptive counselling and the contraceptive options offered, however, may be impacted by GPs' perceptions, biases and beliefs and in areas of high-risk for teenage pregnancy this may be compounded by broader social disadvantage.

To date, there have been no studies investigating the approach taken by GPs to contraceptive counselling in areas of high risk for teenage pregnancy. The aim of this study was therefore to obtain GP insights into the challenges they faced when providing contraceptive counselling to teenagers in areas of high risk for teenage pregnancy and how they sought to overcome these challenges.

##### Approach

Using a qualitative study design, data was collected from semi-structured, in-depth, telephone interviews with 18 GPs who were purposively sampled from high-risk areas for teenage pregnancy across Victoria, Australia. This methodology allowed GPs to give rich

descriptions of their contraceptive counselling, within the context of working in a high-risk area for teenage pregnancy. An interview guide was utilised and interviews were audio recorded and transcribed verbatim. Data were analysed using an inductive, grounded theory approach to develop themes.

## Findings

Most GPs recognised that the teenagers in their area were a vulnerable group and found them difficult to engage in contraceptive counselling. They acknowledged multiple structural and patient barriers to the teenagers accessing care and described targeting their counselling to try and also address wider social and economic issues. However despite GPs believing that they provided best-practice contraceptive counselling many did not offer all contraceptive options. Contrary to existing guidelines there was no consistent approach to offering long-acting reversible contraception (LARC) to teenage women. GPs held many erroneous views about contraception and LARCs in particular, and LARCs were often reserved as a second-line contraceptive.

## Consequences

Our study suggests that despite GPs being aware of the need to tailor the way they provide contraceptive counselling to teenagers in areas of high risk for teenage pregnancy, GP biases and misperceptions are still resulting in teenagers being offered less effective forms of contraception. Targeted interventions that improve GP knowledge and skills regarding LARCs and their usefulness in teenagers is required together with public health approaches that address structural and patient barriers to accessing care. Further research eliciting the views of teenagers would also provide further insight into these issues.

## Funding Acknowledgement

## 2A.3

### What is the place of interactive decision-aids for contraception in primary care?

*Presenter: Julia Bailey*

*Authors: Anastazia Gubijev, Judith Stephenson*

#### Institutions

University College London

#### Abstract

##### Problem

An estimated 40% of pregnancies are unplanned globally, and this has a huge impact on health, wealth, and the environment. Women may not be aware of the range of different contraception methods available, and frequently have questions and concerns which are not be raised and addressed in consultation. Aim: To analyse women's views of the Contraception Choices website, and explore the place of digital interventions for contraception choice in primary care.

##### Approach

We conducted a systematic literature review, analysed YouTube videos, and held focus groups and interviews with young women, to explore barriers and facilitators to contraception choice, uptake and use. This information (women's perspectives, evidence-based information about contraception, and behaviour change theory) informed the content of the Contraception Choices website <http://www.contraceptionchoices.org>. We conducted qualitative interviews after women had had access to the Contraception Choices website (n=18 interviews). We used

a semi-structured topic guide to explore their views of the website, and views of the place of digital interventions in contraception care. We audio-recorded and transcribed the interviews, and analysed data thematically.

## Findings

The Contraception Choices website was designed in collaboration with young women. The website is an interactive digital intervention (IDI) which aims to increase satisfaction with choice of contraception method and encourage uptake of more effective methods of contraception. The site addresses the benefits and drawbacks of 12 different methods, and provides tailored suggestions for contraception which address women's concerns and preferences. The website features videos, succinct text, infographics, and an interactive decision aid which offers three tailored contraception method recommendations. Women liked the website, trusted the information, and appreciated honesty about the pros and cons of contraception. They liked the convenience of online access, and said that the website gave them more confidence to discuss contraception with health professionals. The website helped to address doubts and concerns, and prompted reflection about contraception choice. Women felt that the website would be useful before, during or after consultations.

## Consequences

Digital interventions can play a part in facilitating informed choice of contraception method, to empower women to make decisions to enhance their health and well-being.

## Funding Acknowledgement

NIHR Health Technology Assessment Programme

## 2B.1

### Deploying glucose and physical activity self-monitoring technologies to people at moderate-to-high risk of developing Type 2 Diabetes: a randomised feasibility trial

*Presenter: Maxine Whelan*

*Authors: Mark Orme, Andrew Kingsnorth, Francesca Denton, Lauren Sherar, Dale Eslinger*

## Institutions

Nuffield Department of Primary Care Health Sciences University of Oxford, National Centre for Sport and Exercise Medicine Loughborough University, School of Sport Exercise and Health Sciences Loughborough University, Centre for Exercise and Rehabilitation Science NIHR Leicester BRC-Respiratory, Department of Infection Immunity and Inflammation University of Leicester, NIHR Leicester BRC-Lifestyle

## Abstract

### Problem

Self-monitoring of behaviour (namely diet and physical activity) and physiology (namely glucose) have been shown to be effective in type 2 diabetes (T2D) and prediabetes prevention. By combining self-monitoring technologies, the acute physiological consequences of behaviours could be shown; prompting greater consideration to physical activity levels today which impact risk of developing diabetes years or decades later. However, until recently, it has not been possible to show people the immediate harms of unhealthy lifestyle behaviours in real-time during daily life. The aim of the study was to assess user engagement, feasibility and acceptability of providing two commercially available self-monitoring technologies.

## Approach

Forty-five adults aged  $\geq 40$  years, who owned a compatible Android smartphone and were at moderate-to-high risk of developing T2D (calculated using Leicester Risk Assessment Tool) were recruited in Leicestershire. HbA1c was measured using an Afinion Analyser to identify diabetes status. All participants were given a Fitbit Charge 2 to monitor physical activity and Freestyle Libre (FL) flash glucose monitors to monitor glucose for 42 days. Each FL sensor had a maximum lifespan of 2 weeks. Participants were randomly allocated 1:1:1 to either:

1. Glucose feedback (4 weeks) followed by glucose and physical activity feedback (2 weeks)
2. Physical activity feedback (4 weeks) followed by glucose and physical activity feedback (2 weeks)
3. Glucose and physical activity feedback (6 weeks)

Primary outcome measures were time spent on the two monitors' smartphone applications, number of FL scans and changes to physical activity goals. Secondary outcomes included intervention feasibility (e.g. number of FL displacements) and acceptability (e.g. monitor wear and missing data).

## Findings

All 45 participants completed the study ( $56 \pm 8.7$  years, 60% were female,  $8607 \pm 4590$  steps at baseline, 16% high-risk and 7% had prediabetes). Engagement: Time spent on the Fitbit and FL applications declined over the six weeks across the three groups. A total of 10,582 scans of the FL sensor (equating to 7.2 scans/day) were recorded and 13 participants (23.9%) changed  $\geq 1$  of the physical activity goals. Feasibility: 23 participants (51.1%) required additional FL sensors and a total of 41 sensors were declared faulty or displaced during the study (average 1.78 sensors not lasting lifespan). Acceptability: Participants provided Fitbit data on  $40.1 \pm 3.2$  days and 9 (20%) and 24 participants (53.3%) received a prompt to charge or sync the Fitbit, respectively.

## Consequences

Technological problems were prevalent and must be overcome if such technologies are to be adopted into routine care. That said, findings suggest people at moderate-to-high risk of developing T2D were highly compliant in wearing the monitors and engaged with the self-monitoring technologies, but with engagement diminishing over time. The findings showed it is feasible to recruit people at moderate-to-high risk of T2D to a digital health intervention providing physical activity and glucose feedback.

## Funding Acknowledgement

This work was funded in part by philanthropic support received from the late Dr the Honourable David Saul. This work has also been supported in part by the Higher Education Institution Challenge for Patient Supported Quality Improvement and Education in Health and Social Care (funded by the East Midlands Academic Health Science Network) for the involvement of members of the public in research and by Loughborough University School of Sport, Exercise and Health Science for research facilitation funds.

## 2B.2

### **SuMMiT-D - Formative development of a mobile-device based system to support type 2 diabetes medication adherence in primary care: qualitative studies with patients and healthcare staff.**

*Presenter: Nikki Newhouse*

*Authors: Kiera Bartlett, Veronika Williams, Cassandra Kenning, Jenny McSharry, Rustam Rea, David French, Andrew Farmer*

#### **Institutions**

University of Oxford, University of Manchester, NUI Galway, NIHR Oxford Biomedical Research Centre

#### **Abstract**

##### **Problem**

Type 2 diabetes is a lifelong condition affecting 2.9 million people in the UK. Alongside lifestyle change, medicines are used to lower blood glucose, blood pressure and lipids to prevent long-term complications. However, between a third and half of these medicines are not taken as prescribed and many current interventions for improving medicine use are ineffective. Brief messages delivered via a mobile device could reach a large patient population at low cost, but current interventions using brief messages rarely adequately describe message content, or base messages on explicit behaviour change principles. The multi-site Support through Mobile Messaging and digital health Technology for Diabetes (SuMMiT-D) project is developing and testing a mobile-device based system delivering automated brief messages to offer support for medicine use alongside usual care to people with type 2 diabetes in primary care.

##### **Approach**

A bank of brief messages was developed by experts, based on evidence-based Behaviour Change Techniques (BCT) for medication adherence improvement. The delivery system was developed using an iterative approach including stakeholder consultation. This was followed by a six-month pilot study, where patients received up to three automated brief health messages per week and users were asked to react to messages using a limited range of responses. Additionally, we explored patient expectations and experiences of the system during multiple qualitative interviews. Healthcare professionals with a potential role in system implementation participated in focus groups.

##### **Findings**

Seven focus groups with 44 healthcare professionals (including GPs, nurses, healthcare assistants, pharmacists and receptionists) were conducted. Twenty-three patients took part in five focus groups and 48 additional patients participated in the pilot study. Primary care staff described adherence as a problem and saw the benefits of a mobile-device based system to support patients. However, practice staff felt a system could only be implemented if the patient sign-up process was simple and the system supported "more than" medication adherence. This was echoed by patient participants, who described a need for messages to support self-management more broadly. Pilot study participants perceived the system as acceptable and indicated a preference for actionable, pragmatic information. Receipt of information served as a useful reminder of the importance of self-management even if individual messages were not perceived as useful. Analysis regarding acceptability of BCTs is ongoing.

## Consequences

There is evidence to suggest that medication adherence in the context of type 2 diabetes can be supported through the delivery of brief messages and that this is acceptable to healthcare practitioners and patients. Understanding of the impact of certain BCTs may permit tailoring. In addition, the findings from this study confirm the importance of collecting stakeholder views early in the development process and underline the value of iterative, multidisciplinary team work in the development and evaluation of digital health interventions.

#### **Funding Acknowledgement**

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## 2B.3

### **Personalised care for people with type 2 diabetes: Developing a shared decision-making tool embedded in the electronic medical record in primary care.**

*Presenter: John Furler*

*Authors: Brea Kunstler, Jo-Anne Manski-Nankervis, Hamish McLachlan, Dougie Boyle, Sean Lo, Elizabeth Holmes Truscott, Jane Speight, Gary Kilov, Mark Kennedy, Ralph Audehm, Ken Clarke, Sophia Zoungas, David O'Neal*

#### **Institutions**

University of Melbourne, Deakin University, Monash University

#### **Abstract**

##### **Problem**

In the 2018 Declaration on Primary Health Care, the WHO envisioned high-quality primary health care that empowers and engages individuals to maintain and enhance their health and well-being. This is a particular challenge in managing long-term conditions such as type 2 diabetes (T2D). T2D is progressive, requiring stepwise, evidence-based treatment intensification and ongoing self-management to achieve and sustain target glucose levels. However, treatment intensification can be a complex task, with new evidence and treatment options emerging, as well as the need to personalise treatment (based on diabetes and health characteristics, individual preferences, resources and supports). Furthermore, the busy, reactive, time-poor environment of a primary care consultation can be a barrier to implementing high-quality, empowering patient centred care. Clinical decision support (CDS) tools are one way to support general practitioners (GPs) in diabetes clinical management and potentially overcome clinical inertia. A CDS tool based in the electronic medical record (EMR) can automatically draw on data in the EMR to guide high-quality, evidence-based shared treatment decisions in real-time to inform real-world practice.

##### **Approach**

We undertook a staged design and refinement process to inform the design of an EMR-based CDS tool prototype (GlycASSIST). We scanned literature to identify existing T2D-related CDS tools to inform the initial design. Based on co-design and an evaluation framework for digital health interventions, we engaged health professionals and people with T2D in interviews and focus groups. Initial data collection explored participant's prior clinical decision-making and reasoning and feedback

on the design of GlycASSIST. Following significant refinements, the second stage involved computer simulations of the use of GlycASSIST in mock consultations with GPs (N=8). Focus groups were conducted with people with T2D (N=6), during which they viewed a video recording of the simulated use of GlycASSIST. Data were analysed thematically.

### Findings

We identified clinical and interactional themes covering issues of: Up-to-date authority and reliability of the tool; integration with prescribing restrictions; integration within the EMR and with existing EMR prescribing software; GlycASSIST as a 'third actor' in consultations; making implicit reasoning explicit; supporting shared decision-making. GPs varied in how and the extent to which they used GlycASSIST to engage the person with T2D in shared-decision making. Participants with T2D were surprised at the number of treatment options available and the increased opportunity for choice generated in consultation. An interactive demonstration of the GlycASSIST tool will be presented.

### Consequences

Automated digital real-time decision support will increasingly form part of clinical care. GlycASSIST has potential for scalability and wide-reaching impact, translating rapidly evolving evidence into 'real world' clinical practice. While GlycASSIST may support shared-decision making for some, barriers to GP-based person-centred care remain. Following further refinement, GlycASSIST will be tested in a large-scale implementation in Victorian primary care.

### Funding Acknowledgement

RACGP, Diabetes Australia, Melbourne Networked Society Institute

## 2B.4a

### GP-OSMOTIC Study: A randomised controlled trial (RCT) to determine the effect of retrospective continuous glucose monitoring on HbA1c in adults with Type 2 diabetes (T2D) in primary care

Presenter: John Furler

Authors: David O'Neal, Jane Speight, Jo-Anne Manski-Nankervis, Shar-mala Thuraisingam, Katie De La Rue, Rebecca Doyle, Louise Ginnivan, Elizabeth Holmes-Truscott, Kim Dalziel, Max Catchpool, Jason Chiang, Ralph Audehm, Mark Kennedy, Malcolm Clark, Alicia Jenkins, A

### Institutions

University of Melbourne, Deakin University, Sydney University, Monash University, Latrobe University, Nanyang Technological University,

### Abstract

#### Problem

T2D is a progressive condition, requiring ongoing self-management and stepwise treatment intensification to achieve individualised and sustained glycaemic targets with the aim of reducing downstream complications. Observing retrospective continuous glucose monitoring (r-CGM) patterns may be better than HbA1c to guide personalised decisions to optimise management and achieve glycaemic targets. However, evidence for r-CGM use in T2D remains limited.

#### Approach

Eligible participants were aged 18 years and above, had HbA1c >7mmol/mol (0.5%) above individualised target and were prescribed >2 medications for glycaemia. Intervention participants attended a one-hour diabetes education session, and every three months: had a

HbA1c assessment and wore the FreeStyle Libre Pro (Abbott) device for up to 14 days prior to attending a clinic assessment visit with their primary care physician (baseline, 3, 6, 9 and 12 months). Physicians received training in the use and interpretation of ambulatory glucose profiles. Control group participants wore the r-CGM device (blinded to results) at baseline and had 3-monthly visits based on usual care, including finger prick blood glucose monitoring as appropriate. The primary outcome was the difference in mean HbA1c at 12 months. Secondary outcomes were mean differences in time in glucose target range (4-10 mmol/L) at 12 months, diabetes-specific distress (PAID scores) at 12 months and HbA1c at 6 months. Analysis was conducted on an intention to treat basis, with adjustment for age and socioeconomic disadvantage.

### Findings

Twenty-five primary care practices, 78 primary care physicians and 299 people with T2D participated. Participants were aged (mean(SD)) 60(10) years with diabetes duration (median(IQR)) of 12(8,20) years and mean(SD) HbA1c of 8.9(1.2)% (74.2(13.4) mmol/mol). Primary outcome: At 12 months, the between-group difference in mean HbA1c was 0.2% (95% CI -0.05% to 0.5%). Secondary outcomes: The estimated mean percentage time in target glucose range was 8.4% (95% CI 2.6% to 14.1%) higher in the intervention group than the control group (p=0.004). There was no evidence of a between-group difference in diabetes-specific distress (0.5; 95% CI -2.1 to 3.1). At 6 months, HbA1c was significantly lower in the intervention group; mean difference 0.5% (95% CI 0.2% to 0.8%). We found little evidence of changes in glycaemic medications in either group. There were few sensor dislodgements observed and no serious adverse events.

### Consequences

Use of 3-monthly r-CGM in people with T2D in primary care does not significantly improve HbA1c at 12 months. We showed a statistically and clinically significant reduction in HbA1c at 6 months in the intervention group, as well as significant improvements in time spent in glucose target range, with no change in diabetes distress levels. Our findings suggest the primary impact of r-CGM use on HbA1c in this setting is short term and not driven by increase in the number of diabetes medications.

### Funding Acknowledgement

Australian National Health and Medical Research Council, Sanofi Australia, Abbott (in-kind)

## 2B.4b

### Development and validation of the Diabetes Severity SCOrE (DISSCO): a retrospective cohort study

Presenter: Salwa Zghebi

Authors: Mamas Mamas, Darren M Ashcroft, Chris Salisbury, Christian Mallen, Carolyn A Chew-Graham, David Reeves, Harm Van marwijk, Nadeem Qureshi, Stephen Weng, Tim Holt, Rafael Perera, Iain Buchan, Niels Peek, Sally Giles, Martin K Rutter, Evangelos Kontopantelis

### Institutions

University of Manchester, Manchester Diabetes Centre, Keele University, University of Bristol, University of Brighton, University of Nottingham, University of Oxford, University of Liverpool.

### Abstract

#### Problem

The prevalence of type 2 diabetes (T2DM) is rapidly increasing worldwide and the importance of assessing diabetes severity is well



recognised. However, validated type 2 diabetes severity measures derived from medical data are lacking with limited applications in clinical practice. No previous studies have compared the predictive value of severity measures to HbA1c measurements. This study aimed to: develop type 2 Diabetes Severity SCORE (DISSCO) for predicting hospitalisation and mortality, assess the added clinical utility of DISSCO for predicting outcomes beyond that achieved using models incorporating demographic and clinical variables including HbA1c, and validate the developed severity score using an independent validation dataset.

### Approach

A retrospective cohort study using routinely-collected electronic health records held by the Clinical Practice Research Data link (CPRD) between 2007 and 2017. People aged  $\geq 35$  years, diagnosed with T2DM, and registered in English general practices were included. The study population was randomly divided into 80% and 20% of the cohort as the training and validation datasets, respectively. Baseline and longitudinal severity scores, were developed based on diabetes-related complications and cardiovascular disease. Measured outcomes were all-cause mortality, first hospital admission episode for any cause, due to diabetes including hypoglycaemia, or cardiovascular disease and cardiovascular procedures.

### Findings

A cohort of 139,626 people with T2DM (111,748 in the training dataset and 27,878 in the validation dataset) from 400 general practices was identified. Overall, 32,204 (23%) patients died and 99,951 (72%) patients had at least one hospitalisation during follow-up. In the training dataset, a 1-unit increase in baseline severity score was associated with significantly increased risks for mortality (unadjusted hazard ratio (HR) 1.30, 95% confidence interval: 1.30; 1.31), any hospitalisation (1.17, 1.17; 1.18), and cardiovascular-related hospitalisation (1.59 (1.58; 1.59)). Fully-adjusted models (adjusted for age, gender, HbA1c, ethnicity, and deprivation) reduced the association to 1.13 (1.12; 1.14, AUROC=0.77); 1.09 (1.08; 1.09, AUROC=0.62); 1.45 (1.44; 1.46, AUROC=0.76) for the three outcomes, respectively. The addition of DISSCO to clinical and demographic variables improved the predictive value of models for mortality and hospitalisation outcomes. Compared to the severity score, baseline HbA1c was a weaker predictor for all outcomes, based on AUROC score, except for the risk for hypoglycaemia hospitalisation. Findings were consistent in the validation dataset. Conclusions: higher T2DM severity scores are associated with increased risks for hospital admissions and mortality. The new severity score had higher predictive value than the proxy used in clinical practice, HbA1c.

### Consequences

This new algorithm will be informative to practitioners, focussing where more care is needed, and could stratify clinical management of T2DM patients and support commissioning and public health programmes for people with diabetes. In addition, these findings of our disease-specific severity measure can have important implications for funding future research for grading the severity of other illnesses using routinely-collected data.

### Funding Acknowledgement

This study is funded by the National Institute for Health Research School for Primary Care Research (NIHR SPQR), grant number 331. This report is independent research by the NIHR. The views expressed in this publication are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care. The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

## 2B.4c

### Kidney disease progression and the factors influencing progressive loss of kidney function in a primary care population. A retrospective database analysis

Presenter: Jason Oke

Authors: Jason Oke, Benjamin Feakins, Iryna Schlackow, Borislava Mihaylova, Claire Simons, Chris O'Callaghan, Daniel Lasserson, Richard Hobbs, Richard Stevens, Rafael Perera.

### Institutions

Nuffield Department of Primary Care Health Sciences University of Oxford, Nuffield Department of Population Health University of Oxford, Nuffield Department of Medicine University of Oxford, Institute of Applied Health Research University of Birmingham

### Abstract

#### Problem

Monitoring kidney function using estimated glomerular filtration rate (eGFR) is recommended in people with, or at risk of, chronic kidney disease (CKD). Current guidelines suggest increasing the intensity of monitoring according to eGFR, urine albumin levels, comorbidities and changes in therapy, but the evidence base is weak. To inform recommendations for the timing of eGFR monitoring in primary care, we set out to create a statistical model for kidney disease progression and the factors influencing this progressive loss of kidney function in a primary care population.

#### Approach

We used the Clinical Practice Research Practice Datalink (CPRD) to construct an open cohort study of all adult patient records from April 2005 to March 2014. Patients were eligible for inclusion if they had three or more serum creatinine tests on record. We excluded patients who, in the 12 months before study entry, were pregnant, had a renal transplant, were receiving dialysis, or were living kidney donors. Follow-up ended at the study end date, unless preceded by death, transfer out of CPRD, pregnancy, renal transplantation/donation, or dialysis. To model kidney function over time, a hidden Markov model (HMM) was fitted to four cohorts of patients based on their baseline albuminuria status. The HMM estimates the relationship between observed values of eGFR and the unobserved values of GFR over time. Models were adjusted for annually updated age, sex, read codes for chronic heart failure or cancer at baseline. The average time spent in stage 3b (the sojourn time) and five and ten year risks of renal failure (eGFR < 15 ml/min/1.73<sup>2</sup>) and all-cause death are presented.

#### Findings

Of 1,973,064 patients, 1,921,949 had no recorded urine albumin at baseline, 37,946 had tested and normal urine albumin levels (< 3 mg/mmol), 10,247 had microalbuminuria (3 - 30 mg/mmol) and 2,922 had macroalbuminuria (> 30 mg/mmol) at baseline. The sojourn time (95% C.I.) in stage 3b CKD was 25.1 (22.3 to 27.1) years for patients with untested urine albumin, 15.7 (14.6 to 16.8) years in patients with normal urine albumin, 7.3 (6.7 to 8.1) years for patients with microalbuminuria and 4.5 (3.9 to 5.3) years in patients with macroalbuminuria. For a male, age 60, with eGFR 45-59 ml/min/1.73<sup>2</sup> the five-year risk (95% CI) of end-stage renal failure is 0.017 (0.012 to 0.026)% and the 10 year risk 0.1 (0.07 to 0.15)%, whereas the 5 and 10 year risk of death is 6.8 (6.1 to 7.6)% and 13.5 (12.3 to 14.8)%.

## Consequences

Our findings have implications for scheduling appointments for monitoring eGFR. As true change in kidney function is slow, monitoring intervals should be extended for low-risk groups. This model will combine with a cost-effectiveness analysis to provide evidence-based recommendations for monitoring eGFR in primary care.

## Funding Acknowledgement

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## 2C.1

### Long-term outcomes of urinary tract infection (UTI) in childhood (LUCI) study: What is the prevalence of renal scarring following childhood UTI?

*Presenter: Kathryn Hughes*

*Authors: Rebecca Cannings-John, Hywel Jones, Fiona Lugg-Widger, Mandy Lau, Shantini Paranjothy, Nick Francis, Alastair Hay, Christopher Butler, Judith Van der Voort, Margaret Heginbotham, Kerenza Hood*

## Institutions

Cardiff University, Oxford University, Bristol University, Public Health Wales

## Abstract

### Problem

Guidelines recommend the prompt diagnosis and treatment of UTI in young children to reduce the risk of renal scarring and possible long-term complications. A systematic review in 2010 found that the prevalence of renal scarring following first childhood UTI was 15%. However, the evidence for the association between childhood UTI, renal scarring and long-term complications is weak and these associations have been questioned. There is an urgent need to clarify this as the correct approach to urine sampling and diagnosis of UTI in children hinges on this association. We therefore aimed to determine outcomes following UTI in childhood (<5years) using routinely collected data.

### Approach

We used the Secure Anonymised Information Linkage (SAIL) Databank to access demographic, hospital, GP and microbiology data from children in Wales. Children with at least one microbiologically confirmed UTI (mcUTI) aged less than five, were compared to those with no mcUTI. The primary outcome was renal scarring and secondary outcomes included hospital admissions, hypertension, chronic kidney disease, renal failure, GP consultations, antibiotic prescriptions and subsequent UTI. Risk factors and covariates including VUR and renal/urinary system congenital malformations were defined. The primary analysis used multinomial regression and time to event models.

### Findings

A cohort of 159,207 children was defined. 88,595 urine samples were received from children aged under five. 11,099 (7.0%) children had at least one mcUTI; 32,485 (20.4%) had at least one urine sample submitted to a microbiology laboratory, but no mcUTI; and 115,617 (72.6%) had no urine samples submitted. The overall prevalence of renal scarring in the cohort by age 7 was 0.15%; 1.32% in those

with at least one mcUTI and 0.07% in those with no mcUTI. The unadjusted odds ratio (OR) was 19.23 (15.17-24.39). After adjusting for confounders (including gender, congenital malformations, VUR, comorbidities and surveillance), the OR was 3.96 (2.86-5.47). Among the group with at least one mcUTI, VUR, congenital malformations and comorbidities were highly associated with renal scarring. Having at least one resistant UTI was also associated with renal scarring (unadjusted OR 3.18).

## Consequences

UTI was associated with renal scarring even after adjusting for confounding variables. The prevalence of renal scarring in children with at least one mcUTI is much lower than in the 2010 systematic review. Possible explanations include poor coding in routine data, different patient populations or missed renal scarring diagnoses. We are currently validating our results using radiology data. If renal scarring diagnoses are being missed, a more proactive urine sampling and imaging strategy may be indicated. However, if renal scarring rates are low following UTI, this may not be necessary. Further studies with systematic imaging may be necessary to determine the true rate of renal scarring.

## Funding Acknowledgement

Health and Care Research Wales

## 2C.2

### Is the reduced primary care use of antibiotics resulting in reduced antimicrobial resistance: a population-based ecological study

*Presenter: Ashley Hammond*

*Authors: Bobby Stuijzand, Matthew Avison, Alastair Hay*

## Institutions

University of Bristol

## Abstract

### Problem

Antibiotic resistance is considered one of the greatest threats to public health. Primary care is responsible for around 75% of antibiotics prescribed and was therefore the target for an NHS England quality premium to reduce overall antibiotic prescribing, and the percentage of broad-spectrum antibiotics (co-amoxiclav, cephalosporins and quinolones) to under 10%. We aimed to assess if practice level antibiotic prescribing reductions have resulted in practice level changes in resistance patterns in bacteria isolated from routinely submitted urine samples.

### Approach

We collected antibiotic resistance data from E. coli urinary tract infection-confirmed urine samples submitted by >140,000 patients registered at 174 practices served by Southmead Hospital and Bristol Royal Infirmary between 2013 and 2016. Data on the total number of antibiotic items dispensed for each practice were extracted from NHS Digital. Multilevel modelling was used for within quarter dispensed drug-bug pairs, taking account of potential confounders including age, sex, socioeconomic status and urban/rural classification. As there could be delayed effects, a second set of analyses investigated resistance in the next quarter.

## Findings

More than 85% of patients were female, and over 60% were aged 50 years or older. Reductions in dispensing were observed for several antibiotics including broad-spectrums, an increase in dispensing was observed for nitrofurantoin between 2013 and 2016. Changes in within-quarter antibiotic resistance were relatively small for all antibiotics. Previous quarter reductions in amoxicillin dispensing were associated with reduced amoxicillin resistance (OR 0.997, 95% CI 0.995-0.999, p-value <0.01); increased nitrofurantoin dispensing was associated with reductions in trimethoprim resistance (OR 0.991, 95% CI 0.986-0.996, p-value <0.001), while reductions in broad-spectrum dispensing in the previous quarter increased subsequent broad-spectrum resistance (OR 1.007, 95% CI 1.003-1.011, p-value <0.001).

## Consequences

For many antibiotics, dispensing decreased year-on-year between 2013 to 2016, with resistance rates remaining stable. We found some encouraging evidence to suggest that reducing dispensing of certain antibiotics can reduce resistance, in both the preceding quarter and within the same quarter. However, we also found evidence that broad-spectrum resistance continued to increase despite reductions in dispensing. These relationships did not appear to strengthen or weaken over time. Further research is needed to understand the reasons and to assess if they are being replicated nationally.

## Funding Acknowledgement

This work was funded by grant NE/N01961X/1 to M.B.A. and A.D.H. from the Antimicrobial Resistance Cross Council Initiative supported by the seven United Kingdom research councils.

## 2C.3

### New ways to obtain antibiotics - a threat to antimicrobial stewardship?

*Presenter: Benedict Hayhoe*

*Authors: Benedict Hayhoe, Geva Greenfield, Azeem Majeed*

#### Institutions

Department of Primary Care and Public Health, School of Public Health, Imperial College London

#### Abstract

##### Problem

Antimicrobial stewardship (AMS) initiatives are reducing inappropriate prescribing of antibiotics in primary care. However, such initiatives are undermined by increasing availability of new routes to obtaining antibiotics, including alternatives to face-to-face consultations, and the sale of antibiotics online without medical assessment. Approach

We reviewed existing published evidence and publically available data to understand the likely impact of new ways to obtain antibiotics.

##### Findings

1. A lower threshold for prescribing Alternatives to face-to-face consultations, including telephone and internet-based consultations, are becoming more common, both in NHS primary care and in the private sector. Inability to examine patients, limitations in information gathering, reduced availability of diagnostic testing, and increased time pressure in non-face-to-face consultations may all contribute to a lower threshold for prescribing antibiotics. Limited existing evidence suggests that clinicians are more likely to prescribe antibiotics via

telephone or video consultations than when seeing patients with the same conditions face-to-face.

2. Sale of antibiotics online without prescription Antibiotics are increasingly available without a prescription via online retailers based outside the UK. The lack of any medical assessment increases the likelihood of inappropriate use, and puts patients at risk of missed or delayed recognition of important diagnoses. There is also a risk of obtaining poor quality or counterfeit medications. EU data suggest that online sale is not currently a significant source of antibiotics for patients. However, the impact of online availability may be greater in the UK than in other EU countries where significant over-the-counter sale of antibiotics takes place.

## Consequences

Alternatives to face-to-face consultations in primary care may lead to easier availability of antibiotics through a lower threshold for prescribing. Research is needed to quantify the extent of such prescribing, but further implementation of these consultation types should consider their potential to increase inappropriate prescribing. The sale of antibiotics online without medical assessment is likely to increase inappropriate use, while exposing patients to significant risk. Regulators must work with government to find solutions, including legislation, to the problem of online pharmacies selling antibiotics without medical assessment.

## Funding Acknowledgement

This research was supported by the Imperial NIHR Biomedical Research Centre and the National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care Northwest London (NIHR CLAHRC NWL). The views expressed in this article are those of the author(s) and not necessarily those of the NHS, the NIHR, or the Department of Health and Social Care.

## 2C.4a

### Antibiotic stewardship in general practice: a scoping review of the component parts

*Presenter: Lesley Hawes*

*Authors: Associate Professor Kirsty Buising, Professor Danielle Mazza*

#### Institutions

Department of General Practice, Monash University, National Centre for Antimicrobial Stewardship, Victorian Infectious Diseases Service, Royal Melbourne Hospital, Victorian Infectious Diseases Service, Royal Melbourne Hospital, Victorian Infectious Diseases Service, Royal Melbourne Hospital

#### Abstract

##### Problem

Antimicrobial stewardship (AMS) may be defined as "a coherent set of actions which promote using antimicrobials responsibly". AMS can be established at an organisation or healthcare system level. Currently, we lack a comprehensive healthcare system framework for AMS in general practice. Identifying the component parts of a framework for AMS in general practice is an essential step towards developing a coherent strategy that can be effectively implemented and will highlight current gaps and priorities for AMS. The aim of this scoping review is to identify component parts of AMS in general practice to inform a framework which may be used to guide activity in this health care context.

## Approach

The Joanna Briggs Institute reviewer's manual was used to guide the scoping review method. Six medical databases and five international websites were searched for AMS frameworks applicable to general practice.

## Inclusion criteria

Population: General practitioners (GPs) in community-based general practice.

Concept: Identification of the component parts from an AMS framework for general practice. The AMS framework should be integrated into the health system.

Context: General practice antibiotic prescribing in a country where antibiotics are primarily available by prescription from a registered provider.

Types of studies: All eligible full-text publications were included.

Language: English.

## Findings

The database searches returned 2,112 records. After removal of duplicates and screening, five papers were selected. These were added to four papers identified by snowballing, one from a personal library, and six papers selected from the website searches. Preliminary findings from the 16 papers indicate the components required for an AMS framework in general practice are: 1. National leadership with input from GP professional bodies and funding. 2. Education for the community and prescribers. 3. Regulatory with restriction on antibiotic choice, planning for the release of new antibiotics and prescriber accreditation. 4. Consultation support with prescribing guidelines, appropriate diagnostic testing, patient information including decision aids, and communication skills training. 5. Pharmacy support with timely supply, review and advice, unit dispensing and disposal. 6. Monitoring - use of data to monitor antibiotic prescriptions, pathogen resistance, patient outcomes; and provision of useful feedback to prescribers. Limitation: This framework needs input from key stakeholders to provide information on implementability and validity.

## Consequences

This review highlights a framework for AMS in general practice which will support GPs to safely reduce antibiotic prescribing.

## Funding Acknowledgement

This research was funded by the National Health and Medical Research Council (NHMRC, Grant No. 1079625 to the National Centre for Antimicrobial Stewardship). The NHMRC had no participation in this review.

## 2C.4b

### Using sequential data assimilation to forecast influenza outbreaks from the Royal College of General Practitioners (RCGP), Research and Surveillance Centre (RSC) network data

Presenter: Sean Cleator

Authors: Sean F. Cleator, Dr. Naratip Santitissadeekorn, Dr. Nadia Smith, Dr. Spencer Thomas, Prof. Prof Simon de Lusignan, David Lloyd

## Institutions

(Surrey), (Surrey), (NPL), (NPL), (Surrey, RCGP)

## Abstract

### Problem

The Royal College of General Practitioners (RCGP), Research and Surveillance Centre (RSC) has produced weekly reports on the numbers of communicable and respiratory disease in England for over 50 years. Current data comes from around 200 practices from over 2.5 million patient records and over 2 billion consultations. The data is presented in a weekly report that simply presents the collected data from GPs. However, RCGP RSC does not carry out any forecasting. We report how data assimilation techniques concepts from weather forecasting can be used to forecast the number of presentations of influenza like illness (ILI) at practices in the RSC network over a winter influenza season.

### Approach

We take all first presentations of ILI since August 2003 and apply a particular data assimilation technique, namely particle filtering (PF), for each winter influenza season using the standard susceptible-infection-recovery (SIR) model for communicable disease. For a brief period during the start of the respective influenza seasons, we apply the PF and then forecast for the remainder of the season to produce a series of fan-charts for the expected number of presentations and a 90% probability window. We will also present forecasts made for the winter 2018/19 influenza season made in real-time.

### Findings

For the past four years, the DA/SIR method was able to successfully forecast the number of ILI cases presented at the RCGP practices within a 90% highest probability interval up to 4 weeks in advance of the peak of the flu outbreak. Post-peak, the forecast variance collapses and the forecast becomes highly reliable. However, for years 2011/12 & 2013/14, there was a double-peak in the flu outbreak and the DA/SIR method was unable to forecast the second peak.

### Consequences

This forecast system is the first step to moving the RCGP RSC's weekly respiratory and communicable disease reports from a "data-in-data-out" report to a "data-in-forecast-out" report that will help with planning, and the drug supply chain analysis across England. For regular single-peak flu outbreak years, the DA/SIR method can provide reliable flu outbreak forecasts up to 4 weeks in advance of the peak. At peak and post-peak outbreak the forecasts become highly reliable in forecasting the expected number of presentations.

### Funding Acknowledgement

## 2C.4c

### Do practices exposed to virology sampling training and a dashboard achieve higher rates of flu vaccination?

Presenter: Chris McGee

Authors: Mariya Hriskova, Professor Simon de Lusignan

## Institutions

Department of Clinical and Experimental Medicine, University of Surrey, United Kingdom

## Abstract

### Problem

Seasonal influenza has a substantial health and economic impact. Influenza vaccination programs are implemented over a short period

of time and are the primary prevention strategy. As part of the Public Health England flu surveillance system, we monitor both vaccination rates and influenza like symptoms in a nationally representative sample of primary care practices. Increasing vaccination rates has large impact on morbidity and mortality. We were able to compare vaccination rates between practices exposed to virology sampling training and provision of an online dashboard and those that were not. The data are current and representative of the influenza vaccination program in England. Aim: To determine whether if there was a difference between risk groups or overall between the two types of practice.

### Approach

Patient influenza vaccinations for the period September to October 2018 were identified from Royal College of General Practitioners (RCGP) Research and Surveillance Centre (RSC), primary care sentinel network. Vaccination rates were compared between the practices exposed to virology sampling training and dashboard, those in the national representative network of practices not.

### Findings

The analysis of vaccination rates in the virology sampling trained practices showed a difference in the rate of influenza vaccination for the whole population, 24.52% (178,788.00/729,090.00 : 24.13%-24.92%, 95% C.I.) for sampling practices compared to 17.98% (447,749.00/2,490,117.00 : 17.73%-18.23%, 95% C.I.) for practices that are not part of the influenza virology sampling scheme. This difference in rate was significant ( $p < 0.001$ ). Similar differences were observed in the over 65 years population, 69.36% (104,216.00/150,253.00 : 69.07%-69.65%, 95% C.I.) and 55.32% (237,335.00/429,019.00 : 55.09%-55.55%, 95% C.I.), sampling practices and non-sampling practices respectively, ( $p < 0.001$ ). For at high risk patients, there was a similar difference in vaccination rate, 29.84% (32,095.00/107,552.00 : 28.91%-30.78%, 95% C.I.) vs. 28.86% (79,231.00/274,494.00 : 28.27%-29.46%, 95% C.I.) for sampling practices and non-sampling practices respectively. A similar difference in vaccination rate in children age 2 to 9 years was observed, however practices reported data quality issues resulting from variation in provision of vaccination records from local authorities.

### Consequences

The rates achieved in the sampling practices compared to non-sampling practices indicates that significant improvement in vaccination rates in certain groups is feasible in primary care. In Europe 75% vaccination is stated as the level required for herd immunity, whilst in the USA they say 80%-90%. Process evaluation of these differences could lead to improvement of influenza vaccine coverage is achievable would reduce burden on the seasonal burden on both primary and secondary care.

### Funding Acknowledgement

Public Health England

## 2D.1

### PROG CHANGE - was 2D.4a What healthcare interventions exist to help children and young people who disclose bullying?

Presenter: Vibhore Prasad

Authors: Snigdha Dutta (1), Kerry Jo Lam Po Tang (1), Laura Condon (1), Vibhore Prasad (2)

### Institutions

University of Nottingham (1), King's College London (2)

## Abstract

### Problem

Bullying is a significant global public health concern affecting children and young people (CYP) in the community. There is evidence for long-lasting negative effects on social, psychological, and behavioural functioning into adulthood. However, guidance on how to help CYP who disclose a history of bullying is lacking. The aim of this research was to produce a qualitative synthesis of health-service based interventions to help CYP disclosing a history of bullying.

### Approach

We conducted a systematic search of peer-reviewed publications in seven databases for studies targeting the availability and effectiveness of health-service based interventions for bullying. Identified studies were screened for eligibility and duplication using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Thematic analysis was then undertaken to summarise the types of interventions available targeting the prevention, identification, treatment of bullying for CYP.

### Findings

Ten studies from seven countries were included in this meta-synthesis. CYP were aged between 6 to 25 years ( $x=17$ ;  $sd=3.49$ ). Four main themes were identified: Acceptance & Adherence; Targeting The Bullying Triad & Emotional Responses; Environment of Delivery; Feasibility of Follow-up. There were mixed approaches to gaining adherence to participation in interventions and encouraging accurate reporting of bullying effects to discourage misrepresentative accounts being made. These featured family, peers, and use of an app. The focus of intervention content was also varied between addressing the bullying triad (victimisation reduction, aggression reduction, and active bystanding) and/or the emotional responses to an act of bullying (controlling anxiety, depression, and boosting self-esteem). There were also variations in community based settings where CYP would feel comfortable attending sessions, and were most feasible for their lifestyle. Feasibility of follow-up was a point of debate in all of the studies, mainly due to accuracy of reporting and follow-up length.

### Consequences

There is a lack of health-service based interventions for bullying. Current interventions use a mixed approach to reporting effectiveness, the most prevalent being clinical outcome and self-report or parental report. Clinically meaningful utilisation and impact of GPs in the delivery of these interventions appears to have little or no impact on their effectiveness. Especially as the studies in this review were delivered over multiple community settings, including: school-based, home-based, and primary healthcare clinics. Therefore, future development of bullying interventions could incorporate methods of delivery that involve other members of community healthcare teams as well involving GPs.

### Funding Acknowledgement

VP is funded by the National Institute for Health Research (NIHR) as an Academic Clinical Lecturer, hosted by King's College London and received a Rushcliffe Clinical Commissioning Group NIHR Research Capability Funding Award.

## 2D.2

### Adolescent Health Provision in the Australian School Setting: perspectives of Primary Care Physicians on their preparedness.

*Presenter: Roisin Bhamjee*

*Authors: Professor Lena Sanci*

#### Institutions

Department of General Practice, Melbourne Medical School, The University of Melbourne, Australia.

#### Abstract

##### Problem

Health problems and health related behaviours arising from adolescence shape adult health. Adolescents have the lowest primary care attendance across the life span resulting in unmet needs and missed opportunities of early detection and health promotion. Globally, ensuring adolescents can access and receive appropriate "youth-friendly" primary healthcare can be challenging. School Based Health Services have potential to achieve universal healthcare coverage and in 2017, the Australian Victorian State Government funded, in the first of its kind in Australia, a large scale multi-million dollar School Based Health Service initiative.

The "Doctors in Secondary Schools" program supported the convergence of education and health systems to aid the development of healthy resilient adolescents and to contribute to existing wellbeing school programs. It enables students attending one of a 100 disadvantaged high schools to access primary care on their school site on a weekly basis.

My research involved the doctors in the program and explored their readiness and motivation to get involved and their experiences of the school-based clinic.

##### Approach

Primary Care Physicians were invited to participate in a semi-structured one-on-one interviews of 30-45 minutes duration. Interviews covered motivations of joining the program, evaluation of training received, enablers and barriers in providing healthcare on a school site and experiences of collaboration within the team. Interviews were digitally recorded and transcribed with analysis for themes using N-Vivo software.

##### Findings

Eleven interviews were completed with in-depth analysis ongoing. Preliminary themes emerging include:

(Motivations):

- Sense of giving back to the community
- Building a connection with young people and having a positive influence
- Interest in adolescent medicine

(Perceived Role):

A mixture of views emerged. Some thought the role would be mainly clinical. Others felt they would play a significant role linking with stakeholders and in school based health promotion programs. Another group were unsure.

(Impact on their home clinic and the community)

- Seeing more adolescents in practice and booking them longer appointments

-Upskilled by undertaking further educational studies

-Applying skills they had learnt while working in the program to other patients across generations

On the community:

-Group of confident Primary Care Physicians in looking after adolescents in applying a HEADSS approach and using confidentiality statements

-A cohort of the population that would not seek medical attention in their usual primary care clinic were seeking primary care and had improved health literacy

##### Consequences

My research will add to the evidence base of School Based Health Services. Significant motivating factors to part-take in the program were identified and the demographic and altruistic nature of the doctors involved. We have identified an interested group of competent doctors who are willing and skilled in providing adolescent healthcare. School Based Health Services that have a close connection to local communities had a wider positive impact.

##### Funding Acknowledgement

This research project was supported by the Royal Australian College of General Practitioners with funding from the Australian Government under the Australian General Practice Training program.

## 2D.3

### What are General Practitioners' views on their role when children and young people disclose a history of bullying in the community?

*Presenter: Vibhore Prasad*

*Authors: Vibhore Prasad, Laura Condon*

#### Institutions

King's College London, University of Nottingham

#### Abstract

##### Problem

Bullying among children and young people (CYP) is a major public health concern which can lead to both physical and mental health consequences. The World Health Organisation (WHO) has recommended integrated approaches to tackling bullying, including primary care and other health services. CYP may disclose episodes of bullying and seek help from their general practitioner (GP). However, there is currently little research on GPs' views and perceptions on their role in dealing with these disclosures of bullying in primary care.

##### Approach

We aimed to explore GPs' views about their role in dealing with disclosures of bullying by CYP, especially factors that have an impact on GPs' roles. Semi-structured interviews were conducted with GPs in primary care in England. Purposive sampling was used to achieve variation in GP age, professional status in the practice, profile of the patients served by the practice, practice size and location, and whether the GPs considered themselves to be 'research active'. Data was collected until thematic saturation was reached and analysed using the constant comparative method.

##### Findings

Data from 14 semi-structured interviews revealed three main themes: Remaining Clinically Vigilant; Impact of Bullying in Schools vs. Cyberbullying; Training & Guidance on Dealing with Bullying. There was an encompassing feeling that dealing with disclosures of bullying came down to a GP's clinical experience rather than guideline recommendations, which do not currently exist; and that bullying was a precipitating factor in presentations of CYP's mental health issues. Such opportunities should include both the nature and health consequences of bullying, including cyberbullying, for which GPs felt ill prepared but which was reported to affect their practice.

### Consequences

GPs feel they have a role to play in managing and supporting the health of CYP who disclose bullying during consultations. However, they feel ill equipped in dealing with these disclosures due to lack of professional development opportunities and guidance on treating and managing the health consequences of bullying, which should include a knowledge and availability of specialist services to which CYP may be referred. There is a need for greater collaboration between primary care and the education system, which could provide for more effective support systems for CYP.

### Funding Acknowledgement

VP is funded by the National Institute for Health Research (NIHR) as an Academic Clinical Lecturer, hosted by King's College London and received a Rushcliffe Clinical Commissioning Group NIHR Research Capability Funding Award.

## 2D.4b

### How can policy become reality in children's palliative care? A realist inquiry

*Presenter: Sarah Mitchell*

*Authors: Dr Anne-Marie Slowther, Prof Jane Coad, Prof Jeremy Dale*

### Institutions

Unit of Academic Primary Care, Warwick Medical School, University of Warwick (SM, A-MS and JD) & School of Health Sciences, Queens Medical Centre Campus, University of Nottingham (JC)

### Abstract

#### Problem

Primary palliative care for patients of all ages has been highlighted internationally through the inclusion of palliative care in the 2018 Astana WHO and UNICEF Declaration on Primary Health Care. The numbers of children living with life-limiting and life-threatening conditions is rising rapidly. There are significant inequalities in the provision of palliative care to children, through variability in both specialist paediatric palliative care services (SPPC) and the level of involvement of the GP and primary care team.

#### Approach

#### Aims:

1. To examine the delivery of palliative care for children as a broad approach to care, taking a realist approach, to understand how palliative care is delivered most effectively, to which children and families and in what circumstances.
2. To propose policy-relevant recommendations.

#### Methods:

1. Development of an initial programme theory (PT) using existing policy, followed by systematic and realist literature reviews to further refine the PT.
2. Serial interviews with children with life-limiting or life-threatening conditions and their family members, and focus groups with healthcare professionals involved in the delivery of palliative care to children.
3. Thematic analysis followed by the application of a realist logic to describe the hidden mechanisms (M) which are triggered in certain contexts (C) in order to produce desired outcomes (O). CMO configurations are described and used to further refine the PT. Findings

Forty-one interviews were conducted with ten children from 14 families, and 21 family members between October 2016 and November 2017. Four focus groups were conducted with 71 professionals at four paediatric palliative care network meetings in the UK from December 2017 to June 2018. At an interpersonal level, the delivery of palliative care depends on relationships with healthcare professionals (context), underpinned by trust, respect, advocacy, shared emotional investment and an ability amongst healthcare professionals to bear witness to the child and family situation (mechanisms), which lead to important child and family outcomes including a feeling of being heard and supported. At an organisational level, a healthcare environment which values continuity and legitimises palliative care (contexts) through leadership and role modelling (mechanisms) lead to a shift in culture towards improved and more equitable palliative care (outcome).

### Consequences

The child and family outcomes described are important if policy goals in palliative care are to be achieved. SPPC services lack capacity to care for all of the children who could benefit from palliative care. Generalist physicians, including GPs, share many of the professional values that lead to a palliative care approach. Future service and commissioning models which place emphasis on enabling the contexts across the healthcare system in which hidden mechanisms are triggered in order to produce the outcomes considered most important to children and families will underpin and assist the translation of policy into practice.

### Funding Acknowledgement

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### Disclaimer

This abstract presents independent research funded in part by the National Institute for Health Research (NIHR). The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.

## 2D.4c

### Management of Paediatric Sleep Problems in Primary Care: A Systematic Review

*Presenter: Samantha Hornsey*

*Authors: Catherine Hill, Beth Stuart, Ingrid Muller, Hazel Everitt*

### Institutions

University of Southampton

### Abstract

#### Problem

Sufficient sleep is important for the health and development of children across a range of behavioural, academic, cognitive, emotional and

## Abstract

### Problem

Whilst it is recognised that health policy is changing the shape and direction of primary care, an expert generalist role is still required in the system to help meet the breadth of clinical challenges posed. At the same time, the NHS is finding it difficult to recruit and retain sufficient General Practitioners (GPs) who wish to do patient facing work. This was a study of GPs working in England in 2017. It aimed to explore both nature of the demands of their role as well as the support mechanisms available and how these GPs managed the demands of their work.

### Approach

As the researcher is a GP, participants were recruited using a Snowball/ Respondent driven sampling strategy. Data was gathered using a series of semi-structured telephone interviews which were transcribed. Semi-structured interviews were chosen to allow the respondents to provide depth of information about attitudes and experiences as well as to permit expression of feelings and opinions. A critical realist approach informed the approach to this study. Framework analysis was used for data management and analysis. A matrix of five overarching themes was identified.

### Findings

Interviews with 12 Drs were completed. This sample included salaried Drs and partners practising across England. Five worked full-time and the others part-time. Their primary medical qualifications had been gained (between 1970 and 2012) in the UK, India, Europe and South Africa, mirroring the range seen in GMC workforce data. The five major themes identified were: Health Policy impacts, Changes in the external environment, Dealing with Complexity, Uncertainty in a changing system, Impact on the individual doctor's stress and coping mechanisms (including moderating and mediating factors).

### Consequences

This group of doctors was acutely aware of the service re-organisation taking place around them. For the majority, promised increased resources had not materialised and workload was rising inexorably. The interview findings are discussed in the context of stress and coping. The final theme operates in a similar fashion to that described in the Job Demands-Resources model (Schaufeli and Bakker). An overarching consideration is 'eudaemonic' well-being, several were experiencing anhedonia and feeling of being 'chronically sub-burnout'. There appeared to be significant deficits in core dimensions of well-being as well as a sense of 'moral distress'. Jameton warns that failure to recognise this or acknowledge these experiences had devastating effects on both the individual and the services they provide. The findings of this study will be used to inform a questionnaire study of stress and coping in a larger sample of GPs in England, considering whether particular characteristics of the doctor or their working environment are related to burnout. These findings may inform workplace changes aimed at ameliorating the current workforce crisis.

### Funding Acknowledgement

No external funding

physiological domains. In particular, shorter sleep duration has been associated with higher risk of obesity and reduced grey matter volume. Sleep problems vary, but include difficulty initiating and maintaining sleep and may be caused by sleep disorders. Behavioural Insomnia (BI) is the commonest childhood sleep disorder. Literature supports behavioural and sleep hygiene interventions for BI, though there is little research into management within primary care. As a first point of contact for families, primary care is an important setting for enhancing the availability of treatment and addressing sleep problems at an early stage, reducing the possibility of persisting problems. Honaker and Meltzer (2016) suggested that limited professional training in sleep problems is currently provided and sleep problems are not often discussed in primary care. We aim to update their review which was conducted up to 2014 and focus on primary care professionals' understanding, knowledge, perceptions of their role and current practice regarding children's sleep problems.

### Approach

Six databases were searched (MEDLINE, EMBASE, PsycINFO, CINAHL, Cochrane Library CENTRAL and Web of Science), using terms and subject headings for 'sleep', 'child/paediatric', 'primary health care', 'general practitioner' and 'health visitor'. Selection criteria include quantitative and/or qualitative studies of either GPs (or similar) treating paediatric sleep problems or parents/ carers of children presenting in primary care. The primary outcomes and focus will be GP/health visitor attitudes, knowledge, understanding and practice regarding paediatric sleep management in Primary Care. Titles and abstracts will be screened for eligibility and full texts will then be considered. A second reviewer will screen 10% of initial results, and full texts. Data extraction of included studies will be conducted and checked by a second reviewer. Any discrepancies throughout the review will be discussed by the review team. A mixed-methods synthesis will be conducted, involving a thematic synthesis for qualitative papers and a narrative synthesis for quantitative papers. Quality appraisal of the included studies will be conducted using the Mixed Methods Appraisal Tool (MMAT).

### Findings

Database searches resulted in approximately 4750 papers (before screening for duplicates). Screening is currently in progress and analysis will be complete by July 2019.

### Consequences

Our findings will identify gaps in the literature and potential areas for improvement. This will inform further primary care focussed research to better support primary care professionals and families in managing children's sleep problems and accessing appropriate resources at an early stage.

### Funding Acknowledgement

National Institute for Health Research, School for Primary Care Research (NIHR SPCR)

## 2E.1

### Coping with General Practice: An exploratory study of the working life of General Practitioners in 2017

Presenter: Catherine Neden

Authors: Kate Hamilton-West, Patricia Wilson

### Institutions

Centre for Health Services Studies, School of Social Policy, Sociology and Social Research, University of Kent



## 2E.2

### What mechanisms support Advance Clinical Practitioners to support Primary Care serving deprived communities

Presenter: Ben Jackson

#### Institutions

Academic Unit of Primary Medical Care, Sheffield Medical School

#### Abstract

##### Problem

The NHS plan commits £891 million to invest into primary care teams over the next 5 years in the form of clinical practitioners from non-medical backgrounds<sup>(1)</sup>. Workforce challenges in previous systems of funding have led to an 'inverse care law' operating with respect to access to high quality primary care for our most deprived communities<sup>(2,3)</sup>. Used wisely, this investment has potential to mitigate these problems. Many are concerned regarding the available evidence regarding the best way of effectively integrating non-medical practitioners to provide generalist care to these communities<sup>(4)</sup>.

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2. Tudor Hart J. *The Inverse Care Law*. *Lancet*. 1971;(7696):405-12.

3. Mercer SW, Watt GCM. *The inverse care law: Clinical primary care encounters in deprived and affluent areas of Scotland*. *Ann Fam Med*. 2007;5(6):503-10.

4. Marshall M, Gray DP. *General practice is making a leap in the dark*. *BMJ* [Internet]. 2016 Oct 28 [cited 2017 Jan 12];355:i5698. Available from: <http://www.bmj.com/lookup/doi/10.1136/bmj.i5698> <http://www.bmj.com/lookup/doi/10.1136/bmj.i5698>

##### Approach

A realist evaluation of the integration of advanced clinical practitioners (ACPs) in supporting primary care to deprived populations is being undertaken. The first stage of the realist evaluation has been completed through a review of the literature and stakeholder consultation (GPs, ACPs, Commissioners) from the South Yorkshire region

##### Findings

The work so far has identified the context-mechanism-outcome (CMO) configurations that are likely to be operating as ACPs integrate themselves into primary care teams. These CMO will be presented along with the potential triggers for the mechanisms identified to activate in different contexts and outline plans for empirical data collection to test the validity of the proposed CMO configurations.

##### Consequences

A better understanding of how the successful integration of non-medical practitioners into primary care teams to provide high quality generalist care to deprived communities is required. An increased understanding will be critical if the proposed investment in non-medical practitioners is going to be utilised to address the current inverse care law in access to quality primary care.

##### Funding Acknowledgement

This work is carried out through staff doctorate arrangements at the University of Sheffield.

## 2E.3

### Multimorbidity Plus: exploring GP work in deprived areas

Presenter: Marianne McCallum

Authors: Sara MacDonald

#### Institutions

Institute of Health and Wellbeing

#### Abstract

##### Problem

There is a recruitment crisis in General Practice, particularly in deprived areas. We know that GPs working in deprived areas manage more complex multimorbidity in less time. What is less well recognised is that alongside medical complexity, GPs are also increasingly managing attendant social complexity. The extra workload created could be contributing to the recruitment crisis. We wanted to look in more depth at the evolving GP workload in multiply disadvantaged communities. In particular, we sought to explore the work involved in managing this combination of medical and social complexity, and the extent to which the skills required deviate from the conventional GP role. Studies of chronic illness suggest patients engage in different types or 'lines' of work. Corbin and Strauss' influential portrayal of living with chronic illness identified three lines of work: biographical, everyday and illness work. Drawing on Corbin and Strauss' theory as an analytic lens, we explored the lines of work carried out by GPs working in areas of multiple disadvantage.

##### Approach

We carried out a secondary analysis of ten in-depth interviews with GPs working in areas of multiple disadvantage. The original study focused on GP engagement in training in areas of deprivation. Initial analysis of the transcripts highlighted the issue of GP work and work roles. Corbin and Strauss' theory emerged as a potentially relevant analytic tool; a coding frame based on the lines of work was applied to the data.

##### Findings

Hidden (everyday) work: while much of their everyday work was similar to all GPs, the respondents identified significant extra work created from managing populations with low health literacy, low self-efficacy and the burden of poverty. Frustration with this extra work - often viewed as the most challenging aspect of their role - was expressed, particularly that it was neither recognised, nor rewarded, by the wider health system. Role of the GP: a biographical challenge: Some GPs struggled with demands of patients and professionals, to manage issues they felt outwith their remit and not what they were trained for. Their identity as GPs was challenged constantly. Tension between everyday and biographical work: Other GPs had reframed their biography, seeing managing social problems, advocacy and navigating the health system for their patients as a core part of their role, ultimately absorbed into everyday work. Illness work and overwhelmed patients: GPs described a more active role, for the wider primary care team, in management of chronic illness in the context of patients who were often overwhelmed.

##### Consequences

These findings suggest substantial, often hidden, work that is not recognised, or resourced, in deprived areas. Recognising and resourcing this work could increase GP resilience and reduce burnout. Our findings contribute to the wider discourse on the crisis in primary care

##### Funding Acknowledgement

## 2E.4

### Realist Evaluation of Paramedics Deployed in General Practice: The 'READY Paramedics' Study

*Presenter: Matthew Booker*

*Authors: Sarah Voss, Behnaz Schofield, Kim Kirby, Alysha Proctor, Jonathan Benger*

#### Institutions

University of Bristol, University of the West of England

#### Abstract

##### Problem

Primary care services are under increasing pressure due to a growing and ageing population with multiple co-morbid health conditions. Due to the shortage of GPs, primary care must look to members of the allied health professional workforce to meet this rising demand. This is particularly the case for urgent and 'same day' care. The General Practice Forward View (NHSE), the 2022 GP Vision (RCGP) and the Sustainability and Transformation Partnership blueprints all advocate the deployment of paramedics in GP services as part of the solution. Legislative changes allowing for paramedic independent prescribing, along with national policy and funding specifically for paramedics in primary care has resulted in a rapid expansion of paramedics working in General Practice settings. The variation between models is substantial, with very little in the way of evidence to inform which ways of working (if any) contribute to the perceived benefits.

##### Approach

This pilot study is using a realist-informed approach - across three work packages - to characterise the range of models in use, develop testable programme theories and explore the feasibility of using practice-level data to compare outcomes between the different ways of working. Our first work package involves a realist-informed review of the literature and policy background, supplemented by key stakeholder discussions and a survey of current practice. This aims to capture some of the concepts that define the contrasting models. Our second work package comprises a series of in-depth theory-driven interviews with key stakeholders, to examine the underlying assumptions about how different approaches to paramedic deployment are thought to work. This will sample experiences at various stages of paramedic model implementation. Our third work package will pilot methods for collecting supporting primary care data, such as patient safety metrics, health service utilisation, prescribing data and economic / cost-effectiveness measures.

##### Findings

Data collection and analysis are on-going. A range of fundamental theories appear to underpin paramedic deployment in primary care. These include: (1) the freeing up of GP time to manage more complex multi-morbid patients who may benefit most from continuity; (2) creating same-day capacity to see patients earlier in their illness and maximise opportunities for community treatment; (3) improved patient satisfaction (and possible clinical outcomes) if paramedics can spend more time with certain patient groups than GPs can. We will present an outline taxonomy of models in use, and how we propose to test how our theorised mechanisms link context with outcomes.

##### Consequences

It appears likely that different models of paramedic deployment are required in different practice contexts. We aim to follow this pilot work with a realist evaluation and economic evaluation. It is anticipated this will help guide practitioners and commissioners about which models

work in which contexts, supporting the optimal deployment of scarce NHS resources.

#### Funding Acknowledgement

The presented work is funded by the BNSSG Research Capability Funding stream.

## 2F.1

### Early Career Solution Room

*Presenter: Jo Butterworth, Emily Fletcher, Judit Konya*

*Authors:*

#### Institutions

University of Exeter

#### Abstract

<https://sapc.ac.uk/content/2019-early-career-solution-room-follow>". Post meeting follow up responses to unanswered questions

##### Aim:

An engaging and interactive workshop for Early Career Researchers, delivered in a "Solution Room" style, with the aim of addressing attendees most pressing career-related questions and concerns.

##### Preparation and format:

After registering for the workshop, attendees are emailed to ask for their most pressing career-related questions/concerns. Attendees come prepared to discuss one question/concern each in a small group format. An 'expert advisory panel' have all agreed to attend.

They are: Helen Atherton, Sue Richards, Chris Clark and Phil Evans.

The panel will come prepared to introduce themselves and to aid facilitation of small groups but mostly to provide the answers ("solutions") to the most common/pressing questions/concerns at the end of the session. Workshop organisers will inform the panel of the concerns that are likely to be raised, based on the email response from registered attendees.

##### Workshop content:

Introduction from workshop organisers Introductions from the panel Organisers provide an explanation of the task

Small groups brainstorm and scribe each individual's problem using interactive whiteboards. Brainstorms are sent electronically from interactive whiteboards to the main screen for whole room viewing. The group nominates a spokesperson who summarises each table's main questions/concerns to the whole room.

The panel take it in turns to describe their own inspirational career pathway. (Meanwhile the organisers amalgamate the small group questions and prioritise them to present to the panel).

Questions/concerns are answered by the panel. Workshop organisers scribe and summarise the "solutions" using interactive whiteboards

Closing - signposting for any unanswered questions Inform audience that workshop organisers will email information scribed during answer session.

##### Intended audience:

Clinical and non-clinical early career researchers

#### Funding Acknowledgement

## 2G.1

### Hot off the press: the very latest on primary care publishing and open access

*Presenter: Roger Jones and Debbie Sharp*

*Authors:*

#### Institutions

##### Abstract

<https://sapc.ac.uk/file/sapc-asm-2019-workshop-report-final-hot-press-rj-ds-pdf>". Download the post-workshop report

##### Aims, outcomes/objectives

The aim of this interactive workshop is to outline the current developments and uncertainties in biomedical publishing and to encourage participants to discuss their own experiences and concerns about journal choice and other aspects of the publication process. We aim to develop and share an understanding of the information needed to navigate this new landscape, and how it can be provided to the primary care research community. We will circulate a report on the workshop.

##### Format

Following a brief background presentation, a moderated Q&A discussion will take up most of this workshop, with pauses for summaries, checking on agreement, and encouraging full participation. If possible we would like to give delegates registering for this workshop a short briefing note asking them to identify and be prepared to report on their own publishing dilemmas.

##### Content

The biomedical publication landscape is changing rapidly. Open access publishing, with research funders paying for the output of their research to be publicly discoverable, is becoming widespread and the rapid evolution of digital technologies has created new ways of presenting, disseminating and evaluating the impact of scholarly publications. Alternatives to traditional peer review are being considered, while social media and alternative metrics seem to be assuming greater importance. Predatory journals have proliferated alarmingly. Authors and publishers will also now have to contend with Plan S, a proposal from a North American and European consortium known as Coalition S, that all research funded by public bodies must be published in open access only journals, rather than in the more common hybrid model, where open access is an option. This raises many questions about the subscription-based model of scholarly publishing, the use of embargoes and paywalls, of publicly-discoverable repositories, and of licensing and copyright, and has implications for the REF. Many researchers will find themselves confused and uncertain about the most appropriate journals to choose for their work. In this workshop we will invite attendees to present their recent experiences and discuss their information needs for choosing the right target journal, including characteristics of journals such as scope, peer review policies, acceptance rate, Article Processing Charges, access and embargo arrangements, appeal mechanisms, Impact Factor, altmetrics and media relations.

The workshop presenters are an experienced medical editor, responsible for a hybrid primary care journal and an open access primary care journal, and an experienced academic GP involved at national level in clinical academic training.

##### Intended audience

Early and mid-career researchers will have a good deal to contribute and learn from this workshop, but because of the fast pace of change and uncertainty about the implementation of Plan S, the new information that we will bring should also be of interest to senior academics involved in research supervision.

##### Funding Acknowledgement

## 3A.1

### The role of the General Practitioner in the management of patients with self-harm behaviour in primary care: a systematic review

*Presenter: Faraz Mughal*

*Authors: Isabela Troya, Lisa Dikomitis, Carolyn Chew-Graham, Opeyemi Babatunde*

#### Institutions

Research Institute for Primary Care and Health Sciences Keele University England ST5 5BG, School of Medicine Keele University ST5 5BG, Midlands Partnership NHS Foundation Trust, NIHR Collaboration for Leadership in Applied Health Research and Care West Midlands.

#### Abstract

##### Problem

Around 220,000 people present with self-harm (SH) annually to emergency departments across England. SH is the strongest risk factor for suicide. A key area of the National Suicide Prevention Strategy (2017) is: 'reducing rates of SH as a key indicator for suicide risk'. Two-thirds of people present to their General Practitioner (GP) in the month preceding a SH episode and within the month following SH. GPs are thus well placed to intervene to prevent SH, repeat SH, and suicide.

The aim of this systematic review is to explore the role of the GP in the management of people with SH behaviour in primary care and to contribute to the development of a primary care intervention which could reduce SH rates.

##### Approach

This systematic review is conducted and reported in accordance with PRISMA guidelines. A systematic search of published literature on the role of the GP in the management of SH was conducted in six electronic databases: MEDLINE, PsychINFO, EMBASE, CINAHL, AMED, and Web of Science. Titles, abstracts, and full texts of articles were independently screened by two reviewers against pre-defined eligibility criteria, with discrepancies resolved by discussion or a third reviewer. The quality of included studies was appraised using the Mixed Methods Appraisal Tool. Data extraction included: study design; knowledge, attitudes and behaviours of GPs and facilitators and barriers to GP SH management. A narrative synthesis (Popay, 2006) is being conducted.

##### Findings

The search found 6,976 unique citations. After screening 12 studies are being synthesised. The studies were conducted in Europe, Australia, and America, with a GP age range of 25-63 years. Most studies are of good methodological quality. GPs describe SH as both a 'cry for help' and a coping mechanism. GPs see themselves as frontline support for patients but refer most patients who SH to specialist care settings. The co-production of general practice SH clinical guidelines and the development of SH-specific primary care services were seen as

important facilitators for the management of people who SH in primary care. A lack of time and heavy GP workload were seen as key barriers in the adequate assessment of SH risk in the consultation.

### Consequences

Preliminary findings highlight a need for GP training in brief psychosocial interventions, better relationships with specialist services, and the crucial need of SH services in primary care and the community. This review is important for the development of brief primary care SH interventions, that are acceptable for people who SH and feasible for GP use, which in turn can reduce referral to specialist services and ease burden on secondary care.

### Funding Acknowledgement

FM is supported by a NIHR In-Practice Fellowship.

CCG is co-funded by the NIHR CLAHRC West Midlands.

## 3A.2

### Prognostic factors for recovery following the diagnosis of a work-related mental health condition: A systematic review

*Presenter: Samantha Chakraborty*

*Authors: Samantha Chakraborty (1), Brooke E. Vandenberg (1), Jacinta Dermentzis (1), Tshepo Rasekaba (1), Bianca Brijnath (1, 2), Danielle Mazza (1)*

#### Institutions

(1) Department of General Practice, Monash University, (2) National Ageing Research Institute

#### Abstract

##### Problem

Many factors influence patient recovery from work-related mental health conditions. General practitioners (GPs) play a central role in both managing the personal recovery plan for these patients and in monitoring their progress towards recovery. However, there is no current advice to GPs about which factors adversely affect recovery in patients following a diagnosis of a work-related mental health condition. We, therefore, aimed to identify the factors that can adversely affect recovery in patients with work-related mental health conditions.

##### Approach

A systematic review using a keyword search of electronic databases was undertaken from database inception to April 2017. Studies were excluded if they were not in English or included mental health conditions other than anxiety, depression, posttraumatic stress disorder, acute stress disorder or adjustment disorder, and if they did not report on patient recovery outcomes (inferred from delayed return to work or personal recovery). Identified titles, abstracts and full texts were reviewed by two reviewers. Conflicting reviews were resolved through discussion or by an adjudicator. The quality of body of evidence was assessed using GRADE: Grading of Recommendations, Assessment, Development and Evaluations.

##### Findings

Of 1610 studies identified in the literature, 13 were eligible for inclusion in the analysis and these were collectively given a GRADE rating of High. Factors that are associated with affecting recovery, include medical factors (e.g. chronic pain, higher-degree of severity of

the mental health conditions), health behaviours and attitudes (e.g. drug and alcohol dependence, attitude to return-to-work), employment/workplace factors (e.g. job stress, harassment as a precursor to the mental health condition) and personal factors (e.g. age >40 years, life stressors).

### Consequences

Many factors can adversely affect recovery in patients with a work-related mental health condition. GPs can consider these factors during management and follow-up of patients to assist in preventing delayed recovery or return to work. However, these factors should not be used to indicate compensable status. The findings from this review have informed the development of an evidence-based clinical practice guideline on the diagnosis and management of work-related mental health conditions in general practice.

### Funding Acknowledgement

This work was supported by the Australian Government Department of Jobs and Small Business and Comcare, Office of Industrial Relations - Queensland Government, State Insurance Regulatory Authority (NSW), ReturntoWorkSA and WorkCover WA.

## 3A.3

### Qualitative Evaluation of the e-coachER Randomised Controlled Trial: Participants' views of the web-based support package for facilitating uptake of Exercise Referral Schemes and maintenance of longer-term physical activity

*Presenter: Jeffrey Lambert*

*Authors: Sarah Dean, Rohini Terry, Nigel Charles, Jeffrey Lambert, Colin Greaves, John Campbell, Adrian Taylor*

#### Institutions

University of Exeter Medical School, University of Plymouth, University of Birmingham

#### Abstract

##### Problem

Exercise referral schemes (ERS) aim to increase physical activity (PA) of patients with chronic conditions such as obesity, diabetes, hypertension, osteoarthritis and low mood. However, patient uptake and adherence to ERS limited. The e-coachER RCT aimed to determine whether augmenting usual ERS with a bespoke web-based behavioural support (informed by self-determination theory (SDT)), and pedometer, increased long-term PA for patients with chronic conditions. The present study aimed to qualitatively explore how participants experienced and engaged with the e-coachER intervention.

##### Approach

Semi-structured telephone interviews were conducted with participants who had logged on to e-coachER at least once (n=26). The topic guide focussed on all aspects of the intervention including the welcome pack, pedometer and web-based support. Interviews were recorded, transcribed and imported into NVivo Version 11. Two researchers analysed the transcripts thematically, focussing on 'top level' themes reflected in the e-coachER logic model.

##### Findings

Thirty-eight interviews were carried out in total with seven participant's

having more than one interview. Each interview lasted between 16 and 80 minutes. Participants expressed barriers such as time, ill-health, unexpected life events and IT related difficulties. Most participants found that e-coachER was easy to understand, flexible and supportive and served as a reminder to increase their PA. For many, e-coachER fostered a sense of competence by providing motivational feedback on self-monitoring and goal setting and inviting them to reflect on how they felt after engaging in PA. Many people also felt that e-coachER increased their sense of control, by suggesting other ways they could achieve their PA (e.g. by walking instead of taking the bus) and some felt that e-coachER facilitated connectedness by encouraging them to develop and expand their social networks. Finally, others experienced barriers to engagement which may have undermined these needs and subsequent PA.

### Consequences

The e-coachER intervention was acceptable and positively experienced for many, but not all, of the participants interviewed. Many participants felt that their basic needs of competence, autonomy and relatedness were somewhat facilitated by e-coachER. In a wider context, this study provides valuable insights into how ERS augmented with web-based support is received by patients with a range of complex personal circumstances and co-morbidities.

### Funding Acknowledgement

This research has been conducted independently by the University of Plymouth, University of Birmingham, Brunel University London, University of Edinburgh, University of Exeter, University of Southampton, Royal Cornwall Hospitals NHS Trust and University of St Mark and St John. It is funded by the Department of Health (DH) as part of the National Institute for Health Research (NIHR) Health Technology Assessment (HTA) programme (project number 13/25/20).

## 3A.4a

### What are the health and wellbeing outcomes of peer-led group-based interventions for adult survivors of sexual abuse and assault, and what are the experiences of participants using these groups?

*Presenter: Judit Konya*

*Authors: Konya, Judit (MD)1; Perôt, Concetta (MSc)2; Pitt, Katherine (Dr)2; Emma Johnson (PhD)2, Gregory, Alison (PhD)2; Feder, Gene (Prof MD FRCGP)2; Campbell, John (Prof MD FRCGP)1*

### Institutions

1 University of Exeter, 2 University of Bristol

### Abstract

#### Problem

Sexual assault and abuse (SA) are widespread, and are associated with short- and long-term physical and mental health problems. Multiple barriers exist to survivors disclosing, and to health practitioners asking about SA, and exploring whether appropriate support and treatment are being provided. Support and treatment options for survivors include peer-led support groups and 12-step approaches. While many systematic reviews address psychotherapies, limited evidence exists about the effects of peer-led support groups. We aimed to explore the published evidence for peer-led, group-based interventions, including the 12-step method, in the care of adult survivors of SA.

### Approach

We undertook a systematic literature review involving electronic searches of seven large online health and social care databases. The review question was "What are the health and wellbeing outcomes of peer-led group-based interventions in the care of adult survivors who have experienced SA, and what are the experiences of participants using these groups?" Title and abstract screening was followed by full-text screening of relevant published material. Quality appraisal was completed using the Mixed Methods Appraisal Tool (MMAT). Results were reported by using a descriptive approach and thematic analysis with methods of constant comparison.

### Findings

Initial searches identified 13,941 potentially relevant articles. 126 full texts were assessed and of these, eight met our study inclusion criteria and were selected for data extraction. Authors identified positive impacts of the various interventions delivered, relating to inclusion of the peer-process – an individual supporting another individual on the basis of a shared experience. This is reflected by the five overarching themes and twenty-three sub themes identified. These include positive psychological and interpersonal impacts; experiences of being part of the survivor group; mutuality and interconnectedness of benefit, pain and healing arising from participation; and issues concerning different models of peer groups.

### Consequences

Evidence to support the use of peer-led group-based approaches amongst adult survivors of SA is limited. Given the scale of the problem and the vulnerable nature of the population, further research in the third sector where these groups are mostly run, is needed. This should involve robust studies designed to investigate the effectiveness of various approaches providing survivor peer support.

### Funding Acknowledgement

JK is an Academic Clinical Fellow funded by Health Education South West.

KP is an Academic Clinical Fellow funded by the NIHR.

## 3A.4b

### How acceptable is a Culturally adapted Manual Assisted Problem solving (C-MAP) intervention for Self-Harm? Therapist and patient participant perspectives.

*Presenter: Carolyn A. Chew-Graham*

*Authors: Nasim Chaudry, Sherish Tofique, Tayyeba Kiran, Sana Farooque, Anna Taylor, Nusrat Hussain, Penny Bee,*

### Institutions

Keele University, Pakistan Institute of Living and Learning, University of Manchester

### Abstract

#### Problem

Suicide is a serious global public health problem, ranked amongst the leading causes of death in the world. Each year more than 800,000 people worldwide kill themselves; 75% suicides occur in Low and Middle Income Countries (LMIC). The World Health Organisation (WHO) Mental Health Action Plan 2013-2020 is committed to working towards a global target of a 10% reduction in the suicide rate by 2020.

Self-harm (SH) is a risk factor for suicide. Offering appropriate treatment to individuals presenting after SH is considered a key component of suicide prevention strategies. In Pakistan, there are more than 100,000 episodes of self-harm annually. SH and suicide are under-studied due to legal, social and religious implications. A multi-centre Randomised Controlled Trial (RCT) is being conducted in Pakistan, aimed at testing the effectiveness of a psychosocial intervention (Culturally-adapted, Manual-Assisted Problem-solving intervention - the C-MAP Intervention) for patients following an episode of SH. The intervention comprised 6 sessions delivered by wellbeing practitioners.

### Approach

Semi-structured interviews with therapists who had delivered, and participants who had completed, the intervention. Topic guides were used to generate data. We explored acceptability of the intervention and changes reported by patient participants since participating in the trial. Interviews with therapists explored acceptability of experiences of delivering the intervention and supervision.

### Findings

Interviews with 20 people (9 males, 11 females) who had completed the trial, and 20 therapists who had delivered the intervention. People who had completed the trial reported valuing the problem-solving and distraction techniques, use of the crisis plan and letter writing, describing improvements in motivation, mood and learning to cope. Participants suggested that they were more able to share problems, particularly within their family, and attributed this to the C-MAP intervention. Therapists found the training and supervision useful in supporting them deliver the intervention to trial participants. They described challenges in delivering the intervention including lack of privacy when family members were present, but not seemingly interested, in sessions, which impacted negatively on engagement of patient participants with the intervention. All participants made suggestions of how the intervention could be improved, including the use of more picture content in the patient manual. Therapists suggested that the intervention should be more inclusive of family members in the sessions, whilst some patient participants expressed reluctance to include their family.

### Consequences

The C-MAP intervention is acceptable to people who have self-harmed, and to therapists delivering the intervention. The intervention may help people presenting after SH to develop problem-solving skills, and thus may have a role in the prevention of suicide. The RCT will establish the clinical and cost-effectiveness of the C-MAP intervention. The qualitative work will inform modification of the intervention for use in routine care.

### Funding Acknowledgement

Medical Research Council. MRC Reference: MR/N006062/1

## 3A.4c

### SHAMIL: British South Asian recruitment into Mental Health Research in the UK

*Presenter: Yumna Masood*

*Authors: Waqas Waheed, Peter Bower*

### Institutions

University of Manchester

### Abstract

### Problem

Recruitment of ethnic communities to research is problematic, and researchers lack skills to recruit ethnic communities to clinical trials. Low cultural competence and limited resources discourage ethnic recruitment to trials. Up till now, as there is no cultural training available for research staff, therefore, it has been proposed to have specialised training provisions which could equip researchers with the skills and the confidence to work with ethnic minorities leading to an increased ethnic recruitment. A specialised culturally sensitive recruitment intervention called SHAMIL (Urdu & Arabic word means to "include") is developed. The aim of the intervention is to equip researchers and clinical research teams with the skills and the confidence to work with ethnic minorities leading to increased ethnic recruitment in mental health trials. Preliminary evaluation of SHAMIL recruitment intervention revealed positive outcomes in terms of the researcher's knowledge, confidence and skills to recruit ethnic communities in research. Aim: Assessing the acceptability and impact of SHAMIL intervention to increase participation of British South Asians in mental health trial.

### Approach

We have worked with the CHEMIST an NIHR PHR funded trial team and have implemented SHAMIL intervention. The implementation of SHAMIL intervention includes translation and adaptation of CHEMIST materials, delivery of cultural competence recruitment training to the recruitment staff and ongoing support to the staff about the recruitment of British South Asian population. The therapy manual has also been culturally adapted and these strategies will facilitate ethnic recruitment into this trial. We have also recruited 3 community pharmacies in Blackburn that will recruit and deliver the intervention. A mixed methods feasibility study with the qualitative evaluation to explore the feasibility and acceptability of SHAMIL recruitment intervention has been used. The feasibility study is case-control in design aiming to determine if SHAMIL recruitment intervention will lead to an increased ethnic recruitment outcome.

### Findings

No results available at this stage.

### Consequences

This SHAMIL-CHEMIST partnership provides a unique opportunity to develop a new model to enhance recruitment of ethnic minorities to clinical research. By introducing and testing culturally specific recruitment intervention in a trial will enhance evidence base related to recruitment methodologies for ethnic minorities to mental health trials. No such initiative has been developed in the past and our research team is breaking new grounds with possibilities of rolling out SHAMIL in future clinical trials. This recruitment intervention can potentially enhance the efficiency, performance and sustainability of health trials. Further enhancing NHS R&D efficiency, performance and sustainability through SHAMIL recruitment intervention.

### Funding Acknowledgement

NIHR SPCR PhD studentship

## 3B.1

### Organising polypharmacy: unpacking medicines, unpacking meanings

Presenter: Deborah A Swinglehurst

Authors: Nina Fudge

#### Institutions

Queen Mary University of London

#### Abstract

##### Problem

Approximately 64 million multi-compartment compliance aids (MCAs or 'dosette boxes') are issued by community pharmacies in England every year. Professional guidance directed at pharmacists strongly discourages their use in all but extreme circumstances, citing concerns such as: lack of evidence to support them; increased risk of dispensing errors; reduced medicine stability once medicines are removed from original packaging. Despite efforts from professional bodies to discourage use of MCAs, demand for MCAs is increasing. We investigate how professionals and patients organise polypharmacy and consider the remarkable persistence of the MCA as one way of organising polypharmacy in the context of high risk polypharmacy. We unpack the meanings attributed to different ways of organising medicines across a range of contexts: patients' homes, GP surgeries and community pharmacy.

##### Approach

In-depth ethnographic case study employing mixed qualitative methods including longitudinal ethnographic follow-up of 24 patients aged 65 or older and prescribed 10+ items of medication ('high risk' polypharmacy). The dataset includes: 200 hours of ethnographic observation across patients homes, community pharmacy and GP practices; 20 ethnographic interviews with patients about their medicines practices; 10 interviews with pharmacy staff. We adopt a 'practice theory' lens to make sense of our data, with a particular focus on social practices (including people, technologies, artefacts and their interconnections) driven by a curiosity for what is being accomplished, and why and by whom.

##### Findings

This is work-in-progress. Our interim analysis identifies the MCA as a highly contested object, imbued with an array of different meanings and interpretations as it circulates within and between contexts, sustained by (and itself sustaining) a vast amount of 'hidden work' for professionals and patients. Four of our 24 patient participants receive pharmacy-prepared MCAs, but all have developed ways of organising their medicines, many using 'do-it-yourself' dosette boxes which are fraught with many of the same safety concerns as pharmacy-prepared MCAs. Regardless of who is doing the work, organising polypharmacy is necessary, labour-intensive and risky.

##### Consequences

The widespread use of MCAs is primarily a side-effect of polypharmacy, and may contribute additional risk to an already high risk situation. MCAs may have little evidence to support their use, but polypharmacy is itself rarely, if ever, evidence-based. Recent calls to more heavily regulate pharmacists, improve standards of MCA practice and thereby reduce the number of MCAs issued are welcome. But our research shows that polypharmacy necessitates 'organising'. Unless the underpinning polypharmacy is itself tackled, the burden of organising this work will always fall somewhere and will always carry risk.

##### Funding Acknowledgement

NIHR, CLAHRC

## 3B.2

*Reducing opioid prescribing: a qualitative process evaluation of how general practices responded to enhanced feedback.*

Presenter: Su Wood

Authors: S. Wood<sup>(1)</sup>, R. Foy<sup>(1)</sup>, T. Willis<sup>(1)</sup>, P. Carder<sup>(2)</sup>, S. Alderson<sup>(1)</sup>

#### Institutions

<sup>(1)</sup> Leeds University Academic Unit of Primary Care, <sup>(2)</sup> West Yorkshire Research and Development

#### Abstract

##### Problem

There is national and international concern over rising trends in opioid prescribing for chronic non-cancer pain. Given accumulating evidence of harm, reversing the current trend in opioid prescribing would benefit a substantial at-risk population. The Campaign to Reduce Opioid Prescribing (CROP) entailed sending 316 practices in West Yorkshire enhanced feedback (evidence-based, comparative and practice-individualised) on their overall opioid prescribing, and for high-risk patient groups. Reports were sent bimonthly for 12 months from April 2016. We evaluated how enhanced feedback to reduce opioid prescribing was perceived and acted upon.

##### Approach

Semi-structured interviews, guided by Normalisation Process Theory (NPT), with general practices explored the process and experience of the feedback on opioid prescribing. We purposively recruited participants according to baseline prescribing levels and degree of change following feedback. Recorded interviews were transcribed and data coded to NPT components and thematically analysed.

##### Findings

Interviews with 21 staff from 20 practices highlighted five issues: First, high achievers were practices which already had a clear structure for quality improvement. Identifying a project lead and regular practice meetings seemed important actions. CROP did encourage some less structured practices to change systems, e.g. use an action plan; include locums in regular meetings. Second, the non-prescriptive reports allowed practices to identify strategies to fit within their way of working, e.g. harnessing practice pharmacists; conducting their own searches; adding prompts to patient records; developing patient leaflets; agreeing a practice policy; ending repeat prescribing of opioids. Third, although some highlighted that implementation took time and effort (with risks of damage to patient relationships, appointment shortage and competing priorities), mitigating plans were mentioned, e.g. staggering reviews, agreeing a practice policy, or working on one high risk area only. Fourth, reducing opioid prescribing was recognised as a clinical priority and feedback motivated action. Impact came from graphical practice comparison, and change seen over the year. Patient benefit from reducing and stopping opioids was reported by those who achieved lower prescribing. Conflict between drivers of clinical excellence and patient satisfaction was raised as an issue on how a practice is judged. Finally, reports did not consistently make it through 'gate-keeping' processes within practices but the scale and frequency of feedback may have been sufficient to produce worthwhile population effects.

##### Consequences

CROP was a non-prescriptive, enhanced feedback intervention on an important prescribing issue which engaged practices in change and allowed adaptation to their own ways of working. Changes in routine systems were embedded where there were structures already in place

to discuss, agree, and implement change; but this intervention also encouraged varied actions in less structured practices. CROP illustrates a well-aligned collaboration between researchers and providers for a common quality improvement goal.

### Funding Acknowledgement

This research was funded by the Scientific Foundation Board of the Royal College of General Practitioners (Grant No SFB 2017-23)

## 3B.3

### Knowledge, perceptions and practices of community pharmacists towards antimicrobial stewardship: a systematic scoping review of survey studies

*Presenter: Sajal Kumar Saha*

*Authors: Sajal Kumar Saha<sup>1,2</sup>, Dr. Chris Barton<sup>1</sup>, Shukla Promite<sup>3</sup>, Professor Danielle Mazza<sup>1,2</sup>*

### Institutions

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### Abstract

#### Problem

The use of community antimicrobial stewardship (AMS) programs is rising as the majority of antimicrobials are prescribed, dispensed and misused in primary care. Community pharmacists (CPs) are well positioned to facilitate AMS through general practitioners (GPs) and patients. However, the extent of the literature on the knowledge, perceptions and practices (KPP) of CPs towards AMS is unclear and the nature and scope of survey tools to measure CPs' KPP is unknown. This systematic scoping review aimed to determine the breadth of existing survey literature, assess the survey tools for future use to measure CPs' KPP towards AMS and analyse reported outcomes.

#### Approach

We used Arksey and O'Malley's methodological framework and PRISMA-ScR guidelines to conduct this review. Seven databases and relevant pharmacy journals were searched to October 2018 to identify English language survey studies related to CP-AMS. Our search terms covered topics including; AMS, KPP, pharmacist and primary care. Two reviewers assessed the quality of surveys using published criteria. Literature synthesis was done to determine which domains of KPP have been investigated, the tools used to quantitatively measure KPP. KPP outcomes were analysed as median percentage of CPs' agreement and interquartile range (IQR). Reported AMS barriers and facilitators were narratively summarized using a socioecological framework.

#### Findings

Of 1860 articles returned from databases, journals and snowball searches, ten surveys from six countries were eligible after reviewing the full text of 68. No articles were identified that assessed knowledge, but seven assessed perceptions or attitudes and eight described practices of CPs related to AMS. Upon quality assessment, we found four high quality and validated surveys for future use to measure CPs' AMS perceptions and practices, but local testing should be conducted to ensure contextual suitability and validity.

Quantitative synthesis showed that most CPs (65%, IQR 63%-67%, n=2) had heard of AMS. CPs perceived that AMS improved patient care (86%, IQR, 83.3%-93.5%, n=6) and reduced inappropriate antibiotic use (84%, IQR, 83%-85%, n=2). With regards to AMS practices, CPs collaborated with prescribers (77.0%, IQR 55.2%-77.8%, n=5), educated patients (53.0%, IQR, 43.2%-67.4%, n=5) and screened guideline compliance of antimicrobial prescriptions (47.5%, IQR, 25.2%-58.3%, n=3). Major AMS barriers reported in three studies were AMS guidelines and training, GP-CP interactions, and reimbursement models. CPs' willingness to participate in AMS was a major facilitator.

### Consequences

A growing body of literature was found describing CP-AMS. Limited validated surveys are available to assess CPs' perceptions and practices, but none to measure their AMS knowledge. CPs had positive perception towards AMS but their AMS practice improvements require relevant training, collaborative system structure, guidelines and role definitions. Future research is warranted to develop AMS knowledge measurement tools, and qualitative insights into KPP, barriers and facilitators for CPs to strengthen community-AMS.

### Funding Acknowledgement

This study was supported by the internal funding for a Ph.D. student, Sajal Kumar Saha by the Department of General Practice and Monash University, Australia.

## 3B.4a

### How, when and why do STOPP/START criteria based interventions improve medicines management for older people: a realist synthesis

*Presenter: Jose M Valderas*

*Authors: Gangannagaripalli J1, Greenhalgh J2, Cockcroft E1, Porter I1, Anderson R1, Hughes C3, Briscoe S1, Harris J1, Ricci-Cabello I4, Payne R5, Valderas JM1.*

### Institutions

1. University of Exeter; 2. University of Leeds; 3. Queen's University Belfast; 4. Instituto de Investigación Sanitaria Illes Balears; 5. University of Bristol

### Abstract

#### Problem

The most widely used tools for assessing appropriate prescribing in older adults in Europe are the STOPP/START tools (SSTs). A greater understanding of how interventions based on the use of these tools work, for whom they work, in what contexts and why is currently lacking. Our aim was to conduct a two-phase project on a realist evidence synthesis on the interventions based on SSTs. We present here theory identification and development (phase I).

#### Approach

We identified programme theories about SSTs/SSTs-based interventions on how, for whom, in what contexts, and why they are intended to work, and whether patients are being involved in shared decision-making in stopping or starting medicines. We conducted electronic searches of grey literature to identify generic guidance and policy documents, and electronic searches of the peer reviewed literature (PubMed, EMBASE, others). A project reference group consisting of health care professionals, NHS decision makers, older people and members of the public were set up to embed the study in real-life



experience. We discussed the identified theories in a workshop with the patient advisory group and conducted eight interviews with the experts. We used these sources of information to identify, develop and refine programme theories (contexts, mechanisms and outcome configuration). This work is still in progress.

### Findings

We identified preliminary emerging both positive and counter theories about how SSTs/SSTs-based interventions are expected to work. Positive theories: The i) SSTs provide a systematic and structured way of carrying out the medication review process; ii) as SSTs are evidence-based, comprehensive and structured, the assumption is that they can be used with little need for clinical judgement (mechanism) and thus can be used by a range of clinicians (context) in older people; iii) SSTs will prompt the clinician to start or guide discussion with the patient about whether they wish to stop or start particular medications and what their priorities are. Counter theories: i) SSTs only offer resources to enable clinicians to identify potential medication problems, they do not provide resources about the context of the individual patient; ii) It is argued that one of the reasons why clinicians use the tools is that they may not enable them to identify as many potentially inappropriate medicines (outcome) as clinicians do not use them 'rigorously', and don't follow through on stopping medication (mechanism); iii) When paper versions of the tools (resource/context) are used, completion is time consuming (outcome).

### Consequences

These emerging theories will be further refined through conduct and analysis of additional interviews and further input from patient advisory group to help prioritise the theories from the patient perspective. In Phase 2 we will test the programme theories. We will review and synthesise relevant published and unpublished empirical quantitative and qualitative evidence.

### Funding Acknowledgement

This project was funded by National Institute for Health Research Health Services and Delivery Research Programme

## 3B.4b

### Deprescribing of high-dose inhaled corticosteroids in COPD with mild or moderate airflow limitation: what do patients think?

*Presenter: Timothy Harries*

*Authors: Gill Gilworth, D M Thomas, Chris Corrigan, Patrick Murphy, Nicholas Hart, Les Hamilton, Timothy Harries.*

### Institutions

King's College London, London, UK, University of Southampton, Southampton UK, Lane Fox Unit, Guy's and St Thomas' Hospital NHS Foundation Trust, London, UK.

### Abstract

#### Problem

High-dose inhaled corticosteroids (HD-ICS) are often prescribed inappropriately in COPD patients with mild or moderate airflow limitation. HD-ICS increase pneumonia risk and other complications in patients with COPD. Most inappropriate prescribing of HD-ICS for COPD takes place in primary care. Patients who are inappropriately prescribed HD-ICS should undergo a trial of withdrawal. Deprescribing is complex in patients given the medication to provide long-term prevention and

who may feel the medication is helping. In this study we gathered the views on staged deprescribing of HD-ICS in COPD patients with mild or moderate airflow limitation who were taking the medication.

### Approach

Participants were recruited from the COPD registers of general practices using an electronic search of records. They had to have a diagnosis of COPD confirmed by spirometry at interview, no evidence of asthma, no evidence of severe or very severe airflow limitation, and to be currently prescribed HD-ICS. One-to-one semi-structured qualitative interviews were carried out exploring COPD patients' opinions and feelings about using HD-ICS prescribed outside guidelines and their attitudes to proposed withdrawal. Interviews were audio-recorded and transcribed verbatim. Data were processed using NVivo and thematic analysis was completed.

### Findings

Twenty-four COPD patients were interviewed. Six did not meet spirometric eligibility criteria. Seventeen interviews were included. Many participants were not aware they were using a HD-ICS, did not know the medication was prescribed as a preventative, and did not know of the risk of side effects. Some were unconcerned by what they perceived as low risk, others expressed fears of worsening symptoms on withdrawal. Most would have been willing to attempt withdrawal or titration to a lower dose of HD-ICS if advised by their clinician. Some would have accepted their clinician's advice without question, but many would have been more willing to accept deprescribing if a reasoned explanation was offered.

### Consequences

Attitudes to deprescribing of inappropriately prescribed HD-ICS in COPD were varied. Ignorance of the indication, the fact that the medication contained steroids and its potential side effects, was surprising to many participants. Deprescribing of these drugs is likely to be required in general practice. Primary care clinicians managing COPD should be aware of the range of patients' issues that may need to be addressed in undertaking this work.

### Funding Acknowledgement

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## 3B.4c

### The rural dispensing practice - does it achieve better medication adherence and clinical outcomes compared to non-dispensing practices? A cross-sectional analysis of routine data

*Presenter: Mayam Gomez Cano*

*Authors: John Campbell, Chris Clark, Bianca Wiering, Gary Abel*

### Institutions

University of Exeter Medical School

### Abstract

#### Problem

Rights to dispense medications, as opposed to issuing prescriptions that may not be dispensed, distinguish rural dispensing practices from

their urban counterparts. The clinical implications of this difference are unknown. We hypothesised that dispensing status may be associated with better medication adherence than prescribing alone. This could impact intermediate clinical outcomes dependent on medication adherence in, for example, hypertension or diabetes.

### Approach

We analysed Quality and Outcome Framework (QOF) data from 2016/17 linked to NHS Business Services Authority dispensing status for England. QOF performance indicators were classified into three groups, namely; 1) indicators dependent on medication adherence (for example, HYP006: the percentage of patients with hypertension whose last blood pressure reading is  $\leq 150/90$  mmHg), 2) indicators related to prescribing but independent of medication adherence (e.g. CHD005: percentage of patients with coronary heart disease and a record of anti-platelet or an anti-coagulant prescribed in the last year) and 3) indicators unrelated to prescribing (e.g. AF006: percentage of patients with atrial fibrillation in whom stroke risk has been assessed). Mixed-effects logistic regression was used to estimate differences between dispensing and non-dispensing practices. Adjustment was made for percentage of practice population aged  $\geq 65$ , percentage of practice population who were male, practice deprivation, practice list size, single-handed status and rurality. Analyses were restricted to practices with list sizes  $\geq 1000$ .

### Findings

Complete data existed for 6,596 practices with over 1,000 patients, of which 976 (14.8%) had dispensing status. Dispensing practices typically had more patients over the age of 65, served less deprived populations, were more likely to be single-handed practices and were much more likely to be in rural areas. We found evidence ( $p < 0.05$ ) that achievement on seven out of nine QOF indicators dependant on medication adherence was higher in dispensing practices than non-dispensing practices. We found greater achievement of blood pressure targets in hypertension (e.g. for HYP006 Odds ratio (OR) 1.07; 95%CI 1.04-1.11,  $p < 0.0001$ ), coronary heart disease, peripheral arterial disease and diabetes, and greater lowering of total cholesterol to 5mmol/L or less in diabetes. One of the three HBA1c targets in diabetes showed greater achievement in dispensing practices whereas two others showed no difference. We found evidence of differential performance between dispensing and non-dispensing practices for one out of nine indicators related to prescribing but independent of medication adherence; only one of six indicators unrelated to prescribing or dispensing showed any difference. Consequences

On conservative estimates, between 3% and 10% of prescriptions are not dispensed. Dispensing to patients presents one less barrier to obtaining medication than prescribing alone. Practice dispensing may be associated with better clinical outcomes, possibly through improved medication adherence. Further work is required to clarify the possible underlying mechanisms for, and significance of, these observations.

### Funding Acknowledgement

## 3C.1

### 'Time to remove the blinkers?' Exploring patient and primary care practitioner perspectives on quality of care for people with serious mental illness.

*Presenter: Katharine Bosanquet*

*Authors: Peter Coventry, Ian Watt, Ceri Owen, David Shiers, Simon Gilbody*

### Institutions

University of York, Hull York Medical School, University of Manchester

### Abstract

#### Problem

On average, people with SMI die 15-20 years younger than the general population, principally from the same preventable conditions such as cardiovascular and respiratory disease. They also develop comorbidities earlier. This mortality/morbidity gap is inequitable and unacceptable. To date research on the physical health of this population has been largely quantitative. This study used qualitative methods to generate unique insights from patients and practitioners about the quality of care for people with SMI. It aims to deepen our understanding of the physical health needs of people with SMI to enable them to live longer healthier lives.

#### Approach

A qualitative semi-structured interview design was chosen to explore patient and provider perspectives of quality of care. Thirty interviews were conducted (Yorkshire and Humber region), 19 people with schizophrenia or bipolar disorder and 11 practitioners (GPs/practice nurses). The majority of patients were recruited through family practices, purposively sampled according to diagnosis, age, sex and deprivation level to maximise data variation. Interviews were audio recorded, transcribed verbatim, and, analysed using thematic analysis and constant comparison. The study was approved by the Social Care Research Ethics Committee, London (17/IEC08/0025).

#### Findings

Findings demonstrated both congruence and dissonance between practitioners and patients. For example, both groups view continuity of care as pivotal to care quality. Most patients expressed strong preference to see their own GP, even if long waiting times were incurred. Similarly practitioners agreed relationships and trust are paramount for providing high quality care to this group. Both groups shared concern over an apparent disconnect in communication between primary and secondary care and its negative impact on care quality. Contrastingly, discord arose in how health is conceptualised. Patients reported an absence of holistic care, stating practitioners typically separate physical and mental health. Conflict also arose over prioritisation of health needs. Patients reported feeling let down by lack of time and opportunity to discuss the negative and impairing side effects of psychotropic medication. Chief among their concerns was the unprecedented weight gain associated with medication.

#### Consequences

This study provides new evidence about the quality of care for SMI patients and what is happening in practice. Practitioner and patient perspectives offer rare insights which can inform policy from the bottom up. The data demonstrate there is a need for serious mental illness to become more visible and more of a priority in primary care. Continuity of care – a guiding principle of primary care – is increasingly difficult

to achieve but is imperative to delivering high quality of care for this group, perhaps more so than for people without SMI.

### Funding Acknowledgement

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## 3C.2

### Is there an association between participation in extended hours and performance outcomes in English general practices?

*Presenter: Louis Levene*

*Authors: Richard Baker, John Bankart, Kamlesh Khunti, Nicola Walker, Christopher Williams*

#### Institutions

University of Leicester

#### Abstract

##### Problem

The General Medical Services contract now includes a directed enhanced service for extended access. There is debate as to how effective this has been in improving health outcomes. Current evidence suggests that increased extended hours access has a limited association with three patient experience measures. Our research question tested the following null hypotheses: variations in levels of extended access do not predict variations in three performance-related outcomes (controlled blood pressure in patients with hypertension, satisfactory glycaemic control in patients with diabetes, and having and seeing a preferred GP), after adjusting for population and organisational characteristics.

##### Approach

Cross-sectional study of general practices in England in 2017-2018, with three dependent variables:

1. % patients with hypertension with last blood pressure reading (measured in the preceding 12 months) <150/90 mmHg (QOF HYP001)
2. % patients with diabetes with last IFCC-HbA1c is <59 mmol/mol (7.5%) in the preceding 12 months (QOF DM007)
3. % patients who have and are able to see a preferred GP in January-March 2018 (GPPS Q8x9)The main independent variable was number of extended access days per week (0-7) in March 2018 (from NHS Digital). We included 10 independent confounder variables: IMD 2015 score, % 75+ years (2016- latest), % Black ethnicity (2018), % South Asian ethnicity (2018), % on practice hypertension register (2018), % on practice diabetes register (2018), Geographical region, list size (2018), FTE GPs/1,000 patients (2016) and FTE practice nurses/1,000 patients (2016).We undertook descriptive statistics, univariable analyses (correlations), and linear regressions.

##### Findings

6,892 practices in England. 11.7% offered 0 days' and 40.9% offered 7 days' extended access. The distribution of extended access was skewed. Spearman's rho values were weakly negative (all  $p < 0.05$ ) for extended

access with controlled hypertension (-0.029), satisfactory glycaemic control (-0.040) and continuity of care (-0.038). In regressions, levels of extended access did not independently predict variations in achievement for any dependent variable.

### Consequences

Increased extended access was not associated with improvements in three important performance indicators. Is the additional investment in extended access (£258 million in 2018-9) cost-effective? Further research is needed to examine associations between extended access and other outcomes.

### Funding Acknowledgement

This study was carried out within an existing programme of research. There was no additional funding.

## 3C.3

### Investigating the impact of case-mix on general practice cancer diagnostic outcome indicators

*Presenter: Gary Abel*

*Authors: Carolynn Gildea, Georgios Lyrazopoulos, Sean McPhail, Ruth Swann*

#### Institutions

University of Exeter, Public Health England, University College London

#### Abstract

##### Problem

The Cancer Services profiles report indicators of cancer diagnostic activity for all English general practices. A recent study reported that several indicators were dominated by chance, with some practice-level variation explained by the practice's age-sex profile. It is often argued that where variation in indicators are driven by differences in the population served by different providers, that adjusted performance on such indicators facilitates fairer comparisons. Here we assess two potential methods for adjustment by quantifying the variation explained by patient-level case-mix and establishing whether the practice-level data on the age-sex profile of registered patients adequately adjusts for this.

##### Approach

We considered five indicators from Cancer Waiting Times (2016/17, 6050 practices) or Routes to Diagnosis (2015, 6355 practices) data: Two Week Wait (TWW) conversion rate (the percentage of TWW referrals resulting in a cancer diagnosis) and TWW detection rates (the percentage of incident cancer cases diagnosed via a TWW referral) and the percentage of cancer cases diagnosed as either an emergency, following GP referral, or by another route. Mixed-effect logistic regression was used adjusting for patient-level case-mix, using cancer registration data on age, sex, deprivation, referral/cancer-type and, where possible, ethnicity and stage at diagnosis. Further models also adjusted for the practice-level age-sex profile.

##### Findings

Chance explained 60-85% of the observed between practice variation, whilst the combination of chance and patient-level case-mix explained between 75% (TWW conversion rate) and 89% (emergency diagnosis proportion) of the observed variation. For TWW conversion rate, there was considerable overlap in the variance explained by practice- and patient-level factors. For the other indicators, practice- or patient-level factors were largely independent.

## Consequences

Chance is not synonymous with case-mix and is the dominant source of variation in practice indicators. Therefore, we recommend the continued aggregation of data over multiple years. For most studied indicators, adjustment for the age-sex profile of the whole practice population is not a substitute for case-mix of individual cancer patients and so should not be used. Rather, we suggest it is likely that the ages of patients served by a practice may affect a GPs propensity to refer or investigate, even when faced with the same type of patient. Given patient-level case-mix adjustment leads to only a modest reordering of practices routinely adjusting these indicators may not be a priority.

## Funding Acknowledgement

### 3C.4a

## Could a system of risk-based, continuous, consultation peer-review improve patient safety and clinician learning in general practice? Evaluating 9 years of the BrisDoc Clinical Guardian experience

*Presenter: Ian Bennett-Britton*

*Authors: Ian Bennett-Britton, John Banks, Chris Salisbury*

## Institutions

University of Bristol, NIHR CLAHRC West

## Abstract

### Problem

The "NHS Long-term Plan" seeks to enhance sustainability of general practice through increased utilisation of new roles to do work previously done by GPs, better integration of primary and secondary care, and embracing digital technology. Unanswered questions regarding the safety of such changes highlight the weaknesses of existing safety assurance systems in general practice. These weaknesses broadly pertain to poorly aligned incentives, infrequent data sampling, reliance on self-collated data, and a focus on reactive measures to respond to safety issues. A potential alternative is a risk-based, continuous, consultation peer-review system, used by an 'out-of-hours' general practice provider in Bristol over the last 9 years. This system samples a proportion of all clinicians' consultation records for peer-review based on each clinician's perceived risk status. Cases are screened by a professionalised peer-review team, with cases causing concern escalated for consensus peer-review. Learning needs are continuously fed back to clinicians, and commonly occurring issues are reviewed at a service level to allow continuous improvement.

### Approach

To understand the perceived usefulness, acceptability and potential for wider use of such a system we undertook 20 semi-structured interviews with clinicians with exposure to the peer-review intervention. This included 8 GPs, 3 Nurse Practitioners and 3 trainee GPs subject to the peer-review intervention, 3 members of the peer-review team itself, and 3 senior management team members at the organisation running the service. Interviews have been completed and are being analysed by inductive thematic analysis. Two researchers will independently code a subset of transcripts to ensure consensus over coding and themes. Interview data will be integrated across the 3 participant groups through comparison of themes by parent group.

### Findings

Preliminary findings suggest the intervention is perceived to be

useful, acceptable and has potential for wider use in general practice. Interviews identified themes of clinical isolation in general practice, an appetite for better supervision at all clinical levels to manage unknown unknowns, variation in organisational learning culture and barriers to meaningful engagement in governance processes.

## Consequences

The rapid evolution of general practice requires corresponding evolution of quality and safety assurance methodologies. Our findings suggest further research into the development of risk-based, consultation, peer-review in general practice is justified as a potential adjunct to existing quality and safety assurance methods. This system has the potential to circumvent many weaknesses of existing safety assurance systems; using proactive, continuous sampling to assesses all clinicians on their situational competence, irrespective of their professional status, and providing a potential methodology to standardise inter-organisational clinical governance practices.

## Funding Acknowledgement

NIHR Academic Clinical Fellowship

RCGP Practitioner's Allowance Grant

### 3C.4b

## Targeting acute kidney injury (AKI) to improve patient safety: Patient and carer inputs to design a learning healthcare system

*Presenter: Jung Yin Tsang*

*Authors: Benjamin Brown, Stephen Campbell, Niels Peek, Thomas Blakeman*

## Institutions

University of Manchester

## Abstract

### Problem

Acute kidney injury (AKI) is common, harmful and costly, making it a global priority for patient safety. Every year it is attributed to over 100,000 deaths and costs the NHS over £1 billion. By targeting AKI as a syndrome, it moves away from tackling individual diseases, allowing wider patient safety issues to be highlighted, such as polypharmacy and safer transitions of care, particularly for vulnerable patient groups. Much AKI research concentrates on hospital acquired AKI, yet nearly two-thirds occur in primary care, where earlier detection and intervention is more appropriate. Our research seeks to fill this gap by exploring the potential for using a computerised 'learning healthcare system' to improve the safety of patients with AKI in the community. A preliminary step to achieve this involves seeking views from patients and the public, aiming to elucidate any gaps in communication surrounding the care of patients with AKI and exploring how a computerised system could support improvements.

### Approach

We consulted two established patient and public involvement (PPI) groups H@PPI (Health E-Research Centre group) and 'PRIMER', (Primary Care Research in Manchester Engagement Resource) to outline the design and co-facilitation of a workshop. The co-design workshop was subsequently attended by ten members, including seven patients and carers, two patient facilitators and a PPI research officer. Following a brief presentation to introduce the project, participants were split into

two smaller groups for personalised discussion. We also utilised the Ketso® kit to stimulate deeper reflection and discussion using colour coding and systematic representation.

### Findings

The workshop helped identify potential merits and limitations of current practice not previously considered by our team. Gaps in communication included the isolation of primary and secondary information – especially at discharge and the delay in patients receiving the results of blood tests and AKI diagnoses. Potential solutions involved using a computerised system to join up certain primary and secondary health records, audit functions to pinpoint the most vulnerable patients and providing patient access to blood tests to remove the need for an extra communication step. Feedback was positive for the capability of a true ‘learning healthcare system’, where outputs are automatically fed back into the system to generate continuous improvements. There were also suggestions that were outside our project scope, but carries prospects for future research, such as using artificial intelligence to predict those at higher risk of AKI much earlier.

### Consequences

Patients and the public are integral to improving safety and outcomes, frequently highlighting gaps in basic care. Findings have informed the design of our system and suggested potential for future research. We aim to ensure ongoing engagement with patients and carers throughout the design of our learning healthcare system.

### Funding Acknowledgement

This project is funded by the NIHR School for Primary Care Research

## 3C.4c

### Do patients access electronic medical test results services in General Practice in England?

*Presenter: Ludivine Garside*

*Authors: Gemma Lasseter, Ludivine Garside, Christie Cabral, Alastair Hay, Richard Huxtable, Hannah Christensen, Anna King*

#### Institutions

Bristol Medical School

#### Abstract

##### Problem

Providing healthcare medical test results to patients is a key service offered by general practices. These test results are routinely provided to patients during clinical consultations or via discussion with reception staff. However, it has been argued that delivering test results electronically may improve health outcomes and service satisfaction, promote health literacy and reduce misunderstanding between patients and doctors that may otherwise result in litigation. Despite these claims, there remains a paucity of empirical research in this area and thus there is a lack of evidence on patient outcomes and other potential benefits attributed to electronic test results services.

##### Approach

Using a realist evaluation approach, our research aims to find out what types of electronic test results services are currently being used by general practices in England. We also plan to gauge patient and GP practice experiences of these systems, and draw together the types of costs and benefits linked to electronic test results services. To do this our project has

three phases. In the first phase we have developed a questionnaire, which has been sent to a sample of practices across England to identify what electronic test results services are currently being offered to patients and by what types of practices. We will also obtain pseudoanonymised patient records from a sample of practices and compare patients who use electronic test results services to those patients who do not, with respect to socio-demographic characteristics and health conditions. In the second phase we will conduct qualitative interviews with patients and general practice staff to find out their experiences and views of using (or not) electronic test results services offered by their practice, and any associated facilitators or barriers. This will be complemented by qualitative observations to help identify how test results services are incorporated into routine practice. Finally, we will draw the questionnaire, patient data and interview information together to develop a framework which could be used to conduct an economic evaluation in the future.

### Findings

This is ongoing research. We are currently recruiting practices across England to complete the questionnaire survey. This will inform the data extraction strategy and practice selection for the retrospective data analysis. Interview topic guides have been developed and piloted, in readiness for qualitative work in the coming months. Consequences

Patient Online is a programme instigated by NHS England and aims to enable general practices in England to offer their patients access to their medical records, online appointments, ordering of repeat prescriptions and online test results. The roll out of these services across England is part of strategic plans for modernising Primary Care. Our results will be of use to policy makers and practices looking to roll-out electronic access of test results to patients in the best way possible.

### Funding Acknowledgement

The study is funded a Policy Research Programme grant from the Department of Health and Social Care.

## 3C.4d

### The relationship between general practice funding and patient experience in England: a longitudinal analysis, 2013 – 2016.

*Presenter: Mark Ashworth*

*Authors: Peter Schofield<sup>1</sup>, Hugh Gravelle, Peter<sup>2</sup>, Mark Ashworth<sup>1</sup>*

#### Institutions

1.) School of Population Health & Environmental Sciences, King's College London; 2.) Centre for Health Economics, The University of York

#### Abstract

##### Problem

It has been demonstrated across a wide range of international settings that greater investment in primary healthcare is associated with improved population health outcomes. However, less is known about the influence of funding on patient experience and overall satisfaction in primary care. The aim of this study is to understand the relationship between general practice funding and patient experience.

##### Approach

We used panel data multivariable regression to relate general practice funding to patient experience in the domains of access, continuity of care, professionalism and overall satisfaction. Descriptive data for all general practices in England over the 4-year period 2013-2016

(2013, n= 7931; 2014, n= 7768; 2015, n = 7612; 2016, n= 7342) were obtained from the General and Personal Medical Services database. Patient experience data was obtained from the General Practice Patient Survey for the same period sent to a representative sample of just over 1 million registered patients per year. Practice funding was defined as pounds (£)/1000 patients/year, based on capitation payments. Fixed effects multivariable linear regression was employed to examine the effect of general practice funding on measures of patient experience in each domain. The Hausman test was used for model selection; the P value <0.001 confirmed appropriate use of the fixed-effects model. The model was adjusted for confounding by practice and demographic characteristics and for year effects.

## Findings

Mean patient experience scores were calculated using the top two positive responses (good and very good) for questions relating to the domains of access (mean: 80%), continuity (mean: 48%), professionalism of GP (mean: 84%) and overall experience (mean: 81%). Analysis of data for all practices demonstrated a significant positive association between funding and reported patient experience of access (B coefficient 0.88; 95%CI : 0.64, 1.10), continuity of care (B 3.48; 95%CI : 2.19, 4.77), professionalism of the GP (B 1.02: 95%CI : 0.73, 1.31), and overall satisfaction (B 1.24: 95%CI : 0.90, 1.59). Based on the regression model, an additional capitation payment of £10/patient/year to the mean overall capitation funding (£83.36) would translate into an increase of 1.2% (95%CI: 1.15 - 1.3) in the overall patient experience score. Corresponding increases for individual domains were 0.9% (95%CI: 0.8, 0.9) for access; 3.5% (95%CI: 3.1, 3.8) for continuity; 1.0% (95%CI: 0.9, 1.1) for GP professionalism.

## Consequences

Patient experience is a key component of the quality of clinical care. This is the first national study to explore the relationship between funding allocated to GP practices and self-reported measures of patient experience. We found evidence that increased funding is associated with higher levels of patient experience, both for overall satisfaction and for all included domains, especially continuity of care.

## Funding Acknowledgement

VL is funded by an NIHR Doctoral Research Fellowship.

## 3D.1

### **A definitive randomised controlled trial (RCT) and economic evaluation of a community-based rehabilitation programme following hip fracture. Fracture in the Elderly Multidisciplinary Rehabilitation - Phase III (FEMuR III)**

*Presenter: Nefyn Williams*

*Authors: Nefyn Williams, Lola Howard, Ben Hardwick, Susanna Dodd, Rhiannon Tudor Edwards, Jo Charles, Val Morrison, Andrew Lemmey, Ruth Lewis, Monica Busse-Morris, Pip Logan, Toby Smith, Catherine Sackley, Shanaz Dorkenoo*

## Institutions

University of Liverpool, Bangor University, Cardiff University, University of Nottingham, University of Oxford, King's College London

## Abstract

### Problem

Background Proximal femoral fracture, commonly known as hip

fracture, is common, disabling and costly. Rehabilitation has the potential to maximise functional recovery and maintain independent living, but evidence of effectiveness and cost-effectiveness is lacking. So far, we have developed a community-based rehabilitation programme that was designed to enhance usual rehabilitation and have assessed the feasibility for this definitive randomised controlled trial (RCT). Objectives What is the effectiveness and cost-effectiveness of an enhanced rehabilitation programme following surgical repair of proximal femoral fracture in older people compared with usual care? What are the mechanisms and processes that explain the implementation and impacts of the enhanced rehabilitation programme?

### Approach

Design Multi-centre, pragmatic, parallel group, two-armed RCT with 1:1 allocation ratio stratified by gender and site. Blinded outcome assessment and statistical analysis; unblinded patient and carer participants and clinicians. Internal pilot phase, concurrent process and economic evaluations. Setting Participant recruitment on orthopaedic wards; intervention delivered in the community following hospital discharge. 12 sites in England and Wales. Participants Older adults (aged ≥60) recovering from surgical treatment following hip fracture, with mental capacity and living independently prior to fracture. Interventions Usual care versus enhanced rehabilitation (workbook, goal-setting diary, six additional therapy sessions). Outcome measures: Baseline, 4 and 12 months follow-up. Nottingham Extended Activities of Daily Living (NEADL), EuroQol EQ-5D-3L, Hospital Anxiety and Depression Scale (HADS), self-efficacy, hip pain intensity, fear of falling, grip strength, physical performance battery. Carer strain Index and HADS. Sample size 446 to detect a difference of 2.4 in NEADL (SD 10), 5% significance, 90% power, 79% retention. Data analysis: Effectiveness analysis will be ANCOVA at 12 months for NEADL, adjusting for baseline score, site and gender. The economic analysis will be a cost-utility analysis with a health service and personal social care perspective. The process evaluation will include qualitative interviews of a purposive sample of patients, carers and therapists. An internal pilot phase will assess recruitment and retention after the first six months. Internal pilot An internal pilot phase will assess recruitment and retention for the first 6 months in terms of the number of sites open to recruitment, the number of patient participants recruited per open site per month, and the retention rate at the 4 months follow-up assessment.

### Findings

Trial progress, particularly the site and participant recruitment in the internal pilot. Consequences

The enhanced rehabilitation intervention has the potential to influence outcomes for people recovering from hip fracture. The focus in hospital is discharging people home safely; from a primary care perspective, rehabilitation is also about recovering function for everyday independent living. It also has implications for rehabilitation from other serious illnesses, and long-term conditions managed in primary care, which might benefit from a functional assessment, improved self-efficacy, goal setting and self-monitoring.

### Funding Acknowledgement

This research was funded by the Health Technology Assessment (HTA) programme of the National Institute for Health Research (NIHR) (HTA reference 16/167/09). The views and opinions expressed therein are those of the authors and

do not necessarily reflect those of the HTA programme, NIHR, the National Health Service, or the Department of Health.

## 3D.2

### **Monitoring of Hip Injury Patients (MoHIP): Feasibility of using a wearable activity monitor to better understand recovery of mobility in patients who have sustained a hip fracture.**

*Presenter: Laura Armitage*

*Authors: Laura Armitage, Yuan Chi, Carmelo Velardo, Beth Lawson, Carlos Areia, Lionel Tarassenko, Peter Watkinson, Matthew Costa, Andrew Farmer*

#### **Institutions**

Nuffield Department of Primary Care Health Sciences University of Oxford, Institute of Biomedical Engineering University of Oxford, Nuffield Department of Clinical Neurosciences University of Oxford, Nuffield Department of Orthopaedics Rheumatology and Musculoskeletal Sciences University of Oxford.

#### **Abstract**

##### **Problem**

In 2018, the James Lind Alliance identified the top two research priorities for lower limb fragility fracture as firstly understanding best in-hospital and secondly best out-of-hospital physiotherapy regimes for recovery. However, little is known about the trajectory of recovery in mobility as patients transition from hospital to home, where continuing care is provided by primary care teams. Furthermore, in 2018 the national 'Hip Sprint' audit revealed only 20% of hospitals achieved continuity of rehabilitation as patients transitioned to home. We aimed to assess feasibility of using wearable activity monitors to better understand recovery of mobility as patients transition from hospital to home following a hip fracture. Ultimately this knowledge may inform future primary care based interventions and personalise care.

##### **Approach**

We conducted a hospital-to-home, observational cohort study of patients admitted to the John Radcliffe Hospital, Oxford with a hip fracture from May 2018. Eligible patients were adults, recruited to the World Hip Trauma Evaluation (WHiTE) cohort study and without cognitive impairment. Participants were recruited during their hospital stay and asked to wear a CE-marked 3-axis logging accelerometer (Axivity AX3) contained within a pouch on a lanyard for 4 months from point of recruitment. Participants received monthly visits from a primary care research nurse during the 4 month follow up period.

##### **Findings**

Between May 2018 and January 2019, 59 of 213 (28%) participants recruited to WHiTE were eligible for recruitment to MoHIP. The most common reason for exclusion was cognitive impairment (n=100, 47%). Of the 59 eligible WHiTE participants, 19 were recruited to MoHIP (32%). Consent was declined by 25 (42%) eligible WHiTE participants, the most common reason being not wanting to wear an activity monitor on a lanyard (n=7). Of the 19 participants, 68% were female and mean age was 75.5 (SD 9.1). All participants were living in their own home prior to admission. Discharge destinations of participants were own home (n=16, 84%) NHS rehabilitation unit (n=2, 11%) and nursing home (n=1, 5%). Five participants (26%) chose to withdraw from the study before completion; citing reasons relating to monitor wear ("gets in the way", "another thing to worry about") and inconvenience of study participation in the context of an already high medical burden. Initial activity data is currently under analysis and will be available ahead of conference.

## Consequences

Whilst monitoring recovery from hip fracture over the transition from hospital to home remains a priority area of research, our research demonstrates that future monitoring strategies should be suitable for cognitively impaired patients to ensure outcomes are generalisable and should use non-intrusive devices. Further collaborative work with patients and carers will help identify an acceptable method of wear for activity monitors and address some of the barriers to recruitment and retention seen in this study.

#### **Funding Acknowledgement**

This work is funded by the Health Technology Assessment Programme of the National Institute for Health Research, Oxford Biomedical Research Centre.

## 3D.3

### **Chronic MSK pain and its association with all-cause mortality: a study of 194,419 participants in UK Biobank.**

*Presenter: Ross McQueenie*

*Authors: Bhatish Jani, Susan Browne, Jordan Canning, Joanne Neary, Stefan Siebert, Colin McCowan, Sara Macdonald, Frances Mair, Barbara Nicholl*

#### **Institutions**

University of Glasgow, University of St Andrews

#### **Abstract**

##### **Problem**

Musculoskeletal (MSK) pain is pain affecting the bones, ligaments, tendons or muscles. MSK pain may be localised to one site, multiple sites, or be widespread throughout the body, and may present as acute or chronic symptoms. Despite its prevalence and severity, no study has to date examined mortality outcomes associated with chronic MSK pain, nor factors which may mediate its severity. Further, no study has quantified the differing outcomes in patients with single site, multisite or chronic pain all over the body. This study addresses this gap.

##### **Approach**

We used prospective cohort data from the UK Biobank (N=502,543) to examine chronic MSK pain. Participants with chronic MSK pain affirmatively responded to experiencing pain in at least one MSK site (neck/shoulder, back, hip, knee or pain all over the body) lasting for a period of >3 months. We examined demographic factors – age, sex, and socioeconomic status – and lifestyle factors – smoking status, frequency of alcohol intake, body mass index (BMI) and physical activity level – for patients with no, single site, multisite or pain all over the body. Using a list of 43 prevalent long-term conditions (LTCs), we investigated the effect of LTCs on each chronic MSK pain group. Proportion of deaths in each subgroup of chronic MSK pain was examined using Kaplan-Meier graphs. All-cause mortality was measured using a fully adjusted Cox's proportional hazards model controlling for age, sex, socioeconomic status (by Townsend score), smoking status, frequency of alcohol intake, BMI, physical activity and number of LTCs.

##### **Findings**

194,419 (38.6%) participants reported chronic MSK pain in at least 1 site. 1.4% (N=7129) participants reported chronic pain all over the body. During the follow up period (median = 7 years), 6.1% of patients

with chronic pain all over the body had died, compared with 2.6% of patients with no chronic MSK pain. When controlling for demographic factors, lifestyle factors and number of LTCs as described above, there was no significantly increased association between single site (hazard ratio (HR) 0.94, 95% confidence interval (CI) 0.90 – 0.98) nor multisite (HR 0.99 95% CI 0.94 – 1.04) chronic MSK pain and all-cause mortality. However, there remained a significant association between chronic pain all over the body and death, with an 18% greater risk of all-cause mortality reported for these participants (HR 1.18 95% CI 1.06 – 1.32).

### Consequences

**Whilst all-cause mortality is not positively mediated by multisite MSK pain, chronic pain all over the body is shown to be a significant factor in patient's outcomes. This has strong implications for the urgency of examination and treatment of this subset of chronic pain patients across all levels of the healthcare system.**

### Funding Acknowledgement

This project was funded by Arthritis Research UK (now Versus Arthritis)

## 3D.4a

### Is Patient Direct Access to NHS Physiotherapy Services Cost-Effective?

*Presenter: Miaoqing Yang*

*Authors: Miaoqing Yang<sup>1,3</sup> (First Author), Annette Bishop<sup>2</sup>, Jon Sussex<sup>3</sup>, Martin Roland<sup>4</sup>, Sue Jowett<sup>5</sup>, Edward CF Wilson<sup>4,6</sup>*

### Institutions

1. National Perinatal Epidemiology Unit, University of Oxford.
2. Research Institute for Primary Care and Health Sciences, Keele University.
3. RAND Europe, Cambridge.
4. Department of Public Health and Primary Care, University of Cambridge.
5. Health Economics Unit, University of Birmingham.
6. Health Economics Group, University of East Anglia.

### Abstract

#### Problem

Patient direct access to National Health Service (NHS) musculoskeletal physiotherapy services in primary care settings is defined as "patients [being] able to refer themselves to a physiotherapist without having to see a GP first, or without being told to refer themselves by a health professional". It has the potential to bring the MSK expertise of physiotherapists to bear at an earlier point in the patient pathway and prevent delays in access to care. Despite being endorsed by the English Department of Health and Social Care, direct access schemes have not been implemented in many places, likely due to a lack of evidence: a 2015 review of primary care services specifically recommended exploration of the cost-effectiveness of direct-access physiotherapy.

#### Approach

We used a discrete event simulation (DES) model to represent a hypothetical GP practice of 10,000 patients and modelled the expected costs, quality adjusted life years (QALYs) gained, waiting times and number of patients receiving physiotherapy under a direct access scheme and under status quo (no scheme) over 1 year. Costs

were measured from the perspectives of the NHS and society. Model inputs were based on a pilot cluster randomised controlled trial (RCT) conducted in four general practices in Cheshire, UK, and other sources from the literature.

### Findings

Direct access could increase the number of patients receiving at least one physiotherapy appointment by 63%, but without investment in extra physiotherapist capacity would increase waiting time dramatically. The increase in activity is associated with a cost of £4,999 per QALY gained.

### Consequences

Direct access to physiotherapy services would be cost-effective given current cost per QALY thresholds used in England. This is because physiotherapy itself is cost-effective, rather than through any savings in GP time. Direct access without an increase in supply of physiotherapists would increase waiting times and would be unlikely to be cost saving for the NHS owing to the likely increase in the use of physiotherapy services.

### Funding Acknowledgement

Study Funded by Versus Arthritis (formerly Arthritis Research UK).

## 3D.4b

### What is the impact over time on GP musculoskeletal workload, of providing a patient direct access to NHS physiotherapy for adults with musculoskeletal conditions in primary care?

*Presenter: Annette Bishop*

*Authors: Annette Bishop, Ying Chen, Jo Protheroe, Reuben O Ogollah, James Bailey, Martyn Lewis, Kelvin Jordan, Nadine E Foster*

### Institutions

1. Research Institute for Primary Care & Health Sciences, Keele University,
2. Nottingham CTU, Nottingham Health Science Partners, Queen's Medical Centre, Nottingham.

### Abstract

#### Problem

In the drive to reduce burden on general practices, patient direct access (self-referral) to NHS physiotherapy has been suggested as a way of reducing musculoskeletal (MSK) consultations with GPs. A previous pilot cluster randomised controlled trial (STEMS) included four general practices (2 having patient direct access to NHS physiotherapy and 2 continuing usual GP-led care). On conclusion of the pilot RCT the patient direct access pathway was introduced to the practices with GP-led care allowing a natural experiment to investigate the impact of patient direct access on GP MSK workload over time. Exploratory analyses of secondary outcomes assessed whether other management actions, suggested in previous observational studies to reduce with direct access, such as prescribing of medication, work absence and x-rays and scans changed.

#### Approach

The 4 GP practices that participated in the pilot RCT all used the same electronic primary care clinical system, EMIS Web. Working with EMIS, we obtained extracted routinely recorded anonymised data from the registered adult population. The primary outcome was the rate per 1000 registered population of GP consultations for MSK problems across the



6-year time period investigated (June 2011 to June 2017). Quarterly GP consultation prevalence per 1,000 registered population was calculated and presented both descriptively and using trend graphs. Joinpoint regression was used to assess any changes in the quarterly GP consultation trends within the pilot trial intervention practices and separately for the control practices. Exploratory analyses described the rates per 1000 registered population for x-rays and MRI scans ordered, referrals into secondary care, sickness certificates issued for patients with MSK conditions and prescriptions for medications linked to MSK conditions.

### Findings

Interim findings suggest in the four included practices no consistent impact on GP workload resulted from the introduction of patient direct access. In exploratory analyses of secondary outcomes, only referral for x-rays and into secondary care suggest patient direct access has an effect.

### Consequences

The introduction of patient direct access to NHS MSK physiotherapy had a variable impact on GP MSK consultations. Local factors such as the pre-existing consultation rate and possibly the previous referral to MSK physiotherapy rate need to be considered when evaluating the impact of patient direct access. Our qualitative work (presented in a separate abstract) suggests that the awareness and use of the patient direct access pathway reduced as time passed since the pilot RCT and is a factor that limits the impact on the general practice.

### Funding Acknowledgement

This work was funded by Versus Arthritis (grant number 21406).

Nadine Foster a NIHR Senior Investigator. The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.

We acknowledge the STEMS-2 study team and the participating general practices and physiotherapy service.

## 3D.4c

### Patient direct access to musculoskeletal physiotherapy in primary care: perceptions of patients, general practitioners, physiotherapists and clinical commissioners in England

*Presenter: Annette Bishop*

*Authors: Chinonso N. Igwesi-Chidobe, Bernadette Bartlam, Katrina Humphreys, Emily Hughes, Joanne Protheroe, John Maddison, Annette Bishop*

### Institutions

Research Institute for Primary Care & Health Sciences, Keele University, Department of Medical Rehabilitation, College of Medicine, University of Nigeria, Family Medicine & Primary Care, Lee Kong Chian School of Medicine, Nanyang Technical University Singapore, Central Cheshire Integrated Care Partnership, The North West Coast Clinical Research Network

### Abstract

#### Problem

Musculoskeletal (MSK) conditions are the leading cause of chronic disability. Most patients in the UK seek initial care from their general practitioner (GP). However, UK primary care is struggling to meet the

current demand from patients, which is set to rise as the population ages and MSK conditions increase.

Patient direct access to National Health Service (NHS) musculoskeletal physiotherapy services is one possible solution and is defined as "patients [being] able to refer themselves to a physiotherapist without having to see a GP first, or without being told to refer themselves by a health professional".

No previous studies have investigated patient and professional views and experiences of patient direct access. This study investigated the perceived impact of patient direct access to NHS MSK physiotherapy by exploring the views/experiences of patients, general practitioners, physiotherapists and clinical commissioners in a region where direct access was rolled out following a pilot randomised trial of patient direct access.

### Approach

An exploratory approach used one-to-one semi-structured interviews, conducted face-to-face or by telephone. Interviews explored patient and professional views and experiences of NHS MSK physiotherapy services, as well as organisational and commissioning barriers and facilitators to successful implementation. Interviews were transcribed verbatim and fully anonymised before analysis. Data were thematically analysed within a Normalisation Process Theory framework. Five of the co-authors, including the PPIE co-author developed the coding frame.

### Findings

Patients included 16 women and 6 men, aged 36 – 86 years. Practitioners/commissioners were 9 women and 11 men with a broad range of clinical experience (2 – 34 years). Four major themes emerged:

Understanding and acceptability of physiotherapy: Many patients did not understand the roles and scope of physiotherapy. This lack of understanding around the scope of physiotherapy practice was also reflected in some accounts of the practitioners.

Understanding and awareness of direct access: GP recommended direct access patients believed they were being referred by the GP and did not understand self-referral as a concept. All groups found direct access acceptable.

Barriers to successful implementation: Challenges were identified around communication and data sharing between physiotherapists and GPs, and between primary care and specialist care which appear to mitigate against successful implementation.

Contribution of direct access to potentially enhance access to timely treatment yet with concerns expressed about generating unrealistic patient expectations.

### Consequences

Patient direct access to MSK physiotherapy may have the potential to promote effective and efficient patient care. Physiotherapy services need to increase public awareness about physiotherapy, its scope of practice, and access routes. GPs need to actively promote physiotherapy and its access routes with patients to increase awareness and acceptance of new methods of access. System changes are required to improve cross-disciplinary communication and facilitate successful implementation of patient direct access.

### Funding Acknowledgement

This work was funded by Versus Arthritis (grant number 21406).

We acknowledge the STEMS-2 study team.

## 3E.1

### Can dementia risk be predicted using routine electronic health records?

Presenter: Catharine Morgan

Authors: Darren M Ashcroft, Evan Kontopantelis, Daniel Stamate, David Reeves

#### Institutions

The University of Manchester, University of London

#### Abstract

##### Problem

Primary care is the main route through which individuals are identified or subsequently diagnosed with dementia by a GP or specialist referral services. Evidence suggests numerous risk factors are associated with development of Dementia and many multi-factorial prognostic dementia risk factor models have been proposed. However, few are based on risk factors routinely captured from electronic patient records (EHR), none incorporate longitudinal trends in health, and none have utilised the potential of Machine Learning (ML) approaches. We aim to develop an improved healthcare record-based tool for estimating patient risk of developing dementia with the opportunity of earlier identification of those at risk.

##### Approach

The Clinical Practice Research Datalink (CPRD) is an anonymised primary care electronic patient record database capturing events from healthcare interactions. We will identify patients aged 60-95 years contributing to CPRD between 01/01/2005 and 31/12/2017 along with the subset of these who received a diagnosis of dementia over the period. Potential predictors will be identified from published systematic reviews, relevant individual research studies, and newly emerging items proposed by dementia experts. Clinical Readcode lists for each candidate risk factor will be developed. Model building, with a randomly selected subset of the cohort, will be approached using both traditional logistic regression analysis and machine learning (ML) techniques. The remaining cohort will be used for model validation.

##### Findings

Between 01/01/2005 and 31/12/2017, 2,005,756 adults aged  $\geq 60$  years contributed to CPRD and fulfilled inclusion criteria. Of this cohort, 70,621 (3.4%) were identified as having a dementia diagnosis. From the research literature we have identified 100 plus reported individual risk factors for dementia, broadly classified into demographic and social factors, physical and mental health status, consulting patterns, and treatments received. Specification of each risk factor as a Readcode list is ongoing, with the modelling exercise to begin in the coming months. ML will be carried out by co-investigators of the University of London in parallel to the traditional modelling approach based in the University of Manchester.

##### Consequences

A tool for calculating an individual's 3, 5 and 10 year risk of developing dementia from electronic health records may potentially be used in primary care to identify high-risk patients for early intervention or more detailed assessment. Such a tool is also greatly needed to identify high-risk individuals for invitation into clinical trials of promising treatments. Success in developing a markedly improved tool for the prediction of dementia may also lead to utilising the same techniques to develop improved risk tools for many other health conditions.

##### Funding Acknowledgement

Alzheimer's Research UK

## 3E.2

### People living with dementia - what really matters? and why do primary care practitioners need to know?

Presenter: Siobhan Reilly

Authors: Siobhan Reilly, Andrew Harding, Hazel Morbey, Faraz Ahmed, Caroline Swarbrick, Paula Williamson, John Keady

#### Institutions

Lancaster University, University of Manchester and University of Liverpool

#### Abstract

##### Problem

Research waste takes many forms including poor outcome selection. There is high variability of outcomes and ways to measure them in dementia trials and this impedes the measurement and comparisons of effectiveness. A high proportion of the 850,000 people estimated to be living with dementia in the UK reside at home in their neighbourhoods and communities. Trials of the effectiveness of non-pharmacological health and social care community based interventions are important to increase the quality of evidence in dementia research. To date, previous consensus exercises to identify important outcomes have not meaningfully involved people living with dementia relative to professional groups. We designed a study to establish an agreed standardised core outcome set (COS) for use when evaluating non-pharmacological health and social care interventions for people with dementia living at home in their neighbourhood.

##### Approach

- 1) qualitative interviews/focus groups (including key stakeholders: people living with dementia, care partners, health and social care professionals, researchers and policy makers) and literature review;
  - 2) A modified two-round Delphi survey was used to attain consensus on core outcomes from 288 key stakeholders (21 people living with dementia, 58 care partners, 137 relevant health and social care professionals, 60 researchers, 12 policy makers). The core outcome set was finalised in a consensus meeting with 20 representatives from the key stakeholder groups.
  - 3) systematic review of existing outcome tools.
- Findings

Fifty-four outcomes were initially identified through a process of extracting outcomes from existing trials, key sources and qualitative work with stakeholders in phase 1. In a two-round Delphi survey (round 1 n=288, round 2 n=246 – 85% response rate) with key stakeholders, consensus for inclusion in the COS was attained for 10 outcomes. Three additional outcomes were added at a consensus workshop with key stakeholders (n=20). The final thirteen outcomes in the COS are across four domains – self-managing dementia symptoms, quality of life, friendly neighbourhood and home, independence. Our systematic review (including an assessment of psychometric properties) which seeks to identify existing outcome measures that map onto the 13 outcomes identified in the COS, is currently work in progress.

##### Consequences

We recommend thirteen outcomes in the COS that need to be measured as a minimum in trials of community-based health and social interventions for people living with dementia. Funders and researchers will need to shift their focus towards social health outcome measures. Furthermore, this consensus is also capable of informing the content and delivery of health and social programmes. As such, the COS and this study is of interest to researchers, trialists and policy

makers including those who plan and commission services. The gaps in outcome measures will also help to set the research agenda for the development of relevant measures in the future.

### Funding Acknowledgement

Work programme 3 forms part of the ESRC/NIHR Neighbourhoods and Dementia mixed-methods research study ([www.neighbourhoodsanddementia.org](http://www.neighbourhoodsanddementia.org)). The support of the Economic and Social Research Council (ESRC) and National Institute for Health Research (NIHR) is gratefully acknowledged (Grant reference ES/L001772/1).

## 3E.3

### Culturally adapting cognitive tests for ethnic minorities: an illustration using the Addenbrooke's Cognitive Examination III for British Urdu speakers

Presenter: Nadine Mirza

Authors: Maria Panagioti, M. Wali Waheed, Waqas Waheed

### Institutions

University of Manchester, Leicester Medical School

### Abstract

#### Problem

The majority of cognitive tests were developed for English speaking European populations, standardised on Caucasians. Within the UK, ethnic minorities are demonstrating higher rates of false positive and negative scores on these cognitive tests. This leads to a misdiagnosis and underdiagnosis of dementia respectively. This is attributed to bias that arises when the target populations differ from the population that assessments, including cognitive tests, were originally designed for. Over 864,000 individuals within the UK struggle to or cannot speak English and they are disadvantaged as these tests are dependent on English language recognition and ability. Translation is not enough as culture influences performance, including perception of test questions and responses to them. Therefore, ethnic minorities score lower on cognitive tests that differ in cultural context from the one they are familiar with. Thus, there is a need for culturally adapted cognitive tests for ethnic minorities. We propose the following methodology, illustrated through the cultural adaptation of the Addenbrooke's Cognitive Examination III (ACE-III). We adapted it for British South Asians, the largest ethnic minority group in the UK and translated it into Urdu, a popular South Asian language, 4th most spoken in the UK.

#### Approach

We undertook a multi-method approach. We conducted a systematic review of primary publications of the ACE-III and its predecessors and received feedback through questionnaires from existing adaptors of the ACE-III. We extracted data on cultural adaptation processes and rationale from these sources to develop guidelines on culturally adapting the ACE-III. Potential ACE-III Urdu questions were developed with these guidelines and their cultural appropriateness was assessed through focus groups with 12 British Urdu speaking elderly and an experts' consensus meeting with two psychiatrists. The ACE-III Urdu was finalised with this feedback and culturally validated by administering it to cognitively healthy lay persons from our target population and then conducting cognitive interviews to assess their understanding and acceptability.

### Findings

Our systematic review identified 32 publications and we received 7 completed questionnaires. We successfully developed guidelines with this data and utilised them with focus group and consensus meeting feedback to develop the ACE-III Urdu. Through our cognitive interviews we found the overall response to the ACE-III Urdu was positive, with participants finding it straightforward, understandable and culturally acceptable. One question pertaining to memory and one to language were perceived as ambiguous and further adapted according to participant suggestions.

### Consequences

This research resulted in an ACE-III for the British Urdu speaking population that is being psychometrically validated. This can also lead to developing adapted versions of the ACE-III Urdu for other cultures and other language versions with the same culture. The methodology can also be used for developing guidelines for and culturally adapting not just other cognitive tests but health measures in general.

### Funding Acknowledgement

## 3E.4a

### A qualitative study of interprofessional collaborative practice in community based dementia care in Scotland and Japan - the nurse perspective

Presenter: Yui Wakabayashi

Authors: Mina Suematsu<sup>1</sup>, Noriyuki Takahashi<sup>1</sup>, Kentaro Okazaki<sup>1</sup>, Etsuko Fuchita<sup>2</sup>, Manako Hanya<sup>3</sup>, Keiko Abe<sup>4</sup>, Masafumi Kuzuya<sup>1</sup>, Morag McFadyen<sup>5</sup>, Sundari Joseph<sup>6</sup>, Lesley Diack<sup>5</sup>

### Institutions

- <sup>1</sup> Nagoya University Graduate School of Medicine, Japan,
- <sup>2</sup> Nagoya University School of Health Science, Japan,
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- <sup>4</sup> Critical Care Nursing, Aichi Medical University, Japan,
- <sup>5</sup> School of Pharmacy and Life Sciences, Robert Gordon University, Aberdeen, UK,
- <sup>6</sup> Learning and Development Lead at Together in Dementia Everyday and Life Story Network, UK

### Abstract

#### Problem

Japan has experienced an unprecedented growth in its numbers of elderly, and is now has to deal with the increasing problem of dementia care. Furthermore, the number of people diagnosed with dementia is increasing worldwide including in many European countries that are regarded as developed countries in dementia care. Particularly, Scotland with a similar increasing dementia demographic as Japan it is at the forefront in community based dementia care.

People living with dementia require diverse care as their symptoms worsen, therefore, interprofessional collaborative practice (IPCP) becomes essential in dementia care. The nurse is often perceived as the significant profession in dementia care teams because of their involvement at various stages.

In this study, we aim to identify the features of IPCP implemented in community based dementia care in Scotland and Japan.

## Approach

This was a qualitative study which interviewed key stakeholders in dementia care in Scotland and Japan, including nurses. Participants were recruited through convenience purposive sampling within community based dementia care. Interviews included the following questions "Can you explain about the team you work in and different professions involved in caring for people living with dementia?" "Is there any professions you would like to see involved?" The transcriptions were analysed using the qualitative data analysis method, "Steps for Coding And Theorization" (SCAT). This study was approved by the Ethics Committee of Nagoya University School of Medicine and Ethics Review Committee of each collaborative research facility.

## Findings

From the analysis differences between the processes for community based dementia care emerged both countries had a degree of collaborative practice but each had elements that were not ideal. In Scotland, the situation could at times have duplication of resources that could be considered to be a problem, however in some areas the care for patients by each profession became more mature and was carried out with "clear-boundary collaboration". In Japan, there was no connection among healthcare professions and this was considered to be a problem which could be solved by strengthening their teamwork. The paradigm for collaborative practice in Japan was "vague-boundary collaboration".

## Consequences

One reason for the differences was that the Scottish are developing an integrated health and social care system based on collaborative practice which encourages pragmatism in care while the Japanese focus on the emotional side. By identifying the differences between the two countries, and analysing patient care needs in dementia care, interprofessional collaboration was considered to be the most appropriate method for care in each country. Included in the research was the sharing of knowledge on the socio-cultural and health care backgrounds of both countries. It is hoped that the comparison of two diverse countries approach to community based dementia care can inform the development of quality dementia care worldwide.

## Funding Acknowledgement

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## 3E.4b

### Co-research and involvement of people living with dementia in health services research: Lessons and reflections for primary care

*Presenter: Faraz Ahmed*

*Authors: Hazel Morbey, Andrew Harding, Caroline Swarbrick, John Keady, Siobhan Reilly*

## Institutions

Lancaster University, University of Manchester

## Abstract

### Problem

There are increasing calls for dementia related research in primary care. Inclusion of people living with dementia in dementia research

continues to be advocated. Yet, seldom has the shift from research on, to research with, people living with dementia transpired. The CO-research INvolvement and Engagement in Dementia or COINED model forms part of the work of the Neighbourhoods and Dementia Study and is a unique and positive feature of the our study. The term 'co-researcher' reflects collaborative, co-operative and community-based partnership between groups of people living with dementia, academic researchers and service providers. We capitalised on opportunities to facilitate the unique involvement of people living with dementia within a multi-level, mixed method study conducted in the complex environment of NHS acute hospitals. We will present our insights and reflections learned for health services research as a whole, including aspects critical to co-research in primary care.

## Approach

We utilised a mixed methods research design, that included a cohort study, Hospital Episode Statistics and health economics analysis, as well as primary data collection. These data included survey data at organisational and staff levels, and qualitative data gathered through a multi-hospital case study approach. A systematic review of literature identified contextual factors, mechanisms, interactions, facilitators and barriers to dementia training in the hospital setting. Across each of the study phases, we have facilitated the involvement of people living with dementia as co-researchers, guided by the COINED model of co-research. In this presentation, we focus on our co-research approach and facilitation.

## Findings

Our co-researchers were involved in study design, survey development (organisational and staff level), participation in case study site visits, and qualitative data analysis. We worked with local memory cafes in the community to hold group discussions and one to one consultations. In this presentation, we outline these areas of involvement and focus on the inclusion and participation of people living with dementia in our study in the following ways: • Consultation and feedback on the choice of participants, question domains for study surveys, and the focus of qualitative interview tools; • Conducting hospital case study visits with people living with dementia from the community in each site, for 'real-time collaborative co-research analysis'; • Co-research data analysis workshop, and development of an initial logic model through the systematic review.

## Consequences

These areas of involvement enhanced the inclusion of the perspectives of people living with dementia and ensured a fuller exploration and understanding of data, and interpretation of these data within our theoretical and thematic analysis frameworks. Importantly these opportunities of involvement facilitated the unique representation of people living with dementia in a multi-level, mixed method study conducted in the complex environment of NHS Trusts, and relate to the different levels of health and social care.

## Funding Acknowledgement

We gratefully acknowledge all the contributions made to DEMTRAIN by the study co-researchers.

The support of the Economic and Social Research Council (ESRC) and National Institute for Health Research (NIHR) is gratefully acknowledged. Work Programme 5, Developing the evidence base for evaluating dementia training in NHS hospitals, forms part of the ESRC/NIHR Neighbourhoods and Dementia mixed methods study [www.neighbourhoodsanddementia.org] under grant: ES/L001772/1

### 3E.4c

## What are the predictors and patterns of antipsychotic drug use in people with dementia?

*Presenter: Hayley Gorton*

*Authors: Tjeerd Van Staa, Bruce Guthrie, Daniel Morales, Anthony Avery, Darren Ashcroft*

### Institutions

HG, TvS, DM: The University of Manchester; AA: Nottingham University; DM: Dundee University; BG: Edinburgh University

### Abstract

#### Problem

Antipsychotic Drugs (APDs) are sometimes used to treat behavioural and psychological symptoms of dementia, despite warnings to restrict their use due to associations with serious harm. To better interpret these risks, it would be helpful to know more about the patterns of APD use or factors that influence APD initiation and persistence. We therefore aimed to describe these in relation to history of psychosis.

#### Approach

We used the Clinical Practice Research Datalink to delineate a prevalent dementia cohort between 01/01/1998-12/31/2017 without prior APD prescription. We estimated the association of previous mental health diagnoses, treatments, demographics and care home residence status with APD initiation, in relation to history of psychosis, using logistic regression models. In stage 2, we restricted the cohort to new-users of APD and began follow-up on this date. We used summary statistics to describe patterns of APD use. Using cox-proportional hazards models, we estimated the persistence of individual APDs and any APD in relation to history of psychosis.

#### Findings

Of 104,170 individuals with prevalent dementia, 21,814 (20.9%) were new-users of APDs. Ninety percent of these did not have a record of psychosis. Prior diagnosis of depression or anxiety was associated with APD prescription. Prior prescription of antidepressants, benzodiazepines or z-drugs in the previous 12 months increased the likelihood of APD use whereas opioids or anti-dementia drugs reduced it. Referral to specialist psychiatric or geriatric care was associated with APD use in those with (OR 2.67, 95%CI 2.41-2.96) and without (OR 2.01, 95%CI 1.93-2.08) history of psychosis. People who were in care home residence were less likely to be prescribed APDs than those who were not (psychosis: OR 0.79, 95%CI 0.70-0.89; no psychosis: OR 0.84, 95%CI 0.81-0.87). In stage 2, the most commonly prescribed APDs were risperidone (20.6%), quetiapine (18.2%) and haloperidol (15.0%). Compared to risperidone, those initiated with quetiapine (OR 0.73, 95%CI 0.69-0.77) were less likely to have a single exposure period without reintroduction. The converse was true for haloperidol (OR 1.55 95%CI 1.47-1.63). People with a history of psychosis were less likely to have a single continuous exposure to APDs without reintroduction, than those without (OR 0.81, 95%CI 0.77-0.86). For individuals who were re-exposed to APDs, on average, two months elapsed until the first reintroduction, but there was large variation (55 days, IQR 18-190 days).

#### Consequences

We have identified certain factors that predict APD initiation and persistence. By providing a clear understanding of drug utilisation and predictors of drug initiation and discontinuation, we will help target future interventional studies to minimise potentially inappropriate APD use in people with dementia in community settings.

### Funding Acknowledgement

This study was funded by the National Institute for Health Research through a Programme Grant for Applied Research. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR, or the Department of Health and Social Care. The funders had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

### 3F.1

## Developing Patient-Centred diagnosis as a tool for the new clinical generalist

*Presenter: Joanne Reeve, George Freeman, Norbert Donner-Banzhoff*

*Authors: Joanne Reeve, Hull York Medical School George Freeman, Imperial College London Norbert Donner-Banzhoff, Marburg*

### Institutions

### Abstract

Diagnosis is exceptionally challenging in primary care. Most serious conditions are rare and most of their symptoms have common and innocuous meanings. Hypothetico-deductive reasoning has become the normative model for clinical practice – applied in primary and secondary care settings despite the differences in epidemiology and presented problems. Drawing on research from clinical reasoning, education and cognitive psychology, Donner-Banzhoff (Ann Fam Med 2018;4:353-358) describes a new model of inductive foraging as an efficient and effective method for clinical practice in the ‘uncertain’ context of primary care. Work that recognises active listening is not just kindness but improves diagnostic yield and efficiency; and that ‘pattern failure’ rather than ‘pattern recognition’ is the dominant mode of discovery in the opening of consultations; rather than the active deductive reasoning commonly taught. A small, but growing body of empirical work highlights a need to look again at diagnostic practice and clinical reasoning – with implications for how we understand professional roles, and train clinicians (both medics and the extended primary healthcare workforce.)

This workshop will introduce Donner-Banzhoff’s work through a critical discussion that considers the implications for educating primary care clinicians (including the new SAPC-RCGP curriculum); scholarship and professional identity; and the (re)design of primary care services. The audience will be invited to challenge emerging proposals and so identify the key education, research and scholarship questions and tasks emerging. In the second half of the workshop, participants will work in small groups to develop solutions to the emerging tasks. We will conclude by setting an action plan and timeline for SIG working groups to take this agenda forward.

The session will be useful for educationalists working on training the future workforce; researchers interested in professional practice, clinical decision making, educational research and workforce; and generalist clinicians looking for ideas ‘beyond experience’ to guide them to more effective diagnosis.

### Funding Acknowledgement

## 3G.1

### How can decision modelling help us to evaluate the clinical- and cost-effectiveness of diagnostic strategies in primary care?

*Presenter: Sam Merriel et al*

*Authors: Sam Merriel, Brian Nicholson, Beth Shinkins, Sarah Price, Marije van Melle, Jan Verbakel, Monica Koo, Anne Spencer*

#### Institutions

Sam Merriel, University of Exeter Brian Nicholson, University of Oxford Beth Shinkins, University of Leeds Sarah Price, University of Exeter Marije van Melle, University of Cambridge Jan Verbakel, University of Oxford Monica Koo, University College London Anne Spencer, University of Exeter

#### Abstract

Aim and intended outcome/educational objectives

This workshop aims to raise awareness among clinicians and primary care researchers of the potential application of decision modelling to improving diagnosis in primary care, using cancer as a disease model.

After attending this workshop, delegates will:

1. Understand how decision modelling can be used to evaluate both clinical- and cost-effectiveness of novel diagnostic strategies for cancer in primary care
2. Reflect on how we can better capture and understand the management of a patient who is not referred to secondary care based on a negative test result
3. Understand the important role of clinicians and patients in the development of decision models to ensure they reflect 'real-world' clinical practice

#### Format

This interactive workshop will begin with a brief introduction of the new SAPC Cancer SIG. A short presentation will be followed by facilitated small group discussions. A wider group discussion with brief presentations from the small groups, and summarising from the organisers will conclude the session. The outline programme is as follows:

Welcome and SAPC Cancer SIG Introduction

Principles of decision modelling

Small group case discussions

Whole group discussion

Questions and wrap up

Content

The workshop will commence with an introduction of the new SAPC Cancer SIG, its aims, and avenues for membership. A brief presentation from the workshop organisers will outline decision modelling principles and their relevance to evaluating primary care diagnostic strategies. Cancer will be used as an exemplar, making use of the SIG committee's expertise. Participants will then be divided into smaller groups to review different aspects of the cancer diagnostic pathway as they relate to primary care, using case studies. Facilitated by the workshop organisers, the small groups will consider how decision modelling could help to quantify both the short- and long-term harms and benefits of novel diagnostic strategies. The small groups will be asked to nominate a speaker to briefly report back on their case study

and a summary of their discussions to the wider group. This discussion will be led by the workshop organisers to reinforce the key learning points.

#### Intended audience

Clinicians and primary care researchers with an interest in methods for evaluating diagnostic strategies in primary care. Those interested in diagnostic pathways of cancer in primary care will also gain an understanding of decision modelling.

#### Funding Acknowledgement

## 4A.1

### Development and evaluation of a prescribing e-Learning package for GPs

*Presenter: Rexhep Hysenagolli*

*Authors: Richard Knox, Tony Avery, Ndeshi Salema, Rexhep Hysenagolli, Brian Bell, Gill Gookey, Kate Marsden, Glen Swanwick*

#### Institutions

University of Nottingham

#### Abstract

##### Problem

Healthcare organisations are committed to reducing prescribing errors due to their resultant impact on morbidity and mortality. The GMC PRACtICE study identified errors in one in 20 prescription items from UK general practice and highlighted therapeutic training as one of the factors contributing to such errors. An e-learning package was developed, which highlighted lessons learned from the PRACtICE study.

##### Approach

The e-learning package, which went live on the RCGP e-learning site in January 2014, consists of five modules: appropriate drug selection, avoiding prescribing errors, choosing the right drug, providing the right dose instructions and performing effective medication reviews. Users were asked to complete a 13-question multiple choice quiz based on prescribing safety both before and after completing the e-learning. Additionally, users were invited to complete a detailed on-line feedback questionnaire consisting of three sections: demographic information about the user, exploration of 'lessons learned' from the course, and feedback regarding the process of taking part in the e-learning course. Quantitative data from e-learning users and the participants of the detailed on-line feedback questionnaire were downloaded into excel files. Descriptive statistical output was facilitated by SPSS.

##### Findings

From January 2014 until September 2017, 2805 unique users had engaged with the on-line learning course by completing the pre-test or the post-test quiz. Both pre and post-tests were completed by 1733 users (61.8%). A paired samples t-test showed a significant difference in the scores for post-test ( $M=7.80$ ,  $SD=1.156$ ) and pre-test ( $M=6.06$ ,  $SD=1.307$ );  $t(1732)=54.294$ ,  $p<0.01$ . Hence, the mean post-test score was found to be significantly greater than the mean pre-test score. Most of the 765 users who completed the on-line feedback questionnaire were either GPs (601, 78%) or GP Associates-in-Training (88, 11.5%). The majority of responders either agreed or strongly agreed that the e-learning had increased their knowledge of prescribing (748/765, 98%). A similar majority of users either agreed or strongly agreed that the modules had improved their skills required in order to prescribe

safely (735/765, 96%). Most of the users agreed or strongly agreed that the course had been a useful part of their continuous professional development (750/765, 98%). Those completing the feedback questionnaire also detailed how their practice had been changed as a result of completing the e-learning. Ways in which the e-learning could be improved were also proffered.

### Consequences

Initial analysis of user data from the e-learning course gives strong support for the efficacy of the learning package. The analysis of the full set of quantitative data and thematic analysis of the free text data will be presented at the conference. Outlining reported changes in practice will be of particular interest, as it is often very difficult to measure the potential 'impact' of an e-learning package.

### Funding Acknowledgement

1. NIHR Greater Manchester Patient Safety Translational Research Centre (Greater Manchester PSTRC)
2. Medical Defence Union (MDU)

## 4A.2

### Medication review in primary care: a patient-user perspective

*Presenter: Deborah McCahon*

*Authors: Dr Rupert Payne, Dr Polly Duncan, Dr Jeremy Horwood*

### Institutions

Centre for Academic Primary Care, University of Bristol

### Abstract

#### Problem

Within the NICE guidelines for medicines optimisation, regular medication review is recognised as a key priority for implementation and mechanism for making medicines optimisation part of routine practice. NICE define medication review as a 'structured, critical examination of a person's medicines with the objective of reaching an agreement with the person about treatment, optimising the impact of medicines, minimising the number of medication related problems and reducing waste'. To date there has been little investigation of the patient perspective of medication review as undertaken in primary care. This study aimed to explore patient attitudes to and experiences of medication review with a GP or pharmacist in general practice including the processes and activities that led up to and shaped the review. Such understanding will help to direct the development of medication review as a resource to improve patient outcomes.

#### Approach

Semi-structured interview study. Seven practices in the Bristol area were purposively sampled to achieve diversity in participants and a range of experiences and perspectives of medication review. Practices identified community dwelling adults receiving at least four repeat prescription medications for a minimum of two long-term conditions who had a recent record (within the preceding 8 weeks) of medication review in their notes. Audio-recordings of the interviews were transcribed, anonymised and analysed thematically utilising a data-driven inductive approach.

#### Findings

Twenty-one patients (ten female), (aged 59-88) were interviewed. Around half of patients lacked awareness that they had recently

received a medication review. Several of the patients who recalled their review, perceived medication review as a tick box exercise that the practice needed to conduct as part of the process of repeat prescribing. Others valued medication review as opportunity for reassessment of the need for drugs which had been on repeat prescription for a long time and/or to seek reassurance regarding drug-drug interactions. Patients who had no previous experience of medication review, reported feeling unprepared and suggested that they would have benefited from having more information about the scope and nature of a medication review.

### Consequences

Findings provide a valuable insight into the ways in which official guidelines for medicines optimisation are being applied and enacted within general practice from the perspective of the patient. To ensure patients are informed and prepared for an active role in these clinician-patient encounters, good communication before and during the review is essential. Additional data related to motivation to attend medication review and challenges to involvement in discussion and decision making around the use of medicines during such reviews will be provided. Future research and innovation in primary care will be discussed.

### Funding Acknowledgement

This research was funded by the Scientific Foundation Board of the Royal College of General Practitioners (Grant No SFB 2017-16).

## 4A.3

### What types of recommendations do pharmacists make, do GPs action them and do they reduce complexity? Findings from the 3D Study

*Presenter: Polly Duncan*

*Authors: Line Guenette, Debbie McCahon, Daisy Gaunt, Jack Collins, Shuip Kobeci, Margaret Watson, Chris Salisbury.*

### Institutions

University of Bristol (PD, DM, DG, CS), University of Bath (MW), University of Reading (SK), University of Sydney (JC), University of Laval (LG)

### Abstract

#### Problem

In UK General Practice, there is a trend for practices to employ a pharmacist as part of their primary care team. Research into how best to utilise their skills is lacking. This was a sub-study of the 3D Study, a randomised controlled trial for patients with multimorbidity (three or more long term conditions, mean age 71 years). As part of the intervention, one of nine pharmacists reviewed patients' GP computer records, conducted a remote medication review and made up to four recommendations for the GP to discuss with the patient. We explored the reasons why the 3D intervention had no effect on the number of drugs prescribed and examined the impact of the intervention on medication regimen complexity. The study aimed to:

- (i) categorize the types of recommendations made by the pharmacists and the reasons for the recommendations;
- (ii) examine what proportion of recommendations were actioned by GPs; and
- (iii) assess whether medication regimen complexity reduced in those receiving the intervention in comparison with usual care

## Approach

Phase II Two coders independently coded the free text of each pharmacist recommendation using an adapted version of the validated PharmDISC framework. The type of intervention (e.g. stop/switch) and the reason for the intervention (e.g. cost, safety) were coded. Discrepancies between the two coders were identified and discussed with the wider team where consensus could not be agreed. The framework and coding rules were updated iteratively. Phase II to assess whether the recommendations were actioned by the GPs, we focused on recommendations which advised a change in prescribing. We examined the prescribing data between the date of pharmacist review and 90 days after GP review. Phase III Medication Regimen Complexity Index (MRCI) scores were calculated for patients in the intervention and usual care arms of the study at baseline, 6 and 15 months follow-up.

## Findings

609/797 (76%) of intervention patients had a pharmacist review for whom 115/609 (19%) no pharmacist recommendation was made. Of 1100 recommendations made, 218 (20%) were either vague, indirect or a question. The most common interventions were to stop/reduce a medication (26%), switch a medication within the same class (18%) or 'review' a medication (16%). Of the recommendations advising changes to prescriptions, over half were not actioned by the GPs. Analysis of MRCI scores will be complete by July 2019.

## Consequences

A high proportion of pharmacist recommendations were vague or indirect and over half of the recommendations that advised a change in prescribing were not actioned by the GPs. This explains why the 3D intervention had no effect on the number of medications prescribed. It is possible that the 3D Study intervention improved the medication complexity (e.g. the number of doses per day). Findings from the analysis of MRCI scores will be presented.

## Funding Acknowledgement

The 3D Study was funded by the National Institute for Health Research (NIHR) Health Services and Delivery Research Programme (project number 12/130/15). Dr Polly Duncan is a NIHR In-Practice Fellow (IPF-2016-10-05).

## 4A.4

### Socio-cultural influences on antibiotic prescribing in China & England: comparative qualitative study

*Presenter: Christie Cabral*

*Authors: Meixuan Chen, Jing Chai, Jing Cheng, Xingrong Shen, Debin Wang, Helen Lambert*

## Institutions

Centre for Academic Primary Care & Health Protection Research Unit, Bristol Medical School, University of Bristol; Anhui Medical University, China

## Abstract

### Problem

Antimicrobial resistance (AMR) is a global health problem, driven largely by over use of antibiotics. China is one of the leading consumers of antibiotics in humans among Low and Middle Income Countries and is seeking to address this issue through antimicrobial stewardship policies. This research was part of a large inter-disciplinary study investigating drivers of antibiotic use for common infections and

community prevalence of antimicrobial resistance. This study reports on a comparative analysis of socio-cultural influences on antibiotic prescribing in contrasting global contexts.

## Approach

In China, we conducted ethnographic observations and semi-structured interviews in village and township health facilities in four rural counties in central China. We interviewed 18 health care professionals (HCP) and 61 patients about understanding of antibiotics and AMR, treatment-seeking, and antibiotic use. We observed health care encounters and the prescribing and dispensing of antibiotics. These qualitative data were analysed thematically to identify key drivers of antibiotic seeking, prescribing and consumption. A triangulation method was used to compare drivers identified from these data with drivers identified from qualitative work conducted in England. This identified areas of convergence (complementary findings), dissonance (conflicting findings) and silence (drivers that only operated in one context).

## Findings

The way in which health care for common infections is delivered in rural China differs from England in many ways. The medical training of HCP in our sample is very diverse; they are a mixture of state employees and private practitioners; the types of tests and treatments offered are different (IV antibiotics for RTI is not uncommon in village clinics); health care is partially paid for via government health insurance; patients can (and do) purchase antibiotics directly from pharmacies or go direct to hospital outpatients in search of care. Given these differences, it is perhaps surprising that there was much commonality. In both contexts, HCP ideas about what being a 'good doctor' entailed was a key influence on practice. This included ideas about safety, both for patients and for themselves from medico-legal consequences of not treating; HCP wanted to maintain good relationships with their patients; they believed patients expected antibiotics and felt pressure to provide them. In China, lay understandings of appropriate treatment for infections drew on Traditional Chinese Medicine ideas and ideas about the relative strength of treatments, which contrasted with lay understandings in England.

## Consequences

This cross-cultural comparison allows us to see the role of ideas about what it means to be a 'good doctor', lay illness models and norms of practice as key influences on antibiotic prescribing rates and important targets for global interventions to reduce AMR.

## Funding Acknowledgement

This study is funded by the Newton Fund, through the UK Medical Research Council (MRC) and the National Natural Science Foundation of China (NSFC).

## 4A.5

### An interrupted time series analysis of the Campaign to Reduce Opioid Prescribing primary care feedback intervention.

*Presenter: Sarah Alderson*

*Authors: Tracey Farragher, Thomas Willis, Paul Carder<sup>3</sup>, Robbie Foy*

## Institutions

Leeds Institute of Health Sciences, University of Leeds, School of Health Sciences, University of Manchester, West Yorkshire Research and Development, Bradford District CCG



## Abstract

### Problem

There is international concern over rising trends in opioid prescribing, largely attributed to prescribing for chronic non-cancer pain. Given accumulating evidence of harm, reversing the current trend in opioid prescribing would benefit a substantial at-risk population. The Campaign to Reduce Opioid Prescribing (CROP) intervention entailed sending 316 practices in West Yorkshire evidence-based, comparative and practice-individualised feedback on their overall prescribing and for patient groups at risk of long-term or strong opioid prescribing, bimonthly for 12 months from April 2016. We used population-level routine data to assess the effectiveness of an enhanced performance feedback intervention on opioid prescribing for non-cancer pain in general practice.

### Approach

We assessed the change in the rate of opioid prescribing using a controlled interrupted time series (ITS) analysis. Routinely collected data were used to assess the trends in opioid prescribing across all 311 intervention practices and compared to 135 control practices. Data were collected for the four years prior to, the year during, and the year after the intervention using monthly epochs. We examined effects on different types of opioid prescribing and particular at-risk patient groups, and whether practice or patient characteristics are associated with any intervention effects. Trends in prescribing nationally at CCG level were compared for those CCGs targeted by CROP and those who were not to see if the underlying national trend was changed by the intervention.

### Findings

In 2013, the opioid prescribing rate did not significantly differ between control and intervention practices (34.1 and 34.3 per 1000 patients per month respectively) and increased at a similar rate in both groups up until the intervention occurred. There was no statistically significant intervention effect during the first month of the intervention, nor a statistically significant reduction in the trend compared with that of controls of 0.03 prescription per 1,000 patients per month (95% CI -0.13, 0.08). However, monthly prescription rates fell significantly in intervention practices during the post intervention period by 0.05 prescriptions per 1,000 patients (95% CI -0.10, -0.01), whilst there was no significant change in control practices monthly prescription rates over the same period (-0.007; 95% CI -0.06, 0.05). Analysis of whether practice or patient characteristics are associated with any intervention effects are in progress.

### Consequences

CROP represents an effective, population-level intervention to reduce opioid prescribing. The time lag for achieving effects is consistent with the notion that repeated feedback resulted in accumulating changes in clinical behaviour. Locally, CROP reversed the current rising national trend in opioid prescribing. This low cost intervention translates into a substantial population impact and reduction in patient harm. We are not aware of any other intervention that has achieved this at scale in UK primary care.

### Funding Acknowledgement

This work was supported by funds from the Academy of Medical Sciences, Wellcome Trust, Medical Research Council, British Heart Foundation, Arthritis Research UK, the Royal College of Physicians and Diabetes UK. Academy of Medical Sciences Starter Grants for Clinical Lecturers no. SGL017\1033

## 4A.6

### Incidence, predictors, and prognostic impact of bleeding after hospital discharge following acute coronary syndrome: A cohort study within the Clinical Practice Research Datalink.

*Presenter: Nafiu Ismail*

*Authors: Kelvin Jordan, Umesh Kadam, Mamas Mamas.*

### Institutions

Nafiu Ismail, Kelvin Jordan, Mamas Mamas - Centre for Prognosis Research, Research Institute for Primary Care & Health Sciences, Keele University, Keele Staffordshire, ST5 5BG, UK; Umesh Kadam - Department of Health Sciences, University of Leicester, Leicester, United Kingdom.

## Abstract

### Problem

**Background** – The secondary management of acute coronary syndrome (ACS) with antithrombotic medication achieves the desired goal of reducing adverse ischaemic events, albeit at the expense of increased bleeding complications. The incidence and prognostic impact of major bleeding has been well-characterised within the clinical trial setting. However, little is known about the extent of these bleeding events post-hospital discharge. **Objective** – To determine the incidence, predictors and prognostic impact of bleeding on all-cause mortality post-hospital discharge post ACS.

### Approach

We used the Clinical Practice Research Datalink (CPRD), with linkage to Hospital Episode Statistics (HES), to identify patients with ACS diagnosis between 2006 and 2016. Patients were followed from date of hospital discharge for records of bleeding consultations post ACS. The incidence, timing, and types of bleeding events within 12 months of hospital discharge were determined. We assessed independent associations between post-discharge bleeding and baseline patient characteristics using a competing risk model, accounting for the death as a competing event. The association of bleeding with all-cause mortality was assessed using a standard Cox model.

### Findings

Among 27,660 patients surviving to hospital discharge, 3,620 (13%) experienced bleeding complications at a median time of 123 days (IQR: 45, 223) post-hospital discharge. The incidence of bleeding within 12 months of hospital discharge was 162/1000 persons years. Bruising (26%) was the most common type of first bleeding event, followed by gastrointestinal bleed (19%). Significant predictors of post-discharge bleeding included prior history of bleeding complication, oral anticoagulant prescription, history of peripheral vascular disease, chronic obstructive pulmonary disease, and advanced age >80 years. Bleeding increased the risk of all-cause mortality post hospital discharge for ACS.

### Consequences

Bleeding complications post-hospital discharge are common within the primary care setting, and carry a greater risk of mortality. Patients who experience these bleeding events have distinct baseline characteristics. These characteristics can inform risk-benefit considerations in deciding on favourable combination and duration of secondary antithrombotic therapy.

## Funding Acknowledgement

This study was supported by the North Staffordshire Medical Institute 50th Anniversary Award.

### 4B.1

## Comparative efficacy of exercise and anti-hypertensive pharmacological interventions in reducing blood pressure in people with hypertension: A network meta-analysis

Presenter: Andrew W. Murphy

Authors: C Noone, J Leahy, E Morrissey, J Newell, M Newell, CP Dwyer, J Murphy, F Doyle, GJ Molloy.

### Institutions

NUI Galway, RCSI.

### Abstract

#### Problem

Hypertension is the leading preventable causes of premature morbidity and mortality globally. Recently updated European guidelines are circumspect regarding the perceived efficacy of exercise. This may be because the evidence base underpinning the efficacy of anti-hypertensive medications is well-established with a perceived relative lack of evidence for exercise. We therefore aimed to determine the comparative efficacy of anti-hypertensive medication and exercise interventions on blood pressure reduction in people with hypertension.

#### Approach

A systematic review was conducted focusing on randomised controlled trials of exercise interventions and first-line anti-hypertensive pharmacotherapy interventions where BP reduction was the primary outcome in those with hypertension. Network meta-analyses were conducted to generate estimates of comparative efficacy of each intervention class in terms of reduction of the primary outcomes: systolic and diastolic BP.

#### Findings

We identified 93 RCTs with a total of 32,404 participants which compared placebo or usual care to first-line antihypertensive interventions and exercise interventions. Of these, there were 81 (87%) trials related to anti-hypertensive medication with 31,347 (97%) participants and 12 (13%) trials related to exercise with 1,057 (3%) participants. The mean age of the study participants ranged from 39 to 69.9 years. The mean SBP ranged from 125 mmHg to 193 mmHg, while the mean DBP ranged from 72.8 mmHg to 166 mmHg. The studies formed a connected and consistent network of evidence. For both SBP and DBP, there was not sufficient evidence to suggest that first-line pharmacotherapy interventions significantly reduced BP to a greater extent than did the exercise interventions.

#### Consequences

The current limited evidence base with a bias towards medication research justifies, perhaps, the circumspection of the European guidelines regarding the efficacy of exercise. In the meantime individual clinicians may justifiably consider trials of exercise for low risk patients who confirm their interest in such an approach.

## Funding Acknowledgement

Irish Research Council

### 4B.2

## Can a local intervention for quality improvement for AF and hypertension work better than QOF? A controlled before-after study

Presenter: Timothy Smith

Authors: Christopher Fell, Harmony Otete, Umesh Chauhan

### Institutions

University of Central Lancashire - Timothy Smith, Harmony Otete, Umesh Chauhan, University of York - Christopher Fell

### Abstract

#### Problem

Evidence in favour of using financial rewards to bring about quality improvement in primary care is generally inconsistent, often short-lived, and comes from data with unreliable control comparisons. The biggest and best-known reward scheme is QOF, which has proved unpopular with surgeries, and has some negative effects on care. East Lancashire CCG has run a local quality framework for general practice since 2016/7 designed to improve standards and diagnosis in AF and hypertension, for a fixed amount per head of population, rather than the sliding remuneration scale used by QOF. Participating surgeries appointed surgery leads for AF and hypertension, produced their own protocols, and attended quarterly workshops where they reflected with peer groups on protocols and data. The first year's data presented at last year's conference showed a significant increase in recorded prevalence of AF and optimal anticoagulation management but no significant benefit in hypertension measures. We have analysed the second year's data to see whether they showed the same effects.

#### Approach

This study used published QOF data to compare those surgeries taking part in the intervention (n=57) to controls in the rest of England (n=7243). It adopted a controlled before-after approach, which looked at the primary outcome measures of change in mean recorded prevalence of AF and hypertension at surgery level after 24 months, compared to before the intervention. Secondary measures looked at additional outcomes as indicators of quality of management.

#### Findings

In primary outcome measures, independent T tests showed a significant benefit for the intervention group in the mean increase in recorded hypertension prevalence (0.59%) compared to the controls (0.20%),  $p=0.004$ , although the mean increase in AF prevalence (0.26%) compared to controls (0.20%) was non-significant,  $p=0.168$ . There was a significant increase in patients  $\geq 45$  years having an up-to-date BP in the past 5 years in the intervention group (0.55%) compared to controls (0.23%),  $p=0.002$ . The mean increase in percentage of patients with optimal anticoagulation management (previous/current CHA2DS2-VASc  $\geq 2$  and anticoagulated, or CHA2DS2-VASc  $< 2$  in past 12 months), was significantly more in the intervention group (9.58%) than in controls (5.99%),  $p < 0.001$ .

#### Consequences

There have been ideas in recent times about what alternatives or accompaniments to QOF might best improve outcomes for patients. This study demonstrates how a funded quality framework designed to meet local needs, can engage local primary care providers and improve patient outcome measures, without the need for financial incentives for hitting specific targets. Potentially, it offers an alternative,

more successful method for funding quality improvement within existing services. However, similar to findings of some earlier quality-improvement schemes that demonstrated only short-lived benefits, there are suggestions that long-term benefits can be difficult to maintain, as the significant increase in recorded AF prevalence seen after 12 months was not continued by 24 months.

#### Funding Acknowledgement

### 4B.3

#### Apparent treatment resistant hypertension in primary care: the feasibility of assessing adherence to therapy with mass spectrometry-urine analysis in combination with ambulatory blood pressure monitoring.

*Presenter: Andrew Murphy*

*Authors: Peter Hayes, Monica Casey, Liam G Glynn, Gerard J Molloy, Hannah Durand, Eoin O' Brien, Eamon Dolan, Kishor Das, John Newell, David Finn, Brendan Harhen, Ann Conneely, Andrew W Murphy.*

#### Institutions

NUI Galway/ UL-GEMS

#### Abstract

##### Problem

Apparent treatment resistant hypertension (aTRH) is defined as poorly-controlled blood pressure (BP) in patients taking three or more anti-hypertensive medications (one of which must be a diuretic). The term apparent is used because some patients will have true treatment resistant hypertension, some undiagnosed secondary hypertension, whilst others are pseudo-resistant. Pseudo-resistance occurs when non-adherence to medication, white coat hypertension (WCH), lifestyle and inadequate drug dosing are responsible for the poorly controlled BP.

Our aim is to determine among patients with aTRH in primary care, the feasibility of using mass spectrometry-urine analysis combined with ambulatory blood pressure monitoring (ABPM) to examine pseudo-resistance.

##### Approach

For this purpose, 453 patients with aTRH, from a baseline population of 45,788 persons, in fifteen university-research affiliated general practices were invited to participate. Eligible patients underwent mass spectrometry-urine analysis to test adherence to medications and ABPM.

##### Findings

In total, 235 urine samples underwent mass spectrometry-urine analysis confirming feasibility. Of these, 174 (74%) patients were fully adherent, 56 (24%) partially adherent, and 5 (2%) fully non-adherent. ABPM reports were also analysed (n=206) and 58 (28%) patients had WCH. No significant associations were found between adherence and socio-demographics, drug class, or BP.

##### Consequences

Pseudo-resistance is common, and mass spectrometry-urine analysis combined with ABPM is feasible in primary care. This unique approach may well yield savings for healthcare programs through maximizing BP control in high risk populations and improving prognosis. Further research on how to incorporate this approach into individual patient consultations and its associated cost-effectiveness is now appropriate.

#### Funding Acknowledgement

HRB-Ireland, ICGP-Career Support Grant

### 4B.4

#### Inter-arm blood pressure difference: insights into aetiology from the INTERPRESS-IPD collaboration

*Presenter: Christopher Clark*

*Authors: Fiona C Warren, Kate Boddy, Sinead TJ McDonagh, Sarah Moore, Lyne Cloutier, Rod S Taylor, Angela C Shore, Richard J McManus, Victor Aboyans, John L Campbell*

#### Institutions

University of Exeter College of Medicine & Health, UK. Université du Québec à Trois-Rivières, Canada. Nuffield Department of Primary Care Health Sciences University of Oxford. Department of Cardiology, Dupuytren University Hospital, France

#### Abstract

##### Problem

Differences in systolic blood pressure (BP) between arms are associated with excess mortality and cardiovascular events. Inter-arm difference (IAD) has been attributed to both subclavian stenosis and to arterial stiffening. These conditions share common risk factors but the patho-physiological basis of IAD has not been clearly established. We explored cross-sectional associations of systolic IAD within the large INTERPRESS individual participant data (IPD) Collaboration to gain further insight.

##### Approach

The INTERPRESS-IPD Collaboration pooled records for 57,434 participants across 24 studies from Europe, North America, East Asia and Africa. Using hierarchical IPD linear regression with random effects for study, we performed univariable and multivariable models, examining cross-sectional associations of IAD with known markers of cardiovascular risk, and with cardiovascular risk scores. IAD was based on a single sequential pair of BP readings. Models were compared using Aikeke's information criterion (AIC) and likelihood ratios (LR). Analyses were undertaken using Stata v15.0.

##### Findings

Mean age of participants was 60.3 (Standard deviation 12.5); 47% were female and mean BP was 138.3/80.9 (21.8/11.8). The majority ethnicity was White (69.8%) followed by African American (5.5%) and Hispanic American (3.4%). Based on a single pair of measurements, prevalences of systolic IAD  $\geq 10$  mmHg and  $\geq 15$  mmHg were 28.2% and 11.1%. Complete case data existed for 43,488 participants from 22 cohorts. Ankle brachial index (ABI) was negatively correlated with IAD: coefficient -0.69mmHg of IAD per 0.1 increment of ABI (-0.74 to -0.65;  $p < 0.001$ ). QRISK2, ASCVD and Framingham cardiovascular risk scores were positively correlated with IAD: coefficients 0.06 (0.06 to 0.07;  $p < 0.001$ ), 0.07 (0.06 to 0.08;  $p < 0.001$ ) and 0.06 (0.05 to 0.06;  $p < 0.001$ ) per 1mmHg increment of IAD respectively.

On multivariable modelling, magnitude of IAD was positively associated with smoking ( $p = 0.04$ ), age ( $p = 0.05$ ), body mass index ( $p < 0.001$ ), systolic BP ( $p < 0.001$ ) and hypertension ( $p < 0.001$ ). IAD was lower for African American ( $p = 0.04$ ) and Hispanic American ( $p < 0.001$ ) participants compared to White ethnicity, and lower for men than women ( $p = 0.02$ ).

Using all available case data the multivariable model was confirmed. Goodness of fit improved on taking account of pre-existing cardiovascular disease (LR  $p = 0.004$ ;  $n = 41,664$ ), with addition of pulse pressure (LR  $p < 0.001$ ;  $n = 33,844$ ) or on adjustment for renal disease (LR  $p < 0.001$ ;  $n = 15,541$ ). AIC was non-discriminatory between models.

## Consequences

This large multivariable analysis confirms the independent cross sectional association of systolic IAD with recognised cardiovascular risk markers, and with internationally used cardiovascular risk scores. Findings are consistent with the hypothesis that IAD reflects pathological change in the circulation. The factors correlated with IAD are associated with both arterial stiffening and with occlusive arterial disease; it is likely that both processes make a contribution to the aetiology of IAD. These findings support further hypothesis generation and justify studies aimed to elucidate the full aetiology of IAD.

## Funding Acknowledgement

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## 4B.5a

### Routinely recorded blood pressures and prognosis in older adults

*Presenter: Jane Masoli*

*Authors: JOAO DELGADO, W. DAVID STRAIN, WILLIAM HENLEY, DAVID MELZER*

#### Institutions

University of Exeter Medical School; Royal Devon and Exeter NHS Foundation Trust

#### Abstract

##### Problem

RCTs have provided evidence that aiming to lower Systolic Blood Pressure (SBP) to <120mmHg in selected older adults free from frailty is associated with improved cardiovascular and mortality outcomes. However, outcomes in routine care are less clear, especially on prognosis in older adults with frailty or with co-existing Chronic Kidney Disease (CKD). To work towards a more personalised approach to BP management in older adults, we must understand the implications of frailty status or co-existing conditions on prognosis.

We aimed to estimate the association of BP with cardiovascular and mortality outcomes in older adults with treated hypertension, those with CKD and by frailty status.

##### Approach

The 3 prospective observational studies presented used primary care clinical records from the Clinical Practice Research Datalink, linked to hospital and death certification data. Median SBP recorded in primary care during 3 years before study entry represented baseline SBP. The studies investigated: adults over 80 with diagnosed hypertension, adults over 60 with CKD 3 or 4 and adults over 75, stratified by baseline electronic frailty index (eFI) frailty status. Outcomes were incident cardiovascular events (myocardial infarction, heart failure, stroke) and all-cause mortality during follow-up. We used Cox proportional hazards models to estimate associations between baseline SBP and mortality and Fine and Gray competing risk models for cardiovascular outcomes, with all-cause mortality as the competing risk.

##### Findings

Results:

The studies included 79,376 with diagnosed hypertension, 158,713

with CKD and 415 980 for frailty stratification respectively. We showed increased incident cardiovascular outcomes with baseline hypertension in all studies as expected.

However, all-cause mortality did not follow the same pattern. Consistently across all 3 studies there was worse prognosis with lower baseline SBP: eg. all-cause mortality HR 1.25 SBP <135 mmHg, 95% confidence interval 1.19-1.31 for 80+ hypertension compared to 135 to 145mmHg reference, in CKD 3 and 4 higher HR mortality in 60+ years with SBP <120 compared to 130-140mmHg reference and across frailty groups higher HR mortality in 75+ with SBP <120 or 120 to 129mmHg compared to 130-140 mmHg reference.

In the frailty stratification study individuals with SBPs between 140 and 160mmHg had lower all-cause mortality during follow-up across baseline frailty status (eg. SBP 140 to 149 mmHg compared to 130 to 139 mmHg reference mild frailty Hazard Ratio (HR)=0.88, 0.86 to 0.91; severe frailty HR=0.77, 0.61 to 0.98). In those with moderate or severe frailty at baseline mortality remained lower even with SBP 160-169 mmHg at baseline.

##### Conclusions:

SBP >140 mmHg were associated with worse cardiovascular prognoses. However, this did not result in increased mortality during up to 10 years follow-up, including in severely frail groups and those with CKD.

##### Consequences

We must be cautious extrapolating results of studies in less representative participants to older adults.

Further work is required to explore optimum BP management in older adults, this may have important safety implications.

##### Funding Acknowledgement

NIHR Doctoral Fellowship DRF-2014-07-177

## 4B.5b

### Model of cardiovascular disease in people with reduced kidney function using routine healthcare data

*Presenter: Iryna Schlackow*

*Authors: Claire Simons, Jason Oke, Benjamin Feakins, Daniel Lasserson, Richard Stevens, Rafael Perera, Borislava Mihaylova*

#### Institutions

Health Economics Research Centre Nuffield Department of Population Health University of Oxford; Nuffield Department of Primary Care Health Sciences University of Oxford; Institute of Applied Health Research University of Birmingham; Blizard Institute Barts and The London School of Medicine and Dentistry Queen Mary University of London

#### Abstract

##### Problem

Reduced kidney function is associated with increased cardiovascular disease (CVD) risk. To evaluate the long-term effects and cost-effectiveness of kidney function monitoring and treatments to prevent cardiovascular events, a long-term model of CVD in people with reduced kidney function is required.

## Approach

We used a large routine individual patient primary care dataset (Clinical Practice Research Datalink, UK) linked with secondary care (Hospital Episodes Statistics, UK) and UK mortality registry data to model long-term cardiovascular outcomes and survival in people with impaired kidney function. A cohort of 1.13 million patients with at least two eGFR measurements  $<90$  mL/min/1.73m<sup>2</sup>  $\geq 90$  days apart between 2005 and 2015 was established. Information on patients' characteristics, including sociodemographic (e.g. age, gender, smoking status) and clinical factors (e.g. blood pressure, history of diabetes, cholesterol levels, urinary albumin-to-creatinine ratio), as well as, kidney function measures and CVD events, were used to model the major CVD risks (myocardial infarction (MI), stroke, hospital admission for heart failure and vascular death) using parametric survival models separately in men and women with and without prior cardiovascular disease. The covariates in models were selected using statistical information criteria and epidemiological evidence. Missing data were multiply imputed using chained equations. A Markov state disease model, developed using the separate risk equations, was validated in categories of participants by gender, eGFR (90-60; 60-45; 45-30; 30-15;  $<15$  mL/min/1.73m<sup>2</sup>) and prior CVD. External data informed annual cost and quality of life in the model. Relative risk reductions in cardiovascular events with CVD preventive treatments, informed from randomised controlled trials, were implemented.

## Findings

The patient cohort included 509,179 men (77% without and 23% with prior CVD at entry) and 630,369 women (83% without and 17% with prior CVD at entry) followed for a median of 4.9 (interquartile range 2.3-7.8) years. At baseline 74% had an eGFR of 60-90mL/min/1.73m<sup>2</sup>; 18% 45-60; 6% 30-45; 1.3% 15-30 and 0.2% less than 15mL/min/1.73m<sup>2</sup>. Six percent of patients without and 11% with CVD experienced a non-fatal stroke or MI; and 2% and 8%, respectively, died from vascular causes. In all risk equations, age, current eGFR, and, where relevant, prior CVD, were the key determinants of subsequent CVD. The model-projected CVD risks corresponded well to observed CVD risks in categories of patients and over time.

## Consequences

This new model projects long-term CVD risks, quality-adjusted survival, healthcare costs and the effects of CVD preventive interventions, and can be used to guide CKD monitoring strategies and CVD preventive treatments in people with reduced kidney function.

## Funding Acknowledgement

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## 4B.5c

### The association between intimate partner violence and cardiometabolic disease

*Presenter: Joht Chandan*

*Authors: Tom Thomas, Caroline Bradbury-Jones, Julie Taylor, Siddhartha Bandyopadhyay, Krishnarajah Nirantharakumar*

## Institutions

University of Birmingham

## Abstract

### Problem

Background: The World Health Organization estimates that intimate partner violence (IPV) affects 1 in 3 women. However, no cohort study has investigated the relationship between exposure to IPV and the development of cardiovascular disease (CVD), with few studies exploring hypertension (HTN) and type 2 diabetes mellitus (T2DM).

Objective: To identify if there is an association between IPV and the development of cardiometabolic disease.

### Approach

Methods: Retrospective cohort study using routine data from 'The Health Improvement Network' Database between 1st January 1995-1st December 2017. 18,547 adult women exposed to IPV were compared to 74,188 unexposed women matched by age and gender. The main outcomes presented as adjusted incidence rate ratios (aIRR) were the risk of developing CVD, HTN and T2DM.

### Findings

Results: 181 exposed women experienced a CVD event compared to 467 of the unexposed group. This related to an aIRR of 1.55 (CI 95% 1.29-1.85) with the association particularly significant with the development of ischaemic heart disease and stroke/trans-ischaemic attacks. 222 exposed women developed T2DM relating to an aIRR of 1.25 (CI 95% 1.07-1.46). We did not observe an association with HTN (aIRR 0.98; CI 95% 0.87-1.12). Following sensitivity analysis where individuals were matched for more lifestyle factors, these associations remained significant.

### Consequences

Conclusions: There is an increased risk of developing CVD and T2DM in female survivors of IPV potentially independent of lifestyle choices. Considering the prevalence of IPV, clinicians should be aware of the disproportionately increased risk and therefore are encouraged to manage modifiable risk factors actively in this group.

### Funding Acknowledgement

N/a

## 4C.1

### Has lung cancer presentation changed?

*Presenter: Sarah Chowienzyk*

*Authors: W. Hamilton, S. Price*

## Institutions

University of Exeter

## Abstract

### Problem

Late diagnosis is likely to contribute to the poor lung cancer survival rate seen in the UK<sup>1</sup>. Lung cancer patients whose diagnosis is initiated in primary care have higher survival rates<sup>2</sup>. Understanding trends in pre-diagnostic lung cancer presentations in primary care could help enable earlier diagnosis.

### Approach

We studied 27,795 lung cancer patients in the Clinical Practice Research Datalink from 2000-2017 inclusive, plus 34,930 colorectal

and 5,655 ovarian cancer patients for comparison. We defined first presentation as the first recorded cancer symptom(s) in the year before diagnosis, using 2015 NICE suspected cancer guidelines<sup>3</sup>. We identified the proportion of patients with a first presentation for each pre-diagnostic symptom. For patients with lung cancer we identified the proportions who met NICE criteria for further investigations in the year before their diagnosis<sup>3</sup>. We used generalised linear models (with a binomial function) to test if the proportion of patients varied with year of diagnosis.

## Findings

In patients with lung cancer, the proportion with no recorded pre-diagnostic cancer symptoms did not vary; the proportion with a first pre-diagnostic presentation of cough or dyspnoea increased and the proportion with a first pre-diagnostic presentation of any of haemoptysis, fatigue, appetite loss, weight loss or chest pain decreased year on year. The proportion of patients who met NICE criteria for offer of a chest X-ray and those with suspected cancer increased; the proportion of patients who met NICE criteria for referral due to haemoptysis, referral due to abnormal chest X-ray and consideration of a chest X-ray decreased progressively. The proportion of patients who progressed through NICE criteria for further investigation decreased year-on-year. Odds ratio for cough 1.01(95% confidence interval 1.004,1.016) per year; dyspnoea 1.05(1.046,1.06); haemoptysis 0.93(0.92,0.945); fatigue 0.98(0.972,0.998); appetite loss 0.93(0.904,0.965); weight loss 0.98(0.964,0.993); chest pain 0.96(0.948,0.966); offer of a chest X-ray 1.05 (1.044,1.055); suspected cancer 1.08 (1.066,1.0985); haemoptysis referral 0.93(0.922,0.947); abnormal Chest X-ray referral 0.87 (0.847,0.905); consideration of a chest X-ray 0.98 (0.974,0.991); offer of a chest X-ray then referral 0.97 (0.959, 0.982); consideration of chest X-ray then referral (0.92 0.906 0.943), consideration then offer of chest X-ray (0.98 0.973 0.993): all  $p < 0.0001$ , other than fatigue  $p = 0.03$ , weight loss  $p = 0.004$  and consideration then offer of chest X-ray  $p = 0.0007$ . In colorectal and ovarian cancers first symptom presentations did not change.

## Consequences

The prevalence of pre-diagnostic symptoms of lung cancer appears to have changed, unlike for ovarian and colorectal cancer. Cough and dyspnoea increased, therefore more patients met NICE criteria for the offer of a chest X-ray. Decline in the proportions of patients who progress through NICE criteria for investigations may indicate an increased willingness of GPs to investigate symptoms earlier. Pre-diagnostic presentations with cough and dyspnoea represent a growing opportunity for early lung cancer diagnosis.

1. Richards, The size of the prize for earlier diagnosis of cancer in England
2. Richards, Thorlby, Fisher, & Turton Unfinished business
3. NICE 2015 Suspected cancer: recognition and referral (NG12)

## Funding Acknowledgement

## 4C.2

### The predictive value of unexpected weight loss in adults for cancer in primary care: a matched cohort study using UK electronic health records data from 2000-2014.

Presenter: Brian Nicholson

Authors: Willie Hamilton, Constantinos Koshariis, Clare Bankhead, Sarah Stevens, Paul Aveyard, FD Richard Hobbs.

## Institutions

University of Oxford, University of Exeter (WH)

## Abstract

### Problem

A recent systematic review linked unexpected weight loss (UWL) with cancer diagnosis across ten sites in primary care. Important biases limited the meta-analysis of the 25 included studies. No study compared diagnostic intervals following the date of UWL or the predictive value of weight loss stratified by cancer site, cancer stage, gender and age-group.

### Approach

We present a matched cohort analysis of representative electronic health records data from the UK's CPRD for 2000-2014 with linkage to the National Cancer Registry. All patients aged >18 years old with an UWL code were matched 1:5 based on age, gender and GP practice to consulting patients without a weight loss code. Demographic, symptom and test result data were extracted in relation to the index date. Diagnostic intervals over a two year period were calculated and time-to-event modelling used to derive adjusted Hazard Ratios (HRs) over-time and by time-period, for clinically important subgroups.

### Findings

Of 330,444 patients remaining after exclusions, 63,973 (19%) had UWL, 190,002 (57%) were females, and 124,953 (38%) were aged >70 years. The median (IQR) number of days to diagnosis for patients with and without UWL was 80 (26-290) vs. 353 (181-541), with marked variation by cancer site and gender. The adjusted 3-month and 6-month HRs (95% CI) for cancer were 3.3 (2.9-3.7) and 1.9 (1.7-2.1) in males and 1.9 (1.6-2.1) and 1.1 (0.99-1.3) in females. Late-stage cancer was more strongly associated with UWL than early stage. UWL combined with 30 individual clinical features and 20 abnormal test results pushed cumulative Positive Predictive Value for cancer above the 3% threshold for further investigation adopted by NICE.

### Consequences

Our results will inform the optimal investigative strategy to diagnose cancer in patients presenting to primary care with UWL. To reduce unnecessary investigation we will also present the most powerful test combinations to rule-out the need for further investigation, informed by the cachexia literature.

### Funding Acknowledgement

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## 4C.3

### Are patients with high-normal platelet counts at increased risk of cancer? The NORMA study.

Presenter: Luke TA Mounce

Authors: Dr Sarah ER Bailey, Dr Gary A Abel, Professor Willie Hamilton

#### Institutions

Institute of Health Research, University of Exeter Medical School

#### Abstract

##### Problem

Thrombocytosis – a platelet count greater than  $400 \times 10^9/l$  – is a newly discovered risk marker of cancer, with a one-year cancer incidence of 11.6% for men and 6.2% for women. This exceeds the 3% risk threshold set by the UK National Institute of Health and Care Excellence for rapid investigation of suspected cancer. These findings suggest that patients with a platelet count at the upper end of the normal range may be at increased risk of an undiagnosed malignancy. The present study investigated the one-year cancer incidence in patients with a peri-normal platelet count.

##### Approach

We conducted a primary care-based cohort study using electronic medical records from 2005-2015 within the Clinical Practice Research Datalink. The study cohort consisted of 295,316 patients stratified by platelet count;  $150-325 \times 10^9/l$  (control sample),  $326-350 \times 10^9/l$ ,  $351-375 \times 10^9/l$ , and  $376-400 \times 10^9/l$ . Patients' primary care records were linked to National Cancer Registration and Analysis Service (NCRAS) data to obtain one-year cancer incidence, and stage at diagnosis. Patients were aged 40 years or older and had no malignancies prior to their platelet count date.

##### Findings

One-year incidence of all cancers (excluding non-melanoma skin cancer) increased greatly with age, male gender, and higher platelet count. The highest incidence was found in males aged 80+ years in the  $376-400 \times 10^9/l$  group at 7.6% (95% CI 6.1%-9.4%), whereas the incidence for males in this age group in the control sample was 4.6% (95% CI 4.1%-5.1%). The 3% risk threshold was reached for all males aged 70+, and for all men aged 60-69 with a high-normal count. No female grouping reached this threshold. Stage at diagnosis for incident cancers was more likely to be late (stages 3-4) in patients with a high-normal platelet count. Colorectal cancer was the most common incident cancer.

##### Consequences

These results suggest that clinicians should consider the possibility of cancer in males aged 60 or over with a platelet count greater than  $325 \times 10^9/l$ . A high-normal count may also reflect a more advanced malignancy. These results support previous work suggesting that the upper threshold for a normal platelet count in men aged 60 years could perhaps be reduced.

##### Funding Acknowledgement

This research was funded by the Policy Research Unit for Cancer Awareness, Screening, and Early Detection.

## 4C.4

### Title: Which inflammatory marker tests should be used in primary care? A cohort study using CPRD

Presenter: Jessica Watson

Authors: Dr Penny Whiting, Dr Jon Banks, Professor Chris Salisbury, Professor Willie Hamilton

#### Institutions

University of Bristol, University of Exeter

#### Abstract

##### Problem

Research comparing C-reactive protein (CRP), erythrocyte sedimentation rate (ESR) and plasma viscosity (PV) in primary care is lacking. Clinicians often use multiple inflammatory markers simultaneously, leading to concerns about overuse, and difficulties with interpretation of results, which may be discrepant. The aims of this study were; firstly to compare the diagnostic accuracies of CRP, ESR and PV, and secondly to evaluate whether measuring two inflammatory markers simultaneously increases diagnostic accuracy.

##### Approach

Prospective cohort study in UK primary care using Clinical Practice Research Datalink. Participants were 160,000 patients with inflammatory marker testing in 2014. We compared the diagnostic test performance of inflammatory markers, singly and paired, for any relevant disease (infections, autoimmune conditions and cancers).

##### Findings

After excluding those with pre-existing autoimmune conditions, cancers and recent infections, 136,961 participants remained; 83,761 (62.2%) had a single inflammatory marker at the index date, and 53,200 (38.8%) had multiple inflammatory markers. For any relevant disease, only small differences were seen between the three tests; areas under receiver operator curve (AUC) ranged from 0.66–0.68. CRP had the highest overall AUC, largely because of superior performance in infection (AUC CRP 0.62 versus ESR 0.59,  $p < 0.001$ ). Adding a second test gave marginal improvement in the AUC for relevant disease (CRP 0.68 versus CRP+ESR 0.69,  $p < 0.001$ ); this is of debatable clinical significance. The negative predictive value for any single inflammatory marker was 94% (95% CI 93.8–94.2), compared to 94.1% (93.9–94.4) with multiple negative tests.

##### Consequences

Results have important clinical implications for practicing GPs. Testing multiple inflammatory markers simultaneously does not appear to increase the ability to rule out disease. We therefore suggest that this should usually be avoided. CRP has superior diagnostic accuracy for infections, and is equivalent for autoimmune conditions and cancers; we therefore suggest this should generally be the first line test. As CRP is also cheaper, we expect that implementation of these findings could generate significant cost savings for the NHS as well as reductions in GP workload.

##### Funding Acknowledgement

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Health Research and Care West (CLAHRC West) at University Hospital Bristol NHS Foundation Trust. The views expressed in this publication are those of the authors and not necessarily those of the NHS, the National Institute for Health Research, Health Education England or the Department of Health and Social Care.

## 4C.5

### Nasopharyngeal cancer in primary care: a case-control study using electronic patient records.

*Presenter: Tuba Khan and Yusera El-Sockary*

*Authors: Elizabeth Shephard, Yusera El-Sockary, Tuba Khan, William Hamilton*

#### Institutions

University of Exeter Medical School

#### Abstract

##### Problem

Nasopharyngeal cancer is rare; around 230 cases are diagnosed in the UK annually. There are currently no specific referral recommendations for nasopharyngeal cancer within the National Institute for Health and Care Excellence (NICE; NG12) cancer guidelines. The clinical prodrome of nasopharyngeal cancer, separate from grouped head and neck cancer features, is unknown. Therefore, this study aimed to identify and quantify the individual and combined risk markers for nasopharyngeal cancer in UK primary care patients.

##### Approach

This was a matched case-control study of patients aged  $\geq 40$  years using UK primary care electronic patient records. Cases were matched with up to 5 controls for age, sex and general practice. Putative clinical features of nasopharyngeal cancer were identified in the year before diagnosis via literature search, online databases and patient self-reported symptoms. Clinical features associated with cancer were assessed using conditional logistic regression. Positive predictive values (PPVs) for each feature were calculated for the consulting population.

##### Findings

Interim findings - 74 cases diagnosed with nasopharyngeal cancer between 2000 and 2009 and 330 matched controls (practice, sex and age) were studied. Four independent and clinically relevant features were associated with nasopharyngeal cancer: head and neck lump, odds ratio 69, (95% confidence interval 2.1 to 162); thrombocytosis 27, (3.3 to 225); epistaxis, 18 (2.0 to 162), and otalgia 17 (3.0 to 92). All P values were  $< 0.01$ . Individual positive predictive values were  $< 1\%$ : epistaxis and head and neck lump, 0.03%; thrombocytosis and otalgia 0.01%.

##### Consequences

This is the first study to investigate the clinical features of nasopharyngeal cancer in primary care. Given the rarity of the cancer and the resulting low PPVs, GPs won't be referring patients based on these features alone. However, we now know the features of this rare cancer. This will be useful to GPs who can use their experience and intuition to spot the patient who may warrant referral to an ENT specialist for suspected nasopharyngeal cancer. As a result, patients may benefit from earlier referral, potentially impacting on their stage of cancer at diagnosis.

## Funding Acknowledgement

This study was funded by the National Institute for Health Research (NIHR), through the NIHR Policy Research Unit in Cancer Awareness, Screening, and Early Diagnosis and the NIHR Programme Grants for Applied Research (grant reference number: RP-PG-0608-10045).

## 4C.6

### External validation of genetic risk prediction models for incident colorectal cancer using UK Biobank

*Presenter: Simon Griffin*

*Authors: Catherine L Saunders, Britt Killian, Deborah Thompson, Antonis C. Antoniou, Simon J Griffin, Jon Emery, Fiona M Walter, Joe Dennis, Xin Yang, Juliet A Usher-Smith*

#### Institutions

Department of Public Health and Primary Care, University of Cambridge

#### Abstract

##### Problem

There is evidence that colorectal cancer (CRC) screening programmes reduce CRC incidence and mortality. In most countries individuals are invited for screening based on their age. Stratifying screening, or changing the age threshold at which someone is invited for screening, based on individual estimated risk could potentially provide a way of improving efficiency. Using the UK Biobank cohort for external validation we have previously shown that several risk models including only phenotypic risk factors and/or family history exhibit reasonable discrimination. This study aimed to compare and externally validate risk scores previously developed to predict future CRC that include genetic risk factors, with or without phenotypic risk factors, that could potentially be used to stratify the UK population.

##### Approach

We are using data from UK Biobank to perform external validation of 13 risk models for CRC identified through a systematic review (five 'genes only' and eight incorporating both genetic and phenotypic information). In total, across all models, the genetic risk models include 95 independent single nucleotide polymorphisms (SNPs), between six and 43 per model. The models with additional phenotypic risk factors include age, sex, BMI, family history, smoking, alcohol, physical activity, red meat consumption, aspirin use and fibre and vegetable consumption. We are using genetic information available in UK Biobank and phenotypic information from the baseline assessment, which was carried out between 2006 and 2010. For the main analysis we are including 373,112 participants with no prior history of CRC and five year follow-up (the last available cancer registry data linked to UK Biobank comes from September 2014). We are assessing discrimination of each risk model using the area under the receiver operating characteristic curve (AUC) and assessing calibration graphically, and using the Hosmer-Lemeshow statistic, for those models where absolute risk can be estimated.

##### Findings

**At the time of writing this abstract we have externally assessed the discrimination of the five risk models that estimate CRC risk using genetic information alone. Wang 2013; AUC = 0.51, Ibanez Sanz 2016; AUC = 0.55, Hosono 2016; AUC = 0.54; Frampton 2016, AUC = 0.54; Jenkins 2016, AUC = 0.57. These are typically lower than the AUCs estimated in the development populations and previous**



**external validations. Further models are in the process of being evaluated. Consequences**

Genetic risk estimated through a risk score developed from SNPs typically does have some discriminative ability in a UK population, however results suggest this is lower than risk scores based on phenotypic risk, and scores incorporating age-related risk; further health economic modelling work is required to explore whether incorporating genetic or phenotypic risk into national screening programmes would be cost-effective.

**Funding Acknowledgement**

## 4D.1

### **Predicting the impact of a patient-directed financial incentive on choices of asthma controller inhalers in Australia: a discreet choice experiment and financial impact analysis**

*Presenter: Nicholas Zwar*

*Authors: Tracey-Lea Laba, Helen Reddel, Guy Marks, Elizabeth Roughead, Anthony Flynn, Michele Goldman, Aine Heaney, Kirsty Lembke, Stephen Jan*

#### **Institutions**

UNSW Australia, University of Sydney, George Institute for Global Health, Woolcock Institute of Medical Research, University of South Australia, Asthma Australia, NPS MedicineWise

#### **Abstract**

##### **Problem**

In Australia, despite subsidisation of medications via the national Pharmaceutical Benefits Scheme, out-of-pocket costs contribute to non-adherence with controller inhalers in people with asthma. For asthma, guidelines recommend that most patients should be prescribed regular low-dose inhaled corticosteroids (ICS-alone), but in Australia, most are treated with combination ICS/long-acting beta 2-agonists (LABA), which cost more to patients and government. This includes in patients with asthma of a severity where ICS-alone would be equally effective. This study sought to estimate the impact of a financial incentive in the form of a lower co-payment for ICS-only inhalers for people with asthma, on patient preferences for controller inhalers as well as the financial impact on Australian government drug expenditure.

##### **Approach**

Discrete Choice Experiment (DCE) using mixed multinomial models at varying levels of financial incentive. The setting was via an online survey of national representative cohort of adults and parents of children with asthma. Outcome Measures were demand for medicines (ICS, ICS/LABA, no controller) and related government pharmaceutical expenditure. Participants were adults (n=792) and parents of children (n=609) with asthma.

##### **Findings**

The co-payment attribute had a significant but overall small influence on controller medicine demand for both adults and parents of children with asthma (e.g. OR, 95%CI: adult concession 0.907 (0.890-0.923); Child, general beneficiary 0.957 (0.951-0.964)). Without changing the current co-payment, preference-based modelling predicted an increase in the use of asthma controlled medicines from 57% to 89%, with higher uptake of ICS-alone (29% current, 48% predicted) and reduced average cost per patient (\$AUD38.54 c.f. \$32.73). Reducing the co-

payment on ICS-alone by 50% would increase its market share (43% to 50%) whilst completely removing co-payment would only have further marginal impact, but increase average cost of treatment (\$AUD41.04 per patient).

##### **Consequences**

Though the DCE predicts some impact, introducing a new patient-directed financial incentive, as a stand-alone strategy, is unlikely to substantially improve the uptake of cost-effective controller medicines for asthma in Australia. Given the gatekeeper role of prescribers, usually general practitioners, on medication selection additional strategies directed at prescribers will be needed to change current practice.

##### **Funding Acknowledgement**

Partnership Grant from Australian National Health and Medical Research Council, Asthma Australia and NPS MedicineWise

## 4D.2

### **Misuse of antibiotics and asthma medication for acute lower respiratory tract infections in patients with and without asthma in primary care: retrospective cohort study**

*Presenter: Rachel Denholm*

*Authors: Esther van der Werf, Alastair D Hay*

#### **Institutions**

Centre for Academic Primary Care, University of Bristol; School of Medicine, Taylors University

#### **Abstract**

##### **Problem**

Changes to clinical guidance on the use of antibiotics has led to considerable clinical uncertainty in the management of acute lower respiratory tract infections (ALRTIs). Anecdotal evidence suggests antibiotics and step-up asthma medication are overused in asthmatics and non-asthmatics presenting to primary care with ALRTIs. Our aim was to describe the frequency, variation and drivers in antibiotic and step-up asthma medication prescribing for ALRTI in asthmatic and non-asthmatic adults in primary care

##### **Approach**

A retrospective cohort analysis of patients aged 18 years and over, diagnosed with an ALRTI in primary care in 2014-15 was conducted using data from the Clinical Practice Research Datalink. Current asthma status, step-up asthma medication and oral antibiotic use within three days of ALRTI infection was determined. Treatment frequency was calculated by asthma status. Mixed-effect regression models were used to explore between practice variation and treatment determinants.

##### **Findings**

127,976 ALRTIs were reported among 115,696 patients during the study period, of whom 25,783 (22%) had asthma. Respectively, 79% and 80% of asthmatic and non-asthmatics received antibiotics, and 38% and 14% step-up asthma medication. There were significant differences in between practice prescribing for all treatments, with greatest differences seen for oral steroids (non-asthmatics odds ratio (OR) 90; 95% CI 31 to 368 and asthmatics OR 29; 11 to 124) and step up asthma medication (non-asthmatics OR 20; 11 to 40 and asthmatics OR 10; 5 to 23). Independent predictors of antibiotic prescribing among asthmatics included fewer previous ALRTI presentations (0 vs.

2+: 0.3; 0.2 to 0.4), higher practice antibiotic prescribing (1.5; 1.4 to 1.6) and concurrent step up asthma medication (1.4; 1.3 to 1.5). Other factors included male gender, worse deprivation, and higher prior patient antibiotic prescribing. Predictors were the same in non-asthmatics, with the exception of deprivation, where no association was observed. Independent predictors of step up asthma medication in non-asthmatics included younger age (youngest vs. oldest quartile: 1.5; 1.4 to 1.7), higher prior asthma medication prescribing (7+ vs. 0: 3.2; 2.8 to 3.7) and concurrent antibiotic prescribing (5.7; 5.2 to 6.3). Other factors included female gender, current smoking and higher multimorbidity. Predictors were the same for asthmatics, with the exception of gender and smoking status, where no associations was observed.

### Consequences

Findings from the study indicate that antibiotics are over-used for ALRTI, irrespective of asthma status, and step-up asthma medication is over-used in non-asthmatic patients, with between practice variation suggesting considerable clinical uncertainty. Further research is urgently needed to clarify the role of these medications for ALRTI.

### Funding Acknowledgement

ADH was funded by NIHR Research Professorship (NIHR-RP-02-12-012)

## 4D.3

### Initial process evaluation findings from the At-Risk Registers Integrated into primary care to Stop Asthma crises in the UK (ARRISA-UK) trial: practice characteristics, engagement and early experiences of the intervention

*Presenter: Jane Smith*

*Authors: Rachel Winder, Leon Poltawski, Polly Ashford, Stanley Musgrave, Susan Sterling, Sarah Morgan-Trimmer, Ann-Louise Caress, Michael Noble, Andrew Wilson*

### Institutions

University of Exeter Medical School, Norwich Medical School University of East Anglia, University of Huddersfield Department of Nursing & Midwifery, Acle Medical Centre

### Abstract

#### Problem

Most deaths and hospitalisations due to asthma are preventable. The ARRISA-UK trial is investigating whether, compared to usual care, a GP practice-level intervention decreases the proportion of 'at-risk' asthma patients who experience asthma-related A&E attendances, hospitalisations or death over 12 months. This presentation reports initial findings from a nested process evaluation, describing characteristics of recruited practices, and their engagement with and early experiences of the intervention.

#### Approach

The ARRISA-UK study is a UK-wide cluster-randomised controlled trial of an intervention that involves identification and flagging of at-risk asthma patients' electronic records and web-based training of practice staff to support implementation of practice-wide actions in response to the flags. A mixed-methods process evaluation is exploring implementation, mechanisms of action and the influence of contextual factors (e.g. practice characteristics) on the intervention. Quantitative

and qualitative data from study baseline and post-training questionnaires, training software, practice-specific action plans and initial focus groups and interviews with staff were analysed to describe practice characteristics, and engagement with, and initial implementation and staff experiences of, the ARRISA-UK approach.

### Findings

The 275 recruited practices, from across 14 English Clinical Research Network Regions, 7 Welsh and 5 Scottish Health Boards, had a median list size of 8801 (range 1667-37800) and identified a median of 33 (range 1-197) at-risk asthma patients per practice and over 10,000 in total. There was considerable variation in other practice characteristics (e.g. software system, level of asthma special interest, area deprivation). Despite some early documented difficulties with technology and staff turnover, at least 409 staff (GPs, nurses, receptionists/administrators, dispensers/pharmacists) from 133 (96%) of 139 intervention practices completed a substantial proportion of the individual on-line training, reflecting a median of 3 (maximum of 9) staff at practices with any trainees. 128 (92%) practices also completed group training to prepare Action Plans, attended a webinar and activated flagging. Action plans disseminated to staff to outline actions to take in response to the flags varied in content and detail but illustrated ways to enhance access to, and uptake of, asthma-related services by at-risk patients, including implementation of protocols for reception, capitalising on opportunistic encounters and communicating with out-of-hours where possible. Further analyses of data from the training software, post-training questionnaires and early focus groups/interviews with practice staff are underway.

### Consequences

The ARRISA-UK intervention represents a pragmatic, practice-wide approach to targeting at-risk asthma patients which has been implemented across a range of GP practices. Early data suggest that the intervention has generally engaged all practice staff groups, particularly receptionists, and been well-received. Initial findings are informing ongoing data collection via a Practice Experience Questionnaire, and focus groups and interviews with purposively sampled practices, staff and patients to further explore variations in implementation and potential reasons for its success, or otherwise.

### Funding Acknowledgement

The ARRISA-UK trial is fully funded by the NIHR Health Technology Assessment (HTA), Grant number 13/34/70. This abstract presents independent research commissioned by the NIHR. The views and opinions expressed by authors are those of the authors and do not necessarily reflect those of the NHS, the NIHR, the NIHR Evaluation, Trials and Studies Coordinating Centre, the HTA programme or the Department of Health.

## 4D.4

### The impact of COPD case finding on clinical care: a prospective analysis of the TargetCOPD trial

*Presenter: Shamil Haroon*

*Authors: Peymané Adab, Andrew P. Dickens, Alice Sitch, Kiran Rai, Alexandra Enocson, David A. Fitzmaurice, Rachel E. Jordan*

### Institutions

University of Birmingham, University of Warwick

### Abstract

## Problem

COPD is vastly underdiagnosed and a large number of studies have evaluated the effectiveness of case finding in terms of the number of new diagnoses made in primary care. However, few studies have evaluated the impact of case finding on subsequent clinical care.

## Approach

This was a prospective analysis of the TargetCOPD trial, which was a pragmatic cluster RCT based in primary care in the West Midlands, UK. It evaluated the effectiveness of COPD case finding against usual care. Following the trial, additional data on COPD-related care were extracted from electronic healthcare records (EHR) for a subset with newly diagnosed COPD. In addition, a subset of participants with case-found COPD were provided questionnaires that included questions about clinical care. The primary outcome was addition to a COPD disease register by the end of the TargetCOPD trial. The secondary outcome was a clinical management score formed by summing the number of COPD-related clinical assessments and interventions received. Multilevel logistic regression was used to assess for associations between participant characteristics and the likelihood of being added to a COPD register. Multilevel linear regression was used to assess for associations between participant characteristics and the clinical management score.

## Findings

The primary analysis included 857 patients identified with COPD by case finding and 764 by usual care. Only 21.2% of case-found patients had been added to a COPD register, compared to 92.7% of patients diagnosed by usual care. Factors associated with a higher likelihood of being added to a COPD register were current and former smoking (adjusted OR 8.68, 95% CI 2.53 to 29.8, and aOR 6.32, 95% CI 1.88 to 21.3, respectively), and lower percentage of predicted FEV1 (aOR 0.96, 95% CI 0.95 to 0.98). Among participants with additional EHR data (n=532), factors associated with a higher clinical management score were being on a COPD register (adjusted 5.06, 95% CI 4.36 to 5.75), and having a higher number of comorbidities (a 0.38, 95% CI 0.11 to 0.65). Among participants with additional questionnaire data (n=375), factors associated with a higher clinical management score were being on a COPD register (a 3.48, 95% CI 2.81 to 4.15), higher CAT score (a 0.05, 95% CI 0.01 to 0.08), and lower percentage of predicted FEV1 (a -0.03, 95% CI -0.03 to -0.01). Consequences

Only 1 in 5 case-found patients had been added to a COPD disease register by the end of the TargetCOPD trial. Smokers and those with lower lung function were more likely to be formally registered with COPD by their GP. Being on a COPD register was associated with receiving a significantly higher level of clinical care.

## Funding Acknowledgement

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## 4D.5

### **HATRIC - Feasibility study of Pelargonium sidoides root extract, EPs®7630 (Kaloba®), for the treatment of acute cough due to lower respiratory tract infection in adults: a double blind, placebo controlled randomised trial.**

*Presenter: Michael Moore*

*Authors: Catherine Simpson, Merlin Willcox, Gareth Griffiths, Paul Little, Alastair Hay, Chris Butler, Lily Yao, Frances Webley, Amy Whitehead, Jennifer Bostock, Margaret Bell*

## Institutions

University of Southampton, University of Oxford, University of Bristol

## Abstract

### Problem

Antibiotic resistance is rising and linked to prescribing in primary care. Acute lower tract infection (LRTI) is a common acute infection managed in primary care. The majority of patients are prescribed antibiotics, despite the lack of evidence of benefit. A delayed prescription strategy has been successful in reducing antibiotic prescribing rates for LRTIs but identifying a safe and effective method of symptom control would likely reduce antibiotic use further. A Cochrane review suggests that Pelargonium sidoides root extract has some benefit.

### Approach

HATRIC is a mixed methods double blind, placebo controlled, cluster randomised feasibility study with four arms comparing Pelargonium sidoides root extract EPs®7630 liquid vs. liquid placebo and Pelargonium sidoides root extract EPs®7630 tablet vs. tablet placebo. GP practices were cluster-randomised to give tablet or liquid formulation and within each practice, eligible patients were randomised to active or placebo IMP. Adults aged 18 years and over presenting with an acute cough ( $\leq 21$  days' duration) as their main symptom and with symptoms localising to the lower tract, for which an infective diagnosis was judged very likely were recruited in primary care. In addition to the intervention, clinicians were able to offer one of three antibiotic strategies; immediate antibiotics, delayed antibiotics or no antibiotics. A notes review was undertaken at 28 days to document consultations with a LRTI. The aim of the HATRIC feasibility study is to demonstrate the ability to recruit and retain participants and conduct a placebo controlled trial of Pelargonium sidoides extract EPs®7630 in lower respiratory tract infection where pneumonia is not suspected.

### Findings

Recruitment took place between March and December 2018 from 20 practices in England (Wessex Region). 134 patients were recruited and diaries containing all key information were obtained from 107 (80%) participants. More detail on demographics and outcome measures will be presented at the conference.

### Consequences

If this feasibility study leads to a successful full RCT that shows Pelargonium sidoides root extract is effective in reducing the symptom burden of LRTI then antibiotic prescribing for LRTI may decrease. Thus minimising the long-term public health risks of inappropriate antibiotics and providing a model for different management strategies for other Respiratory Tract Infections (RTIs).

## Funding Acknowledgement

The clinical trial was coordinated by the Southampton Clinical Trials Unit, a UKCRC registered, NIHR support funded Clinical Trials Unit. The trial was sponsored by the University of Southampton and funded by the NIHR School of Primary Care.

### 4D.6a

## IMPLementing IMProved Asthma self-management as Routine Treatment: the IMP2ART programme

*Presenter: Steph JC Taylor*

*Authors: Hilary Pinnock, Susan Morrow, Kirstie McClatchey, Steph JC Taylor, for the IMP2ART programme group.*

### Institutions

Queen Mary University of London, Asthma UK Centre for Applied Research, The University of Edinburgh,

### Abstract

#### Problem

Supported self-management, which helps people adjust their treatment in response to changes in symptoms, improves day-to-day control and reduces the risk of asthma attacks. However, for many reasons, supported self-management is not widely implemented; fewer than a quarter of people replying to a recent Asthma UK web-survey owned an action plan. Our recent systematic review concluded that successful implementation of supported self-management requires attention to patient resources, professional motivation and training, and organisational prioritisation and support

#### Approach

Building on the findings of preliminary IMP2ART studies, and working with six general practices, Asthma UK, PRCS-UK and Education for Health we will develop the components of an implementation strategy. For example:

- Patient resources to support self-management (e.g. a range of action plans; flexible access to professional advice; digital options)
- Professional education to motivate and train practice teams (e.g. online, team-based modules to raise awareness and provide specific skills)
- Organisational strategies to facilitate adoption (e.g. audit/feedback; review templates; electronic action plans)Facilitated by respiratory nurse specialists, practices will be encouraged to adopt and adapt strategies to suit their practice routines.

#### Findings

We will recruit GPs, asthma nurses, and admin staff from four practices to pre-pilot the implementation strategy, and provide qualitative feedback on feasibility. We will report progress on the pre-pilot.

#### Consequences

THE IMP2ART UK-WIDE TRIALFollowing a pilot (n=12 practices) we will undertake a national cluster-RCT (n=144 practices) which will evaluate the impact and cost-effectiveness of the IMP2ART implementation strategy on unscheduled care (assessed from routine data) and ownership of action plans. A mixed-methods process evaluation will explore potential for scaling-up and sustainability.

## Funding Acknowledgement

IMP2ART is independent research funded by NIHR PGfAR (RP-PG-1016-20008). The views expressed are those of the authors, not necessarily those of the NHS, NIHR or Department of Health.

### 4D.6b

## How can we improve access to health care for people with severe chronic obstructive pulmonary disease (COPD) in Southern New Zealand? The perspectives of health professional stakeholders and patients.

*Presenter: Tim Stokes*

*Authors: Emma Tumilty, Anna Tiatia Fa'atoese Latu, Kathryn McAuley, Fiona Doolan-Noble, Jo Baxter, Debbie Hannah, Simon Donlevy, Jack Dummer*

### Institutions

University of Otago; Southern District Health Board, Dunedin, NZ.

### Abstract

#### Problem

Chronic obstructive pulmonary disease (COPD) is a common chronic disease with significant morbidity and mortality which places a large burden on the New Zealand (NZ) health system. People with severe COPD account for most COPD morbidity and mortality. These people have significant symptoms, including breathlessness and fatigue, and impaired quality of life. They also receive suboptimal care, notably in relation to the lack of integration of health services in NZ across primary and secondary care. We undertook a mixed-methods implementation research study in partnership with the Southern District Health Board (DHB) with the aim of delivering better health care to people with severe COPD. We aimed to determine health care utilisation and health care and social support needs of people with severe COPD (reported elsewhere) and the barriers and enablers to the provision of accessible high quality COPD care in NZ's southern region (reported here).

#### Approach

Design: Qualitative study using semi-structured interviews with health professional stakeholders and patients. The descriptive categories developed from the patient and stakeholder interviews were organised into themes informed by a conceptual framework for access to health care (Levesque et al, 2013), allowing findings from both sets of interviews to be presented together. Setting: Primary and secondary care in a health region in the lower South Island of NZ (Southern DHB) serving a population of 309,000 dispersed over the largest geographic health region of NZ (62,360 km<sup>2</sup>).Participants: 11 health professional stakeholders and 23 patients from across the Southern DHB region.

#### Findings

Health professional stakeholders identified barriers to providing access to health services, in particular: availability (inadequate staffing and resourcing of specialist services and limited geographical availability of pulmonary rehabilitation), affordability (both of regular medication, medication needed for an exacerbation of COPD, and the co-payment charge for seeing a GP) and appropriateness (a shared model of care across primary and secondary care was needed to facilitate better delivery of key interventions such as pulmonary rehabilitation and advance care planning). Patients' accounts showed variable ability to access services through having a limited understanding of what COPD is, a limited knowledge of services they could access, being unable

to attend pulmonary rehabilitation (due to co-morbidities) and direct (medication and GP co-payment charges) and indirect (transport) costs.

### Consequences

This is the first NZ-based study to explore barriers to access to health care for people with COPD from the perspectives of both health professional stakeholders and patients. Through the use of a conceptual framework of access to health care we demonstrate how both perspectives interact along the current pathway of COPD care in NZ's southern region from perception of health needs by patients through to the outcomes arising from health care.

### Funding Acknowledgement

Health Research Council of NZ Partnership Grant with Southern DHB: Health Delivery Stream (15/655).

## 4D.6c

### Primary care interventions to help reduce secondhand smoke exposure: a cross-sectional survey of UK healthcare professionals

*Presenter: Jaidev Kaur*

*Authors: Amanda Farley, Kate Jolly, Laura Jones*

### Institutions

Institute of Applied Health Research, University of Birmingham

### Abstract

#### Problem

Secondhand smoke exposure (SHSe) remains a significant public health issue and is associated with increased mortality and morbidity for non-smokers. Healthcare practitioners (HCPs) based in primary and community care settings are likely to provide care to patients at risk of SHSe and/or those who regularly smoke around others. Currently, it is unclear how SHSe is addressed in UK primary and community care settings. Therefore, this study aimed to capture HCPs' awareness, opinions, and practices around intervening with patients regarding SHSe in these settings.

#### Approach

Behaviour change theory was used in conjunction with existing literature to develop a cross-sectional survey that assessed HCPs': (i) current practices around SHSe; and (ii) levels of capability, opportunity and motivation to intervene with patients regarding SHSe. This online survey was distributed to HCPs working in primary and community care settings across the UK at conferences, via twitter, and through networks affiliated with membership bodies and universities. Descriptive statistics and regression analyses were used to describe the data and assess participant characteristic effects on 'practice', 'capability', 'opportunity', and 'motivation'.

#### Findings

Of 230 responses received August 2017-May 2018, 172 contributed to the full survey data analysis (encompassing data from 55 general practitioners, 25 nurses, 8 health visitors, 25 pharmacists, and 44 from other HCP groups). 140 respondents (81%) agreed or strongly agreed that they understood the health effects caused by SHS. However, 66 (38%) did not feel they had sufficient training about SHSe and a further 45 (26%) gave a neutral response. Response to the questions concerning level of capability to intervene was varied, with few respondents scoring highly on these questions (mean composite

score=16.5 of maximum 25). Even fewer respondents scored highly for the questions concerning their level of opportunity to intervene around SHSe (mean composite score=10.9 of maximum 20). Only 34 (20%) felt well supported to intervene with patients around SHSe. Furthermore, pressures on time prioritisation reduced intervention opportunities. Respondents generally had a higher motivation level to intervene (mean composite score=18 of maximum 25) compared with their levels of capability or opportunity. 156 respondents (91%) considered SHSe interventions important. However, HCPs' perception of patient engagement with such interventions was uncertain. Over half of the responses indicated that overall primary care-based HCPs never or rarely engage in practices around SHSe. Only 6 (4%) reported often or always asking, advising and acting on SHSe.

### Consequences

The survey results show a clear need to provide further support to HCPs in primary and community care to enable them to help patients to reduce others' exposure to second hand smoke. Future research should explore the development and testing of interventions to help bridge the gap between knowledge and clinical practice; a finding supported by existing global literature.

### Funding Acknowledgement

Funded by a PhD studentship awarded by the College of Medical and Dental Sciences, University of Birmingham

## 4E.1

### Does Babylon GP at Hand reveal the future of general practice?

*Presenter: Chris Salisbury*

*Authors: Camille Aznar (2), Anna Quigley (2), Nick Hex (3)*

### Institutions

(1) Centre for Academic Primary Care University of Bristol, (2) IPSOS Mori (3) York Health Economics Consortium

### Abstract

#### Problem

Babylon GP at hand provides a digital first service in London based on offering video-consultations by smartphone within 2 hours, 24 hours a day. Patients can then be seen face-to-face if necessary. The service is free on the NHS via an NHS general practice subcontracting services to Babylon Health, a private company also providing similar services privately. It has grown very rapidly in London and is soon expanding to other cities. GP at hand has proved highly controversial, amid claims that it 'cream-skims' young healthy patients and will destabilise conventional general practice. This presentation will summarise the first evaluation of this new service.

#### Approach

This evaluation was commissioned from IPSOS Mori advised by Prof Chris Salisbury, and explored the impact of Babylon GP at hand on its registered patients, its GP workforce and the wider health care system. The evaluation was based on (i) anonymised data from GP at hand about patients' characteristics and consultations (ii) an online survey of GP at hand patients to assess their experience, compared with a matched cohort of patients with similar characteristics responding to the GP Patient Survey. (iii) in-depth interviews with GPs and patients (iv) routine data about use of other NHS services (v) qualitative interviews with stakeholders about future developments in primary care.

## Findings

Details of findings are strictly embargoed until the evaluation report is presented to the CCG in mid-May. This resenatation will provide data on:

- \* How many people register with GP at hand and how many de-register again soon afterwards
- \* The age, sex, deprivation and levels of chronic illness in registered patients
- \* Their rates of different types of consultation and rates of prescribing antibiotics
- \* Use of 111, A&E, outpatients and hospital admissions before and after registering with GP at hand, compared with matched controls
- \* Reasons that patients register with GP at hand, their satisfaction with different aspects of the service compared with similar patients in other practices
- \* Characteristics of GPs working at GP at hand and why they chose to work there

## Consequences

GP at hand represents a 'disruptive innovation' which could have major implications for the future of general practice. The findings of this early evaluation raise important questions about the type of care that is preferred by some segments of the population; the impact of this on the wider NHS; the implementation of digital and video consultations; the sustainability of this model of care and implications for the sustainability of other practices; and the attractiveness of a GP career. The findings and the debate about 'cream-skimming' also have important implications for how to ensure that the GP funding model is appropriate for new models of GP provision.

## Funding Acknowledgement

NHS Hammersmith and Fulham CCG

## 4E.2

### A mixed methods systematic review of the effects of patient online self-diagnosing in the 'smart-phone society' on the healthcare professional-patient relationship and medical authority

*Presenter: Annabel Farnood*

*Authors: Professor Frances Mair, Professor Bridget Johnston*

## Institutions

The University of Glasgow

## Abstract

### Problem

As technology continues to advance, the internet is becoming increasingly popular and it is becoming a commonplace for patients to self-diagnose and seek health information online. It is important to understand the influence this may have on the patient-healthcare professional relationship in primary care.

### Approach

A mixed-method systematic review of quantitative, qualitative and mixed method studies, concerning the public and healthcare professionals' perceptions of online self-diagnosis and health information seeking, and how this can impact the patient-healthcare

professional relationship, was undertaken. The systematic literature search was conducted using five databases: MEDLINE, EMBASE, CINAHL, SCOPUS and ACM. The search terms, among others, included 'information seeking behaviour', 'online self-diagnosis', 'internet' and 'professional-patient relations'. Relevant data were extracted, and quality appraised using the mixed methods appraisal tool. A thematic analysis was conducted. The review addressed the following research questions:

1. What are the effects of patients seeking online health information on the healthcare professional-patient relationship and medical authority?
2. How do healthcare professionals perceive patients use of online health information?
3. How do public/patients perceive the use of online health information?

Findings  
We identified 6107 papers and 28 articles (16 qualitative, 11 quantitative and 1 mixed methods study), met the inclusion criteria for the review. The findings indicated that patients found the internet to be a complementary information source alongside healthcare professionals, as well as a means for self-diagnosis. Patients used the internet to reduce uncertainty, often because they had not fully understood everything said in consultations. Several studies found the most common time to access the internet for health information was after a medical consultation. People also feel responsible for their own health and thus see online self-diagnosis and health information seeking as fulfilling a basic need in an easily accessible manner. Healthcare professionals had mixed reviews regarding patient's online health information seeking but generally agreed on the importance of collaboration with patients, though they struggled to find the time to do this efficiently. Patients tended to present information to the healthcare professional to support the therapeutic relationship rather than to challenge it. Most patients hoped the outcome of presenting with online health information would help support the development of a partnership with their healthcare professional and becoming more involved in their decision-making.

## Consequences

Overall, most patients found healthcare professionals to be the most valued source of health information and typically found the internet to be a useful complementary tool. The internet has the potential to be beneficial if the online health information being sought, is accurate and relevant and healthcare professionals react in a positive and supportive manner to internet-informed patients. These findings can inform recommendations for practice, professional development and further research.

## Funding Acknowledgement

## 4E.3

### The ViCo Study: Comparing the content and quality of video, telephone and face-to-face consultations: a non-randomised (quasi-experimental) exploratory study

*Presenter: Brian McKinstry*

*Authors: Victoria Hammersley, Eddie Donaghy, Richard Parker, Hannah McNeilly, Helen Atherton, Annemieke Bikker, John Campbell*

## Institutions

Usher Institute of Population Health Sciences and Informatics The University of Edinburgh, University of Warwick Medical School, University of Exeter Medical School; General Practice and Primary Care

**Problem**

People increasingly communicate online, at work, in college and socially, using visual communication mediums such as Skype and FaceTime. Demands on primary-care services mean that new ways of providing patient care are being considered. Video-consultation via internet is one such mode. However, it is not known how it differs in content from face-to-face or telephone consultations nor for which patients and problems it may work best. We aimed to explore the content and quality of, and satisfaction with, video-consultations (VC) compared with telephone (TC) and face-to-face consultations (FTFC) in general practice.

**Approach**

Primary care clinicians were provided with video-consulting equipment. Participating patients required a smartphone, tablet or video-enabled computer. Clinicians invited eligible patients who required a follow-up consultation to choose from a telephone, face-to-face or video-consultation. Consultations were audio-recorded and analysed for numbers of problems raised, content using the Roter Interaction Analysis System (RIAS, a validated method of consultation analysis of voice recordings), and quality using an adapted and validated scoring system designed by the Royal College of General Practitioners (RCGP). In post-consultation questionnaires, patients rated interaction quality based on questions from the GP Patient Survey and all participants rated the technical aspects of TCs and VCs. Case-notes were reviewed for previous and subsequent NHS resource use. Findings

VC participants were generally younger, and more experienced in communicating online than those choosing FTFC or TC. FTFCs were longer than VCs (mean difference +3.7 minutes, 95% CI 2.1 to 5.2) and TCs (+4.1, 95% CI 2.6 to 5.5). Patients raised fewer problems in VCs (mean 1.5, SD 0.8) compared with FTFCs (2.1, SD 1.1), and there were fewer instances of information giving and data gathering between clinicians and patients. We found evidence of lower quality of consultations in two domains of the RCGP framework (seeking health understanding and placing problem in a psychosocial context) in TC and VC. In terms of consultation length, content and quality, VC appeared similar to TC. Both alternative approaches appeared less 'information rich' than FTFC. Technical problems were common and, although patients really liked VC, infrastructure issues will need to be addressed before the technology can be mainstreamed in primary care.

**Consequences**

Although patients liked VC the advantages to clinicians are less clear as in terms of overall workload, VC has a similar duration, content and impact on follow-up consultations as TC. Considerable work may be required to integrate VC with current NHS systems. Before or during implementation, further research should be conducted to determine the best role for VC in terms of which patients and clinical conditions it is most suited. Ideally a randomised controlled trial should be conducted to explore the differences between VC and other modes of consultation and its impact on resource use, preferably in practices where VC is more established, and including use in first presentations.

**Funding Acknowledgement**

Scottish Chief Scientist Office

**The benefits, challenges and acceptability of video-consultation with patients via the internet in general practice; a qualitative study.**

*Presenter: Helen Atherton*

*Authors: Eddie Donaghy, Helen Atherton, Victoria Hammersley, Hannah McNeilly, Annemieke Bikker, Lucy Robbins, John Campbell*

**Institutions**

Usher Institute of Population Health Sciences and Informatics The University of Edinburgh, University of Warwick Medical School, University of Exeter Medical School; General Practice and Primary Care

**Abstract****Problem**

People increasingly communicate online, at work, in college and socially, using visual communication mediums such as Skype and FaceTime. Growing demands on primary-care services mean that new ways of providing patient care are being considered. Video-consultation over the internet is one such mode. However, it is not known for which type of patients and for which types of problems video consulting may be appropriate, nor is it clear how it differs in content from face-to-face or telephone consultations in general practice.

**Approach**

Primary care clinicians were provided with video-consulting equipment. Participating patients required a smartphone, tablet or video-enabled computer. Clinicians invited eligible patients who required a follow-up consultation to choose from a telephone, face-to-face or online video-consultation. Semi-structured interviews were conducted with patients (n=21) who had had a video-consultation and the primary care clinicians (n=13) conducting them. Interviews were audio-recorded and transcribed. We took an inductive thematic approach to data collection and analysis. Final themes were developed by the team using constant comparison and tested by looking for confirming and disconfirming cases. Finally, the themes were discussed with the wider research team and sent to participants for comment.

**Findings**

Participants choosing video-consultations were younger and more experienced with technology than those choosing face-to-face or telephone consultations. They reported positive experiences of video-consultation. Video-consultation were reported as being helpful for working patients, as well as those with mobility or mental health problems. Video-consultations offered benefits relative to telephone consultations by providing visual cues, building rapport, reassurance, and improving communication. However, for complex problems, or consultations where personal support was required, face-to-face consultations were seen as superior. Technical problems were common and reduced the quality of some consultations. Clinicians felt, for routine use and implementation at scale, video-consultations need to be more reliable and seamlessly integrated with clinical appointment systems which would require upgrading of current NHS IT systems. We concluded that the visual component of video-consultations offers advantages over telephone consultations. When integrated with current systems video-consultations can provide an alternative to face-to-face consultations when formal physical examination is not required and is more convenient for patients than face-to-face consultations, especially for working people.

## Consequences

This work shows that video-consulting may offer distinct advantages in some situations to telephone and face-to-face consultations in terms of improved communication, rapport and convenience. As experience with services such as Skype and FaceTime increases, demand for video-consulting services in primary care is likely to rise, but improved technical infrastructure is required to allow video-consulting to become routine.

## Funding Acknowledgement

Scottish Chief Scientist Office

## 4E.5

### Early insights from a qualitative evaluation of a primary care-based clinical decision support system initiative in England.

*Presenter: Mark Jeffries*

*Authors: Justin Waring, Nde-Eshimuni Salema, Sarah Rodgers, Aziz Sheikh, Tony Avery, Antony Chuter, Richard N Keers*

## Institutions

University of Manchester, University of Nottingham, University of Edinburgh

## Abstract

### Problem

Prescribing errors in general practice are an important and expensive cause of preventable safety incidents and patient harm. Many errors can be detected using prescribing safety indicators which can be deployed in general practice electronic health records to identify patients at risk of potentially hazardous prescribing. When embedded within clinical decision support (CDS) systems, prescribing safety indicators can be presented to health professionals as alerts at the point of prescribing. It is known that computerised alerts may improve the safety of prescribing in hospitals; in contrast, their implementation and sustainable use in general practice is less well understood. We therefore aimed to understand the factors that influenced the successful implementation and sustained use in primary care of a CDS system designed to enhance appropriate prescribing.

### Approach

Participants were purposively recruited from Clinical Commissioning Groups (CCG) in the North West and East Midlands of England and from the CDS software developers. We conducted either face-to-face or by telephone, semi-structured qualitative interviews with twenty six stakeholders including general practice, CCG and software developer staff. Analysis was thematic, iterative and conducted alongside data collection with themes developed into coding frameworks.

### Findings

Twenty two interviews were conducted with general practice staff (16), CCG staff (7) and software developer staff (3). Preliminary findings indicated that engagement and disengagement with the CDS was related to the perceived relevance and appropriateness of alerts. Some prescribers found the CDS system easy to use and that it successfully operated unobtrusively in the background, whereas others found the alerts excessive and intrusive. Whilst the prescribing safety alerts were perceived by some as timely and relevant, they could be ignored if cost-saving and local formulary messages became too persistent leading to

alert fatigue and disengagement. Prescribers felt alerts needed to be considered within the context of individual patients and might be more difficult to act upon for patients with complex needs. As a result, the information in alerts was balanced against the prescriber's expertise. At a strategic level the engagement and communication between the developers, CCGs and general practices was seen as important in sustaining the use of the CDS. Emphasis was placed upon the management of the profile of alerts adopted by the CCG to avoid alert fatigue and to maintain engagement from prescribers.

## Consequences

These findings suggest that the use and sustainability of the CDS is related to prescriber's perceptions of the relevance of alerts. At a strategic level such relevance might be achieved by careful profile management of the suite of alerts in the system. Within general practices prescribers balanced out what they considered relevant and important in the prescribing alerts against their own judgement, experience and expertise and the more holistic needs of the patient.

## Funding Acknowledgement

This research project is being undertaken as part of ongoing research within the PRoTeCT research programme which aims to understand and improve prescribing safety within primary care settings. The PRoTeCT research programme is funded by the National Institute for Health Research (NIHR), reference number: RP-PG-1214-10005.

## 4E.6

### Lessons from the development and evaluation of a virtual renal clinic

*Presenter: Sally Hull*

*Authors: Nicola Thomas, Vian Rajabzadeh, Sec Hoong, Gavin Dreyer, Neil Ashman*

## Institutions

Queen Mary University of London, School of Health and Social Care, London South Bank University, Renal Department, Barts Health NHS Trust

## Abstract

### Problem

Evidence from the UK national chronic kidney disease (CKD) audit, identifies deficits in the identification and management of CKD within primary care. Aligning requirement of GPs for a responsive nephrology service, with the capacity of renal services and the need to prioritise patients with progressive disease requires a re-think of traditional models of care. Utilising health data in the primary care electronic health record (EHR) to bridge the primary secondary care divide is one way forward.

### Approach

We describe the development of a novel community kidney service based in a tertiary renal services provider and four clinical commissioning groups (CCGs) in a multi-ethnic population in east London. A virtual CKD clinic was developed for each participating CCG, using EMIS Web. GPs referred patients electronically, and with patient consent nephrologists can access the entire GP clinical record. Nephrologists document advice in the EMIS Web record, which can be viewed by all clinicians in the practice. Primary care intervention included a package of IT tools to identify patients requiring diagnostic coding, improvements to blood pressure and cardiovascular



management, and monthly practice alerts to identify cases with a falling estimated glomerular filtration rate (eGFR). Practice facilitation on clinical data management was provided by the Clinical Effectiveness group (CEG). Additional renal specific clinical facilitation, focussed on CKD management, was offered to practice teams in the lowest decile of CKD coding. Patients were offered group or 1-1 education to facilitate self-management. A mixed methods evaluation used quantitative data from the virtual CKD clinic, and anonymised data on practice coding and primary care management from the GP electronic health record (EHR). Questionnaire survey data from GPs was collected soon after the clinic went live. This was supplemented by a series of interviews with GPs and nephrologists delivering the service before the intervention had become 'work as normal'.

## Findings

Analysis of the virtual clinic data showed a rapid rise in referrals and a fall in nephrology face-to-face out patient appointments. Most referrals (>80%) did not require a traditional clinic appointment but were managed with advice to the referring clinician. The wait for a nephrology opinion fell from 64 to 5 days. Interrogation of the referral data revealed "hidden work" by nephrologists, with 50% of referrals having a further virtual review. Primary care clinicians expressed positive views including the rapid response to clinical queries, increased confidence in CKD management, and patient satisfaction. Nephrologists valued seeing the entire record which improved clinical management. Concerns remain about the volume and quality of referrals.

## Consequences

It is feasible to develop 'virtual' specialist services by sharing views of the primary care EHR. Such services are best supported by community initiatives which engage primary care in continuing service improvement to make best use of both specialist and generalist expertise.

## Funding Acknowledgement

Innovating for Improvement grant from the Health Foundation

## 4F.1

### From continuity of care to continuity in education: Exploring longitudinal integrated clerkships in the UK

*Presenter: Neha Ahuja and co-authors*

*Authors: Neha Ahuja, Andrew McKeown, Ravi Parekh, Sonia Kumar*

## Institutions

Dr. Neha Ahuja, Imperial College London, Dr. Andrew McKeown, Imperial College London, Dr. Ravi Parekh, Imperial College London, Dr. Sonia Kumar, Imperial College London

## Abstract

### Background

With an ageing, multi-morbid and clinically complex patient population in the UK, there is a need for medical students to develop a generalist approach to patient care within a strained health service. Undergraduate placements in primary care allow medical students to learn from undifferentiated presentations over time, with an integration of complex medical, psychological and social problems. However, the traditional model of primary care placements often involves passive observation, brief encounters with patients, and limited utilisation of

students as active participants within the GP Practice team. Longitudinal Integrated Clerkships (LIC) are a novel and innovative approach to education developed internationally, which empower students to take an active learning approach, through the principles of continuity with their patients, supervisors and integration of their learning across specialities.

### Aims:

Participants will develop their understanding of the principles of LICs and consider how they may be applied in the UK primary care context.

### Objectives:

We hope participants will:

Develop an understanding of the definition and key principles behind LICs

Consider how this may be applied within their own contexts

Discuss barriers and benefits of implementing this model of learning

Format

Short introduction to the key principles of LICs

Small group work utilising interactive online white board software to consider how these principles can be applied in personal contexts

Small group work brainstorming potential benefits, barriers and solutions to utilising an LIC approach

Feedback to large group and summary

Content

LICs are a model of education that allows students to take a meaningful role within their placement, becoming active members within clinical teams. Students work with a panel of patients with a variety of clinical presentations and follow them through their journey of care, across healthcare settings and specialities. Students are able to advocate and start to take responsibility for their patients. This active approach to learning has been shown to develop students' sense of responsibility, a more patient-centred approach and an ability to cope with complex ethical dilemmas. The continuity of relationship with their supervisor allows for a nurturing and personalised approach to develop the students' knowledge, skills and attributes. LICs are well established in the USA, Australia and Canada, and are starting to grow in popularity in the UK. Given the nature of the healthcare and education system in the UK and the unique role of continuity of care in UK primary care, this workshop will consider how we can best apply the principles of LICs in the UK primary care context.

### Intended Audience

This workshop will appeal to novice and experienced educationalists in Primary care in the UK. It will be of particular interest to those involved in curriculum design, development and delivery in undergraduate medical education.

### Funding Acknowledgement

## 4G.1

### A vision for academic primary care in the UK after the 2018 Astana Declaration for Primary Health Care.

Presenter: Jose M Valderas, John Campbell, Jo Butterworth

Authors:

#### Institutions

University of Exeter

#### Abstract

##### Aim and intended outcome / educational objectives

To inform the development of a '2019 statement on academic primary care in the UK'. The statement is intended to use the World Health Organization's 2018 Astana Declaration of Primary Health Care to propose a vision for academic primary care in the UK. The statement will be written for the attention of clinicians, researchers and policy makers. The document will primarily have a UK primary care focus, however it will be designed so that key stakeholders from other countries might find it of potential relevance when developing their own statements for academic primary care. The statement will set out a definition of academic primary care, highlighting key domains in order to describe how academic primary care is central to the delivery of the Astana vision of primary healthcare in the UK.

##### Format

- A short introduction by the facilitators on the Astana vision, the concept of the academic statement and the purpose of the workshop
- Attendees spend time considering the draft statement on their own, with clarification provided by facilitators regarding any queries that arise.
- Attendees are asked for their views of the document (scope, and content, process and format).
- Brief interactive small group discussion will focus on the individual proposed domains of academic primary care (participants will have the opportunity to join the group discussing the domains of their interest)
- Feedback from small group leads/facilitators to the wider group.
- Discussion amongst the wider group will enable critical reflection and refinement of the text relevant to each of the domains in order to finalise a draft statement suitable for wider dissemination, consultation, and action amongst stakeholders.
- Next steps and wrap up

##### Content

Academic primary care is that branch of primary care which focuses on applied research, education and training aimed at improving primary care practice. Like other health-focussed academic disciplines, it is characterised by a body of specialist knowledge, clinical academics with expertise in that body of knowledge, and a professional body representing the interests of specialist practitioners engaged in delivering care to citizens based on that body of knowledge. We urge the APC community to engage in an active process of discussion and dissemination of the new PHC Declaration and Vision, and their implications for the delivery of high-impact, well-resourced, academic primary care. We will engage with APC professionals in other countries to support the development of similar initiatives.

##### Intended audience

We welcome, and would value the perspectives, of all conference attendees.

##### Funding Acknowledgement

## 5A.1

### Improving communication to GPs at discharge: the value of a systems approach

Presenter: Nicholas Boddy

Authors: Boddy N<sup>(1)</sup>, Barclay S<sup>(2)</sup>, Clarkson P.J<sup>(3)</sup>

#### Institutions

Engineering Design Centre Department of Engineering University of Cambridge<sup>(1&3)</sup>, Primary Care Unit Department of Public Health and Primary Care University of Cambridge<sup>(2)</sup>

#### Abstract

##### Problem

Poor communication at transitions of care continues to be a threat to patient safety. At hospital discharge, communication to GPs relies on discharge summaries that are usually written by the most junior doctors, who are inexperienced, can be error prone and lack insight into community care. To raise quality, national improvement efforts have focused on guidance and standardisation through idealised templates. These were adopted and abandoned in the author's local trust, due to poor feedback from both primary and secondary care. National concerns persist over information at discharge, which is essential for patient safety and for GPs to optimally coordinate patient care following discharge. This study aims to explore how to improve this transfer of information.

##### Approach

A 'systems approach', recently co-developed by the Royal Academy of Engineering and Royal College of Physicians, enables understanding of the system, its processes and inherent risks, and is valuable when addressing persistent and complex healthcare service issues such as discharge communication to GPs. Aiming for an holistic understanding of the wider system, we are interviewing key stakeholders (administrative staff and clinicians across the primary-secondary care interface), focusing on their information needs, the barriers to their performance and perceived safety risks. In keeping with a systems approach, a design mindset is permeating interviews, asking what 'good' might look like for these stakeholders. Detailed clinical vignettes of unmet needs will elicit nuances unavailable from generalisations of such a complex environment. Following initial thematic data analysis, focus group discussions of key stakeholders will explore proposed improvements alongside the acceptability of risks.

##### Findings

This exploratory study started with the question "What is the system of discharge communication?". Emergent data is highlighting that the techno-social environment is not always understood by its stakeholders, and that it must constantly adapt to accommodate the spectrum of patients and NHS services involved. The more complex a patient's care, the more complex the information for inexperienced doctors to convey becomes, and the more complex the system within which the information needs to be shared. Embracing complexity and explicitly designing for it, could better facilitate the patient's care in the community.

##### Consequences

Using the results of this study, a systems approach will then add rigour by reiteration of solution design before any implementation. By providing methodological support to balance stakeholder needs and to ensure continuous refinement of understanding throughout the process of change, sustainable and dynamic improvements that

such complex and varied service problems require can be achieved. A systems approach is well placed to target many such issues in an increasingly multidisciplinary NHS.

#### Funding Acknowledgement

None to declare

## 5A.2

### Impact of health and social care interventions on unplanned hospital admissions, timely discharge and well-being of community dwelling older population: A mixed methods meta-review of systematic reviews

Presenter: *Shoba Dawson*

Authors: *Patience Kunonga<sup>2</sup>, Gemma Spiers<sup>2</sup>, Fiona Beyer<sup>2</sup>, Lorna Duncan<sup>1</sup>, Matthew Booker<sup>1</sup>, Dawn Craig<sup>2</sup>, Ruth McDonald<sup>3</sup>, Ailsa Cameron<sup>1</sup>, Barbara Hanratty<sup>2</sup>, Chris Salisbury<sup>1</sup>, Alyson Huntley<sup>1</sup>*

#### Institutions

<sup>1</sup> University of Bristol, <sup>2</sup> University of Newcastle, <sup>3</sup> University of Manchester

#### Abstract

##### Problem

It is predicted that by 2020, the population >65 years, >85 years and >100 years will increase by 12% (1.1 million), 18% (300,000) and 40% (7,000) respectively. Hospital episodes for the >65yrs population have continued to increase, rising to £6.3 million between 2016-2017. Whilst some older people need to be admitted to the hospital, evidence suggests that timely care provision in the community is more appropriate for many. Our aim was to identify and examine systematic reviews (SRs) evidence of health and social care (HAS) interventions for the community-dwelling older population regarding the outcomes 1) unplanned hospital admissions 2) timely hospital discharge and 3) patient well-being.

##### Approach

We developed a comprehensive search strategy and searched eight bibliometric medical and social science databases. Medical Subject headings and keywords for (i) health care, (ii) social care and (iii) systematic reviews/meta-analyses were combined to retrieve the relevant literature and were tested for sensitivity and specificity. Searches were restricted to Organisation for Economic Co-operation and Development countries and to those published from 2009 onwards to reflect the recent changes to care provision in developed nations e.g. GP out of hours contract changes 2004. Additionally, citation searches and reference lists of included reviews supplemented the database searches. Data extraction and risk of bias assessment were carried out by one reviewer with a random sample of 20% and 10% double screened by two other reviewers. This review will be documented following the PRISMA guidance. This review is registered on PROSPERO as CRD42018087534.

##### Findings

Searches retrieved 8720 papers. Following title and abstract screening, we identified 134 relevant papers for full-text screening and included 78 reviews in our synthesis. These systematic reviews have been grouped into reviews which describe a variety of admission avoidance/alternative interventions (n=9), transitional care (n=7), cognitive/

psychosocial interventions (n=2), exercise/rehabilitation (n=18), medication review (n=6), seasonal vaccination (n=1), ED-based interventions (n=5), preventative home visits (n=3), integrated HAS care (n=9), Social care services (n=8) and targeting social isolation interventions (n=10). Most of the reviews describe studies that recruited a mixed, older population (n=53), the remaining describe specific patient groups e.g. heart failure & COPD. Only ten of the reviews focused on qualitative studies. We are currently preparing a paper comparing the effectiveness of health versus social care versus combined HAS interventions with respect to our three outcome measures.

#### Consequences

To our knowledge this is the first meta-review investigating the effectiveness of health and social interventions for the community-dwelling older population. Our analysis will summarise the comparative effectiveness of health, social and combined HAS interventions on hospital admissions, timely discharge and patient well-being and inform appropriate design of health services of the community-dwelling older population.

#### Funding Acknowledgement

National Institute for Health Research School for Primary Care Research Evidence Synthesis Working Group

## 5A.3

### From the Care Home to the Hospital: Understanding hospital transfers through the experiences of care home staff

Presenter: *Fawn Harrad*

Authors: *Dr Chris Williams, Professor Natalie Armstrong*

#### Institutions

University of Leicester

#### Abstract

##### Problem

Care home residents are frequently transferred to hospital despite the potential that this will be of limited benefit to them and risk significant iatrogenic harm. Several initiatives to support care homes in avoiding transfer of their residents to hospital have been introduced, but robust evaluations of these are lacking. Particular gaps relate to understanding the role of care home staff in transfer decisions and the nuanced contexts in which transfer decisions are made. An enhanced understanding of decisions about hospital transfer could help to optimise the care that residents receive and reduce inappropriate transfers. The aim of the current project is to develop a model of escalation, based on the experiences of care home staff, that describes the decisions and processes that occur prior to the transfer to hospital of a care home resident.

##### Approach

Semi-structured interviews were carried out with 30 care home staff across a purposive sample of 6 nursing and residential homes in the Midlands. Participants were managers, deputy managers, registered nurses, senior care assistants and care assistants. Discussions covered personal experience of being involved in transfers and reflection on hypothetical vignettes which had been developed in collaboration with four care home managers to reflect situations that could occur in a care home. Interviews were audio recorded, transcribed verbatim and analysed using constant comparison.

## Findings

Thematic analysis will contribute to a model of escalation that describes the events and process that precede a transfer. Preliminary analysis suggests that care staff recognise deterioration through non-specific features (e.g. change from usual behaviour) rather than a structured clinical assessment. This is shaped by carers' tacit (rather than formal) knowledge of each resident. Once a deterioration is recognised, processes for escalation within the homes vary significantly, reflecting organisational structures. When deciding the most appropriate course of action staff consider multiple factors This includes clinical information, resident and family wishes and (perceived) legal responsibilities. Despite holding in depth knowledge of each resident, care staff believe the decision to transfer a resident (or not) should be made by a healthcare professional such as a GP or paramedic. Staff spoke extensively about the role of advance care plans (ACPs) in the transfer process. ACPs may be useful but vague and ambiguous ACPs are subject to interpretation at the time of deterioration, which can increase the likelihood that a hospital transfer will occur.

## Consequences

This study approaches hospital transfers from care homes from a new perspective, by emphasising the experiences of care home staff. Understanding the processes and interactions that precede a transfer is an important first step to developing high quality alternatives to a hospital transfer. Our model of escalation can provide a theoretical basis for interventions and policies to support such alternatives.

## Funding Acknowledgement

### 5A.4

## A multicentre randomised controlled trial of an augmented exercise referral scheme using web-based behavioural support in individuals with metabolic, musculoskeletal and mental health conditions: findings from the e-coachER study.

*Presenter: Adrian Taylor*

*Authors: Wendy Ingram, Rod Taylor, Nana Anokbe, Lucy Yardley, Kate Jolly, Nanette Mutrie, Jeff Lambert, John Campbell, Sarah Dean, Colin Greaves, Mary Steele, Paul Little*

## Institutions

University of Plymouth, University of Exeter, University of Birmingham, University of Edinburgh, Brunel University, University of Southampton

## Abstract

### Problem

There is no rigorous evidence that exercise referral schemes (ERS) increase physical activity (PA) of individuals with chronic health conditions. E-coachER is a novel web-based behavioural support package (<https://www.ncbi.nlm.nih.gov/pubmed/30244214>) to augment ERS. This is the first RCT to report whether adding web-based support to ERS improves objectively-assessed PA after one year compared to usual ERS.

### Approach

450 low active adults with obesity, diabetes, hypertension, osteoarthritis or depression were recruited by primary care or exercise practitioners in Glasgow, Birmingham and Devon, and randomised

to receive a pedometer, PA recording strips and a guide to access the 7-step web-based support package. The primary outcome was minutes of moderate and vigorous PA (MVPA) in  $\geq 10$  min bouts measured by accelerometer over one week at 12 months, with a wear-time threshold of  $\geq 16$  hours per day for  $\geq 4$  days including  $\geq 1$  weekend day. Other accelerometer-derived PA measures, self-reported PA, ERS attendance, EQ-5D-5L and HADS were collected at 4 and 12 months.

## Findings

The sample had a BMI mean (SD) of 32.6 (4.4), and were primarily referred for weight loss, though 54% reported having low mood as a referral reason. The provisional ITT complete case adjusted comparison of groups at 12 months showed a weak effect in favour of the Intervention group (N=236; 95% CI -1.4 to 25.9; P = 0.08), adjusting for site, participant's reported main reason for referral, IT literacy level, age and gender. Among the intervention participants, 64% logged on to the on-line support at least once, and 36% progressed to review a PA goal (Step 5). Reaching the goal review stage (or not) did not influence the findings in a CACE analysis. The intervention had no significant effect on ERS attendance, EQ-5D-5L or HADS scores, but in complete case repeated measures analyses (including both 4 and 12-months follow up) the intervention participants reported lower depression (P < 0.05) and anxiety (P = 0.05) scores compared with the control group. Challenges were faced in the primary outcome analysis: Few people accumulated  $\geq 10$  min bouts of accelerometer accumulated MVPA, resulting in a poor fit for the predefined model. Further sensitivity analyses are warranted.

## Consequences

Adding e-coachER to usual ERS had only a small effect on long-term objectively assessed MVPA. Engagement in the intervention was acceptable but whether or not they completed a goal review did not influence the findings. Web-based support overcame the need to train ERS professionals to provide consistent, evidence-based, behaviour change support, but further analysis is needed to understand differences in those who did and didn't use the support. The trial involved a number of steps to identify and recruit participants which would not be needed if patients received similar support in a routine primary care referral.

## Funding Acknowledgement

Funding was received from the Department of Health as part of the National Institute for Health Research (NIHR) Health Technology Assessment (HTA) programme (project number 13/25/20)

### 5B.1

## How were migrants and healthcare framed in UK newspapers during the so-called Windrush scandal?

*Presenter: Ruby Rathbone*

*Authors: Ruby Rathbone, Anita Berlin*

## Institutions

Queen Mary University of London, Barts and The London

## Abstract

### Problem

The relationship between migrants and healthcare is topical and increasingly politicised. Indeed in some framings of this relationship a migrant crisis is the cause of a crisis in the NHS. The "hostile environment" has resulted in restricted access to healthcare for

## 5B.2

### How do triage-call-handlers in unscheduled care navigate their discretionary space in machine-mediated and rule-based telephone interactions?

*Presenter: Jens Foell*

*Authors: Christopher Evans, Welsh Ambulance NHS Trust, Thomas Norton, Tofa Mehzabin and Alexandra Ip Dos Santos*

#### Institutions

Imperial College London

#### Abstract

##### Problem

Telephone triage in unscheduled care occupies a key position in regulating access to services. Triage-call-handlers come from a variety of occupations. Their interactions with callers are scripted by algorithm. They have various degrees of liberty in choosing the appropriate algorithm and/or overriding the algorithm. Adherence to the algorithm can be part of key performance indicators. Tensions exist between listening to the caller and following the rule-based conversation structure. Effective and efficient triage conversations ought to assist in "getting it right first time" and have to address the complexity of presenting problems including child health, end-of-life-care, mental health and multiple morbidities. This study explores how call handlers deal with this problem in their occupational contexts. This includes different software systems and different organisational settings. They all have in common that complex situations have to be approached using a technology-mediated interface.

##### Approach

We use a mixed methods qualitative research design with semi-structured in-depth interviews and non-participant ethnographic field work. We contacted triage-call-handlers in the settings of Ambulance Control, NHS Direct and GP Out of Hours. There are two consecutive interviews. The first interview focuses on the occupational context and individual professional background. The second interview explores using a narrative technique emotional labour in the provision of care in triage-consultations. The research project is part of an undergraduate student research; students are trained as research assistants and learn by discovery.

##### Findings

The data gathering period will be in May. Consultations with call-handlers in the fields of ambulance control, GP Out of Hours and NHS Direct highlighted the themes that informed the topic guide: choice of algorithm, degree of professional liberty in potentially overriding the template, ability to do the job if the presenting problem is not adequately covered by the algorithm, emotional aspects of being remotely exposed to difficult or dramatic situations, organisational culture, supervision.

##### Consequences

The findings are important because increasingly technology-mediated encounters are part of primary care, particularly in the realm of resource allocation. The tension between normative and narrative, diagnostic and therapeutic conversations is in the heart of this evolution of services. Finding out how call-handlers do their job in machine-mediated healthcare encounters enables improvement of the interfaces between caller and organisation, but also call-handler and software.

##### Funding Acknowledgement

Funding from Betsi Cadwaladr University Healthboard is applied for

migrants with incomplete documentation. The impact of this policy on migrants from the Windrush generation led to the resignation of the then Home Secretary Amber Rudd in 2018. This study aimed to increase understanding of the use of frames and their intended impact on public opinion, policy, service providers and vulnerable groups. This may shed new light on the wider determinants of health.

#### Approach

This study (by a fourth-year medical student) uses frame analysis: an approach informed by symbolic interactionism that examines systematically human communication identifying underlying messages as problems, solutions and moral/political discourses. Daily newspapers published in the UK were searched using Lexus online database covering one month before and one week after the resignation of Amber Rudd. Search terms included migrants/immigration + NHS/healthcare. After checking and sorting 97 articles were included in the analysis. All articles were analysed for framing of problems and those held responsible (diagnostics/ moral evaluation), and solutions (prognostics) including what needs to be done, what is the "calls to arms" and overall sociopolitical discourse. These were displayed matrices. Subsequently frame clusters and meta frames were generated from the frames set.

#### Findings

Analysis is still in progress but a number of frame clusters and meta frames are emerging. These include explicit calls to arms framing migrants as victims (of the hostile environment) or villains (causally responsible for the NHS crisis). Many seemingly factual articles also present frames but often in more subtle and nuanced ways. A initial finding relates to the concept of legitimacy (or candidacy) distinguishing some undocumented migrants (Windrush generation) as the entitled to healthcare than others (visa over stayers or perceived health tourists). We are also looking at Amber Rudd's resignation as the "solution" to an immediate problem and any mentions of Brexit.

#### Consequences

There is evidence hostile environment has had a negative impact on access to care some of the most vulnerable in society. The relationship between migrants and the NHS has become charged politicised issues that have underpinned recent debate, informed public opinion and policy. Frame analysis is a valuable tool to provide insight into how formal (and informal) communication is used to pass on predetermined messages that may inspire, mobilise, manipulate or actively divide and deceive. As truth and fake information are increasingly difficult distinguish employing techniques that systematically help us understand how messages are used to shapes perceptions and experiences may have wider value in healthcare research and education.

#### Funding Acknowledgement

No funding received

## 5B.3

### GPs should stop making mental health diagnoses or at least use transdiagnostic labels

Presenter: Bruce Arroll

Authors: none

#### Institutions

University of Auckland

#### Abstract

##### Problem

GPs are tempted to make mental health diagnoses but we are often seeing people on the worst day of their life and if we waited, and let passage of time assist in the diagnosis, and dealt with the issues rather than the labels we would serve our patients better. If we are going to use labels they should be transdiagnostic such as distress or stuck.

##### Approach

I would draw upon cross-sectional data from the Magpie study in Wellington which showed that GPs get better at diagnosing depression the more severe it is. I would also draw up a talk by Dr Allan Frances who ran the DSM-IV and is highly critical of DSM 5 who said at the BMJ Overdiagnosis conference 2018 that GPs should not make mental health diagnoses as they have little time and are often seeing patients on the worst day of their lives. The key point is really that the common conditions we see in general practice are distress (depression/anxiety) and the treatments are the same so what is the value of the label. Dowrick (2000) GPs are likely to make a diagnosis of depression if they believe they can manage it so diagnosis follows rather than precedes treatment. GPs are more likely to think in terms problems so why not dispense with the label and get on with the therapy and get the patient moving with their life. In the words of Dr Kirk Strosahl get them back in the "river of life."

##### Findings

As above time is better spent on getting on with treatment rather than trying to come up with a label. There is a move internationally to use transdiagnostic labels and transdiagnostic interventions e.g. Barlow DH et al The Unified Protocol for Transdiagnostic Treatment of Emotional Disorders Compared With Diagnosis-Specific Protocols for Anxiety Disorders. A Randomized Clinical Trial JAMA Psychiatry. doi:10.1001/jamapsychiatry.2017.2164

##### Consequences

The implications are that GPs should rarely if ever make a mental health diagnosis and we should consider stopping trying to make DSM type diagnoses, consider transdiagnostic diagnoses and get on with treatment (non drug to start with).

##### Funding Acknowledgement

University of Auckland Sabbatical grant

## 5B.4

### Understanding Sciatica: How do people with lumbar radicular pain understand their condition and how does this impact on their views regarding treatment?

Presenter: Robert Goldsmith

Authors: Dr Nefyn Williams, Dr Fiona Wood.

#### Institutions

Bangor University, Cardiff and Vale UHB, University of Liverpool, Cardiff University

#### Abstract

##### Problem

Background: Several pathological processes contribute to lumbar radicular pain. It is not known how patients rationalise the experience of sciatica or understand the diagnosis. Providing clinicians with a better understanding of how patients conceptualise sciatica will help them to tailor information for patients on the management and treatment of the condition. Objectives: To understand patients' beliefs regarding their illness following a diagnosis of lumbar radicular pain, how these were developed, and the impact on beliefs regarding treatments.

##### Approach

Design: Single centre, qualitative study Method: Thirteen patients recently diagnosed with lumbar radicular pain were purposively recruited from a single UK based NHS primary care service. Individual semi-structured interviews were recorded and transcribed. Data were analysed using a thematic approach.

##### Findings

Four main themes were generated: (1) the illness experience (2) the concept of sciatica, (3) treatment beliefs and (4) the desire for credible information.

1. Participants emphasised the severity and unpredictability of the pain experience, which was 'mentally and physically draining'. Three participants expressed suicidal thoughts. Participants felt that they were not taken seriously as symptoms were confusing to explain and that their symptoms were underappreciated, illegitimate and 'invisible'.
2. All participants saw their illness as being caused by a mechanical (rather than chemical or ischemic) insult to neural tissue, caused by a disc enlarging. Inflammation was perceived to be involved in these processes by increasing the size of the disc or surrounding tissues. When an MRI failed to adequately explain their experience, participants were left feeling invalidated, frustrated and confused.
3. The compressive illness constructs appeared to have influenced beliefs regarding treatment effectiveness. Treatments addressing compression (e.g. surgery) were easily understood and perceived as having more control over the condition. Those treatments seeking to address inflammatory or neuropathic mechanisms (e.g. medication or NRB) were confusing and therefore perceived as less powerful.
4. Participants expressed a desire for credible information as it was an important step in understanding their illness before considering treatment. Participants appreciated the use of plastic models of the spine to help explanations and highly valued clinicians taking the time to show them their MRI scan. It is likely that the use of plastic models and visualisation of MRI will have influenced the illness construct of participants.

## Consequences

The diagnosis of lumbar radicular pain remains grounded in a compressive conceptual illness identity. Explaining symptoms using a compressive pathological model seems acceptable to patients but may not accurately reflect the spectrum of pathological processes known to contribute to radicular pain. This model appears to inform patient beliefs about treatments. Clinicians should take care to fully explain the pathology prior to shared decision making with patients.

## Funding Acknowledgement

This research and preparation of the manuscript was supported by a First into Research

Fellowship from Research Capacity Building Collaboration, Wales. We gratefully acknowledge

additional funding for qualitative research training provided by a research award from the

Musculoskeletal Association of Chartered Physiotherapists.

## 5B.5

### Can we use metabolic risk factors to predict significant liver disease in primary care?

*Presenter: Helen Jarvis*

*Authors: Dawn Craig, Gemma Spiers, Daniel Stow, Robert Barker, Barbara Hanratty*

## Institutions

Institute of Health and Society, Newcastle University

## Abstract

### Problem

Mortality from liver disease is increasing in the UK, with an average age of death of 59 it is a leading cause of premature mortality. Up to three quarters of people with liver disease present for the first time when they have irreversible cirrhosis, and intervention is less effective. Earlier detection of liver disease in primary care would allow intervention to prevent progression. Non-alcoholic Fatty Liver Disease (NAFLD) is associated with metabolic risk factors making up the metabolic syndrome. We routinely collect information on these metabolic risk factors in primary care. This research will synthesise evidence on the use of metabolic risk factors to predict which patients with NAFLD will go on to develop significant liver disease (NASH, fibrosis, cirrhosis, liver mortality). This will allow targeting of fibrosis testing and intervention.

### Approach

A systematic review is being conducted of published evidence looking at metabolic risk factors as predictive or prognostic factors in the development of significant liver disease. The search strategy is based on a similar review carried out by NICE in 2015 for their 2016 NAFLD guidelines, updated and expanded to include a broader range of liver outcomes and study designs. Searches have been conducted in MEDLINE, EMBASE, The Cochrane Library and clinical trials.gov. Additional grey literature has been searched on CPCI-S (Conference Proceedings Citation Index) and OpenGrey. Citation searches were also carried out. Titles and abstracts of all identified studies were screened independently by two review authors. The full text of potentially eligible studies were retrieved and independently assessed for eligibility by two review team members.

## Findings

6,946 records were identified for title and abstract screening. 263 met criteria for full text screening, and 40 papers reporting on 28 cohort studies have been selected for inclusion. Data extraction is underway and results will be available for presentation at conference in July. Preliminary results based on full text screening indicate that there is a significant body of evidence around the utility of metabolic risk factors in helping to predict significant future liver disease, with the majority of evidence focused around markers of obesity and insulin resistance as predictors of poor outcomes.

## Consequences

The results of this systematic review will bring together the published evidence around metabolic risk and liver outcomes. This will allow primary care clinicians and policy makers to make evidence based decisions on which of the many people with fatty liver should be investigated and kept under regular review. My review alongside other ongoing work will provide the impetus for a 'liver health check' to be added to chronic disease management for people at increased risk, and contribute to earlier detection and mortality reduction for people with liver disease.

## Funding Acknowledgement

Helen Jarvis is funded by an NIHR In Practice Fellowship

## 5B.6

### Adapting an evidence-based domestic violence intervention for general practice for behaviour change in community pharmacist consultations

*Presenter: Natalia Lewis*

*Authors: Gene Feder, Lucy Downes, Joni Jackson, Theresa Moore, Maria Theresa Redaniel, Jenny Scott, Tracey Stone, Penny Whiting, Jeremy Horwood*

## Institutions

Centre for Academic Primary Care, Bristol Medical School (PHS), University of Bristol, NIHR CLAHRC West at University Hospitals Bristol NHS Foundation Trust, UK, Centre for Primary Care and Public Health, Barts and The London School of Medicine and Dentistry, NIHR CLAHRC North Thames at Bart's Health NHS Trust

## Abstract

### Problem

Domestic violence and abuse (DVA) is a public health problem with devastating consequences for women's health. A local health commissioner's enquiry and scoping review suggest that women experiencing DVA may use more emergency contraceptives (EC) than other women. As community pharmacists provide sexual health services including supply of nearly 50% of all emergency hormonal contraceptives, they may be the first point of contact for patients experiencing DVA. Therefore, pharmacists should be involved in the primary health-care response to this public health problem. Identification and Referral to Improve Safety (IRIS) is an evidence-based intervention for behaviour change in general practitioner consultations with patients presenting with indicators of DVA. This study aimed to adapt IRIS for behaviour change in community pharmacist consultations on sexual health.

## Approach

We followed the MRC framework for the development of complex interventions and the framework for the co-production of public health interventions. We used the COM-B Behaviour Change Wheel framework to ensure that the adapted intervention is grounded in established techniques to change behaviour. The adaptation work was carried out in two stages: 1) an evidence synthesis from systematic review and case-control study in Clinical Practice Research Datalink (CPRD) on the association between DVA and EC use, literature review of DVA interventions in pharmacies and thematic analysis of qualitative interviews with pharmacists about the feasibility and acceptability of an adapted IRIS (n=20); 2) co-production of the adapted IRIS with pharmacy stakeholders (n=13). During stage 2, we established an intervention development group consisting of members of the research team, IRIS developers and an academic pharmacist.

## Findings

The systematic review and CPRD study found a positive association between DVA and EC use (OR between 1.5; 95% CI 1.1-2.0 and 6.5; 95% CI 4.2-10.2). We did not find studies of DVA interventions in community pharmacies. The qualitative study found that pharmacists were confident in providing public health services but lacked skills and confidence in identifying and responding to DVA. Pharmacists welcomed training on DVA, alongside organisation and system-level support, and raising public awareness on the role of pharmacies in multi-sector response to DVA. Pharmacists suggested adapting IRIS to the sexual health consultations (i.e., EC, chlamydia screening). Informed by the evidence from stage 1, the intervention development group drafted an IRIS adaptation, ran two stakeholder workshops, and mapped findings from stage 1 and workshops on the COM-B framework. The combined findings informed a programme theory and logic model for the adapted IRIS.

## Consequences

The adapted IRIS intervention will be tested in a feasibility study. Our systematic, theory driven adaptation of IRIS to a new setting and professional group has the potential to increase intervention acceptability, feasibility, and behaviour change in a transferable way, which may be applicable to other health-care settings.

## Funding Acknowledgement

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## 5C.1

### Brief physical activity interventions in primary care: A systematic review

*Presenter: Rebecca Beeken*

*Authors: Rachael Thorneloe, Rocio Rodriguez Lopez, Adam Grice, Claire Stevens, Mangesh Thorat, Kat Bradbury, Meg Kamble, Grace Okoli, Dan Powell*

#### Institutions

Rachael Thorneloe, University of Leeds; Rocio Rodriguez Lopez, University of Leeds; Adam Grice, University of Leeds; Rebecca Beeken, University of Leeds; Claire Stevens, University College London; Mangesh Thorat, Queen Mary University of London; Kat Bradbury, University of Southampton; Meg Kamble, University of East Anglia; Grace Okoli, Kings College London; Dan Powell, University of Aberdeen

#### Abstract

##### Problem

The prevalence of physical inactivity remains high in developed countries and contributes to significant health and economic burden. The World Health Organisation global recommendations on physical activity (PA) for health suggest PA should be promoted within primary care. Brief advice from a general practitioner can be beneficial and cost effective, but less is known about how often such advice is given and to whom. The aim of this systematic review was to examine the extent to which brief PA interventions are delivered in primary care and explore factors associated with both the delivery and patient receptivity.

##### Approach

CINAHL, Embase, Medline, and PsychINFO were searched from January 2012 until July 2018 (PROSPERO: CRD42018103812). Inclusion criteria were: qualitative or quantitative studies reporting on level of delivery of brief PA interventions in primary care and/or views towards brief PA interventions. Studies in the context of disease management or survivorship were excluded.

##### Findings

Searches found 8756 original results, with 42 articles for inclusion (37 surveys and 5 qualitative studies). Nineteen studies collected data from the general population, 16 collected healthcare professional data and 7 collected healthcare professional and patient data. Thirty-seven studies reported data on the delivery of brief PA interventions. The proportion of healthcare professionals who assessed level of patient PA ranged from 8% to 81%, with delivery of PA advice ranging from 15% to 96%. The proportion of patients who received PA advice ranged from 7.7% to 76%. Delivery of PA advice tended to be higher in certain countries (e.g. USA) and among certain healthcare professional groups (e.g. nurses). Few consistent findings emerged for factors associated with the delivery of brief PA interventions. Nine studies reported a significant positive association with patient Body Mass Index (BMI) and the delivery of brief PA interventions. Nineteen quantitative studies examined healthcare professional attitudes towards delivering brief PA interventions. Main themes included: professional role; perceived effectiveness and importance of brief PA interventions; feasibility and time constraints; healthcare professional self-efficacy and; knowledge and need for further training. Practitioners considered a perceived lack of patient motivation and receptivity towards PA to be a key barrier. Data from qualitative studies suggest that patients value brief PA advice when it is clearly linked to contextual factors, such as their presenting health complaint or potential to reduce medication.



## Consequences

Delivery of brief PA interventions within primary care varies widely, and healthcare professionals have identified a number of barriers. Addressing these barriers within training programmes could improve the consistency with which advice is given. More research is needed to better understand when patients are most likely to be receptive to PA interventions within primary care. This could help optimise the effectiveness of interventions and encourage healthcare professionals to feel confident about discussing PA with their patients.

### Funding Acknowledgement

Yorkshire Cancer Research and Cancer Research UK

## 5C.2

### Effect of pedometer-based walking interventions on long-term health outcomes: prospective 4-year follow-up of two randomised controlled trials using routine primary care data

*Presenter: Teresa J. Harris*

*Authors: Elizabeth Limb, Fay Hosking, Iain Carey, Steve DeWilde, Cheryl Furness, Charlotte Wahlich, Shaleen Ahmad, Sally Kerry, Peter Whincup, Christina Victor, Michael Ussher, Steve Illiffe, Ulf Ekelund, Julia Fox-Rushby, Judith Ibson, Derek G Cook*

### Institutions

St George's University of London, Queen Mary's University of London, Brunel, University of London, University College London, Norwegian School of Sports Sciences, King's College London.

### Abstract

#### Problem

Data are lacking from physical activity (PA) trials with long-term follow-up of both objectively measured PA levels and robust health outcomes. Two primary care 12-week pedometer-based walking interventions in adults and older adults (PACE-UP and PACE-Lift) found sustained objectively measured PA increases at 3 and 4 years, respectively. Using routine primary care data from trial participants, we aimed to evaluate intervention effects on long-term health outcomes relevant to walking interventions.

#### Approach

We downloaded primary care data for trial participants who gave written informed consent, for 4-year periods after their randomisation from the 7 PACE-UP and 3 PACE-Lift English general practices (PACE-UP from Oct 23, 2012, to Nov 11, 2017; PACE-Lift from Oct 12, 2011, to Oct 11, 2016). The following new events were counted masked to intervention status for all participants, including those with pre-existing diseases (apart from diabetes, where existing cases were excluded): cardiovascular (myocardial infarction, coronary artery bypass graft, angioplasty, and stroke or transient ischaemic attack, cardiovascular deaths), diabetes cases, depression episodes, fractures, and falls. Intervention effects on time to first event post-randomisation were modelled using Cox regression for all outcomes, except for falls which used Poisson regression to allow for multiple events, adjusting for age, sex, study. Absolute risk reductions (ARRs) and numbers-needed-to-treat (NNT) were estimated.

#### Findings

1297/1321 (98%) of original trial participants 45-75 years, consented to primary care data linkage and had data downloaded. Events were

<20 per group, except fractures and falls. Cox Hazard ratios (95% CI) for interventions vs controls were: non-fatal cardiovascular 0.24 (0.07 to 0.77); total cardiovascular 0.34 (0.12 to 0.91); diabetes 0.75 (0.42 to 1.36); depression 0.98 (0.46 to 2.07); fractures 0.56 (0.35 to 0.90). Poisson incident rate ratio (95% CI) for falls was 1.09 (0.83 to 1.43). ARRs and NNT (95% CI) for cardiovascular events were: non-fatal 1.7% (0.5% to 2.1%), NNT=59 (48 to 194); total 1.6% (0.2% to 2.2%), NNT=61 (46 to 472); and for fractures 3.6% (0.8% to 5.4%), NNT 28 (19 to 125).

### Consequences

New cardiovascular events and fractures were significantly decreased at 4 years. Short-term primary care pedometer-based walking interventions can produce long-term health benefits and should be more widely used to help address the public health inactivity challenge. Our study also demonstrates the potential for using routine data to evaluate the outcome of large-scale primary care walking interventions, avoiding expensive objective accelerometry assessment or inaccurate self-report PA data.

### Funding Acknowledgement

The research was supported by the National Institute for Health Research (NIHR): PACE-UP trial and 3-year follow-up by the Health Technology Assessment (HTA) Programme (10/32/02); PACE-Lift trial by the Research for Patient Benefit (RfPB) Programme (PB-PG-0909-20055); the PACE-UP 3-year follow-up was also supported by the Collaboration for Leadership in Applied Health Research and Care (CLAHRC) South London.

## 5C.3

### The parkrun practice - an investigation into uptake, engagement and delivery

*Presenter: Joanna Fleming*

*Authors: Professor Jeremy Dale, Dr Carol Bryce*

### Institutions

University of Warwick

### Abstract

#### Problem

Promoting physical activity in GP practices can be successful in getting inactive people to be active. However, many exercise referral schemes take place in leisure centres and last 10-12 weeks, therefore not helping to make long term changes. Parkrun is a series of free, weekly 5km events, in areas of open space. It is open to all, including those who are inactive or have health conditions or disabilities. In June 2018, there was a joint collaboration between the RCGP and parkrun, in the promotion of GP practices linking with their local parkrun to become a parkrun practice and promoting parkrun through the appropriate channels. While over 660 practices have registered, it is in its early stages with many unknowns. This study aims to investigate uptake, engagement and delivery of the parkrun practice, exploring motivations and expectations of registered practices and reasons for non-uptake among non-registered practices. In doing so, it aims to help us understand the ways in which the initiative is being implemented and how it may be further enhanced.

#### Approach

This study will use both quantitative and qualitative methods. The lead for each registered parkrun practice will be asked to fill in an

online survey. It will ask questions about the respondent's role, local parkrun details, the processes involved in becoming a parkrun practice, activities being carried out, and how and why patients have been signposted. Descriptive statistics will be presented for all sections of the survey. We will carry out 12 semi-structured interviews with a GP / lead person (6 x parkrun practice; 6 x non-registered practice close to parkrun venue) and 2 focus groups with parkrun practice teams. We will also carry out 3 interviews with key stakeholders. All interview transcripts will be subject to thematic analysis, identifying and mapping key themes relevant to the research questions, with the addition of emergent themes. Analysis will use a modified grounded theory method, whereby an inductive and deductive approach will be used.

### Findings

We are awaiting ethical approval and will start data collection in March 2019. Data collection will take place March-May, with data analysis taking place May-July. By July we anticipate having full findings and conclusions to report.

### Consequences

The findings will help us understand the ways in which the initiative is being implemented, and how it can be further enhanced. With many different potential models of delivery, this study will give us a clearer idea of why practices are choosing to register or not, how they are delivering the initiative and what effect this might be having on the type and number of patients they are signposting. The results will also feed directly into development of a larger grant application exploring in more detail the impact of different models of delivery and patient health and wellbeing.

### Funding Acknowledgement

## 5C.4

### The effects of pedometer and other step-count monitoring interventions on physical activity: a systematic review and meta-analysis of randomised controlled trials.

*Presenter: Umar A R Chaudhry*

*Authors: Umar A R Chaudhry<sup>1</sup>, Charlotte Wahlich<sup>1</sup>, Rebecca Normansell<sup>1</sup>, Rachel Knightly<sup>1</sup>, Derek Cook<sup>1</sup>, Tess Harris<sup>1</sup>*

### Institutions

<sup>1</sup> Population Health Research Institute (PHRI), St George's University of London (SGUL), Cranmer Terrace, SW17 0RE, United Kingdom;

### Abstract

#### Problem

Physical inactivity is a growing public health concern, and the fourth leading cause of death globally. Pedometers measure step-counts and can increase physical activity levels. Newer devices, for example mobile phone applications and body worn devices, also measure step-counts and require scrutiny of their effectiveness. Our primary aim is to conduct a systematic review and meta-analysis of the effects of pedometer and other step-count monitoring interventions on physical activity levels among the adult general population.

#### Approach

We systematically searched seven databases using MeSH headings and keywords to identify randomized controlled trials published after

1/1/2000. We included trials with healthy adults participants aged  $\geq 18$ , or those at risk of disease. Children, those selected with a specific health condition, high-performance trainers and hospital-based studies were excluded. The intervention group comprised community-based step-count monitoring interventions including pedometers with objective physical activity measures; the comparator group incorporated 'usual standard care' or healthcare advice with minimal active engagement. The primary outcome was change in step-count at follow-up compared to baseline. A random-effects model was utilized to assess the primary outcome, and a risk of bias assessment determined the quality of included studies. The protocol is registered PROSPERO: CRD42017075810.

### Findings

Following initial database searching of 14,356 records and subsequent forward citation search, 54 studies were included, of which 13 were part of the narrative synthesis. 41 studies were therefore incorporated in the quantitative meta-analysis; 22 providing estimated mean between-group differences in change from baseline step-count and 19 providing mean between-group differences in end-point only step-counts. From the 22 studies, 16 reported the primary outcome at  $\leq 3$  months with a mean difference (MD) in step-count of 1255 [95% Confidence Interval 848, 1661]; 8 studies at  $\leq 6$  months, MD 1084 steps [647, 1520]; 9 studies at  $\leq 1$  year, MD 516 steps [273, 758]; 2 studies at  $\leq 2$  years, MD 290 steps [-7, 587]; and 4 studies at  $> 2$  years MD 494 steps [251, 738]. The 19 studies with end-point only step-counts highlighted similar findings, but had fewer participants and reported no outcomes beyond one year.

### Consequences

This review demonstrated that pedometers and other step-count monitoring interventions significantly increase individuals' step-counts in the short-term, with larger trials also showing small sustained long-term effects. These interventions could therefore provide a means of addressing the public health inactivity challenge. Further work will evaluate which type of interventions are more effective and determine the effect-modifiers of physical activity maintenance.

### Funding Acknowledgement

This study is being undertaken as part of an academic clinical fellowship (ACF) in general practice.

## 5D.1

### Overseas GP recruitment: a methodology for comparing international GP training and healthcare contextual data with the UK

*Presenter: Emily Fletcher*

*Authors: Anna Sansom, Emma Pitchforth, Gerens Curnow, Adrian Freeman, John I Campbell,*

### Institutions

University of Exeter Medical School

### Abstract

#### Problem

The UK has a GP shortage. Substantial overseas recruitment targets have been set. Doctors from European Economic Area (EEA) countries can join the UK's GP Register under European law. Non-EEA doctors must obtain a Certificate of Eligibility for General Practice Registration (CEGPR), demonstrating equivalence to UK-trained doctors. CEGPR can

be time-consuming and burdensome. To meet overseas recruitment targets, it is important to determine the most efficient route into UK general practice whilst maintaining registration standards and patient safety.

### Approach

We developed a methodology to map GP training and healthcare contextual data from an overseas country to the UK. Four stages were undertaken using desk-based research and stakeholder interviews: i) developing a data collection template, ii) conducting a case study (Australia), iii) refining the data collection template, and iv) creating a mapping framework. The case study used the 2016 curricula for both UK and Australia.

### Findings

Five 'domains' were included in the data collection template: Healthcare Context, Training Pathway, Curriculum, Assessment, and CPD/Revalidation. The final data collection template comprised 50 mapping questions across the five domains. The methodology included application of a red/amber/green rating to indicate similarity of data across the five domains. Australia was rated 'green' for Training Pathway, Curriculum and Assessment, and 'amber' for Healthcare Context and CPD/Revalidation; Australia's overall rating was 'green'.

### Consequences

We developed a robust, systematic methodology for mapping GP training between different countries and the UK which will support the international GP recruitment agenda and help to sustain and grow the UK's GP workforce.

### Funding Acknowledgement

n/a

## 5D.2

### The GP Academy. Using medical Education to train and retain GPs

*Presenter: Gail Allsopp*

*Authors: Anjla Sharman, Jaspal Taggar*

### Institutions

University of Nottingham, Health Education East Midlands, LMC Derbyshire

### Abstract

#### Problem

There is a recruitment crisis in primary care with multiple stakeholders (HEI's, HEE, NHSE) working independently to encourage more doctors to "choose GP", starting at medical school (Waas Report), through foundation, into speciality training choices. "The GP academy" aims to bridge the gap between the stakeholders by using medical education to "train and retain" GPs throughout the East Midlands, whilst simultaneously inspiring medical students, through near peer teaching (GP trainees). We aim to 1. Expose every undergraduate medical student to near peer teaching, building on our own evidence which proved medical students were more likely to choose a career in general practice after being exposed to innovative paired careers tutorials as part of their primary care attachment. The GP academy uses GP speciality trainees rather than GP academics in the original study. 2. To inspire young GPs to begin a portfolio career in medical education ensuring we increase the number of GP placements in the community at the

same time as inspiring the GP trainees to stay working locally post qualification.

### Approach

GP speciality trainees (n=12), attended a 2-day "teaching the teachers course" and then taught innovative paired careers tutorials to medical students (n=120), under supervision of an experienced GP tutor (n=12). Pre, mid and post teaching course qualitative data was collected and a post course focus group held for quantitative data collection (with thematic analysis), to enable a mixed methods study to be performed. Medical students filled in a pre and post "paired tutorial" Likert scale to show how likely they were to choose General Practice as a career, to determine if their choice had changed following exposure to the near peers.

### Findings

Innovative paired careers tutorials by near peers increases the number of students who would consider a career in GP. Teaching the teachers course increases the confidence of GP trainees in "how to teach" the number who would consider becoming a community tutor for medical students. Being part of the "GP academy" encouraged GP registrars to stay locally in the area and to continue to develop a portfolio career in medical education once qualified.

### Consequences

We have now received funding from NHSE to roll the project out across the Midlands and East with the aim of training 500 GPs over the next 4 years and to create a large workforce planning database for the first time in the region subject to ethical approval. We aim to create a community of GPs with an interest in medical education to increase support, build resilience and sustain the workforce at a time when numbers of GPs are falling, despite government pledges to increase them.

### Funding Acknowledgement

LMC Derbyshire for supporting the project

HEE for approving the study leave for GP trainees

NHSE for supporting the roll out of the GP Academy across the region

## 5D.3

### Performance of candidates declaring dyslexia in the MRCGP clinical skills assessment: cross sectional study

*Presenter: Zahid Asghar*

*Authors: Prof A Niroshan Siriwardena, Dr Nicola Williams, Dr Mandy Fry, Hilary Maxwell-Hyslop, DR Meiling Denney.*

### Institutions

University of Lincoln, Royal College of General Practitioners

### Abstract

#### Problem

There are increasing numbers of doctors each year who declare dyslexia when they take the Membership of the Royal College of General Practitioners (MRCGP) licensing exam for general practice. Exam bodies seek to be fair to candidates with disabilities such as dyslexia as part of their Public Sector Equality Duty under the Equality Act 2010. We aimed to investigate performance of doctors declaring dyslexia in an Objective Structured Clinical Examination (OSCE), the Clinical Skills Assessment (CSA) component of the MRCGP.

## Approach

We used a cross-sectional design, analysing routine candidate performance and demographic data from the MRCGP CSA between 2010 and 2017. We used multivariable logistic regression, comparing candidates who declared dyslexia (either 'early' before their first attempt, or 'late' after failing at least once) with candidates who did not declare dyslexia, to investigate the effect of declaring dyslexia on passing the CSA taking into account number of attempts, together with sex, place of primary medical qualification and ethnicity.

## Findings

Overall, 20879 candidates took the CSA between 2010 and 2017 of which 598 (2.9%) declared dyslexia. Candidates declaring dyslexia were no different in ethnicity compared with those who did not declare dyslexia but were significantly more likely to be male (47.3% vs 37.8%;  $p < 0.001$ ) and to have a non-UK primary medical qualification (27.0% vs 22.4%;  $p = 0.001$ ). Candidates who declared dyslexia late were significantly more likely to fail the CSA compared with those candidates who declared early (40.6% vs 9.2%;  $p < 0.001$ ). They were also more likely to have a non-UK medical qualification (79.3% vs 15.7%;  $p < 0.001$ ) or come from a minority ethnic group (84.9% vs 39.2%;  $p < 0.001$ ). Candidates who declared dyslexia were significantly less likely to pass the CSA compared to candidates who did not declare dyslexia, particularly when this was declared late (Incident Rate Ratio [IRR] 0.78, 95%; Confidence Interval [CI] 0.67 to 0.91) but also when declared early (IRR 0.94 95%; CI] 0.92 to 0.97).

## Consequences

This is the first published study, to our knowledge, investigating the performance of doctors with dyslexia in OSCEs for high-stakes licensing purposes. Trainees declaring dyslexia, and particularly declared late, were less likely to pass the CSA. We found that doctors from minority ethnic backgrounds and those who had received their primary medical qualification outside the UK were more likely to declare dyslexia after initially failing the assessment, and this delay in diagnosis (reducing the possibility of additional preparation strategies) or declaration (decreasing access to reasonable adjustments) may disadvantage these candidates. Differential attainment in doctors with dyslexia needs to be addressed by investigating potential causes and finding solutions for such disparities as well as facilitating earlier assessment of dyslexia in those not previously diagnosed, particularly ethnic minority non-UK trained doctors.

## Funding Acknowledgement

Royal College of General Practitioners.

## 5D.4a

### A mixed methods study to evaluate the effectiveness of nurse training to deliver an integrated care review for patients with inflammatory rheumatic conditions

Presenter: Daniel Herron

Authors: Daniel Herron, Erandie Ediriweera Desilva, Clare Jinks, Samantha Hider, Zoe Paskins, Kendra Cooke, Carolyn Chew-Graham

## Institutions

Research Institute Primary Care and Health Sciences Keele University, Haywood Academic Rheumatology Centre, Midlands Partnership Foundation Trust

## Abstract

### Problem

People with inflammatory rheumatological conditions (IRCs), including rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis, polymyalgia rheumatica and giant cell arteritis, are at an increased risk of comorbidities such as cardiovascular disease (CVD), osteoporosis, anxiety and depression. These are often not recognized or treated and can lead to increased morbidity and mortality. Screening for and managing these comorbidities within a nurse-led review could improve outcomes. The INCLUDE pilot trial aimed to evaluate the feasibility and acceptability of a nurse-led integrated review for people with IRCs based in primary care. This review included an assessment of lifestyle factors, CVD and fracture risk, and case-finding for anxiety and depression.

### Approach

Patients identified as having an IRC via their primary care records were invited to a review consultation at their general practice. Two rheumatology nurses participated in training (which included role play with simulated patients) to deliver the review. Consent was gained to conduct interviews with nurses, to explore their experiences of the training. A topic guide was utilized and interviews transcribed verbatim. Thematic analysis using constant comparison was utilized and overarching themes agreed through discussion with the research team. With patient consent, a convenience sample of INCLUDE consultations were digitally-audio-recorded. Fidelity analysis was undertaken using a predefined checklist of 7 components within the review; opening the consultation, assessing physical health, reviewing CVD risk, assessing bone health and fracture risk, case finding for mood problems, communication of a management plan and advice regarding follow-up.

### Findings

The nurses reported the training to be comprehensive, informing them how to assess for comorbidities within the review and how to use a computer template to record their findings. They felt that the use of role play with simulated patients provided a safe environment in which to test their consultation skills and build their confidence. Fidelity checks on 24 audio-recorded consultations revealed that diet and exercise were not always explored, whilst some borderline raised body mass index (BMI) and blood pressure (BP) measurements were not acted on further. Occasionally, FRAX risk calculations were not supported by background information, such as a history of steroid use or parental hip fracture, whilst the meaning of responses to the case-finding questions for mood problems were not always explained. The purpose of the review and a final management plan were communicated well.

### Consequences

INCLUDE nurses were positive about the comprehensiveness and usefulness of the training, which helped prepare them to deliver the review. Fidelity checks of consultations have highlighted important areas for development of the training in a future randomized controlled trial, including more in-depth discussion of lifestyle factors, BMI and BP, an emphasis on the information required for FRAX risk calculation and communication of the outcome of case-finding questions.

### Funding Acknowledgement

Haywood Rheumatism Research and Development Foundation  
Haywood Hospital

National Institute of Health Research Collaborations for Leadership in Applied Health Research and Care West Midlands (NIHR WM CLAHRC)

## 5D.4b

### The transnational virtual classroom as a learning environment for Family Medicine residents in Palestine: residents' perspectives

*Presenter: Hina Shahid*

*Authors: Dr Suha Hamshari, Dr Hina J Shahid, Dr Zaher Nazzal, Dr Lubna Al-Saudi*

#### Institutions

Foundation for International Development of Family Medicine in Palestine and An-Najah National University, Palestine

#### Abstract

##### Problem

The residency programme for Family Medicine (FM) in the West Bank has been running since 2014. Geopolitical complexities hinder knowledge exchange and cause professional isolation. An online tutorial programme (OTP) has been running since 2016 as a means of British GPs supporting FM residents in the first two years of training to meet learning needs around clinical complexity and patient-centred skills. The OTP is a unique virtual learning environment (VLE) incorporating case-based teaching with online presentations in real-time, patient simulation and small group work, and uses a chat-based platform with synchronous peer-to-peer and resident-to-tutor discussions that cross geographical borders.

The aims of the study are

- 1) To examine the perspectives of Palestinian FM residents on using a VLE with transnational support from UK tutors
- 2) To devise a framework for assessing impact on learning

##### Approach

A virtual focus group was conducted in English using a chat-based platform with a group of five third-year FM residents in the West Bank, facilitated by one UK and one Palestinian faculty member. The data was downloaded in its chat-form and independently coded by two authors (one Palestinian and one British) who also performed the content analysis. Key themes were identified and a framework analysis used which was modified in light of themes grounded in the data. A novel framework was devised, E-QUaL, synthesising and adapting four frameworks used in technology-enhanced learning; Evaluation, Quality, Usability and Learning, where the SCOT framework for evaluation (strengths, challenges, opportunities, threats) was used as a meta-framework for systemising the data.

##### Findings

The biggest strengths of the programme were connecting FM residents with UK tutors to learn about FM practice in an established setting, learning the "art of FM", learning a new way of approaching patients, and the positive collaboration between UK and Palestinian faculties. The challenges included content, cultural context, residual unmet learning needs, and technical issues such as the fast pace, preference for more multi-media resources, and mixed opinions around group work and simulated patients. As the course moves to a new platform with enhanced media features, this study provides opportunities to improve the educational experience for the next cohort of residents. The threats include the new cohort adapting to a different mode of teaching, and the constant challenge of balancing clinical knowledge and professional skills in content development.

## Consequences

The transnational virtual classroom is a useful and supportive learning environment for trainees in countries transitioning to FM, especially under challenging geopolitical circumstances. It can support the development of patient-centred skills and critical thinking and address professional isolation. Virtual focus groups can be conducted to overcome spatial and geographical barriers and the E-QUaL Framework can be used to assess experiences and impact on learning in a virtual learning environment.

#### Funding Acknowledgement

Nil

## 5E.1

### Multi morbidity in UK general practice- exploring its links with deprivation and life expectancy

*Presenter: Melvyn M Jones*

*Authors: Mei Sum Chan, Ardo van den Hout, Mar Pujades-Rodriguez, Melvyn M Jones, Fiona E Matthews, Carol Jagger, Rosalind Raine, Madhavi Bajekal.*

#### Institutions

UCL, Oxford University, Leeds University, Cambridge University, Newcastle University,

#### Abstract

##### Problem

More people are living longer and the prevalence of multi morbidity (MM) increases rapidly with age. The link with deprivation is more complex with earlier disease onset and frequent co-occurrence of mental health illness with physical conditions. Smoking may also be an important explanatory factor. The contribution of MM to inequalities in life expectancy (shortened life) and disease burden (living longer with more diseases) in relation to deprivation has yet to be quantified. Older populations and pockets of deprived communities are nearly universal in UK general practice and so an increased prevalence of multi morbidity impact substantially on GP workload.

##### Approach

We used electronic health records from a representative sample of 225 GP practices in England (CPRD), linked to hospital admissions and deaths, to track the incidence and prevalence of 30 chronic health conditions in a cohort of 1.1 million English people aged 45 and older and they were followed up from 2001–2010. The aim was to examine socioeconomic inequalities in the age of onset of chronic disease and pattern of disease accumulation across broad clinical groups, and quantify life expectancy with and without complex multimorbidity. Multimorbidity was defined as having two or more of 30 major chronic diseases. Multi-state models were used to estimate years spent healthy and with multimorbidity, stratified by sex, smoking status and quintiles of small area deprivation.

##### Findings

Unequal rates of multimorbidity on subsequent survival contributed to higher life expectancy at age 65 for the least (Quintile 1- (Q1) compared to most deprived (Q5): there was a two-year gap in healthy life expectancy for men (Q1: 7.7 years [95% CI: 6.4–8.5] vs Q5: 5.4 [4.4–6.0]) and a three-year gap for women (Q1: 8.6 [7.5–9.4] vs Q5: 5.9 [4.8–6.4]); a one-year gap in life expectancy with multimorbidity for men (Q1: 10.4 [9.9–11.2] vs Q5: 9.1 [8.7–9.6]) but none for women (Q1: 11.6 [11.1–12.4] vs Q5: 11.5 [11.1–12.2]). Inequalities were

attenuated but not fully attributable to socioeconomic differences in smoking prevalence: multimorbidity onset was latest for never smokers, and subsequent survival was longer for never and ex smokers.

### Consequences

Deprived groups have an earlier onset of the first disease, a quicker progression to multi morbidity, more years living with diseases and for men dying younger. The association between social disadvantage and multi morbidity is complex. By quantifying sociodemographic and smoking-related contributions to multimorbidity onset and subsequent survival, we provide evidence for more equitable allocation of prevention and health care resources to meet local needs.

### Funding Acknowledgement

Legal & General

## 5E.2

### Impact of childhood abuse on prevalence and complexity of multimorbidity

*Presenter: Marianne McCallum*

*Authors: Peter Hanlon, Duncan Lee, Bhautesh Jani, Frances Mair*

#### Institutions

Institute of Health and Wellbeing and School of Mathematics and Statistics, Glasgow University,

#### Abstract

##### Problem

Childhood adversity has been linked to a range of poor health and social outcomes. Abuse in childhood is associated with increased prevalence of long-term conditions (LTCs) like heart disease and diabetes, and is strongly linked to addiction and psychological co-morbidities. Previous studies examining childhood trauma and multimorbidity have only considered the presence of 2 or more LTCs, and not the degree of multimorbidity, or factors which complicate patient's experience and clinical management. This study aims:

- To quantify the relationship between childhood abuse and degree and nature of multimorbidity in adulthood
- To examine the relationship between frequency of abuse, and increasing number of types of abuse experienced, and number of LTCs.
- To see if childhood trauma is associated with factors increasing the complexity or burden of multimorbidity (e.g. chronic pain, depressive symptoms, frailty, social isolation).

##### Approach

Cross sectional analysis of 157,357 UK Biobank participants who had completed a mental health questionnaire. Experience and frequency of four types of childhood abuse (physical, sexual, emotional, neglect) identified. We explored the relationship between type, number and frequency of abuse experienced and number of self-reported LTCs (1,2,3, 4 or more) using multinomial logistic regression. Models adjusted for age, sex, deprivation, BMI, smoking, and alcohol. Binary logistic regression assessed relationship between abuse and self-related health, loneliness, frailty and widespread pain, adjusting for the factors above plus number of LTCs.

##### Findings

A total of 63,517 participants (40%) experienced at least one type of abuse with 1,515 (1%) experiencing all four. Each type of abuse,

frequency of abuse, and total types of abuse experienced were all associated with higher numbers of LTCs. For example, people experiencing four types of abuse were 5 times as likely to have >4 LTCs than those with no abuse experience (OR4.97, 95% CI 4.08-6.07). A dose-response relationship was seen with both frequency of abuse and number of types of abuse experienced. Experience of abuse was associated with higher prevalence of mental health comorbidity. Type, frequency and number of abuse were all independently associated with poor self-related health, loneliness, pain and frailty, particularly for those experiencing all four types of abuse compared to none (poor self-related health OR 2.43, 95% CI 1.98-2.98; loneliness OR 2.85, 95% CI 2.56 – 3.18; pain OR 1.92, 95% CI 1.35-2.73; frailty OR 2.35, 95% CI 1.79-3.08).

### Consequences

Childhood adversity is associated with increased prevalence and complexity of multimorbidity. Patients with a history of abuse are more vulnerable not only to developing multimorbidity, but have more complex management needs.

### Funding Acknowledgement

## 5E.3

### Improving communication to reduce risks to patient safety: what are the barriers and enablers for older people with multimorbidity?

*Presenter: Rebecca Hays*

*Authors: Peter Bower, Thomas Blakeman, Harm van Marwijk, Sarah Peters*

#### Institutions

RH PB TB: NIHR School for Primary Care Research, Centre for Primary Care and Health Services Research, School of Health Sciences, University of Manchester. HvM: Division of Primary Care and Public Health, Brighton Sussex Medical School, University of Brighton. SP: Manchester Centre of Health Psychology, School of Health Sciences, University of Manchester.

#### Abstract

##### Problem

Older people with multimorbidity are likely to experience more patient safety incidents. In primary care, threats to patient safety often arise as a result of breakdowns in communication between patients and staff. Thus, interventions to improve communication could help reduce risks to patient safety. Such interventions are commonly aimed at staff. However, some important aspects of communication are patient- as opposed to provider-initiated. Previous research has demonstrated patients can be empowered to communicate more effectively but this work has not been carried out with older people with multimorbidity. Prior to designing and testing such an intervention, we first aim to develop a better understanding of the barriers to and enablers of communication in primary care for this patient population, as well as what might need to change for communication to improve.

##### Approach

In-depth interviews are being carried out with a stratified sample of older people with multimorbidity and a range of clinical and administrative staff from general practices. The interviews explore experiences of communication by asking about recent interactions and any communication problems that have occurred. The schedule also

includes prompts based on the COM-B model of behaviour. These are designed to further explore barriers and enablers, and how patients could be supported to communicate more effectively.

### Findings

Older people with multimorbidity face many barriers to communication in primary care, and respond to these in different ways. Whether or not communication happens and how effective it is appears to be determined by the interplay between a number of factors. These include patient knowledge and confidence, practice policies and environment, and the perceived friendliness and approachability of staff. Patients would like or be receptive to learning more about their General Practices, and when and how best to interact with them. If available, they would also make use of tools to help them prepare for appointments and ensure they raise their concerns. However, patients prefer to avoid rather than provide feedback to staff they feel are not personable or interested in them.

### Consequences

Our findings suggest patients learn how to communicate with primary care staff through experience but, in many cases, such learning could be provided proactively. Empowering patients to communicate more effectively could help them avoid or better address communication problems. This, in turn, could reduce risks to patient safety. Findings from this study will be used to inform the development of a patient-centred behaviour change intervention. Whilst many aspects of this could be standardised (such as communication tools), it is likely that some elements will need to be tailored to individual practices (for example, information on staff and services). It will not be possible to address all of the identified barriers without adding a staff-centred component.

### Funding Acknowledgement

Rebecca Hays is funded by a National Institute for Health Research Doctoral Research Fellowship. The project is co-funded by the NIHR Research for Patient Benefit programme.

## 5E.4a

### Interventions for involving older patients with multimorbidity in decision-making during primary care consultations: A Cochrane systematic review.

*Presenter: Jo Butterworth*

*Authors: Rebecca Hays, Sinead McDonagh, Suzanne Richards, Peter Bower, John Campbell*

### Institutions

University of Exeter Medical School, University of Leeds Faculty of Medicine and Health, University of Manchester Academic Health Science Centre

### Abstract

#### Problem

Life expectancy is predicted to continue to rise globally and the prevalence of long-term conditions also increases with age. The consequences of ageing with multimorbidity include functional decline with poor quality of life, high healthcare utilisation and costs, and reduced life expectancy. Our previous work identified that older patients value being involved in decision-making about their healthcare. However, they are less frequently involved when compared with younger patients and there is evidence of associated

health inequalities. These patients need support in prioritising and rationalising treatment options to maximise quality of life and day-to-day function. This review explores the effectiveness of interventions delivered with the aim of involving older patients with multimorbidity in decision-making about their healthcare during primary care consultations. It will inform the development of a new intervention to facilitate the involvement of this vulnerable patient group, in decision-making about their healthcare, during GP consultations.

### Approach

A Cochrane systematic review of interventions. Study type: randomised controlled trials (RCTs), cluster-RCTs, and quasi-RCTs. Participant population: Patients aged 65 years and over with more than one long-term health problem. Interventions facilitating patient involvement in decision-making may refer to: - a practitioner, seeking to facilitate a patient's active engagement in decision-making - patients, increasing their own involvement in decision-making (including expressing a preference for involvement) - changes to the organisation of care; to more comprehensively address patients' needs and preferences. Primary outcome: Evidence of patient involvement in decision-making during the consultation from patient and/or practitioner and/or observer perspectives. We searched the following electronic databases without language or date restriction: the Cochrane Central Register of Controlled Trials; MEDLINE; Embase; PsycINFO; CINAHL; DARE; HTA Database; Ongoing Reviews Database; and Dissertation Abstracts International.

### Findings

Two review authors independently screened 8,252 abstracts; 49 full-text studies were assessed for eligibility; and data is currently being extracted for analysis from three included studies. Results will be available at the conference.

### Consequences

There are concerns that current delivery of good quality care is not meeting the needs of older patients who often experience multimorbidity. These patients consult frequently and account for over a third of spending in primary care in the UK. The UK National Institute for Clinical Excellence published guidelines in 2016 for the clinical assessment and management of patients with multimorbidity, recommending more patient involvement in decision-making, and special consideration for vulnerable groups such as the elderly. However, to date there has been little instruction on how to facilitate patient involvement for this patient group. Our review aims to provide evidence-based guidance to policy makers, researchers, and commissioners about how to direct funding towards good quality interventions targeting the involvement of older patients in decision-making about their healthcare, and to provide practical guidance to clinicians when adopting these interventions.

### Funding Acknowledgement

Funded by an NIHR doctoral fellowship award

## 5E.4b

### A qualitative focus group study to refine a new intervention 'VOLITION': To facilitate the involvement of older patients with multimorbidity in decision-making about their healthcare during GP consultations.

Presenter: Jo Butterworth

Authors: Emma Pitchforth, Suzanne Richards, John Campbell

#### Institutions

University of Exeter Medical School, University of Leeds Faculty of Medicine and Health

#### Abstract

##### Problem

In the UK, the number of people aged over 65 years is increasing. Over a third of spending in general practice goes towards care for older patients. They are likely to have more than one long-term health problem (multimorbidity) and these patients tend to have a poorer quality of life. Sharing in decision-making with a doctor can have positive health outcomes including taking the doctor's advice about treatments, feeling happier about the care received, and having trust in the doctor. Despite older patients with multimorbidity reportedly valuing the opportunity to share in decision-making about their healthcare, they are currently less often involved when compared with younger patients. This study uses qualitative methods to refine a new intervention 'VOLITION' ahead of testing the intervention in a randomised controlled feasibility trial. VOLITION aims to support older patients with multiple health problems in joint decision-making about their healthcare during GP consultations.

##### Approach

Focus groups will compare common views on the proposed intervention, 'VOLITION', which consists of:

- a half-day training workshop for GPs in shared decision-making
- a written involvement-facilitating tool for patients (delivered by post and available in the waiting room). We are recruiting 20 patients and 15 GPs from five practices across Devon. Practices have been purposively selected based on sociodemographic characteristics, in order to achieve diversity in our sample. Patients, aged 65 years and over with more than one long-term health problem, are approached via a mail-out from practices. On return of questionnaires, those with varying degrees of morbidity are invited to participate. All GPs from the practice are invited. There are four focus groups, each lasting 2.5 hours; two with approximately ten patients and two with seven or eight GPs. Topic guides aid exploration of all aspects regarding the development and refinement of the intervention. Focus groups are audio-recorded, transcribed, anonymised and analysed with the aid of computer software. As we have multiple focus groups the constant comparative technique will be used, following a deductive framework and coding inductively for thematic analysis.

##### Findings

This study is currently in progress, however findings will be available to present at the conference. We will use the analysis to fine tune our intervention materials ahead of testing them in a feasibility trial.

##### Consequences

Interventions aimed at facilitating shared decision-making between doctors and patients are outdated in their assessments of today's

older patient population, who often experience multimorbidity. These patients need support in prioritising treatment options in order to maximise quality of life and day-to-day function. We believe that an effective intervention in this area could address health inequalities, with positive outcomes for both patients and practitioners, thereby reducing primary healthcare costs for the NHS.

#### Funding Acknowledgement

Funded by an NIHR doctoral fellowship award

## 5E.4c

### Development and validation of the Cambridge Multimorbidity Score

Presenter: Rupert Payne

Authors: Silvia C Mendonca, Marc N Elliott, Catherine L Saunders, Duncan A Edwards, Martin Marshall, Martin Roland

#### Institutions

University of Bristol, University of Cambridge, RAND Corporation, University College London

#### Abstract

##### Problem

Multiple long-term health conditions are increasingly common and significantly affect health and well-being. Multimorbidity places considerable pressures on primary and secondary care, yet services and policies have failed to respond to these demands. There is a need to develop new measures of multimorbidity that could be used in future studies of multimorbidity and for planning health services and resource allocation.

##### Approach

Full clinical data were extracted from three samples of the UK's Clinical Practice Research Database (CPRD): a development sample of 300,000 and two validation samples of 150,000 patients each. Codes were derived for 37 commonly-coded conditions and related to three outcomes: primary care consultations, unplanned hospital admissions and mortality. Outcomes were measured at one and five years. Additional analyses estimated the added benefit of including prescribing information as a predictor, constructed a general-outcome multimorbidity score by averaging the standardised weights of the separate outcome scores, and compared our models with the Charlson co-morbidity index.

##### Findings

Models including all 37 conditions were good predictors of GP consultations, emergency hospital admissions and mortality at one year (C-indices 0.732, 0.742 and 0.912 respectively, adjusted for age and gender). Reducing the models to the 20 conditions which had the greatest combined prevalence/weight made little difference to the predictive value of the models (C-indices 0.727, 0.738 and 0.910 respectively). Adding data on prescribing patterns made little difference to the predictive power of the models. Prediction of outcomes at five years for the 20-condition model remained good for consultations and mortality admissions (C-indices 0.735, 0.889) but performed less well for unplanned admissions (C-index 0.708). A 20-condition general-outcome score performed similarly to the outcome-specific models (C-indices 0.723, 0.735 and 0.913). The models performed substantially better than models based on conditions in the Charlson index.



## Consequences

We have developed several robust, simple-to-use, multimorbidity scores, both tailored and not tailored to specific health outcomes. These scores have the potential to be of considerable value to clinicians and policymakers alike, providing a common-sense, transparent, easy-to-implement and effective means of optimising the delivery of healthcare to an ageing and increasingly multimorbid population.

## Funding Acknowledgement

This paper presents independent research funded by the National Institute for Health Research (NIHR) School for Primary Care Research. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health.

## 5F.1

### Enlarging human understanding through the arts

*Presenter: Louise Younie and Deborah Swinglehurst*

*Authors:*

#### Institutions

Queen Mary University London

#### Abstract

##### Aim

To share examples of participatory creative enquiry activities as a 'taster' of the learning that is possible through this approach within both undergraduate education and postgraduate professional development. The overarching aim is to foster practitioner development and a 'flourishing practice'.

##### Objectives

By the end of the workshops participants will:

Understand how creative enquiry

extends reflective practice enriches encountering the 'other' in clinical encounters

invites voice and interiority

Be equipped with examples of creative enquiry exercises to try out in their own context (teaching, learning, personal professional development)

##### Outcomes

Appreciate art as a reflective mode of communication

Explore the arts in transformation of practice

##### Format

We will set the scene for the workshop by: inviting participants to engage with insightful quotes from key thinkers in this area; to explore some philosophical underpinning; and to experience some real examples of clinician/student creative texts.

Participants will then be invited to choose one of three short creative enquiry exercises to work on individually, each exercise being designed to prompt reflection and action through an appreciation of creative work. Participants will be invited to share their work in pairs to further extend their learning. These exercises will be designed to be accessible to a diverse range of participants – from those who have no previous experience of creative enquiry to those who already have expertise in this area.

Building on this learning exercise, participants will join together in small groups around examples of creative texts, and explore strengths and weaknesses of creative enquiry approaches with some specific questions as prompts.

The workshop will introduce participants to some key sensitizing concepts such as epistemic injustice, epistemological humility, healthy self-criticism, positive organizational scholarship and the value of inviting evaluation of practice from a disconfirming stance. Through sharing of different viewing points and perspectives within the group work, participants will tease out the value of going beyond reflection towards reflexivity.

#### Content

Themes we will address include:

Creative enquiry extending reflective practice by:

reframing experiences

engaging with multiple perspectives

embracing other languages of expression

Creative enquiry enriching how we encounter the other by exploring

intersubjectivity between 'selves' in the clinical encounter

Creative enquiry inviting personal, situated ways of seeing and reflecting Intended audience

The workshop will be relevant to:

educators (both undergraduate and postgraduate)

researchers interested in arts-based research and creative research outputs

clinicians who are keen to develop their own reflexive capabilities, to appreciate and celebrate their unique contribution to practice (and diminish burnout!)

#### Funding Acknowledgement

## 5G.1

### Identifying the top 10 primary care research priorities from SAPC stakeholders using a modified Delphi method.

*Presenter: Frank Sullivan and Virginia Hernandez Santiago*

*Authors:*

#### Institutions

University of St Andrews

#### Abstract

##### Aim

To identify a set of international primary care research priorities to guide resource allocation and research agendas.

##### Intended outcome

By the end of the workshop participants will be able to

Describe the primary care research priorities presented at the WHO Global Conference on Primary Care in Astana, Kazakhstan in 2018.

Discuss the extent to which these could be priorities for SAPC members.

##### Content

After a brief orientation to the 2018 PLOS One publication: 'Identifying

top 10 primary care research priorities from international stakeholders using a modified Delphi method': participants will undertake a 2 round discussion process. Participants will suggest up to 2 additional priorities; vote on the new suggestions merged with the original 10; discuss the top 15 and finally vote to produce the SAPC research priority list.

1. How can primary care best address the social determinants of health and promote health equity?
2. How should primary care be financed, organized, and staffed?
3. How best can universal health coverage be achieved in low and middle income countries?
4. How should primary care performance be measured?
5. What are the most effective ways to translate knowledge and evidence into primary care?
6. What are the most effective interventions to improve functional ability and quality of life in people with multimorbidity?
7. What are the best ways to involve patients in the design and delivery of primary care?
8. How can Indigenous communities' knowledge be integrated into the provision of clinical services at the individual level?
9. How can primary care best promote healthy behaviours in the population?
10. What are the effects of using electronic communication (including email, text messaging and electronic health record access) in the delivery of primary care?

#### Intended audience

Suitable for all conference delegates

#### Funding Acknowledgement

## 6A.1

### How can we optimise the management of people with Heart Failure with Preserved Ejection Fraction (HFpEF)? a qualitative study.

*Presenter: Carolyn Chew-Graham*

*Authors: Muhammad Hossain, Emma Snowden, Ian Wellwood, Stephanie Tierney, Christi Deaton*

#### Institutions

Keele University, University of Manchester, University of Cambridge, University of Oxford.

#### Abstract

##### Problem

Heart failure (HF) is a long-term condition occurring when the heart becomes less efficient at pumping blood to meet the body's needs. There are an estimated 0.9 million people living with HF in the UK; and HF causes about 5% of all emergency hospital admissions. About half of patients with HF have preserved ejection fraction (HFpEF) where the heart is stiff; this is more common in older people with hypertension, obesity and diabetes. HFpEF may be difficult to recognise in primary care. No specific medications are effective in HFpEF, with management focusing on optimising long-term condition care. This study aims to improve understanding of patient and provider preferences and concerns to inform the development of a model of care for people with HFpEF. Approach

A qualitative study involving semi-structured interviews and focus groups with people with HFpEF as well as healthcare professionals (HCPs) from primary and secondary care services across three regions in England. Interviews and focus groups were digitally recorded with consent and transcribed verbatim. Framework analysis was used to interpret data, supported by NVIVO software.

#### Findings

Thirty-three interviews with people with HFpEF, and interviews and 2 focus groups with 43 HCPs, including General Practitioners (GPs); Heart Failure Specialist Nurses; Practice Nurses; Cardiologists, Pharmacists, an Echocardiographer and a Commissioner. Interim analysis indicates that the 'work' necessary for the development of a shared understanding of HFpEF between patients and providers was challenging. The meaning of 'HFpEF' to patients was unclear, with few seeming to understand the nature of their condition. GPs and PNs expressed uncertainty about the term HFpEF, resulting in difficulty in considering and making the diagnosis. HCPs reported the use of euphemisms to name and explain the condition to patients, avoiding the term 'heart failure'. This lack of a shared understanding of the condition possibly contributed to patients with misattributed symptoms having limited feelings of empowerment in terms of monitoring and self-management. HF specialist nurses emphasised 'sense-making work' as central to the optimal management of HF, and viewed this work as more demanding in the context of HFpEF where multimorbidity was typical. Problems with communication were reported between providers across the primary/secondary care interface and this miscommunication influenced relationships upon which optimal care was dependent. Findings suggest unclear lines of responsibility across multiple providers, influencing patients' and providers' experiences of communication and relationships within the healthcare system.

#### Consequences

Findings illustrate an interplay between understanding, communication and responsibility, resulting in substantial uncertainty and variability in both the perception of HFpEF and access to support, service provision, and care across multiple interfaces. These findings provide timely evidence to support the development of interventional research to improve the management of patients with HFpEF in primary care.

#### Funding Acknowledgement

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The views expressed are those of the author(s) and not necessarily those of the NIHR, the NHS or the Department of Health.

## 6A.2

### The diagnostic accuracy and clinical utility of natriuretic peptide based screening for the detection of incident heart failure in the community: a systematic review and meta-analysis

*Presenter: Clare Goyder*

*Authors: Goyder CR, Jones NR, Roalfe AK, Plumpton C, Taylor KS, Hobbs FDR, Taylor CJ*

#### Institutions

Nuffield Department of Primary Care Health Sciences, University of Oxford, UK

#### Abstract

##### Problem

Globally, approximately 26 million people are estimated to be living with heart failure (HF). The prevalence is also expected to rise further with population aging. HF is also associated with very high levels of morbidity and mortality, indeed patients with HF are now known to have a higher risk of death than people with most common types of cancer. There are multiple challenges to the accurate and timely diagnosis of HF in the community and most cases are only diagnosed in secondary care. Given these difficulties, and the importance of detection at an early stage, including increasing evidence to support preventative strategies, recent attention has focused on potential population screening. The role that natriuretic peptides (NP) might play in HF screening is controversial. Although both Canadian and American guidelines now advocate NP screening in high risk groups, the diagnostic accuracy of NPs in this context has not been established. This is the first systematic review to assess the accuracy of NP screening for incident HF and the potential impact that this may have.

##### Approach

Study design: Systematic review and meta-analysis. Data sources: Ovid Medline, Embase, Cochrane Database of Systematic Reviews, Cochrane CENTRAL, DARE, Science Citation Index. Included studies: Diagnostic accuracy studies, randomised controlled trials and observational studies including cohort studies. Outcomes: Diagnostic accuracy of NP screening in comparison with echocardiography, including sensitivity, specificity, PPV, NPV, diagnostic odds ratios, ROC curves. Clinical utility will be assessed by examining outcomes such as mortality, morbidity, hospital admissions and changes in quality of life measures.

##### Findings

2262 records were identified for inclusion. Following title and abstract screening, 211 full text studies were assessed for eligibility and 85 were included. There were 29 studies that examined diagnostic accuracy. In total this included 21213 participants, recruited from both high risk and low risk populations. 15 studies looked at NTproBNP, 11 studies at BNP and 8 studies analysed both biomarkers, further data analysis is currently ongoing. 56 studies assessed the clinical utility of NP screening, further data extraction and analysis is planned.

##### Consequences

This is the first systematic review to assess how accurately NP levels detect incident heart failure and to determine what is actually changed by early diagnosis both for patients and health care systems. It may have important implications for developing future pathways in primary care HF prevention.

## Funding Acknowledgement

Clare Goyder and Nicholas Jones are Wellcome Trust doctoral fellows. Andrea Roalfe is supported by the NIHR Biomedical Research Centre Oxford (BRC) Oxford University Hospitals NHS Foundation Trust. Kathy Turner receives funding from the NIHR programme for applied research. Richard Hobbs acknowledges support from the NIHR School for Primary Care Research, NIHR CLAHRC Oxford, the NIHR Oxford BRC and Harris Manchester College, Oxford. Clare Taylor is an NIHR academic clinical lecturer.

## 6A.3

### How can shared decision making for hypertension or heart failure be supported? A longitudinal qualitative study

*Presenter: Rachel Johnson*

*Authors: Rachel Johnson, Helen Cramer, Gene Feder, Katrina Turner*

#### Institutions

University of Bristol (all authors)

#### Abstract

##### Problem

Shared decision making is a process by which clinicians and patients work together to make healthcare choices. Implementing shared decision making has proven challenging. Research focused on shared decision making for hypertension or chronic heart failure is sparse. The aim of this study was to understand how patients with these two common conditions experience involvement in decision making during consultations, in order to understand how shared decision making for these conditions can be supported.

##### Approach

Twenty-four patients with either hypertension or chronic heart failure were recruited from five general practices. Patients with a range of ages and stages of hypertension / heart failure were sampled. All patients took part in in-depth baseline interviews. When patients had consultations, either at the GP surgery or in other healthcare settings, these were observed and audio-recorded, and afterward patients and healthcare professionals took part in interviews focusing on their experiences in the preceding consultation. Recorded data were transcribed verbatim. Data were analysed thematically using an inductive, constant comparison method. A coding frame was developed and applied to the data; as analysis continued broader categories became evident and these were gradually developed into themes.

##### Findings

All 24 patients took part in baseline interviews; forty consultations relating to 13 patient participants were observed. Patients' lack of understanding of their health reduced their ability to report important symptoms and ask questions, and reduced their opportunities for involvement in healthcare decisions. Most consultations did not provide opportunities to increase patients' understanding of their healthcare condition. Opportunities for involvement in decision making were reduced by the highly-structured nature of consultations, and consultation complexity. Highly-structured consultations were led by the healthcare professional and focused on biomedical tasks, limiting patients' contributions to answering the healthcare professionals' questions or asking questions when invited to do so. Few patients recalled discussions about treatments as decisions; rather they recalled

being told that medications were necessary and accepting treatments that clinicians suggested to them. Choices regarding medications were rarely perceived. Typically, very little time during consultations was devoted to making decisions about treatment; there was little discussion of the potential benefits and dis-benefits of treatments (including side-effects), or of the patient's preferences in relation to treatment. Decisions were distributed, i.e. different components of a decision were made over a series of different types of interactions with one or multiple practitioners.

### Consequences

Factors reducing patient involvement included the tendency of consultations to be routinized, task-focused and to pursue a biomedical agenda, limited health understanding of patients, the distributed nature of healthcare decisions, and the lack of explicit discussion about choice. If shared decision making is to be facilitated, these barriers need to be addressed.

### Funding Acknowledgement

This work is funded by an NIHR doctoral fellowship DRF-2013-06-034

## 6A.4a

### Frailty and co-morbidity in patients with heart failure in primary care: predicting risk of hospitalisation

*Presenter: Benedict Hayhoe*

*Authors: Alex Bottle, Dani Kim, Benedict Hayhoe, Azeem Majeed, Paul Aylin, Andrew Clegg, Martin Cowie*

### Institutions

Dr Foster Unit, Department of Primary Care and Public Health, Imperial College London; Department of Primary Care and Public Health, Imperial College London; Academic Unit of Elderly Care and Rehabilitation, University of Leeds; National Heart & Lung Institute, Royal Brompton Hospital, Imperial College London

### Abstract

#### Problem

Admission of patients with heart failure to hospital for any reason is a marker of poor prognosis, with high risk of subsequent readmission and mortality. Identification of those patients at greatest risk of hospitalization therefore is of key importance in primary care, but little evidence exists currently to inform such predictions. We therefore sought to establish key predictors, available to GPs, of hospitalization risk in patients with heart failure.

#### Approach

We used linked primary and secondary care data (the Clinical Practice Research Datalink) to identify patients diagnosed with heart failure between 2010 and 2013. We examined records for first hospital admission following diagnosis, and compared the effects of patients' characteristics, including frailty calculated using the electronic frailty index (eFI).

#### Findings

6360 patients diagnosed with heart failure in primary care met our inclusion criteria. 2469 had a hospitalization for any cause within a year of heart failure diagnosis (591 were admitted for heart failure). Key predictors of heart failure admission were greater age, higher serum creatinine and not being treated with a beta-blocker. Admission for any

cause was predicted by age, comorbidity, frailty, prior admission, not being on a beta-blocker, lower haematocrit, and living alone.

### Consequences

Frailty and co-morbidities are important predictors of all cause hospitalization in patients with heart failure. Given the significant implications of hospital admission for patients and the NHS, primary care professionals should assess patients with heart failure for frailty, as well as considering other key risk factors, in order to identify those at greatest need of intervention to avoid admission.

### Funding Acknowledgement

This work was supported by Dr Foster®, a private healthcare information company, via a research grant to the Dr Foster Unit at Imperial College London. The Dr Foster Unit at Imperial College London is also partly funded by research grants from the National Institute for Health Research Health Services Research. Prof Cowie's salary is supported by the NIHR Cardiovascular Biomedical Research Unit at the Royal Brompton Hospital, London.

## 6A.4b

### Establishing research priorities to improve the management of patients with advanced heart failure in the community

*Presenter: Clare Taylor*

*Authors: Alyson Huntley, Amy Gadoud, Richard Lehman, Nicholas Jones, Eleanor Wicks, Jonathan Mant, Gene Feder, FD Richard Hobbs, Rachel Johnson*

### Institutions

Nuffield Department of Primary Care Health Sciences, University of Oxford, Centre for Academic Primary Care, University of Bristol, Department of Public Health and Primary Care, University of Cambridge, Institute for Applied Health Research, University of Birmingham, University of Lancaster, John Radcliffe Hospital, Oxford University Hospital Trust, Oxford

### Abstract

#### Problem

Heart failure is a complex clinical syndrome affecting 1-2% of the adult population. It places a heavy burden on both patients, their carers and services which typically increases in the advanced stages of the illness. Research priorities have traditionally been set by researchers and funders yet involving patients and clinicians in the process can lead to more valid, credible and relevant research findings. The aim of this project was to determine research priorities in advanced heart failure by bringing together patients, carers and healthcare professionals.

#### Approach

The Universities of Oxford, Bristol and Cambridge worked with the James Lind Alliance to establish an 'Advanced Heart Failure Priority Setting Partnership'. Priority setting was carried out using the James Lind Alliance method between April 2017 and March 2019. An initial survey was used to collect research uncertainties. Existing evidence was checked to determine if uncertainties had previously been answered. Duplicate questions were removed and overlapping questions were merged. A second survey was used to prioritise the research questions to form a shortlist of research priorities. A workshop attended by patients, carers and healthcare professionals was used to consider the final shortlist and agree a 'Top Ten' list of priorities using nominal group technique.

## Findings

The initial survey was open, and publicly accessible, in October and November 2018: 191 people (74 patients, 17 carers, 91 healthcare professionals, 9 others) submitted a total of 476 research uncertainties. From these, 123 summary questions were categorised and checked against existing literature. Categories included 'Emotions', 'Tiredness and fatigue', 'Breathlessness and sleeping', 'Service provision' and 'What does the future hold'. Duplicate questions were merged and those previously answered by research were removed. In total, 65 questions were included in a second survey which was open and publicly accessible for 4 weeks in January 2019: 122 people ranked these questions in order of priority. The priorities identified by patients and carers differed from healthcare professionals. The top 25 unanswered research priorities were then considered at a final workshop attended by 30 patients, carers and healthcare professionals. The final top ten priorities included patient empowerment and self-care, prognosis and end of life care, interface between the NHS and charities, diuretic management and support for carers.

## Consequences

Using the James Lind Alliance method we have collaboratively identified key research areas in advanced heart failure that matter most to patients, their carers and healthcare professionals. Without this approach, many priority areas for heart failure research would have been missed. These priorities can now be used by researchers and funders to direct future research in advanced heart failure.

## Funding Acknowledgement

This research is funded by the National Institute for Health Research (NIHR) School for Primary Care Research (NIHR SPCR). The views expressed are those of the authors and not necessarily those of the NIHR, the NHS or the Department of Health.

## 6B.1

### The clinical effectiveness of sertraline in primary care and the influence of depression severity and duration: a pragmatic randomised controlled trial.

*Presenter: Gemma Lewis*

*Authors: Gemma Lewis, Kate Button, David Kessler, Tony Kendrick, Tim Peters, Nicola Wiles, Glyn Lewis, on behalf of the PANDA team*

## Institutions

University of Liverpool, University College London, University of Bristol, University of Bath, University of Southampton.

## Abstract

### Problem

Depression is usually managed in primary care. However most antidepressant trials involve patients from mental health services, and there are few large pragmatic trials of the clinical effectiveness of antidepressants in primary care. Doctors also have little specific guidance on which patients are more likely to benefit from antidepressants. We investigated the clinical effectiveness of the antidepressant sertraline in patients who presented to primary care with symptoms of depression. We also tested whether the severity and duration of depressive symptoms influenced treatment response.

### Approach

We undertook a multicentre placebo-controlled double-blind

randomised controlled trial of patients from 179 primary care surgeries in four UK sites. We included patients aged 18 to 74 who had presented with depressive symptoms of any severity or duration in the past two years, where there was uncertainty about the possible benefit of an antidepressant. Patients were individually randomised to 100mg daily of sertraline or identical placebo, stratified by severity, duration and site. The primary outcome was Patient Health Questionnaire (PHQ-9) score at 6 weeks. Secondary outcomes at 2, 6 and 12 weeks were depressive symptoms and remission on the PHQ-9 and BDI-II, generalised anxiety disorder symptoms (GAD-7), mental and physical health related quality of life (SF-12) and self-reported improvement.

## Findings

Between 01/01/2015 and 31/8/2017, 655 patients were randomised to sertraline (326) or placebo (329). Primary outcome analyses included 550 patients (266 sertraline, 284 placebo, 85% follow-up). The mean PHQ9 score at 6 weeks was 7.98 (SD 5.63) in the sertraline group and 8.76 (SD 5.86) in placebo (5% relative reduction, 95% CI 0.85 to 1.07;  $p=0.40$ ). Of the secondary outcomes, there was strong evidence that GAD-7 scores were lower in the sertraline group (GAD-7 adjusted proportional change 0.83, 95% CI 0.75 to 0.91,  $P < 0.001$ ) and improved mental (but not physical) health related quality of life and self-reported improvement. There was evidence that depressive symptoms were reduced by sertraline at 12 weeks on the PHQ9 (13% relative reduction, 95% CI 0.79 to .97;  $p=0.014$ ) and BDI-II (16% relative reduction, 95% CI 0.74 to .95;  $p=0.004$ ). We found no evidence that severity or duration affected response.

## Consequences

We found limited evidence that sertraline reduced depressive symptoms for primary care patients within 6 weeks but some evidence of a reduction in depressive symptoms by 12 weeks. Sertraline reduced anxiety symptoms and improved quality of life and subjective wellbeing at 6 and 12 weeks. Our study supports the use of SSRI antidepressants in primary care, but the main initial effect is to reduce anxiety symptoms. Where there is clinical equipoise about the possible benefit of an antidepressant, anxiety symptoms such as worry and restlessness indicate an increased likelihood of benefit and support prescription of an antidepressant.

## Funding Acknowledgement

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## 6B.2

### Does using a clinical prediction tool to triage and tailor treatment improve outcomes for patients with depressive symptoms? Results of the Target-D randomised controlled trial

*Presenter: Jane Gunn*

*Authors: Jane Gunn, Susan Fletcher, Caroline Wachtler, Sandra Davidson, Cathrine Mihalopoulos, Victoria Palmer, Kelsey Hegarty, Amy Coe, Elizabeth Murray, Christopher Dowrick, Gavin Andrews and Patty Chondros*

#### Institutions

University of Melbourne, Karolinska Institutet, Deakin University, University College London, University of Liverpool, University of New South Wales

#### Abstract

##### Problem

About a quarter of primary care patients have depressive symptoms. This heterogeneous group spans mild symptoms which may spontaneously remit, to severe symptoms needing complex treatment approaches. Stepped care approaches are recommended but few tools exist to assist GPs target depression management to individual need. We have developed a Clinical Prediction Tool (the diamond CPT) to address this gap. The diamond CPT predicts depressive symptom severity at three months and classifies individuals into three groups (mild, moderate, severe). This study aimed to test whether embedding the CPT in an online platform, to triage individuals with depressive symptoms into symptom severity-appropriate treatment, reduces depressive symptoms at three months compared with usual care.

##### Approach

Adult patients attending general practices in Victoria, Australia were invited to participate in this stratified individually randomised controlled trial. After eligibility screening and informed consent, all participants completed the diamond CPT on a purpose-built online platform which included a randomisation function. The comparison arm received usual care plus attention control (asked for feedback on research in primary care and their approach to managing emotional health and wellbeing). The intervention arm received feedback on their CPT responses, were asked to set priorities and reflect on their motivation to change, and given an evidence-based treatment recommendation matched to their predicted depressive symptom severity. Participants in the mild group were recommended online self-help, those in the moderate group received a referral to guided online cognitive behavioural therapy, and those in the severe symptom group were offered nurse-led collaborative care. The presentation of feedback and treatment recommendations, and the collaborative care intervention, were informed by principles of motivational interviewing. Follow up assessments were completed online at 3 and 12 months. The primary outcome was depression severity at 3 months, measured on the Patient Health Questionnaire-9. Secondary outcomes included quality of life (Assessment of Quality of Life scale), anxiety (Generalised Anxiety Disorder scale), self-efficacy (Mental Health Self-Efficacy Scale), and health service use (Resource Use Questionnaire). Parallel process and economic evaluations were also conducted (to be reported separately).

##### Findings

We recruited 1868 patients from 14 general practice waiting rooms,

with retention of 70% and 66% at 3 and 12 months respectively. Intention-to-treat analyses commence in March 2019. Between-arm differences in outcomes will be estimated using linear mixed-effects models. Differences between study arms overall and stratified by symptom severity groups will be presented. Results will be reported for the first time in this presentation.

##### Consequences

This is the first prognosis-based stratification system for depression management in primary care. Our findings will inform whether the implementation of the Target-D model of depression care into routine practice could reduce unnecessary treatment burden and improve allocation of treatment resources.

##### Funding Acknowledgement

Target-D is funded by a grant from the National Health and Medical Research Council (NHMRC) (ID: 1059863)

## 6B.3

### The effectiveness of the Engager Intervention for male prison leavers with common mental health problems, near to and following release: results from a randomised controlled trial.

*Presenter: Richard Byng*

*Authors: Tim Kirkpatrick, Charlie Lennox, Jenny Shaw, Fiona Warren, Rod Taylor, Cath Quinn.*

#### Institutions

University of Plymouth, University of Manchester, University of Exeter,

#### Abstract

##### Problem

Offenders have a high prevalence of common mental health problems (50-70%), along with co-occurring substance misuse, emotional lability and social problems, such as homelessness and relationship difficulties. Care in prison is suboptimal and discontinuity on release is the norm. Complex needs, chaotic lifestyles and services designed for single 'disorders' contribute to the lack of care normally provided. The UK NIHR funded Engager six year programme has developed and is evaluating a complex intervention to address this problem for male prison leavers. We developed the Engager intervention that aimed to provide both practical and emotional support for people with common mental health problems (CMHPs), near to and after release from prison. It incorporates an explicitly person centred approach to intervention delivery. We describe the recently completed randomised controlled trial to evaluate the effectiveness of the intervention, and present the main results of the trial.

##### Approach

Participants (n=280) were incarcerated men recruited from three UK prisons, randomised to receive either the Engager intervention plus standard care or standard care alone. Two teams of a team leader/supervisor and two Engager practitioners delivered the intervention in the north west and south west of the UK. Participants had between 4 and 20 weeks before release and had screened in as having current CMHPs or likely to have CMHPs following release. Baseline assessment was completed in prison, with follow-up assessments at 1, 3, 6, and 12 months post release. The primary outcome was the CORE-OM at 6-months post-release. Secondary outcomes included the Camberwell Assessment of Need and measures of quality of life, substance use, addiction and housing level.

## Findings

A follow-up rate of 66% was achieved at the six-month primary outcome time-point. The intervention was delivered over a two year period with variable levels of engagement. Results will be presented comparing CORE\_OM scores and scores across the range of secondary outcome measures. Analysis will be complete at the time of the conference. Consequences

Implications for practice will be discussed. This is the first reported randomised controlled trial of a mental health intervention for prison leavers with mental health problems worldwide and the methods for achieving high levels of recruitment and follow up are important in their own right. The theoretical problems of selecting outcomes for person centred interventions will be discussed.

## Funding Acknowledgement

NIHR

## 6B.4

### Identifying early signals prior to Bipolar Disorder diagnosis in a UK primary care patient cohort

*Presenter: Catharine Morgan*

*Authors: Darren M. Ashcroft, Roger T. Webb, Carolyn A. Chew-Graham, Anya Francis, Alison R. Yung*

## Institutions

The University of Manchester, Keele University

## Abstract

### Problem

Bipolar disorder (BD) is a serious mental illness characterised by mood instability. Delay in diagnosis is typically between 6 and 10 years with many affected individuals experiencing persistent untreated symptoms. The diagnostic delay is associated with poor outcomes including poor social adjustment, more hospital admissions and high prevalence of coexisting cardiovascular, endocrine/metabolic or neurological conditions. Unlike recognition and treatment of schizophrenia, there is no agreed strategy for improving early identification and treatment of BD. We aimed to investigate features of BD that precede its formal diagnosis to identify early and undetected signs of BD.

### Approach

The Clinical Practice Research Datalink (CPRD) is an anonymised primary care electronic patient record database with linkage to secondary data, (Hospital Episode Statistics (HES) including A&E outpatient and hospital admissions). We identified all adult incident BD diagnoses made during years 2010-2017 inclusive by extracting Read codes from CPRD and ICD-10 codes from HES. We applied 1:20 (case: comparators without BD) matching by age, gender and GP practice. Health events of interest prior to the index date were extracted. These included other mental illness diagnoses, prescriptions (antidepressants, antipsychotics, benzodiazepines, Z-drugs, mood stabilisers, pregabalin, gabapentin, and strong opioids), other health events (such as substance abuse, self-harm/suicidal ideation, mood swings, and sleep disturbance) and service interactions (face-to-face consultations, missed appointments, A&E presentations, referral to mental health services). Annual episode incidence for cases and comparators and the odds ratios of cases presenting with each health event prior to the index date were reported.

## Findings

There were 2,366 incident BD cases and 47,138 individuals in the comparator group (median age 40 years, 60.5% females). Cases had a higher incidence of diagnosis of depression, personality disorder, schizophrenia and anxiety disorder even 10 years before diagnosis of BD compared to comparators. Cases were 8 times more likely to have received 3 different categories of prescription as early as 6 years prior to the index date compared to comparators (OR: 8.4 [95% CI 6.8, 10.6];  $p < 0.001$ ). The number of face-to-face consultations was higher in all years prior to the index date, with a median [IQR] of 8[15] for cases vs 4[9],  $p < 0.0001$  for comparators. At 5 years prior to BD diagnosis, cases were 5 times more likely to miss 6 scheduled appointments in a year compared to comparators.

## Consequences

Potentially useful signals to raise awareness in primary and specialist care are: more than three psychiatric drug prescriptions during the same year, multiple GP attendances in one year, increasing frequency of non-attendance of scheduled appointments. Our advisory board members, including individuals with lived experience, carers, clinicians and third sector services, were in agreement that these signs could aid earlier detection of BD, leading to more timely and appropriate care.

## Funding Acknowledgement

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## 6C.1

### Understanding improvements in cancer diagnosis in primary care: Time trends analysis (2006-2015) of diagnostic routes and emergency presentation sub-type in England

*Presenter: Lucy Elliss-Brookes*

*Authors: Annie Herbert, Gary Abel, Sam Winters, Sean McPhail, Georgios Lyratzopoulos*

## Institutions

University College London, University of Exeter Medical School (Primary Care), Public Health England (National Cancer Registration and Analysis Service)

## Abstract

### Problem

Primary care has a crucial, though often misrepresented, role in the diagnosis of cancer. Many patients continue to be diagnosed as emergencies, which have a complex aetiology and are associated with worse survival. Examining time trends in diagnostic routes can help to appreciate the evolving role of general practice in diagnostic pathways for cancer patients.

### Approach

We examined time trends in diagnostic routes overall, and in emergency presentations specifically. We paid particular attention to a specific sub-type of emergency presentation, i.e. those generated after emergency GP referrals (which we term GP-EP). We used the Routes to Diagnosis dataset, including data on patients diagnosed

with cancer in England during 2006-2015. We described trends in the numbers of cancer cases diagnosed through any route (i.e. including non-emergency presentation). Further, we described these trends after adjusting for patient characteristics and cancer site case-mix, using multivariable logistic regression.

### Findings

The number of all cancer cases in England increased during 2006-2015 increased by 20%, while the number of emergency presentations decreased by 4%, with progressive reductions in related proportions. The percentage of patients diagnosed via two-week wait referral increased from 25% to 38% (19% to 30% adjusted). Reductions in the proportion of cancer patients diagnosed as emergencies was accompanied by a changing composition of emergency presentation sub-types. Among the 554,621 emergency presenters, the GP-EP share declined continually during the study period (adjusted percentages down from 31% in 2006 to 17% in 2015). Across the study years, emergency presenters were more likely to be GP-referred if they were diagnosed with pancreatic, gallbladder, ovarian, or acute leukaemia, and if they lived in areas of lower level of deprivation (least vs. most deprived quintile: 25% vs. 19%).

### Consequences

We describe continued reduction in the proportion of patients diagnosed with cancer as an emergency, and particularly emergency presentations generated by an emergency GP referral. Reductions in overall emergency presentations seem to chiefly reflect downward trends in GP-EP referrals, which in turn likely reflect continually increasing use of the two-week-wait referral pathways during the last decade, through the implementation of NICE referral guidelines.

### Funding Acknowledgement

AH and GL are supported by a Cancer Research UK Advanced Clinician Scientist Fellowship to GL (award C18081/A18180). GL and GAA are associate directors (co-investigators) of the multi-institutional CanTest Research Collaborative funded by a Cancer Research UK Population Research Catalyst award (C8640/A23385).

This project involves data derived from patient-level information collected by the NHS, as part of the care and support of patients with cancer. The data are collated, maintained and quality assured by the National Cancer Registration and Analysis Service, which is part of Public Health England (PHE).

## 6C.2

### Two week wait referrals for possible cancer: how much of the variation between GP practices is due to CCGs and hospital trusts?

*Presenter: Chris Burton*

*Authors: Luke O'Neill, Phillip Oliver*

#### Institutions

University of Sheffield

#### Abstract

##### Problem

Ensuring that patients with symptoms of possible cancer have access to prompt diagnostic tests and treatment is a key concern for healthcare systems. Variation between providers in referral or access to such services is an important performance issue. In the UK and Europe,

particular attention has been drawn to variation in referral from primary to secondary care for patients with clinical features possibly indicative of cancer. We aimed to examine how much of this variation at practice level was attributable to local healthcare organisations and provision (CCGs and Acute Hospital Trusts).

### Approach

We used multilevel linear regression on publicly available data over the 5 years from 2013- 2017. We included all practices in England with 50 or more two-week wait referrals over the period. For each practice we obtained standardised referral rates and calculated sensitivity and specificity of referrals for a diagnosis of cancer. We mapped each practice to a CCG and each CCG to an Acute Hospital Trust (AHT). We used three types of model: (a) random intercept, practice within CCG; (b) random slope and intercept, practice within CCG and (c) random intercept practice within CCG within AHT. The first two model types were run on all practices and the third only on practices where two or more CCGs mapped to the same AHT. All models were run before and after adjusting for practice characteristics. For models with cancer detection rate (sensitivity) as the outcome we also adjusted for specificity. We estimated the proportion of variation as either intraclass correlation coefficient, R-squared or both.

### Findings

CCGs accounted for 21% of the variation between general practices in the standardised fast-track referral rate and 35% of the unadjusted variation in cancer detection rate (sensitivity). After including practice characteristics (specificity, deprivation, and proportion of patients aged over 65), CCGs accounted for 30% of the variation in cancer detection rate (compared to 13% accounted for by practice characteristics). In areas where a hospital trust was the main provider for multiple CCGs, trusts accounted for approximately twice as much variation as CCGs (between 62% and 70% of the explained variation).

### Consequences

This is the first large-scale finding that a substantial proportion of the variation between GP practices in referrals is attributable to their local healthcare systems. Efforts to reduce variation need to focus not just on individual practices but on local diagnostic service provision and culture at the interface of primary and secondary care.

### Funding Acknowledgement

## 6C.3

### What was the impact of changing NICE suspected-cancer referral guidelines on time to diagnosis of ovarian cancer?

*Presenter: Sarah Price*

*Authors: Willie Hamilton, Ruben Mujica-Mota, Obi Ukoumunne, Yoryos Lyratzopoulos, Sal Stapley, Anne Spencer*

#### Institutions

University of Exeter, University College London

#### Abstract

##### Problem

The 2005 NICE referral guidelines for suspected ovarian cancer were revised in 2011. It is important to know what impact this has had on the time to diagnosis after symptomatic presentation to healthcare.



## Approach

This observational study was set in The Clinical Practice Research Datalink (CPRD), a dataset of UK prospective, primary care medical records. In a pre-post design, we studied two cohorts of women ( $\geq 18$  years) with an incident diagnostic code for ovarian cancer made between 01/08/2008 and 31/21/2010 ("Pre") or between 01/08/2011 and 31/12/2013 ("Post"). We identified CPRD codes recorded in the year before diagnosis for clinical features that might be caused by the undiagnosed ovarian cancer. We grouped women by their index cancer feature. The "Old NICE" group had index cancer features in the 2005 guidelines: bloating, abdominal/back pain, abdominal/pelvic mass, urinary symptoms, or constipation. "New NICE" women had index features introduced in 2011: early satiety, appetite loss, pelvic pain, weight loss, fatigue, change in bowel habit, raised Ca-125 or ascites. The outcome variable was diagnostic interval: the number of days from index cancer feature presentation to diagnosis. Quantile difference-in-difference regression estimated the change in median diagnostic interval attributable to guideline revision. Explanatory variables were cohort (Post/Pre), NICE grouping (New/Old) and an interaction between cohort and NICE grouping. Analyses adjusted for age and deprivation, and clustering within general practice. All analyses were carried out using Stata 15.

## Findings

Ovarian cancer diagnostic codes were identified for 1,708 women (Pre:  $n=874$ ; Post,  $n=834$ ). Mean (SD) age at diagnosis was 65.5 (14.1) years. Of these women, 1,267 (74.2%) attended primary care with  $\geq 1$  clinical features of ovarian cancer before diagnosis, and were entered into analyses. The distribution of NICE grouping was similar in the Pre ("Old NICE":  $n=484/636$ , 76.1%; "New NICE":  $n=152/636$ , 23.9%) and Post ("Old NICE":  $464/631$ , 73.5%; "New NICE":  $167/631$ , 26.5%) cohorts. Abdominal pain was the most common index feature (Pre:  $250/674$ , 37.1%, of all index features; Post:  $234/689$ , 34.0%). Raised Ca125 accounted for  $70/674$  (10.4%) of all index features in the "Pre" period, and  $108/689$  (15.7%) in the "Post". The unadjusted median diagnostic intervals, by NICE grouping and cohort, were: 62 days ("Old NICE", "Pre",  $n=484$ ); 77 days ("Old NICE", "Post",  $n=464$ ); 63 days ("New NICE", "Pre",  $n=152$ ); and 50 days ("New NICE", "Post",  $n=167$ ). The adjusted pre-to-post changes in median diagnostic interval in the "Old NICE" and "New NICE" groups were +11.6 days (95% confidence interval -1.5 to 24.7 days) and -14.5 (-33.1 to 4.2 days), respectively. The coefficient for the interaction term (cohort  $\times$  NICE grouping) was -26.1 (-48.0 to -4.1) days ( $p=0.02$ ).

## Consequences

Revising the NICE guidelines for referral for suspected ovarian cancer was associated with a reduction of diagnostic interval of about 1 month greater than expected from secular trends. We are now investigating the impact on patient outcomes, such as 1-year survival.

## Funding Acknowledgement

Cancer Research UK

## 6C.4a

### Understanding GP-help seeking with potential cancer symptoms – the Understanding Symptom Experiences Fully (USEFUL) study

Presenter: Peter Murchie

Authors: Rute Vieira, Rosalind Adam, Katriina Whitaker, Phil Hannaford

#### Institutions

University of Aberdeen - Institute of Applied Health Sciences

#### Abstract

##### Problem

There is good evidence that many people delay seeking help from GPs when they develop symptoms subsequently proving to result from cancer. Understanding how and when different demographic groups currently seek help for potential cancer symptoms could highlight where interventions are needed to prompt earlier help seeking for some. This presentation reports data from the USEFUL study, a questionnaire study from nearly 15,000 UK adults aged  $\geq 50$ . Of patients experiencing 25 potential cancer symptoms we wished to determine those patients that had, or had not, consulted a General Practitioner (GP) about them and how this decision was influenced by previous experience of symptoms, current health status and socio-demographic factors.

##### Approach

A postal survey sent to 50,000 adults aged  $\geq 50$  years around the UK. Questions asked about respondents' experiences of, and responses to, 21 symptoms of possible cancer in the previous year. Descriptive statistics were used to summarise overall and relevant subgroup information regarding each symptom, previous experience of the symptoms, GP help-seeking behaviour, as well as demographics. Cluster analysis was used to identify distinct patterns of reported symptoms.

##### Findings

Poorer current health status, being unable to work and co-morbidities strongly predicted GP help-seeking with potential cancer symptoms. Lower income also appeared to increase the likelihood of GP help-seeking for symptoms of potential cancer. Previous experience of several symptoms (headache, chest pain, persistent diarrhoea, blood in stool or rectal bleeding) made it less likely that an individual will seek GP help for them, but those with bladder symptoms or weight loss were more likely to seek help. Current smokers were less likely to seek help for important potential symptoms of lung cancer. Alarm symptoms are relatively rare so targeting these symptoms to raise their salience could be beneficial and is unlikely to overwhelm health services.

##### Consequences

Unexpectedly those who appear to be most at risk of a protracted or non-linear route to diagnosis of cancer appear the most likely to seek help from their GP when they experience symptoms. The existing data, when interpreted along with the work of others, has considerable potential to inform the details of future campaigns aimed at particular symptoms and targeted to specific population groups. For example, smokers may need tailored information about coughing and hoarseness, and busy working professionals may need to have the value of having GI symptoms check-out emphasised to them.

##### Funding Acknowledgement

The study was funded by a project grant from Cancer Research UK.

## 6C.4b

### Common cancer symptoms at presentation and associated stage at diagnosis

*Presenter: Gary Abel*

*Authors: Ruth Swann, Sean McPhail, Gary Abel, Lucy Elliss-Brookes, Greg P Rubin, Georgios Lyratzopoulos*

#### Institutions

University College London, Public Health England, University of Exeter Medical School, Newcastle University

#### Abstract

##### Problem

Early diagnosis interventions such as cancer symptom awareness campaigns and fast-track diagnostic pathways for cancer focus on specific presenting symptoms of cancer but such efforts may have limited clinical utility if the selected symptoms represent advanced stage. Current evidence examining how symptoms at presentation are associated with stage is limited, and typically relate to individual cancer sites. We sought to examine associations between common presenting symptoms and their associations with stage at diagnosis using a population-based incident cohort of cancer patients.

##### Approach

We analysed English National Cancer Diagnosis Audit (2014) data on 7,997 patients with one of twelve solid tumours with a high degree (>80%) of stage completeness: bladder, breast, colon, endometrial, laryngeal, lung, melanoma, oesophageal, oral/oropharyngeal, ovarian, prostate, rectal, and renal cancer. We considered 20 common symptoms in the study population and examined their associations with stage at diagnosis (TNM IV versus I-III, stage completeness >80%) using logistic regression, taking into account whether that symptom was seen alone, or with other symptoms.

##### Findings

There was large variation in the proportion of patients diagnosed with stage IV ranging from 1% (abnormal mole) to 80% (neck lump), with further variation by symptom depending on whether other symptoms were present. Stage IV disease was diagnosed in <20% of patients who presented with abnormal mole, breast lump, post-menopausal bleeding, rectal bleeding, or lower urinary tract symptoms; 20-60% of patients with haematuria, change in bowel habit, lower abdominal pain, abdominal pain, hoarseness, fatigue, weight loss, cough, haemoptysis, chest infection, and dyspnoea; and >60% of patients with back pain, chest pain, or neck lump. Adjustment for single/multiple presenting symptom status, and for patient characteristics and cancer diagnosis, indicated broadly comparable patterns of variation for most symptoms.

##### Consequences

Presenting symptoms of cancer are variably associated with advanced stage at diagnosis. However, for nearly all examined symptoms large proportions of patients are diagnosed in non-advanced stage. These findings refute concerns that early diagnosis interventions centred on common symptoms of cancer principally expedite the detection of advanced stage disease.

##### Funding Acknowledgement

The UK Department of Health's Policy Research Unit in Cancer Awareness, Screening and Early Diagnosis and Cancer Research UK.

## 6C.4c

### Why are GPs not using dermoscopy?

*Presenter: Nigel Hart*

*Authors: Fee J, Finbar P. McGrady, Nigel D. Hart*

#### Institutions

Queen's University Belfast

#### Abstract

##### Problem

Cases and deaths from melanoma, the UK's fifth commonest cancer, continue to rise in many countries. Successfully managing melanoma necessitates its early detection. Most patients with concerning pigmented skin lesions (PSLs) present first to their General Practitioner (GP).

Visual inspection of PSLs has limited accuracy because many early melanomas can mimic benign lesions, and many benign lesions can change in appearance, mimicking melanomas. For GPs, deciding whether to refer or reassure patients is therefore very difficult. GPs' referrals to specialist services for suspected skin cancer have risen enormously in recent years.

Dermoscopy is a relatively new tool for assessing PSLs, and has been shown to improve trained GPs' abilities to triage lesions suggestive of skin cancer. However, dermoscopy is currently used by a small minority of GPs globally. There have been calls for dermoscopy to become a standard clinical tool for GPs similar to a stethoscope.

Work to understand GPs' perceptions of dermoscopy and possible barriers to its use has been undertaken previously in questionnaire studies, but published work has not explored influencing factors in-depth.

Thus study aimed to explore factors that influence GPs' use of dermoscopy in primary care.

##### Approach

A qualitative study design was chosen with the study methodology underpinned by principles of grounded theory including an iterative study design, purposive sampling, constant comparison and theoretical sufficiency. GPs registered on a social media platform for GPs in Northern Ireland (representing approximately one-third of Northern Ireland GPs) were invited to participate. Information was gathered on respondents' dermoscopy experience, and a purposive sample was taken to explore the perceptions of 1. established dermoscopy users; 2. new dermoscopy users; and 3. dermoscopy non-users. A number of additional participants were recruited through a 'snowballing' approach. Twelve semi-structured interviews lasting approximately 20-30 minutes were conducted by JF, recorded and transcribed verbatim. Data coding was facilitated using NVivo software. The data were analysed using a thematic analysis (Braun & Clarke).

##### Findings

Key themes that have been generated from the data include:

1. Need for training and certification;
2. Importance of accurate diagnosis;
3. Impact on personal clinical practice;
4. Clinical and personal priorities;
5. Confidence;

6. Adapting to innovation;
7. Interactions with secondary care.

### Consequences

This study has revealed several factors that influence dermoscopy use among GPs, many of which may be modifiable. Current short training programmes are often considered inadequate to give GPs the skills and confidence needed to use dermoscopy in practice. Agreed standards for dermoscopy training and use in practice could help to guide training and development and safeguard patient care. Collaborations between primary and secondary care could help to streamline referrals using dermoscopy. Given the rising burden of skin cancers, equipping GPs to assess skin lesions more accurately must be considered a priority.

### Funding Acknowledgement

JF's study fees and maintenance come from HSC R&D Division, Public Health Agency's GP Academic Research Training Scheme and EAT/5336/17.

## 6D.1

### Awakening Critical Consciousness? Opportunities seized and missed in General Practice teaching.

*Presenter: Annalisa Manca*

*Authors: Nigel Hart, Jenny Johnston, Gerry Gormley*

### Institutions

Queen's University Belfast

### Abstract

#### Problem

There are increasing calls in the field of Medical Education to become more socially accountable, by adopting critical approaches to curriculum development. Critical Pedagogy theory was developed by Paulo Freire with reference to 'disempowered populations', but it also refers to all educational experiences promoting empowerment and transformation among learners. Central to Critical Pedagogy is 'Critical Consciousness', a process through which individuals identify elements of a socio-cultural environment that contribute to the reality of a particular context. So, Critical Consciousness is the basis of social accountability and transformation. A way for Medical schools to become truly socially accountable, could be to embed critical pedagogy constructs in their curricula in a way that it stimulates both educators and students to identify where power imbalances might compromise the mission of medical education and to develop attitudes to rectify those imbalances. This research seeks to identify areas of the GP curriculum where the opportunities to cultivate critical consciousness in our future doctors are seized and those where they are missed. Can we design GP teaching experiences in undergraduate medical curricula as opportunities to develop 'grounded and rounded doctors'?

#### Approach

We conducted a Critical Ethnography (CE) of a 4th year GP teaching attachment in a UK Medical School in order to understand the dynamics in which critical consciousness develops and is conceptualised by teachers, tutors and students within the educational practices. CE can help suggest 'what can be done about' a particular situation, challenging the status quo in society, and promoting emancipation. We argue that this character of CE makes it suitable for Medical Education research, particularly for exposing hidden dynamics of power, hegemony of certain practices over others, and how these affect

the learning experience for students and educators alike, in furtherance of transformative practices, both clinical and educational. We also interviewed a sample of students, GP tutors and teachers, and collected students' audio-diaries during their GP clinical attachment. Discourse Analysis was used to analyse interview and audio-diaries transcripts and observe the ways in which language portrays critical consciousness. Grounded Theory was used to analyse the fieldnotes and understand how the GP teaching cultivates learners' critical attitude.

### Findings

A preliminary analysis of the collected data suggests that teaching and learning practices within the GP curriculum we observed, are based on premises which facilitate students' understanding of the forces influencing healthcare and of the impact of socio-political inequities on the health of disadvantaged populations.

### Consequences

GP Educators' and curriculum planners' critical attitude in the design and delivery of educational interventions is key to ensuring that students themselves develop skills to foster social transformation through self-reflection, critical analysis of socio-cultural issues, and social action. The findings of this research will potentially influence GP curriculum design and pedagogical practices.

### Funding Acknowledgement

## 6D.2

### Promoting active practice: medical students in action

*Presenter: Liza Kirtchuk and Niki Jakeways*

*Authors: Liza Kirtchuk, Laila Abdullah, Niki Jakeways, Ann Wylie, Anne Stephenson*

### Institutions

King's College London

### Abstract

#### Problem

Physical Inactivity is a major public health concern and both the RCGP and PHE have launched campaigns to promote physical activity as part of the wider move to encourage general practice to adopt social prescribing [1, 2]. Physical activity prescribing and promotion can be potentially very effective in the primary care context [1]. Concurrently UK medical education core curricula are being updated, both generally and for Primary Care, with learning outcomes linked to physical activity. We opportunistically devised an Active Practice assignment for our 2nd year medical students as part of our new longitudinal GP placement. This involves students responding to the local needs of both the practice and its demographic through establishing physical activity improvement initiatives for staff, patients and local populations. In addition to contextualising the importance of social prescribing, a broad range of learning outcomes are met in this way, including the development of professionalism and quality improvement, leadership and teamwork skills.

#### Approach

Groups of eight second-year students across 25 practices in SE London undertake the Active Practice assignment, embedded within their longitudinal GP placement of 24 Tuesdays. The assignment is complemented by clinical exposure to primary care, seminars and campus-based teaching on health promotion, behaviour change and healthy eating. Each practice has two student active practice champions

that lead their student team: they attend workshops and are supported by GP mentors. They are asked to review their practice and patient population to assess needs, local opportunities and links, and provided with various resources and feedback from their mentors. GP tutors and their practice team are expected to be supportive and guide students regarding sustainable interventions at the practice. Assessment of the assignment is through a group presentation and written reflection, based on one or more of the aims to:

- Reduce sedentary behaviour of staff
- Reduce sedentary behaviour of patients
- Increase physical activity of staff
- Increase physical activity of patients
- Increase engagement with community groups

Data will be presented on the activities to promote physical activity in each of the 25 practices, the sustainability of what has been developed and the impact as well as the challenges for the students, their mentors and the practice teams.

### Consequences

The Active Practice assignment gives second year medical students a role in establishing social prescribing in Primary Care, enabling the development of protocols and promotion of physical activity. There are also broader opportunities for leadership and experience in managing change.

### Funding Acknowledgement

## 6D.3

### What is the role of near-peer mentoring in informing medical students about a career in general practice?

*Presenter: Anjali Gondhalekar*

*Authors: Manisha Gossain, Anne Fitzgibbon-Cadiou*

### Institutions

UCL (University College London) Medical School

### Abstract

#### Problem

It is essential that medical students can make informed choices about a career in general practice. A report released by Health Education England (Wass et al) titled 'By Choice-not by chance, supporting medical students towards a future career in general practice' outlined a number of recommendations on increasing recruitment into general practice. The report illustrated the need for strong general practice role models and a contribution from near-peers to better inform medical students about a career in general practice. A qualitative study was carried out looking at perceptions of medical students before and after the introduction of a near-peer mentoring scheme between UCL medical school students and UCL affiliated GP trainees.

#### Approach

Ethical approval was sought prior to the project being initiated. Questionnaires and focus groups were undertaken before and after the near-peer mentoring project to consider changes in the perception of general practice as a result of near-peer mentoring. This was considered in the context of the theory of change. Responses were transcribed and thematic analysis carried out using Nvivo software.

### Findings

Overall, near-peer mentoring was appreciated by students and feedback was resoundingly positive. Limitations should be considered including the self-selecting nature of both mentors and mentees. Key themes included the fact that many students drew on experiences in general practice and this was a major factor impacting on their perception of general practice as a career prior to participating in the near-peer mentoring scheme. Overall, near-peer mentoring was found to enhance perception of role model and provided students with a more holistic outlook on general practice as a career.

### Consequences

This project clearly indicates that there is scope for a wider reaching near-peer mentoring schemes, which could provide vital information and inspiration into a career in general practice. Moreover, this model could also have potential to be adapted at different training levels to provide greater cohesion between healthcare trainees and professionals through near-peer mentoring support.

### Funding Acknowledgement

UCL Changemaker's

## 6D.4a

### Effectiveness of an "interprofessional diabetes education program" using a collaborative learning system in the Web campus on undergraduate healthcare professional students

*Presenter: Mina Suematsu*

*Authors: Noriyuki Takahashi<sup>1</sup>, Kentaro Okazaki<sup>1</sup>, Etsuko Fuchita<sup>2</sup>, Kenichi Okumura<sup>3</sup>, Manako Hanya<sup>3</sup>, Keiko Yamauchi<sup>4</sup>, Keiko Abe<sup>5</sup>, Masafumi Kuzuya<sup>1</sup>*

### Institutions

<sup>1</sup> Nagoya University Graduate School of Medicine, Japan,

<sup>2</sup> Nagoya University School of Health Science, Japan,

<sup>3</sup> Department of pharmacy, Meijo University, Japan,

<sup>4</sup> National Hospital Organization Kyoto medical center, Japan,

<sup>5</sup> Critical Care Nursing, Aichi Medical University, Japan

### Abstract

#### Problem

To accomplish patient-centred care, interprofessional education (IPE) for healthcare professions is essential worldwide. However, IPE has numerous barriers to be implemented, for example physical distance among the stakeholders in the universities (spatial barriers and time barriers), and mutual lack of understanding because of their cultural differences (psychological barriers). We developed an innovative IPE course to overcome these barriers using a collaborative learning system in the Web campus. Web campus enabled participants to contact using on-line educational setting at any time, anywhere, which included chat system and video meeting. Multidisciplinary healthcare professional undergraduates learned about diabetes and made their original educational programme for people with diabetes. The aim of this study was to investigate the effectiveness of this IPE course using Web campus on undergraduate healthcare professional students.

## Approach

This IPE course consisted of three types of educational settings (face to face workshop setting, on-line setting, and with real patient setting). Workshop was conducted for all participants in the first day (face to face workshop setting). The presentations of diabetes educational programme for people with diabetes were held in the final day (with real patient setting). Fifteen participants (four 5th year medical, three 5th year pharmacy, five 4th year nursing and three 3rd year nutrition students) were divided into three mixed professions' groups. Each group discussed and made their original diabetes educational programme. All students could contact with the other students and consult educators using Web campus at any time (on-line setting). After this course, an interview was conducted involving students who had participated in this IPE, and the results were qualitatively analysed using the "Steps for Coding And Theorization" (SCAT) method. This study was approved by the Ethics Committee of Nagoya University School of Medicine.

## Findings

Students' experiences of on-line setting weakened their psychological barriers against students of the other professions, and helped them recognise the roles of their own profession and the other professions. Although some students had difficulties to use on-line setting because of their internet environment at home, they cooperated with the other professions' students successfully as a team. Furthermore, the IPE course encouraged students to care for patients and develop close relationships with patients.

## Consequences

This IPE course using the Web campus effectively increased opportunities for the participants to interact with students of other professions and learn about the roles of many professionals in their own and other fields, as well as communication skills to cooperate with others. As Information and communication technologies (ICT) in medicine and healthcare has been required, IPE course using ICT in medical education will become more essential. In conclusion, IPE using Web campus enables the healthcare professions' undergraduate students to reduce the barriers and awareness of importance to collaborate the other professions.

## Funding Acknowledgement

none

## 6D.4b

### Investigating the process of goal setting within feedback given in a teaching module in Phase 1 at Leicester Medical School.

*Presenter: Fiona Bermingham*

*Authors:*

## Institutions

University of Leicester Medical School

## Abstract

### Problem

Feedback has been recognized as "one of the most powerful influences on learning and achievement" (1). However, Bing-You et al have highlighted several important skills that students need to be able to effectively use feedback to enhance learning (2). One technique that

aims to influence the proactive and reflective use of feedback is goal setting (1,2). These are extremely valuable skills, vital for the life long learning of a medical career. This study aims to investigate whether goal setting is used in the process of feedback in the Compassionate, Holistic, Diagnostic Detective (CHDD) Module. This is an opportunity to evaluate the feedback in CHDD and highlight differences in the practice of feedback giving and goal setting. This will inform feedback given in other settings within the Medical School. (1) John Hattie, Helen Timperley. The Power of Feedback. Review of Educational Research. 2007 Mar(2) Bing-You RG, Trowbridge RL. Why Medical Educators May Be Failing at Feedback. JAMA. 2009 Sep.

## Approach

An overview of the current feedback practice at Leicester Medical School was achieved by discussing the approaches to feedback with clinical academics. Medical Educators from Warwick and Aston Medical Schools were also consulted to compare feedback practice in Medical Schools with similar curriculums. In addition, feedback delivery was observed in the CHDD module and a clinical teaching setting in General Practice. The CHDD module was identified as providing an opportunity to assess feedback from both the student and tutors' perspective. A literature review has enabled understanding of the progression of feedback practices within medical education and recognition of the strategies already used and those still in development, such as the Educational Alliance (3). Focus groups have been chosen as the most powerful method to investigate how tutors perceive the delivery of their feedback and to compare this to how students utilize the feedback they receive. The module is taught by GP educators and this study aims to highlight ways of improving how their feedback is conveyed and used. (3) Telio S, Ajjawi R, Regehr G. The "educational alliance" as a framework for reconceptualizing feedback in medical education. Academic medicine : journal of the Association of American Medical Colleges. 2015 May.

## Findings

This study is ongoing and results will be presented. Consequences

This study aims to understand how goal setting is interlinked as an integral part of the feedback process. A potential result of this study is that student satisfaction with the module will be improved as a result of enhancing feedback through goal setting. In addition, GP educators could translate this to their teaching practice.

## Funding Acknowledgement

University of Leicester

## 6E.1

### Describing the content of general practice consultations: a national morbidity study

*Presenter: Clare Bankhead*

*Authors: Alice Fuller, Richard Hobbs, Tim Holt, Sarah Lay-Flurrie, Brian Nicholson, Rafael Perera-Salazar, Chris Salisbury*

## Institutions

University of Oxford, University of Bristol (Chris Salisbury)

## Abstract

### Problem

General practice is central to provision of healthcare in the NHS. However, little is known about the content of consultations - how often, how often, or with what sorts of problems. Most of the

## 6E.2

### A method for measuring continuity of care in day-to-day general practice.

*Presenter: Kate Sidaway-Lee*

*Authors: Denis Pereira Gray, Philip Evans*

#### Institutions

St Leonard's Practice, University of Exeter Medical School

#### Abstract

##### Problem

Continuity of care is widely acknowledged as being an important feature of general practice and has recently been linked to decreased hospital admissions and mortality. However continuity of care is currently in decline and is rarely measured in day-to-day general practice. It is difficult to improve something that is not regularly measured. However, current methods for measuring continuity, mainly used in research, require minimum numbers of appointments or long time scales, and/or may be difficult to calculate within a general practice. We aimed to describe the St Leonard's Index of Continuity of Care (SLICC) for measuring GP continuity regularly and demonstrate how it has been used in service general practice. We also compared it to other existing methods, in particular the widely-used Usual Provider of Care (UPC) index.

##### Approach

The SLICC has been developed in a service general practice and used for over 40 years. It is simple to calculate using practice computing systems such as SystmOne, together with Microsoft Excel. To demonstrate its use, we analysed appointment audit data from 2016-2017 in a general practice with 8823-9409 patients and 7 part-time partners and 1-2 GP Registrars. The practice uses a personal list system, although the SLICC could also be applied to the named GP, which is a national requirement. The SLICC (the percentage of face-to-face appointments with the patients' personal GP) was calculated monthly for each doctor's list. The SLICC for different groups of patients was compared. The UPC index over the two years was also calculated, allowing comparisons between indices.

##### Findings

In the two years studied, there were 35,622 GP face-to-face appointments; 1.96 per patient per year. Overall, 51.7% (95% CI: 51.2-52.2%) of GP appointments were with the patients' personal doctor. There was a large variation between months and between doctors, from below 30% in months where a doctor was on leave, to over 70% for one list. Over 65s had a higher level of continuity with 64.9% of appointments being with their personal doctor. More deprived patients, males and patients with over seven appointments also had a higher SLICC. The mean whole-practice UPC score was 0.61 (SD=0.23), with "usual provider" being the personal GP for 52.8% and a trainee or locum for 8.1% of patients. Again, patients aged over 65 had a significantly ( $P<0.001$ ) higher UPC (mean 0.69, SD 0.22), than those below 65 (mean 0.58, SD 0.23).

##### Consequences

We demonstrate that a reasonable level of continuity can be achieved in a training general practice where all GPs are part-time. The 65% continuity for the over 65s is likely to cover most patients with multimorbidity. This method could provide working GPs with a simple way to track continuity of care and inform practice management and decision making.

##### Funding Acknowledgement

information available comes from the 4th national morbidity study, conducted more than 20 years ago. Since then much has changed: the population has aged; many people are living with chronic conditions, which are frequently managed in primary care; and rates of risk factors have changed. We have analysed the content of general practice consultations, aiming to provide an updated national morbidity study to provide an invaluable resource for healthcare education, planning and policy.

#### Approach

Using a 10% age-sex stratified random sample of 304,937 people and 1.7 million consultations from the Clinical Practice Research Datalink (CPRD), we mapped all the codes recorded during 1 year (2013/2014) to the International Coding in Primary Care (ICPC-2) scheme. Three main outcomes were calculated: the proportion of consultations attributable to conditions; consultation rate/person years; and annual consulting prevalence. These were all reported by age and gender for each of the 17 ICPC-2 chapters and for specified exemplar conditions.

#### Findings

57% of all consultations contained codes in the General and Unspecified chapter, including issues such as blood pressure measurement, medication reviews and lifestyle advice. Respiratory conditions were the next most frequently coded chapter, accounting for just over 10% of consultations (consultation rate of 46 consultations/100 person years and consulting prevalence of 26.5/100 person years); skin conditions occurred in 9% of consultations and musculoskeletal complaints in 8%. The next most commonly coded ICPC-2 chapters were cardiovascular problems, digestive issues, endocrine/metabolism, female genital problems, pregnancy/family planning, psychological, ear, urological problems occurring in 2% to <5% of consultations and neurological, eye, male genital conditions, blood disorders and social problems in less than 2% of consultations. High consultation rates in infants especially for respiratory concerns (128.2 consultations per 100 person years), skin complaints (66.1 consultations per 100 years) and digestive concerns (55.5 consultations per 100 person years) were observed. Consultation rates were also high regarding pregnancy and contraception amongst women aged 15-44. Several of the ICPC-2 chapters (neurological, urological, musculoskeletal and psychological chapters) showed patterns of increasing consultation rates with increasing age. Patterns of prevalence rates were similar.

#### Consequences

We have shown that a significant proportion of consultations are about respiratory, skin and musculoskeletal problems. This has implications for medical education since the latter two types of condition receive relatively little attention in many curricula. We have also shown that many consultations include general activities but cannot be attributed to any specific health condition which raises difficulties for research and health service planning.

#### Funding Acknowledgement

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## 6E.3

### How can we measure the complexity of general practice consultations?

*Presenter: Chris Salisbury*

*Authors: Sarah Lay-Flurrie<sup>2</sup>, Clare Bankhead<sup>2</sup>, Alice Fuller<sup>2</sup>, Chelu Mfalila<sup>2</sup>, Mairead Murphy<sup>1</sup>, Barbara Caddick<sup>1</sup>, Tim Holt<sup>2</sup>, Brian Nicholson<sup>2</sup>, Rafael Perera-Salazar<sup>2</sup>, Richard Hobbs<sup>2</sup>*

#### Institutions

<sup>1</sup> University of Bristol, <sup>2</sup> University of Oxford

#### Abstract

##### Problem

We have previously demonstrated that GP consultation rates are increasing. However, the complexity of consultations may also be increasing due to the rising prevalence of multimorbidity, transfer of work from secondary to primary care, the requirements of the QOF and increasing policy and public expectations. If so, this will further compound workload pressures in general practice. In order to assess the complexity of GP consultations we need a valid and reliable measure which can be applied to routine medical records, but no suitable measure currently exists. The aim of this study was to develop such a measure.

##### Approach

We conducted a Delphi study over two rounds involving 32 experienced GPs to identify potential indicators of consultation complexity. We created initial Read code sets for each of the endorsed complexity indicators; the code sets were assessed independently by two GP academics with a third involved if disagreement. We excluded indicators which could not be clearly defined or with very low prevalence. We are currently assessing the face validity of each indicator by exploring its relationship with consultation duration, using a 10% age-sex stratified random sample of 304,937 people and 1.7 million consultations from the Clinical Practice Research Datalink (CPRD). We will then use factor analysis to combine the indicators into separate measures of patient and consultation complexity. Finally, using CPRD we will explore how complexity varies in different populations and how it changed between 2007 and 2018.

##### Findings

We found it necessary to distinguish between indicators of complex consultations (consultations involving complex problems) and complex patients (enduring patient characteristics which make most of their consultations complex irrespective of the presenting problem). Between rounds 1 and 2 of the Delphi several potential indicators were re-worded in the light of panel members' comments. After two rounds the panel endorsed 17 of a possible 19 indicators of consultation complexity (e.g. consultation raises child protection concerns) and 17 of 26 indicators of patient complexity (e.g. polypharmacy). The panel sometimes found it difficult to define what makes a patient or consultation more complex than others when the norm was already complex. Findings from the work to combine indicators and to validate the patient and consultation complexity scores will be presented, along with how complexity has changed over time.

##### Consequences

Developing measures of complexity is challenging both conceptually and practically, but necessary given the changing demands on general practice in the UK and internationally. Valid and reliable measures of patient and consultation complexity are important for research (e.g. as

a case-mix measure) and for policy, with implications for how general practice is organised and resourced, for example to inform decisions about appointment lengths and how funds are distributed between practices.

#### Funding Acknowledgement

This project was funded by the National Institute for Health Research School for Primary Care Research (project number 243) and was supported by the NIHR Oxford Biomedical Research Centre. The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.

## 6E.4a

### Primary care consultations rates among practices using Vision<sup>®</sup> and EMIS<sup>®</sup> practice management software systems - an evaluation using the Clinical Practice Research Datalink

*Presenter: Tarita Murray-Thomas*

*Authors: Dr Helen Booth, Daniel Dedman, Melissa Cabecinha, Dr Rachael Williams, Dr Puja Myles*

#### Institutions

Clinical Practice Research Datalink, London, UK; MC - PhD Student, UCL, London

#### Abstract

##### Problem

Combining data from GP practice management systems (PMS) may provide more accurate insights on national trends in the use of primary care services and clinical workload, data essential for health care planning and policy formulation. However, the comparability of data from different sources must be assessed before combined, to understand how factors such as differing data capture and recording methods may influence findings.

##### Approach

This work aimed to compare national trends in primary care consultations using anonymised longitudinal patient level data from general practices using Vision<sup>®</sup> and EMIS<sup>®</sup> systems. Data from practices which switched from Vision<sup>®</sup> to EMIS<sup>®</sup> were also considered. Consultation data from a sample of general practices in England during 01/04/2006 - 31/03/2017 were assessed. Practices continuously contributing data to CPRD during this period were included, as were patients who had at least one day of follow-up. Consultations were defined as direct contact between practice staff and patients. Staff role was grouped as GP, nurse or other health professional. Consultation location was categorised as surgery, telephone, home visit or other location. Crude annual consultations per person-year (ppy) and 95% confidence intervals were estimated separately for Vision<sup>®</sup>, EMIS<sup>®</sup> and switched practices, and stratified by financial year, gender, age-group, staff role and consultation location.

##### Findings

587 practices (372 EMIS<sup>®</sup>, 142 Vision<sup>®</sup> and 73 which switched from Vision<sup>®</sup> to EMIS<sup>®</sup>) were included. Crude annual consultation rates were higher among Vision<sup>®</sup> practices, increasing steadily from 5.39 ppy [95% CI: 5.38-5.39] in 2006/2007 to 8.31[8.30-8.31] in 2016/2017. Although rates among EMIS<sup>®</sup> practices were slightly higher than in Vision<sup>®</sup> in 2006/2007 (5.51[5.50-5.51]), only modest rate increases were observed in EMIS<sup>®</sup> by 2016/2017(5.63 [5.63-5.63]). Differences

between systems appeared to be explained by higher consultation numbers categorised as 'other health care professional' and 'other consultation location', among Vision practices. Possible system level differences were further highlighted when examining annual consultation rates among Vision<sup>®</sup> practices that switched to EMIS<sup>®</sup>. Trends in annual rates prior to switching were similar to Vision<sup>®</sup> practices (5.76 ppy [5.75-5.77]) in 2006/2007 rising to 8.03 ppy [8.03-8.04] in 2014/2015) but tended towards rates among EMIS<sup>®</sup> practices (6.35 ppy [6.35-6.36]) in 2016/2017) after switching. Despite PMS differences in the magnitude of annual consultation rates, trends in consultations in both systems were similar - rates were higher among females, the very young and the elderly, and consultation rates by GP and nurse were similar.

### Consequences

This study highlights possible systematic differences in PMS data recording, suggesting that caution is required when considering whether to combine results from multiple systems. While similarities in trends observed between PMS may be reassuring for some uses of the data, it is important to consider potential limitations and how these may be counterbalanced when making decisions about combining data.

Funding Acknowledgement

## 6E.4b

### Greater continuity and lower mortality: Is there an effect in primary care?

Presenter: Richard Baker

Authors: George Freeman, Jeannie Haggerty, John Bankart, Keith Nockels

### Institutions

University of Leicester, Imperial College, McGill University

### Abstract

#### Problem

Continuity is a core principle of general/family practice, but is declining. Past studies suggest that benefits include improved patient satisfaction, better prevention and lower hospital admissions. A recent review concluded that higher continuity in primary and/or secondary care was associated with lower mortality.

#### Approach

We reviewed all studies investigating associations between a quantifiable measure of continuity (informational, management or relational) of primary medical care exclusively with a measure of mortality, and reviewed any mechanisms described. We included original empirical quantitative studies of any design, published in English or French since the inception of the bibliographies searched (Medline, EMBASE, PsychINFO, and for unpublished studies Open Grey and the library catalogue of the NYAM). The data extracted were: authors; publication year; design; setting; patients included; measure of continuity and mortality; covariates in statistical models; type of statistical model, whether outcome had been transformed; continuity beta coefficient estimate (95% CI); continuity variability estimate; missing data. The assessment of bias used the 2011 version of the mixed methods appraisal tool (MMT), designed for the appraisal of randomised, non-randomised, quantitative descriptive, qualitative and mixed methods studies. We planned to conduct a meta-analysis if methods used in the included studies were sufficiently similar. Findings

We assessed 2251 articles in abstract, 67 in full text, finally including 12. Papers came from the USA (3), Canada (3), England (2), France (1), Israel (1), South Korea (1), and the Netherlands (1). Only relational continuity was studied. Studies included: all primary care patients (3); patients aged 60 or over (5), people with diabetes (1), heart failure (1), and specific chronic conditions (4). All studies reported at least one measure of greater continuity being associated with lower mortality. However, in one US study, only one of 16 measures of continuity had a protective link with mortality, seven continuity measures derived from claims data and one from patient reports being associated with increased mortality. We will present a meta-analysis of the suitable (confounder adjusted) studies where outcomes were similar (hazard ratios), and the continuity measures continuous. Ten studies suggested a mechanism to explain the reported association between continuity and mortality; these included greater trust and knowledge and improved preventive care. No study related continuity to patient safety.

### Consequences

Our findings are consistent with a positive effect of continuity on mortality, although one study showed inconsistent results between different measures of continuity. The studies were all observational; potential mechanisms were not adequately investigated and reverse causation is also possible. Evidence about the association with mortality suggests that more good than harm is likely, but randomised trials are feasible and would be much more persuasive.

### Funding Acknowledgement

There was no funding for this study

## 6E.4c

### Developing a patient-centred template for asthma reviews: an IMP2ART implementation strategy

Presenter: Steph JC Taylor

Authors: Kirstie McClatchey, Aimee Sheldon, Liz Steed, Steph JC Taylor, Hilary Pinnock, Charlotte Ridgeway, Oliver Taylor, Francis Appiagyei, David Price.

### Institutions

Queen Mary University of London, Asthma UK Centre for Applied Research, The University of Edinburgh, Optimum Patient Care.

### Abstract

#### Problem

Templates for use in consultations typically aim to improve adherence to key functions, but risk overriding the patient agenda. As part of the IMpLeMenting IMpROved Asthma self-management as Routine (IMP2ART) programme, we aimed to develop a review template designed to enhance patient-centred care, and promote supported self-management in primary care asthma reviews.

#### Approach

Building on current guidelines, recommendations of an Asthma UK and Royal College of Physicians workshop, professional experience, patient-centred care literature, and behaviour change theory, the multidisciplinary team (clinicians, health psychologists, technical experts) developed a prototype template. A professional advisory group of asthma-interested GPs and nurses (n=17), provided insights into items to be included and excluded and advised on feasibility.



## Findings

Key features of the prototype template include: an opening question to establish the patient's agenda such that patients concerns and goals can be addressed; a reduction in extensive data collection e.g. by using different tabs for spirometry; considerations for if asthma is poorly controlled; links to access a range of external information sources for patients; and a closing question to confirm that the patient's agenda has been addressed. The template highlights patient-centeredness, encourages action plan provision, and supports patients to self-manage their asthma.

## Consequences

Our prototype template is designed to promote patient-centred care and overcome the risk of reducing asthma reviews to 'tick-box' exercises. We will now seek feedback on the utility of the template from professionals and patients.

## Funding Acknowledgement

IMP2ART is independent research funded by NIHR PGfAR (RP-PG-1016-20008). The views expressed are those of the authors, not necessarily those of the NHS, NIHR or Department of Health and Social Care.

## 6F.1

### What is a pragmatic trial and how do I do a good one?

*Presenter: Sandra Eldridge and Sally Kerry*

*Authors:*

#### Institutions

Queen Mary University London and University of London

#### Abstract

##### AIM AND INTENDED OUTCOME/EDUCATIONAL OBJECTIVES

The aim of this workshop is to give participants a better understanding of pragmatic trials. It is intended that participants leave the workshop with a clearer understanding of the definition of pragmatic trials, the key ways that these trials differ from explanatory trials, and the aspects of these trials that need to be thought through carefully in order to avoid some of the common pitfalls.

##### Objectives:

1. To provide a clear definition of pragmatic trials
2. To introduce participants to the idea of a spectrum between explanatory and pragmatic trials and the PRECIS-2 tool that can be useful in understanding where on the spectrum trials are
3. To consider some specific aspects of pragmatic trials on which investigators need to make decisions

##### FORMAT

A. An introduction to the workshop and objectives 1 & 2 will be covered. Slides will be used for objectives 1 and 2.

B. Small group discussions. Participants will consider some specific aspects of pragmatic trials in small groups, thinking about how they might make decisions about these aspects. Introductory scenarios will be provided for groups to discuss, but if participants have brought examples of their own trials these can also be discussed.

C. Whole group discussion. Feedback on small group discussions.

D. Quiz to determine participants views on aspects of pragmatic trials at the end of the workshop, and conclusion.

The workshop will cover definitions of pragmatic trials; the PRECIS-2 tool which has nine domains representing different aspects of trials that can be rated on a pragmatic-explanatory spectrum including, for example, how flexible an intervention is, how intensive follow-up is, how much additional resource is necessary to implement the intervention. We will also cover how to define the intervention, current regulatory frameworks and pragmatic trials, how important are pilot studies, bias and blinding, and what sort of designs can be used.

## INTENDED AUDIENCE

The workshop is designed for anyone - those who know nothing about pragmatic trials as well as those who are more experienced and are conducting, have conducted or plan to conduct, such trials.

## Funding Acknowledgement

## 6G.1

### Impact, advocacy and outcomes - applying the evidence base to active change

*Presenter: Amanda Howe*

*Authors:*

#### Institutions

University of East Anglia

#### Abstract

##### Aim and intended outcomes:

To learn / update knowledge of core competencies of effective advocacy; consider when academic researchers need to act as advocates in their teaching, research and clinical settings; and reflect on the organisational structures where advocacy is needed by our SAPC community.

Participants will be able to apply their learning to their own research and setting, choosing topics of relevance to their needs.

##### Format:

- introductory slides on content and context
- discussion of case scenarios based around (1) REF impact studies
- (2) research funding
- (3) departmental capacity building
- (4) institutional change.

##### Feed back.

Then each will prepare a '3 minute thesis' summarising the key issues they want to address and how they will get their messages across; these will be presented in the groups, some presented to the larger group. and then all can close with further discussion on action planning for their own setting.

##### Content / background:

Whether at the individual, institutional, or systems level, academics are constantly faced by situations they would like to change. Common issues for SAPC members are e.g. wanting to innovate / alter educational approaches (curricula, placements, pedagogical emphasis); secure more resources for primary care and health services research; ensure their research findings have an economic, societal and / or

clinical impact; and establish stability and growth within an institution that often has many complex (and conflicting) strategic priorities.

Academics are rarely taught the skills of advocacy, but this literature is beginning to form part of leadership training in many healthcare and higher education settings. Achieving effective change relies not only on intelligent analysis and excellent knowledge of the field, but on timing, techniques of communication, and effective use of relationships and networks.

Core stages of effective advocacy usually include: choosing a strong issue or message out of the many options; testing this out on other stakeholders and defining a precise set of goals / targets; building partnerships and alliances; considering timing and opportunities where change may be possible; deciding which 'voices' and media to use; and a cycle of implementation, evaluation and closure. Getting access to key players and overcoming power blocks are also crucial steps, and taking the time to do this can seem challenging in an already busy academic schedule. But the opportunity to create significant academic impact and also enhance one's own reputation and career can offset this.

Finally there is also specific evidence on how to affect institutional / organisational change which will be presented as part of the material and working exercises.

### Intended audience

The workshop is relevant to all stages of academic careers, though the specific scope and challenges may vary according to setting and circumstances - the workshop will allow choice of focus.

### Funding Acknowledgement

## 7A.1

### Rheumatological conditions as risk factors for self-harm. A retrospective cohort study

*Presenter: James Prior*

*Authors: Rebecca Whittle, Aly Abdul-Sultan, Carolyn Chew-Graham, Athula Sumathipala, Tom Shepherd, Christian Mallen, Zoe Paskins,*

#### Institutions

Research Institute for Primary Care and Health Sciences, Keele University

#### Abstract

##### Problem

Prevention of self-harm, as a key risk factor for suicide, is an international public health priority. The WHO recommends that clinicians should assess the potential for self-harm in high-risk patients e.g. those with chronic pain and depression. The risk of self-harm across individual rheumatological conditions (associated with chronic pain and depression) has not previously been examined.

##### Approach

We conducted a retrospective cohort study using data from the UK Clinical Practice Research Datalink (CPRD). Patients with a Read code for osteoarthritis, osteoporosis, fibromyalgia, rheumatoid arthritis (RA) or ankylosing spondylitis (AS) were identified between 01/01/1990–31/12/2016 and matched to controls of the same gender and within the same 10-year age category. Incident self-harm was identified by Read code after diagnosis of the rheumatological condition. Hazard ratios (HR) were obtained from Cox-regression models to examine the risk of self-harm in each rheumatological condition compared to their

matched controls. Analysis was initially unadjusted and then adjusted for age, gender, body mass index, smoking, alcohol, anxiety and depression.

### Findings

Over the 16-year time-period, there were 720,762 osteoarthritis, 126,316 osteoporosis, 26,572 fibromyalgia, 55,678 RA and 24,181 AS patients. Adjusted HRs (95%CI) of self-harm for each rheumatological condition compared to matched controls were as follows; osteoarthritis 1.2 (1.1-1.2); osteoporosis 1.5 (1.3-1.6); fibromyalgia 2.0 (1.6-2.4); RA 1.3 (1.1-1.6); AS 1.0 (0.8-1.3).

### Consequences

Patients with rheumatological conditions in primary care, particularly fibromyalgia are at greater risk of self-harm compared to matched controls, except for those with AS. Clinicians need to be aware of the potential for self-harm in patients consulting with these conditions.

### Funding Acknowledgement

This project was funded by the National Institute for Health Research (NIHR) School for Primary Care Research (SPCR) (Reference number: 349). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.

## 7A.2

### Acceptability of a nurse-led integrated primary care review for people with inflammatory rheumatological conditions: a qualitative evaluation

*Presenter: Daniel Herron*

*Authors: Annabelle Machin, Clare Jinks, Samantha Hider, Zoe Paskins, Kendra Cooke, Erandie Ediriweera Desilva, Carolyn Chew-Graham*

#### Institutions

Research Institute Primary Care and Health Sciences Keele University, , Haywood Rheumatology Centre

#### Abstract

##### Problem

People with inflammatory rheumatological conditions (IRCs), including rheumatoid arthritis, psoriatic arthritis, ankylosing spondylitis, polymyalgia rheumatic and giant cell arteritis, are at an increased risk of comorbidities such as cardiovascular disease, osteoporosis, anxiety and depression. An assessment of these common comorbidities within a nurse-led review in primary care could lead to improved control of the IRC and reduced morbidity and mortality. The INCLUDE pilot cluster randomised controlled trial aimed to evaluate the feasibility and acceptability of a nurse-led integrated primary care review for people with IRCs, to identify and manage comorbidities.

##### Approach

A qualitative study was embedded within the INCLUDE trial. A purposive sample of 20 patients (IRC, age and gender) who attended an INCLUDE review appointment, were invited to participate in a face-to-face interview to reflect on their experience of the INCLUDE review. A topic guide was utilized. Interviews were transcribed verbatim. Thematic analysis using constant comparison was undertaken. Overarching themes were agreed by discussion between members of the qualitative research team, and then mapped onto the constructs of the new Theoretical Framework of Acceptability (TFA).

## Findings

Four overarching themes were developed, mapping onto four constructs of the TFA: including expectations of the review, experiences of the review, usefulness of the review, and burden. Affective attitudes Participants appreciated the opportunity to learn more about comorbidities linked to their condition. The personal qualities of the nurse, such as being approachable and having time to listen, were valued and were reported to facilitate patients to disclose health concerns. Patients recognised the value of the integrated approach, which allowed them to discuss multiple areas of health in one consultation. Intervention coherence Many patients reported attending the review for altruistic reasons, to help with research, rather than perceiving it to be relevant to themselves or their IRC. Few patients were initially aware of their increased risk of comorbidities and did not expect this to be the focus of the review. Perceived effectiveness Patients reported the review to be effective by identifying and initiating management of previously unrecognised comorbid conditions, or by providing reassurance when no comorbidities were identified. Some patients reported barriers to following recommendations, such as lifestyle modifications, suggested by the nurse. Burden Several patients felt the review added extra burden when new medications were suggested to deal with newly identified comorbidities.

## Consequences

This study is novel as we have used the new TFA to assess acceptability of the INCLUDE review. Many patients with IRCs lacked knowledge about their risk of comorbidities. The findings suggest an integrated review which recognises multimorbidity is acceptable to patients. However, some patients identified examples of added extra burden and barriers to following recommendations.

## Funding Acknowledgement

Haywood Rheumatism Research and Development Foundation

Haywood Hospital

National Institute of Health Research Collaborations for Leadership in Applied Health Research and Care West Midlands (NIHR WM CLAHRC)

## 7A.3

### Patterns of comorbidity and their effects on mortality in rheumatoid arthritis: a study of 5658 UK Biobank participants

*Presenter: Ross McQueenie*

*Authors: Bhatish Jani, Susan Browne, Jordan Canning, Joanne Neary, Stefan Siebert, Colin McCowan, Sara Macdonald, Frances Mair, Barbara Nicholl*

## Institutions

University of Glasgow, University of St Andrews

## Abstract

### Problem

Rheumatoid arthritis (RA) is a debilitating, chronic autoimmune disease characterised by inflammation of the synovial joints. To date, few studies have quantified the predominance or type of comorbid long-term conditions (LTCs) in rheumatoid arthritis, nor examined their effect on mortality. This work aims to address these gaps using a large prospective cohort study.

## Approach

Using data from UK Biobank (N=502,543), we sampled participants who self-reported RA. Comorbidity was measured in this group by examining 42 non-RA LTCs self-reported by participants. We examined lifestyle factors including smoking status, frequency of alcohol intake, body mass index (BMI) and physical activity level alongside demographic factors such as sex, age and socioeconomic status. Kaplan-Meier plots were used to examine differences in proportion of deaths between patients with RA and those without. Cox proportional hazards models were used to examine all-cause mortality outcomes in patients with RA. This model controlled for number of LTCs in addition to lifestyle and demographic factors listed above.

## Findings

5658 of the 502,543 of participants in Biobank self-reported RA (1.1%). 74.7% of participants reported at least one LTC besides RA (30.1% one LTC, 22.1% two LTCs, 12.1% three LTCs, 6.2% four LTCs, 4.2% five or more LTCs). In comparison, only 63.8% of participants without RA reported one or more LTC. The most predominant physical health-based LTC in patients with RA was hypertension (35.6%; 26.4% in population without RA), whilst the most predominant mental health based LTC was depression (7.0%; 5.7% in population without RA). 311 participants (5.4%) self-reporting RA died in the follow up period (median=7 years) compared with 2.8% who reported no RA. Participants with RA experienced a 39% increase in all-cause mortality compared with patients without (hazard ratio (HR) 1.39, 95% confidence intervals (CI) 1.24-1.57) when using a Cox's proportional hazards model controlling for sex, age, socioeconomic status (Townsend score), smoking status, alcohol intake, BMI, physical activity level and number of LTCs.

## Consequences

Participants with RA had an increased proportion of long-term conditions compared to those without RA. Further, participants with RA had an increased rate of all-cause mortality after controlling for demographic factors, lifestyle factors and numbers of long-term conditions. Further work will focus on identifying other factors that influence this increased mortality.

## Funding Acknowledgement

This work was funded by Arthritis Research UK (now Versus Arthritis)

## 7A.4a

### The challenge of diagnosis and the management of fibromyalgia in Primary care

*Presenter: Heather Brant*

*Authors: Michelle Farr, Gemma Artz, Nicola Walsh, Jeremy Horwood*

## Institutions

CLAHRC West, University of Bristol, Bristol, North Somerset and South Gloucestershire Clinical Commissioning Group, University of the West of England, CLAHRC West, University of Bristol.

## Abstract

### Problem

Fibromyalgia Syndrome (FMS) is a complex condition where patients can present with multiple symptoms, such as chronic widespread pain, fatigue, non-refreshed sleep, mood disturbance and cognitive impairment. FMS affects 2% of the population but management of the condition is dependent on a diagnosis which can be challenging in primary care. Once diagnosis is confirmed optimal management

requires education and effective self-management of function and psychosocial aspects of pain. GPs are often the first point of contact for patients, but they may not feel confident in the diagnosis and management of fibromyalgia. This study investigated current practice to identify how best to support early diagnosis and enhance engagement of FMS self-management in primary care.

### Approach

Interviews were conducted with 17 GPs and 8 secondary care practitioners including rheumatologists, pain consultants, clinical psychologists and physiotherapists, across Bristol, North Somerset and South Gloucestershire Clinical Commissioning Group (BNSSG CCG). Thematic analysis was used to analyse the data with the support of NVivo 11.

### Findings

GPs reported a range of experience in patients with FMS and subsequently differing levels of confidence in diagnosis. Some were aware of diagnostic tools but not all found them useful. Some used them as guiding principles but more often it was a diagnosis of exclusion. Identification of FMS was challenging to GPs within a consultation time frame and secondary care practitioners sympathised. GPs reported delays in diagnosis through excluding other possible conditions and patients sometimes found accepting a FMS diagnosis difficult because of no 'cure'. These factors often resulted in multiple consultations. GPs also reported difficulty in referring patients, because of uncertainty of who, where or when to refer and GPs were under the impression that referrals to secondary care were discouraged. Secondary care practitioners acknowledged that referrals for FMS was increasing substantially and this had put increasing demand on their service, however, they still encouraged referrals when necessary. The management of FMS in primary care was challenging and was often approached by managing the symptoms presented at each consultation. Although self-management was acknowledged to be the best approach, GPs would often provide written guidance to patients but had insufficient time to support the process. Many felt that this support was best placed in NHS provided courses or peer-support groups. GPs had access to a range of resources designed to support and guide diagnosis and management, but they reported varying degrees of usefulness and awareness of what was available.

### Consequences

Early diagnosis and management of FMS is the recommended approach for patient satisfaction and for reduction in demand for secondary care services. However, this is dependent on adequate training and support for, and co-designed by, primary care practitioners and should always be guided by patient needs.

### Funding Acknowledgement

This research was funded by the National Institute for Health Research (NIHR) Collaboration for

Leadership in Applied Health Research and Care West (NIHR CLAHRC West). The views expressed in

this article are those of the author(s) and not necessarily those of the NHS, the NIHR, or the

Department of Health and Social Care.

## 7A.4b

### What is the role of primary care in reducing the decline in physical function and physical activity in people with long-term conditions? Findings from realist theory-building workshops using LEGO® SERIOUS PLAY®.

*Presenter: Rebecca-Jane Law*

*Authors: Rebecca-Jane Law, Joe Langley, Rebecca Partridge, Lynne Williams, Julia Hiscock, Beth Hall, Valerie Morrison, Chris Burton, Andrew Lemmey, Yasmin Noorani, Candida Lovell-Smith, John Gallanders, Nefyn Williams*

### Institutions

Bangor University, Sheffield Hallam University, University of Liverpool

### Abstract

#### Problem

Declining physical function and physical activity in people with long-term conditions can cause deteriorating physical, social and psychological health, and reduced independence. In line with the renewed WHO declaration, primary care is well placed to empower individuals and communities to reduce this decline. However, current evidence suggests the best approach is uncertain and the complexities of the needs of people with long-term conditions and of primary care service delivery requires further investigation. Therefore, this study aims to unpick this complexity and develop evidence-based recommendations about how primary care can facilitate improved physical function and physical activity for people with long-term conditions.

#### Approach

We are conducting a realist evidence synthesis as this methodology enables focus on the complexity of optimising physical function and physical activity, and combines evidence from varied sources of literature with the views, experiences and ideas of multisectoral partners and stakeholders. Established realist methods will be used to develop and refine theories about the promotion of improved physical functioning and physical activity for people with long-term conditions, and in particular; what works (or doesn't work), for whom and in what circumstances. The refined theories will form the basis of co-produced, evidence-based recommendations for primary care service innovation. We have used LEGO® SERIOUS PLAY® as a participatory method for our initial theory-building stakeholder workshops, facilitating expression and creativity through model-building and sharing. We have also incorporated expertise and international perspectives from our external Project Advisory Group. In later phases of this project, plans for making the innovation useable and sustainable will be designed collaboratively with stakeholders through a series of co-design workshops.

#### Findings

Following a stakeholder analysis, 13 professionals (health, social care, and community-based), 10 people with long-term conditions, and the two lead researchers participated in a facilitated workshop where they created and described individual LEGO® models for incorporation into a shared 'landscape'. The model-building method enabled this wide range of stakeholders, with different backgrounds and circumstances, to participate successfully and offer in-depth personal explanations. The descriptions and images of the models have been captured audio-visually for analysis. This ongoing research will develop theories relevant to the meaning of physical function, lived experiences of

maintaining physical function with a long-term condition (from a patient and professional perspective), and associated barriers and facilitators. These will be used to explain the relationship between contexts, mechanisms and outcomes, as well as inform subsequent literature searching.

### Consequences

This work is important because despite perceptible shifts in approach, the priority in primary care remains on diagnosis and categorisation of disease. However, co-producing ways of increasing the emphasis on functional limitations and physical activity, that also address complexity, has the potential to improve the health of people with long-term conditions and subsequently influence practice, primary care education and policy.

### Funding Acknowledgement

This project was funded by the NIHR Health Services and Delivery Research (17/45/22). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.

## 7A.4c

### Gaining insights from mixed methods data integration. Use of a triangulation protocol in the iPOPP pilot trial.

*Presenter: Daniel Herron*

*Authors: Daniel Herron, Elaine Nicolls, Emma Healey, Carolyn Chew-Graham, John McBeth, Clare Jinks (on behalf of the iPOPP team)*

### Institutions

Keele University, Midlands Partnership NHS Foundation Trust, University of Manchester

### Abstract

#### Problem

Development and evaluation of complex interventions requires mixed methods data collection and analysis. Despite the existence of methods to integrate data analysis, data sets are often analysed and findings reported separately. Integrated analysis adds value to research by identifying where data agree, complement each other or disagree (and thus contradict each other). The process enables a more complete analysis that contributes to the validity of the results and adds strength to conclusions that are made. The iPOPP pilot trial evaluated the feasibility and acceptability of a walking intervention for older adults with chronic musculoskeletal pain delivered by Health Care Assistants (HCAs) in primary care. Five datasets were available for analysis: qualitative interviews with trial participants (n=20), qualitative interviews with HCAs delivering iPOPP (n=4), audio-recorded iPOPP consultations (n=18), quantitative pilot trial data (case report forms n=47), HCA pre and post-training questionnaires (n=5 HCAs trained). We needed a method to integrate analysis in order to draw robust conclusions about feasibility and acceptability and any changes required to the iPOPP intervention or trial processes.

#### Approach

A triangulation protocol was used when all datasets had been analysed. Initial key findings statements were generated from each dataset by four researchers (working independently) who had analysed them. The initial key finding statements were then compared across all datasets by all researchers (working independently) and a final list produced

through discussion. For each key finding, pairwise comparisons were then independently undertaken by two researchers to compare data from each data set. Comparisons were categorised as agreement, partial agreement, dissonance, silence or not applicable. Consensus was agreed through discussion where comparisons had been categorised differently.

### Findings

Preliminary analysis produced 65 initial finding statements across all five datasets, reducing to 29 after identifying duplicate key findings. A total of 290 paired comparisons were made across data sets. We will present examples of agreement, partial agreement and disagreement from the pairwise comparisons that are linked to our feasibility objectives. Examples are: agreement that intervention components (pedometers, activity diary) motivated older adults with chronic pain to walk; agreement that interventions were acceptable; agreement and disagreement that intervention fidelity was good; and, agreement that HCAs found it challenging to set goals with participants who perceived themselves already active.

### Consequences

This study is novel as we have used a triangulation protocol within a primary care pilot trial in order to integrate mixed methods analysis and provide robust transparent findings and conclusions about acceptability and feasibility of a new walking intervention for older adults with chronic musculoskeletal pain. The integrated analysis enables deeper understanding of findings which go beyond those available from analysis of single datasets in isolation.

### Funding Acknowledgement

The iPOPP pilot trial was funded by Arthritis Research UK. Clare Jinks is part-funded by the National Institute for Health Research (NIHR) Collaborations for Leadership in Applied Health Research and Care West Midlands. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

## 7B.1

### What are primary care professionals' views on patients' use of self-monitoring technologies at home?

*Presenter: Jacob Andrews*

*Authors: Kate Weiner, Catherine Will, Ros Williams, Flis Henwood*

### Institutions

University of Sheffield, University of Sheffield, University of Sussex, University of Sheffield, University of Brighton

### Abstract

#### Problem

The arrival of new technologies features prominently in the New Declaration for Primary Health Care, where it is predicted that these will 'enable individuals and communities to identify their health needs [...] and play an active role in maintaining their own health and wellbeing'. Technology also constitutes a main theme in the UK government's Long Term Plan for the National Health Service in England. Here, it is suggested that within the next ten years we will be able to 'effortlessly monitor physiology, using 'intuitive' and 'straightforward' healthcare technologies. However, such views of technology in the area of self-monitoring may be over-optimistic, ignoring the real-life complexities

of its implementation. In this study, we explored GPs' and practice nurses' (PNs) views and experiences of patients self-monitoring, in the specific cases of blood pressure and body mass index (BMI), where self-monitoring has been used for many years.

### Approach

We sought the views of primary care professionals on the home use of blood pressure monitors and BMI scales, to examine the complexities still present in implementing well-established self-monitoring technologies. In a novel adaptation of vignette methodology, we presented excerpts from a large interview study with home users of blood pressure monitors and BMI scales, to general practitioners (GPs) and practice nurses (PNs). To date, we have completed one focus group with six GPs and two PNs, and we have plans to conduct four more groups in February and March 2019.

### Findings

Preliminary findings suggest primary care professionals believe that self-monitoring technologies create the need for additional clinical time to educate patients on how best to self-monitor and manage their medication. This includes the importance of setting boundaries around the frequency and duration of self-monitoring to protect patients' mental health. GPs and PNs also suggest that a lack of expertise in pharmacology may prevent patients from being truly empowered to effectively manage their own medication based on their readings. Furthermore, electronic transmission of readings and photos between patients and healthcare practitioners is seen as problematic, for reasons including information security, intellectual property and transcription accuracy.

### Consequences

Our findings demonstrate the complexity involved in primary care interactions relating to two types of self-monitoring device that have been in use for many years. Thus, they draw attention to aspects of the implementation of these technologies that will require the most work to achieve the visions set out in recent policy documents. More immediately, these findings have implications for the management of self-monitoring practices in primary care, where, for example, healthcare assistants could be mobilised to provide additional support in order to facilitate patients' effective use of self-monitoring technologies.

### Funding Acknowledgement

This work was funded by a Research Grant from the Leverhulme Trust.

## 7B.2

### Patient awareness and use of online services in general practice: the Digital Access Now Survey.

*Presenter: Carol Bryce*

*Authors: Carol Bryce, Matthew O'Connell, Martin Underwood, Jeremy Dale*

### Institutions

University of Warwick

### Abstract

#### Problem

There is international interest in the potential role of digital and communications technology to improve access to healthcare. Digital routes of access to both book, and have, a face to face consultation

are increasingly encouraged as a route to help manage demand, and patients can variably contact their GPs using a range of methods, including phone, email and online triage systems. Without understanding whether patients are aware of, or interacting with, the full range of online services, and how such awareness and behaviour is associated with sociodemographic characteristics and health status, it is not possible to shape services to suit patients and their needs. There are key unanswered questions about the characteristics of patients who currently do and do not engage with these services. We have conducted a survey to better understand awareness and use of online services and consultation types.

### Approach

We used a cross sectional survey design. The survey instrument covered several key areas; use of online services, use of alternatives to a face-to-face consultation (e.g. video consultation) and use of NHS 111 services. The survey also collected data on internet use, health status and demographics. We have recruited 40 general practices across the West Midlands and these have a range of characteristics, from rural to urban, from small through to large list size, deprivation scores ranging from 1-10 and differing numbers of patients in ethnic minority groups. Each practice recruited randomly sampled 5% of patients from their list and sent out the survey. A total of 15,000 surveys were sent out in February. Each participant received a paper copy and were given the option to complete the survey online via a link or QR code. Once responses are collated we will report the proportion of patients aware of and interacting with digital GP access. Using multivariable statistical analyses we will identify the key predictors of these outcomes to assess whether differences across population subgroups are explained by other characteristics.

### Findings

The survey is currently being administered and initial responses are expected in late February. Based on estimates from previous surveys conducted in general practice we expect to see a 25-30% response rate, which would total 3750-4500 responses. We will present the full findings at the conference.

Consequences  
Understanding awareness and use of digital services has the potential to influence the design and commissioning of services in general practice, given the current push for their introduction via the new GP contract. The results of the survey will be used by healthcare commissioners to help them shape their services. The findings will also provide the first data on how patients are using private online general practice services. These private online services have potential implications for NHS general practice by segmenting care.

### Funding Acknowledgement

This study was funded by the NIHR Senior Investigator Award for Professor Martin Underwood, and by the Clinical Research Network West Midlands.

## 7B.3

### Understanding the use of a novel interactive electronic medication safety dashboard in primary care : a mixed methods study

*Presenter: Mark Jeffries*

*Authors: Wouter T Gude, Richard N Keers, Denham L Phipps, Richard Williams, Evangelos Kontopantelis, Benjamin Brown, Anthony J Avery, Niels Peek, Darren M Ashcroft.*

#### Institutions

University of Manchester, University of Amsterdam, University of Nottingham

#### Abstract

##### Problem

The safe prescribing and monitoring of medicines is an important aspect of health care provision worldwide. The Salford Medication safety dASHBOARD (SMASH) intervention provided general practices in Salford (Greater Manchester, UK) with feedback about identified patients exposed to potentially hazardous prescribing and inadequate blood-test monitoring through an online dashboard, and input from practice-based clinical pharmacists trained in root cause analysis. As part of a wider evaluation of the SMASH intervention, we explored how pharmacists and other practice staff used the SMASH dashboard to improve medication safety, how they interacted with the dashboard to identify potential medication safety hazards and their workflow to resolve identified hazards.

##### Approach

We used a mixed-methods study design, which involved synergistic utilisation of quantitative data and qualitative data. We combined the dashboard's user interaction logs from forty-three general practices participating in the SMASH trial during the first year of receiving the SMASH intervention, and qualitative data from semi-structured interviews with 22 pharmacists and physicians from 18 practices in Salford. We analysed the qualitative interview data using a thematic template analysis approach. Quantitative and qualitative data were collected concurrently, analysed separately and then integrated in a process of synthesizing and weaving of the data.

##### Findings

Practices interacted with the dashboard a median of 12.0 (interquartile range, 5.0-15.2) times per month during the first quarter of use to identify and resolve potential medication safety hazards. This typically started with the hazards they perceived to be most serious or those that were most prevalent. After observing a potential hazard, pharmacists and practice staff worked collaboratively to resolve it sequentially by verifying the dashboard information, reviewing the patient's clinical records, and by deciding potential changes to the patient's medicines. Dashboard use transitioned over time, towards regular but less frequent (median of 5.5 [3.5-7.9] times per month) checks to identify and resolve new cases. Practices with a larger number of at-risk patients had more frequent dashboard use. In 24 (56%) practices only pharmacists used the dashboard; in 12 (28%) use by other practice staff increased as pharmacist use declined over time; and in 7 (16%) there was mixed use by both pharmacists and practice staff.

##### Consequences

Pharmacists started using the dashboard to identify patients at risk, focusing on the most prevalent safety hazards and highest risk (patients

highlighted by more than one indicator) first. They subsequently worked with GPs to resolve these risks on a case-by-case basis. Over time this workload reduced as it shifted towards resolving new incident cases, and in some practices GP staff started to use the dashboard as pharmacist activity reduced. These factors contribute to making SMASH a sustainable intervention after resource-intensive pharmacist activity eased.

#### Funding Acknowledgement

This study is funded by the National Institute for Health Research through the Greater Manchester Patient Safety Translational Research Centre (NIHR Greater Manchester PSTRC). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR, or the Department of Health and Social Care.

## 7B.4a

### Support through Mobile Messaging and digital health Technology for Diabetes (SuMMiT-D): feasibility study protocol.

*Presenter: Cassandra Kenning*

*Authors: The SuMMiT-D Research Programme Group*

#### Institutions

University of Oxford, University of Manchester, Oxford University Hospitals NHS Trust, University of Bangor, University of Aberdeen, University College London.

#### Abstract

##### Problem

Self-management support is a key component of care for people with type 2 diabetes with evidence for improved outcomes. The increasing availability of digital communication and monitoring tools offers the possibility of increasing the relevance of health messages by delivering them by mobile phone and tailoring them for individuals. Evidence suggests that text-messages may be an effective means of providing support, although studies in the UK are few, and the role of messages developed using health psychology is unclear.

##### Approach

SuMMiT-D is a trial aimed at testing the feasibility for using SMS text-messages to support self-management of type 2 diabetes focused on use of medication. The aim of this feasibility trial is to test recruitment of patients to, and collection of planned primary and secondary outcome data. SuMMiT-D is a primary-care based, individual randomised two arm parallel group trial comparing brief, tailored behaviour change messages with usual care. Participants are adults >35 years taking oral glucose lowering treatment and with access to a mobile phone. The intervention consists of brief, health related messages delivered via SMS text-message over 6 months. Content of messages is based on participant feedback received during formative work for this trial and there is tailoring of messages based on participant feedback. A range of different types of messages have been developed that use different behaviour change techniques to target health-related behaviour change. Usual care includes infrequent non-health related messages. With 200 participants (100 in each group) the feasibility trial is powered to detect 80% follow up within 95% confidence intervals of 73.8% to 85.3%.

##### Findings

The primary outcome of this feasibility study is the rate of recruitment

and randomisation of participants to the trial. Secondary outcomes focus on the feasibility of collection of clinical measurement data for the proposed main trial including the feasibility of obtaining HbA1c, systolic blood pressure and cholesterol from the medical records of trial participants. We will use qualitative methods to assess the feasibility and acceptability of the intervention for patients and also among health care workers (including general practitioners, nurses, receptionists and pharmacists).

### Consequences

The findings from this study will inform the design of a trial to test brief messaging support that would estimate the extent of benefit and costs, and identify difficulties that might be encountered in practice. The brief messaging system used in this study offers a unique range of messages targeting different ways of supporting behaviour change. This research could offer a model for technology-based self-management support that could be extended more widely in the NHS.

### Funding Acknowledgement

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## 7B.4b

### Exploring Online Resources for Childhood Eczema: A Survey of Parents' Online Resource use and mixed methods analysis of Online Exchanges

*Presenter: Bethan Treadgold*

*Authors: Dr Ingrid Muller, Dr Emma Teasdale, Prof Neil Coulson, Dr Miriam Santer*

### Institutions

Primary Care and Population Sciences University of Southampton UK, Division of Rehabilitation and Ageing University of Nottingham UK, Primary Care and Population Sciences University of Southampton UK, Primary Care and Population Sciences University of Southampton UK,

### Abstract

#### Problem

Parents and carers of children with eczema often turn to social media sites and online discussion forums for their information and peer-support needs. Little is known about the information that parents share and receive on these online platforms about treatments for eczema, whether these discussions are medically accurate, and how this influences people's subsequent experiences of consulting. This study aimed to explore what information and support people seek online, the accuracy of the information, and how it influenced behaviour.

#### Approach

We carried out an online survey study to initially determine 1) The online resources that parents of children with eczema most frequently use; 2) The type of advice and support they seek from these online resources; 3) How online information might influence their management of their child's eczema. Following this, qualitative thematic analysis will be used to explore beliefs about eczema treatments expressed in discussion threads in three popular online

resources identified from the survey. We will then conduct a medical accuracy assessment of these discussions, focusing on five criteria: accuracy, completeness, sensibility, the influence of the discussions on the discussion leader, the value of the discussions to the discussion leader.

### Findings

133 parents and carers of children with eczema completed the survey. 55% of parents reported health information websites (e.g. NHS Choices) as most used initially for advice and support (47%), with subsequent use transitioning to Facebook and other social media sites (43%). Most participants sought online information about treatments (35%), followed by eczema causes (20%), and emotional support about eczema (18%). Parents more often reported that they had acted upon information they had read on social media sites (e.g. Facebook) and discussion forums (e.g. Mumsnet) (90%) than on health information websites (85%). Facebook support groups were reported as the most commonly used online platform for advice and support about their children's eczema (61%), followed by a range of online discussion forums. Findings to date from the analyses of parents' discussions about treatments for eczema, on these identified popular social media sites/online discussion forums will also be presented.

### Consequences

This study provides an insight into parents' experiences with online resources for advice and support about their children's eczema. It allows academics and clinicians in primary care to better understand the perspectives that parents bring to their consultations about their use of online resources for advice about eczema treatments. This study will also suggest how to best sign-post parents to online resources that meet their needs and contain medically accurate information.

### Funding Acknowledgement

This study is part of a PhD studentship which is supported and funded by the National Institute for Health Research, School for Primary Care Research.

## 7B.4c

### The unexpected consequences of digital health: Lessons from a stakeholder workshop

*Presenter: Fiona Hamilton / Lorraine McDonagh*

*Authors: Lorraine McDonagh, Jeremy Horwood, John Powell, Sarah Blake, Fiona Stevenson on behalf of the DECODE team*

### Institutions

University College London, University of Bristol, University of Oxford

### Abstract

#### Problem

The use of digital technology is promoted as having the potential to improve patients' access to healthcare, improve the quality of care, and reduce GP practice workload. However, despite the increased use of digital technology in GP practices, the unexpected consequences (both benefits and problems) for patients and staff remain unknown.

#### Approach

A stakeholder workshop was held in London in September 2018 with GPs, researchers from the field, technology developers and members of the public, to identify research priorities for the DECODE project (unexpected consequences of Digital Health). Specifically, we explored:



1) Smartphone apps that support the monitoring or self-management of long term medical conditions

2) Patients' online access to their electronic medical record (EMR)

3) Alternatives to face-to-face consultations, including online consultations.

## Findings

### Apps

- Stakeholders felt that apps can support self-management for long term conditions and may be particularly helpful with respect to 'hard to reach' groups who do not attend clinics, yet they may exclude others (e.g., those with learning disabilities)..

- GPs noted that few patients share data from apps during consultations, and that they can feel overwhelmed when patients do. Concerns were also expressed about data-security, the quality and trustworthiness of apps.

### Electronic Health Records

- Some GPs felt that access to full EMRs may improve patient outcomes, reinforce information given in consultations and have the potential to empower patients and challenge paternalistic views of healthcare.

- Concerns were expressed about potential risks to privacy by parents/ carers having access, and the removal of the consultation as a safe, confidential space for those suffering abuse.

### Alternatives to face-to-face consultations

- Alternatives to face-to-face consultations were viewed as potentially helpful for sensitive issues, and/or routine simple health problems. However, they were seen as introducing inequity by excluding those who are medically and/or social disadvantaged.

- Concerns were also raised in relation to the use of this technology regarding: (1) the lack of physical examination could affect patient satisfaction, impact patient-provider relationships and have medico-legal consequences, (2) difficulties establishing who the consultation is being held with, and (3) delivering test results by text may falsely reassure patients into assuming no further investigations are needed.

### Consequences

All three technologies were seen as inherently a 'good' thing, but concerns were expressed in relation to GPs and patients feeling 'forced' into using these technologies and the populations who may be left behind, potentially increasing inequality in healthcare access. These concerns, as well as the opinions presented above, are currently being explored in interviews with stakeholders focusing on the unexpected consequences of digital health. A further more extensive workshop to contribute to policy and practice is planned.

### Funding Acknowledgement

This abstract presents independent research funded by the National Institute for Health Research School for Primary Care Research (NIHR SPQR). The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.

## 7C.1

### ASPREE-Xt (ASpirin in Reducing Events in the Elderly eXTension) study.

Presenter: Mark Nelson

Authors: MR Nelson <sup>1 2</sup> RL Woods <sup>2</sup> CM Reid <sup>2 3</sup> AM Murray <sup>4</sup> B Kirpach <sup>5</sup> RC Shah, <sup>6</sup> M Ernst <sup>7</sup> JE Lockery <sup>2</sup> R Wolfe <sup>2</sup> JJ McNeil <sup>2</sup> on behalf of the ASPREE-Xt Investigator Group.

### Institutions

<sup>1</sup> Menzies Institute for Medical Research, University of Tasmania, Hobart TAS, Australia.

<sup>2</sup> School of Public Health and Preventive Medicine, Monash University, Melbourne VIC, Australia.

<sup>3</sup> School of Public Health, Curtin University, Perth WA, Australia.

<sup>4</sup> Division of Geriatrics, Department of Medicine, Hennepin County Medical Center and University of Minnesota, Minneapolis MN, U.S.

<sup>5</sup> Berman Cen

### Abstract

#### Problem

The ASPREE study, an N of 19,114 randomised controlled trial of low dose aspirin vs. placebo, showed no benefit for disability free survival in the elderly. There was also an excess of mortality in those taking aspirin and this was almost entirely driven by cancer deaths. Systematic reviews of cancer outcomes for the benefit of cancer suggest benefits may only accrue over a decade or more and not the median 4.7 years of observation in the trial.

#### Approach

A post-trial cohort study to investigate long-term legacy effects of aspirin on disability free survival, dementia, cognitive impairment, mortality, fatal and non-fatal cancer, physical disability, depression and major haemorrhagic events. Concurrently these and other diseases of ageing can be studied in a healthy ageing cohort. Data will be collected and endpoints adjudicated as for the ASPREE study giving an enriched longitudinal dataset.

#### Findings

From the beginning of February 2018 to the end of February 2019, 13,829 have consented to ASPREE-Xt (not including verbal consent) of a possible 17,099 (excluding those who had withdrawn or died during the ASPREE study).

#### Consequences

This will provide an opportunity to monitor the health of an initial healthy aged population well into quite advanced age. It will provide essential data on the burden of diseases and their possible risk and protective factors, aetiology, possible potential therapies and effectiveness of current therapies through participant characteristics, exposures, behavioural, genetic and biomarker changes from ASPREE trial entry (2010-2014) until 2024.

#### Funding Acknowledgement

National Institutes for Aging (US), National Cancer Institute (US), National Health and Medical Research Council of Australia.

## 7C.2

### How can we better support older people at risk of malnutrition living in the community? A qualitative study exploring the views and practices of older people, carers, primary care and community health professionals

*Presenter: Christina Avgerinou*

*Authors: Christina Avgerinou<sup>1</sup> Cini Bhanu<sup>1</sup> Kate Walters<sup>1</sup> Helen Croker<sup>2</sup> Remco Tuijt<sup>1</sup> Ann Liljas<sup>1</sup> Jennifer Rea<sup>1</sup> Jane Hopkins<sup>3</sup> Maggie Kirby-Barr<sup>3</sup> Kalpa Kharicha<sup>1</sup>*

#### Institutions

<sup>1</sup> Department of Primary Care and Population Health, University College London, London, UK,

<sup>2</sup> Health Behaviour Research Centre, University College London, London, UK,

<sup>3</sup> Patient and Public Involvement and Engagement (PPIE) representative, London, UK

#### Abstract

##### Problem

Malnutrition is associated with increased morbidity and mortality and is estimated to affect 1.3 million people >65 in the UK. However, we know little about the views of older people, carers and health professionals on current management of weight/appetite loss in community-dwelling frail older adults. The aims of this study were to a) explore the views and practices of older people at risk of malnutrition, their carers, primary care and community professionals on how malnutrition is currently managed, b) identify gaps in knowledge, facilitators and barriers to healthy eating in later life, c) identify the elements of potential primary care based interventions for frail older people at risk of malnutrition.

##### Approach

We conducted a qualitative study using a) semi-structured interviews with community-dwelling people aged ≥75, malnourished/at risk of malnutrition, recruited from four GP practices, their carers, b) a carers' focus group in London, and c) Seven focus groups with primary care and community health professionals (multi-disciplinary (MDT) and dietitians) in London and Hertfordshire. Data were analysed using thematic analysis.

##### Findings

We interviewed 93 participants in total (24 older people, 9 informal carers, 60 health professionals). Most older people did not consider their low weight to be a problem. 'Healthy eating' perceptions focused on fruit and vegetable intake and low-fat diet. Older people rarely asked their GP about diet and none had received advice about increasing protein intake or gaining weight. Carers held different perspectives and most expressed concern about weight loss in the older person they cared for, although they were not provided with any guidance on how to help meet the older person's dietary needs. Most older people and carers were open to advice, and did not have a strong view about the professional background of the person delivering such a service (doctor, nurse, dietitian, other trained professionals), although the majority felt they would follow advice recommended by a clinician. Health professionals perceived malnutrition as a multi-faceted problem. Overall, a lack of ownership of the problem was a main barrier to management. From the primary care professionals' perspective,

hindering factors were time constraints and lack of training in nutrition. GPs generally felt overwhelmed by workload and saw nutrition as low priority and not necessarily within their remit. Some suggested public health interventions delivered in other community settings. MDT professionals reported screening for malnutrition during initial assessment of frail people and referral to dietitians but thought that this was often not enough, especially for people with unmet social care needs.

##### Consequences

There is currently a gap in the care provided for older people at risk of malnutrition in the community. Future interventions should include a multi-faceted approach with education of individuals and healthcare professionals and a tailored approach according to need and context.

##### Funding Acknowledgement

This paper presents independent research funded by the National Institute for Health Research School for Primary Care Research (NIHR SPCR) (Grant Reference Number 377 and 407). The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.

## 7C.3

### Does a raised inflammatory marker in primary care predict one-year mortality? A prospective cohort study using CPRD

*Presenter: Jessica Watson*

*Authors: Dr Penny Whiting, Dr Jon Banks, Professor Chris Salisbury, Professor Willie Hamilton*

#### Institutions

University of Bristol, University of Exeter

#### Abstract

##### Problem

Inflammatory markers such as C reactive protein (CRP), erythrocyte sedimentation rate (ESR) and plasma viscosity (PV) have been implicated in predicting future mortality, particularly from cardiovascular disease. The relevance in primary care settings, and over the shorter term, is unclear. The aim of this study was to examine one-year all-cause mortality in a cohort of primary care patients in whom inflammatory marker bloods had been tested.

##### Approach

This was a prospective cohort study of 160,000 patients from Clinical Practice Research Datalink (CPRD) with inflammatory marker blood testing in 2014, with linkage to ONS mortality data. The primary outcome was one-year mortality in those with raised versus normal inflammatory marker. A comparison cohort of 40,000 age, sex and practice matched patients without inflammatory marker testing in 2014 was identified, to compare mortality in tested versus untested patients.

##### Findings

Of the tested cohort; 73% had a CRP test, 59% had an ESR test, and 10% had PV test; of these 29% had at least one raised inflammatory marker. One-year mortality in patients of any age with a raised inflammatory marker (n=47,797) was 6.89%, compared to 1.41% in those with normal inflammatory markers (p<0.001). In the untested comparison cohort, one-year mortality was 1.62%. The association between raised inflammatory markers and one-year mortality was seen in all age

groups. In older age groups the absolute risk was considerable; a raised inflammatory marker in the over 80s was associated with a one-year mortality of 21.8%, compared to 8.4% in the over 80s with normal inflammatory markers. A dose response relationship was found with CRP >100mg/L and ESR >100mm/hr at any age both associated with >20% one-year mortality. The area under the receiver operator curve (AUC) was 0.77 for CRP, 0.75 for ESR and 0.65 for PV. The main cause of death in those with raised inflammatory markers was cancer (37%), followed by cardiovascular disease (24%) and respiratory disease (14%).

### Consequences

With an aging population and increasing multimorbidity, identification of frailty has become a high priority, with the aim of facilitating the planning and delivery of services. A range of frailty indexes have been developed, using various symptoms, signs, diseases and test results; these do not currently include the use of inflammatory markers. A single raised CRP has a similar AUC to several previously developed frailty indices, and could therefore be a useful and simple indicator to improve prediction of life-expectancy in primary care. Inflammatory marker test results must be interpreted within the overall clinical context; however in the absence of obvious, reversible causes of inflammation, clinicians should consider whether older patients with a raised inflammatory marker are reaching the end of life. Evidence-based interventions for frailty are needed alongside predictive tools.

### Funding Acknowledgement

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The views expressed in this publication are those of the authors and not necessarily those of the NHS, the National Institute for Health Research, Health Education England or the Department of Health and Social Care.

## 7C.4a

### Measuring modifiable functional decline and frailty in Primary Care: Is the eFI a suitable tool?

*Presenter: Jessica Bollen*

*Authors: Bollen, J.C, Budd, A., Withall, J., Greaves, C.J, Moorlock, S.J, de Koning, J., Stathi, A.*

#### Institutions

University of Exeter, University of Bath, University of Birmingham

#### Abstract

##### Problem

Since 2017 General Practices (GP) are required to identify patients over the age of 65 with moderate to severe frailty. Whilst the assessment method is decided by the GP practice, many use the electronic Frailty Index eFI. Interventions targeting older adults who begin to experience some decline in functional mobility and are effective at preventing further decline, could lead to the reduction of health and social care costs and the increase of people's well-being and quality of life. Identification and recruitment of people with early signs of physical frailty is a key factor for the success of such interventions. This study examined the appropriateness of the eFI as a screening tool for the

identification of adults aged 65 and over with modifiable functional decline.

### Approach

Fourteen General Practice (GP) surgeries whose patients were assessed for eligibility for REACT were approached via a letter. The letter requested eFI scores for their patients who had completed the Short Physical Performance Battery (SPPB) at the REACT baseline assessment. SPPB scores of 4-9, indicating some mobility impairment, were differentiated from scores of >10 indicating non-frail. A score of <3 were excluded. The sensitivity and specificity of the eFI and SPPB outcomes were investigated, and potential participants with SPPB score of 4-9 were identified by determining an eFI cut off score. These data were provided by participating practices and Receiver Operating Characteristic (ROC) Curves were carried out in addition to sensitivity analyses.

### Findings

Preliminary analysis indicates that the eFI is a poor predictor of SPPB score. An exploratory Spearman correlation identified a weak to moderate negative correlation suggesting as SPPB score increased eFI score decreased. An Area Under the ROC Curve indicated using eFI scores to predict SPPB scores was also poor and therefore referring to a patient's eFI score to determine physical frailty and functional decline is of limited clinical use. However it may be possible to improve identification of mobility impaired people for research studies using eFI scores (which would achieve a hit rate of roughly 1 in 2)

### Consequences

This study indicates the eFI is not an effective screening tool to identify adults aged 65 and over with modifiable functional decline or physical frailty in a clinical setting. However there may be merit in using eFI to identify who to approach for future studies. Other methods to assess physical frailty and functional decline in primary care need to be identified to enable accurate targeting of appropriate interventions, in addition to standardisation of how to assess frailty.

### Funding Acknowledgement

National Institute for Health Research (NIHR)

## 7C.4b

### A patient-orientated hospital discharge summary to promote self-care in older patients: a mixed-method study to determine suitability and outcome measures

*Presenter: Alyson Huntley*

*Authors: Davies B1, Steiner M,2 Johnson R,1 Baxter H, 1 Richfield E,3 Purdy S, 1*

#### Institutions

University of Bristol, North Bristol Trust, University Hospitals Bristol

#### Abstract

##### Problem

Patients who are discharged following a stay in hospital are often not well informed on the treatments they have received whilst in hospital and the next steps for their care. This is in part because conventional hospital discharge forms are devised with the health professional in mind. Patients may be unaware of results of investigations, diagnosis, medication, what they can do to support their health, and where to seek

ongoing help. Our aim was to determine whether a patient-orientated hospital discharge summary (PODS) developed to promote self-care is appropriate and acceptable to older people and relevant care professionals in the NHS setting.

### Approach

We conducted a rapid review of the evidence for PODS interventions. In addition, we conducted a focus group with older patients recruited from general practice and interviews with relevant health-care professionals within North Bristol NHS Trust. Our outcomes were a) a recommendation on the implementation of a PODS intervention b) A set of meaningful outcomes for its evaluation c) Understanding of the practical steps needed to facilitate its implementation.

### Findings

There is limited but promising evidence from the literature for the use of a PODS intervention to have the potential to influence readmissions, attendance at outpatients and primary care as well as influencing patient outcomes e.g. preparedness for discharge, quality of life. A focus group with patients and qualitative interviews with health-care professionals indicate that conventional discharge summaries are written in complex language with jargon and abbreviations, and that a patient friendly discharge summary would be welcome. They are often produced in a hurry and any patient friendly content is generally limited and variable. Health-care professionals suggest if patient friendly information is produced it needs to be enough not to give the wrong message but that some information is technical e.g. medication detail and that even with the best effort's patients are not always in the situation to take the information in. Patients articulated that they wanted clear instructions ('do and do not') and that understanding signs and symptoms better could be life saver. Production of a modified discharge summary is challenged by patient data protection and a lack of 'connectedness' within secondary care and between secondary care and primary/community care IT systems.

### Consequences

These data suggest that both older patients and health-care professionals consider present hospital discharge summaries to be lacking and welcome more patient-friendly content. Whilst the evidence is limited it appears to be of value to support a primary study into the feasibility of a PODS intervention for the older patient and its impact on both patient wellbeing via selfcare and health-care service use.

### Funding Acknowledgement

Elizabeth Blackwell Institute Research for Health Scheme 2017 (University of Bristol)

## 7C.4c

### Prediction of premature all-cause mortality: prospective general population cohort study comparing machine-learning and standard epidemiological approaches

*Presenter: Stephen Weng*

*Authors: Luis Vaz, Nadeem Qureshi, Joe Kai*

### Institutions

University of Nottingham

### Abstract

#### Problem

Prognostic modelling using standard methods is well-established, particularly for predicting risk of single diseases. Machine-learning may offer potential to explore outcomes of even greater complexity, such as premature death. To develop and report novel prognostic methods using machine-learning, in addition to standard survival modelling, to predict premature all-cause mortality.

#### Approach

This was a prospective cohort study to develop novel mortality prediction models in a large UK general population cohort. 502,628 participants aged 40-69 years were recruited to the UK Biobank cohort from 2006-2010 and followed-up until 2016. Participants were assessed on a range of demographic, biometrics, clinical and lifestyle factors at baseline. Algorithms for predicting premature all-cause mortality were developed and validated by randomly assigning 75% sample for training and 25% for testing. Two machine-learning algorithms were developed using deep learning and random forest using 10-fold grid-searches. Two standard models based on Cox regression were developed using stepwise modelling. A total of 60 potential predictor variables for inclusion. Calibration was assessed by comparing observed to predicted risks; and discrimination was assessed by area under the 'receiver operating curve' (AUC). The main outcome of mortality was provided by the Office of National Statistics.

#### Findings

A total of 14,418 deaths (2.9%) occurred over a total follow-up time of 3,508,454 person-years. A simple age and gender Cox model was the least predictive (AUC 0.689, 95% CI 0.681 – 0.699). A multivariate Cox regression model significantly improved discrimination by 6.2% (AUC 0.751, 95% CI 0.748 – 0.767). The application of machine-learning algorithms further improved discrimination by 3.2% using random forest (AUC 0.783, 95% CI 0.776 – 0.791) and 3.9% using deep learning (AUC 0.790, 95% CI 0.783 – 0.797). These ML algorithms improved discrimination by 9.4% and 10.1% respectively from a simple age and gender Cox regression model. Machine-learning algorithms were well-calibrated, while Cox regression models over-predicted risk.

#### Consequences

Machine-learning significantly improved accuracy of prediction of premature all-cause mortality in this middle-aged general population, compared to standard methods. This study illustrates the value and exploitation of machine-learning for risk prediction within a traditional epidemiological study design, and how this approach might be reported to assist scientific verification.

#### Funding Acknowledgement

The study was funded internally by the University of Nottingham, with the costs of data access provided by Road to Health Ltd.

## 7D.1

### How do healthcare professionals discuss unhealthy behaviours with patients? An ethnographic analysis of NHS Health Checks in general practice

*Presenter: Caroline Cupit*

*Authors:*

#### Institutions

University of Leicester

#### Abstract

##### Problem

Over recent years, general practice policymaking in England has increasingly focused on preventative care, and in particular the need to support patients to 'get serious' about changing their lifestyles. Policy frequently emphasises the need for healthcare professionals to 'engage' patients to make changes to unhealthy behaviours. For instance, best practice guidance for delivery of the NHS Health Check programme recommends strategies such as 'motivational interviewing' and other similar behavioural techniques. However, policymakers continue to be concerned at the prevalence of unhealthy behaviours and the burden of disease to which these will lead.

##### Approach

This paper is based on observations of NHS Health Checks and motivational interviewing training, supported by interviews with healthcare professionals and patients, which were conducted as part of an institutional ethnography (Smith 2005) of CVD prevention in general practice. Using institutional ethnography's theoretical approach to analysing people's 'work', I highlight what happens during Health Checks, focusing on the work of healthcare professionals delivering Health Checks.

##### Findings

I show that, as healthcare professionals worked through the Health Check template, they were organised (through institutional systems which determine the format of the checks) to ask questions about lifestyle behaviours, but to systematically inhibit meaningful discussion of the underlying issues surfaced by these questions; it was healthcare professionals who appeared to 'disengage' from patients' attempts to discuss health concerns. Behavioural techniques such as motivational interviewing were not employed. Interviews with healthcare professionals, and observation of motivational interviewing training, highlighted the challenges of negotiating such interactions with patients and therefore suggest possible explanations for healthcare professionals' reluctance to employ the technique. Healthcare professionals are required to both 'open up' patients' lives and lifestyles to scrutiny, whilst also placing strict limits on the support they are able to provide, in order to fit the intervention within the constraints of standardised appointment times. The findings presented here challenge dominant narratives that improvements to prevention work should be focused on interventions to 'engage' and 'motivate' reluctant patients. Using the institutional ethnographic approach to analysis, I suggest that patients' 'disengagement' may, in part, be shaped by the way in which they experience interactions with healthcare professionals. I trace the organisation of healthcare professionals' apparent lack of interest in patients' own health concerns to the institutional structures of preventative healthcare – to economic models which determine the length of Health Check appointments, the competencies of staff who routinely deliver them, and the activities which should be included (and omitted).

## Consequences

The interactions produced by current models of preventative care limit the opportunities for healthcare professionals to form constructive relationships with patients, which will support their own attempts to change unhealthy behaviours. GPs involved in developing policy (and other policymakers) should consider the unintended consequences of these recommended models.

## Funding Acknowledgement

This study was funded by The Health Foundation.

## 7D.2

### Co-designing an intervention to involve patients in organisational decision making in general practice

*Presenter: Jessica Drinkwater*

*Authors: Jess Drinkwater, David Meads, Maureen Twiddy, Anne MacFarlane, Ruth Chadwick, Ailsa Donnelly, Phil Gleeson, Amir Hannan, Nick Hayward, Michael Kelly, Robina Mir, Graham Prestwich, Martin Rathfelder, Robbie Foy*

#### Institutions

University of Leeds, Patient Participation in Improving General practice (PPIG) co-research group, University of Leeds, University of Hull, University of Limerick.

#### Abstract

##### Problem

Patient and public involvement in decisions about health care design and delivery is enshrined in the English National Health Service constitution and recognised as important internationally. Every English general practice is contractually required to have a patient group and involve them in service improvement. Evidence suggests much of this involvement is enacted through feedback mechanisms to capture patient experience. However, increasingly organisations are overwhelmed with feedback which can be emotive and rarely leads to service change. An alternative approach is to base shared organisational decisions on patients' values. This project aims to co-design a locally adaptable intervention to incorporate patient values into shared decisions about organisational change in English general practice.

##### Approach

Using a participatory research approach, a co-research group involving ten patients (seven core members), six general practitioners (two core members), one receptionist, and one PhD researcher was established. So far, the group has had 18 meetings (approximately 45 hours of discussion) over three years. Through an iterative process we have: conducted a systematic review; used and reflected on participatory facilitation techniques; conducted six focus groups with general practice patient groups (31 patients, eight clinical, and 11 non-clinical members of staff); and piloted a discrete choice experiment (DCE) survey (30 patient participants recruited through a local Healthwatch) including 15 think aloud interviews. Meetings, focus groups, and interviews were audio-recorded and transcribed prior to thematic analysis with co-research group involvement. Analysis is ongoing with initial results reported below.

##### Findings

The above approach resulted in the development of an adaptable DCE template; 24 attributes of general practice to be used in the DCE template; and a facilitated participatory process to support patient

groups and clinical and non-clinical staff working together to select five attributes to use in a bespoke DCE in their general practice. Emerging results suggest the intervention highlights to patients the need for trade-offs when making decisions about service improvement in a resource limited context. The 24 attributes enable patients and staff to discuss common topics such as appointments, whilst also discussing wider issues such as equity and quality. This increases public awareness of the different features of general practice. Local adaptability of the DCE, and the facilitated decision making process of adaption, provides ownership over the content of the survey. Discussing values rather than solely experiences, encourages patients to think about others' values, as well as their own. This, together with the survey format, and patient group training, aim to start to address the representational deficit of existing patient groups.

### Consequences

Current involvement mechanisms are inflexible and based on patient experience. A co-designed intervention to incorporate patient, clinical, and non-clinical staff values into organisational decision making, appears to address deficits in current involvement mechanisms. We are now testing intervention feasibility.

### Funding Acknowledgement

This oral presentation presents independent research funded by the National Institute for Health Research (NIHR), UK. The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health.

## 7D.3

### Longer-term follow up of cognitive behavioural therapy (CBT) for irritable bowel syndrome (IBS): 24 month data from the ACTIB trial

*Presenter: Hazel Everitt*

*Authors: Hazel Everitt, Sabine Landau, Gilly O'Reilly, Alice Sibelli, Stephanie Hughes, Sula Windgassen, Rachel Holland, Paul Little, Paul McCrone, Felicity L Bishop, Kim Goldsmith, Nicholas Coleman, Robert Logan, Trudie Chalder, Rona Moss-Morris*

### Institutions

University of Southampton, Kings College London, Southampton University Hospitals, Kings College Hospital

### Abstract

#### Problem

Irritable Bowel syndrome (IBS) is common and many people suffer ongoing troublesome symptoms despite having been offered first line treatments. The ACTIB (Assessing Cognitive behavioural Therapy (CBT) for IBS) randomised controlled trial (n=558) was a 3 arm multicentre trial which showed that telephone therapist-delivered CBT (TCBT) and web-based CBT (WCBT) with minimal therapist support were significantly more effective than treatment as usual (TAU) at reducing IBS symptom severity and impact at 12 months in adults with refractory IBS.

#### Approach

We are reporting 24 month naturalistic follow-up of ACTIB participants. Participants were recruited from 74 primary care general practice (GP) surgeries and 3 secondary care gastroenterology outpatient clinics in the South of England and London, May 2014 to March 2016. 24 month data collection completed May 2018. TAU participants were given

access to the WCBT website (but not therapist support) from 12 months. Co-primary outcome measures (IBS Symptom Severity Score (IBS SSS) and Work and Social Adjustment Scale (WSAS) and secondary outcomes were completed on-line by participants (or a paper copy posted or telephone follow-up as described in the published protocol). Formal trial arm comparisons were Intention-to-treat analyses by multiple imputation to account for missing data.

### Findings

57.9% (323/558) of participants randomised were followed up to 24 months. Only 10 TAU participants chose to access WCBT. Preliminary results: Compared to TAU (IBS SSS score 198 at 24 months), IBS SSS scores were 40.5 (95% CI (15.0 to 66.0)) points lower ( $p<0.002$ ) in TCBT and 12.9 (95% CI -12.9 to 38.8) points lower ( $p=0.3$ ) in WCBT at 24 months. Assessing IBS-SSS responders (participants with a clinically significant IBS SSS change ( $\geq 50$  point) from baseline to 24 months: 84/119 (70.6%) were responders in TCBT, 62/99 (62.6%) in WCBT and 48/105 (45.7%) in TAU. Compared to TAU (WSAS score 7.6 at 24 months) WSAS was 3.1 (95% CI 1.3 to 4.9) points lower ( $p<0.001$ ) in TCBT and 1.9 (95% CI 0.1 to 3.7) points lower ( $p<0.04$ ) in WCBT. Secondary outcomes: Patient enablement (responders): TCBT compared to TAU OR 8.3 (95% CI 4.2 to 16.4)  $p<0.001$ , WCBT to TAU OR 3.3 (95% CI 1.8 to 6.0)  $p=0.001$ ; Hospital anxiety and depression scale (HADS) TCBT to TAU 3.1 (95% CI 1.6 to 4.7)  $p<0.001$  and WCBT to TAU (95% CI 2.7 (1.0 to 4.4)  $p=0.002$ .

### Consequences

At 24 months sustained benefits were seen in both CBT groups compared to TAU, particularly on impact of IBS symptoms. Some previous gains were reduced compared to 12 month follow-up in the intention-to-treat analysis. Complete case analysis indicated those who had adhered to CBT treatments maintained large clinically significant gains in both symptoms and impact at 24 months. Increasing access to CBT for IBS could achieve long term-benefits for patients.

### Funding Acknowledgement

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Institute for Health Research Clinical Research Network.

This paper represents independent research with some staff part funded by the National

Institute for Health Research (NIHR) Biomedical Research Centre at South London and

Maudsley NHS Foundation Trust and King's College London.

The views expressed are those of the author(s) and not necessarily those of the NHS, the

NIHR or the Department of Health and Social Care.

## 7D.4a

### How do patients benefit from social prescribing?

*Presenter: Chris Burton*

*Authors: Elizabeth Walton PhD MRCGP Clinical Lecturer, Christopher Burton MD FRCGP Professor of Primary Medical Care*

#### Institutions

Academic Unit of Primary Medical Care, University of Sheffield

#### Abstract

##### Problem

Social prescribing has been widely recommended as a means of addressing a wide range of illness, distress and health behaviours in individuals and populations. It provides an adjunct to conventional medical treatment. The popularity of social prescribing has grown in recent years and is set to increase with its inclusion in the NHS Long Term Plan and GP Contract. Research suggests that socially prescribed activity is beneficial for some of those who engage in it, but little is known about how that benefit comes about. We aimed to explore the mechanisms by which social prescribing is perceived as beneficial by people who have been referred to it.

##### Approach

We conducted semi-structured interviews with people undertaking a range of socially prescribed activities to understand how they perceived its benefits. The study was conducted within a social prescribing organisation in one English city which provides a range of services and acts as a gateway to others. We recruited participants using purposive sampling based on length of engagement, primary reason for referral and the type of service accessed within the organisation. The analysis was based on interpretive phenomenological analysis and adopted a realist view of mechanisms operating within contexts to produce perceived outcomes. Emerging themes were compared against a concurrent synthesis of other qualitative studies to provide coherence with previous research.

##### Findings

We interviewed 17 adults aged between 45 and 84. We identified five themes which formed a journey of engagement and participation. While not always present for any one individual, the themes occurred in a consistent order. (1) Receiving personal and professional support for specific problems. (2) Engaging with others through participation in socially prescribed activity. (3) Learning different ways to relate to other people and developing new skills. (4) Changing perceptions by recognising personal assets and becoming open to the possibility of new futures. (5) Developing a positive outlook on the present and looking to move forwards in pursuit of future goals and better health. These themes were inherently social, involving interaction with others and self-reflection in the light of this. While we found a consistent order, this was not externally enforced nor pre-specified in a programme underpinning the interventions. Rather, individuals found their own personal journeys of social re-engagement and reappraisal.

##### Consequences

Socially prescribed activity appears to benefit patients by moving from personal problems through social engagement to recognition of assets and opportunities. In doing so it is inherently social and idiosyncratic rather than following a pre-specified programme or course. As social prescribing moves into the mainstream there is a danger that it will become standardised and lose this fundamentally social nature. This would represent a missed opportunity.

##### Funding Acknowledgement

## 7D.4b

### What's the point of public involvement in an individual participant data meta-analysis of inter-arm blood pressure difference?

*Presenter: Kate Boddy*

*Authors: Kristin Liabo, Sinead McDonagh, Nigel Reed, Malcolm Turner, John Goddard, Chris Clark*

#### Institutions

PenCLAHRC, University of Exeter Medical School, United Kingdom, Primary Care Research Group, University of Exeter Medical School, Public Involvement member, PenCLAHRC, University of Exeter Medical School, United Kingdom

#### Abstract

##### Problem

While public involvement in primary research studies is widely accepted, there is a perception that there is little scope for involvement to impact on 'technical' research, such as secondary analyses of datasets. The purpose of this project is to challenge that view and assess the impact of public involvement in an individual participant data (IPD) meta-analysis using a large international dataset.

##### Approach

The context for this public involvement evaluation is the Inter-arm blood Pressure difference IPD (INTERPRESS-IPD) Collaboration which investigated difference in blood pressure between arms as a predictor of excess cardiovascular disease and all-cause mortality. Data from 24 cohorts, totalling over 57,000 patient records were analysed, confirming the independent contribution of inter-arm blood pressure difference to an improved prediction model for mortality, and to improved prediction of cardiovascular risk with existing risk prediction tools, namely, QRISK2, Framingham and ASCVD risk scores. We took a collaborative approach to public involvement from study inception. We identified advisors through an initial workshop on meta-analysis and worked with a three person public advisory group. They became an integral part of the research process and were represented at all of the bimonthly project progress meetings. We now aim to evaluate the impact of public involvement on this completed research project, the research team (n=14) and the public advisors themselves (n=3). Data comprises transcribed audio recordings of the research meetings throughout the duration of the INTERPRESS project, reflexive e-mails about the public involvement contributed by researchers and advisors after each meeting and minutes, agendas and published documents. We believe this is one of the first studies to analyse data from research meetings attended by both public advisors and researchers. Data analysis will be conducted using an inductive thematic approach. Preliminary analysis of the first two meeting recordings led to the development of a coding framework for 'impact'. This framework was refined and applied to the remaining meeting transcriptions. The additional data (from, e-mails, minutes etc.) will be used to verify impact. For example, if impact from public involvement is detected during a research meeting, does this result in a tangible outcome?

##### Findings

We will present results from our completed analysis. Preliminary findings suggest that public involvement contributed both tangible impacts, such as demonstrable changes to the published protocol and quality assessment tool (Quality In Prognostic Studies; QUIPS), and many subtle impacts on both researchers and the research itself. We will co-present this work with a member of our public advisory group.

## Consequences

By evaluating the impact of patient and public involvement within the INTERPRESS-IPD project, we challenge the view that there is little point to public involvement in meta-analysis studies and by doing so hope to influence research practitioners to routinely collaborate with public advisors on secondary data analyses.

## Funding Acknowledgement

This research was supported by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care South West Peninsula. The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.

## 7D.4c

### Placebos in Primary Care? A Nominal Group Study Explaining GP and Patient Views

*Presenter: Dr Mohana Ratnapalan*

*Authors: Mengxin Tan, Beverly Coghlan, Hazel Everitt, Adam Geraghty, Paul Little, Felicity Bishop*

#### Institutions

Primary Care & Population Sciences University of Southampton

#### Abstract

##### Problem

Researchers are exploring techniques to help harness placebo effects in clinical settings ("placebogenic" practice). However, we know relatively little about how GPs and patients view different placebogenic practices. Placebogenic practice could offer cost-effective healthcare, which enhances health outcomes whilst minimising patient harm from drug side effects. We undertook this study to better understand the acceptability to patients and GPs of key theoretically plausible placebogenic techniques.

##### Approach

A qualitative study using nominal group technique. 21 GPs and 20 "expert" patients from across the UK took part in 9 face to face audio-recorded nominal groups (4 GP and 5 patient groups). Participants discussed scenarios illustrating 6 placebogenic practices: (1) Positive therapeutic message but withholding information on side-effects; (2) Regular review and patient self-monitoring (3) GP stating a strong belief that the therapy will work (4) Idealised patient-centered, empathic consultation (5) Placebo pills with deception (6) Open-label placebo pills. Groups voted on the acceptability of each scenario. Votes were collated and audio-recordings transcribed verbatim, then coded thematically.

##### Findings

**Participants found it hard to decide on what practices were acceptable and spoke about needing to balance the positive effects of the placebogenic practice against the harms from erosion of the therapeutic relationship from the loss of trust. Scenarios that were acceptable included: (2) self-monitoring (3) GP expressing belief in a therapy and (4) the idealised consultation. The scenarios which featured elements of deception, (1) withholding information on side effects and (5) placebo pills with deception, were felt by most groups to be unacceptable. Groups worried that patients would come to both physical and psychological harm from the deception.**

## Interestingly, there was a range of opinion on the acceptability of open label placebo. Consequences

These results improve understanding of which aspects of placebogenic practice patients and practitioners may find acceptable to employ in clinical practice and highlight the difficulties in determining acceptability.

## Funding Acknowledgement

SPCR funded study

## 7E.1

### Is it time we looked at the impact of languages in primary care research? Lessons from qualitative research with minority ethnic groups

*Presenter: Faraz Ahmed*

*Authors: Jenni Burt, Cathy Lloyd*

#### Institutions

University of Cambridge, The Open University

#### Abstract

##### Problem

The health of minority ethnic populations is an increasingly important focus in European and US policy and research arenas, particularly as these populations are both substantial and growing. An individual's language is one of many dimensions of ethnicity, and one that can play an important part in conducting primary care research with minority ethnic groups. Language use/turns during an interview or focus group can emphasise the unequal balance of power existing in the researcher-participant or participant-participant relationship. Participants and researchers may actively use/switch between different languages to emphasise and convey important narratives. This presentation outlines the ways in which language can impact on primary care-based qualitative research with minority ethnic groups, and makes suggestions for those conducting research in this field.

##### Approach

We critically explore the way in which language may impact on study design, data collection and analyses, drawing on examples from three different primary care research studies:

- Semi-structured interviews with Pakistani and Bangladeshi community members
  - Focus groups with Pakistani and Bangladeshi community members
  - Video elicitation-interviews with Pakistani patients in general practices
- The term 'code-switching' is used to describe instances of a speaker switching between two or more languages during a conversation or research encounter, and also a speaker switching between two or more styles of speech within the same language. Explorations of code-switching can help bring new insights to qualitative data analysis, for example by enabling a greater focus on aspects of researchers' or participants' behaviours, intentions, and meanings within an interview or focus group setting, or by considering new dimensions of communication behaviours in doctor-patient interactions. For example, Fisher and Groce's (1985) examination of doctor-patient interaction in relation to norms about female patients identified that doctors code-switched to a less formal and less 'medical' way of talking (i.e. 'ain't it') in certain interactions.



## Findings

We will present findings relating to three major aspects of language use and impact:

- Researchers' language use during study design, and data collection
- Participants' language use during data collection
- Role of code-switching and the implications of this for data analysis and interpretation

The impact of language may be particularly pronounced when there is no agreed written form of a spoken language; for example, there is no agreed written form of the main language spoken by Pakistanis (Mirpuri) in the UK. Language use may impact in multiple ways on the power-dynamic between the researcher and interviewee, and on the construction and interpretation of qualitative data. Understanding and exploring language code-switching in the qualitative analysis process has the potential to provide greater depth and be a valuable data collection and analytical tool to explore interactions in interviews and focus groups with minority ethnic groups in primary care research.

## Funding Acknowledgement

This presentation covers a range of studies, and we would gratefully acknowledge the contributions made by all of the participants who took part in our studies.

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## 7E.2

### Street Medics: An innovative learning opportunity for medical students in a primary care outreach setting

*Presenter: Deidre Walsh and Gemma Ashwell*

*Authors: Dr. Gemma Ashwell, Prof. Laura Stroud*

## Institutions

Academic Unit of Primary Care, Leeds Institute of Health Sciences, University of Leeds

## Abstract

### Problem

There is growing momentum to ensure that issues relating to health inequalities and the social determinants of health are run throughout undergraduate medical teaching (Williamson and Ayres, 2015). There is also a national drive to improve recruitment into General Practice (Wass, 2016) with recruitment problems most severe in deprived areas (Blane, 2018). Street Medics is an innovative scheme that was co-created by medical students and GP educators. This initiative provides voluntary opportunities for medical students to join GPs doing outreach work with deprived patient groups. It provides hands-on learning experience of the impacts of health inequalities. Despite being voluntary and occurring in the evenings, demand for places by students consistently exceeds capacity. This research project aims to explore the influences that motivate student engagement in this extra-curricular initiative and what the impacts are on the students involved.

## Approach

This is a qualitative study of medical students' experiences of the street medics project. Two focus groups have been conducted with 8 medical students who have experienced the initiative. The focus group discussion was recorded and transcribed verbatim and then thematic analysis was undertaken. A third focus group is planned to ensure data saturation.

## Findings

The preliminary data analysis has revealed the following key themes. Motivating factor themes are: appetite to explore; altruism; perceived lack of exposure in undergraduate teaching; and previous observation of perceived sub-optimal care to socially disadvantaged patients. Experience and impact themes are: increased understanding of social determinants of health; change in perception of vulnerable patient groups; influence on career intentions and future practice; desire to incorporate into undergraduate curriculum.

## Consequences

This experiential approach to learning about health inequalities and the social determinants of health has the potential to challenge pre-conceived perceptions, to ignite enthusiasm and to influence career intentions of medical undergraduates. The popularity of this initiative and the research findings strengthen the case for widening the experiential learning opportunities within the primary care setting. This is particularly relevant at a time when recruitment into general practice is paramount to sustain the future workforce. If we can identify the reasons that undergraduates are self-selecting to experience primary care outside of their delivered curriculum, we can then propose a model to be shared across medical undergraduate courses. References: Blane, D.N. (2018). Medical education in (and for) areas of socio-economic deprivation in the UK. *Education for Primary Care*. 29:5, pp. 255-258. Wass V (2016) By choice – not by chance: supporting medical students towards future careers in general practice (Health Education England and the Medical Schools Council, London) Williamson, A. Ayres, R. (2015) Core intended learning outcomes for tackling health inequalities in undergraduate medicine. *BMC Medical Education* 15:66

## Funding Acknowledgement

None

## 7E.3

### Access to healthcare for vulnerable migrants - one year on: How can medical student advocates influence local primary care ?

*Presenter: Pooja Seta and Isa Ouwehand*

*Authors: Pooja Seta, Isa Ouwehand*

## Institutions

Queen Mary University of London, Barts and The London

## Abstract

### Problem

At SAPC 2018 we presented our Access to Care project. This developed following a workshop for fourth year students regarding UK legislation limiting access to healthcare for undocumented migrants. Students proposed an advocacy project looking at ways to improve access to primary care for migrants encountering difficulty at registration. East London is an area of high deprivation and diversity. Students

## 7E.4a

### Delivering primary care to patients who are multiply-excluded

*Presenter: Emily Clark*

*Authors: Professor Nicholas Steel, Dr Tara Gillam*

#### Institutions

Norwich Medical School

#### Abstract

##### Problem

City Reach Health services (CRHS) provides primary healthcare services for people in Norwich who find it difficult to visit mainstream GP services such as rough sleepers, sex workers, people seeking asylum and other vulnerable migrants.

##### Aims

- To characterise the population of patients registered at City Reach Health services and the services provided.
- To review to what extent CRHS provides meets the national standards of effective health care provision for vulnerable patients.
- To develop an evidence-based action plan for service development.

##### Approach

##### Methods

- Quantitative data capturing exercise from medical records to define the baseline characteristics of the patients registered at City Reach and services provided.
- Semi-structured interviews with staff and patients to explore the experience of patients, any facilitators or challenges to their care and to understand which outcomes matter to patients, analysed with the Context, Mechanism and Outcome framework.

##### Findings

- Quantitative analysis so far has revealed high rates of mental health diagnoses (87% of patients), increase in demand over the last year (increase of 30% in contacts), and high rates of severe trauma in the homeless population (44%) and substance misuse (70%).
- Interviews with patients and staff showed themes such as the relapsing/ remitting nature of exclusion, the importance of longer appointments and tolerance of challenging behaviour.

##### Consequences

- Results show gaps in service provision, such as the lack of service user feedback into the service and clinical capacity.
- The results of these studies will enable comparison of care to the values of the Faculty of Inclusion healthcare and use of a self assessment tool and development of an evidence based action plan.

##### Funding Acknowledgement

NIHR CLAHRC

I was 2019 'Early Career Researcher' prize-winner at Madingly, Cambridge (January 2019) who will fund my place at Exeter.

are exposed to increasing to those whose health are affected by sociopolitical factors such as austerity and "hostile environment". The role of the socially accountable medical school includes preparing students for their role as potential advocates for vulnerable patients and communities. Advocacy can be defined as: "Action by a physician to promote those social, economic, educational, and political changes that ameliorate the suffering and threats to human health and well-being that s/he identifies through his or her professional work and expertise" (LM. Luft 2017).

#### Approach

Access to Care is a student led project supported by primary care faculty. Two students (PS and IO) recruited peers to undertake a local intervention during final year GP placements. They delivered 2 training sessions and seven students participated in the project. Consent was sought from practice staff. Registration policies and practices were explored through semi structured conversations with clinical and administrative staff. Each student wrote an individual report and the data was collated and analysed thematically.

#### Findings

Our presentation will describe our thematic analysis. Challenges to registration included:

- Lack of awareness of current NHS guidelines regarding access to care by staff
  - Issues around completing computerised registration system without specific documents
  - Queries about contacting people without a registered address
  - Discomfort around using the practice address as alternative for correspondence
  - Financial concerns relating to practice budget
  - Lack of trust for people without documentation
- Student authors will describe the impact on practices and on local CCG registration policies. They will also include critical reflection on their learning through this work.

#### Consequences

What do your findings mean and why do they matter? For work in progress consider the potential to influence outcomes. Firstly we have seen student advocacy in action and aim to embed further in our curriculum led by an academic GP trainee. We have learned about the challenges and limitations to sustaining student involvement in advocacy. Importantly data gathered by the students has been used to inform the development of online registration tool and therefore has already had impact on local policy and practice regarding "Safe Surgeries". Ensuring student advocacy is aligned to local needs is a priority.

#### Funding Acknowledgement

No funding received

## 7E.4b

### How do we engage participants from underserved populations with a dementia in primary care research?

*Presenter: Sarah Griffiths*

*Authors: Sarah Griffiths, Lorna Manger, Rebecca Chapman, Ian Sherriff, Cath Quinn, Rose McCabe, Paul Clarkson, Val Mann and Richard Byng.*

#### Institutions

Community and Primary Care Research Group, Faculty of Medicine and Dentistry University of Plymouth, Plymouth, School of Health Sciences, City, University of London, London, Division of Population Health, Health Services Research and Primary Care, Faculty of Biology, Medicine and Health, University of Manchester

#### Abstract

##### Problem

The DPACT-Dementia Support Study aims to evaluate the effectiveness of a primary-care based person centred dementia support intervention. One of the challenges we face is engaging people diagnosed with a dementia, who may also be living with frailty and emotional difficulties, and who live alone or lack an extended support network. Previous primary care based trials have struggled to recruit such individuals, who may respond least well to written material, yet have the potential to benefit most from the intervention.

##### Approach

We aim to test an assertive recruitment approach which balances the ethical imperatives of ensuring adequate opportunity to be involved and avoiding unwelcome pursuit or breaches in confidentiality. We have worked in collaboration with a Peer Research Group (PRG) consisting of people with dementia and their carers in the development of our approach. The approach is person-centred, accessible and flexible. The pathway starts with a standard approach letter from the GP leading on to alternative responses if adequate contact is not made. The pathway includes a series of exclusion points, with combinations of letters, phone calls and face-to-face meetings as appropriate. Ongoing assessment for each point at which contact is made will determine the person's wish and ability to participate, the nature of the wider support network and the potential for carer participation in the study. For those who do not respond to any opportunity along the chain, clinical follow-up will be arranged through the GP practice, to allow identification of hitherto unknown clinical or social needs. In addition, qualitative interviews with participants will further reveal helpful and unhelpful recruitment strategies. We will operate a test and learn approach, whereby researchers and participants (through informal feedback processes) will reflect on every contact in the chain and adapt the protocol further.

##### Findings

We will present findings from the initial prototype pilot phase, trialling the recruitment process. We will report levels of engagement in each step and reported harms and benefits. Early findings from our qualitative enquiry will also be presented alongside consequent adaptations to the recruitment process.

##### Consequences

This innovative approach addresses an important gap in the evidence-base around recruitment of hard to reach groups. Our findings have the potential to inform future studies involving recruitment of

people with dementia as well as other groups who lack capacity. By including strategies to follow-up those who do not take up or opt out of opportunities to participate at any of the contact points, anticipatory care is built into the recruitment process. This ethically sound approach enables us to gain knowledge of the characteristics of those with dementia who are usually left out of research, when this may be due to unknown and unmet clinical or social needs.

#### Funding Acknowledgement

NIHR PGfAR

## 7E.4c

### Nonverbal communication between registered nurses and patients in general practice during lifestyle risk reduction conversations

*Presenter: Sharon James*

*Authors: Dr Sue McInnes <sup>1</sup> Elizabeth Halcomb <sup>1</sup> Dr Jane Desborough <sup>2</sup>*

#### Institutions

<sup>1</sup> University of Wollongong,

<sup>2</sup> Australian National University

#### Abstract

##### Problem

Increases in the chronic disease necessitate a shift towards effective approaches to lifestyle risk reduction. Behaviours such as smoking, poor nutrition, harmful alcohol intake, inadequate physical activity and obesity or overweight are modifiable. However, individuals often require ongoing targeted lifestyle risk communication and management from clinicians to achieve lasting behaviour change. General practice nurses (GPNs) often have prolonged community-based engagement with patients, ideally placing them to implement prevention and self-management strategies. While health education comprises a large proportion of nurse-patient encounters, our understanding of these interactions is limited. Nonverbal interactions represent the majority of communication and indicate how people behave with or without speech. Effective nonverbal behaviour assists in the strengthening relationships, rapport and person-centred communication leading to greater patient trust, understanding and engagement. Understanding lifestyle risk communication in this way aims to better inform clinicians of nonverbal behaviour impact and interventions empowering behaviour change.

##### Approach

This paper forms part of a mixed methods study about how GPNs perceive and communicate lifestyle risk. Using non-participatory video observation methods and descriptive statistics, we sought to understand GPN-patient nonverbal communication during chronic disease management (CDM) consultations. Fifteen GPNs and 36 patients were recruited from South Eastern Australia. The Nonverbal Accommodation Analysis System (NAAS) was used to understand nonverbal communication and how participants modified nonverbal communication over the course of the consultation. Additionally, GPN computer-eye contact time was measured.

##### Findings

Paraverbal and nonverbal behaviours were categorised into joint convergence, asymmetrical convergence, joint divergence asymmetrical divergence and joint maintenance using established definitions.

Convergence indicated behavioural similarity to the other party where as divergence showed accentuation of difference. Person-centred communication was most frequently categorised (44.0%) through joint convergent behaviours (talk time 44.4%, pauses 41.7%, simultaneous speech 33.3%, interruptions 38.9%, smiling 58.3%, laughing 66.7%, gesturing 36.1%, nodding 47.2%, eye contact 50%). However, speech rate showed that largely patients responded convergently (30.6%) or divergently (27.8%) potentially indicating GPN active listening or dominance. The majority of nurse computer eye contact (58.3%) decreased over the course of the consultation (mean beginning consult 0.30, end 0.25) but this did not translate to a marked increase in GPN-patient eye contact (mean beginning consult 0.45, end 0.46).

### Consequences

Effective communication techniques between patients and health professionals are known to support sustained behavioural change. Nonverbal behaviours used effectively are linked to patient, health professional and communication outcomes and satisfaction. The findings in this study show higher levels of convergence than previous research amongst medical practitioners. Utilising and expanding this person-centred approach by GPNs has the potential to improve CDM and the prevention of lifestyle risk. These findings can inform health policy, GPN education and practice to improve health outcomes for lifestyle risk reduction.

### Funding Acknowledgement

This research has been conducted with the support of the Australian Government Research Training Program Scholarship with a top up grant from the Health Impacts Research Cluster at the University of Wollongong.

## 7F.1

### Cultivating an environment of social accountability: academic primary care for the future

*Presenter: Bhakti Visani, Christine Douglass, Sonia Kumar*

*Authors: Dr Bhakti Visani (Imperial College London), Dr Christine Douglass (Imperial College London), Dr Sonia Kumar (Imperial College London)*

### Institutions

### Abstract

#### Aim and intended outcome

At a time when general practice & healthcare systems are facing unprecedented pressures, and increasing health inequities persist across populations, we need to critically examine the design and delivery of general practice learning and teaching within our medical schools. The WHO defined social accountability as a priority for medical schools "to direct their education, research, and service activities toward addressing the priority health concerns of the community, the region, or nation they have a mandate to serve". (1) In this workshop we will bring together the theories and practice of social accountability with priority outcomes from the recently published Declaration of Astana i.e., strengthening sustainable primary care, equitable access to health care, social justice, and interdependency of political, social, cultural and economic systems. This workshop will provide participants with a means to explore and cultivate social accountability in partnership with local communities across their learning, teaching and research activities. By the end of the workshop delegates will be able to: Understand what social accountability means in academic primary

care and research and how it links to priorities from Astana Identify successful tools and processes to advance social accountability across education and research activities in general practice Develop relevant, innovative approaches to creating sustainable wider partnerships across learning, teaching and research activities in general practice Link together with individuals/institutions interested in developing social accountability networks.

### Format:

The interactive workshop uses the principles of 'Design Thinking'. Design Thinking is a creative, innovative way of addressing complex problems characterised by uncertainty, collaboration and co-production of knowledge. It is increasingly and successfully being applied across medical education & clinical contexts. The workshop design will fit well in the 'exploration lab' room 2. Mirroring of the computers will enabling rapid, interactive sharing, discussions and feedback from the group work.

### Content:

Using the principles of design thinking & reflexive practice, this 90' interactive workshop will combine a brief presentation; principles of design thinking exercises; pair sharing narrative exercises; and group scenario-based brainstorming to reflect on how social accountability and the priority findings from Astana can be brought together to inform the design of an academic primary care of the future.

### Intended audience

Clinical & academic GPs, trainee GPs, & all other Primary Healthcare Professionals

1. Boelen, C., Heck, J., and World Health Organization, Division of Development of Human Resources for Health. ( 1995) . Defining and measuring the social accountability of medical schools. Geneva: World Health Organization.

### Funding Acknowledgement

## 7G.1

### What are the opportunities to foster and nurture Quality Improvement in General Practice for medical students, GP trainees and GPs?

*Presenter: Nigel Hart, Ann Wylie, Joanna Bircher*

*Authors:*

### Institutions

Nigel Hart, Queen's University Belfast, Founder and Lead for EQUIP (Experience in QUality ImProvement) for GP Trainees Ann Wylie, Kings College London, QI and Health Promotion Community Lead Joanna Bircher, Clinical Director, Greater Manchester GP Excellence Programme and author of RCGP "Quality Improvement Guide for General Practice"

### Abstract

Aim and intended outcome / educational objectives

The aim of this workshop is to explore and share insights for the development of Quality Improvement training and experience in General Practice for medical students, GP trainees and General Practitioners

### Format

The workshop will feature a brief insight from each of the three presenters (5 minutes each) from the perspectives of:

1. Undergraduate education
2. Postgraduate training
3. General Practitioner education and professional development

The bulk of the workshop will draw on the insights, experiences and questions of the participants to develop a range of ideas about how best to develop programmes and support students, trainees and GPs become confident in their application of Quality Improvement for improved healthcare outcomes.

### Content

Everywhere now in healthcare people seem to be talking about 'Quality Improvement' (QI). Batalden and Davidoff say "everyone in healthcare really has two jobs....: to do their work and to improve it".

The IHI (Institute for Healthcare Improvement), The Kings Fund and the Health Foundation have been promoting QI as a core activity for all healthcare practitioners for some years. More recently the GMC blueprint for undergraduate medical education and postgraduate training, 'Outcomes for Graduates' references QI as an important focus for the next generation of doctors.

Within the RCGP Curriculum, QI is now a set competency and importantly the new GP Contracts in England, Wales and Scotland include Quality Improvement activities. Educators, trainers and researchers need to develop, innovate and test how best to foster and nurture knowledge, skills and experience in Quality Improvement.

What is not clear is how best this might be pursued.

In this session we will use stories (the oldest and most natural form of how people make sense of the world) questioning (the Socratic method), discussions and real data from real projects to explore and seek congruence on future direction of Quality Improvement that is relevant to General Practice.

### Intended audience

Undergraduate curriculum authors, educators & facilitators  
Postgraduate GP Training course organisers and trainers  
Practicing General Practitioners  
Researchers interested in developing interventions to maximise system improvements

### Funding Acknowledgement

## 8A.1

### Big results from brief consultations. Using Focused Acceptance and Commitment therapy (FACT) in primary care

*Presenter: Bruce Arroll*

*Authors:*

### Institutions

University of Auckland, New Zealand

### Abstract

Workshop 13:30 - 15:00 Friday 5th July 2019

bruce.arroll@auckland.ac.nz"

### Aim

The aim of the workshop is to show how FACT can be used in the primary care setting.

### Educational objectives

Participants will be able to conduct a brief psychosocial assessment called the work/love/play questionnaire (available free) in few minutes.

Participants will be able to use the work/love/play information to set some tasks with the patient to expand their lives (which will almost always be constricted).

Participants will be able to do a behavioural analysis of an unwanted symptom e.g. anger and use the choice point handout to assist the patient in making values driven changes in their lives

### The format will be:

A brief 15 minute talk will give an overview of FACT and will include the statistically significant results of an RCT which showed an effect size of 29% in the intervention group over an active control group.

Then an 11 minute video of a FACT interview

### Interactive activities

Audience will do a work/love/play interview in pairs based on their own lives or a hypothetical or real patient. This will include the likelihood step where the patient will be asked to do some tasks that will take them towards what is important in their lives (following their values) - a likelihood of < 7/10 requires a re-negotiation of the likelihood until there is agreement on 7 or more out of 10.

A video will then be shown of the choice point which is a visual way of doing a behavioural analysis of an unwanted behaviour (e.g. anger) and finding points at which the patient could change their behaviour. This is a very powerful process and many patients take the choice point handout home and put it on their fridges to remind them of what they need to do to get their lives back on track.

Time required 90 minutes

I have been doing talks to New Zealand GPs for over 2 years and get great feedback from these training sessions. They feel it gives them a strategy to deal with distressed patients in a short space of time.

### Funding Acknowledgement

## 8B.1

### 'Equivalence' - the evolution of primary care in secure environments

*Presenter: Jake Hard*

*Authors:*

### Institutions

### Abstract

## Workshop 13:30 to 15:00 Friday 5th July 2019

*Facilitator: Dr Jake Hard Chair of the RCGP Secure Environments Group  
Clinical Lead for the Health & Justice Information System*

jake.hard@nhs.net

### Aim

To explain the ethical and legal principles that currently define the care provided in secure settings.

To describe the recent progress and future developments of healthcare in secure settings.

To highlight this area of work and engage with the SPAC Community

to enlist ideas and support for a collaborative strategy to improving research and education in this field.

#### Format:

Three short presentations:

1. Equivalence - Dr Jake Hard
2. Health and Justice Information System - Dr Jake Hard or other speaker
3. Developing the future approach to healthcare in Secure Environments - RCGP Healthcare in Secure Environments Clinical Champion

A brief presentation on the principle of 'equivalence' and the definition published by the RCGP in July 2018 – what does this mean and how can it be evidenced through the use of data and research?

A brief presentation on the IT project, for which I am the Clinical Lead, which will enable the registration of people within a prison to register with a GP and along with this will come HSCN/Spine connectivity allowing for the flow of clinical records both into and out of the secure estate in England – what does this mean for the delivery of healthcare in prisons; what will this mean for community practices receiving people being released from prison?

Current themes and areas of need in the secure setting: self-inflicted deaths, substance misuse and use of psychoactive substances, increasing self-harm and violence – how are these tackled; what approaches are necessary and how do we evidence what is effective in tackling these issues?

#### Intended audience

Academic and Researchers in the fields directly or associated with the secure environment patient group e.g. research into criminality and recidivism; work in the field of health inequalities; field of substance misuse; research into suicide and self-harm; big data and population research.

#### Funding Acknowledgement

## 8C.1

### Exploring Primary Care physical activity interventions using LEGO® SERIOUS PLAY®

*Presenter: Joe Langley, Rebecca Partridge, Rebecca-Jane Law, Nefyn Williams*

*Authors:*

#### Institutions

#### Abstract

#### Workshop 13:30 to 15:00 Friday 5th July 2019

*Facilitators: Dr Joe Langley (Lab4Living, Sheffield Hallam University) Dr Rebecca Partridge (Lab4Living, Sheffield Hallam University) Dr Rebecca-Jane Law (North Wales Centre for Primary Care Research, Bangor University) Prof. Nefyn Williams (Department of Health Services Research, University of Liverpool)*

Contact Dr Joe Langley - j.langley@shu.ac.uk

#### Aim

To use LEGO® SERIOUS PLAY® to explore the role of primary care in reducing the decline in physical function and physical activity in

people with long term conditions; what works, for whom, in what circumstances?

#### Learning outcomes

Use LEGO® SERIOUS PLAY® to share and reflect on experiences of: ----- primary care based physical activity interventions designed to improve physical function (for primary care professionals) OR ----- maintaining physical activity and physical function (for patient representatives)

Use LEGO® SERIOUS PLAY® to develop a shared understanding of why primary care based interventions designed to improve physical activity and physical function work for some people and not others

Reflect on the use of LEGO® SERIOUS PLAY® to engage diverse people in primary care based research, to elicit experiences and different perspectives and create shared knowledge

#### Format

Two qualified LEGO® SERIOUS PLAY® facilitators will lead a 90 minute LEGO® SERIOUS PLAY® session. This will not involve the use of slides (with the exception of a 3-5 minute introduction). The session can accommodate up to ~50 individuals, in a cabaret style room with roughly 6 individuals per table. Small Lego kits will be provided for each individual, for the duration of the session. The facilitators will be two design research academics whose research focuses on the application of creative design activities to participatory research approaches in healthcare contexts. Two additional facilitators will be an academic whose research focuses on physical activity and physical function and a primary care clinical academic. All four facilitators are collaborators on an NIHR HS&DR funded project exploring this theme.

#### Content

The session is split into 3 sections:

- 1) Skills building
- 2) Exploration of primary care based interventions designed to improve physical activity and physical function
- 3) Reflection on the topic and the method

Skills building is an initial 20 minutes period during which participants are introduced to the LEGO® SERIOUS PLAY® method. They are led through a series of activities, focused on trivial topics, that establish familiarity and confidence with the method. The main body of the session leads attendees to apply the method to specific questions focused on the theme of primary care, physical activity and physical function. This takes approximately 45-50 minutes. The final 20 minutes will be used to reflect equally on the topic and the method using an After Action Review method followed by open Q&A.

#### Intended Audience

This workshop will be relevant to any delegates with an interest in: - participatory research methods - creative methods of public involvement - maintenance of physical activity and/or physical function in older adults with long term conditions - physical activity interventions in primary care

#### Funding Acknowledgement

## POSTERS

### P1.001 (displayed for the whole conference)

#### RCGP/SAPC Elective Prize Winner - Primary care in Primary schools

*Presenter: Pamela Sturges*

*Authors: Pamela Sturges and Dr Ruth Cambers OBE, Stoke-on-Trent*

#### Institutions

Keele Medical School, Keele University

#### Abstract

With very little emphasis on lifestyle choices and their health consequences in the primary school curriculum, 'The Junior Health Society' was created with the aim to be a preventative intervention to ultimately lower the prevalence of lifestyle induced conditions in children approaching secondary school entry. Children aged 9-11 years of age are invited to take part in our interactive sessions via school liaison.

An evaluative study into the impact of 'The Junior Health Society' is currently underway. This involves completion of a baseline questionnaire designed by behavioural psychologists and a follow-up review post-intervention from the Junior Health team. Questions relate to each session covering topics such as dementia awareness, living with a disability, exercise, food choices and obesity, living with a long-term condition, alcohol and smoking. These topics were designed with specific learning outcomes and resources to aid learning. Trained university student volunteers teach small groups via an interactive circuit of activities.

This project has now been running for 18 months now having reached over 700 students so far. At present, feedback from teachers and students is gained via evaluation forms that are completed at the end of the interactive stations which last for up to three hours. Feedback has provided evidence via verbal and written responses, highlighting a change of mindset with health decisions. This is then used to adapt the resources and materials applied to fit the cohort of students in the geographical area. Furthermore a sub-project has emerged to help resource our stations, in particular living with childhood asthma. We are now developing our own semi-structured interview videos of children with and without asthma. This method of child led interviews and videos, we have found to be the most engaging and impacting amongst this age group.

With over a quarter of children aged 2-10 years being overweight or obese, it is imperative to create a positive behaviour change to prevent further co-morbidities such as diabetes, asthma and heart disease. 'The Junior Health Society' is a unique scheme reaching a large community to do just this: helping to educate primary school children to prevent future health problems in future years.

### P1.001A (displayed for the whole conference)

#### Creative piece - The hats we wear

*Presenter: Rebecca Morris*

*Authors:*

#### Institutions

University of Manchester

#### Abstract

A core principal of primary care and research is to consider patients as people viewing them as a whole. A central element of participatory

approaches to research is to work in partnership with people throughout the research process. Bringing together multiple stakeholders as research partners represents an attractive approach to increase the democratisation of academic research and provide a productive generation of knowledge that has the potential to create change. The co-operative inquiry of participatory research raises ethical issues of ownership, confidentiality and power differentials that must be navigated. Identifying these challenges led to me developing this creative enquiry to reflect on the multiple hats that I wear in collaborative work and the blurring of boundaries between roles, including those of academic researchers.

This creative enquiry will include the image that I developed which is an abstraction of different hats and roles that I wear and the impact this has on me to build relationships with patients, researchers, healthcare professionals and other stakeholders within my work. It is often a priority for patient and public involvement contributors to not be seen as unidimensional as they bring many skills beyond their role as a patient or member of the public. Yet we often do not discuss our own multiple roles and experiences that may shape our thinking (for example being a carer, parent, sibling or patient) or create the explicit space to examine and share this and the influence this might have on partnerships and research. Paradoxically while opening up spaces for discussion to create depth and necessary reflexivity by examining emotional, organisational, project or social discourses around research to create closer partnerships, it may also raise conflicts and challenges which we may not feel equipped to deal with.

This creative piece will provide an interactive space to pose these questions by asking people to identify the different hats they wear and the influence this has on their practice and research by using props of different hats that will be available. People will be asked to write on a whiteboard to depict these roles, take photos and share them online to create a shared dialogue using a Twitter hashtag during the conference. The hashtag will be #sapc-hats. This piece explores how reflexivity in academic primary care is essential and whilst it is sometimes explicit and formal there may be layers of implicit or less formal roles that can influence our work and the enquiry will give conference participants an opportunity to create a dialogue about how this may affect their practice and research.

### P1.001B (displayed for the whole conference)

#### Creative piece - Brian

*Presenter: Deborah Swinglehurst*

*Authors:*

#### Institutions

Queen Mary University London

#### Abstract

REFLECTION I was inspired to write this poem an example of the role of 'witness to suffering' that Iona Heath sets out in her wonderful paper "The Mystery of General Practice". This consultation was mostly about Brian witnessing the suffering of his dying wife and the importance to him of being available and by her side in her last days, however exhausting. He was perplexed and frustrated at his own limits, and fearful of the future. But this consultation was also about me in my role as witness to Brian's suffering, and my parallel sense of perplexity and frustration at my own limits. My key resource - communication - was not available to me in the usual way. And I acknowledge a sense of guilt that I am no longer practising as a GP 24/7 like I used to. I felt an awkward dissonance between the silent solemnity in the room and the vivacious, expansive gestures of the sign language interpreter, who was

at the same time both behind me (and visible only out of the corner of my eye) and between us (as a mediator of communication) as we all struggled through the consultation together, improvising to the best of our ability. The encounter prompted me to consider what it must be like to live a life in the silence of deafness, especially at times when life is creating so much emotional noise and turmoil...and what it must be like inviting an interpreter into some of life's most intimate moments.

## P1.001C (displayed for the whole conference)

### Creative piece - Poetry of Preventative Care: Poems from research interviews with healthcare professionals and patients

Presenter: *Caroline Cupit*

Authors:

#### Institutions

University of Leicester

#### Abstract

I present short poems based on research interviews carried out as a part of an ethnographic study of cardiovascular disease prevention in English general practice (approved by an NHS Research Ethics Committee). These poems arose out of my need (as researcher) to make sense of huge quantities of interview data – conversations in which I and the participant discussed all kinds of issues and concerns whilst trying to piece together the activities involved in preventative care. Short pieces of poetry became a reflexive way of both actively listening to, and distilling, participants' accounts. I stuck closely to participants' own words and attempted to be faithful to the overall messages which I thought were coming through in their accounts. Using the 'method of enquiry' described as institutional ethnography, which foregrounds "the actualities of people's everyday lives and experiences" (Smith, 2005), the poetry enabled me to particularly highlight the 'work' carried out by healthcare professionals and patients in (and around) preventative interactions. As highlighted in the pieces presented, this was often emotional work which revealed tensions between the participant's own knowledge of the support needed in order to make improvements to their health, and the knowledge which was embedded in institutional policies and structures for delivering preventative care. For example, in the sample poem submitted (entirely constructed from a GP's own words), the participant is pulled between hitting preventive targets for managing population health as stipulated by the QOF and the CCG, and responding to individual patients' needs as they present in frontline practice. I have showed the poem submitted here to the GP whose words I had used. He felt that it encapsulated and expressed something important – something which he felt he would not have been able to articulate in such a powerful way. This poster presents this poem, and several other short poems, as a creative way of generating discussion about preventative care practices. I hope that, for some readers, the poems may provide an accessible, and emotionally engaging, opportunity to consider the experiences of healthcare professionals and patients, and their interactions in frontline clinical practice.

#### Hitting Targets

I love hitting targets

I'm really good at hitting targets

It's important that you hit the targets

That's how you're perceived

And we can do it.

I feel torn

I want to hit the targets, I want to be a patient-centred GP

Oh shit, my diabetic figures are really bad

We're coming to the end of the year

I must sort out a few more people

I'm tempted

She wanted to talk about her anaemia

The nurse appointments are fully booked, it was now or never

It comes up in pink boxes, it's like someone shouting

I hate myself for doing it

I stuck her on the bloody couch

Her pulses were fine

It wasn't in the slightest bit appropriate

I wanted to hit our figures

She would be another one towards the target

## P1.001D (displayed for the whole conference)

### Creative piece - Mr X

Presenter: *Reya Srivastava*

Authors:

#### Institutions

QMUL

#### Abstract

Following an interview with a patient, Mr X, I began to think about the doctor-patient relationship and whether it can have an effect on health outcomes. As in his case, many patients want to be more involved in making decisions about their healthcare. One of Mr X's main issues with his healthcare was that he felt he was not being listened to. He felt that he was expected to follow doctors' recommendations without question and, worryingly, his experiences have discouraged him from addressing subsequent medical issues with his doctor.

Treating each patient as an individual with a specific set of values and beliefs leads to greater trust, patient satisfaction, and better health outcomes. My painting depicts what happens when this is not recognised.

When creating my art piece, my aim was to portray the way many patients feel when they are subjected to a paternalistic approach. The blurred face in this portrait takes away the patient's individual identity and replaces it with a generic form. The viewer is forced to see him the way a doctor might: simply as 'young male.' Without the face serving as the focus of the piece, I wanted to draw attention to the patient's hands. Clasped hands held over the abdomen are often associated with vulnerability, giving the viewer some insight into how he might be feeling. Medical consultations can be intimidating for some patients and detecting non-verbal cues can help doctors elicit and address the patient's unresolved concerns.

I hope that this piece encourages healthcare professionals to reflect on their interactions with patients and consider ways in which they could improve the experience for the patient.



## P1.001E (displayed for the whole conference)

### Creative piece - The opaque consultation, an illustration of the Doctor as Drug

*Presenter: Christopher Clark*

*Authors:*

#### Institutions

University of Exeter

#### Abstract

I have been a member of a small GP group throughout my general practice career. Each year we took two days away, often at the old Atlantic Hotel Polzeath, to reflect on and refresh our practice and ourselves. Around the Millennium we worked with a writer; one brief on the day was to write a short piece describing an encounter at work. My response was the dialogue presented, intended at the time to light heartedly paraphrase one, or a few, of my recent confusing encounters. I was trying to capture occasions when a consultation has a seemingly comprehensible beginning and end, but one is left feeling unsure as to what has taken place, and what use one has been to the patient – a nagging feeling that things could have gone better.

Consultations addressing vague or unexplained symptoms can be challenging. After many years of hindsight I now reflect on this piece as a metaphor for “the doctor as drug”. Balint introduced this concept in his seminal 1957 book, illustrating the concept that doctors unconsciously as well as consciously deliver psychotherapeutic benefit to their patients within the consultation. Although much criticised since, the recognition of this psychosocial component remains essential to current practice. A non-judgmental and empathetic approach is a pre-requisite to transactions at this level, as illustrated by Carl Rogers’ definition of “unconditional positive regard”. Ballatt and Campling have built on this, comprehensively summarising how kindness can facilitate, and indeed is essential to, effective dialogue with both patients and colleagues.

But do these consultations do any good? The doctor’s feelings arguably don’t matter if the patient has left feeling better. Dowrick, in his Helen Lester Memorial Lecture to this Society in 2016, wonderfully illustrated the longer term positive outcomes of remaining engaged with individuals, at times quite troubled, whose individual consultations appeared at the time to be accruing no discernible benefit. Continuity of care itself, as exemplified in that lecture, has also been associated with a wider range of benefits including reduced mortality rates.

So the doctor’s perception of success or otherwise in the consultation must remain the doctor’s, but not necessarily the patient’s, concern. I originally titled this piece “Can we start again?”. I no longer feel that such consultations need to be revised, and now fully recognise the unconscious and empathic elements of such an encounter. However expressions of gratitude for what can feel, at best, an adequate consultation continue to remind me of the privileged position that we occupy as general practitioners. We are, to coin Berger’s words, fortunate indeed.

## P1.01

### Development and validation of the Diabetes Severity SCORE (DISSCO): a retrospective cohort study

*Presenter: Salwa Zghebi*

**Abstract - see 2B.4b**

## P1.02

### Management of Type 2 Diabetes in General Practice in Ireland: effect of the ‘Cycle of Care’ Programme

*Presenter: Raymond O’Connor*

*Authors: Jane O’Doherty, Ailish Hannigan, Aoife O’Neill, Conor Teljeur, Andrew O’Regan, Rory O’Driscoll*

#### Institutions

University of Limerick Graduate Entry Medical School, University of Limerick Dept of Mathematics and Statistics, Health Ireland User Group, Health Information and Quality Authority

#### Abstract

##### Problem

Diabetes is a major cause of death and disability worldwide and is associated with complications, which are reduced by control of risk factors. The introduction of the diabetes ‘cycle of care’ pay for performance programme in Ireland in January 2016 means that general practitioners (GPs) have been resourced to provide structured care to patients with type 2 disease. The aim of this study was to examine the effectiveness of the ‘cycle of care’ programme.

##### Approach

A computerised search was developed for diabetes data. 41 practices returned data for a 12 month period before (2014) and after (2017) the introduction of the ‘cycle of care’. International guidelines informed the analysis and categorisation of results. Comparison was made with results from similar audits conducted in Ireland (Midlands Diabetes Audit 2017) and United Kingdom (UK National Diabetes Audit 2015-6).

##### Findings

3189 patients were examined from 41 practices for the years 2014 and 2017. 9 practices were located in an urban setting (22%), 16 rural (39%) and 16 in a mixed location (39%). 1781 males (55.8%) and 1408 females (44.2%). In 2017, the mean age of participants was 68.5 (SD=12.3). 2277 (71.4%) patients had clinical data provided for both 2017 and 2014, 875 (27.4%) for 2017 only, 5 (0.2%) for 2014 only and 32 (1.0%) for neither year. Substantial improvements in rates of recording and in levels of missing data were shown for HbA1c, lipids, renal function, blood pressure and BMI. Improvement was also seen in the standard of care as reflected in several of these results. Rates of foot review, retinopathy screening, treatment review, influenza immunisation and patient education were recorded for the first time in 2017 due to the programme. Results compared favourably with other Irish and UK data.

##### Consequences

This is the first study to examine the effect of the ‘cycle of care’ programme on the standard of care of people with type 2 diabetes in Irish general practice. This programme has resulted in substantial improvements in type 2 diabetes care in Ireland. These results strongly support ‘pay for performance’ measures to resource the management of chronic disease in Ireland.

##### Funding Acknowledgement

Research and Education foundation of Irish College of General Practitioners, Dublin, Ireland.

P1.03

## **GP-OSMOTIC Study: A randomised controlled trial (RCT) to determine the effect of retrospective continuous glucose monitoring on HbA1c in adults with Type 2 diabetes (T2D) in primary care**

*Presenter: John Furler*

**Abstract - see 2B.4a**

**P1.04**

## **What factors are associated with ambulance conveyance to hospital in patients with diabetes or diabetes-related emergencies in care homes? Cross sectional database study**

*Presenter: A. Niroshan Siriwardena*

*Authors: A. Niroshan Siriwardena, Graham Law, Murray D. Smith, Mohammad Iqbal, Viet-Hai Phung, Anne Spaight, Amanda Brewster, Pauline Mountain, Keith Spurr, Mo Ray, Iskandar Idris, Kamlesh Khunti*

### **Institutions**

University of Lincoln, East Midlands Ambulance Service NHS Trust, Diabetes UK Midlands, University of Nottingham, University of Leicester

### **Abstract**

#### **Problem**

Diabetes, affects over 1 in 5 nursing or residential care home residents which may lead to diabetes-related or other emergencies resulting in ambulance call-outs and hospitalisation. We aimed to investigate ambulance call-outs to care home residents with diabetes-related emergencies, to determine clinical and demographic predictors of ambulance conveyance to hospital, and to estimate costs of ambulance attendance and transportation.

#### **Approach**

We employed a cross-sectional design using ambulance care record and dispatch data from a regional ambulance trust together with care home data from the Care Quality Commission (CQC), for people calling an ambulance in the East Midlands over six years, from January 2012 to December 2017. We included data on place of residence (care home vs non-care home community dwelling), care home characteristics (CQC quality rating, nursing vs residential status, Index of Multiple Deprivation), call day and timing, together with patient characteristics (age, sex), physiological status, treatments received, outcome (conveyance) and costs. We constructed multivariable logistic models fitting factors potentially associated with conveyance to hospital. We fitted a predictive statistical model to the costs from a health service perspective for ambulance calls and associated hospital care costs, for care homes resident where an ambulance was called for a diabetes-related emergency.

#### **Findings**

Overall 219722 (6.7% of 3.3 million) attendances were to care home residents of which 12080 (5.5%) were for diabetes-related emergencies. Of 3152 care home patients categorised as having a 'diabetic problem' 1,957 (62.1%) were conveyed to hospital. Despite access to trained staff in care homes, this was not significantly different to the rate for community dwelling people not in care homes, taking into account other factors. Factors which were statistically significantly associated with conveyance included reduced consciousness level (odds

ratio [OR] for mean Glasgow Coma Scale 0.91, 95% confidence interval [CI] 0.87-0.95), elevated heart (OR 1.01, 95% CI 1.01-1.02) or respiratory rate (OR 1.08, 95% CI 1.06-1.10), no treatment for hypoglycaemia (OR 0.54, 95% CI 0.34-0.86) or additional co-morbid medical (but not psychiatric) problems. Cost to EMAS was significantly lower when a patient was conveyed, by some £18 (95% CI £11.94-£24.12), but this would not outweigh downstream NHS costs arising from hospital care. For a simulation in which all trusts' mean NHS reference costs were used, conveyance was no longer significant in the cost model.

#### **Consequences**

Conveyance to hospital was as common for care home patients with diabetes-related emergencies as for non-care home community dwelling patients, and more likely when conscious level was impaired, heart or respiratory rate abnormal or when treatment for hypoglycaemia was not given by ambulance clinicians. The study has implications for better training of staff, access to guidelines and primary care, and support to improve monitoring treatment and emergency care for these individuals.

#### **Funding Acknowledgement**

NIHR CLAHRC East Midlands

**P1.05**

## **What are the predictors and patterns of antipsychotic drug use in people with dementia?**

*Presenter: Hayley Gorton*

**Abstract - see 3E.4c**

**P1.06**

## **View (active tab) Edit Perspectives of clinicians on switching antipsychotics to improve the physical health of people with schizophrenia: a qualitative study**

*Presenter: Annabel Nash*

**Abstract - see 1A.6b**

**P1.07**

## **Impact on the use and cost of other services following intervention by an inpatient Pathway Homeless Team in an acute mental health Trust**

*Presenter: Zana Khan*

**Abstract - see 1A.6a**

**P1.08**

## **Co-design living labs: can we embed co-production in the mental health research continuum?**

*Presenter: Victoria Palmer*

*Authors: James Gunn, Roxanne Kritharidis, Amy Coe, Konstancja Densley, Maria Potiriadis, Kali Godbee, Susie Fletcher, Matthew Lewis, Jane M. Gunn*

## Institutions

The Department of General Practice, Melbourne Medical School, The University of Melbourne

## Abstract

### Problem

Co-production is stressed across the research continuum yet finding meaningful ways to embed participation from inception to translation is a critical challenge. Engagement has been critiqued in the literature for its tokenism and a tendency to follow instrumentalist models that reflect largely one-way transactions. To address this and foster co-production with lived-experience at the centre, we established a Co-design Living Lab model within the Integrated Mental Health Research Program in Victoria, Australia.

### Approach

The Co-design Living Lab model is a partnership approach that brings together people with lived-experience with industry and government, and uses researcher facilitated co-design processes and tools for innovation. We aim to engage people across the research continuum. There is a good deal of waste in research currently. Thousands of people take part in research but when studies are completed, our relationships with participants end. As part of study close out procedures we recruit people to our living labs registry. Joining is optional and voluntary. No further research data is collected about lab participants but the registry holds details of age, gender, geographic location, mental health conditions and the details of studies participants were involved in. Depending on our research study stage and needs, people are invited by email, SMS or mail to take part in different labs as required. Invitations give a brief overview of the purpose of the lab and who is likely to be in attendance. Examples of labs include dialogue around research question generation, or brainstorming ways to overcome recruitment challenges, co-design of interventions and prototypes, working with government partners to contribute to policy formation.

### Findings

Our Co-Design Living Lab has a registry of over 500+ people from our completed research studies. Ethical considerations have emerged from the establishment, facilitation and coordination of the living labs which require further attention. These include: consideration of how to build researcher capacity in facilitation that is informed by narrative and participatory approaches, design thinking and co-design activities; how to ensure co-design remains tailored to different group's histories, contexts and needs; attention to preparatory work for participants in terms of setting boundaries within the group as people begin with not knowing each other and form new relationships from coming together in the living labs. Additional issues include resourcing the registries, coordinating communications with lab participants in a regular manner, geographical location of participants to come to labs, and ensuring feedback from the outcomes of different labs.

### Consequences

There is a need to move engagement beyond the research agenda-setting and protocol-development stages of research and to consider the skills, resources and models that can facilitate lived-experience involvement in data collection and analysis. Australia has a rich history of co-production, but lags behind in lived-experience researcher capacity development and models.

## Funding Acknowledgement

The Integrated Mental Health Research Program has received consecutive years of funding from the National Health and Medical Research Council, the Australian Research Council, the Victorian State Government, beyondblue and other non-government charitable organisations.

## P1.09

### A patient-student co-creation quality improvement project raising mental health awareness in an Arab patient population in a primary care setting

*Presenter: Nour Houbby, Aida Abdelwahed*

## Abstract - see 1A.6c

## P1.10

### The effectiveness of FACT in primary care distressed patients; an RCT

*Presenter: Prof Bruce Arroll*

*Authors: Arroll B, Frischtak H, Mount V, Sundram F, Susie Fletcher; Kingsford D, Bricker J.*

## Institutions

University of Auckland, Melbourne, Washington

## Abstract

### Problem

Short time frames and lack of resources to deal with mental health distress in primary care

### Approach

To use a Focussed Acceptance and Commitment therapy approach for patients with a PHQ 8  $\geq 2$  in the GP waiting room and doing a quick psychosocial history (called work/love/play - available from <http://www.brucearroll.com> followed by an intervention which gets patients to behaviourally activate i.e. catch up with friends, problem solve their issues and start going exercise. Each intervention is scored on a 1 to 10 basis and any score  $<7$  is renegotiated. The control group gets just the work love play

### Findings

After one week the blinded assessment of outcome reported a PHQ 8 score of 7.4 in the FACT group and 10.1 in the control group. This was statistically significant  $p < 0.02$ .

### Consequences

Rapid interventions with distressed patients in primary care can bring about quick and effective changes in their lives

## Funding Acknowledgement

University of Auckland Sabbatical fund.

## P1.11

### Comparison between self-administered depression questionnaires and patients' own views of changes in their mood: a prospective cohort study in primary care.

*Presenter: Catherine Hobbs*

*Authors: Gemma Lewis, Christopher Dowrick, Daphne Kounali, Tim Peters, Glyn Lewis*

#### Institutions

Catherine Hobbs (University of Bath), Gemma Lewis (University College London), Christopher Dowrick (University of Liverpool), Daphne Kounali (University of Bristol), Tim Peters (University of Bristol), Glyn Lewis (University College London)

#### Abstract

##### Problem

Self-administered questionnaires are widely used in primary care and other clinical settings to assess the severity of depressive symptoms and monitor treatment outcomes. Qualitative studies have found that changes in questionnaire scores might not fully capture patients' experience of changes in their mood but there are no quantitative studies of this issue. Aims: We examined the extent to which changes in scores from depression questionnaires disagreed with primary care patients' perceptions of changes in their mood and investigated factors influencing this relationship.

##### Approach

Prospective cohort study assessing patients on four occasions, two weeks apart. Patients (N=554) were recruited from primary care surgeries in three UK sites (Bristol, Liverpool and York) and had reported depressive symptoms or low mood in the past year (68% female, mean age 48.3 (SD 12.6)). Main outcome measures were changes in scores on Patient Health Questionnaire (PHQ-9) and Beck Depression Inventory (BDI-II) and the patients' own ratings of change.

##### Findings

There was marked disagreement between clinically important changes in questionnaire scores and patient-rated change, with disagreement of 51% (95% CI 46% to 55%) on PHQ-9 and 55% (95% CI 51% to 60%) on BDI-II. Patients with more severe anxiety were less likely, and those with better mental and physical health related quality of life more likely, to report feeling better, having controlled for depression scores.

##### Consequences

Our results illustrate the limitations of self-reported depression scales to assess clinical change. Clinicians should be cautious in interpreting changes in questionnaire scores without further clinical assessment.

##### Funding Acknowledgement

The study is funded by a National Institute of Health Research (NIHR). The PANDA is independent research commissioned by the National Institute for Health Research Programme Grant for Applied Research (RP-PG-0610-10048). The views expressed in this publication are those of the author(s) and not necessarily those of the sponsor, NHS, the National Institute for Health Research or the Department of Health and Social Care. The funder had no role in the study design, data collection, data analysis, interpretation of data or writing of the report. This work was part supported by the UCLH NIHR Biomedical Research Centre.

## P1.12

### Time-dependent variation of patient reported outcome (PRO) measurement in patients with chronic conditions: a scoping review

*Presenter: Antoinette Davey*

*Authors: Ian Porter, Colin Green, Joe Coombes, Jose Valderas*

#### Institutions

University of Exeter

#### Abstract

##### Problem

Patient reported outcomes measurements (PROMs) are instruments collecting health outcomes, such as quality of life or functional status, directly reported by an individual without an interpretation of the response by a clinician or someone else. PROMs require individuals to reflect and evaluate their experience of their health condition over different periods of time, relying on their recall. For patients with chronic conditions recall is problematic as symptoms are known to fluctuate over time. Although diurnal patterning of symptoms has been documented in the biological literature and the timing of the day has been recognised as important for certain conditions, there has been a lack of literature examining the patterns in patient reported outcomes.

##### Approach

A scoping review of the literature was undertaken with the protocol registered on PROSPERO (CRD42017058365). A search strategy was developed based on previously conducted relevant reviews and implemented in: MEDLINE, Embase, PsycINFO, and CINAHL. No restrictions was placed on article types. Backward and forward citation searches were conducted. Screening and data extraction was independently completed by up to three reviewers. An adapted version of CASP assessed quality of included articles.

##### Findings

3092 references resulted from the searches, with 33 articles meeting the inclusion criteria. Most study designs included observational research (particularly ecological momentary assessment), 2 were RCTs and 2 were systematic reviews focusing mainly on mental health, respiratory and musculoskeletal conditions. Increased amplitudes and variability in self-reported scores (daily, weekly, and seasonally) were found in the conditions in comparison to healthy controls, demonstrating different rhythmic patterns (e.g. diurnal, circadian and infradian). Symptoms (e.g. pain, fatigue) have distinct temporal profiles that can be picked up by the variability of PRO scores in patients with different chronic conditions, including COPD, rheumatoid arthritis, osteoarthritis, and depression.

##### Consequences

Day-to-day fluctuations may be important to patients in managing their condition and improving their quality of life, thus should not be overlooked by clinicians who generally focus on persistent symptoms at the time of patient consultations. Fluctuating patient reported outcomes reported by patients could have a bearing on the evaluation of treatment plans and disease progression.

## P1.13

### Using Fourier components analysis to examine variations in outcome scores for individuals with Meniere's Disease

*Presenter: Antoinette Davey*

*Authors: Gary Abel, Charlotte Caroff, Kevin Owusu-Mantey, Jess Tyrell, Jose Valderas, Colin Green*

#### Institutions

University of Exeter

#### Abstract

##### Problem

Meniere's disease is an incurable, chronic disorder of the inner ear, with patients experiencing varying levels of severity in hearing loss, tinnitus, aural fullness and vertigo. It affects around 120,000 people in the UK, with the majority being of working age. The symptoms experienced by patients significantly impact on patients' quality of life, with increased incidences of social isolation amongst sufferers. Rhythmic fluctuations of symptoms (also known as chronobiology) at different time-points have been previously reported for patients with chronic conditions. However, there has been a lack of literature on how time of the day affects Meniere's symptoms. Focusing on the fluctuating patterns of Meniere's symptoms may support clinical practitioners in better understanding, supporting and diagnosing patients.

##### Approach

A pre-existing dataset was provided which used a mobile app to collect data from individuals with Meniere's disease. The "Meniere's Monitor" app allowed individuals to monitor their symptoms on a daily basis collating information on their level of severity in dizziness, aural fullness, tinnitus, and hearing loss. In addition, other questions regarding stress, sleep quality and demographics were asked. The data collection period was between 2015 and 2017 and a total of 853 individuals provided data. Variability of symptom severity over a 24-hour period was assessed with a multivariate mixed-effects regression model using Fourier components. Time transformations, using sine and cosine functions, were created and added to the four main symptoms. Adjustments were made to differentiate trends from demographic factors.

##### Findings

The majority of participants were female (68.3%), and the mean age of the sample was 48.9 years. Over half of the participants were employed (58.3%), and from Europe (54.2%). There was variation in all four symptoms across a 24-hour period. Peak aural fullness occurred between 4pm and 8pm compared to midnight. Tinnitus severity peaked at three points in the day from early morning (6am), midday (12pm), and 5pm. Dizziness symptoms peaked at different points in the day, mainly 10am and 3pm.

##### Consequences

Usage of Fourier analysis enabled variability of Meniere's symptoms to be captured and analysed over a 24-hour period demonstrating peaks of symptoms at different times of the day. This analytic method would be useful for patients in better understanding and managing the disease ultimately affecting their overall wellbeing. More tailored interventions using the time of day information Fourier analysis provides could be designed and implemented by clinicians.

## P1.14

### How does an intensive care coordination program for people with chronic conditions and complex needs incorporate person-centred care? A multi-methods qualitative study

*Presenter: Annette Peart*

*Authors: Christopher Barton, Debra Gascard, Virginia Lewis, Grant Russell, Julie White*

#### Institutions

Monash University, Monash Health, La Trobe University

#### Abstract

##### Problem

In Australia, Hospital Admission Risk Programs (HARP) aim to decrease hospital demand through comprehensive assessment, care coordination, and timely, responsive, specialist care in the community for people with complex needs, who present frequently or are at imminent risk of presenting to hospital. The HARPs focus on people with complex needs, particularly those with multiple chronic conditions who require intensive support to help manage their health. One key principle of these HARPs is person-centred care, a core element of high-quality healthcare. Numerous frameworks of person-centred care exist, and commonly comprise an informed and involved patient or client, receptive and responsive health professionals, and a coordinated, supportive, healthcare environment. How, and to what extent, person-centred care is incorporated in HARPs, is not known. To date, studies of person-centred care have focussed on the perceptions of providers. The perspectives of clients about approaches to care, their experiences, and what is important to them in the care they receive, has not been studied. This qualitative study aims to explore how a HARP for people with multiple chronic conditions and complex needs incorporates principles of person-centred care. Approach

The study is set in a large metropolitan health service in Melbourne, Australia, in an area of social disadvantage. Seventeen staff, predominantly clinical nurse consultants as care coordinators, and 23 clients, with a variety of chronic conditions and complexities, were interviewed to understand their experiences of the program. For six of the clients interviewed, their carer participated in the interview. Interviews were supplemented with analysis of the health records of interviewed clients, as well as observation of chronic disease outpatient clinics providing specialist medical, nursing, and allied health support. Data were analysed using Braun & Clarke's thematic analysis. Findings

This study is in progress: interviews are completed while analysis of the health records and observation field notes continue. Interview findings will be presented as themes based on key elements of patient-centred care: in particular, the experiences of clients planning their care, using information provided to make decisions, and having their needs identified and met. Staff interview data will also outline barriers and enablers to providing person-centred care in the HARP. The characteristics of care that matter most to clients with multiple chronic conditions will be presented. Consequences

The findings of this study will provide core person-centred elements of care for people with multiple chronic conditions in the community, as described by the clients themselves. Similar programs aiming to reduce potentially preventable hospitalisations, and improve chronic disease management strategies can use these elements. The findings will also give voice to people with multiple chronic conditions and complex needs, to understand what is most important to them in their care.

## Funding Acknowledgement

This research is supported by a scholarship at Monash University as part of the Innovative Models Promoting Access-to-Care Transformation (IMPACT) Centre of Research Excellence. IMPACT is funded by the Canadian Institutes of Health Research Signature Initiative in Community-Based Primary Health Care, Fonds de recherche du Québec - Santé, and the Australian Primary Health Care Research Institute, which is supported by a grant from the Australian Government Department of Health, under the Primary Health Care Research, Evaluation, and Development Strategy.

### P1.15

## Kidney disease progression and the factors influencing progressive loss of kidney function in a primary care population. A retrospective database analysis

Presenter: Timothy Harries

Abstract - see 3B.4b

### P1.16

## Do digital interventions for parents of children with acute illnesses improve treatment seeking behaviour?

Presenter: Emily Donovan

Authors: Merlin Wilcox, Chris Willcox

### Institutions

Univ of Southampton

### Abstract

#### Problem

Acute illnesses in children are a common reason for seeking urgent care. These include infections (for example viral infections, gastroenteritis, febrile illnesses, respiratory infections and urinary infections) and non-infectious presentations (for example minor head injuries). The challenge is that although the majority are self-limiting, a small number can become severe and even life-threatening. It is important to give evidence-based advice to prevent inappropriate treatment-seeking for children with minor illnesses, while signposting those with signs of severe illness to urgent care services.

#### Approach

A systematic review to assess the literature. This will be used for background for the department that is working alongside a paediatrician who has developed a mobile application to help parents of children under 5 access the appropriate advice and consultation.

#### Findings

No RCTs have been done to assess the effectiveness of digital interventions in changing health seeking behaviour of parents of children under 5 with acute illnesses. This is still a work in progress and only 1 relevant article out of 2339 articles has been found, and it was not an RCT.

#### Consequences

Research is needed in this area. Digital interventions could be an important way of appropriately triaging parents to self care, in a way that current interventions such as 111, have not. This could ensure urgent care consultations are kept for those children requiring them. A secondary outcome of parents not presenting to health care providers due to appropriate self care would be a decline in unnecessary antibiotic prescriptions.

## Funding Acknowledgement

I am a GP academic clinical fellow funded by NIHR.

### P1.17

## Uninterpretable urine samples from children: could molecular analytic methods be more accurate than culture?

Presenter: Kathryn Hughes

Authors: Clive Gregory, Robert Brown, Julian Marchesi, Kerenza Hood, Mandy Wootton, Christopher Butler

### Institutions

Cardiff University, Public Health Wales, Oxford University

### Abstract

#### Problem

The prompt and accurate diagnosis of urinary tract infection (UTI) in young children is important both to reduce morbidity and reduce the possibility of renal scarring. The diagnosis usually relies on microbiological confirmation as presenting symptoms are non-specific. Urine sampling is difficult in young children and contamination is a big problem. Culture results are often inconclusive with 48% urine culture results from children less than five reported as 'mixed growth', requiring repeat urine samples. False positive and negative results are also suspected. We aimed to explore whether molecular methods have the potential to more accurately diagnose UTI in children compared with standard culture

#### Approach

Urine samples were obtained from children aged less than five from healthy and acutely ill children, using clean catch or nappy pad sampling techniques. Urine samples from the ill children were analysed by National Health Service (NHS) microbiology laboratories according to their standard operating procedures and frozen. Molecular methods (qPCR and pyrosequencing) were used to determine the type and load of bacteria in the samples from acutely ill and healthy children. The results for the healthy children were used as a baseline. Results from molecular methods were compared with standard NHS culture results for the acutely ill children. We considered molecular methods possibly indicative of true infection if nucleic acid from the dominant bacteria represented more than 107 reads/ml and more than 50% of the overall bacterial DNA.

#### Findings

128 urine samples from acutely ill children, were analysed using standard NHS urine culture. These, plus a further 57 urine samples from healthy children totalling 185 samples, were analysed using PCR and pyrosequencing techniques. The urine from healthy children had a wide variety of bacteria, with the predominant bacteria representing less than 50% of overall bacterial growth in all cases. For the ill children, findings from molecular methods largely reflected NHS culture results. However, 23.9% of NHS negative results had >107 reads/ml with >50% of total bacterial DNA from the dominant organism, suggesting false negative results. Similarly, 26.7% of positive results

were suggestive of false positive results. In those with mixed growth on culture, 48.8% had molecular results suggestive of UTI.

### Consequences

False positive and negative results are likely to arise when using culture to diagnose UTI, particularly in young children where sampling is difficult and there is a high risk of contamination. Our findings support this view with an estimation of the extent the problem. Given the importance of accurate diagnosis in young children, alternatives to traditional culture need to be considered. Diagnostic thresholds would need to be validated, but we have shown that molecular methods may provide a diagnostic alternative to culture in children, which is less affected by sampling method and contamination.

### Funding Acknowledgement

Health and Care Research Wales

Cardiff University/Wellcome Trust Seedcorn Grant

## P1.18

### The effect of antibiotics on the gut microbiome in children: a systematic review

*Presenter: Lucy McDonnell*

*Authors: Mark Ashworth, David Armstrong, Alexander Gilkes, Victoria Rowland, Patrick White*

### Institutions

King's College London

### Abstract

#### Problem

Antibiotics are the most commonly prescribed medications in children. The gut microbiome is in a state of development up to 3-5 years old. Antibiotic exposure in adults has been shown to reduce microbiome diversity, richness and change microbial composition. Microbial dysbiosis (change from healthy state or imbalance of organisms) in childhood has been associated with obesity, Crohn's disease, type 1 diabetes, asthma and an increase in opportunistic infections. Much uncertainty remains regarding the effect of antibiotics on the microbiome in children. This research aimed to review and appraise the evidence of the effect of antibiotics on the developing microbiome.

#### Approach

A systematic review of research investigating the impact of antibiotics on the microbiome of children (via Medline, Embase and Web of Science) up to February 2019 was carried out. Inclusion criteria were: studies of any design assessing the impact of (named) antibiotic exposure on gut microbiota; participants <18 years (excluding pre-term babies); assessment of microbial composition or richness or diversity; molecular techniques such as PCR or DNA analysis, comparable control group or baseline assessment and adequate study power/ statistical analysis. Quality was assessed using modified Newcastle Ottawa Scale and Jaccard indices.

#### Findings

The search identified 4668 publications of which 10 studies were eligible for inclusion (5 cohort, 3 randomized controlled trials and 2 cross sectional studies). Quality was assessed as good (7 studies) or fair (3 studies). The 10 studies included 1662 participants (aged 2-12) of which 448 received antibiotics (duration 2-10 days). In 9 studies there was <1 month between antibiotic exposure and initial microbiome

analysis. Meta-analysis was not possible due to heterogeneity in study design and outcome measures. All studies reported a change in microbiome composition following antibiotic exposure. A significant change in the balance of species was reported in all studies ( $p < 0.05$ ). Significant reduction in microbiome diversity and/or richness was reported in 5 out of 6 studies ( $p < 0.05$ ). Four out of 6 studies reported a decrease in *Bifidobacteria* spp. which are thought to be beneficial to the gut microbiome. In one study macrolide exposure had a longer lasting effect on the microbiome (up to 2 years) than penicillins.

### Consequences

This systematic review has found evidence of collateral damage to the microbiome as a result of antibiotic exposure in children. There is good evidence that antibiotics altered the balance of species and reduced microbiome diversity and beneficial bacteria, at least in the short term. General practitioners should be aware of the unintended effects of antibiotics on the microbiome, particularly when prescribing multiple courses in a short period of time. General practitioners should be aware that macrolides may be more damaging to the microbiome than penicillins. Further research should investigate the longer-term changes in the microbiome following antibiotic exposure and focus on mitigation strategies.

### Funding Acknowledgement

This research was funded by an NIHR in practice fellowship.

## P1.19

### Prescribing trends in Cow's Milk Protein Allergy: a retrospective database study

*Presenter: Katie Pearson*

*Authors: Willie Hamilton, Stuart Logan*

### Institutions

University of Exeter

### Abstract

#### Problem

Cow's Milk Protein Allergy (CMPA) is the second most common childhood food allergy, and is thought to be increasing, with associated rising costs to the NHS. It can be divided into IgE and non-IgE mediated: IgE mediated reactions are immediate and result in histamine-related symptoms (for example urticaria and angioedema); whereas non-IgE mediated reactions are termed delayed and constitute a myriad of more non-specific symptoms, including gastro-oesophageal reflux, abdominal pain, skin changes and constipation. Management of cow's milk protein allergy includes prescription of a specialised formula; historically this was soya-based, but current guidelines suggest the majority of children should be prescribed an extensively hydrolysed formula, with amino-acid based as second-line. We aim to describe prescribing trends for Cow's Milk Protein Allergy (CMPA), including the proportion of the three formula types, for the years 2007-2017, in a bid to determine whether this is an increasing public health problem.

#### Approach

We identified all formula prescribed for CMPA between the years 2007-2017 and used publically available yearly prescribing datasets, and population data from the Office of National Statistics, to calculate prescribing rates per 1000 of population under 2. We report how the rate of prescribing has changed, as well as the proportion of each type of formula (amino-acid, extensively hydrolysed or soya). We have also

calculated the estimated cost to the NHS of these prescriptions (this cost does not take into account dispensing costs etc) Findings

The study found that there has been a significant increase in the prescribing rate for CMPA in the past 10 years. In accordance with current guidelines, the rate of soya-based formula has declined, but there has been dramatic increases in both hydrolysed (309%) and amino acid based formula (435%). This increase comes at a substantial cost to the NHS, with the cost of formula for CMPA rising from £12.8million in 2007, to £65.2million in 2017, amounting to a 319% increase when adjusted for inflation (using the consumer price inflation (CPI) index).

### Consequences

There has been a significant increase in the rate of prescribing of formula for CMPA, which now represents a growing financial burden to the NHS in prescriptions alone. Further work is needed to determine whether the increase in prescriptions is related to over diagnosis of CMPA, increased awareness of the condition by both carers and professionals, or a genuine increase in incidence.

### Funding Acknowledgement

NIHR ACF

## P1.20

### Management of Paediatric Sleep Problems in Primary Care: A Systematic Review

Presenter: *Samantha Hornsey*

Authors:

### Institutions

Abstract - see 2D.4c

## P1.21

### What healthcare interventions exist to help children and young people who disclose bullying?

Presenter: *Vibhore Prasad*

Abstract - see 2D.4a

## P1.22

### What are General Practitioners' views on their role when children and young people disclose a history of bullying in the community?

Presenter: *Vibhore Prasad*

Abstract - see 2D..3

## P1.23

### Providing care to former refugees through mainstream general practice in Southern New Zealand: what are the perspectives of general practitioners and practice nurses?

Presenter: *Tim Stokes*

Abstract - see 1E.6a

## P1.24

### MedExUL: A community-based interdisciplinary approach to chronic illness rehabilitation; protocol for qualitative study of attenders and defaulters

Presenter: *Raymond O'Connell; Connor*

Authors: *Alison Bourke; Sinead Kelly; Catherine Woods*

### Institutions

Graduate Entry Medical School, University of Limerick, Ireland; Physical Education and Sports Science, University of Limerick Ireland; University of Limerick Arena, University of Limerick, Ireland.

### Abstract

#### Problem

Insufficient physical activity (PA) is one of the leading risk factors for premature death worldwide.

Globally, 6-10% of IHD, stroke, diabetes, and some cancers occur due to lack of PA.

A way of addressing this challenge is through exercise referral. The Health Service Executive (HSE) National Exercise Referral Framework (NERF) aims to increase PA levels and improve health in individuals living with an established non-communicable disease (NCD) or mental illness. The medical exercise programme in University of Limerick (MedEx UL) is one such NERF centre. We describe the initial 15 month experience of running the programme.

Many patients who would clearly benefit from the programme also stop attending. Their reasons for defaulting have not been studied in detail in the past. This has clear implications for the future design and delivery of the programme.

#### Approach

The aim of this study is to evaluate the patients' experience of MedEx UL through one-to-one semi structured and focus group interviews with (i) patients who have sustained participation over a 6-month period and (ii) with people who have dropped out of the program.

A semi-structured interview script is being developed, informed by the theory of planned behaviour to assess patient experience of MedEx UL. This script will be used to conduct one on one (1-1) interviews with MedEx UL patients.

#### Findings

The patients' values, beliefs, motivation to comply and subjective social norms, along with their programme expectations and how these change over a 6-month timeframe will be studied.

Secondary outcome measures will include daily minutes of moderate to vigorous physical activity, as well as details of their physical health and quality of life.

As the programme is still in the planning stage we have no results to report as yet.

#### Consequences

Our primary goal is to understand the patients' experience of MedEx UL, and with this knowledge, recommend how the services at other NERF centres can be improved to achieve desired outcomes. This study will also provide novel information as no other MedEx group has studied this aspect of patients' experience of the program.



## P1.25

### The interaction between geographical factors and access to out-of-hours primary care. An ongoing meta-ethnographic review of qualitative studies.

*Presenter: Rose Wood*

*Authors: Rosalind Adam, Sarah Hall, Aaron Tedham, Peter Murchie*

#### Institutions

University of Aberdeen

#### Abstract

##### Problem

It is known that patients with cancer who live in rural areas have worse outcomes than patients with cancer who live in urban areas. The reasons for this discrepancy have not yet been explained. One possible contributing factor is how rural patients access and receive care during out-of-hours. Access to healthcare is a wide concept affected by multiple factors, one of many being geographical reachability. The WHO define health equity as, "the absence of avoidable, unfair, or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically or by other means of stratification". This review explores differences and highlights any remediable discrepancies in access to out-of-hours primary care by rural and urban patients. Given the worthiness of health equity this review incorporates results for all patients, not only patients with a cancer diagnosis, as here remains a gap in current literature. This ongoing review aims to identify factors that affect access to out-of-hours primary care for rural and urban patients.

Research Questions:

1. What factors affect the patient's decision to use out-of-hours primary care services?
2. What factors affect the patient's access to out-of-hours primary care services?
3. Are there differences in these factors for patients who live in rural versus urban areas?
4. What other sociodemographic factors interact with geography to affect access to out-of-hours primary care?

##### Approach

This qualitative review will take the form of meta-ethnography. A search for relevant papers built around three key terms – out-of-hours primary care, experience of access and geographical factors – was completed on MEDLINE, Embase and CINAHL and wider resources. All papers retrieved have been assessed for inclusion against set criteria by two authors independently. Included studies will be critically appraised though no studies will be excluded on this basis. Data will be extracted on to a standardised form. Reviewers will become familiar with the contents of the studies in order to allow interpretation to build throughout the process. Themes in the findings of individual papers will be drawn. The meta-ethnography will take a "line-of-argument" approach with themes across all studies categorised and their relationship determined. The categories will be reviewed and interpretive synthesis completed.

##### Findings

This review is ongoing. The process of meta-ethnography will provide an accurate and rich picture based on current literature of access to out-of-hours primary care and geographical factors.

## Consequences

This qualitative review will identify foci for further research. It may identify key areas for service change. For example, with a current drive towards information technology solutions there may be ability to use information technology to address some of the barriers raised. The findings may also have implications for access to in-hours healthcare.

## P1.26

### Is General Practitioner continuity of care achievable in large, multi-site practices?

*Presenter: Emily Brown*

*Authors:*

#### Institutions

University of Exeter

#### Abstract

##### Problem

Continuity of care is associated with multiple benefits, including increased patient satisfaction, decreased use of hospital services and lower mortality rates. However, continuity of care is declining across General Practice (Levene, 2018) and is particularly poor in larger practices (Barker, 2017). With a national trend to larger, multi-site practices, is maintaining continuity of care plausible? This work sought to address this issue through measurement of General Practitioner (GP) continuity of care in a very large, multi-site practice.

##### Approach

GP continuity of care was measured in the second largest practice in southwest England, with a list size of 39,144 over three sites (city centre practice, suburban practice and a university practice). The practice has 10 partners and 18 salaried GPs, totalling 16 full-time equivalent GPs. Of the 28 doctors, 27 work part-time. The practice uses personal lists (Pereira Gray, 1979), whereby each GP takes professional responsibility for a defined list of patients. Continuity of care was measured with the commonly used 'Usual Provider of Care' index (UPC). The UPC is the proportion of a patient's consultations which were with the GP that the patient saw most often. The Continuity of Care Calculator from the University of Bristol was used within EMIS Web. Data were analysed from the last two years, with a sample size of 1 in 6 registered patients. All face-to-face consultations (surgery and home visits) and all telephone consultations with GPs (including registrars and locums) were included.

##### Findings

Data were analysed for 6,524 patients. The number of patients who had consulted was 4,352, with a mean number of GP consultations per patient per annum of 2.3. The UPC index was 63.8% +/-0.8% (95% CI).

##### Consequences

A 'medium' level continuity has been considered as UPC 0.4-0.7 (Barker, 2017). This work illustrates that it is possible for a very large, multi-site practice to achieve a reasonable or 'medium' level of continuity of care. These results are interesting in the context of previous work (Barker, 2017), which found that continuity was lower among practices with more doctors, with a UPC of average 0.59 for practices with >7 full-time equivalent GPs. In contrast, the average UPC for practices with 1-3 full-time equivalent GPs was 0.7. The practice had no specific focus on increasing continuity. The practice does however operate a personal list system and these results illustrate the benefit of

personal lists in achieving continuity of care (Roland, 1986). In a time of unprecedented change in General Practice, with a focus on access and larger practices, it is easy to see how the trend for declining continuity of care may continue. However, we must remember the numerous benefits of continuity of care and that it is realistic for larger, multi-site practices to achieve continuity.

## P1.27

### Can the demand on GPs be managed to the benefit of all?

*Presenter: Ian Barratt*

*Authors: Harry Longman*

#### Institutions

askmyGP

#### Abstract

##### Problem

With expectations on GPs and their practices continuing to increase, the challenge is managing demand to improve access to GP services, deliver the most appropriate response to meet patient requests, maintain levels of continuity and improve the lot of the GPs themselves. The digital agenda is seen as critical to success but only if workflow is managed effectively.

##### Approach

The approach adopted by askmyGP is that of total flow. This means that all demand presenting to a GP practice (online, telephone calls or walk-ins) is put through the askmyGP system. This provides one managed process to ensure equity of treatment whatever route the patient has adopted. All demand can then be assessed to determine both the level of response needed (e.g. a face to face or telephone consultation or advice) and a range of response styles (e.g. messaging, telephone, video). Access online is available 24/7 but patients are advised not to use the system in the event of emergencies and that their request, if submitted out of hours, will be dealt with when the practice is next open. The system does not allow online booking, a means by which undifferentiated demand can reach GPs without some form of triage.

##### Findings

The system is currently dealing with over 13,000 patients per week (a number which is growing) and over the period October 2018 to January 2019 our practices experience response times of minutes (median time-to-complete = 104 minutes, n=156,602 requests). High uptake by patients (some practices as high as 83% online) reflects the utility of askmyGP for both patients and practices and the quality of a managed change management process.

##### Consequences

Based on the experience of practices, there is evidence that efficiency gains can be achieved and that these can be used in several ways, i.e. time savings with a better quality of life for GPs, opportunity cost savings and/or cashable savings through a reduced use of locums and a reduction of demand on receptionists as call volumes fall.

## P1.28

### Could a system of risk-based, continuous, consultation peer-review improve patient safety and clinician learning in general practice? Evaluating 9 years of the BrisDoc Clinical Guardian experience

*Presenter: Ian Bennett-Britton*

#### Abstract - see 3C.4a

## P1.29

### The development of an online patient safety questionnaire for Primary Care (PREOS-PC)

*Presenter: Jose M Valderas*

*Authors: Salema N, Marsden K, Lafond N, Gangannagaripalli J, Mounce L, Valderas JM, Avery T.*

#### Institutions

University of Nottingham, University of Exeter

#### Abstract

##### Problem

The Patient Reported Experiences and Outcomes of Safety in Primary Care (PREOS-PC) questionnaire was developed and piloted as part of the Patient Safety Toolkit for Primary Care developmental work. This was the first large-scale survey to evaluate the safety of general practices in England as experienced by the patients themselves. Suggestions for improving the questionnaire included making it shorter and developing an online version. This current study was undertaken to explore the feasibility of using two online, shortened, versions of PREOS-PC questionnaire (Short-Form and Compact questionnaires) in general practice.

##### Approach

After registering with the PREOS-PC database, 17 participating practices in the East Midlands sent emails containing a link to the questionnaire to a random sample of patients (18 years and over). Questionnaire responses were directly stored in the database and a downloadable report available to each practice in real-time. Patients also provided feedback on the process of completing the online questionnaire. Data were analysed using both quantitative and qualitative methods.

##### Findings

A total of 699 Compact and 247 Short-Form questionnaires were completed. Overall, patients perceived their general practices to be safe. Results showed that practices were more proactive than patients at ensuring safer healthcare. Free text responses from patients highlighted areas where practices performed well in relation to patient safety and areas where improvements could be made.

##### Consequences

This study successfully demonstrated that it is feasible to disseminate the PREOS-PC questionnaire online. Strategies and opportunities to engage the practice staff and patient participation groups in utilising results from the PREOS-PC questionnaire are needed.

##### Funding Acknowledgement

This project is funded by the East Midlands Academic Health Science Network.

## P1.30

### How, when and why do STOPP/START criteria based interventions improve medicines management for older people: a realist synthesis

Presenter: Jose M Valderas

Abstract - see 3B.4a

## P1.31

### Antibiotic stewardship in general practice: a scoping review of the component parts

Presenter: Lesley Hawes

Abstract - see 2C.4a

## P1.32

### Emergency hormonal contraception dispensing patterns in Shropshire pharmacies: an epidemiological analysis

Presenter: Emma Pearce

University of Birmingham

#### Abstract

##### Problem

Many women each year require access to emergency hormonal contraception (EHC). In rural areas across England, such as the county of Shropshire, pharmacies often provide the most consistent access to this form of emergency contraception. Women attending pharmacies for EHC do not have access on-site to the full range of related sexual health and contraceptive services, and importantly do not have ready access to the most effective form of emergency contraception, the intrauterine device (IUD). Women attending pharmacies may also be attending repeatedly and require further comprehensive assessment. It is imperative, therefore, to fully understand the demographics of women attending pharmacies for EHC in order to tailor services effectively, and ensure pharmacists are providing the most accurate information for the potential ongoing contraceptive and sexual health needs of this vulnerable group of women.

##### Approach

This retrospective descriptive epidemiological analysis was conducted using routine anonymised PharmOutcomes data collected from all EHC dispensing pharmacies within Shropshire local authority boundaries during the period of 1st April 2016 to 31st January 2019. Patients attending for EHC were described by age, ethnicity, reason for attendance, prior known use of EHC, acceptance of referral for IUD and type of EHC prescribed. Those women identified as repeatedly attending pharmacies for EHC dispensing were separately described with respect to the same characteristics as above and compared to the women attending just once during that time period.

##### Findings

3499 attendances, by 3079 individual women, were seen during the period 01/04/16 to 31/01/19 across all Shropshire pharmacies signed up to the EHC dispensing contract with Shropshire Council's sexual health commissioning service. This study remains ongoing, with further

preliminary results expected by the end of February 2019, and full results by the end of March 2019.

##### Consequences

This descriptive analysis aims to fully understand which women Shropshire attend pharmacies to access EHC. In describing their characteristics, and considering those who attend repeatedly in more detail, I hope to outline key aspects of care that can be further explored to ensure that the most safe and effective services are provided to vulnerable women in Shropshire who require emergency contraception. This information should be utilised by local authorities and clinical commissioning groups in providing accessible and effective emergency contraceptive services across Shropshire, and also in geographically similar counties across England.

## P1.33

### Safe Prescribing of Pregabalin in Sciatica

Presenter: Me - Dr John Paul McNally-Reilly

Authors:

#### Institutions

London Northwest Healthcare

#### Abstract

##### Problem

Back pain accounts for up to 7% of GP consultations, with Sciatica being a common cause. Pregabalin is one of four medications recommended in the treatment of neuropathic pain. Our aim was to see whether guidance provided by NICE and SIGN on the initiation of treatment and adjustments required in renal impairment were being adhered to.

##### Approach

EMISweb tool was used to search for patients with a code of 'Sciatica' and concurrently prescribed 'Pregabalin within the last 6 months'. In total 24 patients were identified with 1 patient coded with 'Sciatica' excluded due to Pregabalin being prescribed for a reason other than sciatica. The remaining 23 patients consultation notes, medication history and blood tests were reviewed since being initiated on Pregabalin.

##### Findings

4 aims were outlined at the beginning in the project; The first focussed on patients having an eGFR within the last 12 months, or recorded within 2 weeks of initiating Pregabalin. 3/23 patients did not have any documented evidence of a recent eGFR as outlined above. Of those with a documented eGFR, 4 patients were identified with an eGFR of between 30-60, and as per NICE guidance should be initiated on 75mg a day (divided in two or three doses) and a maximum daily dose of 300mg (divided in two or three doses). All 4 patients exceeded the initiation dose recommendation, with doses prescribed including 75mg BD for two patients, 50mg TDS for a third patient and 75mg OD. 100% of patients did not exceed the maximum daily dose, with maximum doses of 75mg BD, 75mg OD, 50mg TDS and 150mg BD prescribed. The final aim was to ensure early review following initiation of Pregabalin, defined as within 4 weeks of Pregabalin initiation as suggested by SIGN. Of this cohort 6/23 were seen within 4 weeks.

##### Consequences

In conclusion I believe in this study I have highlighted a gap in the knowledge of primary care clinicians when prescribing Pregabalin. The

main area is in the incorrect initiation of Pregabalin therapy in renal impairment, which resulted in 4 prescribing errors, but also could have occurred, in the long-term maximal therapy when up titrating treatment. There also seems to be a lack of knowledge and awareness when it comes to the importance of an initial renal function, with 13% of patients not having any bloods prior to or upon Pregabalin initiation. There is also scope for clarification from NICE as to what would be an appropriate time scale for review following Pregabalin initiation, as if it was within 4 weeks as suggested by SIGN then only 26% of patients were appropriately followed up.

## P1.34

### Patient direct access to musculoskeletal physiotherapy in primary care: perceptions of patients, general practitioners, physiotherapists and clinical commissioners in England

Presenter: Annette Bishop

Abstract - see 3D.4c

## P1.35

### What is the impact over time on GP musculoskeletal workload, of providing a patient direct access to NHS physiotherapy for adults with musculoskeletal conditions in primary care?

Presenter: Annette Bishop

Abstract - see 3D.4b

## P1.36

### Is Patient Direct Access to NHS Physiotherapy Services Cost-Effective?

Presenter: Miaoqing Yang

Abstract - see 3D.4a

## P1.37

*The prevalence of clinical features and comorbidities in patients prior to giant cell arteritis diagnosis: a systematic review*

Presenter: Lauren Barnett

Authors: Toby Helliwell, Alyshah Abdul-Sultan, John Belcher, Kelvin Jordan, James Prior

### Institutions

Arthritis Research UK Primary Care Centre Keele University

### Abstract

#### Problem

Giant cell arteritis (GCA) is the most common form of medium and large vessel vasculitis. In the UK, incidence is 10 per 10,000 people, with highest rates being found in women aged between 70 and 80 years old. GCA is often typified by headache, fever, weight loss, and visual impairment. Diagnosis remains difficult since there are a multitude of symptoms experienced by patients with GCA. Prompt diagnosis is

important as GCA is classed as a medical emergency. Due to the high risk of permanent visual loss, it is crucial that the time to diagnosis is as short as possible. The aim of this systematic review is to find pooled estimates of prevalence and odds for common GCA symptoms.

### Approach

Four medical literature databases were searched (Medline, Ovid, CINAHL, and Web of Science) from their respective inception dates until December 2017. A defined search strategy was used to search the databases, which included known symptoms of GCA such as headache and comorbidities prior to diagnosis. Title review was completed by one reviewer; abstracts and full-text articles were reviewed by two. Quality assessment was performed using a modified version of the Newcastle-Ottawa scale by two reviewers. Data such as sample size, and demographics was extracted from articles, along with the clinical features recorded for patients. A random-effects meta-analysis will be conducted, stratified by symptoms recorded in 4 or more articles.

### Findings

The search strategy found 10,192 articles; 7,581 were unique. 589 were included for abstract review, whilst 90 were kept for full-text. A total of 43 articles were included in the final review. All articles reported prevalence of symptoms within the study population, the most commonly reported were headache, PMR, jaw claudication, abnormal temporal artery, and any kind of visual impairment. However, no symptom was reported in all 43 articles. The variability of GCA populations in the articles was large, with as many as 92% reporting headache to as few as none. There was large heterogeneity between studies. Only 18 articles had the necessary information to calculate odds ratios. Jaw claudication, elevated ESR, and anorexia had the highest pooled ORs, indicating that they were indicative of a GCA diagnosis.

### Consequences

Our review illustrates that there are many clinical features associated with a GCA diagnosis with large variation between patients and populations. It was also shown that visual disturbances, often thought to be highly associated with GCA, are only present in less than 50% of the disease population. This review shows that systemic/constitutional symptoms such as fever and weight loss have a high prevalence in patients prior to their GCA diagnosis. This compounds the problem of diagnosing GCA quickly, as these symptoms are often indicative of another, more common, condition. Our review indicates that further research is needed into the clinical features experienced by GCA patients prior to their diagnosis.

## P1.38

### Defining the relationship between rheumatoid arthritis, multimorbidity and adverse health-related outcomes: a precision medicine approach

Presenter: Jordan Canning

Authors: Stefan Siebert, Bhautesh Jani, Frances Mair, Barbara Nicholl

### Institutions

University of Glasgow, Scotland (UK), Karolinska Institute, Stockholm (Sweden)

### Abstract

#### Problem

Rheumatoid arthritis (RA) is a chronic autoimmune disease characterised by joint pain, stiffness and swelling. Multimorbidity

(i.e. the presence of two or more long-term conditions in an individual) is highly prevalent among patients with RA. Despite therapeutic advances improving the clinical outcomes and long-term prognosis of RA, multimorbidity can cause additional complications in RA patients, with the effects of multimorbidity on mortality and adverse health outcomes in RA relatively unknown. While objective markers of inflammation are central in monitoring RA disease activity, subjective factors relating to patient wellbeing may be of greater relative importance when assessing the impact of co-existing physical and mental health morbidities in RA. This impact will vary by individual depending on biological, lifestyle and environmental factors and thus it will be important to explore the relationship between RA, multimorbidity and mortality/adverse health-related outcomes. This work aims to address this research gap.

The key research questions are:

1. What is known about the effect of multimorbidity on mortality/adverse health-related outcomes in people with RA?
2. How do demographic, lifestyle factors, morbidity measures and routine clinical blood tests mediate the relationship between individuals with RA and mortality/adverse health-related outcomes?
3. Is it possible to develop a predictive algorithm to identify individuals with RA and multimorbidity at high risk of adverse outcome?

### Approach

This project consists of two main parts: a systematic review and quantitative analysis of three separate cohorts (UK Biobank, SERA and rheumatology cohorts in the Karolinska Institute, KI). The UK Biobank is a general population cohort consisting of data collected from over 500,000 adult participants where 1.3% report RA. SERA (Scottish Early Rheumatoid Arthritis) is a national inception cohort comprising over 1,000 adults with newly diagnosed RA or undifferentiated arthritis in Scotland and combines patient- and clinician-reported data. Access to large RA inception, disease and treatment cohorts will also be achieved through collaboration with KI. The aim of the systematic review is to appraise existing literature to delineate the relationship between RA, multimorbidity and mortality/adverse health-related outcomes. Risk stratification models will be developed using population health and data science approaches, including in silico-type modelling. These will be developed using data from patients with established RA from UK Biobank and KI cohorts, and tested in separate inception cohorts for RA (SERA and KI) to compare predicted to observed outcomes.

### Findings

Systematic review in progress.

### Consequences

Without a defined relationship between RA and multimorbidity, it is difficult to develop and implement standardised treatment advice and guidelines that are inclusive to multimorbid RA patients. Precision medicine methods may be used to explore the risk stratification of patients with RA and multimorbidity; helping to identify those at increased risk of experiencing adverse clinical and health-related outcomes as a result of multimorbidity.

### Funding Acknowledgement

The Doctoral Training Programme in Precision Medicine is funded by the Medical Research Council.

## P1.39

### Multimorbidity Plus: exploring GP work in deprived areas

Presenter: *Marianne McCallum*

Abstract - see 2E.3

## P1.40

### Prioritising the national dementia guideline recommendations to facilitate implementation in general practice

Presenter: *Danielle Mazza*

Authors: *Danielle Mazza<sup>1</sup> Edwina McCarthy<sup>1</sup> Elise Mansfield<sup>2</sup> Jamie Bryant<sup>2</sup> Amy Waller<sup>2</sup> Xiaoping Lin<sup>1</sup> Leon Piterman<sup>1</sup>*

### Institutions

<sup>1</sup>Department of General Practice, School of Primary and Allied Health Care, Faculty of Medicine, Nursing and Health Sciences, Monash University, Australia <sup>2</sup>School of Medicine and Public Health, University of Newcastle, Australia

### Abstract

#### Problem

The national dementia guidelines in Australia aim to improve the quality and consistency of care provided to people with dementia and their carers. General Practitioners (GPs) play a key role in dementia care however, the guidelines consist of 109 recommendations which presents challenges for GPs in determining which to apply in their practice. The aims of this study were to determine which components of care are most important for GPs to implement and to identify those requiring the greatest need for support for GP implementation.

#### Approach

Key stakeholder organisations in general practice were approached for representation in this Delphi study. Forty-seven participants (42 GPs, 4 practice nurses, 1 medical services director) completed two rounds of online surveys.

#### Findings

Six out of 21 components of care were identified as the most important for GPs to implement: Principles of care, Ethical and legal issues, Early identification, Information and support for the person with dementia, Behavioural and psychological symptoms of dementia and Support for carers. Five components of care were identified as requiring the greatest need for support for GP implementation: Ethical and legal issues, Barriers to access and care, Organisation of health services, Behavioural and psychological symptoms of dementia, and Support for carers.

#### Consequences

The findings from this study will inform the development of an intervention to support the implementation of national dementia guidelines by GPs.

## P1.41

### A qualitative study of interprofessional collaborative practice in community based dementia care in Scotland and Japan - the nurse perspective

Presenter: Yui Wakabayashi

Abstract - see 3E.4a

## P1.42

### Can markers of dementia progression and outcomes be derived from electronic health records? A systematic review

Presenter: Professor Carolyn Chew-Graham

Authors: Paul Campbell, Shula Baker, Suhail Tarafdar, Opeyemi Babatunde, Peter Croft, Carolyn A. Chew-Graham, Louise Robinson, Kate Walters, Swaran Singh, Scott Weich, Kelvin Jordan

#### Institutions

Keele University, Midlands Partnership NHS Foundation Trust, Newcastle University, University College London, University of Warwick, University of Sheffield

#### Abstract

##### Problem

Understanding the progression of dementia and the factors that can change or alter progression is central to its management. Electronic health records (EHR) provide a potentially rich resource to measure progression. Currently there is an established body of EHR evidence that reports on risk factors predictive of dementia onset, however EHR research on post-diagnosis progression is less well established. The aim of this systematic review was to synthesise the available evidence on markers of progression and outcomes that may be identified within EHR for people with dementia.

##### Approach

A systematic search for observational studies was conducted in AGELINE, AMED, CINAHL, EMBASE, Ethos, PsychINFO, MEDLINE and Web of Science (from database inception to October 2018). Retrieved citations were screened against pre-specified inclusion/exclusion criteria independently by three reviewers. Eligible studies were required to have: 1) followed participants post-diagnosis of dementia, (2) used participant data obtained from EHR. A narrative synthesis of extracted data was conducted. Identified markers of progression and outcomes were mapped on to an established framework of outcomes: the International Consortium of Health Outcome Measures for Dementia (ICHOM-D). This framework was developed by an international collaboration of experts (leading physicians and specialists in dementia, health measurement experts, patient groups) to create a "standard set" of outcomes and case mix variables to enable comparisons (e.g. health services, regions, countries). Domains included within ICHOM-D are clinical status, safety, sustainability, carer, symptoms, medication, quality of life, and functioning.

##### Findings

Interim results of this review identified 3167 potentially eligible papers. Screening resulted in 34 papers included within the analysis. Data extraction resulted in the identification of 153 potential prognostic markers or outcomes. Synthesis and mapping of these 153

markers and outcomes to the ICHOM-D domain framework indicated the majority of current dementia EHR focus is on 4 domains: symptoms (mostly comorbidities, 35.3%), sustainability (mostly healthcare utilisation in primary and secondary care, 21.6%), medication (e.g. acetylcholinesterase Inhibitors, psychotropic, drugs for associated comorbidities, 17.0%), safety (mostly drug safety and drug interactions, 15.0%). There was much less focus on quality of life (only quality of care assessments reported, 3.3%), functioning (e.g. indicators of advanced dementia, 3.3%), clinical status (mostly mortality, 3.3%) and carer (e.g. shared decision making, 1.3%).

##### Consequences

These results show that EHR capture important domains that may indicate prognosis and outcomes for those with dementia. However, our preliminary analysis indicates a lesser focus on certain important domains that would enable a complete consideration for dementia (e.g. quality of life, carer issues, clinical status, functional status). More work is now required to assess if these lesser reported domains can be captured within EHR as a first step to enable investigation of patient variation on the course of their dementia.

##### Funding Acknowledgement

This work is supported by a grant from the Dunhill Medical Trust (RPGF 1711/11) to Professor Kelvin Jordan. The views and opinions expressed within this abstract are those of the authors and not necessarily the views of the Dunhill Medical Trust.

## P1.43

### Sensitivity of the Total B12 Test Compared to Methylmalonic Acid - A Systematic Review

Presenter: Willemina Rietsema

Authors: Mark Worthington, Hajira Dambha-Miller

#### Institutions

University of Southampton

#### Abstract

##### Problem

The total vitamin B12 test (tB12) is the standard test to determine whether someone is vitamin B12 (B12) deficient. It is used for symptomatic patients, e.g. with anaemia or tiredness, and to rule out treatable causes of dementia and other neurological disease. Incidence of B12 deficiency is increasing with the popularity of vegan lifestyle and use of nitrous oxide as a recreational drug. Several studies indicate tB12 is a poor test for deficiency but a systematic review of its sensitivity and specificity has not been done before. We aim to assess the evidence for sensitivity, specificity, and diagnostic yield of tB12 for the diagnosis of B12 deficiency, compared to methylmalonic acid (MMA).

##### Approach

A systematic search of six online databases and two trial registries was conducted for the terms 'methylmalonic' and either 'B12' or 'holotranscobalamin'. Eligible publications were to provide data on sensitivity and specificity, or allow calculation of diagnostic 2x2 tables.

##### Findings

After title and abstract review, 1208 publications were deemed eligible, of 729 full text was available. These have been reviewed. Twenty-two studies met criteria. After quality assessment, 13 studies were deemed

to be of sufficient quality to allow data extraction and analysis. Even at cut-off levels for tB12 significantly higher than used in clinical practice (< 271 pg/mL), compared to MMA > 400 nmol/L, tB12 had a sensitivity of 8-48.6%, and specificity 83.1-98.4%. False negative results, i.e. potential missed diagnoses, occurred in 9.3-36.8% of five study populations of older people. The highest of these occurred in a study that included participants living in a nursing home.

### Consequences

The tB12 test has good specificity but low sensitivity even at cut-off levels higher than used in clinical practice. Many diagnoses of eminently treatable deficiency may be missed. This confirms Hooper et al's finding that many patients experience diagnostic delay of years, and occasionally decades (2014). Older people, because of their high prevalence of B12 deficiency and multiple co-morbidities obscuring the clinical picture, are particularly at risk of being missed. High levels of clinical suspicion, access to more sensitive tests, and a symptom score to rate the effect of trial of treatment are needed to improve diagnosis of B12 deficiency in General Practice.

## P1.44

### In older people, the association between diabetes medication group and hypoglycaemia, cardiovascular disease, and mortality: prospective primary care-based cohort study 2010-2016

Presenter: Katharine Wallis

Authors: Sue Wells, Katrina Poppe, Vanessa Selak, Ngaire Kerse.

### Institutions

the University of Auckland

### Abstract

#### Problem

There is uncertainty about the long-term benefits and risks of diabetes treatment in older people. We aimed to determine whether in older people there are differences in hypoglycaemia, cardiovascular disease (CVD) events or mortality according to diabetes medication regimen.

#### Approach

Prospective cohort study. People in the Auckland and Northland regions of New Zealand, aged 65 years or older dispensed insulin and/or oral diabetes medications in 2010 with a baseline HbA1c measurement. The cohort was stratified into four sub-cohorts by medication group: metformin only, metformin plus other oral hypoglycaemic agents, other oral hypoglycaemic agents only, and any insulin. Participants were followed to the end of 2016 using linked national hospitalisation and mortality data. ICD-10 coded outcomes were hypoglycaemia-associated hospitalisation, fatal and non-fatal CVD, and all-cause mortality. The time to first event was analysed with Cox models adjusted for age, sex, ethnicity, socioeconomic deprivation, baseline HbA1c, prior CVD and prior diabetes hospitalisation, and modified Charlson comorbidity index.

#### Findings

Of the 18,099 participants, at baseline 7669 (42%) were on metformin only, 4842 (27%) were on metformin and other oral agent/s, 1922 (11%) were on other oral agent/s only, and 3666 (20%) were on insulin. During follow-up, 16% experienced hypoglycaemia, 36% CVD and 31% died (of whom half died from CVD causes). The risk of hypoglycaemia was associated with a high baseline HbA1c 70+mmol/mol, increasing

age, Māori and Pacific ethnicity, increasing deprivation, prior CVD, comorbidity burden and all medication groups compared to metformin-only with insulin having an adjusted hazard ratio 11.9, 95% CI 10.3-13.8. The risk of the other outcomes was also associated with age, Māori ethnicity, deprivation, comorbidity burden, and all medication groups compared to metformin-only although the magnitude of the difference between insulin and other oral/s was much less. There was marked separation in the adjusted survival curves by medication group for hypoglycaemia but not for the other outcomes.

### Consequences

In older people, after adjusting for multiple risk factors, insulin and any other oral medications compared to metformin-only were associated with long-term increased risk of hypoglycaemia-associated hospitalisation with insulin being the strongest predictor. While associated with increased risk of fatal and non-fatal CVD and all-cause mortality, the impact of medication group compared to metformin-only was similar. These findings lead us to question the use of these second-line diabetes medicines in older people.

### Funding Acknowledgement

Graeme Mack Research Fund, Diabetes NZ Auckland Branch

## P1.45

### Dashboard for raising the quality of care in atrial fibrillation, pilot study in a primary care sentinel network

Presenter: Sabah Chaudry

Authors: Simon de Lusignan, Sabah Chaudry, Noshin Ishrat, Chris McGee, Harshana Liyanage

### Institutions

Department of Clinical and Experimental Medicine, University of Surrey, United Kingdom

### Abstract

#### Problem

Atrial fibrillation (AF) is a common cardiac arrhythmia which has globally increasing incidence. AF leads to strokes, transient ischemic attacks and peripheral embolisms. The correct management of AF can reduce the risk of thromboembolic complications. Studies have shown that the number of patients being treated for has increased. However, guidance in different localities is high variable particularly for the use of direct oral anticoagulants (DOACs).

#### Approach

We developed an online dashboard for reporting metrics related to managing AF patients in primary care. The data for the dashboard are obtained from the Royal College of General Practitioners (RCGP) Research and Surveillance database (RSC) in real time. The dashboard is accessible to all practices in the RCGP RSC primary care sentinel network and individual practices are able to view metrics related to their management of AF compared with other network practices. The dashboard displays four groups of information: (1) Incidence and prevalence of AF (2) Risk scores using CHADVASC and HASBLED scores (3) Prescribing of anticoagulants and (4) Suboptimal prescribing of anticoagulants. In addition to these metrics, the dashboard also provides additional indicators corresponding to potential earnings according to the Quality and Outcomes Framework (QOF) business rules. In parallel to building the dashboard we also conducted a

retrospective analysis of AF cases between 2007 and 2017. Findings We identified 415,517 patient with a diagnosis of AF between 2007 and 2017. We have observed an increase in AF and an increase in stroke risk by CHAD and by CHA<sub>2</sub>DS<sub>2</sub>-VASc Score over ten year period. We are currently conducting an evaluation study by involving various stakeholders in the general practice setting to provide feedback about the usability of the dashboard. Usability feedback is captured during a think-aloud session where the participants narrate their user experience while navigating the dashboard. The feedback allows us to build a cognitive model which highlights sections of the dashboard with usability issues. Consequences

If implemented in practice this dashboard could improve quality. Whilst nearly all the RCGP RSC practices are high achievers in QOF this dashboard has highlighted gaps in their management. In particular, cases could be identified outside those flagged by QOF, CHA<sub>2</sub>DS<sub>2</sub>-VASc Score often not coded, even when all the component data are recorded. Incident cases are most often started on DOAC, though there are gaps in monitoring and patients on inappropriate low doses.

### Funding Acknowledgement

Public Health England

Royal College of General Practitioners

## P1.46

### Can a co-produced, assertive care intervention reduce cardiovascular disease risk in people living with severe mental illness in the primary care setting? The Assertive Cardiac Care Trial

Presenter: Victoria Palmer

Abstract - see 1B.7c

## P1.47

### Community recruitment into very large-scale clinical trials through general practice in Australia.

Presenter: Mark Nelson

Authors: MR Nelson<sup>1,2</sup> JE Lockery<sup>2</sup> CM Reid<sup>2,3</sup> RL Woods<sup>2</sup> AM Tonkin<sup>2</sup> S Zoungas<sup>2</sup> JJ McNeil<sup>2</sup>

### Institutions

<sup>1</sup>Menzies Institute for Medical Research, University of Tasmania, Hobart TAS, Australia, <sup>2</sup>School of Public Health and Preventive Medicine, Monash University, Melbourne VIC, Australia, <sup>3</sup>School of Public Health, Curtin University, Perth WA, Australia.

### Abstract

#### Problem

Ask hospital and institutionally based researchers about conducting clinical research in general practice and they will tell you it is doomed to failure given the inability of general practitioners (GPs) to deliver the participants they desire. The problem lays not in primary care but the approach taken due to the lack of familiarity with the primary care sector.

#### Approach

Over the last 24 years we have developed research recruitment, retention and conduct methods that have allowed us to conduct the

largest clinical trials ever in the country (e.g. NEJM 2003;348(7):583-589; (2) NEJM 2018;379(16):1500-1508) in Australian general practice right across the continent. The strategy can be summarised as: (a) Having a research question relevant to GPs and their patients; (b) Giving appropriate status and some financial compensation to GPs and practices; (c) Having at least one experienced GP clinician as a principal investigator; (d) Minimising GP and practice workload by providing research staff in the practice for recruitment and data collection; (e) Limiting GP commitment to clinical decision making and; (f) Flexibility to accommodate the variety found in general practice.

### Findings

Using these methods we have conducted and completed trials, as well as continuing to conduct ongoing studies, with around 2500 GP co-investigators in each, approximately 10% of the entire Australian workforce. Studies as exemplars include ANBP2 (N = 6,083), ASPREE (N = 19,114 with 16,703 in Australia) and STAREE (N = 4,711 to 1-3-19 of planned 18,000).

### Consequences

Large-scale clinical outcome trials have been successfully conducted in Australian primary care for nearly a quarter of a century. Lessons can be learned, and ideas exchanged between the UK and Australia given the differing yet in some ways similar healthcare systems and populations they serve.

### Funding Acknowledgement

Merck Sharp and Dohme, National Institutes for Aging (US), National Cancer Institute (US), National Health and Medical Research Council of Australia, Monash University, National Heart Foundation of Australia.

## P1.48

### An RCT to determine if screening for paroxysmal atrial fibrillation reduces stroke and mortality: SAFER programme - Screening for Atrial Fibrillation with ECG to Reduce stroke

Presenter: Duncan Edwards

Authors: Jonathan Mant, Jenni Burt, Simon Griffin, Richard Hobbs, Richard McManus, Duncan Edwards, Gwilym Thomas, Kate Williams, Andrew Dymond, Mike Sweeting, Ed Wilson - on behalf of the SAFER investigators

### Institutions

University of Cambridge, University of Oxford, University of Leicester, University of East Anglia

### Abstract

**Problem** Atrial Fibrillation (AF) is a major risk factor for ischaemic stroke unless treated with an anticoagulant. Detecting AF can be difficult because it is often paroxysmal and asymptomatic. Many clinicians support AF screening. The UK National Screening Committee and the US Preventive Services Task Force have highlighted a lack of evidence that screening for AF is beneficial. The 8-year NIHR-funded SAFER Programme aims to determine if screening for AF in people aged ≥65 years does prevent stroke, does not cause significant harm, and is cost-effective.

#### Approach

Patients will attend their GP practice for instruction in the use of a handheld single-lead ECG device (Zenicor). They will continue screening at home over a 2-4 week period. The ECGs will be read by a validated



computer algorithm with diagnoses confirmed by a cardiologist. Treatment for AF will follow national guidelines.

1. Feasibility study (commenced February 2019) In 12 practices all allocated to screening to determine whether it is feasible to implement screening within primary care.

2. Internal pilot trial Cluster randomising practices (10 screening, 20 control) to inform refinement of the screening programme, determine the AF detection rate and inform the power calculation for the main trial.

3. Main trial Cluster randomising practices (100 screening, 200 control; 120,000 patients). Average 5-year follow-up of electronic medical records will determine if screening leads to fewer strokes, heart attacks and deaths, and whether it increases the risk of serious bleeding.

4. Qualitative Interviews and observations with patients and staff to clarify how to best carry out screening. Exploration of psychological harms of screening.

5. Health economics A within trial analysis and decision modelling analysis to determine whether screening is cost effective.

### Findings

Due to report in 2026, this is the world's largest AF screening trial to date.

### Consequences

If cost-effective, an AF screening programme with careful management of diagnosis and treatment may prevent over 10% of ischaemic strokes. The SAFER programme will inform the decision regarding possible implementation of a national AF screening programme.

### Funding Acknowledgement

This project is funded by the National Institute for Health Research (NIHR) Programme Grant for Applied Research (Grant Reference Number RP-PG-0217-20007). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

## P1.49

### YouTube advice about post-stroke recovery: is it evidence based?

*Presenter: Frances Mair*

*Authors: Katie Gallacher, Shi Wa Lau, Lewis Allan, Jen Alexander, Julie Duncan-Millar, Frances Mair*

### Institutions

University of Glasgow

### Abstract

#### Problem

People with stroke are increasingly relying on internet-based resources to manage their health. YouTube is the most commonly used video-sharing site on the Internet. Previous research has shown that YouTube videos relevant to other health conditions can contain misleading or anecdotal information that is not evidence-based or in line with best practice.

#### Approach

The aim is to analyse the content of YouTube videos that provide advice about promoting recovery after a stroke to stroke survivors in the community, to ascertain if the advice given is evidence-based or based

on best practice if evidence is not available. A search was conducted on YouTube <http://www.youtube.com> using the terms "stroke recovery advice". The location was set to "United Kingdom" and language to "English (UK)". Videos were sorted by relevance and the first 200 were title then full-video screened by two independent reviewers with a third party for arbitration of disagreements.

#### Inclusion criteria:

- 1) English language;
- 2) videos providing advice to stroke survivors about ways to promote stroke recovery in the community e.g. change in diet, medications, physiotherapy exercises, alternative therapies;
- 3) videos published in the last 10 years (due to the evolving nature of stroke guidelines). Duplicate videos were removed. Video content analysis will be conducted by two independent reviewers with a third party for arbitration of disagreements.

#### Analysis aims to ascertain:

- 1) Type of stroke recovery advice.
- 2) Sources of the videos: e.g. medical professionals, patients, charities, universities, hospitals.
- 3) Country of origin of the videos.
- 4) Whether the video content is evidence-based or based on best practice. To do this, video content will be compared to recent national guidelines. Where no evidence is available, relevant health professionals will be asked if the content is based on best practice.

### Findings

After title screening of the 200 videos, 27 were excluded due to: duplication (3); publication over 10 years ago (2); non-English language (13); or irrelevant topic (9) e.g. stroke recovery in dogs. Of the remaining 173 that were full-video screened, 103 were excluded due to: being aimed at non-stroke survivors (11); no advice on promoting stroke recovery in the community (90); or poor quality of video (2). This left 70 videos included for data extraction and analysis which is currently underway.

### Consequences

Potential limitations include: restriction of one search term when using YouTube; a lack of clarity about the YouTube search algorithm; no standardized method for appraising health information on the internet; difficulties in analysing video data in-depth; and the exclusion of non-English language videos. This study will provide useful information about stroke recovery information on YouTube, allowing health professionals to better advise stroke survivors on using YouTube as an information source.

### Funding Acknowledgement

The Stroke Association TSA LECT 2017/01

## P1.50

### Project Swallow: Living with Oesophageal Cancer

*Presenter: Henry Goodfellow*

*Authors: Professor Elizabeth Murray, Madeline Webb*

### Institutions

University College London

### Abstract

## Problem

Centralisation of oesophageal cancer care improves outcomes and reduces healthcare costs but it can also affect the patient experience and increase the administrative burden on healthcare staff. Under a centralised care pathway, patients lose the continuity of care as they are transferred between different hospital trusts, traveling further whilst unwell. The aim of our project is to create digital health interventions (DHI), delivered through a computer software, to be used by healthcare staff, and a mobile phone app for patients and their carers. The three objectives of the DHIs are to:

- Improve patient experience
  - Provide one source of reliable health and support information individualized to patients
  - Improve communication with their care team.
- Improve health service efficiency.
  - Reduce the administrative burden on HCPs
  - Improve auditing across sites for adherence to pathway and cancer wait times
  - Reduce DNA rates and A+E attendances
- Improve health outcome so
  - More patient centered care decisions (quality vs quantity)
  - Standardise care across hospital trusts.

## Approach

This project has emerged from observed challenges within the current NHS system, and is intended to have impact across the NHS in a relatively short time frame. It has strong patient and clinical input with a multi-disciplinary approach consisting of patients, Patient and Public Involvement (PPI), academic researchers, senior clinicians, chief medical officers, commercial company "Living with" who have expertise in smart condition management apps for the NHS and Macmillan cancer charity. There is patient involvement throughout the project to ensure that patients views are considered at each stage of design, implementation and evaluation. The project is divided into 4 main work packages.

- Summarising the evidence base with a literature review
- Determining using needs using qualitative methodology.
- Designing the Digital health interventions using the principles of agile participatory design.
- Refining the prototype with a small non clinical pilot. Findings

We are currently in the design phase having done a literature review on the needs of cancer patients and determined end user needs with interviews, focus groups and workshops. The results so far have highlighted the varied and complicated support needs of oesophageal cancer patients and the difficulties faced by their health care workers. The results of these findings are being used to inform on the design of the DHIs, to make sure the end user needs will be met. Consequences

Our vision for the future is that every patient with cancer will have personalized support throughout their cancer journey provided by a digital health intervention. Different healthcare professionals including GPs will be able to see an overview of the cancer care in order to provide further support to patients in the community.

## Funding Acknowledgement

Macmillan Cancer Charity

NIHR

## P1.51

### Lung cancer diagnostic and treatment pathways: A comparison between Culturally and Linguistically Diverse (CALD) and Anglo-Australian patients - Findings from the LEAD study

Presenter: Danielle Mazza

Authors: Jon D. Emery, Fiona M. Walter, Jane M. Young, David J. Barnes, Paul Mitchell, Bianca Brijnath, Andrew Martin, Ken O'Byrne, Peter Briggs, Xiaoping Lin

## Institutions

Monash University

## Abstract

### Problem

Lung cancer is the leading cause of cancer mortality worldwide. Immigrant patients are especially vulnerable with higher mortality rates than non-immigrant patients. The reasons for this are unclear as there are few studies comparing the lung cancer pathway from patients first noticing symptoms to their diagnosis and treatment in these two groups. We therefore aimed to compare the lung cancer diagnostic and treatment pathway between Culturally and Linguistically Diverse (CALD) and Anglo-Australian patients and to explore factors underlying any observed differences.

### Approach

Informed by the Aarhus Statement, the LEAD study used a mixed-method, observational cohort design. Anglo-Australian patients were those born in Australia and four other English-speaking countries (including Canada, New Zealand, the United Kingdom, and the United States). CALD patients were those born overseas and from the target CALD communities (i.e., Arabic, Chinese, Greek, Italian, and Vietnamese). This presentation will report findings from the quantitative arm of the LEAD study comprising a patient questionnaire and reviews of patients' hospital and general practice records. A total of 577 (407 Anglo-Australian and 170 CALD) patients were recruited from three cities in Australia (Melbourne, Sydney and Brisbane). Hospital records were reviewed for all recruited patients. The questionnaire was returned by 189 (135 Anglo-Australian and 54 CALD) patients and a record review was conducted by the General Practitioners (GPs) of 99 (76 Anglo-Australian and 23 CALD) recruited patients. Survival and Cox Regression analyses were conducted to examine differences in the time intervals along the lung cancer pathway.

### Findings

CALD patients reported a longer time from referral to diagnosis interval (Median = 30 days, 95% CI = 26 - 34 days) than Anglo-Australian patients (Median = 17 days, 95% CI = 14 - 20 days),  $p = .003$ , Exp (B) = 1.319. This difference persisted after the impact of relevant factors, such as patient age and stage of lung cancer was taken into consideration. A trend towards longer time intervals amongst CALD patients in five other intervals was observed, including from 1) symptom notification to GP presentation, 2) GP presentation to referral to specialists or hospitals, 3) referral to treatment, 4) symptom notification to treatment, and 5) symptom notification to diagnosis. However, the differences in these five intervals failed to reach significance.

### Consequences

LEAD is the first study to comprehensively document differences in time

intervals along the lung cancer pathways between CALD and Anglo-Australian patients. Such information is vital for multicultural countries to understand ethnic disparities in lung cancer in order to design interventions to reduce these disparities.

#### Funding Acknowledgement

The LEAD study is funded by Cancer Council Australia with the assistance of Cancer Australia.

## P1.52

### Post-mastectomy immediate breast reconstruction trends in Ireland between 2005 and 2014.

*Presenter: Robert Yunusov*

*Authors:*

#### Institutions

John Browne, Zubair Kabir, Anthony Fitzgerald

#### Abstract

##### Problem

Numerous published studies have proved the safety of undertaking breast reconstruction on the same day as mastectomy. This research proposed to examine various time trends of accessibility to undergo immediate breast reconstruction across Ireland compared to other countries.

##### Approach

National level datasets were retrieved from the Hospital In-Patient Enquiry database from 2005 to 2014. Estimated unadjusted and adjusted immediate reconstruction rates were explored in four defined Irish hospital regions considering patient age, year of breast surgery and the region where patients lived. Multivariable logistic regression analyses were used to assess the chances of undergoing tissue expander or flap reconstructions adjusted for year of surgery and the hospital region.

##### Findings

A total number of 8,849 women underwent breast surgery in Ireland throughout the study period. The overall immediate reconstruction rate was rising gradually from 10.6% in 2005 to 23.4% in 2014. Younger patients (< 40 years old – 40.9%; 40-49 years – 30.7%; 50-59 years – 22.5%) had a higher chance of undergoing immediate reconstruction than older patients (>60 years old – 9.9%) ( $p < 0.001$ ). Furthermore, both Dublin hospital regions (North East and Mid Leinster) have become major medical centres with the rates of undertaken mastectomies together with reconstruction of 28 and 37% in 2014, respectively, compared to the South (17%) and West (14%) regions ( $p < 0.001$ ). Additionally, tissue expander (27 – 49%) and myocutaneous flap (51 – 72%) reconstructive technique rates were prevailing over omental flap type (less 1%) during the whole study period ( $p < 0.001$ ).

##### Consequences

Despite the growing immediate reconstruction rates in Ireland, they still varied between the hospital regions. Joint work across hospitals is needed, to achieve equal access for all breast cancer patients, in the state, to mastectomies with immediate reconstruction.

## P1.53

### Risk of anxiety and depression in breast cancer survivors compared to women who never had cancer: a population-based cohort study in the United Kingdom

*Presenter: Rachael Williams*

*Authors: Helena Carreira, Garth Funston, Susannah Jane Stanway, Krishnan Bhaskaran*

#### Institutions

Clinical Practice Research Datalink, London School of Hygiene and Tropical Medicine, University of Cambridge, The Royal College of Physicians of London

#### Abstract

##### Problem

Breast cancer survivors are the largest group of cancer survivors in the United Kingdom (UK). Having had a breast cancer diagnosis may adversely affect the patient's mental health. We aimed to estimate the long-term risk of anxiety and depression in women with history of breast cancer compared to those who never had cancer.

##### Approach

We conducted a matched population-based cohort study, using data from the Clinical Practice Research Datalink GOLD primary care database. The exposed cohort included all adult women diagnosed with breast cancer between 1987 and 2018; the unexposed group included women with no cancer history, matched to exposed women in a 4:1 ratio on primary care practice and age. Cox regression models stratified on matched set were used to estimate hazard ratios of the association between breast cancer survivorship and anxiety and depression.

##### Findings

59,972 women (mean 62 years; standard deviation (SD) 14.0) had history of breast cancer. The median follow-up time was 3.0 years (SD 4.4), which amounted to 256,186 person-years under observation. The comparison group included 240,387 women followed up over 3.5 years (SD 4.5) (1,163,819 person-years). The incidence of anxiety in breast cancer survivors was 0.08 (95% confidence interval (95%) 0.07-0.08) per 1000 person-years, and the incidence of depression was 70 (95%CI 68-71) per 1000 person-years. The risks of both depression and anxiety were raised in breast cancer survivors compared with controls, and this appeared to be driven by the first 3 years following diagnosis.

##### Consequences

Breast cancer survivors in the UK had significantly higher risk anxiety and depression diagnosed in primary care for three years following diagnosis than women who never had cancer.

##### Funding Acknowledgement

UK Medical Research Council, Wellcome Trust and The Royal Society

## P1.54

### **SURvivors' Rehabilitation Evaluation after CANcer (SURECAN): using Acceptance & Commitment Therapy plus physical activity and work support (ACT+) for those who choose them, to help people living with and beyond cancer**

*Presenter: Stephanie Taylor*

**Abstract - see 1C.6a**

## P1.55

### **To what extent can Multidisciplinary Diagnostic Centres respond to the referral requirements of patients with non-specific but concerning symptoms?**

*Presenter: Veronique Poirier*

**Abstract - see 1C.6b**

## P1.56

### **Guideline discordant diagnostic care: when do primary care referrals not reflect guidelines for suspected cancer?**

*Presenter: Bianca Wiering*

*Authors: Georgios Lyratzopoulos, Willie Hamilton, John Campbell, Gary Abel*

#### **Institutions**

University of Exeter, University College London

#### **Abstract**

##### **Problem**

Survival of patients with cancer in the United Kingdom lags behind that of patients in many similar countries around the world. Earlier diagnosis of cancer is one way in which cancer survival rates may be improved. One key service focused on improving the timeliness of diagnosis is the fast-track referral system known as the two-week wait pathway. NICE guidelines advise general practitioners which patients warrant a fast-track (two-week wait) referral to hospital. However, guidelines are only effective to the degree that they are implemented. This study aims to investigate how often GPs follow the guidelines and whether certain types of patients are more or less likely to be referred.

##### **Approach**

The Clinical Practice Research Datalink (CPRD) linked to Hospital Episode Statistics (HES) data for the period from 2014 to 2016 will be used. Patients presenting with haematuria, PR bleeding, breast lump, post-menopausal bleeding, dysphagia or anaemia for the first time during 2014-2016 will be included. Logistic regression analyses will be used in order to investigate whether patient characteristics, and the nature of symptoms affect whether patients receive a referral. Data on patient characteristics such as age, gender, ethnicity, comorbidities and level of deprivation will be derived from the CPRD data.

##### **Findings**

The study is ongoing, but will have made enough progress in order to present our findings at the conference. We will provide insight into the number of patients with one or more of the above-mentioned symptoms who should have received a "two-week wait" referral for suspected cancer, but who were not referred. We will also present information regarding which patients are more or less likely to receive a referral based on the symptoms they present with, and on patient characteristics such as age, gender, ethnicity, comorbidities and level of deprivation.

##### **Consequences**

Our findings will help to identify patients who are more likely to experience delay. Appreciating which patient groups are at greater risk of non-referral against guideline recommendations can help target improvement efforts. For example, these findings may be used by schemes such as CRUK cancer facilitators and Macmillan GPs to directly influence practice or alternatively they could inform educational materials and novel interventions targeting early diagnosis.

##### **Funding Acknowledgement**

This study is funded by Cancer Research UK

## P1.57

### **Microcytosis as a risk marker for cancer in primary care: a cohort study using electronic patient records**

*Presenter: Rhian Hopkins*

*Authors: Elizabeth Shephard, Sarah Bailey, Willie Hamilton*

#### **Institutions**

University of Exeter

#### **Abstract**

##### **Problem**

Microcytosis has found to be a risk marker in five cancers. It is not known whether it is also present in other cancer sites. The aim of this study is to investigate the role of microcytosis as a risk marker for all cancers.

##### **Approach**

This cohort study uses electronic patient records from the Clinical Practice Research Datalink (CPRD) to study the one-year incidence of cancer in 108,919 patients aged 40 years and over between 2006-2008. Patients were grouped as either: having microcytosis (16,684), macrocytosis (4796); or a normal blood test result (87,439). For comparison, the records of 42,803 patients who did not have a blood test were also examined.

##### **Findings**

Preliminary results show that 577 (3.46%) patients with microcytosis were diagnosed with cancer within one year of their test result. For patients with a normal MCV the number was 1941 (2.22%) and 352 (0.82%) for untested patients. The cancers most significantly associated with microcytosis were: colorectal (21.66%), lung (11.79%), lymphoma (4.68%), kidney (3.81%) and stomach (2.60%). Planned sub-analyses will investigate the cancer risk by age-group and gender; the significance of accompanying symptoms will also be associated. Results so far show that the one year cancer incidence for males was 5.06% and females was 2.39%.

## Consequences

UK cancer survival lags behind many other European countries. Determining the role of microcytosis as a risk marker for all cancers would help guide clinical decision making, thereby helping to expedite cancer diagnosis.

### P1.58

## Which non-cancerous diseases are associated with thrombocytosis and do these associations change with gender, age, and platelet count, a secondary analysis study using English electronic medical records and cancer registry data.

*Presenter: Dr. Cansu Clarke*

*Authors: Dr. Sarah ER Bailey, Prof. Willie Hamilton.*

### Institutions

University of Exeter Medical School, Department of Academic Primary care

### Abstract

#### Problem

Thrombocytosis is an excess of platelets, which are acute-phase reactants, therefore, they increase in response to various stimuli, including systemic infections, inflammatory conditions, bleeding, and tumours. The recently discovery of the association between thrombocytosis and cancer detection is well known, yet 89% of patients with thrombocytosis don't have or develop cancer. In this study, our primary aims are 1) identify which clinical outcomes other than cancer are associated with thrombocytosis and how common these associations are, and 2) identify if these associations change by patient age, gender or platelet count. Understanding other conditions associated with thrombocytosis will help clinical practitioners to rule out cancer when an alternative explanation is present.

#### Approach

This study is a secondary analysis of a dataset of 40,000 patients aged 40 years and over with a platelet count of  $>400 \times 10^9/l$  in the Clinical Practice Research Datalink (CPRD) from 2000 - 2013. A literature search was carried out to identify candidate diagnoses that have been linked to a raised platelet count. The electronic medical records of included patients will be searched for any new record of these conditions in the year following the patients' first raised platelet counts, and the incidence of each of these conditions estimated. Analyses will be stratified by age group and sex. We will investigate whether the extent to which platelet count is elevated is associated with different diagnoses.

#### Findings

The literature search identified 14 candidate conditions. These disease have been allocated into first division and second division. At the time of abstract submission, we were generating code libraries for each disease. By July, we will have estimates of incidence for each condition in the cohort as a whole, and stratified by age and sex.

#### Consequences

Identifying commonly diagnosed conditions after a raised platelet count is of vital importance to enable primary care clinicians to carry out appropriate investigations and history taking in patients with unexpected thrombocytosis. The link between cancer diagnosis and

thrombocytosis is now well established in clinical practice; knowledge of other associated conditions will also be valuable in helping clinicians to rule out cancer when another recognised cause of a raised platelet count is present. It may be that age, gender and platelet count change the strength of association of the identified clinical diseases with thrombocytosis. Therefore clinicians can make a more confident diagnoses for a patient with thrombocytosis with a demographic that has been strongly associated with a disease.

### P1.59

## How often do people with epilepsy die due to alcohol-specific causes and are there missed opportunities for support?

*Presenter: Hayley Gorton*

*Authors: Roger Webb, Matthew Carr, Rosa Parisi, Marcos DelPozo-Banos, Kieran Moriarty, W.Owen Pickrell, Ann John, Darren Ashcroft*

### Institutions

The University of Manchester, Swansea University

### Abstract

#### Problem

The International League Against Epilepsy "Call for action" states the need for accurate estimation of cause-specific mortality in people with epilepsy. This includes the specific contribution of alcohol, which is currently poorly captured. We therefore aimed to estimate the risk of alcohol-specific death in people with epilepsy compared to those without, and to determine treatment and care in primary care related to alcoholism, and associated hospital admissions.

#### Approach

We delineated a cohort of people with incident epilepsy between 01/01/1990-31/03/2014, and aged 18 or over from the Clinical Practice Research Datalink linked to Hospital Episode Statistics. We matched each person in this cohort to up to twenty people without epilepsy on gender, year of birth ( $\pm 2$  years) and general practice. We applied the ONS definition of alcohol-specific death using ICD-10 codes to identify alcohol-specific death. We estimated the hazard ratio for alcohol-specific death using stratified-Cox proportional hazards models adjusted for area-level deprivation. We estimated the proportion previously treated for alcohol problems in primary care and those admitted to hospital for their alcohol problems.

#### Findings

There were 9,871 people in the incident epilepsy cohort and 185,800 people in the matched cohort. Twenty-nine people with epilepsy died due to alcohol-specific causes, compared to 106 in the matched cohort. This corresponds to a deprivation-adjusted hazard ratio of 5.43 (95%CI 3.80-7.75). Amongst those who died due to alcohol-specific causes, the following proportions were observed in the epilepsy and comparison cohorts respectively: treated for alcohol dependence (24.1% vs. 9.4%); received support in primary care (20.7% vs 11.3%) and hospitalised for alcohol-related illness (51.7% vs. 38.7%).

#### Consequences

People with epilepsy are five-times more likely to die due to alcohol-specific causes compared to those without the condition. Not all of these individuals had a record of care related to alcohol. This presents a missed opportunity in the care of people with epilepsy in primary care; particularly in primary care where the proportion of individuals cared for regarding alcoholism was low.

## P1.60

### Trends in asthma diagnosis in children in East London general practices

Presenter: Lois Holliday

Authors: Lois Holliday, Akshaykumar Patel, Chris Newby, Nadine Marlin, Gill Harper, Kambiz Boomla, Chris Griffiths

#### Institutions

Barts Institute of Population Health Sciences, Queen Mary University of London

#### Abstract

##### Problem

Asthma is a common chronic respiratory condition affecting 10% of the UK population. Association between exacerbation of asthma and exposure to traffic related pollution has been previously identified. We sought to determine the incidence of new childhood asthma diagnosis in East London over recent years and whether the implementation of the Low Emission Zone (LEZ), an initiative designed to reduce air pollution, had an effect on asthma diagnosis incidence.

##### Approach

Date of first coded asthma diagnosis in electronic health records was gathered from 14 GP practices across Tower Hamlets between 2002-2013. A total of 100,702 patients were included in primary analysis. We examined monthly asthma incidence rates, carrying out an exploratory interrupted time series analysis, comparing two times periods 2002-2007 and 2008-2012, before and after the date of first implementation of the LEZ. Air Quality data on five major air pollutants (NO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>) were collected and modelled according to postcodes of the included participants.

##### Findings

Results showed a trend towards a general reduction in new asthma diagnosis incidence over time from 10 per 1000 person years to 5 per 1000 person years. Age stratification analysis performed did not reveal this change in incidence as suggested by primary analysis. This trend does not seem to be affected by the implementation of the LEZ within London.

##### Consequences

Results show general trends of reduced rates of asthma diagnosis over time. These could be real or artifactual, for example, reflecting Read coding conventions changing over time, or changes in population demographics in East London. Results suggest potential relationship with PM<sub>10</sub> concentration but not statistically tested, with further work required.

##### Funding Acknowledgement

EXHALE study group

## P1.61

### An audit of the Concordance of the Peel Group Practise to British Thoracic Society / Scottish Intercollegiate Guidelines Network and The National Institute for Health and Care Excellence guidelines on the Investigation and diagnosis of Asthma in Chil

Presenter: Rory Tinker

Authors: Dr Helen Teare, Prakhar Srivastava

## Institutions

Peel Medical Centre Albany Road Peel Isle of Man IM5 1HU Manchester Medical school ,Oxford Rd, Manchester M13 9PL

#### Abstract

##### Problem

Introduction: Asthma is a major cause of morbidity and mortality in children and adults. It can be difficult to diagnose, the diagnostic investigations lack sensitivity or specificity. To aid in the diagnosis and management of asthma two conflicting guidelines have been produced from the British Thoracic Society (BTS) / Scottish Intercollegiate Guidelines Network (SIGN) and the National Institute for Health and Care Excellence.

##### Approach

Objective 1: To audit the Peel group practise on diagnosis of asthma in Children specifically if children are being referred for spirometry. This data was reviewed to assess concordance with the NICE and then subsequently the BTS/SIGN Guidelines. Objective 2: Review the literature with regards to the conflict between the two guidelines. Methods: Patients diagnosed with Asthma between the ages of 1-8 were identified on the practise database. These notes were then reviewed to assess concordance with both guidelines. A PubMed search to review the literature around the guidelines.

##### Findings

Results: The practice does not follow NICE guidelines but is partly concordant with SIGN/BTS guidelines. As per the guidelines the practise diagnoses on clinical features but does not arrange spirometry for medium and low risk patients.

##### Consequences

Recommendations: 1. High to intermediate risk patients should be coded with 'suspected asthma'. There should then be annual audits to look for patients with this code who had reached the age of five and then arrange to review them and refer for spirometry if clinically appropriate. 2. If the patients are classified as Low risk an alternative diagnosis should be investigated before referring for investigations like spirometry. Conclusion: The lack of concordance is likely due to the practise being unaware of the guidelines. It may also be due to the technical and practical limitations of spirometry in young children. This has resulted into evidence not being translated into clinical practise. Further clarity must be provided by the future combined BTS/SIGN NICE guidelines. But these guidelines must reflect the realities of day to day general practise in the UK.

## P1.62

### Giving Asthma Support to Patients (GASP) Program Evaluation

Presenter: Nicholas Zwar

Authors: Anthony Flynn, Andrew Bonney

#### Institutions

University of New South Wales, Asthma Australia, University of Wollongong

#### Abstract

##### Problem

Asthma prevalence in Australia is among the highest in the world,

affecting over 2 million people. Asthma control is often sub-optimal and it has been a challenge to provide well organised and ongoing asthma care. GASP is an educational program and computerised decision support developed in New Zealand by Comprehensive Care and modified for the Australian context by Asthma Australia. GASP aims to provide practice nurses with skills and knowledge to undertake a structured asthma assessment, provide asthma education and structured follow-up. The objectives of the evaluation are: to assess whether the use of GASP program improves asthma outcomes; and to assess the acceptability, feasibility and sustainability of the GASP program in Australian general practice.

### Approach

The program has been implemented in general practices in Western Sydney and the Illawarra and is being evaluated through a pre-post mixed methods design. Quantitative measures include: Pre/post period of treatment, rate of exacerbations, oral steroid use, health service use (unplanned hospital and emergency department attendances, GP visits for asthma). Qualitative evaluation involves semi-structured telephone interviews with a purposive sample of patients, practice nurses and GPs.

### Findings

The project is in progress with practices in Western Sydney and Illawarra participating. The poster will report on project progress to date including challenges in practice recruitment, GASP installation in practice computer systems and practice nurse education. The poster will present quantitative findings to date including characteristics and patients recruited and progress of the intervention. Early findings from patient and practice nurse interviews will also be presented.

### Consequences

GASP has been a challenging program for general practices to implement as it requires substantial practice nurse training and changes to the practice nurse role. GASP program success essentially depends on practices making fundamental changes to their model of care and providing the space and time for practice nurses to apply the skills and use the tools they have access to via GASP, which provides tailored, evidence-based treatment recommendations and education and self-management support material for their patients with asthma.

### Funding Acknowledgement

Asthma Australia

## P1.63

### Validating the accuracy of asthma outcomes in routine UK primary care data

Presenter: *Chris Newby*

Authors: <sup>1</sup>Chris Newby, <sup>2</sup>Neil Wright, <sup>1</sup>Thomas Hamborg, <sup>1</sup>Sandra Eldridge, <sup>3</sup>Susan Morrow, <sup>4</sup>Steven Julious, <sup>5</sup>Francis Appiagyei, <sup>5</sup>Derek Skinner, <sup>5,6</sup>Victoria Carter, <sup>5,6,7</sup>David Price, <sup>1</sup>Steph Taylor, <sup>3</sup>Hilary Pinnock, on behalf of the IMP2ART study group.

### Institutions

<sup>1</sup>Asthma UK Centre for Applied Research, Centre for Primary Care and Public Health, Queen Mary University of London; <sup>2</sup>Clinical Trial Service Unit & Epidemiological Studies Unit, Nuffield Department of Population Health, University of Oxford; <sup>3</sup>Asthma UK Centre for Applied Research, Usher Institute of Population Health Sciences and Informatics, University of Edinburgh; <sup>4</sup>Medical Statistics Group,

### Abstract

### Problem

Routine clinical data offers the opportunity to observe healthcare outcomes in populations but the measures used are rarely validated against the full medical record which includes free text and correspondence.

### Approach

We compared data on unscheduled asthma care and action plan provision over 12-months extracted manually by inspection of the electronic healthcare records (EHR) (the reference standard) with electronically-extracted coded data from the same 500 patients. Combinations of Read codes and prescribing data were tested to derive the most accurate algorithm compared to the reference standard.

### Findings

Ten practices each provided data on 50 people with asthma of whom 34% had an unscheduled asthma care event in the manually-extracted data. The best performing algorithm gave a sensitivity/specificity of 71% (95%CI 63% to 78%) and 82% (95%CI 77% to 86%) respectively. The intra-cluster correlation was 0.12 (95%CI 0.050 to 0.33). For action plan provision, the best performing algorithm only achieved a sensitivity of 34% (95%CI 18% to 54%).

### Consequences

Unscheduled care, but not provision of action plans, can be detected with acceptable accuracy in routine data, though the intra-cluster correlation was high. Validating coded data against a reference standard is an important step in designing, analysing and interpreting the findings of clinical initiatives, implementation and real-life studies.

### Funding Acknowledgement

NIHR Programme Grant IMP2ART

## P1.64

### Using sequential data assimilation to forecast influenza outbreaks from the Royal College of General Practitioners (RCGP), Research and Surveillance Centre (RSC) network data

Presenter: *Sean Cleator*

### Abstract - see 2C.4b

## P1.65

### Do practices exposed to virology sampling training and a dashboard achieve higher rates of flu vaccination?

Presenter: *Sean Cleator*

### Abstract - see 2C.4c

## P1.66

### Protocol for a pragmatic cluster randomised controlled trial assessing the clinical effectiveness and cost effectiveness of electronic risk-assessment tools for cancer for patients in general practice (ERICA)

Presenter: Raff Calitri

Authors: Dr Luke Mounce, Dr Gary Abel, Prof John Campbell, Prof Anne Spencer, Dr Antonieta Medina-Lara, Dr Martin Pitt, Dr Elizabeth Shephard, Dr Fiona Warren, Prof Sarah Dean, Prof Willie Hamilton

#### Institutions

University of Exeter

#### Abstract

##### Problem

Compared with other developed countries, the UK has poorer cancer outcomes. Early cancer diagnosis within general practice has the potential to facilitate improvements. Paper and mouse mat Risk Assessment Tools (RATs) for 18 cancers have been developed to support GPs in identifying cancer. The RATs give precise estimates of the risk of an underlying cancer based on a single symptom or combination of symptoms. RATs have increased cancer diagnostic activity. Some of the RATs have been converted into electronic versions (eRATs) and embedded into GPs' clinical systems, delivering an automated prompt to consider the possibility of cancer when a patient has at least a 2% risk of cancer. Early pilot work suggests that the eRATs are acceptable to GPs. There is no evidence to date of their clinical effectiveness or cost effectiveness.

##### Approach

A pragmatic cluster RCT with 710 practices across England and Wales randomised 1:1 to receive either the intervention (access to a suite of eRATs including: lung, oesophago-gastric, kidney, bladder, ovarian, colorectal) or usual practice. There will also be embedded process and health economics evaluations along with a parallel study modelling the impact of eRATs on NHS service delivery. Clinical outcomes will be observed in routinely collected data exported from English and Welsh cancer registries. The primary outcome will be the proportion of the combined six cancers diagnosed during a 2-year follow-up that were at Stage 1/2 (early - cure likely) versus Stage 3/4 (late - cure not likely) at the time of diagnosis. Secondary outcomes include 30-day and 1-year survival. Ethics approval and trial registration will be sought in the early spring 2019. Practice recruitment is planned to launch in spring/summer 2019 and close in winter 2019.

##### Findings

Results of the RCT will be available from winter 2023. Consequences

The results of the RCT will provide a definitive assessment of the clinical effectiveness and cost effectiveness of the six eRATs being studied, and report the acceptability of eRATs and their impact on care from the perspective of both GPs and patients.

##### Funding Acknowledgement

Funding and support from:

The Dennis and Mireille Gillings Foundation

University of Exeter

Cancer Research UK

Health Care Research Wales & NIHR Clinical Research Network

Macmillan Cancer Support

## P2.01

### Exploring Online Resources for Childhood Eczema: A Survey of Parents' Online Resource use and mixed methods analysis of Online Exchanges

Presenter: Bethan Treadgold

#### Abstract - see 7B.4b

## P2.02

### Can the preference for and uptake of long-acting reversible contraception in young Australian women be increased using an online "LARC first" educational video?

Presenter: Danielle Mazza

Authors: Danielle Mazza, Jo Enticott

#### Institutions

Monash University

#### Abstract

##### Problem

Unintended pregnancies have long been identified as a significant public health problem both in Australia and globally. Long-Acting Reversible Contraceptives (LARCs) have the potential to reduce rates of unintended pregnancy and abortion, particularly in young women, however the uptake of LARCs amongst Australian women is low. One of the barriers to LARC uptake is the lack of awareness of LARCs as a contraceptive option for young women. The internet and social media are increasingly being used by patients as a resource for health information, in particular, amongst young people. We aimed to determine if our online "LARC first" educational video can increase the preference for and uptake of LARCs amongst young women.

##### Approach

Australian women aged 16-25 years were recruited via a paid Facebook advertisement. The intervention involved viewing a "LARC first" patient education video developed as part of the National Health and Medical Research Council funded Australian Contraceptive Choice project (ACCORD). Participants completed online surveys before (Survey 1) and immediately after (Survey 2) watching the video, and six months later (Survey 3). The contraceptive preferences of participants was measured at each time point and their contraceptive use was measured in Surveys 1 and 3. Logistic regression with generalised estimating equations was used to examine the outcome of the intervention on preference and uptake of LARCs.

##### Findings

A total of 437 eligible women were recruited in December 2017. Of those, 322 completed Surveys 1 and 2, and 284 (88%) completed Survey 3 at six months follow-up. There was an increase in the preference for LARCs immediately after viewing the video (OR=1.73, 95% CI 1.44-2.09) and at six months follow-up (OR=1.35, 95% CI 1.11-1.64). Multivariate analysis showed that women aged 22-25 years preferred LARC more than women aged 16-21 years (OR=1.68, 95% CI 1.10-2.56). There was also an increase in LARC use at six months follow-up (OR=1.28, 95% CI 1.11-1.48). Multivariate analysis showed that women aged 22-25 years were more likely to use LARC compared with women aged 16-21 years (OR=1.25, 95% CI 1.11-1.48).



## Consequences

Our results demonstrate that an online "LARC first" patient education video can increase the preference for and use of LARCs in young women for up to six months after viewing. This was more pronounced in those women aged 22-25 years. General practitioners could consider integrating these educational videos in consultations for contraceptive counselling. Further research is required to understand why this intervention appeared to be less effective in teenagers and young adult women.

## Funding Acknowledgement

This study was funded by Bayer.

## P2.03

### GPCOS: exploring women's experience of the management of PCOS in general practice.

*Presenter: Carol Bryce*

*Authors: Professor Jeremy Dale, Dr Carol Bryce*

## Institutions

University of Warwick

## Abstract

### Problem

Polycystic Ovarian Syndrome (PCOS) affects up to 1 in 5 women, with the diagnosis and management mostly occurring in general practice. It can affect many parts of a woman's physical and mental health. Recent evidence shows that there is a high rate of under-diagnosis, with many women experiencing significant delays in diagnosis. The aim of the study was to research patients' perspectives as to how PCOS is managed in General Practice, whether it is being viewed as a "multi-system" condition rather than just one of fertility, and how the long-term effects of the syndrome are being addressed.

### Approach

We designed a questionnaire to investigate women's experience of how PCOS is being diagnosed, treated and managed in General Practice, including consideration of its longer-term potential consequences. Women were signposted to the online questionnaire through websites/social media of four charities/patient support networks and BBC Radio. The questionnaire comprised binary, multiple choice answers as well as open text boxes allowing for a mixed methods analysis. In addition women were asked to contact the researcher if interested in taking part in a more thorough semi-structured telephone interview. Open questions were analysed using framework analysis and themed accordingly.

### Findings

333 women completed the questionnaire. They were diverse in terms of age (range 19-56yrs, mean 35yrs) and ethnicity (white British 59%, Indian 25%; other ethnicities 16%). The recalled "lag time" between presenting to their GP with symptoms and being diagnosed varied from less than a week to over 10 years; 30% of women reported 1-6 months and 34% 6 month-3 years. Only 12% of women recalled having been told by a GP about the risk of developing diabetes and none recalled being told about endometrial hyperplasia. Although 74% felt PCOS had impacted on their mental health, only 39% had discussed this with their GP. In 115 (34%) cases, women did not recall their weight being discussed by their GP despite being overweight or obese. In addition, 11 women contacted the researcher and follow up

telephone interviews took place. In free text comments embedded in the questionnaires and semi-structured interviews a number of themes emerged in relation to how PCOS affected the mental health, quality of life, and the extent to which this was being recognised and addressed by their GP.

## Consequences

This study highlights the extent to which women have mixed experience of general practice care for PCOS, and for many women it was experienced as being inadequate. PCOS appears not to be viewed as a chronic metabolic condition, with women not able to recall being told of their higher risks for co-morbid conditions. Concurrent mental health problems are often not being addressed.

## Funding Acknowledgement

RCGP Scientific Foundation Board PAG

## P2.04

### Placebos in Primary Care? A Nominal Group Study Explicating GP and Patient Views

*Presenter: Mohana Ratnapalan*

## Abstract - see 7D.4c

## P2.05

### Nonverbal communication between registered nurses and patients in general practice during lifestyle risk reduction conversations

*Presenter: Sharon James*

## Abstract - see 7E.4c

## P2.06

### General practice nurse views of interactional strategies necessary for lifestyle risk communication

*Presenter: Sharon James*

*Authors: Prof. Elizabeth Halcomb<sup>1</sup> Dr Jane Desborough<sup>2</sup> Dr Sue McInnes<sup>1</sup>*

## Institutions

<sup>1</sup> University of Wollongong, <sup>2</sup> Australian National University

## Abstract

### Problem

Due to increases in chronic disease and the ageing population, presentations in general practice are more complex. General practice nurses (GPNs) provide an important role in chronic disease management (CDM), creating ideal opportunities for conversations about lifestyle risk. Patients perceive that GPNs can complete most activities required for CDM and their ongoing relationships with their patients support and enable lifestyle risk conversations. Addressing lifestyle risk is complex, involving environmental, social and personal mechanisms to support behaviour change. Practitioner-patient dynamics and environments are important to support patients' confidence for behaviour change. Patients with complex needs are particularly vulnerable, where engagement

is difficult due to poor clinician communication and time constraints, patient ill-health, poor health literacy or means to make healthy choices. Interactional factors support rapport and approachability but little is known about how interactions support lifestyle risk communication. In this context, this study aims to explore GPN views of interactional strategies needed for lifestyle risk communication.

### Approach

This research forms part of a larger mixed methods study seeking to understand how GPNs perceive and communicate lifestyle risk. Fifteen general practice nurses from 14 practices were recruited between August 2017 and March 2018 from South East New South Wales and Canberra regions, Australia. Participants were from a mix of urban and rural centres as well as corporate and small business practices. Semi-structured interviews were audio-recorded and transcribed verbatim. Interviews were uploaded to NVivo version 11 and analysis informed by Braun and Clark.

### Findings

Due to the volume of data, the first of four themes is reported here. 'Relational factors' described two subthemes (i) communication techniques and (ii) relational continuity necessary for lifestyle risk communication. These included patient-centred and authoritarian communication techniques, active listening, conversing in a realistic way, giving palatable amounts of information and understanding patient communication needs necessary for engagement. Relational continuity, required familiarity and rapport, approachability and specific methods such as "chipping" and "digging" away as needed for lifestyle risk communication. Being approachable and maintaining rapport with patients was seen as necessary for ongoing relationships and effective communication about lifestyle risk. In this environment, successes and failures in behaviour change could be openly discussed.

### Consequences

To assist in addressing increased patient need in chronic disease prevention and management, this research suggests ways for GPNs and practices to optimise GPNs' role in lifestyle risk reduction interventions. Lifestyle risk communication requires repeated interactions and environments where person-centred communication can occur. However, ongoing training and workplace support for nurse-patient interactions, including visibility of the nurses' role, would better support patient need in general practice.

### Funding Acknowledgement

This research has been conducted with the support of the Australian Government Research Training Program Scholarship.

## P2.07

### IMPLementing IMProved Asthma self-management as Routine Treatment: the IMP2ART programme

*Presenter: Steph JC Taylor*

**Abstract - see 4D.6a**

## P2.08

### Developing a patient-centred template for asthma reviews: an IMP2ART implementation strategy

*Presenter: Steph JC Taylor*

**Abstract - see 6E.4c**

## P2.09

### A patient-orientated hospital discharge summary to promote self-care in older patients: a mixed-method study to determine suitability and outcome measures

*Presenter: Alyson Huntley*

**Abstract - see 7C.4b**

## P2.10

### Do patients access electronic medical test results services in General Practice in England?

*Presenter: Ludivine Garside*

**Abstract - see 3C.4c**

## P2.11

### Patients' satisfaction with Primary Health Care Services in Saudi Arabia and its determinants

*Presenter: ALAA ALGHAMDI*

*Authors: Alaa Algamdi, Melvyn Jones, Sophie Park*

### Institutions

Imam Abdulrahman Bin Faisal University, University College London

### Abstract

#### Problem

Patient satisfaction is key in providing responsive appropriate health care and is associated with measures of improved health outcomes. Governments must be responsive to their populations and act as agents to deliver societal expectations of access to high quality health care. The Millennium Development Goals have been highly influential in shaping the Saudi Transformation project with significant impact / changes for primary care organization and delivery. Patients are recognized as a legitimate appraisers and shapers of improving health care planning and delivery. Patients' satisfaction, experience and perception of the medical services are crucial measures in evaluating today's modern healthcare system and can be used as an indicator of healthcare services efficacy and quality. Saudi Arabia has a rapidly developing universal health care system and is maturing from its very hospital focused origins, with estimates of up to 65% of the cases seen in secondary emergency hospitals classified as non-urgent that could appropriately be managed in primary health care (PHC). Saudi Arabia has a young population but also has high rates of NCDs such as Diabetes and obesity. Primary care development in Saudi has lagged behind secondary care but evidence suggests that Saudis citizen are currently ambivalent or dissatisfied with their (PHC) services.

#### Approach

We undertook a narrative literature review of evidence including grey literature and research relevant to Saudi Arabia primary healthcare delivery and patient experience. This included exploring patient satisfaction and perceptions of PHC services, over the period from 1990 until 2018, searching Medline, EMBASE, PubMed, and Ovid databases using search terms of public health, patient satisfaction, primary health care, medical services, family physician and Saudi Arabia

## Findings

We will report our review findings. Studies report that patients have a lack of trust in PHC services and perceive that the services offer poor quality. Factors that underlie this dissatisfaction include; shortage of medical staff, lack of dental services, and inappropriate infrastructure (premises, buildings, medical equipment/ facilities). Patient models of health care demonstrate expectations of very hospitalist/ specialist models of care with high reliance on investigations.

## Consequences

The findings of this review will inform an empirical study to further explore current patients' perceptions and satisfaction concerns with PHC in Saudi Arabia, dis-entangling healthcare wants and needs. This will support better understanding of the factors which lead to patient dissatisfaction and inform recommendations to support PHC development within this context.

## P2.12

### Does ability to access primary health care vary with personal and social characteristics?

*Presenter: Jeannie Haggerty*

*Authors: Jean Frederic Levesque, Grant Russell, IMPACT team*

#### Institutions

University of New South Wales, Monash University

#### Abstract

##### Problem

Interventions to enhance access tend to benefit persons who are better-off rather than the disadvantaged, possibly due to socially-related differences in access abilities. The Patient-Centred Accessibility Framework suggests that variations in access to primary healthcare can be due to differences in how healthcare services are organized OR in the variations in the abilities of people to access care (ability to perceive need, to seek appropriate options, to reach services, to pay and to engage in a clinical encounter). Our participatory action-research program co-designed, piloted and evaluated interventions to increase access to comprehensive primary health care for socially vulnerable populations in six jurisdictions: three in Canada and three in Australia. We also aimed to explore how access abilities correlate with indicators of poor access and how they vary with personal and social characteristics.

##### Approach

Although the vulnerable populations and interventions were different in each site, all interventions used a common evaluation method. Pre-and post-intervention surveys incorporated the same: indicators of poor access (reported difficulties accessing care, emergency room use); proxy measures of access abilities and personal and social characteristics (financial status; education; social support; language proficiency; immigrant/refugee status; chronic illness burden). This is a pooled analysis of the baseline data in the 284 participants across the six study regions. We explored correlations between access abilities and self-reported access problems; then access abilities with personal and social characteristics.

##### Findings

Referring to the last 6 months, 38% of persons reported having difficulties with getting needed healthcare or advice, which in 2/3 resulted in forgone care; 29% of the participants reported using the

emergency room, of which 42% attributed use to access difficulties. Lower scores for each of the access abilities are associated with statistically significant increase in the likelihood of reporting difficulties with access and use of the emergency room. There is no difference in access abilities by age, sex, chronic illness burden. Lower access abilities are associated (in decreasing order) with poor financial status, low social support, limited language proficiency, low education. When these social characteristics were summed into an index, higher social vulnerability correlates with lower ability to perceive ( $r=-0.25$ ), to seek ( $r=-0.23$ ), and to engage ( $r=-0.36$ ,  $r=-0.23$ ) and more experienced cost barriers ( $r=0.16$ ) but not with ease of travelling to regular clinic (reach).

## Consequences

Lower patient abilities to navigate successfully all the stages of the care-seeking trajectory is associated with difficulties with accessing care and potential overuse of emergency rooms. These limited access abilities are more evident in socially vulnerable populations – a clear example of healthcare inequity. Primary healthcare access can become more equitable and appropriate by organizing services to be more attentive to persons with poor access abilities, which is likely to benefit especially the socially vulnerable.

## Funding Acknowledgement

Canadian Institutes for Health Research

Australian Primary Health Care Research Institute

## P2.13

### Incorporating a very brief intervention for personalised cancer risk assessment to promote behaviour change in primary care: a pilot study

*Presenter: Katie Mills*

*Authors: Ben Paxton, Fiona M Walter, Simon J Griffin, Stephen Sutton, Robbie Duschinsky, Juliet Usher-Smith*

#### Institutions

University of Cambridge

#### Abstract

##### Problem

Literature reviews and qualitative exploration with healthcare professionals (HCPs) highlight the potential for delivery of personalised cancer risk information in primary care consultations. We developed a very brief intervention and demonstrated acceptability and potential feasibility on usability testing with HCPs. We report the pilot study of the intervention in primary care consultations.

##### Approach

Patients due an NHS Health Check or chronic disease review are recruited from GP practices in the East of England and complete an online risk assessment questionnaire. Patients are then shown their estimated 10-year risk of developing one of the most common cancers on a website, followed by a discussion with a healthcare professional about behaviour changes to reduce risk. This includes provision of a visual estimate comparing their current risk to their risk if they followed all recommended lifestyle guidance. With consent, consultations are video/audio recorded. Immediately afterwards, and after 3-months, patients complete questionnaires concerning lifestyle, perceived risk, and intention to change behaviour. Fidelity of the intervention delivery is also assessed. Two researchers independently review the recordings

and assess fidelity based on a checklist identifying the intervention's key elements. Patients and HCPs are also asked about the acceptability of the intervention and invited to take part in face-to-face interviews. Interviews are analysed using a thematic approach.

### Findings

We will complete recruitment at the end of April 2019. To date 43 individuals (54% female, mean age 54.5 years +/- 11.1) from 5 GP practices (33 NHS Health Checks, 10 annual chronic disease reviews) have participated. The majority of participants (85%) were White British, 97.5% had secondary education or above. Fidelity assessment of consultations showed that the majority of the key components of the intervention were delivered: 92.3% risk factor information review, 76.9% risk communication, 51.8% personalised lifestyle advice, 61.4% goals for behaviour change to promote risk reduction, 63.5% follow-up. However, there was variability in the length of time taken to deliver the intervention (mean length 9 min. 26 sec. +/- 3 mins. 7 secs). Preliminary analysis of 13 face-to-face interviews (n=9 patients, n=4 HCPs) indicates that patients and HCPs hold positive views on the risk presentation format and risk information delivery. For many patients it acted as a motivator to change behaviour and prompted discussion with significant others. All HCPs believed its potential for inclusion into NHS Health Checks and diabetes annual reviews. A few made recommendations for its integration into risk conversations about cardiovascular disease. Follow-up data collection is ongoing and will be presented at the conference.

### Consequences

Preliminary data from this pilot study suggest that the intervention is feasible and acceptable in primary care consultations. Follow-up questionnaire data will indicate whether the intervention has potential to promote behaviour change to prevent cancer.

### Funding Acknowledgement

This study was funded by a Cancer Research UK Prevention Fellowship (C55650/A21464). All researchers were independent of the funding body and the funder had no role in data collection, analysis and interpretation of data; in the writing of the report; or decision to submit the article for publication.

## P2.15

### A qualitative focus group study to refine a new intervention 'VOLITION': To facilitate the involvement of older patients with multimorbidity in decision-making about their healthcare during GP consultations.

*Presenter: Jo Butterworth*

**Abstract - see 5E.4b**

## P2.16

### Development and validation of the Cambridge Multimorbidity Score

*Presenter: Rupert Payne*

**Abstract - see 5E.4c**

## P2.17

### Comparing the performance of different measures of multimorbidity in predicting all-cause mortality and hospitalization: A large general population cohort study

*Presenter: Bhautesh Jani*

*Authors: Peter Hanlon, Ross McQueenie, Barbara Nicholl, Katie Gallacher, Duncan Lee, Frances Mair*

### Institutions

University of Glasgow

### Abstract

#### Problem

Multimorbidity (MM), the presence of  $\geq 2$  long-term health conditions (LTCs), is associated with higher risk of all-cause mortality but there is no consensus regarding how best to measure MM.

#### Approach

The objective was to compare the performance of three different MM measures in predicting all-cause mortality and hospitalization. We used a general population prospective cohort, UK Biobank, N=502,616 participants aged 37-73 years. MM at baseline was classified using three different measures, using self-report and hospital episode statistics (HES): a.) number of LTCs (n=43) b.) Charlson index (CI) c.) Elixhauser unweighted index. All three measures were categorized based on scores: 0, 1, 2, 3,  $\geq 4$ . Two clinical outcomes were ascertained using electronic data linkage: all-cause mortality, all-cause hospitalization (yes/no and number of hospitalization events). Cox proportional hazards and zero inflated poisson models were used respectively to compare the association of the three MM measures with all-cause mortality and number of hospitalization events. Area Under Curve (AUC) were used to compare performance of the three MM measures in predicting all-cause mortality and first hospitalization over follow-up. All models were adjusted for sex, socio-economic status, smoking, alcohol consumption, physical activity and BMI.

#### Findings

N=490,179 participants were included for the analysis, after excluding participants with missing values and those lost to follow-up. At the end of follow-up (median=7 years), n=13,623 (2.7%) participants had died; n=271,259 (55.3%) participants had experienced at least one hospitalization and the total number of hospitalization events were N= 12,00,747. The simple MM count classified highest number of participants as "multimorbid" (38.7%), closely followed by Elixhauser index (33.1%), while CI classified least as multimorbid (10.4%). There was a consistent dose-response relationship between increasing levels of multimorbidity, for all 3 MM measures, and risk of all-cause mortality. The largest effect sizes were observed with CI (Hazard Ratio-HR 7.91 for a score of  $\geq 4$ ), followed by Elixhauser index (HR 5.37 for a score of  $\geq 4$ ), while modest but significant effect sizes were observed with the simple MM count (HR 3.06 for a score of  $\geq 4$ ). The observed AUC for predicting all-cause mortality were similar for the 3 MM measures (CI 65.8%, Elixhauser index 66.2%, simple MM count 66%). A consistent dose-response relationship was also observed between the number of hospitalization events and increasing scores for the 3 MM measures, with largest effect sizes observed for CI and the smallest for simple MM count. However, simple MM count had the best AUC for predicting the first hospitalization event (64.6%), while CI had the lowest AUC (57.2%).

## Consequences

Prevalence of MM and ability to discriminate mortality and hospitalization risk varied across the three MM measures; choice of measure may depend on the purpose of use e.g. for health service planning or for targeting interventions.

## Funding Acknowledgement

This work has been funded by the Chief Scientist Office, Scotland.

BDJ has been funded by the NRS Academic Fellowship

## P2.18

### Measuring modifiable functional decline and frailty in Primary Care: Is the eFI a suitable tool?

*Presenter: Jessica Bollen*

**Abstract - see 7C.4a**

## P2.19

### Prescribing patterns in the very old: findings from the Newcastle 85+ Study

*Presenter: Laurie Davies*

*Authors: Andrew Kingston, Adam Todd, Rachel Duncan, Barbara Hanratty*

## Institutions

Newcastle University, Institute of Health and Society

## Abstract

### Problem

The very old (85+ years) are the fastest growing section of society, in whom multimorbidity and polypharmacy are the norm. Previous research has informed our understanding of medication use in later life, however little is known about prescribing trends in the very old. The aim of this study is to characterise the longitudinal changes in medication use amongst the very old.

### Approach

Longitudinal analyses of medication data amongst survivors will be analysed from waves 1-4 of the Newcastle 85+ Study. The Newcastle 85+ Study is a prospective cohort study of people living in North-East England, who were born in 1921.

### Findings

Early findings will be presented through graphical representation.

### Consequences

This work will provide a greater understanding of medication use in octogenarians as they become nonagenarians, and may help to highlight inappropriate prescribing patterns that could focus the deprescribing agenda.

### Funding Acknowledgement

This work presents independent research funded by the National Institute for Health Research School for Primary Care Research (NIHR SPCR). The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.

The Newcastle 85+ Study has been funded by the Medical Research Council, Biotechnology and Biological Sciences Research Council, the Dunhill Medical Trust and the National Institute for Health Research School for Primary Care Research. Parts of the work have also been funded by the British Heart Foundation, Unilever Corporate Research, Newcastle University, NHS North of Tyne (Newcastle Primary Care Trust). Mortality data were obtained from NHS Digital. We acknowledge the operational support of the North of England Commissioning Support Unit, the National Institute of Health Research Clinical Research Network North East and North Cumbria, local general practitioners and their staff. We thank the research nurses, laboratory technicians, data management and clerical team for their work throughout, as well as many colleagues for their expert advice. Thanks are due especially to the study participants and, where appropriate, their families and carers.

## P2.20

### How has polypharmacy changed in general practice since 2003? - a repeated cross-sectional study of a nationally representative sentinel network.

*Presenter: William Hinton*

*Authors: Chris McGee, Jeremy van Vymen, Piers Gatenby, Mark Joy, Simon de Lusignan*

## Institutions

Department of Clinical and Experimental Medicine, University of Surrey, The Leggett building, Daphne Jackson Road, Guildford, GU27XP, UK

## Abstract

### Problem

Polypharmacy is defined as the prescription of multiple concurrent medications, typically >5 drugs although there is no standardised definition. The ageing population places an increasing load on health services, especially general practice. Prescribing evidence-based therapies individually for multiple co-morbid conditions quickly results in polypharmacy. This increases the complexity in GP consultations, healthcare costs and also contributes to heavy pill burden on the individual patient level. In this study, we aimed to describe the trends in polypharmacy from 2003 to 2017, additionally looking at trends by age and gender.

### Approach

This repeated cross-sectional study used the Royal College of General Practitioners (RCGP) Research and Surveillance Centre (RSC) sentinel network. The mean prescription and drug counts for patients who consulted with their GP at least once at any point in the year was extracted for the period 2003 to 2017. The overall mean prescription and drug count was calculated and results were standardised to the Office of National Statistics (ONS) 2011 standard population. The mean drug and prescription counts were also stratified by Age and Gender. The proportion of individuals on 0-5, 6-9, 10-14 and 15+ drugs was also calculated for every year in the study period.

### Findings

The overall mean prescription count showed a sharp increase from 2003 to 2004 (8.1 to 11.7). The same was observed for the overall mean number of different medications (2.5 to 3.1). Both counts continued to increase steadily until 2014, subsequent to which the mean prescription count plateaued and the mean drug count steadily decreased. Subsequent to 2013, the number of individuals on >5

drugs also declined steadily for all age-bands. Females had higher mean drug counts compared to males and individuals in the oldest age-band (75+) had the highest mean drug counts throughout the study period.

### Consequences

The increases in overall mean prescription and drug count from 2003 to 2004 was associated with the introduction of the Quality Outcomes Framework (QOF). The plateauing and decline in polypharmacy are associated with measures such as Medicines Optimisation, Public Health England's Antimicrobial Resistance Strategy. We are conducting on-going analysis to look at how prescribing varies according to socio-economic status, as measured by the Index of Multiple Deprivation (IMD), as well as ethnicity. We are also analysing how prescribing varies according to drug class (as stratified by British National Formulary (BNF) chapters). Ultimately, further research will need to be completed to identify potential explanatory factors explaining trends seen.

### Funding Acknowledgement

Surrey Heartlands Health and Care Partnership (as opposed to Public Health England)

## P2.21

### Can markers of dementia progression be derived from primary care electronic health records?

*Presenter: Professor Carolyn Chew-Graham*

*Authors: Paul Campbell, Trishna Rathod-Mistry, Michelle Marshall, James Bailey, Carolyn A. Chew-Graham, Peter Croft, Martin Frisher, Richard Hayward, Rashi Negi, Swaran Singh, Athula Sumathipala, Nwe Thein, Kate Walters, Scott Weich, Kelvin Jordan*

### Institutions

Keele University, Midlands Partnership NHS Foundation Trust, University College London, University of Warwick, University of Sheffield

### Abstract

#### Problem

Understanding the progression of dementia is central to its management. Electronic health records (EHR) from primary care provide a potentially rich resource to measure progression and to identify markers of that progression. Dementia research using EHR has already produced information on factors that can identify those at risk of dementia onset, but no study has yet examined the feasibility of determining the progression of dementia post-diagnosis. The aim of this study was to investigate whether a set of credible markers of dementia progression can be identified from routine EHR primary care data and grouped into larger domains relevant to dementia.

#### Approach

Findings from a systematic review and an initial expert consensus group led to the identification of a set of possible markers of progression potentially identifiable within EHR. These markers related to areas such as cognition, neuropsychiatric symptoms, daily functioning, frailty, and care provision. An EHR database (CiPCA) of consultation records from 9 general practices in North Staffordshire in the UK (annual population ~90,000) was used to test the frequency of recording of these markers. Patients with a recorded diagnosis of dementia were compared to age, gender and practice matched (1:1) controls on presence of Read codes related to these markers. We also

performed a hypothesis free analysis to determine other codes that were associated with dementia but not identified from the review or initial consensus group. A final consensus group exercise then confirmed markers and their aggregation into high-level domains based on the findings.

### Findings

There were 2714 individuals identified with dementia. Interim analysis yielded 57 individual markers housed within 15 domains, with 78% of these markers recorded more frequently within the dementia group. The developed domains (e.g. cognitive function, neuropsychiatric, daily functioning, frailty, care provision) were recorded with sufficient frequency to suggest their potential as EHR indicators of progression. Comparing the dementia cohort to the matched cohort for frequency of recorded domains (per 100 person years) revealed differences, for example: cognitive function (15.4 vs 3.8), neuropsychiatric symptoms (12.3 vs 6.2), frailty (8.8 vs 2.8), care provision (28.3 vs 18.2).

### Consequences

This study suggests that EHR are able to capture some of the domains and specific markers which have been identified elsewhere as potentially important as markers of progression and outcomes for persons with dementia. The next stage of this research will carry out analysis within a larger UK national primary care EHR dataset to establish longitudinal patterns of progression following a dementia diagnosis. This research has the potential to provide clinically useful information to identify individuals with dementia at risk of more rapid progression, and can provide a readily available method that may be useful as an outcome measure in future research (e.g. trials).

### Funding Acknowledgement

This work is supported by a grant from the Dunhill Medical Trust (RPGF 1711/11) to Professor Kelvin Jordan. The views and opinions expressed within this abstract are those of the authors and not necessarily the views of the Dunhill Medical Trust.

## P2.22

### What is the role of primary care in reducing the decline in physical function and physical activity in people with long-term conditions? Findings from realist theory-building workshops using LEGO® SERIOUS PLAY®.

*Presenter: Rebecca-Jane Law*

### Abstract - see 7A.4b

## P2.23

### The change in coping strategies among Japanese family carers for people with dementia –A qualitative study–

*Presenter: Yudai Tamada*

*Authors: Mina Suematsu<sup>1</sup> Noriyuki Takahashi<sup>1</sup> Kentaro Okazaki<sup>1</sup> Etsuko Fuchita<sup>2</sup> Manako Hanya<sup>3</sup> Keiko Abe<sup>4</sup> Masafumi Kuzuya<sup>1</sup> Morag McFadyen<sup>5</sup> Sundari Joseph<sup>6</sup> Lesley Diack<sup>5</sup>*

### Institutions

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Meijo University, Japan, <sup>4</sup>Critical Care Nursing, Aichi Medical University, Japan, <sup>5</sup>School of Pharmacy and Life Sciences, Robert Gordon University, Aberdeen, UK, <sup>6</sup>Learning and Development Lead at Together in Dementia Everyday and Life Story Network, UK

## Abstract

### Problem

In Japan, the number of people living with dementia is increasing. The Japanese government is promoting home care and therefore the number of family carers will expand. Most family carers have neither the experience nor appropriate knowledge for dementia care. Dementia care is more stressful for family carers compared with providing care for people who have a physical impairment (Schulz R et al. 2004). Thus, it is essential for carers to be aware how to cope with their stress. Five coping strategies have been identified for carers: Positive Acceptance of Caregiving Role; Formal Support Seeking; Informal Support Seeking; Diversion; Keeping Their Own Pace (Okabayashi et al. 1999). However, there have been few articles reporting any change in coping strategies. The aim of this study is to identify the change in coping strategies among Japanese family carers for people living with dementia.

### Approach

This was a qualitative study with two focus groups. Participants were recruited through convenience sampling. Interviews included the following questions, "Can you tell me how you found out or who told you how to care the person living with dementia?" "Can you tell me with whom you consulted when you have problems about caring?" The transcriptions were analysed using the "Steps for Coding And Theorization" (SCAT) method. The five coping strategies of carers were used as a framework for analysis. This study was approved by the Ethics Committee of Nagoya University School of Medicine.

### Findings

Our results showed gradual change within the coping strategies of the individuals. Two factors (internet and social network, connection with community) promoted the change from acceptance to seeking support for the carer role. Informal Support Seeking was classified into three types of advisers as family, neighbourhood and other carers. Nowadays, Japan has many carer support organisations such as Alzheimer's Association Japan, which actively support the change from formal to informal support seeking, because carers perceived that stress was relieved by talking with other carers. However, if each family member had a different awareness of care, the change was not so apparent.

### Consequences

To prevent carers' burnout, carers must be supported to develop coping strategies. As carers engaged in their care role for longer, their role in caring became more stressful. From the interviews, Informal Support Seeking was the key coping strategies to promote most development because the strategy relieves stress. Furthermore, if family members had a same direction of awareness of care, the change in coping strategies would be promoted. In fact, most carers are over 60s, with few in their 20s or 30s involved in dementia care. This may make the different awareness of care among family carers. In conclusion, we identified the change in coping strategies among Japanese family carers for that people with dementia.

### Funding Acknowledgement

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## P2.25

### Effects of mobile app interventions on sedentary time, physical activity and fitness in community-dwelling older adults: a systematic review and meta-analysis

*Presenter: Dharani Yerrakalva*

*Authors: Dhruvadh Yerrakalva, Samantha Hajna, Simon Griffin*

### Institutions

University of Cambridge

### Abstract

#### Problem

High sedentary time, low physical activity (PA), and low physical fitness place older adults at increased risk of adverse health outcomes. Mobile-apps, applications that run on mobile platforms, may help promote active living. We aimed to quantify the effect of mobile-app interventions on sedentary time, PA and fitness in older adults. (Prospero protocol CRD42018106195).

#### Approach

We systematically searched five electronic databases for trials investigating effects of mobile-app interventions on sedentary time, PA and fitness among older adults aged  $\geq 55$  years in September 2018. We calculated pooled standardised mean differences (SMD) in these outcomes between intervention and control groups after the intervention period. We performed risk of bias and certainty assessments. Six trials (486 participants, 67% women;  $68 \pm 6$  years) were included (five trials in meta-analysis).

#### Findings

Mobile-app interventions may be associated with decreases in sedentary time (SMD = -0.49, 95% confidence interval [CI] -1.02, 0.03), increases in PA (505 steps/day (95% CI -80.5, 1092) and increases in fitness (SMD = 0.31, 95% CI -0.09, 0.70) in trials  $\leq 3$  months and with increases in PA (752 steps/day, 95% CI -146, 1652) in trials  $\geq 6$  months. Risk of bias was low for all but one study. The quality of evidence was moderate for PA and sedentary time, and low for fitness.

#### Consequences

Mobile-app interventions have potential to promote changes in sedentary time and PA over short-term but results did not achieve statistical significance, possibly because studies were underpowered by small participant numbers. We highlight a need for larger trials with longer follow-up to clarify if apps deliver sustained clinically important effects.

#### Funding Acknowledgement

I am an NIHR doctoral research fellow, and therefore would like to acknowledge NIHR.

## P2.27

### Gaining insights from mixed methods data integration. Use of a triangulation protocol in the iPOPP pilot trial.

*Presenter: Daniel Herron*

**Abstract - see 7A.4c**

## P2.28

### Multimorbidity in Arthritis and persistent musculoskeletal Pain (MAP) Study: protocol for a mixed methods study

*Presenter: Ross McQueenie*

*Authors: Sara Macdonald<sup>1</sup> Ross McQueenie<sup>1</sup> Joanne Neary<sup>1</sup> Bhautesh Jani<sup>1</sup> Stefan Siebert<sup>2</sup> Colin McCowan<sup>3</sup> Frances Mair<sup>1</sup> Barbara Nicholl<sup>1</sup>*

#### Institutions

<sup>1</sup>General Practice and Primary Care, University of Glasgow, <sup>2</sup>Institute of Infection, Immunity & Inflammation, University of Glasgow, <sup>3</sup>School of Medicine, University of St Andrews

#### Abstract

##### Problem

Multimorbidity, the presence of  $\geq 2$  long term conditions (LTCs), is an urgent healthcare challenge. Painful arthritis-related conditions are long-term in nature and often experienced alongside other LTCs. We know people with multimorbidity experience increased levels of "work" or treatment burden when managing their LTCs. However, we know relatively little about the impact of multimorbidity on people living with persistent musculoskeletal (MSK) pain and arthritis in terms of effects on: healthcare experiences; health related quality of life; general wellbeing; and health-related outcomes. It is unclear how the presence of multimorbidity in those with persistent MSK pain and arthritis influences healthcare professional (HCP) management approaches.

##### Approach

Aim: To explore the issue of persistent MSK pain and rheumatoid arthritis (RA) together with multimorbidity. Our work addresses nine research questions using three connected work packages (WPs). WP1

1. What pattern of multimorbidity (number and type of LTCs) do people with persistent MSK pain report?
2. How does multimorbidity affect the overall health of people with persistent MSK pain?
3. Do the pattern of multimorbidity and its effects differ between those with persistent MSK pain and non-musculoskeletal pain? We will use UK Biobank (cohort > 500,000) to answer these questions. WP2
4. What pattern of multimorbidity (number and type of LTCs) do people with RA have?
5. How does multimorbidity affect the overall health of people with RA?
6. Do the patterns of multimorbidity (number and type of LTCs) differ in people with persistent musculoskeletal pain compared to those with RA?
7. Is there a difference in the effect of multimorbidity on the overall health of people with persistent musculoskeletal pain compared to those with RA? We will use both UK Biobank and The Scottish Early Rheumatoid Arthritis (SERA) cohort (a group of approximately 1000 patients with newly diagnosed RA recruited from rheumatology clinics across Scotland) to answer these questions. WP3
8. What are HCPs experiences of treating and managing patients with persistent musculoskeletal pain or RA and multimorbidity?
9. How does multimorbidity affect self-management and the capacity to cope in those living with persistent MSK pain or RA? We will use qualitative methods to answer these questions: interviews with 40

HCPs and interviews with 80 people living with persistent MSK pain or RA with and without multimorbidity.

##### Findings

This 30 month study started in November 2018. First findings from WP1 and WP2 will be available from March 2019 and from WP3 in September 2019.

##### Consequences

In the final phase of work we will run workshops with HCPs, patients, and policy-makers to decide how to use our findings to design interventions to increase capacity to manage persistent MSK pain or RA in the context of multimorbidity.

##### Funding Acknowledgement

FUNDING: VERSUS ARTHRITIS Grant Referent: 21970

## P2.29

### A mixed methods study to evaluate the effectiveness of nurse training to deliver an integrated care review for patients with inflammatory rheumatic conditions

*Presenter: Daniel Herron*

**Abstract - see 5D.4a**

## P2.30

### The challenge of diagnosis and the management of fibromyalgia in Primary care

*Presenter: Heather Brant*

**Abstract - see 7A.4a**

## P2.31

### What are the opioid prescribing attitudes and practices of Australian GPs?

*Presenter: Danielle Mazza*

*Authors: Pallavi Prathivadi, Christopher Barton, Danielle Mazza*

#### Institutions

Department of General Practice, Monash University

#### Abstract

##### Problem

Opioids are commonly prescribed in general practice (GP) to manage chronic non-cancer pain (CNCP). Increased opioid prescribing rates in primary care have been well reported in the USA and UK, although the level of harms associated with pharmaceutical opioids appear to be highest in North America. As opioid prescribing rates are increasing in Australia, so too is our opioid-related morbidity and mortality. Unfortunately, little is known about the factors influencing the opioid prescribing decisions of Australian GPs. Without first exploring the self-reported opioid prescribing practices in primary care, it is not possible to develop a feasible, practicable and successful intervention to improve safe opioid prescribing. Hence in this study, we aimed to explore the opioid prescribing knowledge, attitudes and practices of Victorian GPs.



## Approach

This qualitative interview study explored the opioid prescribing practices of GPs in the Australian state of Victoria. 20 GPs were recruited from the Monash (University) practice-based research network (MonREN). Exclusion criteria were lack of Fellowship of the Australian College of Rural and Remote Medicine or the Royal Australian College of General Practitioners, or any current or previous restrictions in opioid prescribing. In-depth, semi-structured interviews were conducted of up to 60 minutes by telephone or face-to-face. Interviews were audio recorded and transcribed verbatim. Thematic analysis was used to identify emergent themes using the Braun and Clarke framework. Data was managed using QSR NVivo. Ethics approval was granted by Monash University in Melbourne, Australia.

## Findings

Three major themes emerged from the data: improving quality of life, addiction and dependence, and autonomy and responsibility. Firstly, GP attitudes towards opioid use for chronic pain varied depending on age of the patient. GPs were more open to prescribing opioids for CNCP for elderly patients to improve their quality of life. In contrast, they were very hesitant to commence opioids in younger patients for fear of addiction, dependence and beliefs that once commenced, the opioids would not ever be able to be ceased. Secondly, in this younger group, non-pharmaceutical and lifestyle management was preferred to opioid analgesia. Lastly, GPs highly valued autonomy in prescribing decisions and disliked continuing scripts commenced by other GPs and specialist prescribers. The concerns of the Australian GPs in managing chronic pain with opioids are consistent with UK literature.

## Consequences

To our knowledge, this is the first qualitative study exploring the self-reported opioid prescribing practices of GPs in the state of Victoria. Improving primary care pain management may involve targeted education to GPs that acknowledges patient age-related prescribing differences. The autonomy of GPs is a key aspect of safe opioid prescribing universally. Specifically, a multidisciplinary and inter-specialty approach may support Australian GPs to pragmatically manage chronic pain with evidence-based practices and still remain patient-centered.

## Funding Acknowledgement

This research project is supported by the Royal Australian College of General Practitioners with funding from the Australian Government under the Australian General Practice Training program.

## P2.32

### **How acceptable is a Culturally adapted Manual Assisted Problem solving (C-MAP) intervention for Self-Harm? Therapist and patient participant perspectives.**

*Presenter: Carolyn Chew-Graham*

**Abstract - see 3A.4b**

## P2.33

### **Are collaborative care approaches effective for people with SMI who are living in the community?**

*Presenter: Siobhan Reilly*

*Authors: Humera Plappert, Bliss Gibbons, Charley Hobson-Merritt, Linda Gask, Claire Planner*

## Institutions

Lancaster University, University of Manchester, University of Birmingham and University of Plymouth

## Abstract

### Problem

**Many individuals with psychosis have suboptimal physical care and poor mental and physical health outcomes. Collaborative care for severe mental illness (SMI) is a community-based intervention, which typically consists of a number of components. The intervention aims to improve the physical and/or mental health care of individuals with SMI. There is no universally agreed definition of collaborative care; it is operationalised with a great degree of variation. Community mental health teams (CMHTs) have become the backbone of mental health services. There are however, problems with CMHT staff frequently having caseloads that are too high to allow sufficient contact time to work effectively with people with SMI and problems with continuity of care across the primary, secondary and the social care interface. NICE guidance for both schizophrenia and bipolar suggests there is surprisingly little evidence to show that they are an effective way of organising services. We are conducting a Cochrane review as there have been no syntheses of the evidence to support this model of care. Approach**

Our primary outcome of interest is quality of life. In this review we have included randomised controlled trials (RCTs) where interventions are described as collaborative care by the trialists AND are comprised of the four 'core' components: a) A multi-professional approach to patient care; b) A structured management plan in the form of evidence based protocols or guidelines; c) Scheduled patient follow-ups; d) Enhanced inter-professional communication. We will also include trials where the interventions are described as collaborative care by the trialists but are not comprised of the four core 'core' components. These will be compared with 'standard care' for adults (18+ years) living in the community with a diagnosis of SMI, defined as schizophrenia or other types of schizophrenia-like psychosis (e.g. schizophreniform and schizoaffective disorders), bipolar affective disorder or other types of psychosis. Electronic searches were performed on the Cochrane Schizophrenia Group Register of Trials and the Specialised Register of the Cochrane Common Mental Disorders Group and we contacted over 50 international experts in the field of collaborative care. Findings

We have screened studies and have identified six potential trials. We are extracting the data from these and entering this on to RevMan software to enable the synthesis according to our pre specified protocol. We are also currently screening studies an additional update search.

### Consequences

Mental health and primary care policy is weakly endorsing integrated primary care mental health. The review will help to provide some evidence about whether this is the right direction. The review may help to identify scope for the promotion of collaborative care in primary care and provide insight into potential opportunities for the implementation

of NHS England's Five Year Forward View strategy for people with severe mental illness.

### Funding Acknowledgement

This review is funded by the National Institute for Health Research (NIHR) under its Programme Grants for Applied Research programme (grant reference no. RP-PG-0611-20004).

## P2.34

### For what reasons do children and young people with attention-deficit/hyperactivity disorder seek healthcare in the two years prior to their diagnosis?

*Presenter: Vibhore Prasad*

*Authors: Vibhore Prasad, Emma Rezel, Patrick White*

### Institutions

King's College London

### Abstract

#### Problem

People with attention-deficit/hyperactivity disorder (ADHD) account for 3-5% of children and young people, both in the UK and globally. In the UK, there are delays in the recognition of ADHD and recognition varies dependent on socioeconomic deprivation and geographic region. CYP from more deprived neighbourhoods are more likely to have recognised ADHD. CYP from the South East of England are most likely to have recognised ADHD. An understanding of reasons why CYP seek healthcare before their diagnosis is lacking. Such an understanding may help to inform interventions to expedite the recognition of ADHD.

#### Approach

The Clinical Practice Research Datalink (CPRD) is a primary care database representing 8% of the UK population. Around half of the practices in England have linked Hospital Episodes Statistics (HES) data. The CPRD-HES linked practices were used to select CYP with ADHD. Up to five controls CYP without ADHD were randomly selected, matched on age, sex and GP surgery. Medical records were extracted in the two years prior to the date of diagnosis for CYP with ADHD (or index date for those without ADHD). Reasons for seeking healthcare were analysed separately for CYP with vs. without ADHD.

#### Findings

8,135 CYP aged 4 to 17 years and had a record of ADHD. 40,230 CYP were aged 4 to 17 years without a record of ADHD. Of the CYP with ADHD in their GP medical records, 1,283 also had a record of ADHD in their hospital medical records. Reasons for seeking healthcare will be presented at the conference.

#### Consequences

An understanding of the reasons why CYP seek healthcare in the two years prior to diagnosis with ADHD may assist general practitioners, paediatrics, educationalists and CYP's parents (carers) to identify ADHD earlier than is currently possible.

### Funding Acknowledgement

VP is in receipt of a Starter Grant for Clinical Lecturers award from the Academy of Medical Sciences. ER is funded by this grant. VP is a National Institute for Health Research (NIHR) Academic Clinical Lecturer, hosted by King's College London.

## P2.35

### mHEALTH MOOD MONITORING FOR PEOPLE WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE: A RETROSPECTIVE COHORT ANALYSIS

*Presenter: Maxine Whelan*

*Authors: Carmelo Velardo, Heather Rutter, Lionel Tarassenko, Andrew Farmer*

### Institutions

Nuffield Department of Primary Care Health Sciences University of Oxford, Institute of Biomedical Engineering University of Oxford

### Abstract

#### Problem

Co-morbid health anxiety and depression can add to the complexity of managing treatment for patients living with chronic obstructive pulmonary disease (COPD). While digital health technologies for COPD patients support monitoring of vital signs (including oxygen saturation), self-monitoring of mood (as for example with bipolar patients) to support self-management is not currently implemented. Monitoring mood regularly can identify deviations from usual patterns and encourage patients to be more mindful of their mood. The aim of this study was to describe adherence to mood monitoring over 12 months and to identify patterns of depressive and anxious symptoms.

#### Approach

The self-management and support programme (EDGE) for COPD was a 12-month, primary care based randomised controlled trial involving patients aged  $\geq 40$  years with a diagnosis of COPD. Patients were identified following an exacerbation from primary care or hospital records. Participants in the intervention arm of EDGE received a tablet computer with the EDGE mHealth application installed and a Bluetooth-linked pulse oximeter. Participants were asked to complete the General Anxiety Disorder questionnaire (GAD) and the Patient Health Questionnaire (PHQ) every four weeks. Generic health status (EuroQol 5-Dimension Questionnaire), St George's Respiratory Questionnaire-COPD and smoking status were recorded at baseline. The primary outcome for this analysis was the extent to which participants completed the mood questionnaires as requested; participants answering  $\geq 10$  of 12 months termed highly adherent. A threshold of  $\geq 5$  was used to define elevated scores for the PHQ and GAD which identifies an increased risk of clinically important anxiety or depression.

#### Findings

Of study participants, 106 (99.1%) recorded mood data; logging a total of 1,268 responses. Eighty-one participants (76.4%) were highly adherent. Up to 24 participants (22.6%; minimum 8 participants) entered  $\geq 2$  responses to the mood questionnaires each month. Adherent participants ( $n=81$ ) differed significantly by smoking status when compared to participants least adherent ( $n=25$ ) ( $\chi^2=14.973$ ,  $p=0.001$ ). Fifty-six participants (52.8%) responded with at least mild symptoms of both anxiety and depression whilst 22 participants (20.8%) did not record any elevated scores. Participants with elevated risk of anxiety and depression differed significantly by generic health status and SGRO-C score when compared with participants without elevated scores (0.6(0.4-0.7) versus 0.7(0.6-0.8),  $z=2.332$ ,  $p=0.0197$  and 62.2 $\pm$ 19.5 versus 50.3 $\pm$ 16.3,  $t=-2.5358$ ,  $p=0.0133$ , respectively).

#### Consequences

Findings suggest that regular mood monitoring in people with COPD is feasible with most patients answering the mood questions over 12

months and, some participants answering more often than requested. This suggests that COPD patients are willing to self-monitor mood over several months. With more than half of participants suggesting an elevated risk of both anxiety and depression (associated with a lower health status and higher respiratory impairment), the opportunity to regularly monitor mood in this patient population could offer helpful information in supporting co-morbidity management within primary care.

#### Funding Acknowledgement

The EDGE trial was supported by the Department of Health and Wellcome Trust through the Health Innovation Challenge (HIC) Fund commissioned by the Health Innovation Challenge Fund (HICF-1010-032), a parallel funding partnership between the Wellcome Trust and the Department of Health.

## P2.36

### Extracting hospital data to inform post-discharge community care in COPD patients: A feasibility study

*Presenter: Maxine Whelan*

*Authors: Xiaorong Ding; David Clifton; Peter Watkinson; Mona Bafadhel; Beth Lawson; Carlos Areia; Lionel Tarassenko; Andrew Farmer*

#### Institutions

Nuffield Department of Primary Care Health Sciences University of Oxford, Institute of Biomedical Engineering University of Oxford, Nuffield Department of Clinical Neurosciences University of Oxford, Nuffield Department of Medicine and Oxford Respiratory NIHR BRC University of Oxford

#### Abstract

##### Problem

Patients with chronic obstructive pulmonary disease (COPD) can experience health deterioration in the community and often attend hospital as a result. More than 4,000 COPD emergency admissions were recorded in 2013-2017 at the Oxford University Hospitals (OUH) NHS Foundation Trust with nearly 1 in 4 patients re-admitted within three months. A wealth of data is captured in the hospital setting but external access to this data is not always possible, despite potential to improve delivery of primary care. Furthermore, it is currently unclear how feasible extraction and alignment of the hospital records and personal collected data are in this patient population. The aim of the self-management and support programme (EDGE2) study is to establish the feasibility of aligning hospital data with community-acquired data for risk-stratification and predicting adverse events in primary care.

##### Approach

Up to two hundred patients with COPD aged  $\geq 40$  years will be recruited while hospitalised with an exacerbation. Participants will be given a tablet computer, pulse oximeter and physical activity monitor (collectively the EDGE2 system) to use for six months in the community after discharge. Participants will be asked to complete daily COPD symptom and monthly mood questions, to monitor vital signs such as oxygen saturation and heart rate, and to wear the physical activity monitor. Routine collection of vital signs data is now collected at scale using the System for Electronic Notification and Documentation system in OUH and can be extracted from the OUH Research Data Warehouse. Other hospital data will include blood gases and ventilation use during index admission, major comorbidities, preceding hospital admissions

and emergency department attendances; each extracted from the electronic patient record, patient administration system and the intensive care database. Re-admissions and any emergency department attendance will be identified in the 6 months after discharge. Consent will be obtained prior to the extraction of any hospital data or the provision of the EDGE2 system.

#### Findings

This abstract describes the protocol to link hospital data to EDGE2 community-acquired data via mobile application and wearable device. Patient outcomes will be assessed six months after discharge. Feasibility of integrating data and refinement of predictive algorithms are the primary outputs. Recruitment for EDGE2 begins in February 2019.

#### Consequences

Access to routinely collected hospital data in addition to self-reported COPD symptoms and objectively measured physiological and physical activity data may together provide a better overview of a patient's condition than current clinical practice. EDGE2 will inform the development of predictive algorithms to identify when patients may be experiencing deterioration in their health, utilising both hospital and primary care data which could be incorporated to provide tailored alerts to patients and clinicians, to encourage timely care intervention in the community.

#### Funding Acknowledgement

This work will be funded by NIHR Oxford Biomedical Research Centre (Technology and Digital Health sub-stream) and the Engineering and Physical Sciences Research Council (EPSRC).

## P2.37

### Inhaled corticosteroids in COPD with mild or moderate airflow limitation: who is suitable for a trial of withdrawal?

*Presenter: Patrick White*

*Authors: Gil Gill Gilworth, M Thomas, Chris Corrigan, Patrick Murphy, Nicholas Hart, Les Hamilton, Timothy Harries.*

#### Institutions

1 King's College London, London, UK, University of Southampton, Southampton UK, Lane Fox Unit, Guy's and St Thomas' Hospital NHS Foundation Trust, London, UK.

#### Abstract

##### Problem

Inappropriate use of high-dose inhaled corticosteroids (HD-ICS) increases pneumonia risk and other complications in patients with COPD. Most inappropriate prescribing of HD-ICS takes place in primary care. The main indication for prescription of HD-ICS is a history of exacerbations in COPD patients with symptomatic disease. Patients who are inappropriately prescribed HD-ICS should undergo a trial of withdrawal. In this study we aimed to assess the feasibility of identifying in primary care, COPD patients with mild or moderate airflow limitation suitable for withdrawal of HD-ICS.

##### Approach

A search of UK primary care electronic records was carried out to identify COPD patients (asthma excluded) recently prescribed HD-ICS with no evidence of severe airflow limitation in the past year. Before assessment with a view to HD-ICS withdrawal, each record was scrutinized for

evidence of asthma, or a history of one severe exacerbation (exacerbation leading to hospital admission) or two or more moderate exacerbations (exacerbation requiring oral antibiotics or oral steroids). Patients were excluded if any of these indications for HD-ICS were present. Eligible patients were invited to COPD review by their GP.

### Findings

392 eligible patient records were identified by electronic search from a COPD patient population of 2967. Frequent inconsistencies in diagnosis and recording of exacerbations were seen in patient notes, often with inability to assign prescription of antibiotics and prednisolone (rescue pack) to exacerbation occurrence. 243 patients were excluded from HD-ICS withdrawal as treatment was indicated. Main exclusion factors were:  $\geq 2$  moderate or  $\geq 1$  severe exacerbations (35%), severe airflow obstruction (27%), airflow reversibility (6%), active lung cancer (4%), and dementia (3%). 149 patients were invited for COPD review. 61 attended, 27 declined in writing, 61 were not contactable or refused on the telephone. 21 patients were excluded due to: FEV1 reversibility (49%), severe airflow limitation (29%), no airflow obstruction (10%), frequent exacerbations in past year (4%), hospital admission for exacerbation (4%), BMI  $> 35$  (4%). 40 (10%) patients were suitable and available for trial of HD-ICS withdrawal.

### Consequences

The identification in primary care electronic patient records of COPD patients with mild or moderate airflow limitation, suitable for a trial of withdrawal of HD-ICS prescription, is a considerable challenge. To identify suitable patients general practices should make hand searches for exacerbation history and should be competent in reliable spirometry to diagnose reversibility.

### Funding Acknowledgement

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## P2.38

### How can we improve access to health care for people with severe chronic obstructive pulmonary disease (COPD) in Southern New Zealand? The perspectives of health professional stakeholders and patients.

*Presenter: Tim Stokes*

*Abstract see 4D.6b*

## P2.39

### Greater continuity and lower mortality: Is there an effect in primary care?

*Presenter: Richard Baker*

**Abstract - see 6E.4b**

## P2.40

### Delegating home visits in general practice through a realist review: Exploring contexts, mechanisms and outcomes

*Presenter: Ruth Abrams*

*Authors: Wong, G., Roberts, N., Mahtani, K, Tierney, S. Boylan, A.M. and Park, S.*

### Institutions

UCL Medical School; Nuffield Department of Primary Care Health Sciences, University of Oxford

### Abstract

#### Problem

Recent policies including the NHS long term plan (NHS, 2019) and the new GP contract (BMA, 2019) have re-shaped ways of working in General Practice. In particular, multidisciplinary teams and workforce expansion are seeing the shifting, sharing, mixing and delegation of traditional GP tasks to other staff groups such as community paramedics. One of these tasks is the delegation of patient home visits in order to reduce both GP workload and hospital admissions. Yet the mechanisms of delegation (i.e. how and why delegation occurs) remain opaque and are likely to be highly dependent on a range of contexts. Our synthesis of published evidence aims to explore the ways in which delegation of a home visit relies on context which subsequently affects both patient outcomes and clinical workload within primary care settings.

#### Approach

Using a realist approach we have synthesised a range of data including qualitative, quantitative and mixed-methods research in addition to grey literature. We have followed the systematic realist review stages advocated by Pawson, making visible the causal explanations of contexts and mechanisms in relation to outcomes regarding delegated home visits through our programme theory.

#### Findings

Contexts such as the nature of employment, patient conditions and GP perspectives to delegation will be articulated. The impact on patient satisfaction and clinical workload will be discussed in relation to outcomes. Mechanisms such as risk tolerance and trust will be elucidated and the tensions between multi-disciplinary professional identities will be highlighted.

#### Consequences

Our findings and causal explanations are anticipated to produce review findings that may help with future implementation of delegated home visits and provide guidance to support GP decision-making to delegate home visits to patients (or not).

#### Funding Acknowledgement

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## P2.41

### Does area of residence influence the likelihood of hospitalisation for ambulatory care sensitive conditions in Ireland?

*Presenter: Emma Wallace*

*Authors: Sinéad Cronin, Fiona Boland, Emma Wallace, Tom Fahey*

#### Institutions

HRB Centre for Primary Care Research, Royal College of Surgeons in Ireland, Dublin, Ireland

#### Abstract

##### Problem

Conditions can be considered "ambulatory-care sensitive" if effective outpatient treatment could reasonably prevent hospitalisation. Geographical variation in hospitalisation for these conditions has previously been studied to evaluate equity of access to primary care. The aim of this study was to examine the extent of geographical variation of potentially avoidable hospitalisations for ambulatory care sensitive conditions in the Republic of Ireland. Our secondary aim was to explore potential causes for any variation identified.

##### Approach

Six ambulatory care sensitive conditions were defined based on work by the European Collaboration for Healthcare Optimization (ECHO) Consortium as follows: Asthma or chronic obstructive pulmonary disease (COPD) in patients aged  $\geq 18$  years, congestive heart failure (CHF) in patients aged  $\geq 40$ , dehydration in patients aged  $\geq 65$ , short-term complications of diabetes in patients aged  $\geq 40$ , and angina without a cardiac procedure in patients aged  $\geq 40$ . An anonymous dataset of emergency hospitalisations for these conditions over 5 years (2012-2016) was extracted from a national administrative database in the Republic of Ireland. Age and sex standardised discharge rates (SDRs) were calculated for 21 geographical areas nationally. Extremal quotients, coefficients of variation and systematic components of variance (SCV) were calculated. Regression analyses were conducted exploring the relationship between SDRs and year, unemployment rate, and the proportion of the population living in urban areas.

##### Findings

Between 2012 and 2016, across  $n=36$  public hospitals,  $n=85,484$  hospitalisations were included. This is an average annual rate of 49 hospitalisations per 10,000 adult population nationally. Hospitalisations for COPD accounted for the majority (55%) and overall 73% of hospitalisations were for patients aged  $\geq 65$ . Based on SCV values, CHF showed low geographic variation, while asthma and COPD showed high variation in particular years. Geographic variation was high for hospitalisations for dehydration, high for diabetes complications and very high for angina. In multivariable analysis, higher unemployment at an area level was associated with higher standardised discharge rates for asthma and COPD. Higher rates of admission for diabetes complications were observed in urban areas, while higher rates of angina admissions were observed in rural areas.

##### Consequences

The average annual rate of hospitalisations overall for conditions under study is in line with previous European research, although COPD accounts for a higher proportion of these hospitalisations in the current study. Our findings suggest that there is significant geographical variation associated with management of chronic conditions, with

angina showing particularly high variation. While there is currently an increased focus on the provision of national integrated primary care services for people with chronic diseases in Ireland, our results highlight the need for further research into local factors that may influence hospitalisation.

#### Funding Acknowledgement

Funding was received from the Health Research Board (HRB) in Ireland through grant no. HRC/2014/1 (TF).

## P2.42

### Monitoring and management of chronic heart failure in primary care: an overview of economic models

*Presenter: Claire Simons*

*Authors: Amitava Banerjee, Carl Heneghan, Clare Taylor, Richard Hobbs, Rafael Perera, Borislava Mihaylova*

#### Institutions

Health Economics Research Centre Nuffield Department of Population Health University of Oxford, Farr Institute of Health Informatics Research Institute of Health Informatics University College London, Nuffield Department of Primary Care Science University of Oxford, Centre for Primary Care and Public Health Queen Mary University of London

#### Abstract

##### Problem

There is a growing interest in strengthening the evidence for heart failure management in primary care. We aimed to review health economic models used to answer research questions related to the cost-effectiveness of heart failure monitoring and management strategies and interventions in primary care with a focus on model structures and data used.

##### Approach

We updated a previous review of cost-effectiveness models in heart failure by Goehler et al. (2011) with 8 further years of data up to August 2018. Analytical frameworks used to evaluate heart failure treatments and management programmes in primary care were identified. Models were excluded if they were exclusively within secondary care or if they presented local non-UK adaptations of already included models.

##### Findings

Forty-three studies were identified of which three studied heart failure diagnosis; 11 management strategies and 29 drug interventions. The severity of heart failure was mostly based on New York Heart Association stages (with or without cardiovascular event history) or number of hospital admissions for heart failure. 34 models used a Markov model structure with the remaining using decision trees, mathematical equations or discrete event simulations. There was limited use on individual patient characteristics in the models with 13 (30%) models incorporating such information though this approach is more frequently considered in recent models (43% of those published since 2010). The data used to inform the parameters in the models (disease risks, quality of life and costs) were sourced predominantly from randomised trials in chronic heart failure patients in secondary care. All studies used some data from randomised trial data, with 31 (72%) of models fully developed using trials' data. These trials were frequently completed some years previously and were unlikely representative of the chronic heart failure population seen in primary

care in primary care in terms of the current prognosis of contemporary patients with heart failure or the range of stages of heart failure observed in the community.

### Consequences

Future models should aim to employ primary care data, include individual patient characteristics and consider important markers of progression of chronic heart failure in patients typically seen in primary care.

### Funding Acknowledgement

Funded by the NIHR PGfAR programme (RP-PG-1210-12003) and NIHR Biomedical Research Centre, Oxford. The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.

## P2.43

### What is the acceptability of sustainable, continuous quality incentives in primary care in the EQuIP-GP trial?

*Presenter: Andrew Bonney*

*Authors: Jan Radford, Athena Hammond, Judy Mullan, Greg Peterson, Simon Eckermann, Nick Zwar, Danielle Mazza, Grant Russell, Marijka Batterham, Christine Metusela*

### Institutions

University of Wollongong, University of Tasmania, Monash University, Bond University

### Abstract

#### Problem

There are major challenges in delivering Universal Health Care, as advocated in the Declaration of Astana, with economic sustainability. The RACGP funded EQuIP-GP trial, currently underway in 33 general practices in three states in Australia, investigates a funding model that provides targeted, continuous quality incentive payments. The trial is unique in that the incentives are continuous, without threshold entry levels, and designed to be cost-neutral or -saving to the health system through reduced prescriptions, pathology/imaging tests and hospitalisations. Implementation of this model will be dependent on its acceptability to stakeholders. We report preliminary baseline qualitative analyses of interviews with participants investigating incentive acceptability.

#### Approach

Interviews were conducted with consenting patients, staff and GPs within six practices; two purposively selected in each of the three states. Interview transcripts were analysed independently by two researchers using a realist inquiry approach, applying an analysis template to elucidate contexts (e.g. practice structures) and mechanisms (attitudes and beliefs) in which the payment structure would operate. Agreement regarding coding and interpretation was reached by consensus.

#### Findings

Twenty-eight interviews were conducted with patients, staff and GPs. Eighteen transcripts from two states were included in this preliminary analysis within the broad framework categories. Context: Across the varied geographic and socioeconomic contexts of the practices, patients and practice staff alike felt the care provided was of good quality. Beliefs: Patients believed GPs should provide quality care as a

professional duty. The GPs were comfortable with the concept of reward for quality care but did not believe they needed money for motivation. Attitudes: Patients and practices all agreed that continuity of care and sufficient time in consultations were key markers of quality and highly valued.

### Consequences

This study provides a unique opportunity to understand the baseline contexts and mechanisms in which a cost-neutral quality incentive funding model in primary care might operate. Among participants in these preliminary analyses, quality was synonymous with patient-centred care. Within this patient-centred paradigm, participants found the term 'incentive' discordant. Further analyses will enable a fully developed understanding of baseline contexts, beliefs and attitudes in which the intervention will operate and inform our approach to follow-up qualitative investigation. Working with both patients and providers to harness the existing positive attitudes and address core concerns may maximize the chances of successful implementation of the EQuIP-GP model.

### Funding Acknowledgement

This project was funded by the Australian Government Department of Health and the Royal Australian College of General Practitioners

## P2.44

### GP-Consultant Exchange Programme: an observational study from Wessex.

*Presenter: Dr Pritti Aggarwal*

*Authors: Dr Adam Fraser, Dr Sally Ross*

### Institutions

Southampton City Clinical Commissioning Group Board Member, UK, Primary Medical Care Module Lead, University of Southampton, UK, GP Partner, Living Well Partnership, Southampton, UK, GP Partner, Bridges Medical Practice, Weymouth, UK, Dorset Programme Director, Bournemouth University, UK, NHSE GP Clinical Advisor, GP Facilitator for Wessex, Clinical Lead for Portsmouth CCG, UK, Sessional GP

### Abstract

#### Problem

Collaborative working across primary and secondary care is crucial to providing quality care. Our aim was to improve professional understanding, foster deeper partnership, ignite opportunities for innovation and quality improvement (QI) with co-owned local solutions.

#### Approach

In this GP-Consultant exchange programme, over 200 Consultants and GPs were paired over Wessex to enhance working relationships. Pairs hosted and visited each other's workplace. Participants completed a questionnaire. Submitted anonymous reflections were analysed for common themes. A celebration of the shared learning took place. Emphasis was on local solutions, compassionate leadership and next steps.

#### Findings

Feedback obtained from 71(60%) participants was scaled from 1 (least likely) to 6 (most likely). In breaking barriers, individuals supported a regular primary-secondary care forum; weighted average score of 5.25, found the scheme useful (4.59), likely to take part again (4.83), consider new ways of working consequent to building better

relationships (3.85). We observed sharing directories of primary care secretary contacts and restructuring of outpatient clinic letters to state "For Information Only" or "GP Action Required" resulting in substantial time and cost savings. Exchanges improved morale and insight. Common themes from reflections revolved around compassion, collaboration, complexity, efficiency and education.

### Consequences

This scheme was an easy and enjoyable way to reconnect individuals and allowed professionals to learn about challenges faced within the NHS. As QI activity, the scheme resulted in local solutions for patients. A low-cost intervention that can be replicated within any organisation/profession in the NHS. It needs a motivated and persistent individual to drive the project forward.

### Funding Acknowledgement

Southampton City CCG

Thames Valley and Wessex Leadership Academy

## P2.45

### Identifying Factors That Influence the Recruitment or Retention of Family Physicians: A Systematic Review

*Presenter: Abdulaziz Alhenaidi*

*Authors: Professor Kate O'Donnell, Professor Jill Morrison*

### Institutions

Department of General Practice and Primary care, University of Glasgow

### Abstract

#### Problem

Primary care services are facing a workforce crisis worldwide, with maintaining the number of family doctors required to meet population needs a particular problem. Countries have taken different approaches to address this, for example increasing postgraduate training posts in primary care to meet the shortage of family physicians; developing the professional roles of nurses and physician's assistants. However, such initiatives take time to produce new doctors in the system. It is therefore important to understand what factors influence doctors to choose, or stay, in family medicine in the first place in order to develop strategies to encourage them to remain. The aims of this research are to review the existing international literature on the factors that increase or decrease the recruitment and retention of family physicians and compare those factors between different countries.

#### Approach

A systematic review of published papers, examining the recruitment or retention of family physicians working in non-hospital settings, published in English from 2000 onwards were considered for inclusion. Qualitative, quantitative, mixed methods and systematic reviews were included. Studies focused on medical students, rural practices or community care centres were excluded. Studies were assessed for quality; data extraction was guided by the Systems Theory Framework of career development to identify important personal and system-levels factors.

#### Findings

Out of 14,859 initial search results, 50 studies were included: eight qualitative, five mixed-methods, two systematic reviews, one secondary data analysis, and the remainder observational studies. Most were conducted in Europe, mainly the United Kingdom (29 studies).

Analysis found that personal factors such as gender, marital status, and having children play an important role in initial recruitment and later decisions to remain. System-levels factors including long working hours, administrative tasks, and long out-of-hours work have an adverse effect on the recruitment and retention. Exposure to family medicine during medical school or vocational training can have both positive or negative impacts on recruitment and retention. Political decisions that change the nature of general practice/family medicine also have a negative impact, for example changing the payment system, appraisal and revalidation. The use of the Systems Theory Framework has been a useful lens to apply to this literature, but also requires some refinement, e.g. considering the effects of health systems more explicitly.

### Consequences

Using a theoretical framework that addresses personal, health systems, and policy levels has shown that personal factors are only part of the issue. System-level factors are as important as personal factors in promoting family medicine as a career. Policies should address family physicians' working conditions and create an attractive environment to improve their recruitment and retention. Improving such conditions could mitigate the effect of some personal factors that affect recruitment and retention.

## P2.46

### Understanding the Nature and Frequency of Avoidable Harm in Primary Care

*Presenter: Anthony Avery*

*Authors: Anthony Avery, Christina Sheehan, Brian Bell, Sarah Armstrong, Darren Ashcroft, Matthew Boyd, Antony Chuter, Alison Cooper, Ailsa Donnelly, Adrian Edwards, Huw Evans, Stuart Helland, Joanne Lymn, Rajnikant Mehta, Sarah Rodgers, Aziz Sheikh, Pam Smith, Huw*

### Institutions

University of Nottingham, University of Manchester, Cardiff University, University of Edinburgh

### Abstract

#### Problem

Most patient safety research has focused on hospital settings (secondary care) where there is now considerable appreciation of the causes and frequency of medical errors, and the resulting harm to patients. There have been few large-scale robust studies that have investigated the frequency, nature and causes of avoidable harm in family medicine/primary care. There is a need for such studies in order to identify strategies for improving patient safety. The aims of our study was to estimate the incidence of avoidable significant harm in primary care in England and describe and classify the patient safety incidents that result in avoidable significant harm.

#### Approach

We conducted a retrospective cohort study of electronic clinical records with independent family practitioners who were trained to undertake case note reviews. The family practitioners reviewed patient records and recorded any incidences of avoidable significant harm over a 12 month period. All patients (n=92,255) registered at 12 general practices across England between 1 April 2015 and 31 March 2016 (89,779 patient years) were eligible for inclusion in the study. The main outcomes were the incidence, per 100,000 patient years, of significant harm judged to be at least possibly avoidable or probably avoidable.

## Findings

The incidence of avoidable significant harm considered at least possibly avoidable was 56.8 (95% CI: 41.2 to 72.4) per 100,000 patient years; the incidence of avoidable significant harm considered at least probably avoidable was 35.6 (95% CI: 23.3 to 48.0) per 100,000 patient years. From 55 cases of at least possibly avoidable significant harm, the most important primary incidents were missed diagnosis (20.0%), delayed diagnosis (27.3%), delayed referral (10.9%) and medication error (23.6%).

## Consequences

Applying our findings to the English population of 56 million means that each year we would expect to see between 19,800 and 32,200 cases of probably avoidable significant harm. To prevent these harms the greatest attention needs to be paid to addressing the ameliorable factors associated with missed diagnosis, delayed diagnosis, delayed referral, and medication error.

## Funding Acknowledgement

This report is based on independent research commissioned and funded by the NIHR Policy Research Programme ('Understanding the Nature and Frequency of Avoidable Harm in Primary Care', Ref: PR-R11-0914-11001).

## P2.47

### Patient safety in Marginalised Groups: A Narrative Scoping Review

*Presenter: Sudeh Cheraghi-Sohi*

*Authors: Maria Panagiotti, Gavin Daker-White, Sally Giles, Lisa Riste, Aaron Poppleton, Sue Kirk, Pauline Ong, Stephen Campbell, Caroline Sanders*

#### Institutions

University of Manchester

#### Abstract

##### Problem

Improving patient safety is at the forefront of healthcare policy and practice across the globe. Achieving equitable patient safety improvement however may be especially challenging in patients from marginalised groups or people considered to be 'outside of mainstream society'. Marginalised groups experience severe health inequities as well as increased risk of experiencing patient safety incidents. To date however no evidence exists to identify and map out the literature in this area in order to understand 1) which marginalised patient groups have been studied in terms of patient safety research, 2) what the particular patient safety issues are for these groups, 3) what contributes to these safety issues arising and 4) to develop a 'conceptual model' to further understand these issues.

##### Approach

A scoping review was conducted. Systematic searches were performed across six electronic databases in June 2018. The time frame for searches of the respective databases was from inception to June 2018 and limited to studies in the English language. No grey literature was included. Data was extracted, charted and coded.

##### Findings

The searches yielded 3118 articles, of which 63 articles were included. We identified fourteen different marginalised groups across all studies

and 70% concerned just four marginalised groups. Thirteen separate patient safety issues were classified and just over half of the studies focused on three topics, the largest being medication safety. In total, 146 individual contributing or associated factors were identified and mapped to one or more of 7 different inductively derived domains. Patient safety issues were mostly multi-factorial in origin and a preliminary conceptual model for understanding patient safety vulnerabilities for marginalised groups was derived. Consequences

This review indicates that marginalised groups are more likely to experience patient safety issues than mainstream populations they live alongside. Understanding which groups and/or individuals within these groups are most likely to experience safety issues and why, is a clear next step to informing how training, services and/or interventions might be designed to remove, or at the very least militate against these increased patient safety risks.

## Funding Acknowledgement

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Safety Translational Research Centre (NIHR Greater Manchester PSTRC). The views expressed are those

of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health and Social Care.

## P2.48

### A critical discourse analysis of how public participants and their evidence are presented in Health Impact Assessment reports in Wales

*Presenter: Fiona Wood*

*Authors: Christopher Emmerson*

#### Institutions

Cardiff University, Public Health Wales

#### Abstract

##### Problem

Health Impact Assessment (HIA) involves evaluating how projects affect the health of particular populations. In many countries HIA has become central to attempts to better integrate both health and public participation into policy and decision making. In 2017 HIA gained statutory status in Wales. This study considers how the public and their evidence are presented within HIA reports and what insights this offers into how public participation is constructed within public health.

##### Approach

Critical Discourse Analysis (CDA), specifically as described by Fairclough (2003), was used to analyse seven HIA reports produced in Wales.

##### Findings

Four themes were identified. 'Consensus and polyphony' addresses the tendency of the reports to produce consensus, with competing or distinctive voices progressively elided. 'Authors and authority' describes how participants and their evidence are shaped by different authorial stances. 'Discussions, decisions and planes of action' considers how decision makers are (or are not) brought into contact with evidence in the texts. 'Evidence: fragmentation and compression' analyses strategies of abstracting and re-ordered participant evidence in the text and the implications of this.



## Consequences

This analysis suggests that participants and their evidence are presented in a number of specific ways in HIA reports and that these are particularly shaped by genre, authorial stances and approaches to abstracting and re-ordering texts. Acknowledging these issues and developing reflexivity may create opportunities to develop HIA in new directions. Further research would allow these conclusions to be tested and would contribute to development of a wider 'sociology of public health documents'.

## P2.49

### Why are GPs not using dermoscopy?

Presenter: Nigel Hart

Abstract - see 6C.4c

## P2.4a

### Interventions for involving older patients with multimorbidity in decision-making during primary care consultations: A Cochrane systematic review.

Presenter: Jo Butterworth

Abstract - see 5E.4a

## P2.51

### Faecal immunochemical test (FIT) to triage patients with lower abdominal symptoms for suspected colorectal cancer in primary care: review of international use and guidelines.

Presenter: Sarah Bailey

Authors: Sarah ER Bailey, Samir IS Yep Manzano, Hugh Wilson, Willie Hamilton, Fiona M Walter.

#### Institutions

University of Cambridge, University of Exeter

#### Abstract

##### Problem

Colorectal cancer causes over 600,000 deaths annually. Diagnosis is difficult; symptoms commonly occur with benign conditions. In the UK, Faecal Immunochemical Tests (FITs) have recently been approved for use in primary care patients with lower-risk symptoms of possible colorectal cancer. This systematic review of clinical practice guidelines examined how FITs are used in symptomatic primary care patients suspected of colorectal cancer worldwide and the underpinning evidence.

##### Approach

MEDLINE, Embase, Scopus, ISI Web of knowledge and TRIP databases were systematically searched to identify relevant guidelines and consensus statements published within the last ten years on initial assessment of patients with symptoms suggestive of colorectal cancer. We also hand-searched known guideline databases and cancer and gastroenterology societies, checked references of related literature and asked worldwide experts. Two independent reviewers performed the title, abstract and full-text selections. From the included guidelines we explored: 1) which countries use

FIT for symptomatic primary care patients; 2) in which population it is used; 3) the cut-off used and other FIT-associated characteristics; and 4) the level of evidence on which the FIT recommendation was based.

##### Findings

The initial search yielded 2,439 publications; 23 covered initial diagnostic assessment of patients with symptoms suggestive of colorectal cancer in 12 countries across 5 continents (Asia n=1, Europe n=11, Oceania n= 4, North America n=5, South America n=2). In 3 countries (Spain, UK and Australia), FIT was recommended for patients with abdominal symptoms, unexplained weight loss, change in bowel habit and anaemia. These recommendations were mainly based on evidence from secondary care, screening of asymptomatic patients and expert opinion. The level of evidence in the symptomatic primary care patient population is low, yet FITs were strongly recommended by experts.

##### Consequences

At present, few countries use FITs in symptomatic patients in primary care, probably because of the limited evidence available in this population, or due to current guidance recommending that symptomatic patients are directly referred to secondary care without triage. Early evidence suggests FIT is a promising additional test to the diagnostic pathway, and future studies should focus on gathering evidence for its use in symptomatic patients in primary care.

##### Funding Acknowledgement

This study is funded by Cancer Research UK (Catalyst award: CanTest Collaborative)

## P2.52

### What features of interventions used at the transition to primary care follow-up affect the outcomes and satisfaction of adult cancer survivors? A systematic review

Presenter: Hannah Laidley

Authors: Angela Yan, Michael Adeleye, Grace Monnery, Simisola Elizabeth Oke, Lauren Quinn, Christopher Williams

#### Institutions

University of Leicester

#### Abstract

##### Problem

The number of cancer survivors is growing due to advances in detection and management of malignancy and the ageing population. Traditional models of hospital outpatient follow-up are no longer sustainable and primary care practitioners are expected to take on more survivorship care responsibilities. The use of survivorship care plans to aid the transition from secondary to primary care has been recommended but evidence of their efficacy is limited. Primary care research is needed to provide evidence-based interventions that deliver cost-effective, patient-centred, high quality care to this growing population. The aim of this review is to classify the types of interventions used in the transition from oncology to primary care follow-up of cancer survivors, and summarise evidence of their effectiveness at improving patient outcomes (e.g. symptom severity, quality of life, psychological status). A secondary aim is to identify the features of interventions that have more favourable process outcomes (e.g. sustainability, cost).

## Approach

Systematic review of studies and reviews that evaluate patient outcomes or satisfaction after any intervention used to support the transition of cancer survivors from hospital to primary care follow-up, including experimental and descriptive quantitative, qualitative and mixed methods studies. Systematic searches of English language publications in MEDLINE, PsycINFO, CINAHL, Cochrane Central Register of Controlled Trials (CENTRAL), EMBASE and BNI from January 1995 to June 2019 were supervised by an experienced clinical librarian with hand searching of references from included studies. Data was extracted by two independent reviewers and summarised using narrative synthesis with quality assessment using the mixed methods appraisal tool. Interventions were classified according to EPOC taxonomy to determine what features of interventions or factors affecting implementation have the greatest effect on patient outcomes. PROSPERO 2018 registration: CRD42018112877.

## Findings

Searches identified > 400 articles for appraisal. Common themes include the use of survivorship care plans and treatment summaries (n=87), nurse-led interventions (n=91), educational initiatives for patients (n=38) and healthcare providers (n=30) and use of technology (n=42). 61 abstracts relate to mental health and psychosocial needs but only 8 discuss pain management. A variety of professionals have been involved in these interventions, including professional navigators, psychologists/therapists, and social workers. 21 abstracts assess the needs of family caregivers in the intervention and 9 are aimed at patients living in rural locations.

## Consequences

We have identified a rich dataset to evaluate the current interventions that have been used to aid the transition for oncology patients from treatment to survivorship. We aim to describe the most common types of interventions and factors that make them successful, while also highlighting areas that need further research. The results of this systematic review will be valuable in implementing future interventions for cancer survivors in primary care and identifying gaps in existing literature.

## P2.53

### What's the point of public involvement in an individual participant data meta-analysis of inter-arm blood pressure difference?

*Presenter: Kate Boddy*

**Abstract - see 7D.4b**

## P2.54

### Routinely recorded blood pressures and prognosis in older adults

*Presenter: Jane Masoli*

**Abstract - see 4B.5a**

## P2.55

### Model of cardiovascular disease in people with reduced kidney function using routine healthcare data

*Presenter: Iryna Schlackow*

**Abstract - see 4B.5b**

## P2.56

### Does eGFR calculated by creatinine or cystatin C predict future decline in kidney function? Results of the FORM-2C observational study of primary care patients with reduced eGFR.

*Presenter: Susannah Fleming*

*Authors: Richard Stevens, Louise Jones, Kathryn Taylor, Richard Hobbs, Daniel Lasserson, Chris O' Callaghan, Rafael Perera, Clare Bankhead*

## Institutions

University of Oxford, University of Birmingham (Daniel Lasserson)

## Abstract

### Problem

The FORM-2C (Frequency Of Renal Monitoring – Cystatin C and Creatinine) Study is an observational study of patients with reduced eGFR (30-89 ml/min/1.73<sup>2</sup>) recruited from primary care. The primary objective of the study is to investigate whether baseline renal function measured by cystatin C or plasma creatinine is better at predicting future change in renal function over time. Cystatin C may provide primary care physicians with a better estimate of current renal function than serum creatinine, according to cross-sectional studies, but there is a lack of prospective data on which better predicts future renal function.

### Approach

We recruited 749 participants to FORM-2C. Each participant attended an initial visit, with follow-up visits at 2 weeks, 12 weeks, 6 months, 12 months, 18 months and 24 months. At each visit, participants provided blood and urine samples for measurement of various biochemical markers, including plasma creatinine and cystatin-C. CKD-EPI equations using either creatinine or cystatin-C were used for eGFR calculations. Baseline renal function was calculated as the mean eGFR using either creatinine or cystatin-C collected at the initial, 2-week, and 12-week visits. Change in renal function over time was calculated by fitting a linear slope to the eGFRs calculated using either creatinine or cystatin-C collected at the 6, 12, 18, and 24-month visits. We used complete case analysis for all patients with at least one baseline result for both creatinine and cystatin-C, and at least 2 results for both creatinine and cystatin-C from visits between 6 and 24 months. The generalised c-statistic was used to quantify the predictive value of baseline eGFR to predict future change in eGFR. Confidence intervals were calculated using the non-parametric bootstrap method.

### Findings

There was sufficient data to include 594 patients in this analysis. We anticipate that the completeness of the data will continue to increase. Mean  $\pm$ SD rate of decline in eGFR between 6 and 24 months was  $-0.04 \pm 10.7$  ml/min/1.73<sup>2</sup>/year when calculated from creatinine, and  $2.16 \pm 6.1$  ml/min/1.73<sup>2</sup>/year when calculated from cystatin-C. The c-statistic for the predictive value of baseline eGFR derived from creatinine for predicting future change in kidney function was 0.491 (95% CI 0.465 to 0.518). The equivalent c-statistic for eGFR derived from cystatin-C was 0.499 (95% CI 0.472 to 0.527). There was no statistically significant difference in the predictive value of the two methods for calculating eGFR.

### Consequences

As both c-statistics are very close to 0.5, it can be seen that neither method of calculating baseline eGFR has value for predicting future change in kidney function, and so may not be of benefit to identify patients who are at risk of further renal decline. In particular, we have

shown that the more expensive cystatin-C biomarker does not appear to provide any prognostic benefit over plasma creatinine.

### Funding Acknowledgement

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## P2.57

### Are there disparities in prescribing of sodium-glucose co-transporter-2 (SGLT2) inhibitors in those at high risk of cardiovascular events? A cross-sectional analysis of a national primary care database

Presenter: William Hinton

Authors: William Hinton, Professor Simon de Lusignan, Professor Michael Feher and Professor Neil Munro

### Institutions

Department of Clinical and Experimental Medicine, University of Surrey, United Kingdom

### Abstract

#### Problem

In the Type 2 diabetes population, there exists a higher risk sub-group of cardiovascular patients. These include older people, those with a longer duration of the disease, and impaired renal function. This high risk group has been the focus of several large cardiovascular outcome trials (CVOTs), which have reported cardiovascular benefit in addition to safety, for the use of sodium-glucose co-transporter-2 inhibitors when compared to placebo added to standard care.

The aims of this study were to identify the proportions of people prescribed sodium-glucose co-transporter-2 (SGLT2) inhibitor real world use based on the eligibility criteria for each of these trials. We also sought to explore differences in prescribing within these groups according to gender, ethnicity, and socioeconomic status. We describe three facets of mismatch: (1) Selectivity of the trial population, particularly previous cardiovascular disease; (2) Difference in characteristics between trial and real world population with equivalent cardiovascular risk; and (3) The proportion of eligible patients that were actually prescribed SGLT2 inhibitors and any disparity between those prescribed SGLT2s.

#### Approach

A cross-sectional analysis was performed of the Royal College of General Practitioners (RCGP) Research and Surveillance Centre (RSC) network database. This is a nationally representative primary care database, English primary care is a registration based system with complete prescribing data. We report: (1) Differences between trial eligible populations; (2) The characteristics of the eligible population registered in primary care compared with trial participants reporting demographics, disease course, and vascular risk; and (3) Any disparities within the eligible population of who is actually prescribed.

#### Findings

(1) There is variability between the CVOTs, principally on the degree of vascular risk; (2) The proportion people with type 2 diabetes meeting

the inclusion criteria for each trial were: CANVAS 14,227 (16.9%); DECLARE 30,498 (36.1%); EMPA-REG 5,628 (6.7%); VERTIS 6,119 (7.3%). The practice populations were older by 6 to 8 years; (3) Less than 10% of people that met the inclusion criteria of each trial had been prescribed an SGLT2 inhibitor. Male gender (OR 1.30, 95% C.I. 1.131 - 1.489) and white ethnicity (OR 1.23, 95% C.I. 1.009 - 1.501) were associated with greater odds of prescribing across all CVOTs, with socioeconomic status associated with increased odds in two trials, (OR 1.23, 95% C.I. 1.115 - 1.500). Black ethnicity however, was associated with reduced odds of SGLT2 inhibitor prescribing (OR 0.33, 95% C.I. 0.175 - 0.561).

### Consequences

There is variation in the stringency of recruitment into CVOTs for SGLT2s; this links to the size of the eligible real world population. However, despite evidence of superiority or non-inferiority, uptake is low and there are disparities in the population included.

### Funding Acknowledgement

AstraZeneca UK Limited

## P2.58

### Prevalence of diabetes Mellitus and Associated Factors in Public Health Facilities in Addis Ababa, Ethiopia.

Presenter: Addisu Tadesse

Authors: <sup>2</sup>Dr Getabalew Endazene, <sup>3</sup>Tebeje A. chero

### Institutions

<sup>2</sup>Yekatit 12 Hospital Medical College, Social and population Health department, Addis Ababa, Ethiopia. <sup>3</sup>Hawassa University, College of Medicine and Health Science, Hawassa, Ethiopia.

### Abstract

#### Problem

The increasing burden of diabetes mellitus became among a few major public health challenges to the health services and economic development of low and middle-income countries including Ethiopia. Studies conducted throughout the country revealed some common figure, but this study would clearly show the current burden of the problem in line with identifying factors contributing to the occurrence of diabetes mellitus in Addis Ababa.

#### Approach

An institution based cross-sectional study was carried out from June-July 2016. A total of 758 participants were studied with multi-stage sampling technique applied. Data were collected with structured interviewer-administered questionnaire; a WHO STEPwise approach of NCDs risk factors identification, and collected data were checked for completeness, immediately following data collection, and the completely filled questionnaire was entered into Epi-Info 3.5.1 then exported to SPSS 23 for further analysis. Descriptive statistics such as mean, percentages, standard deviation, and ranges were determined. To identify factors associated with diabetes mellitus, binary logistics regression was used. Bivariate logistics regression was done to see independent effects of variables on diabetes mellitus, while those variables with  $p < 0.2$  were taken to multivariate logistics regression analysis for control of confounding variables at  $p < 0.05$ .

## Findings

The overall prevalence of diabetes mellitus was 14.8%, with sex-specific prevalence of 18.35% and 16.62% for male and females respectively. Older age participants had a higher risks of developing diabetes mellitus than younger aged individuals. Alcohol drinkers had more risks of developing diabetes mellitus than non-drinkers. Participants with plasma HDL-C > 40mg/dl were more likely to develop diabetes mellitus than those with <40mg/dl. A higher level of plasma triglyceride >130mg/dl increases the risks of developing diabetes mellitus than those with a low level of triglycerides.

## Consequences

This study would help policymakers, researchers and community at large to have a focus of view to diabetes mellitus prevention and control.

## P2.59

### Support through Mobile Messaging and digital health Technology for Diabetes (SuMMiT-D): feasibility study protocol.

Presenter: Cassandra Kenning

Abstract - see 7B.4a

## P2.60

### Effectiveness of an "interprofessional diabetes education program" using a collaborative learning system in the Web campus on undergraduate healthcare professional students

Presenter: Mina Suematsu

Abstract - see 6D.4a

## P2.61

### Investigating the process of goal setting within feedback given in a teaching module in Phase 1 at Leicester Medical School.

Presenter: Fiona Bermingham

Abstract - see 6D.4b

## P2.62

### GP trainees' conceptual structure of empathy: a qualitative study

Presenter: Akane Imaki

Authors: Noriyuki Takahashi, Moeka Toyama, Muneyoshi Aomatsu, Mina Suematsu, Kentaro Okazaki, Nobutaro Ban, Masafumi Kuzuya

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## Abstract

### Problem

Empathy is important for building a relationship of trust with patients and influences treatment results and patient satisfaction. Despite the importance, clinical empathy has been thought to decrease with the increase of clinical experience. It is suggested that students' and residents' empathy do not decrease quantitatively but change qualitatively as they go through clinical experience. Though, it hasn't been clear how specialty trainees perceive empathy. General practitioners recognise empathy as an essential concept to deal with wide and complicated health problems. Therefore, we aimed to identify how specialty trainees in general practice (GP trainees) perceive empathy.

### Approach

We recruited eight GP trainees, and had two focus groups in 2017, one personal interview and one additional interview in 2018. Participants were recruited through convenience sampling. Four ST1 (Specialty Training 1) trainees, one ST2 trainee and three ST4 trainees were all recruited from the department of general medicine of a university in Japan. The transcripts of the discussions were analysed using a qualitative data analysis method called "Steps for Coding and Theorization". We used Morse's classification (1992) as a framework to analyse the development of GP trainees' empathy. The Ethical Committee of Nagoya University Graduate School of Medicine approved the study (approval number 2017-0294-2).

### Findings

GP trainees thought empathy indispensable for building a good relationship of trust with patients (Moral). They empathized with patients objectively based on clinical experiences such as conversations with past patients and advice from senior doctors on how to communicate with patients (Cognitive). If GP trainees have patient experiences or experience life events such as pregnancy or giving birth to a child, they empathized with patients subjectively (Emotional). These cognitive and emotional empathy were expressed for patients immediately (Behavioral). However, GP trainees' fatigue and distress of management to patients with MUS (Medically Unexplained Symptoms) made GP trainees lose emotional empathy and inhibit to show behavioral empathy.

### Consequences

We found that GP trainees improved cognitive empathy by getting used to "Reflective Practice" based on clinical experiences, and improved emotional empathy by their own patient experiences because of the "Wounded Healer" effect. We also found that GP trainees' empathy was negatively affected by MUS management. The possible reason was because GP trainees had not enough experience to patients with MUS, they were frustrated by their own skeptical perspectives to patients' serious MUS conditions. The conceptual structure of GP trainees' empathy revealed in this research would be applicable not only to education of empathy for GP trainees but also to stress management encountered by GP trainees. Limitations of this research were that we asked specific GP trainees to participate in this research and the expression of behavioral empathy was not recognized by others.

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## P2.64

### The transnational virtual classroom as a learning environment for Family Medicine residents in Palestine: residents' perspectives

Presenter: Hina Shahid

Abstract - see 4D.4b