



# Book of Abstracts

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The abstracts have been published as submitted without further editing

## Foreword

2020 will forever be remembered as the year of the COVID-19 pandemic. For the first time since 1972, the 49th Annual Scientific Meeting of the SAPC, due to be held in Leeds in July 2020, could not take place. The cancellation occurred after the submission deadline for abstracts, and, as there was no capacity for a 'virtual' meeting, these abstracts could not be presented. We thank all of the authors, from around the world, for their submissions, which were, as ever, of high quality, importance, and impact, reflecting the state of our discipline.

We have great pleasure in publishing the abstracts in this document. A total of 281 abstracts were submitted, 205 for consideration as 'long orals', and 76 as 'short orals'. A couple of 'technical' points to note:

- The theme of the meeting was 'Living and Dying Well'. This has become more poignant as the events of 2020 sadly unfold.
- They are published 'as submitted' with no edits or updates from authors
- There has been no selection of abstracts – all are included, except those where authors have declined the option of publication

The ASM in Leeds has been rescheduled for 30<sup>th</sup> June – 2<sup>nd</sup> July 2021, and we look forward to hosting a successful meeting. We hope that many people who submitted in 2020 will also do so in 2021.

Richard Neal & Suzanne Richards

On behalf of the Scientific and Organising Committees

University of Leeds

May 2020

# Contents

Abstract numbers are made up of the letter prefix for the topic followed by a number. The alphabetical presenter index at the back of this document shows the abstract number eg A.1 to aid location of abstracts.

|   | <b>Prefix</b> | <b>PAGE</b> |
|---|---------------|-------------|
| Distinguished papers – prize winners from NAPCRG, AAAPC | A.0           | 3           |
| Abstracts by topic                                      |               |             |
| Access and equity                                       | A             | 6           |
| Ageing, frailty and dementia                            | B             | 8           |
| Cancer  | C             | 24          |
| Cardiovascular  | D             | 40          |
| Child health and development                            | E             | 55          |
| Clinical trials   | F             | 59          |
| Comorbidity and multimorbidity                          | G             | 75          |
| Database research                                       | H             | 79          |
| Diabetes  | I             | 85          |
| Education   | J             | 97          |
| Experience of illness in health care                    | K             | 125         |
| Health Services Research                                | L             | 130         |
| Infectious disease                                      | M             | 136         |
| Information Technology                                  | N             | 138         |
| Living and dying well                                   | O             | 151         |
| Mental health   | P             | 160         |
| Migration and migrant health                            | Q             | 170         |
| Musculoskeletal   | R             | 171         |
| Patient-clinician relationship                          | S             | 188         |
| PPIE  | T             | 191         |
| Prescribing   | U             | 194         |
| Primary care workforce                                  | V             | 217         |
| Qualitative methods                                     | W             | 225         |
| Respiratory disease                                     | X             | 228         |
| Social determinants of health                           | Y             | 233         |
| Women's health  | Z             | 236         |
| Presenter index   |               | 245         |

## Distinguished papers

### A.0a

Australasian Association of Academic Primary Care Conference (AAAPC) – winning presentation 2019

#### **The Australian Contraceptive ChOice pRoject (ACCORD): Results of a cluster randomised controlled trial aimed at increasing Long Acting Reversible Contraceptive (LARC) uptake**

Professor Danielle Mazza

Professor Danielle Mazza (1). Dr Cathy Watson (1), Professor Kirsten Black (2). Professor Jayne Lucke (3). Professor Angela Taft (4), Dr Kevin McGeechan (5), Professor Marion Haas (6), Dr Kathleen McNamee (7), Professor Jeffrey Peipert (8)

- 1) Department of General Practice Monash University
- 2) Obstetrics, Gynaecology and Neonatology, University of Sydney
- 3) Australian Research Centre for Sex, Health and Society (ARCSHS). La Trobe University
- 4) Judith Lumley Centre, La Trobe University
- 5) School of Public Health, University of Sydney
- 6) Centre for Health Economics Research and Evaluation, University of Technology Sydney
- 7) Family Planning Victoria
- 8) Obstetrics and Gynecology, Indiana University School of Medicine

#### *Context*

LARCs reduce unintended pregnancy and abortion rates but Australian uptake is low. General practitioners (GPs) are ideally placed to promote LARCs.

#### *Objective*

The Australian Contraceptive ChOice pRoject (ACCORD), adapted from the US Contraceptive CHOICE study, evaluated whether a complex primary care intervention increased LARC uptake.

#### *Study Design*

Cluster randomised controlled trial in general practices in Melbourne, Australia. Intervention GPs received training to deliver structured contraceptive counselling with contraceptive effectiveness emphasis

and access to rapid referral to LARC insertion clinics. Control GPs had access to neither. *Primary outcome:* number of LARCs inserted. Data collected from women at baseline (telephone interview), six months (online survey) and from GPs and gynaecologists during contraceptive consultation and at time of contraception uptake.

#### *Participants*

GPs: worked 3+ sessions weekly, computerised practice and supportive reception staff. Women: attended GP, English speaking, sexually active, not pregnant, not planning pregnancy in following year, 16–45 years, interested in contraceptive counselling.

#### *Findings*

Twenty-five intervention GPs and 32 control GPs recruited 307 and 433 women (N=740). Referral for LARC insertion within 4 weeks of initial consultation - Intervention: 37%; Control: 18% (RR 1.98, 95% CI 1.39-2.8; p<0.001). LARC inserted by 4 weeks - Intervention: 19%; Control: 12% (RR 2.03, CI 1.06-3.89; p=0.033). Using LARC at 6 months - Intervention: 45%; Control: 29% (RR1.66, 95%CI 1.28-2.16; p<0.001). No difference in age nor parity with LARC uptake across groups.

#### *Implications for practice*

ACCORD intervention resulted in significantly more LARC uptake at 4 weeks and 6 months and has potential to reduce unintended pregnancies.

### A.0b

North American Primary Care Group Annual Meeting – winning presentation 2019

#### **“Nosotros” Approach: Community health workers as trust builders and community healers**

Dr Robert L Ferrer

Authors:

RL Ferrer, CG Schlenker, RS Poursani, I Cruz, P Noel, R Palmer, CR Jaén

Department of Family and Community Medicine, UT Health San Antonio, Texas, USA

Context: Promoting patients' commitment to engage in self-care is a core goal of primary care, yet often elusive in the context of social deprivation.

Objective: To report on an innovative, practice-integrated, community health worker (CHW) intervention designed to promote trusting relationships and effective self-care in patients with type 2 diabetes.

Study Design: Retrospective cohort study.

Setting: Family medicine practice in a safety-net county health care system in San Antonio, Texas, USA.

Population studied: Predominantly Hispanic, low-income primary care patients with uncontrolled type 2 diabetes, and significant psychosocial risk factors.

Intervention: Clinicians identified eligible patients through a diabetes registry and at point of care. Patients were assigned CHWs, who engaged them in trust-building and relationship-based sense making to understand their social context, collaboratively identify goals, navigate the health care system, and connect them to community resources.

Outcome Measures: Primary outcome was patient progress through three prospectively defined stages of self-care: a) Outreach (patient responds to CHW's invitation to meet face-to-face); b) Stabilization (patient and CHW build trust and create an alliance to address pressing problems within the patient's life circumstances); and c) Self-Care Generativity (patient commits to self-care. Secondary outcome was repeated measures analysis of glycosylated hemoglobin (A1c).

Results: From a population of 8,647 patients with diabetes, 986 were referred to the Nosotros Approach over 4 years. Of those, 267 (27.1%) remained in Outreach; 399 (40.5%) progressed to Stabilization; while 320 (32.5%) achieved Self-Care Generativity. Repeated measures ANOVA demonstrates an overall decline in A1c, without group differences, through the 4th A1c measurement occasion (mean follow-up 704 days). Beginning at the 5th A1c measurement occasion (mean 860 days), the self-care generativity group achieved greater declines in A1c ( $p < .05$ ). The relative advantage of the self-care generativity group

grew through the 10th measurement occasion (mean follow up 1367 days) when it attained an average A1c of 8.26% vs 9.29% in the engagement group and 9.17% in the stabilization group ( $p < .003$ ).

Conclusions: Community health workers can sustainably engage vulnerable patients, helping them identify and advance long-term self-management goals in the context of formidable social disadvantage.

## A.1

### **Spatial clusters for potentially preventable hospitalisations (PPHs) for chronic conditions and access to allied health in South Western Sydney**

Presenter: Sarah Dennis

Authors: Janelle Gifford, Soumya Mazumdar, Luke Arnold, Matthew Jennings, Bin Jalaluddin, Sarah Dennis

#### **Institutions**

University of Sydney, Ingham Institute of Applied Medical Research, South Western Sydney Local Health District, South Western Sydney Primary Health Network, UNSW

#### **Abstract**

##### **Problem**

A key role of primary care is to support patients to live well with their chronic condition in the community. Potentially preventable hospitalisations (PPHs) for chronic conditions are increasing in Australia. A recent study in South Western Sydney Local Health District (SWLHD) found six hotspots of PPHs which were associated with socioeconomic disadvantage but also higher access to primary care (general practice) services. These services were largely bulk-billing general practices. Many PPHs for chronic conditions may be amenable to allied health interventions and yet access to affordable allied health professionals in SWSLHD is lower than for more affluent areas in Sydney. The aim of this study is to use geospatial analysis techniques to determine whether there is an association between access to primary and community allied health services and hotspots of PPHs for chronic conditions in the SWSLHD area.

##### **Approach**

The main study involves the comparison of two sets of data:

1. Hospital admission data for PPHs for chronic conditions for all age groups from all public hospitals in SWSLHD for a 12-month period (2018) available from NSW Health.
2. The location and availability of allied health services (dietetics, exercise physiology, occupational therapy, physiotherapy, psychology, social work and

speech pathology) in primary and community health in SWSLHD and South Western Sydney Primary Health Network (SWSPHN). The following data is required for all services: geographic location (suburb & postcode), opening hours, out of pocket cost of services (private or community health), and languages spoken by allied health professionals. The allied health service data for 2019 was obtained from National Health Services Directory. The data accuracy and completeness checked against the directory at SWSPHN and community health services (SWSLHD) publically available information. The data will be cleaned and coded. Summary statistics will be produced for all variables in the data. Inferential or regression models will be implemented to investigate relationships.

##### **Findings**

Cross checking of the allied health service data for data accuracy and completeness is underway. Summary data for PPHs and allied health services will be presented.

##### **Consequences**

Cross checking of the allied health service data has revealed some challenges. This has implications for patients and providers trying to access allied health services to support people to live well with chronic disease.

## A.2

### **What are the barriers and facilitators to access to care for people with co-morbid severe mental illness and obstructive airways disease (Asthma and COPD)?: a qualitative study of patient perspectives and stakeholder feedback**

Presenter: Caroline Mitchell

Authors: Nicholas Zuraw, Brigitte Delaney, Neil Dolan, Helen Twohig, Elizabeth Walton, Kirsty Payne, Joe Hulin

#### **Institutions**

University of Sheffield

## Abstract

### Problem

People with a serious mental illness (SMI- schizophrenia, bipolar disorder, related psychoses) experience premature multi-morbidity and mortality. Research suggests systemic barriers to access and overshadowing by the SMI of physical health needs contribute to health inequalities. Compared to the general population, people with a SMI have a significantly higher prevalence of COPD and Asthma. In 2014, the UK 'Asthma Deaths Report' found that 18% of those who died also had mental illness. The UK General Practice Quality and Outcomes Framework (QOF) incentivises an annual health-check (cardio-metabolic/ lifestyle risk factors) for patients with a SMI, and separate structured primary care reviews for people with Asthma and COPD. Our novel research aimed to explore the perspectives of patients with both a SMI and obstructive airways disease (OAD- Asthma or COPD) on access to respiratory care and to discuss the implications with stakeholders.

### Approach

Patients with a SMI and with either co-morbid Asthma or COPD were identified by eight practices using QOF registers and invited by letter to participate in a qualitative interview study. A topic guide was informed by a literature review and feedback from patient groups (x2). Semi-structured interviews were recorded, transcribed and independently analysed (interpretive phenomenological analysis) and continued to data saturation in a purposive sample by patient and practice setting. Results were fed back to a stakeholder group of 18 participants (service users, a charitable service provider, a social prescriber, GPs, nurses, commissioners, researchers) and implications discussed using real-time infographics.

### Findings

We interviewed 16 people (seven male, nine female, aged 45-75yrs). The majority lived alone, (10/16), had left school with no formal qualifications (12/16), were unemployed/ retired (15/16) and were current (6/16) or ex-smokers (6/16). Participants described significant disability and poor access to routine primary care. Social capital determined ease of access. Self-management was challenged by poor health literacy and poverty. Smoking cessation was perceived as impossible without psychological support. Service

level factors could facilitate access to timely primary care and also continuity. However, there was a lack of proactive self-management and over-reliance on urgent care if service factors were lacking. Physical-mental multimorbidity led to fragmentation of care in speciality silos. The stakeholder group expressed similar concerns and in addition, 'fear of loss of benefits' and the 'insecure funding of community organisations'. Potential solutions focused on adequate resources, supported navigation of complex care pathways, relational continuity, individual and community asset-building and the evolving 'social prescriber' role.

### Consequences

This study suggests that despite UK guidelines and incentives to optimise physical healthcare, primary care fails to consistently deliver integrated biopsychosocial care for patients with SMI and OAD. Collaborative, personalised care which builds social capital and tailors support for self-management is needed, alongside enhanced access to primary care for patients with SMI and OAD.

### Funding Acknowledgement

Patient recruitment was supported by adoption of the study by the Deep End Yorkshire and Humber NIHR Clinical Cluster Research Network (CRN) and the Sheffield-Ten NIHR CRN. A Grant from the Clare Wand Fund (BMA) supported project costs. Researcher time was part-funded by the NIHR CLAHRC Yorkshire and Humber. [www.clahrc-yh.nihr.ac.uk](http://www.clahrc-yh.nihr.ac.uk). The views expressed are those of the author(s), and not necessarily those of the NIHR or the Department of Health and Social Care.

## B.1

### Differences in family carer's awareness of dementia caring support between Scotland and Japan

Presenter: Daiki Ando

Authors: Mina Suematsu(1), Noriyuki Takahashi(1), Kentaro Okazaki(1), Etsuko Fuchita(2), Manako Hanya(3), Keiko Abe(4), Yusuke Suzuki(5), Masafumi Kuzuya(1), Morag McFadyen(6), Sundari Joseph(7), Lesley Diack(6)

#### Institutions

- 1) Nagoya University Graduate School of Medicine, Japan,
- 2) Nagoya University School of Health Science, Japan,
- 3) Department of Pharmacy, Meijo University, Japan,
- 4) Critical Care Nursing, Aichi Medical University, Japan,
- 5) Center for Community Liaison and Patient Consultations, Nagoya University Hospital,
- 6) School of Pharmacy Sciences, Robert Gordon University, Aberdeen, UK,
- 7) Learning and Deve

#### Abstract

##### Problem

Family carers suffer from their caring burden, especially in dementia care. In Japan, family carers tend to shoulder most of the caring burden because of cultural norms, such as the expectation of providing family care at home. Although the Japanese government established new strategies to provide support for both people with dementia and family carers, the burden on family carers has been increasing because of shortened length of hospital stays and promotion of home caring. Like Japan, Scotland is also an ageing society, and it supports family carers for people with dementia as a national strategy. Although care for dementia has been adequately provided and become widespread according to the national strategy, there has been little research on family carers' recognition of available caring support. This study aimed to clarify how family carers for people with dementia at home perceive caring support in Scotland and Japan.

##### Approach

This was a qualitative study which interviewed the key family carers in dementia home-caring environments in Scotland and Japan. Participants were recruited through convenience purposive sampling. We asked family carers how they felt about dementia care and the formal and informal care they received. The transcripts were analysed using 'Steps for Coding and Theorisation', a qualitative data analysis method. This study was approved by the Ethics Committee of Nagoya University School of Medicine.

##### Findings

Common perceptions of family carers for dementia in Scotland and Japan were 1) difficulty accepting dementia, 2) feeling a caring burden due to difficult dementia care, 3) hope for escaping from the caring responsibility and 4) interrole conflict among family carers. Family carers' perceptions of each support were different and categorized into 3 types of providers: 1) subcarers, 2) community and 3) providers of care supports. In Scotland, support from the subcarers decreased the burden on the main carers because care roles were equal, clearly divided and cooperative. Family carers assumed a 'Let it be' attitude in announcing the dementia to the community, and they were satisfied with and trusted the providers of care support. In Japan, there was a difference in the awareness of dementia care among the family members because the care roles were ambiguous, sometimes uncooperative and unequal. Family carers were reluctant to let their community know about the dementia, and there was insufficient support for main carers from providers of care supports.

##### Consequences

Compared with Scotland, Japanese family carers are more frequently isolated. Thus, they tend to disclose their care experience to groups with similar care experience and peer support is more effective. It is expected that the comparison of two diverse countries' awareness about dementia caring support can inform the development of quality dementia care worldwide.

##### Funding Acknowledgement

Grant-in-Aid for Scientific Research(C) Funded from JSPS (Japan Society for Promotion for Science) 2018



## B.2

### Managing older people's perceptions of alcohol-related risk in primary care: Qualitative exploration

**Presenter: Bethany Bareham**

Co-authors: Professor Eileen Kaner, Professor Barbara Hanratty

#### Institutions

Newcastle University Population Health Sciences Institute

#### Abstract

##### Problem

Risks of harm from drinking increase with age, as alcohol affects health conditions and medications that are common in later life. Different types of information and experiences affect older people's perceptions of effects of alcohol on their bodies, which must be navigated when supporting healthier decisions for drinking. This study aimed to explore how older people understand effects of alcohol on their health; and how these perspectives are navigated in supportive discussions in primary care to promote healthier alcohol use.

##### Approach

A qualitative study was conducted, consisting of semi-structured interviews and focus groups with older ( $\geq 65$  years) non-dependent drinkers and primary care practitioners in Northern England. Twenty-four older adults and 35 primary care practitioners participated in interviews and focus groups. Data were analysed thematically, applying principles of constant comparison.

##### Findings

Older adults were motivated to make changes to their alcohol use when they experienced symptoms, and if they felt that limiting consumption would enable them to maintain their quality of life. The results of alcohol-related screening were useful to provide insights into the potential effects for individuals. Primary care practitioners motivated older people to make healthier decisions by highlighting individual risks of drinking, and potential gains of limiting intake.

##### Consequences

Later life is a time when older people may be open to making changes to their alcohol use, particularly when suggested by practitioners. Older people can struggle to recognise potential risks, or perceive little gain in acting upon perceived risks. Such perceptions may be challenging to navigate in supportive discussions.

#### Funding Acknowledgement

This study/project is funded by the National Institute for Health Research (NIHR) School for Primary Care Research (project reference BH152196). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

## B.3

### Development and feasibility testing of a new person centred care intervention 'VOLITION': an Intervention Mapping approach.

**Presenter: Jo Butterworth**

Co-authors: Professor Suzanne Richards (1), Dr Emma Pitchforth, Professor John Campbell

#### Institutions

University of Exeter Medical School,

(1)University of Leeds Faculty of Medicine and Health

#### Abstract

##### Problem

The population is ageing and two thirds of those in the UK have multimorbidity. These patients consult frequently and live with a heavy burden of illness, associated with poor quality of life and increased mortality, along with a high treatment burden and associated healthcare costs. Ensuring the provision of high quality person-centred care for these patients poses a real challenge for primary care clinicians, researchers and policy-makers alike. There are few existing interventions in this emerging field. Recently, the potential benefits to older patients with multimorbidity, from participating in decision-making about their healthcare, have been acknowledged in UK health policy. The aim of VOLITION is to facilitate

the involvement of older people with multimorbidity in decision-making about their healthcare during general practice consultations.

#### Approach

An Intervention Mapping (IM) framework was followed as a means of systematically applying existing literature, new data and relevant theory to six iterative steps in the development, refinement and feasibility testing of VOLITION. Patient and public involvement (PPI) was central. We also sought expert stakeholder opinion e.g. through the international symposium on multimorbidity and the RCGP's Network of Champions for patient centred care. We published a Cochrane systematic review of similar interventions. A qualitative focus group study validated our proposed 'performance' and 'change' objectives e.g. by asking patients whether objectives matched their preferences for GP consultations, and asking GPs how they might perform changed behaviours. VOLITION is to be feasibility tested, with process evaluation, in March-July 2020. The feasibility trial was designed using IM and integrates implementation theory, stakeholder opinion and existing literature.

#### Findings

Whilst patient involvement is advocated by experts and recent guidelines on multimorbidity, few studies exist that evaluate interventions to facilitate the involvement of older patients with multimorbidity in primary care. Additionally, potential barriers are perceived by GPs and patients when considering patient involvement in this context. Our IM approach to development ensured that VOLITION took into account all of the above. VOLITION consists of a handout to prompt patients to express their preference for involvement; and a GP training workshop in shared decision-making, tackling the perceived challenges of applying these skills when consulting with this patient group.

#### Consequences

VOLITION adheres to core components of NHS England's current universal personalised care plan; to empower patients in the management of their own healthcare and to train more clinicians in patient-centred skills. The stakeholder involvement, established through our IM approach, provides a platform for dissemination of our findings. A full,

definitive trial of VOLITION is planned. An effective intervention in this area, designed and refined using end-user perspectives, has the potential to influence policy makers as well as clinicians towards ensuring high quality patient-centred care for older people with multimorbidity.

#### Funding Acknowledgement

National Institute for Health Research (NIHR) Doctoral Research Fellowship

## B.4

### Does method of frailty measurement affect prevalence or associations with health-related outcomes in those affected by stroke?

**Presenter: Katie Gallacher**

Co-authors: Peter Hanlon, Terry Quinn, Jenni K Burton, Frances S Mair

#### Institutions

Institute of Health and Wellbeing, University of Glasgow

Institute of Cardiovascular and Medical Sciences, University of Glasgow

#### Abstract

##### Problem

There has been recent interest in the measurement of frailty to enable identification of those at risk of adverse health-related outcomes. There is a scarcity of research on frailty after stroke, with no consensus on method of measurement. This study aims to examine the prevalence of frailty in stroke survivors and associations with health-related outcomes using differing methods of measurement.

##### Approach

A pooled cohort was created of participants with self-reported stroke aged >50 years from three datasets: the USA Health and Retirement Survey (HRS), the Survey for Health, Ageing and Retirement in Europe (SHARE) and the English Longitudinal Study of Ageing (ELSA). Frailty was assessed at baseline using: 1) frailty phenotype (low grip strength, unintentional weight loss, slow walking speed, exhaustion, low physical

activity; 1-2 = pre-frail, 3 or more = frail); 2) the frailty index (a cumulative total of age-related deficits, divided by the total number of possible deficits; <0.12 = robust, 0.12-0.24 = mild, 0.24-0.36 = moderate, >0.36 = severe frailty); 3) the frailty index with an additional six cognitive measures (e.g. immediate and delayed recall, naming current date). Outcomes were assessed at the first data collection point following baseline (approximately 2 years follow-up) and included mortality/hospital admission in the preceding 2 years, and recurrent stroke. Logistic regression models were adjusted for age and sex.

## Findings

Pooled cohort data included 12,422 participants with stroke (HRS: n=3164; SHARE: n=8179; ELSA: n=1079). Mean age (sd): 71.9 (10.8), 50.4% female. Frailty phenotype: robust 1925 (28.8%); pre-frail 3406 (50.9%); frail 1355 (20.3%). Frailty index without cognitive variables: robust 1454 (13.7%), mild 3049 (28.7%), moderate 2352 (22.2%), severe 3758 (35.4%). Frailty index with cognitive variables: robust 1447 (14.6%); mild 3107 (31.3%); moderate 2064 (20.8%); severe 3320 (33.4%). When measuring frailty with the frailty index (without cognitive measures), stroke survivors with moderate frailty had nearly triple the mortality risk compared to those who were robust (RR 2.80; CI 1.9-4.2) and stroke survivors with severe frailty had six times the mortality risk (6.2; 4.4-9.1). Compared to robust stroke survivors, risk of hospital admission was double in the moderate frailty group (2.3; 1.9-2.9) and triple in the severe frailty group (3.1; 2.52-3.84). There were no associations found between frailty and recurrent stroke, even when comparing those with severe frailty to those who were robust (0.9; 0.66-1.24). Results for health-related outcomes were similar when using all three methods of frailty measurement. Consequences Use of the frailty index found a higher prevalence of post-stroke frailty than the frailty phenotype, however adding cognitive variables to the frailty index did not alter findings. All measurements gave similar results when examining frailty and health-related outcomes. Building an international consensus and harmonising measures across registries/trials would facilitate future comparative research.

## Funding Acknowledgement

The Stroke Association TSA LECT 2017/01, MRC Clinical Research Training Fellowship

## B.5

### Would legislating through a Human Rights Lens promote a fair and effective long term care system?

**Presenter: Louisa Harding-Edgar**

Co-authors: Allyson Pollock, Luke Clements, Julie Froud, Barbara Hanratty, Charlene Harrington, Katie Boyle

## Institutions

University of Glasgow, Newcastle University, University of Leeds, University of Manchester, University of California, University of Stirling

## Abstract

### Problem

The system for long term care in England is inequitable and unfit for purpose. Long term care charging is a complex, confusing and fragmented mix of funding streams, with various statutory bodies commissioning services from multiple providers. This analysis piece aims to explore the flaws in the current long term care system and also examines whether legislating for a 'human right to health' would promote the development of a fair and effective long term care system.

### Approach

This analysis describes the history of long term care in the UK, then examines data from a number of reports including from the Office of National Statistics, National Audit Office, Care Quality Commission, Department for Work and Pensions and the Kings Fund, using this to identify problems in the current system. We especially scrutinised data related to funding, workforce factors and quality of care. Research from the US was also included to show the effects of marketisation on long term care.

### Findings

An examination of the history of long term care in the UK shows how gradual divergence from the NHS led to the current, fragmented system. The extent of market involvement and privatisation in today's system and inadequate funding and poor working conditions have clearly had a negative effect. As local authority funding has fallen from 2010 to 2017, the workforce has continued to shift away from local

authority jobs toward independent sector jobs. Reduced funding has been accompanied by tightening of eligibility criteria for long term care, delays in assessing eligibility and inconsistent and inequitable application of criteria. 24% of the workforce is on zero hour contracts, with many paid the National Living Wage or less. Data on quality of care is scarce, with little information available about the quality of accommodation or the extent to which needs are met.

### Consequences

Our findings suggest that a human rights approach could counter many of the problems we have identified in the current long term care system. A national strategy for long term care would be required, devised through a participatory and transparent process, giving particular attention to vulnerable groups. The legally mandated system would integrate funding and require the creation of unified statutory bodies with clear duties to avoid unnecessary fragmentation. Data collection would be routine to ensure accountability and transparency. This approach would lead to the reorientation of services away from the profit driven market towards participator model consistent with progressive human rights obligations. It would also make regression in funding and delivery of services challengeable in the courts.

## B.6

### Development of a framework to support the design and evaluation of Pharmacist led medicines optimisation in Care Homes – a local validation

**Presenter: Dr Andrea Hilton**

Co-authors: Ian Maidment, Nichola Seare, Hemant Patel

### Institutions

University of Hull, Aston University, Wolverhampton CCG

## Abstract

### Problem

Older people are the major users of medication. In the last 20 years there has been a dramatic increase in the prevalence of polypharmacy with the number of older people taking five or more medicines increasing from 12% to nearly 50%. Medicines optimisation is thus challenging in older people and can be particularly challenging in older people in Care Homes where there is a high prevalence of dementia. Wolverhampton CCG has been supporting medicines optimisation in Care Homes for a number of years via a series of initiatives all of which aim to reduce the problems associated with inappropriate polypharmacy, reducing medication errors, adverse drug interactions, difficulty in taking medications as directed and supporting medicines management within care homes. The aim of this service evaluation project was to develop a framework to support the design and evaluation of Pharmacist led medicines optimisation in Care Homes.

### Approach

The framework, for pharmacist-led medicines optimisation, was developed in a four-stage process: Stage 1: Establishment of a Core Project Team and a Consultative Group N= 11 (local clinicians (doctors, pharmacists/pharmacy technicians, nurses) and a care home manager) to support evaluation of the framework during its development

Stage 2: Development of a first draft of the framework Key elements for the framework were developed by the Core Team (AH, NS, IM) from current literature, previous research and service evaluations undertaken by the CCG and Aston University. Several iterations were developed

Stage 3: Evaluation of the first draft of the framework by the Consultative Group The Consultative Group evaluated every element of the draft framework providing quantitative data and free-text qualitative comments. Elements of the framework were rated using a six-point scale of (5) Essential (4) Highly recommended, (3) Recommended (2) Desirable, (1) Desirable if possible (0) Remove.

Stage 4: Analysis of the data from the evaluation by the Consultative Group

## Findings

Elements with a mean rating of two or less (N = 12) were reviewed by the Core Team. Along with the qualitative comments. Qualitative comments on the framework were analysed. Key amendments were made: Using full Primary Care record rather than a summary  
Removal of any duplication notifications  
To include information on vital physical signs and other clinical assessments  
Further to this, other general themes included the need to involve A) GP's B) care home staff C) residents/family carers at key stages

## Consequences

We have evaluated/validated a local framework to support a pharmacist led model for medicines optimisation in care homes. The next steps include validating the framework to reflect different models across the UK with a national survey of health professionals and a qualitative study investigating the engagement of residents and family carers.

## Funding Acknowledgement

Wolverhampton CCG

## B.7

### Challenges for rural primary care teams in providing care for patients with dementia

**Presenter: Lucy Hodkinson**

Co-authors: Dr Nigel Hart, Dr Bernadette McGuinness

## Institutions

Queen's University Belfast

## Abstract

### Problem

Concerns about managing the healthcare needs of an aging population are growing. Predictions shows the number of people over 65 years old will grow by around 7% by 2025. With more people living longer there is a higher prevalence of chronic diseases. Significant amongst these related to dementia and its impact on the individual, caregivers and healthcare system. Currently 850,000 people in the UK have dementia with this expected to grow by 140% by 2050. Health and social care expenditure on people

with dementia is expected to double within 20 years. Over the next decade the rural population is set to increase by 6 percent- with an upwards trend in deurbinsation- people moving from urban areas to the countryside as they get older. This will lead to an increase in elderly people in rural areas, and an increase therefore in chronic conditions such as dementia. Challenges of rural healthcare include distance to services, isolation, lack of internet/phone connectivity. These compounded with a diagnosis of dementia can result in a negative quality of life. Often the first point of contact for these patients, who could be living alone with no support, is their General Practitioner and Primary Healthcare Team. (PCT)  
General literature review suggests that some work has been done looking at challenges for carers of patients with dementia in rural areas but little specifically looking at the challenges facing the multidisciplinary PCT.

## Approach

The aim of this study is to identify the challenges, for the rural primary care team in providing care for patients with dementia and to identify ways in which care might be improved. 1. To identify challenges for the rural PCT in providing care for patients with dementia 2. To establish degrees of concordance and difference of challenges faced by rural PCTs providing care for patients with dementia in Northern Ireland and that revealed in the literature 3. To identify ways in which the rural PCT could improve care for patients with dementia

## Findings

I have carried out a scoping review with the question - what is known about the challenges for rural primary care teams in providing care for patients with dementia. Results of this have shown a small number of studies mainly based in the USA and Australia. The challenges of geography, distance and access to specialist services, lack of community resources, stigma and lack of training for rural physicians were amongst the main findings. More detailed findings would be presented at the conference if successful. I am in the process of conducting focus groups in rural Northern Ireland. Results of these would be presented at the conference.



## Consequences

I feel the findings will be pivotal in addressing future healthcare needs for patients with dementia living in rural and remote areas of northern Ireland and further afield.

## B.8

### Exploring GPs' experience of difficult decisions in dementia patients with an acute illness

**Presenter: Samuel Lassa**

Co-authors: Chris Burton, Jon M Dickson

#### Institutions

University of Sheffield

#### Abstract

##### Problem

Dementia is a brain disease which causes disturbance in higher cortical functions such as learning capacity, memory, thinking, orientation, comprehension, calculation, language and judgement leading to a decline in their cognitive function which affects their social and occupational functioning, hence impairing their independent functioning. Although dementia is not, in itself an acute medical condition, it accounts for a large number of emergency hospital admission in older persons with a majority of these patients referred to hospital from home with acute illnesses such as respiratory and urinary tract infections. These account for 42% of all unplanned hospital admissions and recent studies show that acute hospital care is often not the most appropriate place for people with dementia and acute illness. In primary care there are guidelines for most health conditions but most guidelines do not give GPs enough guidance on how to make decisions for dementia patients with co-morbidities or acute illnesses. As GP assessment and admission is one of the pathways to acute hospital care, it is important to understand how GPs make decisions about acute care for people with dementia and intercurrent acute illness. This study aims to understand how these decisions are made, between GP, patient, family and carers and other health & social care providers in the presence or absence of advanced care plans.

## Approach

This study will be a qualitative study carried out in a community setting, conducting approximately 15 semi-structured interviews with GPs who have managed dementia patients with acute illnesses. Our sample will be aimed at GPs who are experienced in caring for dementia patients who have acute illness including at home and in social care and both in and out of normal working hours. This diverse sample of in hours GPs and Out of hours GPs will facilitate a comparative analysis during data synthesis. The study will frame the analysis within a model of micro-politics – in which actions about a specific issue arise from discussion and negotiation between different agents during which trade-offs and compromises may be made in search of a solution. In this case the focus of the micro-politics will be decisions between GP, patient, family and carers and other health and social care providers about the management of acute illness in a person with dementia.

## Findings

Results of this study will give more insight into Continuity of care (in hours service) versus Transactional care (Out of hours service) as it relates to dementia care in acute situations and the barriers GPs overcome when while making decisions for dementia patients in shared-care.

## Consequences

Understanding more about decision making for dementia patients has implications for both equitable care for patients and helps to inform interventions and policies to optimise acute illness care for people with dementia.

## B.9

### 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 a realist evidence synthesis with intervention co-design.

**Presenter: Rebecca-Jane Law or Nefyn Williams**

Co-authors: Rebecca-Jane Law, Joe Langley, Chris Burton, Beth Hall, Julia Hiscock, Lynne Williams, Val Morrison, Andrew Lemmey, Jennifer Cooney, Rebecca Partridge, John Gallanders, Candida Lovell-Smith, Nefyn Williams

#### Institutions

Bangor University, University of Liverpool, Sheffield Hallam University, Canterbury Christchurch University, Public Involvement

#### Abstract

##### Problem

Approximately 25% of people with one long-term condition report 'problems performing usual activities', rising to over 60% with three or more long-term conditions. As people age and accumulate more long-term conditions, physical activity typically declines, contributing further to disability and reduced independence. Primary care is well placed to empower individuals and communities to address this problem; however, the best approach is uncertain. This study aims to develop a primary care intervention to promote physical activity and physical function for people with long-term conditions.

##### Approach

A realist synthesis was conducted, incorporating systematic and purposive searches of relevant literature, two theory-building workshops (n=25) and ten theory-refining interviews with stakeholders. The emerging evidence-based programme theories informed three co-design workshops (n=23) and a knowledge mobilisation event (n=14) to develop a primary care service innovation.

##### Findings

Five context (C), mechanism (M), and outcome (O) statements were developed:

1. Primary care settings are characterised by competing demands, and improving physical activity and physical function is not prioritised in a busy practice (C). If the practice team culture is aligned to promote and support the elements of physical literacy (M), then physical activity promotion will become more routine and embedded in usual care (O).
2. Physical activity promotion in primary care is inconsistent and uncoordinated (C). If specific resources are allocated to physical activity promotion (in combination with an aligned practice culture) (M), then this will improve opportunities to change behaviour (O).
3. People with long-term conditions have varying levels of physical function and physical activity, different attitudes to physical activity and differing access to local resources that enable physical activity (C). If physical activity promotion is adapted to individual needs, priorities and preferences, and considers local resource availability (M), then this will facilitate a sustained improvement in physical activity (O).
4. Many primary care practice staff have a lack of knowledge and confidence to promote physical activity (C). If staff develop an improved sense of capability through education and training (M), then they will increase their engagement in physical activity promotion (O).
5. There have been many initiatives to encourage physical activity with varying degrees of success (C). If a programme is credible to patients and professionals, trust and confidence in the programme will develop (M) and more patients and professionals engage with the programme (O). A prototype intervention has been co-designed, embodying the emerging programme theories and developing resources to promote physical activity and physical function for people with long-term conditions.

##### Consequences

This work addresses the need to determine ways of promoting physical activity that can improve health and independence for people with long-term conditions, and are adaptable to varying and pressurised primary care contexts. A future research programme will develop further the intervention elements and assess acceptability.

## Funding Acknowledgement

This project is funded by the National Institute for Health Research (NIHR) Health Services and Delivery Research programme (17/45/22). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

## B.10

### Treatment access and self-management support for migraine in primary care: development of a feasibility study proposal for group consultations

**Presenter:** Anne-Marie Logan

Co-authors: Nan Greenwood, Mark Edwards

#### Institutions

St George's University of London, Faculty of Health, Social Care and Education and St George's University of London and Kingston University

#### Abstract

ProblemMigraine is ranked as the most disabling health condition under the age of 50 years, affecting 1 in 7 people. Access to effective treatment of episodic migraine (EM) in primary care is important as inadequate acute treatment is a predictor of chronic migraine (CM). Emergency hospital admissions for headache have increased by 15% in England since 2012/2013 despite recommendations that migraine is treated in primary care. Waiting lists for neurology continue to grow. Group self-management interventions have been shown to be effective in patients with CM but the evidence in EM is less clear. This project aimed to identify patients' priorities for research through patient and public involvement (PPI).

#### Approach

One to one discussions with migraine patients were held in a specialist headache clinic and a national migraine charity clinic. A discussion framework, developed previously with patients, guided discussions about patient and healthcare provider roles. Handwritten transcripts were typed by the author and analysed using an inductive approach to identify codes and these codes were grouped into

themes. The themes then informed development of an online social media survey which asked patients to rate the importance of different types, providers and locations of support. The survey was publicised by national migraine charities through Twitter and Facebook after piloting. Findings were then discussed with the PPI group.

#### Findings

Discussions with 21 consecutive patients from the two settings were analysed. Four themes were identified: access to care, collaboration, prevention and treatment. Patients thought they had an important self-management role that centred on migraine attack prevention through leading "the right lifestyle". They described what support was needed and was missing. Access to care was highlighted in most discussions as a problem. Collaboration between patients and clinicians was important: "have to use medical side and your side together". The survey, completed by 221 respondents, rated decision making support, education and side effect knowledge as extremely important in > 80% of responses. The majority responded that self-management support should be provided by the NHS, located in the community and provided through group plus one to one support. Subsequent discussions with the PPI group have identified that evidence is needed as to whether group consultations for migraine address the problems identified.

#### Consequences

Patients' identified support for their role along with better access to treatment as priorities for research. This has led to the development of a feasibility study proposal of group consultations for migraine. The expected outcome will be a manualised group consultation programme, a process evaluation and co-creation of video and written resources for use in primary care.

## Funding Acknowledgement

Anne-Marie Logan is funded by a National Institute for Health Research (NIHR) Pre-doctoral Clinical Academic Fellowship (PCAF) for this research project



## B.11

### Developing a Culturally Adapted Intervention to Improve Cognitive Functioning in British South Asians with Dementia: A Protocol

**Presenter: Sarah McMullen**

Co-authors: Dr Waquas Waheed, Prof Peter Bower

#### **Institutions**

University of Manchester

#### **Abstract**

##### **Problem**

The WHO states, 'Dementia is a global public health challenge.' Non-pharmacological interventions such as Cognitive Stimulation Therapy and Reminiscence Therapy are recommended by NICE to support individuals living with dementia. However the 'one size fits all' approach does not allow all individuals living with dementia to benefit from these interventions. The proposed project will be focused on the Urdu speaking British South Asian population. According to the ONS, Urdu is the fourth most spoken language in the UK, with 269,000 Urdu speaking individuals residing in England and Wales. The aim of the project is to select and culturally adapt the appropriate treatment (Cognitive Stimulation Therapy or Reminiscence Therapy) for Urdu speaking British South Asians with dementia using previously conducted systematic reviews and qualitative methods.

##### **Approach**

The study will be based on the MRC (2008) guidelines on developing and evaluating complex interventions. This project will be based on the first phase of the MRC guidelines which is the development stage. The study is based on qualitative research methods. The research methods will include background research using previously conducted systematic reviews, focus groups, a consensus process meeting and a PPIE group. The first step of the project is to conduct background research on both therapies. This will include systematic reviews on the recommended interventions, literature on patient priorities and patient preferences. The second step is to conduct a focus group. Focus group 1 will aim to select the appropriate therapy. The third step is the cultural

adaptation of the manual for the appropriate therapy using results from the first focus group and background research. The fourth step is the consensus process meeting and PPIE Group. The aim of the meeting is to finalise the changes and solutions for the culturally adapted manual. The PPIE group will be asked to give their opinion on the activities, format and translations of the culturally adapted manual. Lastly, another focus group will be conducted that will aim to evaluate the appropriateness, deliverability and acceptability of the culturally adapted intervention for Urdu speaking British South Asians with dementia.

##### **Findings**

Background research has shown that Cognitive Stimulation Therapy provides improvement in cognition and Reminiscence Therapy provides improvement in psychological and behavioural symptoms, quality of life and depression.

##### **Consequences**

There is a need for culturally appropriate and acceptable interventions for the ethnic minority community in the UK. The top five spoken languages in England and Wales are dominated by South Asian languages. Important risk factors for dementia such as stroke, diabetes, heart disease (including blood pressure, hypertension) are more prevalent in the South Asian community in comparison with the white population. These risk factors increase the susceptibility of South Asians developing dementia however South Asians have been neglected in dementia research.

## B.12

### GP views on the routine identification and management of frailty in primary care

**Presenter:** Ebrahim Mulla

Co-authors: Elizabeth Orton, Denise Kendrick

#### Institutions

University of Nottingham

#### Abstract

##### Problem

The 2017/18 General Medical Services (GMS) contract requires primary care providers to use electronic tools to risk-stratify for frailty all patients over 65 years of age. Those patients flagged as moderately or severely frail should be clinically reviewed and if severe frailty is confirmed, providers have been asked to offer relevant interventions. These include an annual medication review, sharing of the summary care record and if applicable referral to a falls prevention scheme. However, little is known about how this is being operationalised. The aim of this study was to improve our understanding of the ways in which the frailty contractual requirement is being implemented in primary care and the barriers and facilitators GPs encounter when routinely identifying, risk-stratifying and providing interventions for people living with frailty in primary care.

##### Approach

This was a 2-part study- a survey via online questionnaire to recruit participants, selected by maximum variation sampling, for a follow-up semi-structured telephone interview. All GPs working in the East Midlands region (Derbyshire, Leicestershire, Lincolnshire Nottinghamshire, Northamptonshire) were eligible to take part. A written invitation to participate in the survey was circulated electronically through primary care newsletters and direct GP email. The questionnaire and interview schedule were developed following a review of the literature, peer-reviewed by an expert advisory group from NHS England's Older People team and piloted with 8 and 3 GPs respectively. The questionnaire collected demographic information, responses to a series of Likert-type statements assessing GPs' knowledge and attitudes and provided an opportunity for the GP to

volunteer for a follow-up interview. The interview schedule consisted of 3 stem questions exploring practice systems to identify patients living with frailty, subsequent actions and how it was implemented. The online questionnaire was analysed using descriptive statistics. Interview recordings were transcribed verbatim and transcripts were analysed using framework analysis.

##### Findings

188 GPs responded to the survey from a possible 3,058 GPs (response rate 6%) and 18 GPs were interviewed. GPs held mixed attitudes towards stratification and pro-active identification of people living with frailty, underpinned by a lack of understanding about frailty and frailty stratification. GPs found an increase in workload from both undertaking reviews and uncovering unmet need. Many GPs found the usefulness of electronic tools hampered by a lack of sensitivity and specificity.

##### Consequences

The study has highlighted a range of factors which influence the ability of primary care services to proactively identify and manage older people living with frailty. The findings will inform the ongoing development of NHS England policy on the GMS frailty contractual requirement for primary care providers, development of frailty educational interventions for primary care healthcare professionals and further research about appropriate service configuration.

#### Funding Acknowledgement

RCGP Scientific Foundation Board Practitioners Allowance Grant

## B.13

### Living and dying well with dementia: Investigating a Dementia Nurse Specialist role in primary care

**Presenter: Louise Robinson**

Co-authors: Marie Poole, Emma McLennan, Dorothy Coe, Kate Rennie, Louise Robinson on behalf of the SEED team

#### Institutions

Newcastle University

#### Abstract

##### Problem

Dementia is a leading cause of death in older people in the UK. Research shows that people with dementia receive poorer end of life care (EOLC) than to those with cancer. Supporting Excellence in End of Life Care in Dementia (SEED) was a 5-year NIHR-funded programme which aimed to support professionals to deliver good quality, community-based care towards, and at, the EOL for people living with dementia and their families.

##### Approach

We drew on existing literature, qualitative research and co-design workshops with key stakeholders to develop an intervention comprising a primary care based, dementia nurse specialist (DNS) and associated resources. The DNS provided direct care to people with dementia and their families, supported professionals and promoted systems change. We assessed the feasibility and acceptability of the intervention through a pilot study with a cluster design. Two GP practices were allocated a DNS for 12 months, two further practice acted as controls, providing usual care. Eligible patients were identified using the practice dementia register and a family member and, for those in care homes, a key informant, were also recruited. Numerical data on recruitment and retention and completion of outcome measures were supplemented with qualitative data on the acceptability of study procedures and outcome assessment. Data on intervention fidelity and the acceptability of the intervention were captured through activity logs, observation of intervention delivery and interviews with people with dementia, family carers, a broad

range of health and social care professionals, and the DNS.

##### Findings

We achieved our recruitment target of 11 people with dementia per practice; although identifying patients thought to be approaching end of life was challenging and time consuming. Only 12 patients died during the study period. The SEED intervention proved feasible and acceptable to all stakeholders; key components of the role were providing proactive care, continuity and co-ordination. Improving the local context for EOLC was achieved through development of training for care home staff and implementing a template for annual dementia reviews. None of our outcome measures were suitable as the primary outcome measure for a future trial.

##### Consequences

Our DNS intervention was acceptable, feasible and integrated well with existing care; importantly it was highly valued by all stakeholders. Extending the intervention to all people with dementia was widely recommended; this offers a possible solution to delivering the single, named care co-ordinator role recommended in NICE dementia guidance.

#### Funding Acknowledgement

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## B.14

### Pilot study of a mobile phone app and health coach intervention for dementia prevention in socially and economically deprived communities in the UK.

**Presenter: Shanu Sadhwani**

Co-authors: Shanu Sadhwani, Harm van Marwijk, Edo Richard, Eric Moll Van Charante, Marieke Hoevenaar-Blom, Melanie Hafdi, Esme Eggink and the PRODEMOS consortium

## **Institutions**

Brighton and Sussex Medical School, Academic  
Medical Centre Amsterdam

## **Abstract**

### **Problem**

Dementia is a pressing public health concern and the burden of NHS care for dementia largely falls within primary care. The projected steep rise in global dementia prevalence will largely occur in low and middle-income countries and vulnerable populations in high-income countries. Up to 30% of all dementia is attributable to potentially modifiable risk factors. Innovative strategies are needed to bridge the gap between the theoretical benefits of effective dementia risk factor control and what is in fact achieved in practice. Mobile Health (mHealth) technology allows for scalable and widely implementable prevention programs using self-management for improvement of dementia risk factors such as smoking, diet and physical activity.

### **Approach**

Here, we report a pilot study of a mobile phone application enabling goal-setting and behaviour change, and supported by a health coach. We included 20 participants aged 55-75, who had two CVD risk factors, lived in economically deprived areas in Sussex, and who were recruited through two general practices. We assessed the success of our methods and procedures for: recruiting participants, screening them for eligibility, installing the app on their mobile phones, randomising them, and starting the health coaching both face to face and through the app. Participants were followed up for 8 weeks. Participants were invited to a focus group to give feedback on the app and the study procedures.

### **Findings**

Participants were invited to participate using a mailshot sent out from their GP surgery, only 3% of invited participants responded. A text-message follow-up was effective at reminding potential participants to call the study team. Many participants needed support in installing the app on their phones as well as ongoing technical support throughout the pilot. We identified that robust tracking systems needed to be in place to support participants through the study protocol. GP sites and health coaches

needed study specific training and ongoing technical support. Focus groups found that participants are keen to reduce their risk of dementia, and like the concept of doing this through technology.

### **Consequences**

Rolling out mobile phone technologies for dementia prevention in economically deprived and older populations comes with a host of challenges. Following lower than expected recruitment, our participants liked the idea of the app, but we found delivering an m-Health intervention required significant and ongoing technical support and robust resources for participants and staff involved. Although some clinical time could be saved using m-Health interventions, significant time was required from technical staff in order to support both patients and health coaches for the duration of the pilot. Learning from the pilot will inform the roll out of our large randomised controlled trial on the efficacy of the app, which will start later this year.

## **Funding Acknowledgement**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 779238. The trial is listed on the ISRCTN registry with study ID ISRCTN15986016 (<http://www.isrctn.com/ISRCTN15986016>)

## B.15

### A psychosocial intervention for older adults with depression and multiple long-term conditions: Development utilising qualitative and co-design methods.

**Presenter: Dr Claire Sloan**

Co-authors: Claire Sloan(2), Dean McMillan(2), David Ekers(1&2), Della Bailey(2), Elizabeth Littlewood(2), Suzanne Crosland(2), Eloise Ryde(1&2), Andrew Henry(1&2), Peter Coventry(2), Gemma Traviss-Turner(4), Simon Gilbody(2) and Carolyn A. Chew-Graham(3)

#### Institutions

- 1). Tees Esk and Wear Valleys NHS FT. Research & Development Office, Flatts lane Centre Flatts Lane, Normanby, Middlesbrough, TS6 0SZ,
- 2). Department of Health Services, Seebohm Rowntree Building, York University, Heslington, York, YO10 5DD,
- 3). Research Institute, Primary Care and Health Sciences, Keele University, Staffordshire, ST5 5BG ,
- 4). Leeds University, Leeds, LS2 9NL

#### Abstract

##### Problem

Long-term conditions (LTCs) are prevalent amongst older adults: 60% of people aged 70-79 years and 70% of people aged 80+ years report one or more LTCs. Demographic changes mean that LTC management is an increasing health priority. Depression is 2 to 3 times more common in people with LTCs, resulting in poorer health outcomes and increased mortality, increased treatment costs and a significant contribution to health inequalities. The study aimed to iteratively develop and refine a psychosocial intervention (Behavioural Activation within a collaborative care framework) for older adults with comorbid depression and LTCs to improve physical and psychological functioning. The effectiveness of this intervention will be tested as part of a larger programme of research: the Multimorbidity in Older Adults with Depression Study (MODS).

##### Approach

An iterative process of intervention development and refinement using interview and co-design methods was adopted, following O’Cathain et al’s., (2019) recommendations for developing interventions to improve health (1 Partnership; 2 Target population-centred; 3 Theory and evidence-based; and 4 Implementation-based). Semi-structured interviews were conducted with physical and mental healthcare professionals (HCPs), older adults (OAs) who had experienced low mood/depression and/or had two or more LTCs, and people who provided informal care to this OA population (Caregivers, CGs). Interviews explored OAs’ and CGs’ experiences of mental-physical multimorbidity, access to and experiences of care for physical and mental health symptoms, views on the proposed intervention; and, for HCPs, experiences of providing care for OAs with depression and/or LTCs. Data analysis utilised thematic analysis (TA) and Framework Analysis (FWA). Key questions generated from data analysis were presented and discussed at 3 stakeholder co-design workshops. The prototype intervention and OA materials were tested with two small samples of OA participants (“case series”), who were then interviewed to explore their experiences of the intervention. Ethical and regulatory approvals were obtained.

##### Findings

Practical features of the intervention, including number of sessions, mode of delivery, how to include a caregiver, liaison with other HCPs, who should deliver the intervention and methods of signposting to other services were agreed during the co-design process. The co-design workshops also contributed to the development of a self-help booklet for OAs which included patient diaries, goal setting, and ‘patient stories’; which were all further refined following the case series. Key features of the intervention, including the support worker training programme and accompanying intervention manual, were also agreed during the co-design process.

##### Consequences

The value of co-design to develop a psychosocial intervention which aims to improve the mental and physical well-being of OAs with comorbid depression and LTCs will be discussed. The intervention is due to be tested in a future trial and, if acceptable and

effective, can be applied across a range of healthcare settings.

### **Funding Acknowledgement**

This work presents independent research funded by the National Institute for Health Research (NIHR) Programme Grants for Applied Research programme [RP-PG-0217-20006]. The views expressed in this work are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

## **B.16**

### **What are the consequences of caring for older people and what interventions work best to promote caregivers' health and wellbeing? A rapid review of reviews**

#### **Presenter: Gemma Spiers**

Co-authors: Jennifer Liddle; Patience Kunonga; Sheena Ramsay; Daniel Stow; Orla Whitehead; Claire Welsh; Fiona Beyer; Dawn Craig; Barbara Hanratty

#### **Institutions**

Population & Health Sciences Institute, Newcastle University

#### **Abstract**

##### **Problem**

Approximately 6.5 million adults provide unpaid care in England, with risks to their own health, social and financial wellbeing. Supporting unpaid carers of older people is a high priority for current policy. To support policymaking for this population a clear picture is needed, of what is known and where there are gaps in the current evidence. A rapid review of systematic reviews was undertaken to map current evidence about a) the consequences of caring for older people and b) effective interventions for this group of caregivers.

##### **Approach**

Searches were conducted in Medline, PsychInfo and Epistemonikos (January 2020). Systematic reviews published in English after 2000 were included if they reported evidence about a) the impact of caregiving on carers' health, social and financial wellbeing, and/or b) the effectiveness of caregiver interventions.

Caregiver populations were those of any age and sex, whilst care recipients were older people (as defined in the review). Reviews must have met three out of five DARE criteria to be considered for inclusion. Titles and abstracts were screened: 20% by two researchers independently and the remainder by a single researcher. Full texts were screened against review criteria. Review risk of bias was appraised and a narrative synthesis undertaken by a single researcher.

##### **Findings**

Sixty-nine systematic reviews were eligible for inclusion. Fifty-seven of these were specific to dementia caregivers. To avoid duplication of existing umbrella reviews for this population, the synthesis focused on systematic reviews that reported evidence about those caring for non-dementia older populations (n=12). Systematic reviews about the consequences of caregiving (n=6) typically focused on carers' mental health, quality of life and burden. Few systematic reviews (n=1) included evidence about the impact on carers' physical health, and none reported the social and financial impact of caregiving. There was a consensus across systematic reviews that caregivers experienced poor mental health, quality of life and burden. However, estimates of prevalence and severity were either very variable or not reported at all. Limited evidence from these systematic reviews also indicated that carers experienced poorer mental health compared to that of the general population. Six systematic reviews reported evidence about interventions to support carers of older people. Interventions included respite, psychosocial, educational, cognitive and multicomponent. Evidence suggested that respite care, cognitive, and educational interventions were not beneficial to caregivers. Some psychosocial and multicomponent interventions were promising, with positive outcomes for carers. However, evidence for these was limited in quantity and from reviews with moderate and high risk of bias.

##### **Consequences**

This rapid review of reviews highlights a need for a robust synthesis of primary studies focusing on physical health, social and financial wellbeing outcomes for carers of older people. Further evidence is also required to ascertain the benefits of some psychosocial and multicomponent interventions.



## Funding Acknowledgement

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## B.17

### Ultrasound-assisted Refill of Continuous Intrathecal Drug Delivery System as part of Management of Spasticity in the Community

**Presenter: Mostyn Yong**

Co-authors: Meredith Ogilvie – Brown, Saul Geffen

#### Institutions

Mater Private Hospital Brisbane Rehabilitation Unit  
Brisbane Australia, Rehab + Fitness Brisbane Australia

#### Abstract

##### Problem

Management of spasticity with via Baclofen Continuous Intrathecal Drug Delivery (CIDD) is a well-established technique (Saulino 2013, Godeld 2011). One component of this therapy is a regular scheduled refill of the system's Baclofen (Bacthecal Medicianz Healthcare Pty Limited) reservoir. During this refill procedure, it is paramount to have an accurate placement of the needle into the drug reservoir to aspirate residual contents of the reservoir and refill of new Baclofen within the reservoir. We propose several advantages of an ultrasound guided refill procedure over conventional use of a template for this refilling process. Firstly, it would be possible to exclude any subcutaneous collections overlying the device therefore avoiding the potential to seeding unwanted fluid or material in the pump. Secondly, this provides the operator a visual appreciation of the port access and accurate marking of this site. In addition to these, the ultrasound image allows for the altered external shape to the device as a result of a mobile pocket therefore improving the trajectory of the refilling needle. This day-therapy technique has been adopted for patients with varied long-term neurological conditions such as Stiff Person Syndrome, Spastic Cerebral Palsy and Spinal Cord Injury.

##### Approach

With the patient lying supine, the pump residual volume along with device details is established with

the use of a pump interrogator (Medtronic SynchroMed II, Minneapolis, MN). Ultrasonography is performed by a suitably experienced operator (SG, MO-B) using a portable ultrasound machine (GE Healthcare Venue 40 Ultrasound). The injection port site is identified as a hypoechoic rectangle structure and image centred. This step is followed by gentle external skin markings with the use of a sterile surgical marker. A sterile field centred on the port site is prepared with aqueous chlorhexidine and draped with a pre-cut out sterile paper cloth. Sterile gloves and strict aseptic technique is maintained throughout the procedure. A standard non-coring Huber 22-gauge needle (Refill Kit, Medtronic, Minneapolis, MN) is used. Utilising the external skin markings, the needle is placed perpendicular to the plane of the pump and gentle pressure applied until a 'give' is felt. At this stage, the accurate needle placement within the pump reservoir is further checked by drawing back on the syringe and cross-checking volumes aspirated against device data obtained at the start with the pump interrogator.

##### Findings

Since the adoption of these technique for CIDD Baclofen refilling at this establishment, there has been no complications and deemed to be the standard operating protocol for this procedure and has proven to be reliable.

##### Consequences

With the adoption of these techniques for CIDD Baclofen refilling, a more accurate and safer procedure can be carried out within an outpatient setting. This potentially reduces the rates of complications associated with inaccurate needle placement and failed filling procedure.

## Funding Acknowledgement

There are no financial conflicts of interest to disclose

## C.1

### Guideline discordant diagnostic care: when do primary care referrals not reflect guidelines for suspected cancer?

**Presenter: Gary Abel**

Co-authors: Bianca Wiering, Georgios Lyratzopoulos, John Campbell, William Hamilton

#### Institutions

University of Exeter Medical School, 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. A key service aimed at improving UK cancer survival rates (through improved diagnostic timeliness) is the fast-track referral system known as the two-week wait pathway. Guidelines advise general practitioners which patients warrant a two-week wait referral. 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

We used linked primary care (Clinical Practice Research Datalink) and secondary care (Hospital Episode Statistics) data. Patients presenting with haematuria, rectal bleeding, breast lump, post-menopausal bleeding, dysphagia or iron-deficiency anaemia for the first time during 2014-2015 were included (for patients of those ages where NICE guidelines recommend two-week wait referral). For patients presenting with haematuria, either the second or third GP visit was defined as the index consultation where patients had received treatment for urinary tract infection during earlier visits. A composite outcome reflecting whether a two-week wait referral or an urgent referral had taken place was used since both reflect the need for an urgent clinical assessment. Multilevel logistic regression was used to investigate whether the referral composite outcome was associated with symptoms and patient

characteristics (age, gender, comorbidities and deprivation level).

##### Findings

Considering referrals made within 14 days of first presentation with a recorded symptom indicate a high percentage of patients do not receive a two-week wait or urgent referral, varying from 81.8% (rectal bleeding) to 33.3% (breast lump). There is evidence that referrals are associated with age ( $p < 0.001$ ), and comorbidities ( $p < 0.05$ ), with young patients and patients with comorbidities less likely to receive a referral. Associations between patient characteristics and referrals differ by symptom. More deprived patients with breast lumps, female patients with haematuria and anaemia patients with multi-morbidity were less likely to receive a referral. Furthermore, early evidence suggests that around 4.0% of patients not receiving a referral were diagnosed with cancer in the next year.

##### Consequences

Actions recommended in authoritative guidelines often do not occur for patients presenting with common possible cancer symptoms. Appreciating those patient groups which are at greater risk of non-referral when compared with guideline recommendations may help target improvement efforts in cancer diagnosis in primary care. For example, these findings may be used alongside schemes such as CRUK's cancer facilitators and Macmillan GPs to directly influence practice. Alternatively, they could inform educational materials and novel interventions targeting early diagnosis.

#### Funding Acknowledgement

This work was funded by Cancer Research UK (C50627/A25622). This research is also linked to the CanTest Collaborative, which is funded by Cancer Research UK [C8640/A23385], of which WH is a Co-Directors, GL an Associate Director and GAA is Senior Faculty. GL is supported by a Cancer Research UK Advanced Clinician Scientist Fellowship Award (C18081/A18180).



## C.2

### Exploring the feasibility of gathering economic data for ThinkCancer!: supporting the early diagnosis of cancer in primary care

**Presenter: Bethany F Anthony**

Co-authors: Bethany F Anthony(1), Professor Richard Neal(2), Professor Clare Wilkinson(3), Professor Rhianon T Edwards(1), on behalf of the WICKED team

#### Institutions

- 1) Centre for Health Economics and Medicines Evaluation (CHEME), Bangor University,
- 2) Leeds Institute of Health Sciences, Leeds University,
- 3) North Wales Centre for Primary Care Research, Bangor University,

#### Abstract

##### Problem

Invaluable progress has been made in improving cancer outcomes in the UK, with approximately 1 in 2 patients living with cancer in England and Wales now surviving for 10 years or more. Despite this progress, cancer survival in the UK continues to be lower compared to other Westernised countries including Australia, Canada and a number of other European countries. Welsh Government outline a number of challenges with respect to earlier cancer diagnosis including a lack of awareness of 'red flag' symptoms and difficulties among GPs and other healthcare professionals in identifying cancers that present with vague or non-specific symptoms. For some cancers, earlier diagnosis is associated with greater survival and better patient quality of life and experience. The aim of this current study was to conduct a feasibility economic analysis of the ThinkCancer! intervention to improve earlier cancer diagnosis in primary care.

##### Approach

The ThinkCancer! intervention is a complex behaviour change intervention, which aims to change the behaviours of primary care practice teams, when thinking of and acting on clinical symptoms that could be cancer. From an NHS perspective, we will conduct a feasibility economic analysis of the ThinkCancer! intervention. We will use micro-costing to determine

whether it is feasible to gather sufficient economic data to cost the ThinkCancer! intervention. Researchers delivering the intervention will complete cost diaries, which will include staff costs, travel and subsistence costs for delivering the workshops throughout Wales, material costs and overheads. In order to understand the current evidence base on the topic of earlier cancer diagnosis with economic elements, we undertook a rapid scoping review of the literature.

##### Findings

Scoping searches identified eight published papers. Most of the studies identified (n=5) were costing studies and did not explore both costs and outcome/effects. Three of the studies were screening studies that seek to identify unrecognised cancer, which differ from studies exploring earlier cancer diagnosis that seeks to identify cancer in patients who present with symptoms of the disease. Studies (n=5) were predominately conducted outside of the UK, making comparisons to the NHS difficult. Searches did not identify any published feasibility economic analyses of interventions to expedite earlier cancer diagnosis in primary care.

##### Consequences

Results of this feasibility study will be used to inform a future definitive economic evaluation alongside a pragmatic randomised controlled trial (RCT). Primary care interventions to expedite the diagnosis of symptomatic cancer have the potential to reduce large costs to the NHS and improve patient and carer outcomes; as later stage cancer treatments are often longer, more aggressive to patients, with larger associated healthcare costs, compared to earlier stage treatment.

#### Funding Acknowledgement

Cancer Research Wales

## C.3

### Can a targeted intervention improve cancer symptom awareness and help-seeking among adults living in socioeconomically deprived communities? The Awareness and Beliefs About Cancer (ABACus) randomised controlled trial.

**Presenter:** Kate Brain

Co-authors: Y Moriarty, P Buckle, P Dimitropoulou, A Edwards, S Gilbert, J Hepburn, V Kolovou, M Lau, M Matthews, C Mitchell, R Neal, S Owen, L Padgett, R Playle, H Quinn-Scoggins, M Robling, B Sewell, S Smits, J Townson, R Trubey, F Wood

#### Institutions

Cardiff University School of Medicine, Cardiff  
University Centre for Trials Research, Swansea  
University, University of Leeds, University of Sheffield,  
Tenovus Cancer Care

#### Abstract

##### Problem

Cancer outcomes are poor in the UK's socioeconomically deprived communities, with low symptom awareness and fatalistic beliefs about cancer contributing to prolonged help-seeking and advanced stage disease. We conducted the first trial of a facilitated cancer awareness intervention designed to improve cancer symptom knowledge, encourage positive beliefs about early cancer detection, and increase motivation to seek help among adults living in deprived communities. The theory-grounded intervention entails completion of a touchscreen questionnaire (cancer symptoms, screening, risk factors), with personalised results delivered by a trained lay advisor. We report the main trial findings for the primary and secondary quantitative outcomes.

##### Approach

Adults aged over 40 were recruited opportunistically in community and primary healthcare settings in socioeconomically deprived areas of Yorkshire and South Wales. Participants were randomised in a 1:1 ratio to the health check intervention or usual care control, and completed self-report measures at baseline, 2-weeks and 6-months. Cancer symptom recognition (primary outcome at 2-weeks, total score

range 0-12), anticipated symptom presentation, barriers to presentation and beliefs about cancer were measured using the adapted Awareness and Beliefs about Cancer (Simon et al., 2012) at baseline, 2-weeks and 6-months post randomisation. State anxiety was assessed using the short-form State Trait Anxiety Inventory (Marteau and Bekker, 1992). Intervention effects were tested using multilevel linear regression adjusted for baseline score. Health economic data (implementation costs and healthcare resource use data) were also evaluated.

##### Findings

A total 234 participants were randomised, with high retention at 2-weeks (90%) and 6-months (85%). Participants were predominantly resident in areas of high deprivation (66% in 0-20% most deprived areas). There was no significant difference in total symptom recognition at 2-weeks [difference 0.57, 95% CI -0.03-1.17,  $p=0.06$ ]. Intervention participants reported increased symptom recognition (difference 0.78, 95% CI 0.18-1.37,  $p<0.01$ ) and earlier intended presentation (difference -1.96, 95% CI -3.02--0.91,  $p<0.001$ ) at 6-months. Baseline ceiling effects in the primary outcome were observed across arms [intervention baseline mean=8.8, control mean=9.0]. Recognition of less well-known cancer symptoms (e.g. persistent tiredness, unexplained weight loss) was higher in the intervention group [2-weeks  $p<0.05$ , 6-months  $p<0.01$ ]. Differences in perceived barriers, beliefs and state anxiety were not significant. Health economic outcomes are currently being analysed.

##### Consequences

The ABACus health check improved recognition of potential cancer symptoms, especially those that are less well-known, and did not cause unintended harm. Symptom knowledge was retained and earlier anticipated presentation occurred at longer-term follow-up. Effects on perceived barriers and beliefs about cancer were not observed, partly due to measurement problems. The health check intervention has the potential to achieve significant public health benefits by encouraging cancer symptom awareness and earlier help-seeking in deprived communities, especially for vague, common cancer symptoms that require expedited routes to diagnosis.

## Funding Acknowledgement

Yorkshire Cancer Research (grant reference C402)

## C.4

### What is the prevalence of incidental findings found during lung cancer screening using low dose CT?

**Presenter: Dr Thomas Cassidy**

Co-authors:

#### Institutions

University of York

#### Abstract

##### Problem

The NHS plan to expand lung cancer screening using low dose computed tomography (LDCT) is likely to reduce deaths from lung cancer. However, it remains unclear whether incidental findings will have a beneficial or detrimental effect upon the screened individual. Coronary artery calcification found incidentally might be used to stratify cardiovascular risk and increase adherence to preventative strategies. Extra-pulmonary malignancy found incidentally might provide an early life-saving diagnosis, while large numbers of false positive findings or over-diagnosis may cause anxiety and harm through investigation and over-treatment. What is the possible effect upon primary and secondary care services? It is not clear from the current literature how many and what type of incidental findings are to be expected from widespread screening. This study intends to estimate the prevalence and type of incidental findings found during LDCT screening for lung cancer using systematic review methodology. This subject is original, with only a single similar review published in 2008, and timely due to the planned expansion of screening in the 2019 NHS long term plan.

##### Approach

A systematic review of the literature is intended, including all primary lung cancer screening studies that report sufficiently upon the nature and prevalence of the incidental findings found. A full protocol is available on PROSPERO. Two reviewers will

independently screen abstracts, full papers for inclusion and quality assess. Data will be extracted using an extraction tool by one reviewer and cross checked. A narrative synthesis will explore themes and heterogeneity. Permitting adequate clinical and methodological homogeneity, fixed and random-effects meta-analysis will be performed to provide pooled estimates with corresponding 95% CIs. Heterogeneity will be assessed by Cochran's Q test and I<sup>2</sup> statistic. Publication bias will be considered using a funnel plot.

##### Findings

Interim findings suggest significant heterogeneity in the definition of and reporting of incidental findings across studies. It is also clear that incidental findings are numerous. An aggregate of the prevalence for common incidental findings such as coronary artery calcification is expected to show these to be highly prevalent. The prevalence of findings that require further investigation or follow up is expected to be around 10-15% of scans (previously estimated as 14.2%) while the reports of confirmed extra-pulmonary malignancy is generally less than 1%.

##### Consequences

Estimates of the nature and prevalence of incidental findings can be used to counsel patients undergoing screening. They can inform further research, guideline development, and policy makers upon the potential benefits and challenges incidental findings pose for primary and secondary care services. The cost of incidental findings has also been omitted from economic modelling and estimates can allow for their inclusion within prevalence-based economic modelling, which might in turn have a significant impact upon overall cost-effectiveness of lung cancer screening.

## Funding Acknowledgement

The projects is part of a self funded masters in public health, supervised and supported by Professor Rhian Gabe and Alison Booth from the University of York. The second reviewer is Ann Cochrane from the Clinical trials unit at the University of York.

## C.5

### What are the associations between multimorbidity or individual long-term conditions and colorectal cancer risk?

**Presenter: Dr Neave Corcoran**

Co-authors: Dr Bhautesh Jani, Professor Frances Mair

#### Institutions

General Practice & Primary Care, 1 Horselethill Road, Glasgow, G12 9LX

#### Abstract

##### Problem

Early identification of cancer and specifically colorectal cancer (CRC) is a major international focus in current primary care. CRC survival is improving and early diagnosis has major benefits. Multimorbidity (the presence of  $\geq 2$  long-term conditions (LTCs)) is another growing public health problem but the interaction between CRC and multimorbidity is complex and poorly-understood. Understanding the interplay between multimorbidity and CRC outcomes is important to enhance understanding of implications for screening or points for future intervention. This work explores the relationship between CRC and multimorbidity by examining associations between multimorbidity and particular LTCs, and CRC incidence and mortality.

##### Approach

Prospective population-based study using UK Biobank. Demographic characteristics (age/sex/socioeconomic status), lifestyle factors (BMI/physical activity/smoking/alcohol use), multimorbidity (measured by LTC count, of a possible 42) were recorded at baseline. Outcomes: CRC diagnosis and CRC-specific mortality, determined from linked cancer/mortality registry data. Cox regression models analysed associations between multimorbidity and CRC outcomes, adjusting for demographic/lifestyle factors. F-test variable selection modelling identified LTCs that were potential significant predictors of CRC outcomes. Predictor LTCs were tested for significance in fully adjusted Cox regression models.

##### Findings

The sample included 500,222 participants, aged 37–73 (mean age 56.5; 54.5% female), recruited between 2006–10. CRC was diagnosed in 3669 (0.73%) participants and 876 (0.18%) died of CRC during follow-up (median follow-up duration 7 years). CRC incidence increased with age; those aged 60–73 had higher CRC incidence (hazard ratio (HR) 5.00, 95% confidence interval (CI) 4.36–5.72) and higher CRC mortality (HR 4.69 95% CI 3.66–6.02) compared to those aged 37–49. Multivariate analysis demonstrated male sex (HR 1.43, CI 1.33–1.54), BMI  $>40$  (HR 1.30, CI 1.02–1.66), previous smoking history (HR 1.21 CI 1.13–1.30), and higher alcohol intake (HR 1.42, CI 1.26–1.61) were significantly associated with CRC incidence. Having  $\geq 2$  LTCs did not show a statistically significant association with CRC incidence. CRC mortality was significantly more likely in males (HR 1.62, CI 1.42–1.86), BMI  $>40$  (HR 1.54, CI 1.05–2.27), ex-smokers (HR 1.17, CI 1.03–1.34), high alcohol intake (HR 1.54, CI 1.33–2.03), no physical activity (HR 1.55, CI 1.12–2.13) and multimorbidity, HR of 1.71 (CI 1.38–2.12) in participants with  $\geq 4$  LTCs. F-test logistic regression identified hypertension as a potentially significant predictor of CRC incidence and diabetes of CRC mortality. Adjusted HR for CRC incidence in participants with hypertension compared to those without was 1.1 (CI 1.03–1.19); for CRC mortality in those with diabetes adjusted HR = 1.3 (CI 1.08–1.69) compared to those without.

##### Consequences

This work demonstrates higher mortality from CRC in those with multimorbidity and identifies hypertension as a potential predictor of CRC incidence and diabetes of CRC mortality. These results will guide further research on relationships between CRC risk, other LTCs and multimorbidity that should include exploring causative mechanisms and patient perspectives.

##### Funding Acknowledgement

2019–2020 GP Clinical Academic Fellowship, University of Glasgow, Scottish School of Primary Care, NHS Education for Scotland

## C.6

### The GLANCE study: Exploring the role, use, and utility of General Practitioners' gut feelings for cancer and serious disease in primary care.

**Presenter: Claire Friedemann Smith**

Co-authors: Jason Oke, Benedikte Moller Kristensen, Rikke Sand Andersen, Julie-Ann Moreland, Fergus Gleeson, Sue Ziebland, Brian D Nicholson

#### Institutions

University of Oxford

#### Abstract

##### Problem

Gut feelings (GFs), often described as a sense of alarm or reassurance for a patient's health are increasingly accepted as a component of clinical reasoning in primary care. They remain contentious, however, due to concerns over their subjectivity and difficulties in rationalising, articulating, and incorporating them into clinical guidance. Our objective was to summarise the literature on GF, explore the views of GPs and patients about GF in primary care, and establish their diagnostic utility.

##### Approach

GLANCE is a mixed methods study incorporating three sub-studies: a systematic review and meta-analysis of literature published to July 2019; qualitative interviews with 40 GPs and patients who had used an urgent referral pathway for non-specific symptoms that includes the option to refer based on GP GF; and a quantitative analysis assessing the diagnostic utility of GPs' GFs for cancer and serious disease.

##### Findings

Twelve papers and four web resources were included in the systematic review. GPs conceptualised GF as suspicion that grew out of unease not necessarily based on clinical evidence which could lead to difficulties acting on them. GFs were often related to the patient being "unwell" and rarely experienced in the absence of symptoms or non-verbal cues. The pooled odds of cancer diagnosis were four times higher when GFs were recorded (OR 4.24 (95% CI 2.26 to 7.94)), and GFs became more predictive with increasing clinical experience and familiarity with the

patient. Results from the interviews suggest GPs and patients support the use of GFs in primary care and see them as a manifestation of clinician expertise combined with patient knowledge. GPs described that GFs arise when there is a lack of fit between the clinical scenario and the diagnostic 'box' that they would usually place a similar set of signs and symptoms. Patients acknowledged the uncertainty of clinical practice in primary care and felt that GFs are an important diagnostic tool. When experiencing their own GFs, patients made them more 'doctorable' by focusing on clinical aspects of their ailment rather than relying on their own judgement of their illness. Quantitative analysis of the diagnostic value of GFs is underway and will be complete by the conference.

##### Consequences

This is the first study that has discussed GFs with both clinicians and patients, and in which participants have either been referred, or made a referral, based on a GP's GF. What seems clear is that GFs provide a way for patients to be referred who do not meet strict referral criteria, perhaps highlighting the limits of the evidence base informing current clinical guidance. The completion of the quantitative analysis will provide further insight into the predictive value of GFs for cancer and serious disease in primary care.

#### Funding Acknowledgement

This work was supported by a grant from Cancer Research UK (CRUK) Grant Number: EDAG C50916.

## C.7

### Cancer treatment decisions for people living with dementia: experiences of family carers

**Presenter: Catherine Hynes**

Co-authors: Victoria Hodges, Caroline Mitchell, Lynda Wyld

#### Institutions

Academic Unit of Primary Medical Care (University of Sheffield), Department of Oncology and Metabolism (University of Sheffield)



## Abstract

### Problem

Dementia and cancer are both associated with older age. The National Cancer Data Audit in England found that 4.4% of people diagnosed with cancer also had cognitive impairment. Decisions about cancer treatment can be very complex when someone already has dementia. Often someone's closest relative is asked to make decisions on their behalf. Research examining the impact that making life-altering decisions by proxy has on family carers shows that it can be highly distressing. The specific experience of proxy decision-making regarding cancer treatment for someone with dementia is almost wholly unresearched. This study aimed to explore the experiences of family carers who have been involved in making cancer treatment decisions on behalf of a relative with dementia, in particular identifying challenges and support needs.

### Approach

Semi-structured interviews were conducted with adult carers of people with dementia who had made decisions about cancer treatment on their behalf within the last two years. A purposive sampling strategy recruited participants via CRN-portfolio GP practices and the Join Dementia Research database. Two researchers separately undertook analysis on Nvivo using an inductive, grounded-theory approach to identify themes. A third researcher independently verified these themes to provide a rigorous thematic framework.

### Findings

Interviews were conducted with 16 carers (husbands, wives, sons, daughters and grandchildren). Cancer diagnoses included prostate, breast, bowel, renal, melanoma and lung. We identified four main themes. TranslatorsDecisions about cancer treatment were relatively straightforward for carers. They were usually strongly influenced by the medical team who gave a clear best option. Carers viewed their role as translating a frightening situation for their relative and representing their wishes to healthcare professionals. Cancer services ill-equipped for people with dementiaThe biggest challenge for carers was having to navigate healthcare services which are not prepared for people with dementia. Poor communication, lack of person-centred care and

inexperienced staff caused carer stress throughout all stages of the cancer journey.LPAs hinder, not helpLasting Power of Attorney should simplify making healthcare decisions on someone's behalf, but medical staff have a poor understanding of the authority it grants. It was frequently one of the biggest causes of conflict between carers and healthcare professionals. Cancer preferable to dementiaFor most carers managing the person's dementia remained the biggest challenge and caused the most emotional distress. Many viewed their loved one's cancer as a possible escape from dementia.

### Consequences

Ultimately there remains a huge lack of practical and emotional support for dementia carers, who remain isolated and exhausted. The addition of serious comorbidity in their relative only compounds this and makes it worse. Services across the NHS need to be better equipped to care for people with dementia. Healthcare staff require greater understanding of the authority granted by LPA.

### Funding Acknowledgement

Project funded by RCGP Scientific Foundation Board Annual Research Grant 2018 PPI support provided by the Alzheimer's Society

## C.8

### What chronic diseases are associated with increased lung cancer incidence?

#### Presenter: Bhautesh Jani

Co-authors: Sara Macdonald, Barbara Nicholl, Craig Anderson, Frances S Mair

#### Institutions

University of Glasgow

## Abstract

### Problem

The relationship between chronic diseases and new cancer incidence remains unclear. We studied the association between existing long-term conditions (LTCs) and lung cancer incidence in a general population sample using different data science methods and explored the validity of a lung cancer

incidence prediction model, using information on existing LTCs.

### Approach

**Data:** We used UK Biobank with a sample size of N=502536, aged between 37-73 years. The sample size used for analysis N=488085, after excluding missing values, participants with previous lung cancer and those lost to follow-up. A comprehensive phenotype description was obtained from participants at recruitment; including information on demographics, lifestyle including smoking consumption, family history of lung cancer, previous history of cancer (other than lung), and N=42 health conditions which included chronic diseases and a history of previous lung infections. Record linkage with the cancer registry was used to capture lung cancer incidence. **Statistical Models:** Five different variable selection methods (Automated likelihood-ratio- F test-based backward selection, Akaike information criterion backward selection, Lasso regression, Elastic net regression and Xtreme gradient boosting) were used to reduce data dimension and select candidate variables from a list of demographic/lifestyle/health conditions as lung cancer risk factors. Cox's proportional hazards regression was used to build a final lung cancer risk prediction model.

### Findings

At the end of seven year median follow-up, lung cancer incidence was 2541 (0.5%) of total sample. In total, N=15 variables including five LTCs were chosen as significant predictors using variable selection methods. Four out of five LTCs were found to have a significant association with higher lung cancer risk- Chronic Obstructive Pulmonary Disease (COPD) (Hazard Ratio-HR 1.92; 95% Confidence intervals-CI 1.67-2.20) , Coronary Heart Disease-(CHD) (HR 1.24; 95% CI 1.10-1.41), Peripheral Vascular Disease-(PVD) (HR 1.83; 95% CI 1.25-2.68), Dementia (HR 6.90; 95% CI 2.59-18.43), while Hypertension did not have a significant association (HR 1.09; 95% CI 0.99-1.18), in the fully adjusted model. In mediation analysis, smoking variables could explain only a small proportion of the observed association between chronic diseases and lung cancer association (15% for CHD, 6.2% for PVD, 1.4% for Dementia).

### Consequences

- Four chronic diseases, COPD, CHD, PVD and Dementia, were found to have a significant association with the risk of lung cancer incidence, in addition to ten previously validated demographic and lifestyle risk factors.
- Associations were robust in mediation analysis with smoking variables.
- Association between vascular diseases and lung cancer incidence needs further research. This association may have a role in lung cancer screening as well as lung cancer symptom assessment in primary care.

### Funding Acknowledgement

The study was funded by BMA Foundation Dawkins and Strutt Grant on Multimorbidity Research

## C.9

### Establishing which modalities of artificial intelligence (AI) for early detection and diagnosis of cancer are ready for implementation in primary care: a Scoping Review

#### Presenter: Owain Jones

Co-authors: Owain T Jones, Kethaki Prathivadi, Smiji Saji, Charindu KI Ranmuthu, Natalia Calanzani, Jon Emery, Willie Hamilton, Hardeep Singh, Niek de Wit, Stephen Duffy, Fiona M Walter

#### Institutions

University of Cambridge, University of Melbourne, University of Exeter, Baylor College of Medicine, Queen Mary University London

#### Abstract

##### Problem

Approximately 360,000 people in the United Kingdom are diagnosed with cancer each year and approximately 160,000 people die of the disease. Most people diagnosed with cancer in the UK first present in primary care, where General Practitioners will evaluate (often vague) presenting symptoms and decide on an appropriate management strategy. More accurate triage of these presenting symptoms could

lead to earlier diagnosis of cancer, and improved outcomes for patients, including improved survival rates. There has recently been huge interest in the application of AI technologies, including machine learning, to medical diagnosis. However, there are currently no AI technologies that are established in routine clinical care.

### Approach

We performed a scoping review, aiming to explore and map the research landscape for AI technologies designed to aid the early detection of cancer, focusing on technologies which would be suitable for implementation in primary care settings. We searched Medline, EMBASE, SCOPUS and Web of Science bibliographic databases from the 1st January 2000 to 11th June 2019 for relevant published studies. We identified 10,456 relevant studies after removing duplicates, and subsequently assessed 793 full text articles. This led to 250 studies included in the quantitative synthesis.

### Findings

The AI technologies we identified fell into three main categories:

- (1) applied to electronic health records and routine blood results,
- (2) applied to superficial digital imaging, such as lesions on the skin, buccal cavity or cervix, and
- (3) applied to subsurface digital images, such as ultrasound and thermography.

We found a diverse range of AI techniques used in the studies, although neural networks and support vector machines were by far the most common. We also identified a range of outcomes measures used across the studies. Most studies represented very early stage translational research, using various AI techniques to address clinical problems using freely available online datasets. However, there appeared to be a paucity of clinical input into the design of these AI-technologies, and they were rarely validated in independent datasets or prospectively tested in clinical settings.

### Consequences

Many of the AI-technologies we identified could potentially aid the early detection of cancer and other serious conditions in primary care settings. However,

the research is currently at an early stage, and there are a number of further steps needed before the technologies can be safely and effectively implemented into routine primary care. One key step will be validation of the AI-technologies in independent datasets and prospective clinical studies set among the intended population. Health economic assessments, and research involving patients and clinicians are further important steps, to identify their opinions on AI technologies and potential implementation barriers.

### Funding Acknowledgement

This research has been supported by an NIHR School for Primary Care Research Seed Corn Award for author OTJ. Additional funding has come from the NIHR Cancer Policy Research Unit, and the CanTest programme funded through a CRUK catalyst award

## C.10

### What is the psychological impact of lung cancer screening using a novel antibody blood test?

#### Presenter: Denise Kendrick

Co-authors: K Ayling (1), LE Bedford (2), J Hancox (1), RC Littleford (3), R das Nair (1), JFR Robertson (1), S Schembri (4), FM Sullivan (5), K Vedhara (1), B Young (6).

#### Institutions

- (1) School of Medicine, University of Nottingham,
- (2) Department of Family Medicine and Primary Care, University of Hong Kong,
- (3) Centre for Clinical Research, University of Queensland, Australia,
- (4) Respiratory Medicine, NHS Tayside,
- (5) School of Medicine, University of St Andrews,
- (6) Department of Health Sciences, University of York

#### Abstract

##### Problem

Lung cancer screening can reduce lung cancer mortality by 20% and is currently recommended in the USA, but not the UK. Ensuring any potential psychological harm is minimised is important. Current evidence is limited to the psychological impact of CT



lung cancer screening. This study assesses psychological responses to screening using a novel tumour antibody blood test (Early CDT®-Lung test) within The Early Cancer Detection Test - Lung Cancer Scotland Study (ECLS) to aid the early detection of lung cancer.

#### Approach

ECLS study participants (n=12,208) were randomised to an Early CDT®-Lung test group or a control group. Test-positive participants also had CT scans 6-monthly for 2 years. A sample (n=1,032) of test-positive and test-negative participants completed questionnaires measuring psychological responses (positive and negative affect schedule, lung cancer worry scale and impact of events scale (IES)) at baseline and 1, 3, 6 and 12 months post-trial recruitment. Random effects linear and logistic regression compared psychological responses over time between controls, test-positive and test-negative participants.

#### Findings

Compared to controls, test-positive participants were significantly more likely to worry about developing lung cancer at 1 month (OR: 3.30 [95%CI: 1.73, 6.34]). Compared to controls, test-negative participants had significantly higher levels of positive affect at 1, 3 and 6 months (difference between means (DBM): 1.45 [0.44, 2.47], 1.46 [0.42, 2.49], 1.35 [0.32, 2.38] respectively) and at 3 months were significantly less likely to worry about developing lung cancer (OR: 0.53 [0.30, 0.93]), reported lower impact of worries (DBM -0.26 [-0.45, -0.07]), and lower levels of negative affect (DBM -1.46 [-2.57, -0.35]). Compared to test-positive participants, test-negative participants were significantly less likely to worry about developing lung cancer at 1, 3 and 6 months (OR: 0.42 [0.24, 0.74], 0.43 [0.25, 0.76], 0.36 [0.20, 0.64] respectively) or be anxious about future treatment at 1 and 3 months (OR: 0.19, [0.09, 0.37], 0.49 [0.25, 0.99] respectively). Test-negative participants also reported significantly lower impact of lung cancer worry at 1 and 3 months (DBM -0.26 [-0.45, -0.06], -0.29 [-0.49, -0.09] respectively), higher positive affect at 3 months (DBM 1.58 [0.50, 2.67]), and lower IES scores at 1 month (avoidance DBM: -2.04 [-2.80, -1.27], intrusion DBM: -1.54 [-2.14, -0.95]), 3 months (avoidance DBM: -1.18 [-1.95, -0.41], intrusion DBM: -1.07 [-1.67, -0.48]) and 6 months (avoidance DBM: -1.17 [-1.94, -0.40], intrusion DBM: -

0.76 [-1.36, -0.16]). No significant differences between groups were evident at 12 months.

#### Consequences

Findings suggest lung cancer screening may initially increase worries in those with a positive test and reduce worries and distress in those with a negative test. However, most differences were short-lived and small and may not be clinically important. Lung cancer screening using the Early CDT®-Lung test does not appear to have a long term negative psychological impact.

#### Funding Acknowledgement

The ECLS study was supported by the Chief Scientist Office and Oncimmune Ltd. The psychological outcome data collection was supported by a University of Nottingham PhD studentship and by Oncimmune Ltd.

## C.11

### Psychometric testing for validating a cancer symptom recognition measure in to UK socioeconomically deprived population: learning from ABACus trial

#### Presenter: Tin Man Mandy Lau

Co-authors: Rebecca Playle, Katherine Brain, Harriet Quinn-Scoggins, Robert Trubey, Julia Townson

#### Institutions

Cardiff University

#### Abstract

##### Problem

Challenges have been identified in delivering interventions to deprived populations due to knowledge, language and literacy barriers. The phase 3 ABACus trial (Awareness and Beliefs About Cancer) aims to improve cancer symptom awareness and help-seeking behaviours among adults living in socioeconomically deprived areas in South West Yorkshire and South Wales. This trial used four adapted scales from an internationally validated scale (awareness and beliefs about cancer (ABC) measure) to assess cancer knowledge: Cancer symptom recognition (primary outcome), Anticipated symptom presentation, Barriers to presentation and Beliefs

about cancer. Language within the cancer symptom recognition scale were simplified to meet the need in the targeted population. This presentation describes the findings of the psychometric tests on the adapted ABC measure.

#### Approach

Language within the cancer symptom recognition scale were simplified using feedback from focus groups during phase 1 development and tested during the phase 2 feasibility study. Changes were made to accommodate understanding of those with low literacy and health literacy skills through simplification of phrasing and terminology used throughout the scale. We conducted psychometric testing to validate the modified ABC scales using baseline data collected from our phase 3 randomised controlled trial. We explored scale properties such as item functioning, responsiveness, validity and reliability. Factor analysis, Cronbach's alpha, Pearson's correlations and agreement were used to determine item correspondence to the underlying constructs of the outcome measures and internal consistency. Multiple linear regressions were used to explore the intervention effect on each scale and the new aggregated scores.

#### Findings

The modified 12 item Cancer symptom recognition scale had strong internal consistency (Cronbach's Alpha = 0.79) and strong reliability (0.80). Results were comparable to the original ABC measures. However, a high ceiling effect was found among five well-known cancer symptom items. Principal component analysis resulted in a 2-factor solution. Well-known cancer symptoms formed the first factor and less well-known cancer symptoms the second. There was no difference between the intervention and control groups for the 12 item Cancer symptom recognition score but when the new 2-factor solution was explored the intervention had a positive effect on the second factor; demonstrating that the ABACus intervention improved symptom knowledge on less well-known symptoms.

#### Consequences

The ABC is an internationally validated scale. However, the 12 items Cancer symptom recognition scale does not function well to capture the level of awareness in deprived populations in the UK due to a

high proportion of adults already recognising those 'red flag symptoms'. Item selection should be carefully considered due to cultural attitudes and presence of campaigns about the red flag symptoms.

#### Funding Acknowledgement

Abacus team

## C.12

### **Cancer Together with other Chronic Health conditions: understanding population characteristics and healthcare resource use in general practice**

#### **Presenter: Ellen Mason**

Co-authors: Amanda Farrin, Claire Surr, Laura Ashley, Suzanne Richards, Graham Brunt, Jacqui Gath, Margaret Ogden, Michelle Collinson

#### **Institutions**

Leeds Institute of Clinical Trials Research University of Leeds,  
Centre for Dementia Research Leeds Beckett University,  
School of Social Sciences Leeds Beckett University,  
Academic Unit of Primary Care Leeds Institute of Health Research University of Leeds,  
Leeds Beckett University Service User and Carer Group

#### **Abstract**

##### Problem

Many people living with cancer have additional comorbidities (e.g. diabetes, asthma), which may lead to treatment and care complexities and poorer patient outcomes. Research on the prevalence and healthcare resource use of those with cancer and different comorbidities in primary care in England is limited. CATCH, funded by Macmillan Cancer Support, aims to describe the population size, characteristics and healthcare usage of people living with cancer and comorbidities.

##### Approach

CATCH is a cross-sectional observational study, analysing anonymised electronic patient records from 391 English GP practices during 2005-2016 for

patients aged  $\geq 50$  with a cancer diagnosis consistent with QOF eligibility. Data were obtained from ResearchOne and included socio-demographics, presence of comorbidities and primary care appointments, prescriptions and referrals, totalling 37,095,534 records. Summarised comparator data for the whole population aged  $\geq 50$  was also provided.

### Findings

Out of 99,188 people living with cancer, 56% had at least one other comorbidity diagnosed within the 2 years prior to cancer. Of these, 54% had one comorbidity, 28% had two, 12% had three and 6% had  $\geq 4$ . People with lung cancer were more likely to have other comorbidities (~70% had at least one other comorbidity) compared to breast (~50%), prostate and bowel cancers (both ~55%). Hypertension was the most common comorbidity (22% of patients), followed by Diabetes (11%), Chronic Kidney Disease (9%) and Coronary Heart Disease (9%). People with two comorbidities were most likely to have Hypertension combined with either Chronic Kidney Disease, Diabetes or Coronary Heart Disease. The number of primary care appointments in the year following cancer increased with the number of additional comorbidities. Compared to those with cancer alone, people with one comorbidity had 17% more appointments (IRR: 1.17, 95% CI: 1.14-1.21) and people with  $>5$  comorbidities had 59% more appointments (IRR: 1.59, 95% CI: 1.3-1.94). Of all appointments that had taken place for people with cancer alone, 29% were with an Allied Health Professional, 22% were with a nurse and 21% were with a GP. This was comparable when compared to appointments for people with both cancer and a comorbidity.

### Consequences

This study provides initial estimates of the population size, clinical and primary healthcare usage characteristics of people living with cancer and comorbidities in England. Results highlight the prevalence of additional comorbidities in patients living with cancer and suggest a higher demand on primary healthcare services, particularly for those with  $>1$  additional comorbidity. Future research should focus on understanding the additional needs of patients with cancer and specific comorbidities which could lead to more personalised care for patients in the future.

## C.13

### Understanding population demographics and primary healthcare resource use for people with comorbid cancer and dementia

**Presenter: Ellen Mason**

Co-authors: Michelle Collinson, Amanda Farrin, Laura Ashley, Alys Griffiths, Rachael Kelley, June Hennel, Claire Surr

### Institutions

Leeds Institute of Clinical Trials Research University of Leeds, Centre for Dementia Research Leeds Beckett University, School of Social Sciences Leeds Beckett University, Centre for Dementia Research Expert by Experience group Leeds Beckett University

### Abstract

#### Problem

People with comorbid cancer and dementia are likely to have complex care needs, making the provision of cancer treatment and care particularly challenging. Little is known about this population that could inform practice. We undertook two studies: study 1 aimed to estimate the prevalence, characteristics and healthcare usage of people living with cancer and dementia in England; study 2 explored experiences of cancer care for those with both conditions.

#### Approach

Study 1 analysed an anonymised database of electronic records from 391 English GP practices during 2005-2016. Data, obtained from ResearchOne, include socio-demographics, clinical characteristics, primary care appointments, prescriptions and referrals for patients aged  $\geq 50$  with a cancer and/or dementia diagnosis consistent with QOF eligibility. Study 2 used ethnographic methods to explore the experiences of patients, their families and hospital staff in two NHS trusts. Patient, carer and public involvement was embedded throughout.

#### Findings

The most common comorbidities in people with comorbid cancer and dementia were mental health/psychiatric disorders (24% of patients) and stroke (20%). In the year following the first mention of cancer/dementia in GP records, people with both

conditions had 9% more primary care appointments compared to people with cancer alone (IRR: 1.09, 95% CI: 1.01-1.17) and 37% more compared to people with dementia alone (IRR: 1.37, 95% CI: 1.28-1.47). 162,371 people aged  $\geq 50$  with cancer and/or dementia were identified. 7.5% of those aged  $\geq 75$  with cancer also had dementia and similarly, 7.5% of people with dementia also had cancer. People with cancer and dementia differed from people with cancer; they were older (mean 83 vs. 69 years), more likely to be living in a care home (44% of patients vs. 5%) and more likely to have additional comorbidities (70% of patients vs. 50%). The most common comorbidities in people with both cancer and dementia were mental health/psychiatric disorders (24% of patients) and stroke (20%). Dementia prevalence amongst people with the ten most common cancers ranged from 1.2% (brain, other CNS and intracranial tumours) to 5% (bladder cancer). People with cancer and dementia had 9% more primary care appointments than people with cancer alone (IRR:1.09, 95% CI:1.01-1.17). Study 2 identified many challenges relating to cancer care, including recognition of dementia, and difficulties around decision-making, care processes and care environments. Families played an important and difficult to replicate role in relatives care.

#### Consequences

This study provides the best available estimates of the size, characteristics and care needs of this comorbid patient population. Results highlight the prevalence and complexity of this population but indicate a lower primary healthcare use than expected for people dealing with two complex conditions.

## C.14

**Weight loss as a sign of cancer in the primary care population of Kaiser Permanente Washington – a retrospective cohort study using routinely collected electronic health record data.**

**Presenter: Jason Oke**

Co-authors: Jennifer Chubak, Michael Nguyen, Matthew Thompson, Paul Aveyard, Willie Hamilton, Richard Hobbs, Brian Nicholson

#### Institutions

University of Oxford, Oxford, United Kingdom,  
Kaiser Permanente Washington Health Research  
Institute, Seattle, USA, University of Washington,  
Seattle, USA.  
Exeter University, Exeter, United Kingdom

#### Abstract

##### Problem

In the United Kingdom (UK), the National Institute for Health and Care Excellence (NICE) recommends urgent referral for the investigation of cancer in patients with unexplained weight loss in primary care, but provide no guidance on the extent or timing of weight loss. Weight is not routinely recorded in UK primary care and is often missing in primary care databases. Consequently, NHS primary care data are unlikely to provide rich enough weight information to derive the extent and timing of weight loss that is most indicative of an underlying malignancy. Unlike the UK, weight is measured routinely in the USA and weight data is sufficiently complete to allow detailed analysis of weight change. The overall aim is to provide the evidence to allow GPs to more effectively implement the NICE cancer guidance on the management of unexplained weight loss using USA primary care data

##### Approach

The study population comprised a dataset of 50,000 randomly selected US primary care patients aged  $\geq 40$  years who were members of Kaiser Permanente Washington (KPW) on their date of birth in 2006 and resided in the local cancer registry catchment area. We examined associations between measured weight loss and a diagnosis of cancer. A multi-variable Cox proportional hazard model with time-varying covariates for percentage weight change, symptoms, and blood test results. The model was used to estimate the risk of cancer for combinations of weight loss and intervals of weight measurement in order to identify thresholds for further investigation.

##### Findings

Of 43,302 patients with measured weight and over 288,000 person-years of follow-up, 3,352 were diagnosed with cancer. The median (IQR) number of weight change measures of 13 (6, 24) at a median

(IQR) interval of 39 (15, 104) days. Percentage weight change has a linear association with the risk of any cancer (Hazard ratio of 1.05, 95% CI 1.04 to 1.07 per unit % weight loss independent of age, sex, ethnicity, haemoglobin and platelets, previous cancer diagnosis, the time interval between consecutive weight measures and diagnoses of conditions associated with weight change. In men aged 60 with no existing comorbidities, weight loss of 5% over 6 months is associated with a risk of 2.3%, increasing to 3.0% if weight loss occurred over a 1 month interval.

#### Consequences

Measured weight loss is independently associated with an increased risk of cancer. More weight loss means a higher risk of cancer independent of the time interval between weight measurements and a previous diagnosis of cancer. Diagnostic strategies necessitating that weight loss is observed over a fixed period may delay diagnostic action. Our initial analysis will be expanded to explore the utility of diagnostic strategies using increasing thresholds of measured weight loss and changes in combinations with changes in biomarkers for presentation at the conference.

## C.15

### THE VALUE OF USING CANCER REGISTRY DATA SETS LINKED TO PRIMARY CARE

**Presenter:** Jessie Oyinlola

Co-authors: Eleanor Yelland, Puja Myles, Rachael Williams

#### Institutions

Clinical Practice Research Datalink (CPRD)

#### Abstract

##### Problem

The linkage of patient records across different healthcare sectors has enhanced research, particularly in the area of cancer. Clinical Practice Research Datalink (CPRD) provides primary care data linked to several National Cancer Registration and Analysis Service (NCRAS)) data sets, enabling researchers to study the clinical management and treatment of cancer patients. However, it is currently unclear how these data sources complement each other.

Understanding this is crucial to determine the appropriate combination of data sources when planning a study.

#### Approach

This was a cross-sectional study using linked UK data from CPRD [CPRD GOLD primary care, NCRAS Cancer Registration Data and the recently available NCRAS Systemic Anti-Cancer Therapy dataset (SACT)]. Cases included women with incident breast cancer registered between 2013-2015. Treatment was defined as a record of receiving any form of chemotherapy drug. Concordance of recording was calculated by estimating the proportion of patients with (i) the same breast cancer diagnosis code recorded in the cancer registry and SACT, (ii) a record for systemic treatment in the cancer registry and SACT, and (iii) Body mass index (BMI) recorded in CPRD GOLD and SACT.

#### Findings

3,579 female patients with incident breast cancer and a treatment event recorded in the cancer registry data, were included [mean age: 61 years (standard deviation: 13.6)]. 990 of these patients also had a primary diagnosis recorded in SACT, of which 43% were an exact match with the record in the cancer registry data. Of 3,579 patients, only 9% had a record for receiving a named systemic treatment in the cancer registry. Of the 3,579 patients in the cohort, 894 (25%) had a record of receiving a named systemic treatment in the SACT data. Only 17% of patients had a record in both data sources. There was lower concordance (6%) for records of a specific systemic treatment. Of the 894 patients with a complete record of treatment in SACT, 86% had the information required to calculate BMI in the associated record. This data was available for 96% of the same cohort in CPRD GOLD. Of the patients with a complete BMI record in SACT, 46% of patients had a BMI record in CPRD GOLD which was within 1 kg/m<sup>2</sup> of their record in SACT. For the remaining 54%, most of the recorded BMIs were higher in primary care. Outcome of treatment was missing for 95% patients with a record in SACT. Adjusted analyses and further analysis regarding the feasibility of determining outcome of treatment in CPRD GOLD (when this information was not available in SACT) will be explored.



## Consequences

These results demonstrate the limitations of using these data sources in isolation and how combined they can help bridge data gaps in the individual data source.

## Funding Acknowledgement

This study was funded by the Clinical Practice Research Datalink (CPRD)

## C.16

### Evidence underpinning benefits and harms of earlier cancer diagnosis: a systematic review of economic evaluations

#### Presenter: Lesley Smith

Co-authors: Natalie King, Richard Neal, Michael Messenger, Bethany Shinkins

#### Institutions

Leeds Centre for Personalised Medicine and Health, University of Leeds, CRUK CanTest Collaborative, NIHR Leeds In Vitro Diagnostics Co-operative

#### Abstract

##### Problem

The early diagnosis of cancer has been an area of significant investment in recent years, with the overarching ambition of detecting cancer at a more easily treated stage, thus improving quality of life and survival. Economic evaluations of interventions that facilitate earlier diagnosis of cancer (e.g. screening, novel diagnostics, revised diagnostic pathways, and cancer awareness campaigns) require evidence on the benefits and harms of detecting cancer earlier to estimate health outcomes and costs. This study is a systematic review of the evidence used to underpin the benefits and harms of earlier cancer diagnosis in such studies.

##### Approach

We have searched the following electronic databases: Medline, Embase, Web of Science and the CRD HTA Database. Titles and abstracts of the studies retrieved during the database search are being screened, split evenly between two reviewers (LS and BS), with a

further 10% double screened by each of these reviewers. A PRISMA flow chart will be developed to show the different stages of the screening process. Studies are included if they report an economic evaluation of an intervention that facilitates the earlier diagnosis of cancer. Studies published prior to 2015, non-English papers, and conference abstracts will be excluded. Data will be extracted on the evidence underpinning any assumed benefits or harms arising from the earlier diagnosis of cancer. Specially, the evidence informing the reduced time to diagnosis and the estimated benefits and harms resulting from this will be summarised and categorised using a hierarchy of evidence framework. In the absence of evidence, a summary of the methods used to estimate the consequences of early diagnosis will be provided e.g. calibration, expert elicitation. The Consolidated Health Economic Evaluation Reporting Standards (CHEERS) checklist will be used to assess the overall quality of the economic evaluations.

##### Findings

The results of the systematic review will be presented and the broader implications of the quality of the evidence underpinning the early diagnosis will be discussed.

##### Consequences

The findings from this study will be relevant for primary care and have implications for the development of interventions aimed at promoting the earlier diagnosis of cancer, of which GPs play a crucial role.

## C.17

### **'You know where we are if you need us.' The role of the GP in supporting patients following major pancreatic surgery for cancer: A qualitative study**

**Presenter: Anna Kathryn Taylor**

Co-authors: Miss Ambareen Kausar, Mr David Chang, Dr Lara Rimmer, Prof Carolyn A Chew-Graham

#### **Institutions**

East Lancashire Hospitals NHS Trust, Keele University

#### **Abstract**

##### **Problem**

Pancreatic cancer is the 11th most common cancer in the UK. Most are diagnosed at a late stage, but around 15% of patients undergo a pancreaticoduodenectomy. There is limited research focusing on the experiences of patients living with pancreatic cancer; most qualitative studies have focused on shared decision-making around surgery, and secondary care surveillance. The role of the GP has thus far been unexplored, yet GPs are key in enabling effective coordination of care for people living with life-shortening conditions, and unmet support needs negatively impact patients' quality of life. Our study aimed to explore patients' experiences of help-seeking before diagnosis and following surgery, the impact of living with pancreatic cancer, and opportunities to develop improved support interventions in primary or secondary care.

##### **Approach**

Ethical approval was obtained. Semi-structured interviews were conducted with patients who had undergone a pancreaticoduodenectomy for pancreatic or biliary duct cancer at a specialist hepato-pancreatic-biliary (HPB) centre in Northwest England. Interviews explored their experience of the diagnostic process and surgery, life after surgery, and sources of support including primary care. Data were analysed thematically using the principles of constant comparison.

##### **Findings**

Interviews are ongoing, but analysis of 16 interviews has yielded several themes. Patients described difficulties navigating the healthcare system both prior to diagnosis and following surgery, and being uncertain of the role of the GP in their ongoing care. This was particularly articulated by patients referred to the HPB service via other hospitals in the cancer alliance. Participants recognized that GPs have little contact with patients who have had a pancreaticoduodenectomy, but felt that GPs should be more proactive in offering support. Participants described a significant treatment and monitoring burden, which included: difficulties managing medications (including creon and insulin), the impact of ongoing symptoms on daily activities, and the disruption of frequent appointments and investigations. Participants gained support from a variety of sources including family, friends, and faith communities, but rarely their GP. They reported that although they wanted more support post-operatively, they felt inhibited from asking for help because they did not perceive themselves to be unwell. Participants felt they would value recognition from GPs of both physical and psychological sequelae.

##### **Consequences**

Patients can feel they are not candidates for an increased level of support following surgery because they may not consider themselves sufficiently unwell. Therefore, an awareness of both physical and psychological sequelae is crucial in order for GPs to offer appropriate support proactively following discharge. Gaining an understanding of the surgical and medical treatments offered to patients will enable more effective liaison with specialist care including surgeons, oncologists and dieticians. Understanding the impact of cancer on patients' quality of life is vital in enabling the development of improved support interventions across primary and secondary care.

## D.1

### Factors associated with refusal of anticoagulation in patients with atrial fibrillation: findings from the global GARFIELD-AF registry

**Presenter: Patricia Apenteng, University of Warwick**

Co-authors: David Fitzmaurice(1), Saverio Virdone(2), A. John Camm(3), Keith A. A. Fox(4), Jean-Pierre Bassand (2,5), Samuel Z. Goldhaber(6), Shinya Goto(7), Sylvia Haas(8), Alexander G.G. Turpie(9), Freek W.A. Verheugt(10), Frank Misselwitz(11), Gloria Kayani(2), Karen S. Pieper(2), Ajay K.

#### Institutions

1. Univ. of Warwick, UK
2. Thrombosis Research Institute, UK
3. St. George's Univ. of London, UK
4. Univ. of Edinburgh, UK
5. Univ. of Besançon, France
6. Harvard Medical School, USA
7. Tokai Univ. School of Medicine, Japan
8. Technical Univ. of Munich, Germany
9. McMaster Univ. Canada
10. Onze Lieve Vrouwe Gasthuis (OLVG), The Netherlands
11. Bayer AG, Germany
12. Univ. College London, UK

#### Abstract

##### Problem

There is a substantial incidence of stroke in patients with atrial fibrillation (AF) not receiving anticoagulation. Reasons for patients with AF not receiving anticoagulation are generally attributed to the clinician decision, however in practice some patients refuse anticoagulation. The aim of our study was to investigate the rate of refusal of anticoagulation in patients with AF and the factors associated with patient refusal of anticoagulation.

##### Approach

The Global Anticoagulant Registry in the FIELD (GARFIELD-AF) was an international prospective observational study of patients  $\geq 18$  years with newly diagnosed AF and  $\geq 1$  investigator determined risk factor for stroke. Participants were consecutively enrolled in  $\geq 1000$  centres in 35 countries and followed up for a minimum of 2 years. A logistic regression was

developed with predictors of patient anticoagulation refusal identified by least absolute shrinkage and selection operator (LASSO) methodology. The following information were considered as potential predictors: demographics (sex, age, ethnicity), medical and cardiovascular history, lifestyle factors (smoking and alcohol consumption), vital signs (BMI, pulse, systolic and diastolic blood pressure), type of AF and care setting at diagnosis. Patient refusal of anticoagulation was defined as patients with AF at high risk of stroke (CHA<sub>2</sub>DS<sub>2</sub>-VASc  $\geq 2$ ) who refused anticoagulation.

##### Findings

Out of 43,154, 13,283 (30.8%) participants at high risk of stroke did not receive anticoagulation at baseline. The reason for not receiving anticoagulation was unavailable for 38.7% (5146/13283); of the patients with a known reason for not receiving anticoagulation, 12.5% (1014/8137) refused anticoagulation. The median (Q1; Q3) age of participants who refused anticoagulation was 72 (65; 78) years, and 48.3% were female. CHA<sub>2</sub>DS<sub>2</sub>-VASc score was 3.0 (3.0; 5.0) in patients who refused anticoagulation and HAS-BLED score was 1.0 (1.0; 2.0). The strongest determinant of anticoagulation refusal was care setting at diagnosis, with patients diagnosed in primary care/GP having a higher likelihood of refusing anticoagulation compared to patients diagnosed in cardiology. After care setting, other determinants were ethnicity, vascular disease, type of AF, pulse, care setting location, age, diastolic and systolic blood pressure, history of venous thromboembolism, prior bleeding and prior stroke/TIA/systemic embolism.

##### Consequences

In this global real-world prospective study of patients with newly diagnosed AF, the overall rate of patient refusal of anticoagulation was low (2.3% of patients at high risk of stroke), though patient refusal accounted for 12.5% of patients at high risk of stroke and not receiving anticoagulation. Diagnosis in primary care/GP, Asian ethnicity and presence of vascular disease were strongly associated with a higher risk of patient refusal of anticoagulation. While patient refusal of anticoagulation is an acceptable outcome of shared decision-making, clinically it is a missed opportunity to prevent AF related stroke. Patients'



reasons for refusing anticoagulation need to be explored.

### **Funding Acknowledgement**

The GARFIELD-AF registry is funded by an unrestricted research grant from Bayer AG.

## **D.2**

### **Does GP based, cardiac arrest, community first response save lives?**

**Presenter: Tomas Barry**

Co-authors: Prof Gerard Bury, Ms Mary Headon

### **Institutions**

University College Dublin

### **Abstract**

#### **Problem**

CPR and defibrillation are the most important interventions following cardiac arrest but are critically time sensitive. The mobilization of 'community first responders' has been shown to shorten the interval from out-of-hospital cardiac arrest (OHCA) occurring to CPR and defibrillation being performed and is an important strategy to improve survival. Irish General Practitioners have historically been involved in the resuscitation efforts of 10-15% of all patients who survive cardiac arrest in Ireland, but have not been formally linked with emergency medical services dispatch systems. Since 2015 the world's first GP based, ambulance service linked, cardiac arrest first response initiative has been operational in Ireland.

#### **Approach**

GPs volunteer to receive text message alerts to instances of cardiac arrest in their local communities from emergency services dispatch. Data on alerts, responses, OHCA incidents and outcomes are gathered prospectively, using ambulance control and GP data and with corroborative data from the national OHCA registry.

#### **Findings**

During 2016 to 2018, 190 GPs participated, 146 received one or more alert(s) and 80 responded. In total 228 patients were attended. GPs arrived before

the emergency services on 83 (36% of) occasions. 196 patients (86%) had suffered OHCA of whom 138 (70%) had resuscitation attempted. The remainder were already deceased. GPs initiated CPR on three occasions and delivered the first defibrillation on eight occasions. 55 patients were transferred to hospital of whom 14 (10% of all whom had resuscitation attempted) are known to have survived.

#### **Consequences**

GPs are willing to volunteer to provide OHCA first response in their own communities. GPs reached patients in advance of the emergency medical services in a third of all incidents. A considerable volume of alerting activity is required to generate true resuscitation opportunities. A considerable component of the GP OHCA first responder role involves the management of death in the community. Opportunities to provide early CPR and defibrillation are more limited however likely to contribute to additional survival when they occur.

## **D.3**

### **Systolic inter-arm blood pressure difference and cognitive decline: Findings from the INTERPRESS-IPD Collaboration.**

**Presenter: Christopher E Clark**

Co-authors: Christopher E Clark, Kate Boddy, Fiona C Warren, Sinead TJ McDonagh, Sarah Moore, Victor Aboyans, Lyne Cloutier, Richard J McManus, Angela C Shore, Rod S Taylor, John L Campbell

### **Institutions**

University of Exeter Medical School, Dupuytren University Hospital, Université du Québec à Trois-Rivières, University of Oxford, Royal Devon and Exeter Hospital NHS Foundation Trust, University of Glasgow.

### **Abstract**

#### **Problem**

Hypertension and dementia are associated with older age and with each other. As the populations age, numbers of individuals living with dementia will rise, representing substantial costs and care burdens for society. Currently, there are no interventions to halt established cognitive decline, therefore approaches

focus on prevention. Systolic inter-arm difference in blood pressure (IAD) and cognitive decline are both associated with cardiovascular disease. We therefore propose, and recently published initial evidence for, associations of IAD with prospective cognitive decline. We now present findings from the Inter-arm blood pressure difference individual participant data (INTERPRESS-IPD) Collaboration, examining associations of IAD with development of mild cognitive decline (MCI) and dementia.

#### Approach

Individual participant data meta-analyses: we examined time to event data for new diagnoses of MCI and dementia, according to IAD status in univariable and multivariable Cox regression models, stratified by study. Multivariable analyses were adjusted for systolic blood pressure, age, sex and highest educational attainment. We also examined changes in Mental State Examination (MSE) scores, with adjustment for all of the above and duration of follow up.

#### Findings

Mean age was 66.2 (SD 11.9) years, 55% of participants were female, 84% were of White ethnicity and mean systolic IAD was 7.0 (7.5) mmHg. During 10 years of follow up, there were 273 (5.9%) new diagnoses of MCI among 4,635 participants, from 3 cohorts. In univariable analyses, MCI was associated with a systolic IAD  $\geq 5$ mmHg (Hazard Ratio (HR) 1.34 (95%CI 1.04 to 1.72);  $p=0.022$ ) and IAD  $\geq 10$ mmHg (HR 1.33 (1.03 to 1.73);  $p=0.032$ ). After adjustment, the associations remained: HR 1.31 (1.02 to 1.67;  $p=0.036$ ) for IAD  $\geq 5$ mmHg and HR 1.29 (0.99 to 1.68;  $p=0.056$ ) for IAD  $\geq 10$ mmHg. No significant associations were observed above an IAD of 10mmHg. There were 95 (2.0%) new diagnoses of dementia during follow up; no associations were observed between diagnosis of dementia and IAD. MSE scores were recorded for 2,709 participants in 3 cohorts; 419 (15.5%) showed clinically meaningful reductions (i.e.  $\geq 5$  points) during follow up. Decreases were associated with an IAD  $\geq 5$ mmHg ( $p=0.004$ ) and IAD  $\geq 10$ mmHg ( $p=0.006$ ) on univariable analyses. After adjustment the association with an IAD  $\geq 5$ mmHg remained ( $p=0.033$ ); age and educational attainment attenuated the association with an IAD  $\geq 10$ mmHg ( $p=0.11$ ).

#### Consequences

We present the first time-to-event analyses of development of MCI with IAD. These data provide additional evidence that systolic IADs  $\geq 5$ mmHg and  $\geq 10$ mmHg are associated with development of MCI in a pooled cohort of  $>4,000$  participants. Work to enlarge the dataset and extend these analyses continues. Measurement of blood pressure in both arms is recommended and is straightforward; confirmation of these findings could inform individualised treatment decisions to minimise risk of future cognitive decline.

## D.4

### Why do people take part in atrial fibrillation screening? A longitudinal interview study with SAFER trial participants

**Presenter:** Sarah Hoare

Co-authors: Alison Powell, Jonathan Mant, Jenni Burt – on behalf of the SAFER investigators

#### Institutions

University of Cambridge

#### Abstract

A number of patient groups, charities and clinical organisations have championed the practice of case finding for atrial fibrillation (AF), arguing that early AF diagnosis and treatment may reduce the incidence of stroke. Calls for increased AF case-finding are ranged against concerns about the potential proliferation of unregulated 'back-door' screening; the UK National Screening Committee currently states there is insufficient evidence to support a national AF screening programme. Within this debate the attitude of the public towards AF screening is unknown. The aim of this study was to explore the reasons why participants chose to engage in an AF screening trial.

#### Approach

We conducted semi-structured longitudinal interviews with participants in the feasibility phase of the SAFER trial (Screening for Atrial Fibrillation with ECG to Reduce stroke). Interview participants were sampled purposively in relation to age and gender. Initial face-to-face interviews took place shortly after participants

accepted an invitation to take part in SAFER; up to two follow-up interviews took place via telephone, spaced throughout and following the four-week screening process. We used a flexible topic guide to explore experiences of and attitudes towards screening and AF screening. Interviews were analysed thematically, using both inductive and deductive codes. Themes were synthesised to understand shared views of screening participation, aided by reference to the social science screening literature.

### Findings

We interviewed 24 participants, totalling 55 interviews (interview 1 n=24, interview 2 n=10, interview 3 n=21). Participants were highly supportive of the AF screening programme, underpinned by the belief that screening was a 'good thing to do'. Whilst AF was unfamiliar to most without personal experience of the condition, stroke was well-known and frightening. For participants, AF screening functioned as a way of attenuating the perceived risk and anxiety of having a stroke, but also more broadly to demonstrate (both to themselves and others) their commitment to self-care and being a 'good patient'. Should they be diagnosed with AF, this would offer beneficial early diagnosis and treatment, and further contribute to the maintenance of their health. However, importantly, participants were unlikely to consider themselves to be candidates for AF on entering the screening programme. Engaging in AF screening was therefore thought to be relatively low risk, especially as the screening test was seen as non-invasive. Further, AF screening was commonly presumed to offer a wider health check beyond an assessment of cardiac arrhythmias.

### Consequences

Participants in AF screening can have wider aspirations for the programme than the identification of AF, and the communication of screening results needs to manage expectations effectively. Negative AF screening results may lead to false reassurance concerning wider cardiac risks.

### Funding Acknowledgement

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author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

## D.5

### Barriers and facilitators to optimising heart failure management in ethnic minorities: A meta-aggregation of qualitative studies

**Presenter: Muhammad Hossain**

Co-authors: Nadia Corp, Carolyn Chew-Graham, Stephanie Tierney, Faraz Mughal, Tom Kingstone, Emma Sowden, Thomas Blakeman, Faye Forsyth, Susana Borja Boluda, Christi Deaton

### Institutions

Keele University, University of Manchester, University of Cambridge, University of Oxford

### Abstract

#### Problem

An estimated 0.9 million people live with Heart Failure (HF) in the United Kingdom (UK), accounting for 5% of emergency hospital admissions. Evidence from the UK shows young South Asians are at higher risk of developing HF than young white Europeans and among South Asians, Bangladeshis and Pakistanis are thought to be at greater risk of HF. However, research examining the views and experiences of HF among ethnic minority groups are limited. Previous qualitative research has explored attitudes towards optimising management of HF, diagnosis and treatment, barriers and enablers to service use and support. There is a need to synthesise this work to provide a coherent critical summary, to improve care and service provision for patients, and suggest areas for future research. The aim of this systematic review is to appraise and synthesise the best available qualitative evidence to provide a better understanding of the barriers and facilitators to optimising HF management in people from ethnic minority groups.

#### Approach

A systematic review of qualitative research exploring patients' and carers' perceptions of HF management is being conducted. Seven databases will be searched from inception (EMBASE, MEDLINE, AMED,

CINHALPlus, PsycINFO, ASSIA and Web of Science). In addition, a grey literature search, citation tracking and reference checking of included articles will be undertaken. Articles will be screened using inclusion and exclusion criteria, and full-text articles selected for inclusion will undergo data extraction and quality appraisal using the Joanna Briggs Institute Qualitative Assessment and Review Instrument (JBI QARI). Screening, data extraction and quality assessment will be performed independently by two reviewers. Where there is conflict, this will be resolved through discussion, or a third reviewer will be involved when an agreement cannot be reached. Findings will be synthesised using meta-aggregation guided by the JBI QARI.

### Findings

The review is ongoing and findings from this review will be first presented at the SAPC ASM 2020 - Leeds. Barriers and facilitators to optimising HF management in people from ethnic groups will be presented. Preliminary analysis suggests that people from minority ethnic groups have different beliefs about HF and its treatment which impacts on self-management and access to the services. The diverse religious and cultural traditions of different ethnic groups may affect their knowledge of HF and how they engage with self-management.

### Consequences

The findings will have the potential to inform clinical practice and policy that will reflect the views of ethnic minority groups, to ensure services are culturally and religiously appropriate, accessible and personalised to their needs. The results will provide directions for healthcare providers to improve supportive strategies in the care of HF people from ethnic minority groups.

### Funding Acknowledgement

This work is independent research funded by the National Institute for Health Research School for Primary Care Research (NIHR SPCR), Grant reference number 384. The views expressed are those of the author(s) and not necessarily those of the NIHR, the NHS or the Department of Health.

## D.6

### Survival of people with valvular heart disease in the community (OxVALVE-Survive)

#### Presenter: Nicholas Jones

Co-authors: Clare J Taylor, José M Ordóñez-Mena, Andrea K Roalfe, Saul Myerson, Bernard Prendergast, FD Richard Hobbs

#### Institutions

University of Oxford Nuffield Department of Primary Care Health Sciences, NIHR Oxford Biomedical Research Centre, University of Oxford Division of Cardiovascular Medicine, Radcliffe Department of Medicine, St Thomas' Hospital Department of Cardiology

#### Abstract

##### Problem

More than half of all adults aged over 65 years have some form of valvular heart disease (VHD). Significant VHD, defined as stenosis or regurgitation that impacts upon cardiac function, is associated with impaired quality of life and increased hospitalisation. However, many existing studies of VHD prognosis are confounded by being hospital-based, with likely greater co-morbidity. In addition, most people with VHD have mild disease, which has been linked to poorer outcomes in hospital-based studies but is of uncertain clinical significance in community populations. Furthermore, degenerative valve changes are also common findings on echocardiogram and have traditionally been deemed of little clinical significance as they do not have a functional impact on the heart, but their prognostic significance is also unclear. In this study we aimed to investigate the association between VHD and its subtypes with all-cause and cause-specific mortality in a community population.

##### Approach

We linked data from the OxVALVE study to the Office for National Statistics mortality registry. OxVALVE used echocardiography to screen over 4,000 participants aged over 65 years from seven general practices in Oxfordshire for presence and severity of VHD. We examined the association between VHD and mortality alone and in relation to mitral annular

calcification and aortic sclerosis. We hypothesized that these degenerative forms of valve disease may be associated with an adverse prognosis given that they are markers of atherosclerosis. Kaplan-Meier curves, log rank tests, Cox regression and the Fine-Gray competing risks model were used for the analysis.

### Findings

Mortality data were available for 3,511 participants, of whom 361 (10.3%) died (median 6.49 years follow-up). Most had some form of valve abnormality (n=2,645, 70.2%), including either aortic sclerosis or mitral annular calcification. VHD without degenerative disease was present in 1,760 (50.1%) and 182 (5.2%) had significant disease. Mild and significant VHD were associated with increased all-cause mortality in the unadjusted analysis but not the multivariable model (mild VHD: HR 1.20, 95% CI: 0.96-1.51; significant VHD: HR 1.47, 95% CI: 0.94-2.31). Aortic sclerosis and mitral annular calcification were common findings and both were independently associated with an increased risk of death. Mortality was highest for people with a combination of significant VHD and significant valve degeneration (HR 4.38, 95% CI 1.99-9.67).

### Consequences

These results are important in changing the way that echocardiogram results are interpreted. Most older people detected with VHD (over 90%) will have mild disease that it is not associated with increased risk of death, and they can be reassured. However, degenerative valve changes, particularly in people with significant VHD, are associated with increased mortality, and represent potentially important prognostic indicators, the significance of which may currently be overlooked in clinical practice. Their presence should prompt clinicians to consider intensive treatment of modifiable cardiovascular risk factors.

### Funding Acknowledgement

The OxVALVE study is supported by the National Institute of Health Research (NIHR) Oxford Biomedical Research Centre (BRC), with initial support from the NIHR Thames Valley Comprehensive Local Research Network (UKCRN ID 6086), and the NIHR School for Primary Care Research. 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.

## D.7

### Familiarity and use of cardiovascular clinical prediction rules: A survey of general practitioners

**Presenter: Ban Jong-Wook**

Co-authors: Rafael Perera, Richard Stevens

### Institutions

University of Oxford

### Abstract

#### Problem

Clinical prediction rules (CPRs) can help general practitioners (GPs) address challenges in cardiovascular disease. Although many cardiovascular CPRs exist, few have been broadly used because of inefficiencies in CPR development. It is unknown which cardiovascular CPRs are currently recognized and used by GPs. Therefore, we aimed to identify cardiovascular CPRs recognized and used by GPs, and to assess how GPs' familiarity and use have changed.

#### Approach

An online survey of GPs in the UK was conducted. We recruited a geographically representative sample of GPs from Doctors.net.uk. We asked participants how familiar they were with, how frequently they used, and why they used cardiovascular CPRs. We compared our results with a survey conducted in 2014.

#### Findings

Most GPs were familiar with QRISK scores, ABCD scores, CHADS scores, HAS-BLED score, Wells scores for deep vein thrombosis, and Wells scores for pulmonary embolism. The proportions of GPs using these CPRs were 96.3%, 65.1%, 97.3%, 93.0%, 92.5%, and 82.0%, respectively. GPs' use increased by 31.2% for QRISK scores, by 13.5% for ABCD scores, by 54.6% for CHADS scores, by 33.2% for Wells scores for deep vein thrombosis, and by 43.6% for Wells scores for pulmonary embolism; and decreased by 45.9% for JBS risk calculator, by 38.7% for Framingham risk scores, and by 8.7% for New Zealand tables. GPs most



commonly used cardiovascular CPRs to guide therapy and referral.

### Consequences

We found GPs' familiarity and use of cardiovascular CPRs changed substantially in the UK. Integrating cardiovascular CPRs into guidelines and EHRs might increase familiarity and use.

### Funding Acknowledgement

This study was funded by the Collaboration for Leadership in Applied Health Research and Care (CLAHRC) Oxford, the National Institute for Health Research (NIHR).

## D.8

### Does a pre-existing musculoskeletal condition worsen outcomes in acute coronary syndrome?

**Presenter: Kelvin Jordan**

Co-authors: John J Edwards, Ying Chen, Felix Achana, James Bailey, Alyson L Huntley, Christian Mallen, Mamas Mamas, Stephen Tatton

### Institutions

Keele University, Oxford University, University of Bristol

### Abstract

#### Problem

Musculoskeletal conditions are a common reason for consulting primary care and a major cause of years lived with disability. Many people with painful musculoskeletal conditions have other long-term conditions necessitating hospitalisation.

Musculoskeletal conditions may affect outcomes of other conditions managed within hospital through pain, restricted functioning and mobility, and sleep interference. These factors may hinder or delay delivery of appropriate treatment, thereby reducing its effectiveness, potentially extending time to discharge from hospital, and worsening outcomes of hospitalisation. The objective was to determine whether people with musculoskeletal pain spend longer in hospital and have worse short-term outcomes after hospitalisation with acute coronary syndrome (ACS).

### Approach

We used information on patients aged 45 years and over newly diagnosed with ACS between 1998-2019 recorded within a large UK database of general practice records (Clinical Practice Research Datalink) linked to hospital data. We identified primary care consultations by these patients for musculoskeletal pain in the 24 months prior to ACS hospitalisation. Length of hospital stay and risk of worse hospital outcomes including mortality and readmission within 30 days of discharge were compared between those with pre-existing musculoskeletal pain and those without. We assessed whether findings varied by time since most recent musculoskeletal pain consultation (within 6 months vs 6-24 months before hospitalisation date) and severity (using prescription of strong opioid analgesics and referral as proxies for greater severity).

### Findings

There were 33,870 patients with a new hospitalisation for ACS. Mean age was 70. 12,669 (37%) had consulted for a painful musculoskeletal condition in the previous 24 months. Patients with a musculoskeletal pain consultation had an increased risk of readmission for any cause to hospital within 30 days of discharge after adjustment for comorbidity and sociodemographic characteristics (21% vs 19% readmitted; adjusted odds ratio 1.08; 95% CI 1.02, 1.14). Risk of readmission was increased further in those with a more recent consultation and severe musculoskeletal pain (23% readmitted). Length of hospital stay was longer in those with a more recent consultation and severe musculoskeletal pain (mean difference 0.8 days; adjusted incident rate ratio 1.06; 1.01, 1.11), as was risk of mortality within 30 days (although not statistically significant, adjusted odds ratio 1.17; 0.98, 1.39).

### Consequences

Musculoskeletal pain is associated with poorer short-term outcomes from ACS. Given the high rate of musculoskeletal pain in patients with ACS, increased awareness of the impact of such pain may in particular reduce rates of readmission to hospital following ACS. Further work should assess whether musculoskeletal pain affects the long-term prognosis of cardiovascular conditions, impacts on service utilisation and costs after ACS, and whether there are



potential interventions to ameliorate these effects at either a population level or during inpatient stays.

### Funding Acknowledgement

This study is funded by the National Institute for Health Research (NIHR) School for Primary Care Research (project reference 428). JJE is funded by an NIHR Academic Clinical Lectureship (reference CL-2016-10-003). CM is funded by the National Institute for Health Research (NIHR) Applied Research Collaboration West Midlands and the National Institute for Health Research (NIHR) School for Primary Care Research. This abstract presents independent research funded by the National Institute for Health Research (NIHR) and the National Institute for Health Research (NIHR) Applied Research Collaboration (ARC) West Midlands. 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. This study is based in part on data from the Clinical Practice Research Datalink obtained under licence from the UK Medicines and Healthcare products Regulatory Agency. The data is provided by patients and collected by the NHS as part of their care and support. The Office for National Statistics (ONS) is the provider of the ONS data contained within the linked CPRD data used for this study. ONS Data and Hospital Episode Statistics (HES) Data: copyright © (2019), re-used with the permission of The Health and Social Care Information Centre; all rights reserved. The interpretation and conclusions contained in this study are those of the authors alone.

## D.9

### Diagnosis of peripheral arterial disease in primary care: a survey of general practitioners in England & Ireland

**Presenter: Judit Konya**

Co-authors: STJ McDonagh, G Abel, K Boddy, CE Clark

### Institutions

Primary Care Research Group, University of Exeter Medical School

## Abstract

### Problem

Lower extremity peripheral arterial disease (PAD) has a global prevalence of 10%. PAD is associated with reduced quality of life and physical functioning, and may lead to critical limb ischaemia, limb loss or death. PAD represents a substantial economic and health care burden and is under-diagnosed, perhaps due to variability of leg symptoms presented. The EuroPAD group comprises PAD guideline authors, vascular and primary care experts from 10 European countries. This group conceived and developed a survey for a Europe-wide assessment of current primary care approaches to detecting and monitoring PAD. This study seeks to understand general practitioners' (GPs) usual approaches to the diagnosis, assessment and follow-up of PAD in England and the Republic of Ireland (ROI), using an online, country-specific, version of the EuroPAD survey. We will compare aggregated responses with current standards and guidelines, explore trends in responses according to practice demographics, and link responses to current Quality and Outcomes Framework (QOF) indicator achievements for PAD, to describe factors associated with high or low-level achievement.

### Approach

The online survey is currently being distributed via email to GPs using various means: the local Clinical Research Network (CRN), newsletters for Royal College of General Practitioners (RCGP) Faculties (in England and ROI), Local Medical Committees and the RCGP Rural Forum Google Group. Responses will be summarised as either mean and standard deviations, or median and inter-quartile ranges according to normality of the data. Demographic and QOF characteristics of responding and non-responding practices will be compared using t-tests, Mann-Whitney or  $\chi^2$  tests, as appropriate. QOF data will be compared with survey responses using Pearson's correlation coefficients or t-tests for unadjusted comparisons, and adjusted for practice-level demographics using mixed effects logistic regression. We aim to obtain 300 responses, which will give 90% power ( $p < 0.05$ ) to detect a difference of 3.5% between QOF reporting of anti-platelet prescribing as one indicator of care.

## Findings

The survey opened in January 2020. We aim to finish data collection by April 2020. The results from this ongoing survey will be presented at the conference.

## Consequences

Our findings will offer insight into current PAD management in English and Irish primary care settings. These results will be merged with other national surveys led by the EuroPAD investigators and contribute to a Europe-wide report that can guide future policy. The results will provide an evidence base to inform the design of future interventions with the aim of improving approaches to diagnosing and monitoring PAD. We will discuss our findings with our Patient Participation (PPI) Group prior to dissemination to ensure that interpretation and presentation of results are meaningful to service users.

## Funding Acknowledgement

This research was funded by the Scientific Foundation Board of the Royal College of General Practitioners (Grant No SFB 2019-24).

## D.10

### Prognosis of transient ischemic attacks and minor stroke in an Australian community-based population: a greater role for GP management?

**Presenter: Parker Magin**

Co-authors: Daniel Lasserson, Christopher Levi, Jose Valderas, Debbie Quain.

## Institutions

University of Newcastle (Australia), University of Birmingham, University of New South Wales, University of Exeter

## Abstract

### Problem

Transient ischemic attacks and minor strokes (TIAMS) are common and entail risk of subsequent stroke. Rapid secondary prevention implementation is vital, and most guidelines recommend urgent referral to secondary care. There has been a substantial

improvement in prognosis of TIAMS managed in secondary care, coincident with the institution of rapid access pathways following the landmark 2007 EXPRESS and SOS-TIA trials. The overall prognosis for TIAMS in contemporary practice, managed across the spectrum of primary and secondary care, is less certain. We aimed to establish recurrent stroke incidence in all patients of 16 general practices, in the Newcastle-Hunter Valley-Manning Valley region of Australia, who experienced a TIAMS.

## Approach

We conducted an inception cohort study. Multiple overlapping ascertainment methods (the general practices; after-hours GP co-operative; hospitals EDs, outpatient clinics, and inpatient records) identified participating practice's patients with possible TIAMS. Data collection (August 2012-July 2017) was via extraction from participant's clinical notes from all above sources and from interviews at baseline, three- and 12-months. Adjudication of participant index events (and subsequent events) as TIA, minor stroke, stroke, or TIAMS-mimic was by a three-member panel of senior GPs/stroke physicians. The incidence of subsequent stroke in the TIAMS and TIAMS-mimic groups was calculated. Time to subsequent event was assessed with Kaplan Meier Curves.

## Findings

Of 613 participants (response rate 49%), 298 (49%) were adjudicated to have had a TIAMS (175 TIA, 123 minor stroke). Of all TIAMS, 26% were managed entirely by a GP, 55% were either referred to ED by a GP or presented to ED. Of all TIAMS, 9 (3.0%) had a subsequent stroke during 12-months follow-up. The median time to stroke was 34 days. The Kaplan Meier Time to First Recurrent Stroke following a TIAMS index event did not display the prominent early recurrence ('front-loaded risk') of initial epidemiological studies. Of 315 mimics, 2 (0.6%) had a subsequent stroke. These findings are of considerably lower incidence of recurrent stroke than in historical TIA cohorts and also lower incidence than in more recent (post-EXPRESS/SOS-TIA) secondary care cohorts. Possible explanations for this low recurrent stroke incidence may include the spectrum of TIAMS severity in this community-based study being less than that in previous studies of patients reaching secondary care. It may also reflect translation to practice, including primary care practice, of the need

for urgent secondary prevention suggested by the findings of EXPRESS/SOS-TIA and subsequent studies.

#### Consequences

The findings have implications for health care systems in areas where prompt access to secondary care for TIAMS is difficult or not practicable. TIAMS prognosis may still generally be good in these settings and emphasis may be best directed at referral of highest risk patients or of difficult diagnostic scenarios.

#### Funding Acknowledgement

The study was funded by a National Health and Medical Research Council (Australia) Project Grant (1027794)

## D.11

### The SAFER study (Screening for Atrial Fibrillation with ECG to Reduce stroke): is it feasible to screen for paroxysmal atrial fibrillation in general practice?

#### Presenter: Jonathan Mant

Co-authors: Jonathan Mant, Jenni Burt, Simon Griffin, Richard Hobbs, Richard McManus, Kate Williams, Andrew Dymond, Jenny Lund, Duncan Edwards, Lina Massou, Mike Sweeting

#### Institutions

University of Cambridge, University of Oxford, University of Leicester

#### 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. Informing a large (n=126,000) cluster randomised controlled trial in UK general practice, this feasibility study aimed to quantify: participation rates, screening uptake, AF detection rate, and anticoagulation uptake.

##### Approach

8,000 people aged  $\geq 65$  registered with a participating practice (n=10) were invited to the study. Those that consented to take part were invited to a practice AF screening appointment, and instructed how to use a handheld single-lead ECG device (Zenikor). They continued screening at home (1-4 weeks). ECGs were reviewed by a computer algorithm, a technician and (if potentially 'positive') a cardiologist. Treatment for AF followed national guidelines.

#### Findings

Results from practices 1-5 (full results will be presented): 1,644/4,000 (41%) of people consented to take part in the study. 1,375/1,512 (91%) of people invited for screening accepted. To date, AF was detected in 3.1% (4-week screen, 31/987), and in 0.9% (1-week screen, 3/347). 17 people with 'positive' results are still under review, and 19 had indeterminate results. Anticoagulation commenced in 27/34 (79%) people.

#### Consequences

It is feasible to screen for AF in general practice. We will modify the screening process in the trial; raising the lower age limit to 70 years and screening for three weeks per participant.

#### Funding Acknowledgement

This project is funded by the National Institute for Health Research (NIHR) School for Primary Care Research and 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.

## D.12

### A randomised controlled trial to determine if screening for paroxysmal atrial fibrillation reduces stroke and mortality: SAFER Trial - Screening for Atrial Fibrillation with ECG to Reduce stroke

**Presenter: Jonathan Mant**

Co-authors: Jonathan Mant, Jenni Burt, Simon Griffin, Richard Hobbs, Richard McManus, Kate Williams, Andrew Dymond, Jenny Lund, Duncan Edwards - on behalf of the SAFER investigators

#### Institutions

University of Cambridge, University of Oxford

#### 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 identify the benefits and harms of screening for AF in people  $\geq 70$  yrs and estimate the overall cost-effectiveness. Following a successful feasibility study the cluster randomised trial internal pilot started in 2020.

##### Approach

Patients will attend their GP practice for instruction in the use of a handheld single-lead ECG device. They will continue screening at home over a 3 week period. Treatment for AF will follow national guidelines.

1. Internal pilot trial - ongoing Cluster randomising practices (12 screening, 24 control) to determine AF detection rate and inform power calculation for main trial.

2. Main trial – 2021 Cluster randomising practices (120 screening, 240 control; 126,000 patients). 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.

3. Qualitative Interviews and observations with patients and staff to clarify how to best carry out screening.

4. Health economics A within trial analysis and decision modelling analysis to determine whether screening is cost effective.

##### Findings

The trial is due to report in 2027.

##### Consequences

This will be the world's largest planned AF screening trial to date and will inform the decision to implement a national AF screening programme.

#### Funding Acknowledgement

This project is funded by the National Institute for Health Research (NIHR) School for Primary Care Research and 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.

## D.13

### Which behavioural change interventions improve clinicians' practice with advance care planning in heart failure?

**Presenter: Markus Schichtel**

Co-authors: Rafael Perera, Bee Wee, Charlotte Albury, Igbo Onakpoya, Sarah Collins

#### Institutions

University of Cambridge, University of Oxford,

#### Abstract

##### Problem

National and international guidelines advocate advance care planning (ACP) to improve end-of-life care for patients with heart failure. ACP improves quality of life and patient satisfaction with care but clinicians are hesitant to engage with ACP. Only 8% of eligible patients have an advance care plan and patient care is affected. Behaviour change techniques (BCTs) have been used in the past to change clinicians'

practice pattern. But there is no systematic evaluation of the evidence base for effective behaviour change techniques to support clinicians with ACP in heart failure. Our aim was to identify interventions with the greatest potential to engage clinicians.

### Approach

We conducted a systematic review and meta-analysis and searched CINAHL, Cochrane Central Register of Controlled Trials, Database of Systematic Reviews, Embase, ERIC, Ovid MEDLINE, Science Citation Index, PsycINFO for randomised controlled trials (RCTs) from inception to August 2019. Three reviewers independently extracted data, assessed risk of bias (Cochrane risk of bias tool), the quality of evidence (GRADE) and intervention synergy according to the Behaviour Change Wheel and Behaviour Change Techniques (BCTs). Odds ratios (ORs) were calculated for pooled effects.

### Findings

We conducted a systematic review and meta-analysis and searched CINAHL, Cochrane Central Register of Controlled Trials, Database of Systematic Reviews, Embase, ERIC, Ovid MEDLINE, Science Citation Index, PsycINFO for randomised controlled trials (RCTs) from inception to August 2019. Three reviewers independently extracted data, assessed risk of bias (Cochrane risk of bias tool), the quality of evidence (GRADE) and intervention synergy according to the Behaviour Change Wheel and Behaviour Change Techniques (BCTs). Odds ratios (ORs) were calculated for pooled effects. Of 14483 articles screened, we assessed the full text of 131 studies. 13 RCTs including 3709 participants met all of the inclusion criteria. The BCTs of prompts/ cues (OR, 4.18; 95% CI [2.03 - 8.59]), credible source (OR, 3.24; 95% CI [1.44 - 7.28]), goal setting (outcome) (OR, 2.67; 95% CI [1.56 - 4.57]), behavioural practice/ rehearsal (OR, 2.64; 95% CI [1.50 - 4.67]); instruction on behaviour performance (OR, 2.49; 95% CI [1.63 - 3.79]), goal setting (behaviour) (OR, 2.12; 95% CI [1.57 - 2.87]), and information about consequences (OR, 2.06; 95% CI [1.40 - 3.05]) showed statistically significant effects to engage clinicians with ACP.

### Consequences

BCTs that simultaneously involved prompts, goal setting (outcome), patients and credible source were among the most effective interventions to improve

clinicians' practice with ACP in heart failure. Heart failure services should consider these components for implementation into routine clinical practice.

### Funding Acknowledgement

No funding was involved. We acknowledge and thank Nia Roberts, health science librarian, Bodleian Library, University of Oxford, for running the literature data base searches.

## D.14

**A controlled before-after study of a local quality improvement programme for hypertension and AF: What benefits to patient outcomes and how long do they last?**

**Presenter: Timothy Smith**

Co-authors: Harmony Otete, Umesh Chauhan

### Institutions

University of Central Lancashire

### Abstract

#### Problem

Evidence in favour of using financial rewards for quality improvement in primary care is generally inconsistent, often short-lived, and arose from data with confounded control groups. 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 reflected with peer groups on protocols and data at quarterly workshops. At SAPC ASM, we have previously demonstrated that this improves diagnosis rates of hypertension and management of AF, after 1 and 2 years, although benefits in AF diagnosis seen in year 1 were short lived. With latest data available for year 3, we aimed



to analyse long-term effects of this continuing intervention.

#### 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, using the primary outcome measure for AF and hypertension of change from baseline in mean recorded prevalence per surgery. Secondary outcome measures looked at indicators of quality of management. Time-series analyses at CCG and surgery level were used to determine whether the effects of the intervention appeared to be uniform with time or peaked then waned.

#### Findings

Welch's t test showed a significantly higher mean increase in recorded hypertension prevalence over 36 months for the intervention group (0.82%) versus controls (0.26%),  $p=0.006$ , although the mean increase in AF prevalence (0.33%) compared to controls (0.29%) was non-significant,  $p=0.305$ . Time series analysis showed that there was a significant increase in recorded hypertension and AF prevalence in the first year ( $p=0.033$  and  $0.006$  respectively) and in hypertension prevalence in the second year ( $p=0.011$ ) but not in either in the third year. Opportunistic BP checks were higher in the second year ( $p<0.001$ ) and AF management in the first year ( $p=0.001$ ) but not in any other year.

#### Consequences

Earlier data demonstrated that this funded quality framework designed to meet local needs, could engage local primary care providers and improve patient outcome measures, without the need for target incentivisation. Potentially, it offers an alternative method for funding quality improvement within existing services. Similar to findings of some earlier quality-improvement schemes that demonstrated only short-lived benefits, we found that acceleration in already improving standards may be limited to one or two years, although the overall benefit gained during this time is maintained for longer. This has implications for the optimum length for improvement schemes.

## D.15

### Uncertainty and Variability - Insights from a multi-perspective qualitative study on Heart Failure with Preserved Ejection Fraction

**Presenter: Emma Sowden**

Co-authors: Muhammad Hossain, Carolyn Chew-Graham, Thomas Blakeman, Stephanie Tierney, Ian Wellwood, Francesca Rosa, Christi Deaton

#### Institutions

University of Manchester, Keele University, University of Cambridge, University of Oxford

#### Abstract

##### Problem

Approximately 26 million people worldwide are living with heart failure (HF) – a serious life-threatening disease for which the outlook is often poor. Primary care has a crucial role in the management of this patient population, yet the optimal structure of care remains unclear. About half of patients with HF have heart failure with preserved ejection fraction (HFpEF). HFpEF is more common in older adults with multimorbidity. Compared to HF with reduced ejection fraction (HFrEF), there is a limited evidence-base for management, making the need to establish models of care more pressing. This study aims to identify key barriers to the optimal care of patients with HFpEF.

##### Approach

This study formed part of the NIHR School for Primary Care Research funded programme of work aimed at Optimising management of patients with HFpEF (OPTIMISE HFpEF). A Patient Advisory Group and a multidisciplinary team of experts have been involved in the development and implementation of the study. The research adopted a qualitative multi-perspective approach in which findings across key stakeholder groups were triangulated using Framework analysis to identify key barriers to the optimal care for this patient population.

##### Findings

This study entailed 106 interviews and two focus groups with key stakeholders. Participants included 50 patients with diagnosed or suspected HFpEF, nine



carers, and 73 clinicians (including 35 GPs, 8 Practices nurses, 14 HF Specialist nurses, six Cardiologists and ten other Health professionals). Limited understanding of the syndrome and associated roles and responsibilities were widespread across patients' and primary care clinicians' accounts, indicating an unmet educational need. Respondents described a precarious starting point associated with HFpEF in terms of lack of awareness, failure to diagnose, and a poor evidence-base, from which other problems appeared to stem. Some providers, particularly specialists, expressed concern that HFpEF patients may be missed as the system is attuned to identifying reduced ejection fraction, ignoring other parameters. GPs conveyed uncertainty about interpreting reports, with many relying on summaries or conclusions of variable quality. Patients' descriptions of their journey to diagnosis contrasted with linear referral pathways of protocols and guidelines, conveying a convoluted, protracted series of hospital admissions or specialist appointments. The data suggest that amidst uncertainty and variability as to how HFpEF was identified and understood, and care organised, optimal management was problematic leading to unclear treatment, diminished possibilities of self-management and limited access to specialist care.

#### Consequences

Findings suggest that the current approach to the management of people with HFpEF in primary and secondary care may miss opportunities to optimise the care of this patient population owing to limited understanding of the condition. Findings are being used to inform consensus work leading to the development of an optimised programme of management in primary care for this patient group.

#### Funding Acknowledgement

The study was funded by the National Institute for Health Research, School for Primary Care Research (NIHR SPCR). Grant reference number 384.

## D.16

### Cost-effectiveness of the Risk Assessment and Management Programme for primary care patient with Hypertension (RAMP-HT)

**Presenter: Esther Yee Tak Yu**

Co-authors: Eric Yuk Fai Wan, Eric Ho Man Tang, Cindy Lo Kuen Lam

#### Institutions

Department of Family Medicine and Primary Care, the University of Hong Kong, 3/F Ap Lei Chau Clinic, 161 Main Street, Ap Lei Chau, Hong Kong.

#### Abstract

##### Problem

The Risk Assessment and Management Programme - Hypertension (RAMP-HT) is a territory-wide, multi-disciplinary, multi-component intervention added onto usual primary care that provides total cardiovascular disease risk management of hypertensive patients. It has proven effectiveness in reducing hypertension-related complications and mortality among hypertensive patients after 5 years, thus potentially lessening healthcare burden. However, the sustainability of programme benefit remains unknown. This study aims to evaluate the cost-effectiveness of the RAMP-HT over lifetime.

##### Approach

A lifetime cost-effectiveness analysis from health service provider's perspective was conducted using Markov modelling. Empirical data from a propensity-score-matched cohort of 79,161 RAMP-HT participants and 79,161 usual primary care patients with hypertension was used to estimate public direct medical costs and gender-specific annual transition probabilities of developing hypertension-related complications, including coronary heart disease, stroke, heart failure and end stage renal disease. The mortality of patients with specific hypertension-related complications was estimated from a cohort of 327,842 primary care patients with hypertension. Private direct medical costs and health preference of hypertensive patients with different complication status were collected through structured questionnaire survey of 486 and 873 patients, respectively. Incremental cost-effectiveness ratios

(ICER) was calculated by the ratio difference of direct medical cost to difference of quality-adjusted-life-year (QALY) gained between RAMP-HT participants and usual care patients. Probabilistic sensitivity analysis was conducted with results presented as a cost-effectiveness acceptability curve.

### Findings

A RAMP-HT participant was estimated to save US\$714 (US\$43,340 vs. US\$44,054), gain 0.20 QALYs (12.49 QALYs vs 12.29 QALYs) and 0.19 life years (LYs) (14.64 LYs vs. 14.45 LYs), compared to a patient received usual care on average. The probabilistic sensitivity analysis found that RAMP-HT had 100% chance of being cost-saving compared to usual care under the assumptions and estimates used in the model. Hence, RAMP-HT was proved to be a cost-saving intervention dominating usual care, regardless of the willingness-to-pay threshold. The positive effect of RAMP-HT was shown to be greater if the duration of the intervention lasted longer.

### Consequences

RAMP-HT was projected to be a cost-saving intervention compared to usual care in preventing hypertension-related complications and mortality over the lifespan of a hypertensive patient. The significant reduction in mortalities, complications and resultant direct medical costs could be attributed to the team-based approach facilitated by an improved electronic information-relay system, which ensured delivery of holistic cardiovascular disease risk management, enhanced coordination of allied health services and maximized use of doctor consultation time. In view of the clinical and financial benefits, RAMP-HT should be integrated into usual primary care to enhance management of hypertensive patients. Further study should be conducted to inform who will benefit most from and the optimal frequency of repeating the RAMP-HT intervention.

### Funding Acknowledgement

This study was funded by the Health and Medical Research Fund, Food and Health Bureau, HKSAR (Project no: 13142471).

## D.17

### Assessing the severity of cardiovascular disease in 213,088 people with coronary heart disease (CHD) in England: a retrospective cohort study using the Clinical Practice Research Datalink.

#### Presenter: Salwa Zghebi

Co-authors: Mamas A. Mamas, Darren M. Ashcroft, Martin K. Rutter, Harm Van marwijk, Chris Salisbury, Christian D. Mallen, Carolyn A. Chew-Graham, Nadeem Qureshi, Stephen Weng, Tim Holt, Iain Buchan, Niels Peek, Sally Giles, David Reeves, 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

Coronary heart disease (CHD) is the most common cardiovascular (CV) disease (CVD) and was responsible for nearly 9.5m deaths worldwide in 2016. In the UK, nearly 2.3m people have CHD. Despite the importance of assessing CV severity, however, no established CVD severity scores for primary care patients with CHD exist. Past studies examining CVD severity in patients with CHD are limited, with most currently available CV risk stratification tools are for people without prevalent CVD. Our study aims:

- 1) develop and validate CV severity score in people with CHD using routinely-collected clinical data;
- 2) evaluate its association with risks of all-cause and cause-specific hospitalisation and mortality.

##### Approach

A retrospective cohort study using Clinical Practice Research Data link (CPRD) GOLD data between 2007-2017. People with CHD aged  $\geq 35$  years and registered in English general practices were included. The study population was randomly divided into 80% and 20% parts as the training and validation datasets, respectively. Baseline and longitudinal severity scores were developed based on 20 relevant severity domains. Cox regression models and competing risk

regressions were used to evaluate the association between severity and 1-year all-cause mortality (primary outcome), 1-year hospitalisations (secondary outcomes) after controlling for age, gender, ethnicity, and deprivation. Patient and public involvement and Engagement (PPIE): we invited people with CHD to a PPIE meeting to obtain their opinions on the included severity domains and the readability of our lay summary. All participants agreed on the importance of grading disease severity and their perceptions about the domains varied.

### Findings

A cohort of 213,088 people with CHD (170,395 in the training dataset and 42,693 in the validation dataset) from 398 general practices was identified. Mean ( $\pm$ SD) age was 64.5 ( $\pm$ 12.7) years, 98,041 (46%) were women, 189,272 (89%) White, and 45,719 (22%) and 34,412 (16%) from least and most deprived areas, respectively. Overall, 49,918 (23%) patients died, and 173,204 (81%) patients had  $\geq 1$  hospitalisation during 9.4 ( $\pm$ 6.0) years of follow-up. A 1-unit increase in baseline severity score was associated with significantly 41% increased risk for all-cause mortality (95%CI: 37%-45%, AUROC=0.83). In the competing risk regressions, a 1-unit increase in score was associated with 28% increased risk for any-cause hospitalisation (27%-29%, AIC=992,096), and 39% risk for CV/diabetes hospitalisation (37%-40%, AIC=699,635). The new score improved the models' predictive value for all outcomes when added to socio-demographic variables. The findings were consistent in the validation dataset. Conclusions: A higher CV severity score in people with CHD is associated with increased risks for any cause and CV-related hospital admissions and mortality.

### Consequences

This reproducible scoring tool based on routinely-collected data can support practitioners to provide better clinical management of CHD in primary care with wider implications on public health programmes for people with CHD and informing commissioning.

### Funding Acknowledgement

This study is funded by the National Institute for Health Research School for Primary Care Research (NIHR SPCR), grant number 331.

## E.1

### What contribution do the parents of children with long term conditions make to their NHS care? A qualitative study of lived experience.

**Presenter: Emily Devoy**

Co-authors: Jennifer Swann, Joanne Thompson

### Institutions

Academic Unit of Primary Medical Care, The University of Sheffield

### Abstract

#### Problem

There is a dearth of literature concerning how parents of children with long term conditions (LTCs) experience and manage their child's care and how they provide feedback to NHS services. Research has shown GPs are often the coordinators of care, but very often parents tend to bridge the gap in communication between primary and secondary healthcare. Therefore, having effective channels for parents to provide feedback is an important factor for improving experience of both primary and secondary care. Parents develop expertise in the management of their child's condition so there is a lot we can learn from their experiences to better improve the services provided. The literature also shows, having a child with a LTC has a broader psychosocial impact on the lives of the parents and siblings, including employment, support and the financial impact, which will be further explored in this research. The aim is to understand what contribution parents of children with LTCs can make to their NHS care based on their lived experience. Our objective is to identify the ways in which parents provide feedback to the NHS about their child's care.

#### Approach

This is a qualitative interview study in South Yorkshire. A literature review was carried out to identify the gaps in the literature. From this the research question was formed in an attempt to fill these gaps. A method of co-production is being used to ensure public involvement and authenticity of the research. Semi-structured interviews are currently being carried out, with six already completed and five more scheduled. Recruitment is ongoing and the aim is to interview 15-

20 parents of children with physical LTCs until data saturation. The topic guide is being developed iteratively to incorporate emerging themes. The interviews are being audiotaped, transcribed verbatim and analysis of the results using the Framework approach is ongoing and due for completion in April.

## Findings

Interviews are being conducted between February and April and analysis is ongoing. This forms part of an educational degree (BMedSci) due for submission in May 2020. This method of co-production allows experts in this area to contribute and shape the research as it progresses. Our findings will provide a greater understanding of parents' experiences of having a child with a LTC and their perspective on providing feedback to the NHS.

## Consequences

This study will show what methods parents use, or know about, to provide feedback to NHS services. This will allow us to understand where potential improvements can be made.

## E.2

### Exploring Online Forums to Understand Parents' and Families' Views about Resources and Sources of Support for the Management of Children's Chronic Insomnia in the Community and Primary Care.

**Presenter: Samantha Hornsey**

Co-authors: Samantha Hornsey [1], Catherine Hill [1,2], Ingrid Muller [1], Beth Stuart [1] and Hazel Everitt [1]

## Institutions

[1] University of Southampton, [2] University Hospital Southampton NHS Foundation Trust

## Abstract

### Problem

Poor sleep can affect children's development in a range of ways such as in behavioural, academic, cognitive, emotional and physiological domains. A common sleep disorder in children is Behavioural Insomnia (BI, a form of Chronic Insomnia) and it presents as problems initiating and/or maintaining

sleep. Research indicates that behavioural and sleep hygiene interventions are effective for BI (Mindell et al, 2006; Allen et al 2016). Within primary care, BI could not only be addressed early, but it could also be prevented. However, research on the management of sleep in paediatric primary care (Honaker and Meltzer, 2016), though limited, suggests that sleep is not regularly discussed in paediatric consultations and that formal professional training on the topic is lacking. UK research (Hatton and Gardani, 2018) suggested that the internet is used as an information source by parents or carers of children with sleep problems. Other research (Porter and Ispa, 2012) also indicated that mothers discuss childrearing concerns on online message boards. However, there is no published research to date, which analyses online discussion forums to specifically explore parent's perceptions of how children's sleep problems are managed in primary care. Therefore, this study aims to explore what parents post in discussion forums about their concerns and expectations regarding children's sleep problems, and how they perceive these sleep problems to be addressed during GP consultations. It also aims to explore whether the parents are aware of any resources (online, in the community or in primary care).

## Approach

This study takes an exploratory qualitative approach by analysing posts from parents/carers in public online discussion forums, which are about children's sleep problems in primary care or the community. Scoping searches have been conducted to inform a systematic search for each online forum included in this study. Final searches are being conducted in the three active online discussion forums using terms for sleep and terms for various primary care practitioners (e.g. 'GP and 'doctor'). Data is being collected by downloading the first 300 relevant discussion threads in total and data will be coded in Nvivo. Qualitative analysis of the threads will be based on inductive thematic analysis, involving reading and rereading the data, generating and reviewing a coding schedule and by refining the themes and subthemes that emerge.

## Findings

Data is currently being collected. However, the results will be presented at the conference.

## Consequences

Parents' and carers' perspectives about the available support for children's sleep problems in primary care and the community will be highlighted by this study. This will therefore highlight areas for improvement which can be addressed by future research. It will also inform the development of possible support tools (to be used by families and primary care providers).

## Funding Acknowledgement

This project is 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 NIHR or the Department of Health and Social Care.

## E.3

### A Systematic Review of the Management of Paediatric Chronic Insomnia in Primary Care

**Presenter: Samantha Hornsey**

Co-authors: Samantha Hornsey [1], Catherine Hill [1,2], Beth Stuart [1], Ingrid Muller [1] and Hazel Everitt [1]

## Institutions

[1] University of Southampton [2] University Hospital Southampton NHS Foundation Trust

## Abstract

### Problem

Poor sleep in children can have both physiological and psychological consequences on their development. A form of Chronic Insomnia, Behavioural Insomnia in children (BI) is common and is typically discussed as problems with limit setting and/or with sleep-onset associations. Research indicates that behavioural interventions (e.g. extinction methods, parental education, stimulus control methods) and sleep hygiene interventions are effective treatment strategies (Mindell et al 2006; Allen et al 2016). Primary care offers potential to help families prevent BI or address it early (reducing the risk of consequences of persisting sleep problems). Research on this topic is limited, however, a review (Honaker and Meltzer 2016) suggested that for general sleep

problems in paediatric primary care, professionals' formal training about sleep is limited and that sleep is rarely discussed in appointments. Our review further explores primary care professionals' (PCPs) current practice, knowledge, and perceptions of role, regarding management specific to BI.

## Approach

A systematic search strategy consisting of various terms for 'sleep', 'child' and 'primary care' was conducted in six electronic databases (CINAHL, EMBASE, MEDLINE, PsycINFO, Web of Science and Cochrane Library CENTRAL). Studies were selected if they included PCPs seeing families about BI (or parents/children presenting to PCPs with sleep problems) and if they looked at PCPs knowledge, role perceptions or current practice regarding management of BI in primary care. SH lead initial / full text screening and many of the potentially eligible full texts have been screened for full eligibility. SH is leading data extraction and data from included studies to date have been extracted. Further data is being extracted accordingly, as further articles are included from the remaining full texts. Twenty percent of initial results were also screened by BS who will also screen 20% of full texts and check data extraction. Quantitative and qualitative papers will be synthesised with a narrative synthesis and thematic synthesis, respectively. Quality appraisal will be assessed using the Mixed Methods Appraisal Tool.

## Findings

There were 7578 results from the databases searches (de-duplicated to 5505). Title and abstract screening resulted in 499 potentially eligible full texts to read. To date, 11 papers have been included for analysis, from which data have been extracted. To date, UK research is lacking. Preliminary synthesis is being conducted whilst the final full texts are being screened. Full results will be presented at the conference.

## Consequences

Findings will highlight what PCPs currently know, practice and perceive their role to be, regarding the management of children's BI. Findings will direct future research which aims to further explore, or improve, particular areas of management of BI within primary care. The lack of UK based studies is notable, indicating that further UK research is warranted.



## Funding Acknowledgement

This project is 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 NIHR or the Department of Health and Social Care.

## E.4

### What is a most important measure for food allergy in nursery?

**Presenter: Mitsunobu Kaneko**

Co-authors: Tomoko Miyoshi, Yoshihiro Miyashita, Riku Hayashi, Yuji Okano

#### Institutions

The Department of Nursery Health Administration, Kawasaki Branch of Japan Medical Association

#### Abstract

##### Problem

As food allergy potentially can induce life-threatening anaphylaxis, measures for food allergy are required at nurseries caring for food allergy children, but a large-scale factual investigation has not been carried out.

##### Approach

We evaluated measures for food allergy and emergency cases of food allergy children in nurseries. A questionnaire survey regarding emergency measures in all authorized nurseries (411 facilities including 20586 children) was conducted in Kawasaki city, Japan.

##### Findings

The recovery rate of the questionnaire was 46.5%, which include 14343 children of 191 facilities in total. A total of 637 children (4.4%) in 157 facilities (82.2%) requires elimination diets that were suggested by physicians. Among them, 22 children had been suggested to undergo the use of epinephrine auto-injection kit for emergency. 161 facilities (84.3%) had set a specific manual for emergency of food allergy. Emergency cases over the past one year were four cases and there was no case that had been suggested to use epinephrine auto-injection kit. All

were anaphylaxis and the causes of it included two accidental digestion of culprit foods and the causes of other two cases were unknown. A case who required no elimination diet showed first episode of anaphylaxis. All cases were recovered. High percentage of nurseries in Kawasaki city has cared for food allergy children. While many children with food allergy have been in nurseries, only several cases of anaphylaxis has been reported for a one year. Among four cases of anaphylaxis, no specific cause has not been recognized in two cases and one case has been the first episode of anaphylaxis.

##### Consequences

While most of nurseries have set specific measures for emergency of food allergy, there is certain possibility that nursery staffs can encounter the first episode of anaphylaxis even if there is no food allergy child. For all nurseries, emergency measures for food allergy is vital.

## Funding Acknowledgement

The authors declare no conflicts of interest associated with this study.

## E.5

### Helping parents of children with respiratory infections decide when to seek medical help: an appropriateness study

**Presenter: Louise Newbould**

Co-authors: Newbould L, Campbell S, Edwards, Morris RL, Hughes E, Hayward G, Hay AD

#### Institutions

Social Policy Research Unit, University of York; NIHR Greater Manchester Patient Safety Translational Research Centre, University of Manchester, UK.; Nuffield Department of Primary Care Health Sciences, University of Oxford; Manchester University NHS Foundation Trust; Centre of Academic Primary Care, University of Bristol.

#### Abstract

##### Problem

Meeting demand for care is a challenge for primary care services internationally. Respiratory tract



infections (RTI's) in children are the most common problem managed, and the most frequent reason for antibiotics to be prescribed. Parents report they are often unsure if and when to seek help, and that existing guidance is unclear. Our research addresses this key issue, as far as we are aware, for the first time worldwide. Aim To develop appropriateness criteria to support parental decision making regarding the appropriate next step and when to consult GP/A&E/999 and when to self-care

#### Approach

The UCLA/RAND method was applied in two-stages. A panel of experts (pharmacists, NHS 111 nurses, GPs and Children's A&E Consultants) rated 1,134, first on their own and then as part of an expert workshop, to see if a consensus could be achieved on the appropriate 'next step'

#### Findings

Panellists reached a consensus in 755 (66.58%) scenarios. Of these 6 (0.53%) were rated with disagreement and 383 (33.77%) with an equivocal rating. Of those where agreement was obtained, an appropriate next step was identified in 449 (39.59 %) scenarios. Increasing numbers of symptoms were generally associated with escalation of care from self-care to NHS111/GP to ED/999. In addition, past medical history of hospital admission for asthma, bronchiolitis or other respiratory condition had a nominal impact on panel ratings, though the threshold for the appropriateness of accessing services generally increased with a child aged over 12 years. Informed use of self-care including, pharmacy services, is often appropriate for normal symptoms of RTI of several days duration in children, with guidance for parents on when to consider using primary care or emergency services having the potential to optimise appropriate care options.

#### Consequences

Clinicians and policy makers may wish to use promote these criteria to parents to help inform healthcare seeking decision making. In an age where any symptom may be regarded as abnormal and therefore requiring treatment, perhaps in part explaining the rising demand for care, these criteria could be considered useful to distinguish 'normal' from 'abnormal' infections.

## Funding Acknowledgement

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## F.1

### Ethical and feasibility challenges in scaling up to a randomised trial of a complex intervention tackling problematic primary care prescribing: a consensus process

**Presenter: Sarah Alderson**

Co-authors: Amanda Farrin, Alexander Bald, Paul Carder, Robbie Foy

#### Institutions

Leeds Institute of Health Sciences, Leeds Institute for Clinical Trials Research, University of Leeds Medical School, West Yorkshire Research and Development

#### Abstract

##### Problem

Cumulative meta-analysis of 'Audit and Feedback' (A&F) trials have shown no improvement in effect sizes, suggesting a lack of learning on how to improve effectiveness. The Campaign to Reduce Opioid Prescribing (CROP) provided 316 practices in West Yorkshire, UK (population 2.24 million) with bimonthly evidence-based enhanced A&F reports on their opioid prescribing for one year. The CROP intervention reduced predicted opioid prescription spending by £900,000 in West Yorkshire. We explored feasibility and ethical challenges of scaling up the CROP intervention for a primary care randomised controlled trial to reduce harmful opioid prescribing whilst adding significantly to the wider evidence base on A&F.

##### Approach

A structured Delphi consensus panel of A&F experts, primary care medicines optimisation leads and members of our existing Patient and Public Involvement Panel identified solutions to the ethical and feasibility issues of scaling up the CROP

intervention to a trial, drawing upon a state-of-the-science summary of recommendations, on-going research and medicines optimisation expertise. The consensus process had two rounds and participants were presented with a range of trial feasibility issues to be considered (e.g. randomisation, ethical and governance issues). Participants rated characteristics for each recommendation on a 1-9 scale, where scores of '1' indicates the strongest disagreement and scores of '9' indicate strongest agreement.

#### Findings

Consensus was reached for 36 key conclusions. An opt-out approach to practice consent for a trial was the most acceptable approach to recruitment, however waiving consent completely was considered the most ideal. Randomisation at practice or primary care network level was preferred to higher level randomisation (e.g. by Clinical Commissioning Group). Participants rated detailed prescribing information highly, such as high-risk sub-groups of patients and excluding those not targeted by the feedback, such as those with palliative care patients, rather than total number of prescriptions.

#### Consequences

Waiving consent is the ideal option for primary care A&F studies using aggregated practice data, as obtaining consent may undermine results and create a greater burden than the A&F intervention, however this may be complicated by data protection. Randomisation at primary care network level is acceptable and may reduce the risk of trial arm contamination, although there are inherent risks of organisational instability which may threaten future randomisation. A key factor to the successful planning and delivery of a primary care A&F intervention trial will be how well ethical and feasibility issues relating to trial consent (waive consent, practice or Clinical Commissioning Group consent), unit of randomisation (practices, Clinical Commissioning Groups or regional), and the source of primary care data (nationally gathered databases or electronic health records) are resolved. We will present the panel's 36 key conclusions for scaling up a primary care intervention into a randomised controlled trial.

## Funding Acknowledgement

This work was supported by the Wellcome Trust Institutional Strategic Support Fund (grant no. 204825/Z/16/Z).

## F.2

### Trial based cost-effectiveness evaluation of Link-me: A systematic approach to stepped mental health care in primary care

**Presenter: Mary Lou Chatterton**

Co-authors: Cathrine Mihalopolous, Jan Faller, Susan Fletcher, Matthew Spittal, Meredith Harris, Philip Burgess, Patty Chondros, Victoria Palmer, Bridget Bassilios, Jane Pirkis, Jane Gunn

#### Institutions

Deakin University, The University of Melbourne, The University of Queensland

#### Abstract

##### Problem

Stepped care has been promoted to reduce health care costs without compromising outcomes in the management of mental health. However, there is limited empirical evidence to support the cost-effectiveness of stepped care for mental health treatment in primary care. One challenge to its implementation is the identification of patient need to allow timely matching to appropriate interventions. Link-me is a multifaceted, digitally supported, systematic approach to stepped care beginning with a patient-completed Decision Support Tool (DST) allocating patients into two treatment pathways (low intensity services, care navigation) based on predicted depressive and anxiety symptom severity (minimal/mild, severe) in 3 months. We conducted an economic evaluation within a parallel, stratified individually randomised controlled trial (RCT) to evaluate the costs and outcomes of Link-me compared to usual care for patients in the minimal/mild and severe groups.

##### Approach

The RCT screened 15,474 adults attending general practices in 3 Australian states. Health sector costs

included the DST, care navigation and other health care services used by participants during the trial. Societal costs included health sector costs plus lost productivity. DST and care navigation cost were determined through provider records. Other health care service use (i.e. hospitalisations) and lost productivity were captured through a self-report resource use questionnaire at 6-month follow-up. Standard Australian unit costs were applied (2018/2019 AUD). Outcomes included psychological distress [Kessler Psychological Distress Scale (K10)] and quality adjusted life years [EQ-5D-5L, Australian value set]. Incremental cost-effectiveness ratios were calculated as the difference in average costs between the Link-me and usual care groups, divided by the difference in average outcome with nonparametric bootstrapping to calculate 95% confidence intervals.

### Findings

Among 1,671 participants (830 minimal/mild and 841 severe), Link-me resulted in greater reductions in psychological distress at 6 months than usual care (standardised mean difference -0.10 (95% CI: -0.18 to -0.01). Link-me was associated with higher mean health sector costs than usual care of \$24 (95% CI \$8.3 to \$43.8) per person across all participants, and \$333 (95% CI \$125 to \$623) per person for the severe symptom group. Across all participants, we observed an incremental cost per 1-point decrease in K10 score of \$1,018 (95% CI \$259 to \$10,471) from the health sector perspective and \$1,282 (95% CI Dominant to \$21,964) from the societal perspective. For the severe symptom group the incremental cost per 1-point decrease in K10 score was \$896 (95% CI 234 to 3,978) from the health sector perspective and \$1,359 (95% CI Dominant to 8,677) from the societal perspective.

### Consequences

These preliminary findings suggest the Link-me approach led to improvements in clinical outcomes with higher costs. A planned longer-term follow up evaluation will examine whether improvements in outcomes and trends in cost differences are maintained.

### Funding Acknowledgement

Link-me was funded by the Australian Government Department of Health

## F.3

### Amitriptyline at Low-dose and Titrated for Irritable Bowel Syndrome as Second-line Treatment (The ATLANTIS study): A Double-blind Placebo-controlled Trial

#### Presenter: Hazel Everitt

Co-authors: Heather Cook, Matthew Ridd, Robbie Foy, Sarah Alderson, Felicity Bishop, Elspeth Guthrie, Matthew Chaddock, Delia Muir, Richard Brindle, Christopher Taylor, Daniel Howdon, Roberta Longo, Sonia Newman, Amy Herbert, Ruth Gibbins, Deborah Cooper, Suzanne Har

#### Institutions

University of Southampton. University of Leeds, University of Bristol

#### Abstract

##### Problem

Irritable Bowel syndrome (IBS) is common, causing abdominal pain, bloating and changes in bowel habit that can significantly affect quality of life. Many people suffer ongoing troublesome symptoms despite having been offered first line treatments. NICE IBS guidelines recommend low dose amitriptyline as a potential second-line treatment option but evidence for its use is limited and it is infrequently prescribed for IBS in primary care. The aim of this NIHR HTA funded ATLANTIS trial is to determine the clinical and cost-effectiveness of low-dose amitriptyline as a second-line treatment for IBS in primary care.

##### Approach

ATLANTIS is a randomised, multi-centre, parallel-group, two-arm, double-blind, placebo-controlled trial of low-dose amitriptyline as a second-line treatment for people with irritable bowel syndrome (IBS) in primary care. It includes an internal pilot and a nested, qualitative study. The aim is to recruit 518 participants from approximately 75 GP surgeries in 3 geographical areas: West Yorkshire, Wessex and, West of England, with the support of local Clinical Research Networks. Participants will be identified by searching GP lists for people with a diagnosis of IBS and sending of invite letters or by opportunistic recruitment when people present to the GP surgery. Those eligible after screening will be randomised to

receive 6 months of trial treatment, taking either 1 to 3 tablets (10-30 mg) of amitriptyline or placebo once-daily. Participants will be able to titrate their dose (between 1 and 3 tablets) depending on symptoms and side effects. At 6 months participants will have the option to continue treatment for an additional 6 months (12 months total treatment). Outcome measures will be self-completed online or on paper (participant preference) at 3, 6, and 12 months following randomisation and a weekly question about relief of IBS symptoms. The primary outcome is IBS symptom severity score at 6 months. Secondary outcomes include the work and social adjustment scale, hospital anxiety and depression score (HADS), subjects global assessment of relief of IBS symptoms, quality of life using EQ-5D-3L and costs using a health care resource use questionnaire. A sub-sample of participants and recruiting GPs will undertake two semi-structured telephone interviews at 6 and 12 months to identify factors affecting the prescribing, acceptability and adherence of low-dose amitriptyline, and explore factors that might shape wider use of amitriptyline for IBS.

#### Findings

Trial set up and ethical approval has been completed and recruitment has begun. Reflections on the challenges of setting up this large RCT and initial recruitment figures will be presented at the conference

#### Consequences

This large RCT will provide robust evidence on the clinical and cost effectiveness of amitriptyline for IBS in the primary care population and enable patients and clinicians to make better informed treatment decisions.

#### Funding Acknowledgement

The ATLANTIS trial is funded by the NIHR, HTA Project: 16/162/01, with additional support from the NIHR Clinical Research Network. 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.

## F.4

### safetxt: a randomised controlled trial of a safer sex intervention delivered through mobile phone messaging

**Presenter: Professor Caroline Free**

Co-authors: Caroline Free, Ona McCarthy, Melissa Palmer, Rosemary Knight, Lauren Jerome, Kimberley Potter, Megan Knight, Faran Dhaliwal, Zahra Jamal, Tim Clayton

#### Institutions

London School of Hygiene and Tropical Medicine

#### Abstract

##### Problem

The number of sexually transmitted infection (STI) diagnoses in the United Kingdom (UK) is rising, with the biggest increase in chlamydia and gonorrhoea diagnoses. Young people aged 16-24 have the highest prevalence of genital chlamydia and gonorrhoea compared to other age groups and re-infection rates following treatment are high. The risk of adverse health effects increases with repeated infections, including long-term adverse health effects such as sub-fertility and ectopic pregnancy. There is some evidence that existing interventions delivered face-to-face may be effective, but are limited in their reach or too costly for widespread application. Phone ownership in the UK is high, and young people in particular tend to constantly interact with their mobile phones. An intervention delivered by mobile phone message therefore has the potential to be a widely accessible and inexpensive health behaviour support. Previous research has found support for sexual health via mobile phone messaging to be acceptable, and the ability to receive support anywhere and anytime facilitated confidentiality and privacy. However, no trials to date provide conclusive evidence of their effectiveness as support for safer sex behaviours. We developed the safetxt intervention delivered by mobile phone message to reduce STI by increasing partner notification, condom use and STI testing among young people in the UK.

##### Approach

We conducted a single blind randomised controlled trial to reliably establish the effect of the safetxt

intervention delivered by mobile phone messaging on chlamydia or gonorrhoea infection at one year. We recruited 6250 people aged 16-24 years who had recently been diagnosed with chlamydia, gonorrhoea or non-specific urethritis from 52 sexual health services in the UK. Participants were allocated to receive either the safetxt intervention (text messages designed to promote safer sexual health behaviours) or to receive the control text messages (monthly messages asking participants for contact detail updates). The primary outcome is the cumulative incidence of chlamydia and gonorrhoea infection at one year. Secondary outcomes include partner notification, correct treatment of infection, condom use, and STI testing prior to sex with new partners.

#### Findings

Follow up for the safetxt trial will be complete in March 2020. We will present preliminary findings from the trial.

#### Consequences

If effective, a safer sex intervention delivered by mobile phone messaging has the potential to increase safer sex behaviours in young people, and reduce the number of chlamydia or gonorrhoea infections. This would be an important impact on the sexual health of young people in the UK. The intervention would likely have a global impact, as short written messages delivered via mobile phones are increasingly used for behavioural support worldwide and STIs remain an important cause of morbidity and mortality. Identifying which intervention components are effective has the potential to inform similar interventions in the future.

#### Funding Acknowledgement

NIHR

## F.5

### **The Link-me pragmatic randomised controlled trial: Can a patient-completed decision support tool improve mental health outcomes in primary care?**

**Presenter: Jane Gunn**

Co-authors: Susan Fletcher, Matthew Spittal, Patty Chondros, Victoria J Palmer, Mary Lou Chatterton,

Bridget Bassilios, Meredith Harris, Philip Burgess, Cathrine Mihalopolous, Jane Pirkis

#### Institutions

The University of Melbourne, Deakin University, The University of Queensland

#### Abstract

##### Problem

Over- and under-treatment of mental health problems in primary care is common. Stepped care aims address this by matching patients to the least intensive intervention effective for their level of need. However, tools to easily match patients to an appropriate intervention in real-time are required. Link-me is a multifaceted, digitally supported, and systematic approach to stepped care. A patient-completed Decision Support Tool (DST) allocates patients according to their predicted depressive and anxiety symptom severity (minimal/mild, moderate, severe) in three months' time, and provides treatment pathways matched to group allocation. This randomised controlled trial (RCT), examined whether Link-me improved psychological distress at 6 months, relative to usual care plus attention control, for the minimal/mild or severe groups.

##### Approach

Adult patients (18-75) attending 23 general practices in 3 Australian states were invited to complete the Link-me DST on a purpose-built online platform which included a randomisation function. The comparison arm received usual care plus attention control (information on community-based resources). The intervention arm received feedback on Link-me DST responses, treatment priority-setting, reflection on their motivation to change, and an evidence-based treatment recommendation (low intensity service options for the minimal/mild group and a collaborative care-based, motivational-interviewing informed intervention referred to as care navigation for the severe group). This presentation reports on patient-reported outcome measures completed online at 6 months. The primary outcome was psychological distress (Kessler Psychological Distress Scale [K10]). Secondary outcomes included depression, anxiety, and quality of life.

##### Findings



Of 15,474 patients screened, 7,985 were eligible; of those, 1,671 were allocated into the minimal/mild (n = 830) or severe symptom groups (n = 841) and randomised. Intention to treat analyses found that overall, Link-me resulted in greater reductions in psychological distress at 6 months than usual care, with a standardised mean difference (effect size) of -0.09 (95 % CI: -0.17 to -0.01). The intervention effect differed for the two symptom severity groups: 0.04 (95% CI: -0.17 to 0.24) for the minimal/mild symptom group and -0.26 (95% CI: -0.43 to -0.09) for the severe symptom group. Supplementary analyses showed increasingly large and more clinically meaningful effect sizes associated with delivery of additional elements of the intervention in the severe group.

### Consequences

These preliminary findings suggest that the Link-me approach to matching interventions to patient need is feasible in primary care and can improve mental health outcomes, particularly amongst those with severe symptoms. Implementation of Link-me into routine practice could reduce unnecessary treatment burden and improve allocation of treatment resources. Future analysis will examine the longer-term effect of the intervention.

### Funding Acknowledgement

Link-me was funded by the Australian Government Department of Health.

## F.6

### How common is frailty within clinical trials? An analysis of individual participant data from industry-sponsored clinical trials

**Presenter: Peter Hanlon**

Co-authors: Peter Hanlon, Elaine Butterly, Jim Lewsey, Frances S Mair, David A McAllister

### Institutions

University of Glasgow

### Abstract

#### Problem

Frailty is common in clinical practice. Many clinical guidelines warn that clinical trial findings may not be

applicable to frail patients. However, few trials explicitly quantify or report frailty. In this study we quantified frailty using individual patient data from industry-sponsored clinical trials of pharmacological interventions. We included three exemplar conditions: type 2 diabetes mellitus (T2DM), chronic obstructive pulmonary disease (COPD), and rheumatoid arthritis (RA).

### Approach

Trials were identified from the Clinical Study Data Request repository. Frailty index (FI) was calculated using a previously published standard method. Forty deficits (comorbidities, laboratory deficits, functional limitations and symptoms) meeting standard FI criteria were identified from baseline data. The FI was calculated for each participant as the total number of deficits present, divided by the total number of possible deficits. Participants with an FI >0.24 were considered 'frail'. FI 0.12-0.24 was considered 'pre-frailty'. Baseline disease severity was assessed using HbA1c for T2DM, % predicted FEV1 for COPD, and Disease Activity Score-28 (DAS-28) for RA. Using generalised gamma regression, we modelled FI on age, sex and disease severity. In negative binomial regression we modelled serious adverse event rates on FI.

### Findings

26 studies were identified from the CSDR repository, of which 13 contained sufficient data to calculate a 40-item FI (5 T2DM, 4 COPD, 4 RA). The remaining trials redacted or did not record individual-level participant data (IPD) on baseline functional measures, medical history and/or laboratory deficits. The prevalence of frailty ranged from 7-22% in T2DM trials, 15-21% in COPD trials, and 32-46% in RA trials. Increased disease severity (HbA1c, FEV1 or DAS-28, respectively) and female sex were associated with higher FI in all trials. Older participants had a higher FI in T2DM and RA trials, however there was no significant association with age in the COPD trials. After adjusting for age, sex and disease severity, in 10 out of the 13 trials, a higher FI was associated with a higher rate of serious adverse events (e.g. incidence rate ratio 1.56 (95% confidence interval 1.05-2.40) per 0.1-point increase in FI).



## Consequences

Using a standard method, frailty among clinical trial participants was quantifiable, and generally showed the expected associations with age, sex, disease severity and serious adverse event rates. The prevalence of frailty varied between trials and between index conditions, but all trials included some frail participants. Clinical trials therefore appear to be an underused resource for determining treatment effects in people with frailty. Understanding treatment effects in people with frailty is essential to inform decision making and maximise wellness across the life course.

## Funding Acknowledgement

Peter Hanlon is funded by a Medical Research Council Clinical Research Training Fellowship.

## F.7

### Protocol for the Babybreathe trial (A randomised controlled trial of a complex intervention to prevent return to smoking postpartum)

#### Presenter: Tess Harris

Co-authors: Caitlin Notley, Linda Bauld, Michael Ussher, Richard Holland, Felix Naughton, Wendy Hardeman, Dan Smith, Allan Clarke, David Turner, Sharon Duneclift, Vicky Gilroy.

#### Institutions

St George's University of London, University of East Anglia, University of Edinburgh, University of Stirling, University of Leicester, Cambridge Community Services NHS Trust, Institute of Health Visiting

#### Abstract

##### Problem

22% of women report smoking in the year before pregnancy. Around half quit smoking during pregnancy, but up to 76% return to smoking within 6 months. There is currently no routine support preventing relapse. Sustained smoking abstinence has significant health benefits for mothers, minimising long-term smoking harm. Furthermore, maternal smoking is the primary source of infant/child second hand smoke exposure and a substantial cause of child

morbidity and mortality. “BabyBreathe” successfully developed by our team through an MRC PHIND project, is a novel, complex intervention, offering a combination of face-to-face, digital and tailored support to postpartum women. Study aim: to undertake a randomised controlled trial (RCT) with internal pilot, comparing BabyBreathe with usual care, assessing long-term smoking abstinence for mothers who have recently given birth and have stopped smoking during pregnancy, or during the 12 months prior to pregnancy.

##### Approach

The study design is an RCT with internal pilot trial, including economic evaluation and process evaluation. We will recruit 880 pregnant women who quit smoking for or during pregnancy identified through their routine midwife or health visitor appointments across four areas of the UK (Norfolk, London, Scotland, the North East). We will run an internal pilot study, with clear stop/go criteria, to test recruitment systems. We will definitively test the real-world effectiveness of BabyBreathe intervention in comparison with usual care, by comparing smoking abstinence at 12-month follow-up between trial groups. We will undertake a cost-effectiveness analysis of BabyBreathe in comparison with usual care, based on healthcare resource use of mother and infant (from NHS, social care and broader family perspectives) and health related quality of life. We will undertake a mixed-methods process evaluation to assess delivery, implementation, fidelity and contamination and to identify mechanisms of action, by exploring which intervention components may be particularly effective, for which women, in which contexts.

##### Findings

Trial start date Spring / Summer 2020, total duration 39 month: 3m study set up, 15m recruitment, 12-15m follow-up; 6m analysis and dissemination. Details around planned recruitment strategies and intervention delivery will be shared.

##### Consequences

As a definitive trial, the short-term anticipated impact if the intervention is found to be effective and cost-effective, will be recommendations for change in healthcare policy and practice for supporting postpartum relapse prevention. The anticipated

impact of our intervention will be significant improvements in smoking relapse rates, resulting in improved health outcomes for mothers, increased smoking cessation for partners and reduced second-hand smoke for babies and families.

### **Funding Acknowledgement**

Public Health Research Programme, National Institute for Health Research

## **F.8**

### **Baseline characteristics of older patients with significant polypharmacy recruited to the SPPIRE trial.**

#### **Presenter: Caroline McCarthy**

Co-authors: Barbara Clyne, Fiona Boland, Emma Wallace, Frank Moriarty, Susan M Smith for the SPPIRE Study team

#### **Institutions**

HRB Centre for primary care research, Royal college of Surgeons in Ireland

### **Abstract**

#### **Problem**

Supporting prescribing in older patients with multimorbidity in Irish primary care (SPPIRE) is an ongoing cluster randomised controlled trial that was designed to evaluate the effectiveness of an individualised web guided medication review in reducing potentially inappropriate prescribing and polypharmacy. The population under investigation are adults in primary care aged  $\geq 65$  years who are prescribed  $\geq 15$  medicines. This cohort was targeted as a national Irish dispensing database indicated that approximately 5% of Irish adults aged 65 years and older are on  $\geq 15$  medicines and the first nationally published multimorbidity guidelines in the UK recommended targeting patients on  $\geq 15$  medicines as they are at particular risk of adverse medication related events. The aim of this study is to describe patient uptake rates for the SPPIRE trial and to describe baseline characteristics of this population.

#### **Approach**

Quantitative data collected for the purpose of the trial's CONSORT participant flow is summarised using descriptive statistics. Patient characteristics including demographics and patient reported outcome measures (PROMs) obtained from baseline questionnaires are presented using descriptive statistics.

#### **Findings**

Between April 2017 and December 2019, 3,113 patients from 74 practices were identified by running a patient finder tool; 1,790 of these were deemed eligible to participate giving an eligibility fraction of 57.5%. The most common exclusion criteria were nursing home residents and those cognitively unable to participate. Of the 1790 eligible patients, 422 were ultimately recruited and randomised, giving an enrolment fraction of 23.6%. Fifty-two patients from 23 different practices were excluded prior to randomisation as the practices failed to recruit a sufficient number of participants. The mean age of recruited patients was 76.5 years (SD 6.8 years) and 58.4% were female. The average number of self-reported GP visits over the previous year was 8.5 visits per person (SD 7.1) and 22% of patients reported seeing their GP at least once per month. With respect to health related quality of life (EQ-5D) scores a sizeable proportion reported scores in the severe or extreme impairment domains for mobility (27%), activities of daily living (25%) and pain (29%). The median score on a multimorbidity treatment burden questionnaire was 16 (IQR 8) which represents a medium treatment burden.

#### **Consequences**

Providing evidence based care for patients with multimorbidity is challenging, given their heterogeneity but also given that they are frequently excluded from clinical trials, however recruitment in this population who have complex multimorbidity has particular challenges. The process was slow and involved significant time input from recruited GPs and study personnel and almost a third of these practices were ultimately excluded as they failed to recruit a sufficient number of patients. Baseline data suggests that recruited patients have a significant disease and treatment burden.

## Funding Acknowledgement

Funded by the HRB Primary Care Clinical Trials Network in Ireland

## F.9

### SPPiRE; the evolution of a multimorbidity intervention in the context of emerging evidence.

**Presenter: Caroline McCarthy**

Co-authors: Barbara Clyne, Emma Wallace, Frank Moriarty, Susan M Smith for the SPPiRE Study team

#### Institutions

HRB Centre for primary care research, Royal college of Surgeons in Ireland

#### Abstract

##### Problem

Multimorbidity guidelines recommend tailoring care to the individual and eliciting treatment priorities but specific recommendations are often missing. Developing and evaluating a complex intervention takes a considerable period of time, often by the time an intervention is ready for evaluation in a definitive randomised controlled trial (RCT) the context of the evidence base may have evolved. To avoid research waste, it is imperative that intervention design and evaluation is an iterative and adaptive process incorporating emerging evidence and novel concepts. The aim of this study is to describe the evolution of a multimorbidity intervention in this context of a rapidly evolving evidence.

##### Approach

The core components of the original effective intervention were identified and maintained and following an overview of the literature, novel components were added and modifications made to discretionary components. A framework that was developed to describe intervention modification was employed to describe the key features of the intervention and its evaluation that were modified. These are:

- The context in which the intervention is delivered.

- The content of the intervention.
- The evaluation of the intervention.

##### Findings

Supporting prescribing in older adults with multimorbidity (SPPiRE) is a cluster RCT that was designed to evaluate the effectiveness of a complex intervention comprising a web guided medication review and professional training in reducing polypharmacy and potentially inappropriate prescribing (PIP) in older adults on 15 or more regular medicines in Irish primary care. SPPiRE built on a previous trial, Optimising prescribing for older people in primary care (OPTI-SCRIPT), which was an exploratory cluster RCT that demonstrated that a web guided medication review was effective in reducing PIP in older adults in primary care. Due to the evolving evidence base and the results of another RCT looking at a similar problem, the research question was reconsidered and the population under investigation changed from older people with an identified PIP to older people with significant polypharmacy, a proxy marker for complex multimorbidity. The core component of the OPTI-SCRIPT intervention, a GP delivered web-guided medication review, was maintained and additional components including an assessment of patient treatment priorities. To assess the effect of these new components, an additional primary outcome measure, the number of repeat medicines was included as were additional patient reported secondary outcome measures including a multimorbidity treatment burden score.

##### Consequences

Intervention modification is different from “intervention drift” or unplanned changes that are assessed in a trial’s process evaluation. A framework that has been implemented in public health research was adapted and used to systematically describe how and why the original OPTI-SCRIPT intervention was modified, allowing SPPiRE to build upon an effective and robustly developed intervention but also to be relevant in the context of the current literature and evidence base.

## Funding Acknowledgement

Funded by the HRB Primary Care Clinical Trials Network in Ireland

## F.10

### **Eczema Care Online (ECO): two randomised controlled trials to test clinical and cost-effectiveness of online interventions to support eczema self-care**

**Presenter: Ingrid Muller**

Co-authors: Ingrid Muller<sup>1</sup>, Lucy Yardley<sup>1</sup>, Paul Little<sup>1</sup>, Hywel Williams<sup>2</sup>, Jo Chalmers<sup>2</sup>, Paul Leighton<sup>2</sup>, Matthew J Ridd<sup>3</sup>, Sandra Lawton<sup>4</sup>, Beth Stuart<sup>1</sup>, Gareth Griffiths<sup>5</sup>, Jacqui Nuttall<sup>5</sup>, Tracey Sach<sup>6</sup>, Sinead Langan<sup>7</sup>, Amanda Roberts<sup>2</sup>, Amina Ahmed<sup>2</sup>, Kate Greenwell<sup>1</sup>, K

#### **Institutions**

1Primary Care, Population Sciences and Medical Education, University of Southampton, 2Centre of Evidence Based Dermatology, University of Nottingham, 3School of Social & Community Medicine, University of Bristol, 4Rotherham NHS Trust, 5Southampton Clinical Trials Unit, 6Health Economics Group, Norwich Medical School, University of East Anglia, 7London School of Hygiene and Tropical Medicine

#### **Abstract**

##### **Problem**

Eczema is a common inflammatory skin disorder characterised by red itchy skin and dryness. Eczema can lead to poor quality of life due to itching or bleeding skin and broken sleep. A common cause of poor control of eczema is the underuse of effective treatments. Reasons for underuse include concerns about safety of treatments, time consuming treatments, and insufficient or conflicting advice about how to use treatments.

##### **Approach**

We have developed two online interventions to support self-care for people with eczema; one for young people aged 13-25 years and one for parents and carers of children aged 0-12 years. The interventions support self-management of eczema using tailored content delivered in a series of modules, accessible from mobile devices and computers. Interventions have been iteratively developed following evidence, theory and the Person-Based Approach. We are currently carrying out two

randomised controlled trials to assess the effectiveness of:

1. the ECO intervention in young people with eczema aged 13-25 years
2. the ECO intervention in parents and carers of children with eczema aged 0-12 years Both trials will include an internal pilot phase and nested health economic and process evaluation studies.

##### **Findings**

200 participants will be recruited into each trial from UK Primary Care. Participants will be invited to participate if they are:

- a young person aged 13-25 years or a parent/carer of a child aged 0-12 years
- AND they have a recorded diagnosis of eczema in their records and have obtained a prescription for this in the past 12 months Potential participants with a Patient-Oriented Eczema Measure score less than 5 will be excluded as having very mild or quiescent eczema.

Participants will be randomised to one of two groups:

1. Usual care (with access to the online intervention after 52 weeks of follow-up)
2. Usual care plus immediate access to the online intervention

The primary outcome for both trials will be eczema severity over 24 weeks measured by 4-weekly Patient-Oriented Eczema Measure (POEM) which measures frequency of symptoms. Secondary outcomes include: Quality of Life, long-term eczema control, itch intensity measure, enablement, service use and medication use.

##### **Consequences**

If these interventions prove to be effective, health professionals would be encouraged to recommend their use as part of standard care. Improved self-care has the potential to benefit patients and carers through improved control of eczema.

##### **Funding Acknowledgement**

This study is funded by the NIHR Programme Grants for Applied Research (RP-PG-0216-20007). Data collection for Healthtalk.org was funded by National

Institute for Health Research under its Research for Patient Benefit scheme (PB-PG-0213-30006).

## F.11

### Supporting care for suboptimally controlled type 2 diabetes mellitus in General Practice with a clinical decision support system: A mixed methods pilot cluster randomised trial

**Presenter: Mark Murphy**

Co-authors: Dr. Mark E Murphy, Dr. Jenny McSharry, Professor Molly Byrne, Dr. Fiona Boland, Dr. Derek Corrigan, Professor Paddy Gillespie, Professor Tom Fahey, Professor Susan Smith

#### Institutions

HRB Centre for Primary Care Research, Royal College of Surgeons, Ireland. Health Behaviour Change Research Group, School of Psychology, National University of Ireland, Galway, Ireland. Health Economics & Policy Analysis Centre (HEPAC), National University of Ireland, Galway, Ireland.

#### Abstract

##### Problem

We developed a complex intervention called DECIDE (Computerised dECisional support for suboptimally controlled type 2 Diabetes mellitus in Irish General Practice) which used a clinical decision support system to address clinical inertia and support GP intensification of treatment for adults with suboptimally controlled T2DM.

##### Approach

The current study explored the feasibility and potential impact of DECIDE, through a pilot cluster randomised controlled trial (RCT). Conducted in 14 practices in Irish General Practice, the DECIDE intervention was targeted at GPs. They applied DECIDE to patients with suboptimally controlled T2DM, defined as a HbA1c  $\geq 70$ mmol/mol and /or BP  $\geq 150/95$  mmHg. The intervention incorporated training and a web-based clinical decision support system which supported; i) medication intensification actions; and ii) non-pharmacological actions to support care. Control practices delivered usual care.

Feasibility and acceptability was determined using thematic analysis of semi-structured interviews with GPs, combined with data from the DECIDE website. Clinical outcomes included HbA1c, medication intensification, blood pressure and lipids.

##### Findings

We recruited 14 practices and 134 patients. At 4-month follow-up, all practices and 114 patients were followed up. GPs reported finding decision support helpful navigating increasingly complex medication algorithms. However, the majority of GPs believed that the target patient group had poor engagement with GP and hospital services for a range of reasons. At follow-up, there was no difference in glycaemic control ( $-3.6$ mmol/mol (95% CI:  $-11.2, 4.0$ )) between intervention and control groups or in secondary outcomes including, blood pressure, total cholesterol, medication intensification or utilisation of services. Continuation criteria supported proceeding to a definitive randomised trial with some modifications.

##### Consequences

The DECIDE study was feasible and acceptable to GPs but wider impacts on glycaemic and blood pressure control need to be considered for this patient population going forward.

##### Funding Acknowledgement

This work was supported by the Health Research Board (HRB) Centre for Primary Care Research grant number: HRC-2014-1. The authors would also like to acknowledge support from the HRB-funded SPHeRE PhD Programme (Grant code: 1598), a research grant from the Irish College of General Practitioners, the WestREN Research Network and the HRB Primary Care Clinical Trials Network Ireland (Grant Code: CTN-2014-011).



## F.12

### The development of a patient-reported experiential model of care navigation for complex mental health needs in primary care: Process evaluation findings from Link-me

**Presenter:** Victoria Palmer

Co-authors: Susan Fletcher, Matthew Spittal, Patty Chondros, Mary Lou Chatterton, Bridget Bassilios, Meredith Harris, Philip Burgess, Cathrine Mihalopolous, Jane Pirkis, Jane Gunn

#### Institutions

The University of Melbourne, Deakin University, The University of Queensland

#### Abstract

##### Problem

Care navigation has been identified as effective to support patients to navigate complex health systems, treatment pathways, reduce barriers to accessing services and, to attend to social and health needs. Literature indicates however that diversity in care navigation models does exist and there is no consensus on the ingredients of such models for primary care. There is some literature on positive experiences for patients and for supporting coordination of care across sectors (e.g. from hospital to primary care). However, the evidence for whether care navigation results in improved mental health outcomes is limited; particularly for complex mental health needs in the primary care setting. In the Link-me randomised controlled trial we tested whether care navigation would improve mental health outcomes for people with severe mental health symptoms.

##### Approach

Link-me was a multifaceted, digitally supported, and systematic approach to stepped care for mental health. A patient completed Decision Support Tool (DST) allocated people to minimal/mild, moderate or severe groups based on predicted depressive and anxiety symptom severity in three months' time. Treatment pathways were matched to group allocation. Those with severe symptoms were randomized to receive usual care or care navigation. Care navigation comprised a non-mental health

professional delivering care planning, coordination, and funding to support individuals to find and access services to improve mental health for up to eight structured contacts. The care navigation model delivered in Link-me was informed by collaborative care and motivational interviewing. As part of the process evaluation for the trial 32 semi-structured interviews were conducted with eligible participants who took part in care navigation. Thematic analysis was conducted to identify critical elements of patient experiences shared across all 32 interviews and a patient reported experiential model of care navigation was developed.

##### Findings

There were 420 patients randomized to care navigation and 216 engaged in the intervention across the 23 participating general practices. Interview analysis identified shared positive experiences across the group in terms of setting priorities, developing plans for actions, and receiving support and linkages to services. For some patients this led to greater self-confidence and the ability to take ownership of their own health beyond care navigation. Based on these shared experiences we developed a patient-reported experiential model of care navigation for mental health in primary care. Six interrelated mechanisms of action were also identified: dialogue and affirmation, insight and self-reflection, self-responsibility and self-confidence.

##### Consequences

Care navigation can improve care experiences and mental health outcomes amongst those with more severe symptoms. Identification of the mechanisms of action for care navigation is essential for future implementation in primary care.

#### Funding Acknowledgement

Link-me was funded by the Australian Government Department of Health.

## F.13

### How can the Awareness and Beliefs About Cancer (ABACus) randomised controlled trial process evaluation help us to understand trial outcomes and associated implications? And, what can it teach us about community interventions and trials in the future?

**Presenter: Harriet Quinn-Scoggins**

Co-authors: H. Quinn-Scoggins, Y. Moriarty, S. Gilbert, P. Buckle, P. Dimitropoulou, A. Edwards, J. Hepburn, J. Hughes, V. Kolovou, M. Lau, M. Matthews, C. Mitchell, R. Neal, S. Owen, L. Padgett, R. Playle, M. Robling, B. Sewell, V. Shepherd, S. Smits, J. Townson, R.

#### Institutions

Cardiff University School of Medicine, Cardiff  
University Centre for Trials Research, Tenovus Cancer Care, University of Leeds, University of Sheffield, Swansea University Centre for Health Economics.

#### Abstract

##### Problem

Cancer outcomes are poor in the UK's socioeconomically deprived communities, with low symptom awareness and fatalistic beliefs contributing to delayed help-seeking and advanced stage disease. The ABACus 3 trial tested the effectiveness of a theory-grounded lay advisor-facilitated cancer awareness intervention for adults (aged 40+) living in deprived communities in healthcare and community settings. The intervention entails completion of a touchscreen questionnaire (cancer symptoms, screening, risk factors), with personalised behavioural advice delivered by a trained lay advisor through specified behaviour change techniques (BCTs). In parallel to the trial, the process evaluation was conducted to assess intervention fidelity, dose, contamination and reach and to identify key mechanisms of change and contextual influences at the social and environmental level.

##### Approach

Semi-structured interviews were conducted with lay advisors post-training and post-intervention delivery to explore resource use, engagement, barriers and enablers, delivery of BCTs and perceived social and contextual influences. Purposefully sampled semi-

structured participant interviews were conducted 2-4 weeks and 6 months post-randomisation to explore influences on knowledge, beliefs and behaviours, contamination, reach, actual and perceived barriers to behaviour change and contextual factors (10% across time-points and arms). Interviews were transcribed verbatim and analysed thematically supported by NVivo, 20% independently dual-coded. A purposive sample of intervention delivery sessions (20%; based on lay advisor, setting type, participant age and gender) were audio-recorded with 50% of these additionally observed. Audio-recordings and observations were used to quantitatively assess BCT delivery against a pre-defined coding matrix for personalised results to assess fidelity and dose using content analysis.

##### Findings

Six lay advisor (n=3) and 37 participant interviews were conducted (n=15 at 2-4 weeks, n=22 at 6 months). Twelve intervention delivery sessions were audio-recorded (7 observed) with an average of 68% of the theoretical maximum BCTs being delivered across the three lay advisors (range 23.7% - 94.9%). Personalisation was recognised as key to successful engagement; however, advisors were concerned that tailoring delivery to the participant's interest may have diluted symptom awareness messages, highlighted in the range of BCTs delivered. Participants reported high symptom knowledge (across both arms) associated with prior experience and awareness of mass-media cancer awareness campaigns. Contamination occurred between trial arms, especially within community settings where participants discussed taking part and their results within their social networks. Fidelity and dose of the intervention were high even though the content of discussions, including providing additional information and signposting to resources, differed by session and advisor.

##### Consequences

High self-reported knowledge is consistent with baseline ceiling effects in the main trial primary outcome. Whilst personalisation increases participant engagement, it may dilute core intervention messages. Findings highlight critical learning about effective methods of engaging deprived populations in research and reinforce the importance of conducting

robust process evaluations of cancer awareness interventions due to complexities in evaluation.

### **Funding Acknowledgement**

This work was supported by Yorkshire Cancer Research grant number C402.

## **F.14**

### **Can a complex intervention based on education and a risk prediction tool increase testing and diagnosis of Hepatitis C? - results of a cluster randomised controlled trial in primary care?**

#### **Presenter: 1 Kirsty Roberts**

Co-authors: Kirsty Roberts<sup>1</sup>, John Macleod<sup>1</sup>, Chris Metcalfe<sup>1</sup>, Jeremy Horwood<sup>1</sup>, Peter Vickerman<sup>1</sup>, Peter Muir<sup>2</sup>, Will Hollingworth<sup>1</sup>, Clare Clement<sup>1</sup>, Fiona Gordon<sup>3</sup>, Will Irving<sup>4</sup>, Cherry-Ann Waldron<sup>5</sup>, Matthew Hickman<sup>1</sup>

#### **Institutions**

<sup>1</sup>Bristol Medical School, University of Bristol. <sup>2</sup>Public Health Laboratory Bristol, National Infection Service, Public Health England <sup>3</sup>University Hospitals Bristol, Bristol Royal Infirmary. <sup>4</sup>NIHR Nottingham Digestive Diseases Biomedical Research Unit, University Hospital Nottingham. <sup>5</sup>Centre for Trials Research, Cardiff University

### **Abstract**

#### **Problem**

In England there are estimated to be over 100,000 individuals with chronic Hepatitis C Virus (HCV) infection. Since 2016 over 10,000 people per year have been treated for HCV and an estimated 50,000 people have been diagnosed, though many of the latter may not have been assessed or currently under management by HCV services. Primary care is the largest source of HCV testing, comprising of nearly 30% of all HCV antibody positive tests in laboratory surveillance. Thus, there is a significant number of infected individuals in whom the diagnosis has not been made and a large number of people who have not been treated. Targeted case finding in primary care is estimated to be cost-effective, but there is no robust RCT evidence of specific interventions.

#### **Approach**

The objective of the study was to evaluate the effectiveness and cost effectiveness of a complex intervention in primary care that aims to increase uptake of HCV case-finding and treatment. A pragmatic, two-armed, practice level, cluster controlled randomised trial included 45 general practices in the south west England. The intervention included: An offer of educational training on HCV for practice staff; poster and leaflets displayed in the waiting room; electronic algorithm to flag patients with HCV risk markers and invite them for an HCV test. Control practices followed usual care. The effectiveness of the intervention was measured by comparing uptake of HCV testing. Intervention costs and health service utilisation were recorded to estimate the NHS cost per new HCV diagnosis and new HCV patient initiating treatment.

#### **Findings**

The total number of flagged patients was 24 473 (about 5% of practice list). 2071 (16%) flagged patients in the intervention practices and 1163 (10%) in control practices were tested for HCV (adjusted rate ratio 1.59, 95% confidence interval 1.21 to 2.08;  $P < 0.001$ ). The “number needed to help” was 792 (558 to 1883) patients flagged for one extra HCV diagnosis, referral, and assessment. The average cost of HCV case finding was £4.03 (£2.27 to £5.80) per at risk patient, £3165 per additional patient assessed at hepatology, and £6212 per quality adjusted life year (QALY) (with 92.5% probability of being below £20 000 per QALY).

#### **Consequences**

A complex intervention based around an electronic algorithm integrated with primary care practice systems can increase HCV case finding by a modest amount and be cost effective. The intervention would benefit from being optimised before implementation.

### **Funding Acknowledgement**

The trial was funded by the NIHR and Department of Health Policy Research Programme (PRP) (Grant Code 015/0309) and trials registration number: ISRCTN61788850.

## F.15

### Early Diagnosis of Lung Cancer in Scotland: A Randomised Controlled Trial of an Autoantibody Blood Test

**Presenter: Professor Frank Sullivan**

Co-authors: Dr Agnes Tello, on behalf of the ECLS Investigators

#### Institutions

School of Medicine, University of St Andrews

#### Abstract

##### Problem

Five-year lung cancer (LC) mortality rates remain unacceptably high, and the UK's survival rate is poor by international comparisons. To improve the poor prognosis, methods that detect lung cancer at an earlier stage, when it is more likely to be treated with curative intent, are needed. Several clinical trials have reported that low-dose CT (LDCT) screening can detect lung cancer earlier and reduce lung cancer mortality by around 20%. Most recently, the NELSON trial reported a 24% reduction in lung cancer mortality from screening after 10-years of follow-up of 13,131 men. These findings provide impetus to consider National screening programmes for the early detection of lung cancer. However, the widespread adoption of LDCT screening will likely remain limited by resource constraints, high false positive rates and concerns about overdiagnosis. Less resource-intensive investigations, such as a biomarker test, continue to provide a feasible alternative as a first-line screening test by contributing to more precise, risk-based targeting strategies for LDCT screening.

##### Approach

ECLS was a pragmatic randomised controlled trial involving 12,208 high-risk participants recruited through General Practices and community-based recruitment strategies in Scotland. The trial addressed whether the EarlyCDT-Lung test and subsequent imaging can reduce the incidence of patients with late-stage lung cancer at diagnosis compared to standard clinical practice. The EarlyCDT-Lung blood test is a biomarker panel that measures seven autoantibodies that can be found in patients with lung cancer up to four years before symptomatic

presentation. The intervention arm received the EarlyCDT-Lung blood test and, if test-positive, LDCT scanning 6-monthly for up to two years. The control arm received standard clinical care.

##### Findings

The trial met its primary endpoint by demonstrating a significant reduction in late-stage lung cancer presentation in the intervention arm compared to the control arm at two years. The trial also demonstrated a reduction in lung cancer and all-cause mortality between arms, albeit not yet statistically significant at two years.

##### Consequences

ECLS demonstrates that blood-based biomarker panels, such as the EarlyCDT-Lung test, may have an important role in the early diagnosis of lung cancer: whether in clinical care or screening. This trial provides proof of concept and clinical utility that blood testing in combination with optimal selection of high-risk people and imaging can find cancers at the earliest stages when they are most amenable to cure. Further investigation in large, community-based phase V studies are needed to determine the long-term impact of performing the EarlyCDT-Lung test on mortality, cost-effectiveness, the level of risk that should be targeted, the time interval between tests, and how to improve the engagement of people at the highest risk.

#### Funding Acknowledgement

Scottish Government Health and Social Care Directorate, and Oncimmune Ltd.

## F.16

### Unrecognised asthma in mild or moderate COPD on higher-dose inhaled steroids: action needed

**Presenter: Patrick T White**

Co-authors: P T White, G Gilworth, C Corrigan, M Thomas, PB Murphy, N Hart, T H Harries

#### Institutions

School of Population Health & Environmental Sciences, King's College London, United Kingdom, Department of Asthma Allergy & Respiratory Science,

King's College London, United Kingdom, Primary Care and Population Medicine, University of Southampton, United Kingdom Lane Fox Respiratory Unit, Guy's and St. Thomas' NHS Foundation Trust and King's College London, United Kingdom.

## Abstract

### Problem

Higher-dose inhaled corticosteroids (ICS) are prescribed frequently by GPs, outside COPD guidelines, to patients with mild or moderate airflow limitation. Evidence suggests these are rarely indicated and risk important side-effects. We assessed the implications and opportunities of withdrawal by GPs of ICS prescribed outside guidelines in COPD patients with mild or moderate airflow limitation.

### Approach

COPD patients with mild or moderate airflow limitation, with no history of  $\geq 2$  moderate or  $\geq 1$  severe COPD exacerbations or of asthma, and using ICS (dose  $>400$ mcg beclomethasone dipropionate - BDP/day equivalent), were recruited by their GPs to undergo ICS withdrawal. The electronic records of potential participants, identified by algorithm assessment, were reviewed followed by clinical assessment of those eligible. Participants were randomised to withdrawal from higher-dose ICS. Impact of withdrawal was assessed through measures of lung function (forced expiratory volume in the first second – FEV1), quality of life (COPD Assessment Test – CAT), exacerbations, and cellular and molecular biomarkers. Measures were repeated at 3 and 6 months.

### Findings

392 (13%) patients with mild or moderate airflow limitation were identified for higher-dose ICS withdrawal from a COPD population of 2967. On individual record review, 15 (5%) of those identified had prior evidence of asthma. A further 228 (58%) were excluded for other reasons. 149 eligible patients were invited for clinical assessment. 61 attended. All agreed to randomisation for ICS withdrawal. Eleven (18%) had new evidence of asthma on assessment (FEV1 variability  $> 12\%$  and  $>200$ ml). 40 were randomised to ICS withdrawal or maintenance of whom 18 (45%) had new evidence of asthma after repeated spirometric assessment over six months; 10

(25%) were in the withdrawal group and 8 (20%) in the maintenance group. Worsening symptom burden (increase of  $\geq 2$  in CAT score) was seen after withdrawal of ICS in those with FEV1 variability consistent with a diagnosis of asthma. The presence of a Th2 (asthma-like) inflammatory response in the patients with FEV1 variability was seen in: significant association between FEV1 variability and raised fractional exhaled nitric oxide (FENO) levels ( $p=0.009$ ); significant association between FEV1 variability and a combination of raised FENO and symptom burden ( $p=0.005$ ); and significant association between FEV1 variability and a combination of blood eosinophil count and symptom burden (0.005).

### Consequences

Withdrawal of higher-dose ICS prescribed outside guidelines for COPD is feasible and acceptable. A high proportion of these patients had features consistent with a diagnosis of asthma. We recommend that general practices actively assess patients with COPD with mild or moderate airflow limitation on higher-dose ICS (dose  $>400$ mcg BDP equivalent) to identify those with airflow variability suggestive of asthma. Adoption of an asthma treatment strategy recommended by the asthma guidelines should be considered in these patients.

### Funding Acknowledgement

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## G.1

### Examining the missing link in repeat prescribing systems: patient-centered medication reviews

**Presenter: Dr Andrea Hilton**

Co-authors: James Bennett, Kathryn Harvey, Sarah Greenley, Joanne Reeve, Maureen Twiddy, Ian Maidment

#### Institutions

University of Hull, Faculty of Health Sciences, Hull York Medical School, Aston University

#### Abstract

##### Problem

We face a growing challenge of tackling problematic polypharmacy; where the benefits of long-term use of multiple medications is often outweighed by the burden and potential harm. There has been a call for more tailoring of medication in people with polypharmacy. However, in 2017 there were over 800 million repeat prescriptions issued, so the problem faced is designing repeat prescribing systems that allow for patient-specific tailoring. We seek to describe/deliver a new complex intervention to address polypharmacy that actively builds person-centred medication reviews into the model. We have started by assessing the current evidence base on how this can be/is being achieved in practice. The aim of this scoping literature review is to describe currently the key components of person-centred medication reviews in repeat prescribing.

##### Approach

A scoping literature review was undertaken with an information specialist. We conducted a systematic search of key databases: CINAHL complete, Embase, Academic Search Premier, Medline, PsycINFO, HMIC using piloted search terms. Searches were restricted to the UK. Our wide-lens inclusion and exclusion criteria included: repeat prescribing AND Patient centred; holistic; multimorbidities/multi-morbid/long term condition/co-morbidities; medication review or annual review; system/task/safety; attitudes/behaviours; how do repeat prescribing systems work – logistics/mechanisms/processes; prescribing decisions (clinical). Any non-UK or papers before 2000 were excluded. We screened 415 articles

following duplication removal. Abstracts were screened by AH, JB and KH against inclusion/exclusion criteria. Discrepancies were discussed within the team. Full text articles were all double screened to confirm inclusion. A standard data extraction tool was used to identify details from the included studies on setting, intervention, study methods, study quality. Thematic analysis will be used on the final data set through constant comparison to describe the core components of patient centred medication reviews. The review process was supported by the use of Rayyan software.

##### Findings

Data Extraction and analysis is ongoing. Emerging findings suggest a focus on safe repeat prescribing systems, receptionist's roles and practice based pharmacists but there appears to be a paucity on patient centered repeat prescribing. There appears to be limited research in the context of repeat prescribing systems.

##### Consequences

The findings will feed in to our work to describe a new complex intervention to embed patient centred reviews in repeat prescribing systems. Medication optimisation needs to be patient centred. The findings from this systematic review will help to identify any current patient centredness within repeat prescribing systems in primary care. From this, we plan to identify possible changes that need to be made to the repeat prescribing systems to ensure they are tailored to patients with multimorbidities. Overall, this systematic review aims to explore and help us develop patient centred systems in primary care to deliver better outcomes for our patients.

#### Funding Acknowledgement

Non-Funded Pre Grant application

## G.2

### Multimorbidity in minority ethnic groups: A scoping review of the literature

**Presenter: Kate O'Donnell**

Co-authors: Hamish Foster

#### Institutions

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

#### Abstract

##### Problem

Our understanding of the relationship between ethnicity and multimorbidity lags behind that of multimorbidity and socioeconomic status. Ethnicity, however, is likely to be as important a contributor to multimorbidity-related health inequalities as deprivation. To date, the evidence base for multimorbidity in minority ethnic populations is small. However, with increasing ethnic diversity and long-established ethnic populations ageing, we need evidence to ensure primary care services are appropriate to need.

##### Approach

We searched Medline and EMBASE, from 1996 to October 2019. Search terms included ethnicity, minority ethnic groups, multimorbidity. We also searched the reference lists of two previous reviews and the Academy of Medical Sciences multimorbidity report. A total of 531 papers were identified. These were double-screened and included if their principal focus was reporting on multimorbidity in ethnic/racial populations. Data extraction focused on: year of study; country of study; study design; number of participants; aim; key findings; definitions used for ethnicity/race; definitions for multimorbidity.

##### Findings

We identified 18 papers, all published since 2011. Of these, 12 were located in the US, 3 in the UK, 2 in Europe, 1 in New Zealand. In general, ethnicity/race was self-reported, although some US studies used computer algorithms to assign race. Multimorbidity was usually based on a count of conditions and defined as  $\geq 2$  long-term conditions, usually taken from a longer list of physical and mental health

conditions. Most focused on multimorbidity prevalence in ethnic/racial populations, with little or no attention to condition clusters or health-related outcomes. US-based studies also focused on different communities to that in the UK, in particular Hispanic and Latino populations. Compared to the White majority population, the adjusted prevalence of multimorbidity was higher for Black populations and, in US studies, lower for Hispanic populations. In the US, the prevalence tended to be lower for Asian populations. In the UK, compared to the White population, multimorbidity prevalence was higher for South Asians. Two related US studies reported that multimorbidity starts earlier in minority ethnic groups than in White groups. One UK study suggested that disease clusters were different for White and non-White populations, with diabetes the most dominant condition in clusters in the White population, whereas depression and cancer dominated the cluster in the non-White population.

##### Consequences

There is little literature to draw on to understand the impact of multimorbidity in ethnic minority populations. Most of the published papers reported on prevalence, comparing it to the majority White population. Populations were often reported as a homogenous entity, e.g. South Asians. There is almost no literature on onset or disease clusters, nor the impact on ethnic minority populations. In an increasingly diverse UK, primary care practitioners need much more information about multimorbidity in their minority ethnic patient populations.

##### Funding Acknowledgement

Unfunded study.

## G.3

### Multimorbidity within households and health and social care utilisation and cost

**Presenter:** Mai Stafford

Co-authors: Sarah R Deeny, Kathryn Dreyer, Jenny Shand

#### Institutions

The Health Foundation, University College London

#### Abstract

##### Problem

Multimorbidity prevalence is rising and people with multimorbidity often require significant interaction with health and care systems. Treatment guidelines emphasise reducing treatment burden and improving coordination of care across services. Yet recent large-scale studies of care for people with multimorbidity have not shown immediate success and so more is needed to understand how to improve their care. As the daily responsibility for managing and coordinating their health conditions commonly falls primarily on the individuals themselves and on their informal carers (who are often in the same household), we set out to test whether the household health context matters for the use and cost of care for people with multimorbidity.

##### Approach

Difficulty in identifying households within electronic health records (EHRs) likely contributes to the lack of research in this area. To address this, we used a local sample of EHRs linked to detailed household composition data from local authority records and then replicated the analysis in a national study where co-residence was inferred from anonymised address data. Linked data from health providers and local government in Barking and Dagenham provided a retrospective cohort of people aged 50+ in two-person households between April 2016 and March 2018. Two-part regression models were applied to estimate annualised use and cost of hospital, primary, community, mental health and social care by multimorbidity status of individuals and co-residents, adjusted for age, sex and deprivation. Applicability at the national level was tested using the Clinical Practice Research Datalink.

#### Findings

In our sample of two-person households, over 45% of multimorbid people were co-resident with another multimorbid person. They were 1.14 (95% CI 1.00, 1.30) times as likely to have any community care activity and 1.24 (95% CI 0.99, 1.54) times as likely to have any mental health care activity than those co-resident with a healthy person. They had more primary care visits (8.5 (95% CI 8.2, 8.8) vs 7.9 (95% CI 7.7, 8.2)) and higher primary care costs. Outpatient care and elective admissions did not differ between these groups. Findings in the national data were similar.

#### Consequences

The study provides early evidence that some forms of care utilisation among people with multimorbidity varies by their household health context. The findings raise questions about how to deliver health and social care that acknowledges the household context for people with multimorbidity. For example, this could include scheduling community care to households or developing health care initiatives to households based on the principles of the group care approach.

#### Funding Acknowledgement

This study was funded by The Health Foundation as part of core activity of Health Foundation members of staff.

## G.4

### A Primary Health Care Approach for Hearing Health and its Importance in Maximising Wellbeing Across the Life-course

**Presenter:** Dalia Tsimpida

Co-authors: Dalia Tsimpida [1,2], Prof Evan Kontopantelis [2], Prof Darren Ashcroft [3], Dr Maria Panagioti [1,3]

#### Institutions

[1] Centre for Primary Care and Health Services Research, The University of Manchester [2] Institute for Health Policy and Organisation (IHPO), [3] NIHR Greater Manchester Patient Safety Translational Research Centre (PSTRC)

## Abstract

### Problem

Hearing loss (HL) constitutes a major public health challenge, affecting over 12 million people in the UK. The help-seeking behaviour for HL starts with the self-diagnosis and the initiation of contact with a health provider in primary care. However, little is known about the patterns of diagnosis of HL in primary care and referral to secondary care. Also, the consequences of HL in older adults' mental health are relatively unknown. We aimed to examine: (a) the accuracy of self-reported measures of hearing difficulty in comparison to objective hearing data, and (b) the relationship between HL and depressive symptoms in later life.

### Approach

We used data from the English Longitudinal Study of Ageing (ELSA), which is a large population-based prospective cohort study. We examined cross-sectionally 8,529 individuals that had an assessment in their hearing by both self-reported measures and consented for assessment via a handheld audiometric screening device (HearCheck™ Screener). Multiple logistic regression models examined the validity of self-reported measures of hearing and their potential drivers across different population subgroups. Also, we applied a novel structural equation modelling (SEM) approach to examine the longitudinal association between the HL and clinically significant depressive symptoms of participants (CES Depression Scale), across the 8 Waves of ELSA Dataset.

### Findings

A large percentage (30.2%) of individuals with HL were not detected by the self-report measure. Statistically significant predictors of misreporting hearing difficulties (while they had objectively measured HL >35dBHL at 3.0kHz, in the better-hearing ear) were: female gender (OR 1.97, 95%CI 1.18-3.28), no educational qualifications (OR 1.37, 95%CI 1.26-2.55), routine/manual occupation (OR 1.43, 95%CI 1.28-2.61), tobacco consumption (OR 1.14, 95%CI 1.08-1.90), harmful use of alcohol (OR 1.13, 95%CI 1.11-2.34), and lack of moderate physical activity (OR 1.25, 95%CI 1.03-1.42). The relative risk for depressive symptoms was higher for those who had reported HL than for those who had not reported HL, ranging from 1.40 (Wave 1) to 1.58 (Wave 8).

## Consequences

Up to one-third of adults with HL in England may remain undiagnosed and therefore not referred to ear specialists or given access to hearing aids. People belonging in high-risk groups for HL, such as older and less educated people that face socioeconomic inequalities and adopt an unhealthy lifestyle, are the least likely to be accurately identified. These findings provide novel insights into clinical practice and reinforce the importance of an effective and sustainable HL screening strategy in primary care, for the early detection and intervention for HL in older adults. Importantly, as our findings are consistent with the hypothesis that the early detection of HL could largely prevent or delay the onset of depression, a Primary Health Care approach for hearing health is crucial in maximising wellbeing for people across their life course.

## Funding Acknowledgement

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## H.1

### Initiation of hypertension treatment in young adults in UK primary care: a retrospective cohort study using electronic health records

#### Presenter: Nadeem Ahmed

Co-authors: Nadeem Ahmed, Rasiyah Thayakaran, Francesca Crowe, Krish Nirantharakumar, Tom Marshall

#### Institutions

Institute of Applied Health Research, University of Birmingham, Birmingham, United Kingdom

## Abstract

### Problem

Eligibility for antihypertensive treatment is determined from blood pressure (BP) and predicted ten-year risk of cardiovascular disease (CVD). Currently, patients without pre-existing cardiovascular

disease are eligible for BP treatment if their BP is  $\geq 160/100$  mm Hg or  $140/90$  to  $159/99$  and at  $\geq 20\%$  ten-year CVD risk. We investigated initiations of antihypertensive drugs in young adults aged 18-40 years to determine the proportion who were eligible for treatment.

### Approach

A retrospective cohort study using an anonymised electronic primary care health record database. Setting Electronic health records using The Health Improvement Network (THIN). This included individual health records of approximately 4 million patients uploaded from general practices using Vision primary care records software. Participants Included patients were aged 18 to 40 years, registered in a THIN practice for at least one year between 1st January 2005 and 1st January 2018, free from cardiovascular disease and previously not treated with antihypertensives. A total of 19,006 patients were eligible for inclusion (initiated  $n=1357$  vs. not-initiated on antihypertensive medication  $n=17649$ ), with 142,238 person-years of follow-up. Main outcome measures Patients were categorised into BP and ten-year CVD risk bands based on a rolling yearly average of their BP and calculated CVD risk (QRisk). Because average BP could change over time, each patient could have periods of exposure in more than one blood pressure category and ten-year CVD risk band. Initiation rates of antihypertensive medication were reported as patient years of follow-up and annual initiation rates. We also used a multivariable cox proportional hazards model to observe factors predicting initiation of antihypertensive medication reported as HR and CI.

### Findings

Of 19,006 patients with 142,238 person-years of follow-up, 7.1% (1357) were prescribed antihypertensive medication: Of these 52.1% (707/1357) (95% CI 49.4% to 54.8%) of patients had a mean blood pressure  $<140/90$  mm Hg and 32.0% (434/1357) (95% CI 29.5% to 34.6%) had blood pressure  $140/90$  to  $159/99$  mm Hg but were at  $<20\%$  ten-year CVD risk and thus not eligible for treatment. Therefore, only 15.9% (216/1357) (95% CI 14.0% to 18.0%) were eligible for treatment who were initiated on antihypertensive medication. Under updated NICE guidelines ( $\geq 10\%$  ten-year CVD risk) eligibility for treatment would rise to 21.8% (95% CI 19.7% to

24.2%). Furthermore, rates of antihypertensive drug initiation were lower in patients in lower blood pressure and lower ten-year CVD risk categories.

### Consequences

The great majority of young adults initiated on antihypertensive treatment are not eligible (even when adjusting for updated guidelines of  $<10\%$  ten-year CVD) resulting in further management, unnecessary treatment and cost to healthcare services. Novel strategies are needed to prevent overtreatment and stratify antihypertensive initiation in young adults.

### Funding Acknowledgement

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## H.2

**How does the primary care EMR recording of alcohol consumption compare to self-reported data in the UKB cohort in Scotland?**

**Presenter: Amaya Azcoaga Lorenzo**

Co-authors: David Fraile Navarro, Frank Sullivan

### Institutions

Centre for Health Informatics, Australian Institute of Health Innovation, Medical School University of St Andrews.

### Abstract

#### Problem

According to the Scottish Public Health Observatory, in 2016 the proportion of adults who drink alcohol beyond 14 units per week were 30% of men and 16% of women. Evidence suggests that even low-level regular alcohol use could harm. Reliable estimates of health-related behaviours are required to formulate and evaluate policies, and for alcohol research. One of the main problems when evaluating the effects of alcohol is accurately measuring how much people drink. The use of routinely collected data (RCD) and its



linkage from different sources, such as health and administrative, are increasingly used in different fields and offer an unrivalled opportunity for research in biomedical sciences. In Scotland GPs often ask patients about their alcohol consumption. Plus, it has been one of the Quality and Outcome Framework (QoF) indicators from 2004-16. Although there are numerous codes in GP databases indicating alcohol consumption and multiple records per individual, this information is difficult to use for research or quality purposes and has not been validated.

### Approach

From the UKBiobank cohort we selected and extracted those who answered to alcohol consumption question. We recoded these variables to establish, amount of alcohol drunk per week and then stratified these participants in four consumption categories. This dataset was linked to their GP's records. GP data were processed using Read Codes V2 and V3 identification, using UKB guidance and compiling a list of all codes related to alcohol consumption. We performed the analysis only in participants from Scotland.

### Findings

We included 35,769 participants in our analysis (those who had a recorded alcohol status in UKB questionnaire (99.7% of Scottish participants). After reclassification of the weekly alcohol consumption variables, we detected 8.38% of Non-drinkers, 56.74% Sensible drinkers (less than 14 Units per week), 13.56% of Moderate drinkers (between 15 and 21 Units/week), 12.33% of Hazardous drinkers (between 22 and 35 Units/week and 8.99% of Harmful drinkers (more than 35 Units). GP data preliminary analysis detected alcohol records for 24,409 (68.08%) distinct participants. Those participants included 133,726 coded records related to alcohol consumption (136.) with 93,057 associated recorded values.

### Consequences

We found that 68.1% of Scottish UKB participants had recorded alcohol consumption in Primary Care data, considering that UKB had only released GP data for half of the cohort. Preliminary results show a poor correlation between UKB questionnaires and GP records. It is difficult to assess how it is related to real changes in alcohol consumption and if it is associated with underreporting. It's crucial to improve data

collection and proper codification for effective data research and epidemiologic surveillance. If properly validated, GP records could represent a great opportunity to have populational data on alcohol consumption.

### Funding Acknowledgement

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## H.3

### Linking CPRD Primary Care Data to HES Diagnostic Imaging Data; A Data Resource Profile

**Presenter: Jennifer Campbell**

Co-authors: Jessie Oyinlola

### Institutions

Clinical Practice Research Datalink

### Abstract

#### Problem

When using electronic health data to study patient care pathways it is often useful to see beyond that which is administered and recorded in primary care. The Clinical Practice Research Datalink (CPRD) links primary care data to secondary care data sources including the Hospital Episode Statistics Diagnostic Imaging Dataset (HES DID). HES DID is a collection of detailed information about diagnostic imaging tests carried out on NHS patients in England since April 2012. HES DID contains information about referral source and patient type, details of the test, plus items about waiting times for each diagnostic imaging event, from time of test request through to time of reporting. HES DID does not contain the images produced or the results of the test. Whilst linkage between these two data sets has been in place for a few years to date nobody has attempted to describe what it offers. The aim of this study is to profile the linkage between HES DID and CPRD data in terms of content, coverage, completeness and concordance in order to define information that can be gained from the linkage.

## Approach

The HES DID linked data will be described in terms of coverage of the data source over time and by geography. We will also investigate how complete individual scan records are. Analysis will look at the type of scans recorded in HES DID, which are the most frequently recorded imaging scans and how does that compare with records of scans in primary care data. We will look at the concordance between scans being recorded in CPRD data (both as referral records and scan outcomes) and the record of a scan taking place in HES DID. We will explore whether the linkage between these two data sets and other HES datasets linked to CPRD allows researchers to follow a patient journey from referral for an imaging test through to diagnosis and treatment. We will also carry out a descriptive analysis of the average waiting times between each stage of the patient's care.

## Findings

The latest release of HES DID data linked to CPRD covers the period April 2007 – June 2019. Initial exploratory findings have shown that there were ~15 million CPRD patients who had at least one scan recorded in HES DID during this period with the number of scans recorded in the data increasing slightly year on year. The most frequently recorded scan type was chest x-ray with over 5 million records.

## Consequences

The linkage between CPRD primary care data and HES DID has the potential to provide a valuable resource for researchers wishing to study treatment pathways. This descriptive analysis will allow researchers to assess the value that linked HES DID data could add to their study.

## H.4

### Can early markers of poor long-term outcomes in dementia be identified from primary care electronic health records?

**Presenter: Kelvin Jordan**

Co-authors: Trishna Rathod-Mistry, Michelle Marshall, Paul Campbell, James Bailey, Carolyn A. Chew-Graham, Martin Frisher, Richard Hayward, Rashi

Negi, Swaran Singh, Athula Sumathipala, Nwe Thein, Kate Walters, Scott Weich

## Institutions

Keele University, Midlands Partnership NHS Foundation Trust, University of Warwick, University College London, University of Sheffield

## Abstract

### Problem

The prevalence of dementia is rising. The UK government has prioritised early recognition and treatment to prolong independence, reduce hospital admissions, and delay nursing home admission and mortality. Advances have been made in “case finding” and identifying risk factors for dementia using primary care Electronic Health Records (EHR). “Hard” long term outcomes such as hospital admissions and mortality are obtainable from EHR but less is known about the early course of the disease. This information could help clinicians spot patients at risk of quicker progression and enable shorter term research outcomes to be assessed. The objective was to assess whether early markers of dementia progression can be identified within information routinely recorded in primary care EHR.

### Approach

Through reviewing research studies, consensus meetings with experts in dementia and EHR research, and analysis of a North Staffordshire EHR database, we have established a list of potential markers of dementia-related health that are feasible to assess in primary care EHR. Markers were grouped into domains. We analysed records of patients newly diagnosed with dementia between 1998-2017 from a UK-wide primary care EHR database (Clinical Practice Research Datalink). The incidence of recording of markers from domains up to three years after diagnosis were determined. We tested the validity of the domains as measures of dementia progression with the hypothesis that early recording of the domains should be associated with increased risk of long-term hospital admission, palliative care, and mortality.

### Findings

Sixty-three markers were mapped within thirteen domains. The domains included severe

neuropsychiatric (example marker: psychosis), other neuropsychiatric (e.g. depression), cognition (e.g. memory loss), daily functioning (e.g. walking limitation), selected other illnesses (e.g. heart problem), symptoms (e.g. hearing loss), increased polypharmacy. There were 30,463 people with newly diagnosed dementia. Common first recorded markers after diagnosis included those in the comorbidity (incidence 300/1000 person-years), symptoms (230/1000), and other neuropsychiatric (186/1000) domains. Increased polypharmacy was also common (469/1000). Risk of long-term outcomes increased with increasing number of new markers recorded in the first year after diagnosis. For example, patients with four or more domains in which a new marker was recorded (18% of patients) had greater risk of long term hospital admission (adjusted hazard ratio 1.24 versus no domains; 95% CI 1.16, 1.32), palliative care (1.86; 1.61, 2.16), and mortality (1.57; 95% CI 1.47, 1.67). The individual domains were also associated with long term outcomes, with the neuropsychiatric domains and increased polypharmacy, in particular, having stronger associations.

#### Consequences

Primary care EHR capture measures of dementia-related health associated with long-term outcomes. These may facilitate better understanding of progression, make it easier for GPs to recognise people on a more severe course of dementia, and provide early outcome measures for research studies including clinical trials.

#### Funding Acknowledgement

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The interpretation and conclusions contained in this study are those of the authors alone.

## H.5

### Primary care mortality and the impact of funding: a national longitudinal study 2013 -2016

**Presenter: Veline L'Esperance**

Co-authors: Veline L'Esperance<sup>1</sup>, Hugh Gravelle<sup>2</sup>, Peter Schofield<sup>1</sup>, Mark Ashworth<sup>1</sup>

#### Institutions

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

#### Abstract

##### Problem

Previous studies reporting an association between primary care investment and practice-level mortality have relied on estimates of mortality or been confined to small geographical areas. We investigated the relationship between funding and actual mortality rates, both at practice-level, in a national sample of practices in England.

##### Approach

We combined seven datasets for all general practices in England (n=7310), 2013-2016:

- (i) General and Personal Medical Services database , providing workforce and patient data;
- (ii) NHS payments to General Practice, which records payments to practices;
- (iii) Quality and Outcomes Framework describing performance on clinical achievement indicators in LTCs,
- (iv) deprivation data for each practice;
- (v) neighbourhood ethnicity for each practice;
- (vi) patient experience scores from the General Practice Patient Survey; and
- (vii) practice-level mortality. We estimated a variety of count data models using longitudinal practice-level data to

examine the association between general practice funding and practice-level mortality. These included

- (a) pooled models;
- (b) practice fixed effect models;
- (c) random effects models; and
- (d) Mundlak specification.

We used the Poisson specification for models with practice fixed effects and allowed for over-dispersion of errors by using robust standard errors. Practice-year observations with <5 deaths/year were truncated. We entered the number of general practitioners, nurses and administrative staff in four different ways in the exponential mean function. The goodness of fit for each model was explored using the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC), both of which penalise the number of coefficients estimated; smaller AIC and BIC scores indicate better fitting models.

#### Findings

The inflation adjusted mean total funding per patient across the study period was £133.66 (standard deviation £39.46), adjusted to 2016 costs. The mean total deaths per practice increased from 61.23 (SD 46.15) in 2013/14 to 65.78 (SD 50.52) in 2016/17. Premature mortality (deaths in those <75 years) also increased from 19.22 (SD 13.09) in 2013/14 to 20.86 (SD 14.45) in 2016/17. Reduced practice mortality rates were significantly associated with increased total funding (B coefficient -0.003; %95CI: -0.0004, -0.0001). Other characteristics associated with reduced mortality included: practices in receipt of the capitation supplement, (MPIG) (B coefficient -0.02; %95CI: -0.04, -0.01); practices with less deprived populations (B coefficient 0.011; %95CI: 0.010, 0.011); and practices with increased overall patient experience scores (B coefficient -0.001; %95CI: -0.001, -0.0001). The relationship between mortality and patient age was U-shaped, with extremes of age 0-4 years (B coefficient 0.03; %95CI: 0.03, 0.04) and ≥75 years (B coefficient 0.10; %95CI: 0.10, 0.11) significantly associated with practice mortality.

#### Consequences

This is the first study to examine general practice funding and practice-level mortality rates in England. We found that practice mortality rates are inversely

related to the underlying funding allocated to each general practice. Further work is needed to determine the likely mechanism of any causal relationship between funding and mortality.

#### Funding Acknowledgement

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## H.6

### Reducing DNAs in general practice: evaluating methods of change.

**Presenter: Tom Margham**

Co-authors: Crystal Williams, Jack Steadman, Sally Hull

#### Institutions

Queen Mary University of London, Tower Hamlets CCG

#### Abstract

##### Problem

Non-attendance or Did Not Attend (DNA) is common UK in primary care, reducing clinical capacity. Nationally it is estimated that 5% of appointments in primary care are missed, of which 7.2 million are GP appointments, which equates to a waste of £216 million every year. Reducing DNAs is also important for effective primary care clinical delivery. Missed appointments may translate to patient presentations at less appropriate care settings with additional health and financial implications. The study aimed to: a) Evaluate the impact on practice DNA appointment rates of a system-wide quality improvement (QI) programme which included sharing data on appointment systems and DNA rates. b) Compare the effectiveness of different practice interventions to reduce DNA rates.

##### Approach

Based in a clinical commissioning group (CCG) in east London, with a mobile, ethnically diverse and socially

deprived population; 25 of the 32 practices voluntarily engaged with the programme. Following the generic QI intervention, 14 practices undertook further work on DNA reduction projects, supported by practice based coaching. CCG wide monthly appointment data was collected from the electronic health record (EHR) of each practice between April 2014 and June 2019. An interrupted time series analysis was used to compare DNA rates pre and post the generic intervention; and following specific project work on DNA reduction.

## Findings

Appointment data from all 32 practices in the CCG were available for analysis, comprising more than 4 million booked appointments over the study period. Before the intervention (April 2017) the average DNA rate across the CCG was 7.6% with a practice range of 2-12%. Practice DNA rate was not associated with list size. For all practices combined 80% of DNAs were associated with a wait time of >2 days. Two years following the generic QI intervention the DNA rates for the 25 study practices fell to 5.2%. This equates to an absolute reduction of 4,031 DNAs among the study practices and a potential saving of £120,930. Trend in DNA rates: comparison of 25 Project practices\* with 7 control practices 2014-2019 Monthly change in DNA rates p value for monthly change PROJECT practices (25) 0.990 (0.989 to 0.991) P<0.001 (post intervention) Control practices (7) 0.996 (0.995 to 0.997) P<0.001 \* Adjusted for the different intervention start date of each study practice. 13 practices which implemented patient behaviour change projects showed a modest additional drop in DNAs compared to the generic intervention. One practice introduced a system change to the appointment system, resulting in a sustained drop in DNAs.

## Consequences

The number of days between booking a GP appointment and seeing the doctor is the best predictor of practice DNA rates. Sharing appointment data, combined with QI coaching, produced a significant reduction in missed appointments. Behaviour change interventions had a modest additional impact. In contrast introducing structural change to the appointment system effectively reduced DNA rates. To reduce non-attendance the appointment system needs to change – not the patient.

## Funding Acknowledgement

This project was supported by an Innovating for Improvement grant from the Health Foundation

## H.7

### Development of a dementia risk detection tool using primary care electronic health records

**Presenter: David Reeves**

Co-authors: Catharine Morgan, Darren M Ashcroft, Evan Kontopantelis, Daniel Stamate, John Langham, Brian Mcmillan

## Institutions

University of Manchester, Goldsmiths University of London, Brighton and Sussex Medical School

## Abstract

### Problem

Increasing prevalence of dementia, related to an ageing population, is a major healthcare challenge. 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 dementia risk models have been proposed. However, predictive ability has generally been quite limited, few have exploited routinely collected general practice data or focused on early detection, none incorporate longitudinal trends in health, and only one has utilised the potential of Machine Learning (ML) methods. We aim to develop an improved healthcare record-based tool for estimating patient risk of developing dementia with a focus on 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 identified patients aged 60-95 years contributing to CPRD between 01/01/2005 and 31/12/2017 along with data on a diagnosis of dementia over the period. A set of more than 150 potential predictors were identified from published



systematic reviews, relevant individual research studies, and advice from dementia experts, Model building is using both traditional logistic regression analysis and machine learning (ML) techniques. ML is being carried out by co-investigators at the University of London in parallel to the traditional modelling approach based at the University of Manchester.

### Findings

Between 01/01/2005 and 31/12/2007, 2,005,756 adults aged  $\geq 60$  years contributed to CPRD and fulfilled inclusion criteria. Of this cohort, 7,621 (3.4%) were identified as having a dementia diagnosis. After assessment for feasibility and reliability, we developed and implemented Clinical Readcode lists for 60 risk factors, broadly classified into demographic and social factors, physical and mental health status, consulting patterns, and treatments received. Additional variables were constructed for many factors to capture longitudinal trends alongside current status. Under univariate analysis, the great majority of factors have demonstrated an association with progression to a dementia diagnosis within a 5 or 10 year period, including most classes of prescribed drugs. Multivariate analysis and full predictive modelling using regression and ML methods is underway and will be presented.

### Consequences

Tools to aid in the early identification of people at high risk of dementia are urgently needed. Screening in primary care on the basis of information in the electronic health record has great potential, provided a sufficiently accurate tool can be developed. 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

This study is funded by Alzheimer's Research UK

## I.1

### Improving treatment adherence in people with diabetes mellitus (INTENSE)

**Presenter: Hiyam Al-Jabr**

Co-authors: Hiyam Al-Jabr<sup>1</sup>, Marlous Langendoen-Gort<sup>2</sup>, Jacqueline G Hugtenburg<sup>3</sup>, Femke Rutters<sup>4</sup>, Maartje de Wit<sup>5</sup>, Amber A van der Heijden<sup>2</sup>, Frank Snoek<sup>5,6</sup>, Andrew Farmer<sup>7</sup>, Petra JM Elders<sup>2</sup>, Debi Bhattacharya<sup>1</sup>

### Institutions

- 1 University of East Anglia,
- 2 Department of General Practice and Elderly Medicine, Amsterdam UMC (VUmc);
- 3 Department of Clinical Pharmacology and Pharmacy, Amsterdam UMC (VUmc);
- 4 Epidemiology and Biostatistics Department, Amsterdam UMC (VUmc);
- 5 Department of Medical Psychology, Amsterdam UMC (VUmc);
- 6 Department of Medical Psychology, Amsterdam UMC (AMC);
- 7 University of Oxford

### Abstract

#### Problem

Medication adherence is a common problem among people with type 2 diabetes mellitus (T2DM), and is associated with increased hospitalisation and healthcare costs. Interventions developed to enhance medication adherence rarely allow for significant tailoring to individual need. This study aims to investigate the effectiveness and cost effectiveness of a personalised intervention program to improve medication adherence in people who are non-adherent to oral antidiabetic and/or antihypertensive medicines.

#### Approach

The study was designed for the Netherlands and adapted for a UK audience through working with a patient and public involvement (PPI) group and other relevant stakeholders including the local pharmaceutical committee. The one to one parallel-group, cluster randomised controlled trial will be conducted in community pharmacies in the

Netherlands and the UK. A total of 300 participants will be recruited (n=150 per country) and followed-up for six months. Eligible patients are smartphone users aged 35 to 75 years with T2DM. They must be non-adherent to oral antidiabetic and/or antihypertensive medicines and able to read and write in English. Screening and recruitment will be undertaken in two stages: 1. Potentially eligible patients will be identified by medical practice database searches. The results will be screened by a GP and a letter posted to potentially eligible patients inviting them to contact their community pharmacy team for recruitment. 2. Patients expressing interest in participation will be screened by a member of the pharmacy team to confirm eligibility. Electronic 1:1 block randomisation per pharmacy will be used to randomise patients to intervention or control. Patients will complete an adherence profiling questionnaire to inform generation of a personalised intervention program for intervention participants. This may comprise a selection from text messages, medication dispensing systems and referral to a prescriber. The control group will receive usual care plus access to a general T2DM website. The primary outcome is change in medication adherence measured by telephone pill count. Secondary outcomes include change at six months in blood pressure, HbA1c, quality of life and healthcare costs. A process evaluation including interviews and focus groups with patients, pharmacists and prescribers will be used to understand the trial findings. NHS ethical approval has been secured.

### Findings

Three medical practices and their most proximal community pharmacies have expressed an interest in participating in participant identification and recruitment. Two meetings with PPI members were conducted, and patient-facing supporting programs were adapted to suit the UK population. Participant recruitment is expected to start in April 2020.

### Consequences

The study is expected to demonstrate the impact of a personalised adherence intervention on diabetes-related health, health-related quality of life and healthcare costs.

## Funding Acknowledgement

We would like to thank the European Foundation for the Study of Diabetes for funding this study

## I.2

### What is the prevalence and implications of frailty in diabetes? A systematic review

#### Presenter: Isabella Fauré

Co-authors: Peter Hanlon, Isabella Fauré, Neave Corcoran, Elaine Butterly, David McAllister, Frances S Mair

#### Institutions

University of Glasgow

#### Abstract

##### Problem

With rising life expectancy, the average age of people with diabetes mellitus is increasing. Diabetes is known to be associated with frailty. Frailty describes an age-related decline in physiological reserves leading to increased vulnerability to decompensation and poor health outcomes. Diabetes guidelines recommend relaxing glycaemic targets in people with frailty, citing increased risks from hypoglycaemia. However, there is no consensus on how frailty should be measured nor the effects of frailty on health outcomes in diabetes. We performed a systematic review of studies assessing the prevalence of frailty in people with diabetes and the association between frailty and clinical outcomes.

##### Approach

We searched three electronic databases: Medline, Embase and Web of Science. Abstracts and full texts were screened to identify studies meeting the following inclusion criteria: (i) include people with diabetes (type 1, type 2, or unspecified); (ii) assess frailty status using a recognized frailty measure; (iii) report the prevalence of frailty in people with diabetes and/or the association between frailty and clinical outcomes in the context of diabetes. We included observational studies in any setting (community, hospital, institutional care). Quality was assessed using the Newcastle Ottawa Scale.

## Findings

We screened 3,007 abstracts and 267 full texts, from which 74 studies were identified as eligible for inclusion. Studies were heterogeneous in the type of diabetes studied (n=28 type 2, n=46 unspecified), setting, age of participants, and frailty measure used. Median sample size was 189 (IQR 95-534). Twenty-one different frailty scales were used. The frailty phenotype was the most frequently used measure (n=29 studies) followed by the frailty index (n=11), FRAIL scale (n=5), clinical frailty scale (n=3), Edmonton frailty scale (n=3), comprehensive geriatric assessment (n=3). Fourteen other scales were used in one or two studies each. The median prevalence of frailty in community studies was 9% (IQR 4%-17%). Prevalence was higher in inpatient settings (median 36%, IQR 22%-48%). Frailty was associated with mortality (9/9 studies), hospitalization (5/6 studies), cardiovascular events (3/4), hypoglycaemia (2/2), neuropathy (1/1), depression (1/1) lower quality of life (1/1) and incident disability (1/1). Frailty was associated with higher HbA1c in 3/6 studies, with 3 studies also showing that a high proportion of frail people had HbA1c levels below target range. No studies assessed if the impact of glycaemic control varied by frailty status.

## Consequences

Frailty is common in diabetes and associated with a range of adverse outcomes. There is little consensus over how best to measure frailty, and no studies exploring how the choice of measure impacts on the estimated prevalence and the relationship with outcomes. Few studies in diabetes have assessed frailty measures designed for clinical practice. Future work should clarify the impact of choice of measure as well as the implications of glycaemic control to help guide treatment recommendations.

## Funding Acknowledgement

Peter Hanlon is funded by a Medical Research Council Clinical Research Training Fellowship

## I.3

### Experiences of Doctors and Patients in the implementation of Indonesia's diabetes management model, Prolanis

**Presenter:** Aghnaa Gayatri

Co-authors: Barbara Nicholl, Stewart Mercer, Sara Macdonald

## Institutions

University of Glasgow, University of Edinburgh

## Abstract

### Problem

Indonesia have been implementing a nationwide diabetes management model through the newly established universal health coverage scheme since 2014. The model has similarities with the Chronic Care Model that originated in the United States. It consists of monthly consultations, medication dispensing, laboratory checks, with an optional addition of group exercise and education classes. There are three distinct types of primary care practices in Indonesia implementing this model (government-run community health centre, private primary care clinic, individual doctor practice). No study to date has assessed how Prolanis is being implemented across the different types of primary care. We aimed to explore the experiences of primary care doctors and patients in the implementation of Prolanis. Specifically to address the questions: 1) How is Prolanis implemented in different primary care settings?; 2) What are the factors influencing the implementation of Prolanis?; 3) What are the perceived effects of implementing Prolanis in diabetes care provision?

### Approach

A qualitative approach used in-depth interviews to explore the experiences of doctors and patients in the implementation of Prolanis. We carried out a purposive sampling on the basis of maximum variation to include doctors and patients from the three types of primary care and from both urban and rural settings. Themes and sub-themes were identified from interview transcripts using a thematic approach in order to answer the research questions.

## Findings

A total of 36 participants were interviewed for this study, 18 doctors and 18 patients. An overlap of themes was found from the doctor and patient interviews, resulting in four main themes influencing the implementation of Prolanis for all participants: contextual factors, system factors, process factors, and outcome factors. Prolanis was found to be implemented differently across types of primary care. One example was whether patient group sessions were provided. The decision to run group sessions was influenced by the setting of the practice, the social nature of their patient group, and the available human resources. Having group sessions was highly regarded as an effective approach to achieve good clinical outcomes in diabetes management with Prolanis, with both patients and doctors expressing its effectiveness in the actual increase of diabetes self-management.

## Consequences

The relatively short period of Prolanis implementation (5 years) may be reflected in the different approaches to Prolanis implementation, with practices still finding their way to implement the model according to their circumstances (e.g. size, urban/rural). The highly appreciated group sessions should be considered across all primary care types as they have been viewed as an effective approach to management. Improvements are still needed to effectively implement Prolanis nationally and the findings from this study will provide recommendations on how best to achieve optimum diabetes self-management provision in primary care in Indonesia.

## Funding Acknowledgement

This study is part of a PhD fully funded by the Indonesian Endowment Fund for Education, Ministry of Finance, Republic of Indonesia.

## 1.4

### What is the risk of adverse clinical outcomes in middle-aged and older adults with Type 2 Diabetes and Frailty?

**Presenter: Peter Hanlon**

Co-authors: Peter Hanlon, Jim Lewsey, Bhautesh Jani, Barbara Nicholl, David McAllister, Frances S Mair

## Institutions

University of Glasgow

## Abstract

### Problem

The prevalence of type 2 diabetes (T2D) is growing worldwide, and the average age of people with T2D is rising. Frailty, a state of increased vulnerability to adverse health outcomes, is an important factor in T2D. Clinical guidelines recommend less stringent glycated haemoglobin (HbA1c) targets for older frail people with T2D. The implications for relatively younger people meeting criteria for frailty are less clear. We aim to assess the association between frailty and clinical outcomes in T2D and explore if frailty modifies the association between HbA1c and mortality and hypoglycaemia.

### Approach

We identified people with T2D from the UK Biobank cohort. We assessed baseline frailty using the Frailty Phenotype model, comprising five characteristics (low grip strength, weight loss, slow walking speed, exhaustion, and low physical activity). People with 1-2 of these features are considered pre-frail. People with 3 or more considered frail. Clinical outcomes were identified from linkage to national mortality registers and hospital episode statistics over a median 75 months follow-up. Outcomes included all-cause mortality, cardiovascular mortality, cancer mortality, major adverse cardiovascular event (MACE), hypoglycaemia, and fall/fracture. Cox-proportional hazards models assessed the association between frailty and each outcome, adjusted for age, sex, body mass index, socioeconomic status, smoking and alcohol. We then assessed the association between HbA1c and both all-cause mortality and hypoglycaemia at different levels of frailty.

## Findings

Among 20,569 people with T2D (mean age 60.2, 36.8% female) 2,506 (12.7%) met the criteria for frailty and 11,026 (55.7%) were pre-frail. Frailty was associated with older age, female sex, higher socioeconomic deprivation, higher body mass index, current smoking, and no alcohol drinking. Compared with participants with no frailty characteristics, frailty was associated with all-cause mortality (hazard ratio 2.23, 95% confidence intervals 1.92-2.60), cardiovascular mortality (3.65, 2.16-5.12), cancer mortality (1.75, 1.31-2.35), MACE (1.75, 1.31-2.35), hypoglycaemia (3.21, 2.29-4.49) and fall/fracture (2.22, 1.85-2.67). Pre-frailty was also associated with each of these outcomes, with smaller effect sizes. HbA1c showed a J-shaped relationship with all-cause mortality, with increased risk below 45 mmol/mol and above 55mmol/mol. This relationship was consistent at all levels of frailty ( $p$  for interaction = 0.196). Higher HbA1c was associated with greater risk of hypoglycaemia at all levels of frailty.

## Consequences

Frailty is identifiable and common among middle-aged as well as older adults with T2D. It is associated with a range of adverse outcomes, with particularly strong associations with cardiovascular mortality and hypoglycaemia. Low and high HbA1c are associated with mortality, with similar hazard ratios at all levels of frailty. Consequently, the absolute risks of low and high HbA1c are necessarily larger in people who are frail.

## Funding Acknowledgement

Peter Hanlon is funded by a Medical Research Council Clinical Research Training Fellowship

## 1.5

### Are different phenotypes of type 2 diabetes associated with different risks of vascular outcomes? A cohort study in east London

**Presenter: Rohini Mathur**

Co-authors: Sarah Finer, Sally Hull

## Institutions

Institute of Population Health Sciences, Queen Mary, University of London

## Abstract

### Problem

Background: Recent studies have identified distinct subtypes of type 2 diabetes (T2DM). Characterizing diabetes phenotypes in a young, ethnically diverse inner-city population and their associations with vascular risk is an essential step towards tailoring diabetes management for high-risk groups. The aim of this study was to identify and characterize subtypes of type 2 diabetes based on clinical characteristics at diagnosis and determine associations with vascular outcomes.

### Approach

An observational cohort study using data from the east London Database was conducted using 30,000 adults aged 18 and over diagnosed with T2DM between 2008 and 2018. Latent class analysis was used to identify distinct subgroups of type 2 diabetes using baseline data on HbA1c, age at diagnosis and BMI. The ideal number of classes was selected based on model fit criteria and clinical relevance. Multinomial logistic regression was used to identify demographic and baseline characteristics associated with class membership. Amongst those free from prevalent vascular disease, multivariable cox-proportional hazards regression was used to compare risk of incident cardio- and micro-vascular disease between classes.

### Findings

Three clinically meaningful T2DM classes were identified; 70% of the population were classified as having 'Typical diabetes'; 22.8% were classed as having 'Age-related diabetes' (mean age at diagnosis 72.7), while 8.1% were classed as having 'Severe



hyperglycaemia related diabetes' (mean HbA1c at diagnosis 12.1%/108.7 mmol/L. The majority of individuals in the age-related group were of white ethnicity (42.9%), while the other two classes were largely south Asian (43.2% severe hyperglycaemia, 56.8% typical onset). Compared to those with typical onset, risk of macrovascular disease was 2.75 times higher in the age-related diabetes group (95%CI 2.42-3.14). Risk of microvascular disease was 29% higher in the age-related diabetes group (95%CI 1.21-1.36) and 41% higher in the severe hyperglycaemia group (95%CI 1.30-1.52) relative to those with typical onset.

## Consequences

We characterized differences between individuals belonging to three distinct classes of type 2 diabetes and identified strong associations between some diabetes subtypes and vascular risk. Further exploration into the clustering and trajectories of cardio-metabolic risk factors, both around the time of diagnosis and over the longer term will be key to developing targeted strategies to identify and manage those at highest risk of poor outcomes.

## I.6

### What is the utility of the COM-B model in identifying facilitators and barriers to maintaining a healthy postnatal lifestyle following a diagnosis of gestational diabetes: a qualitative study?

**Presenter: Caroline Mitchell**

Co-authors: Jennifer Boyd, Brian McMillan, Katherine Easton, Brigitte Delaney

## Institutions

Academic Unit of Primary Medical Care, University of Sheffield, School of Health and Related Research, University of Sheffield; Centre for Primary Care and Health Services Research, University of Manchester; School of Education, University of Sheffield. Sheffield.

## Abstract

### Problem

One in twenty pregnant women in the UK develop Gestational Diabetes (GD) and prevalence is increasing. Women who have had GD are over seven times more likely to be diagnosed with type 2

diabetes mellitus (T2DM) in their lifetime. The adverse health outcomes associated with T2DM include a reduction in average life expectancy by 10 years. Although women with GD are generally satisfied with antenatal care, many feel abandoned postnatally and are uncertain about what to expect from their GP regarding follow-up. There is a need to develop innovative postnatal lifestyle interventions to reduce the risk of T2DM amongst women who have had GD. Previous qualitative research investigating the experiences of women diagnosed with gestational diabetes (GD) has provided important insights for intervention development but often lack a theoretical underpinning. This study explores the use of the COM-B framework (Michie et al) to code and the socio-ecological model (Dahlgren & Whitehead) to contextualise participant responses in order to inform intervention development.

## Approach

Qualitative semi-structured interviews post-natally were undertaken with women who had received a diagnosis of GD in the preceding six months. Invitations to participate were sent out with appointment letters from Sheffield University Teaching Hospital NHS Trust for a postnatal oral glucose tolerance test (OGTT). A purposive approach was used to achieve a maximum-variety sample (age, parity, socioeconomic status, ethnicity). OGTT non-attenders were targeted, by further study invitations offering a home visit or telephone interview. Interviews were audio-recorded, transcribed and independently coded using the COM-B framework. A socio-ecological approach was adopted to understand the context of intervention facets. The final model was developed within the research team.

## Findings

We interviewed 27 women diverse in age and parity, most were White-British (20/27). Applying the COM-B framework, we identified sixteen key subthemes which reflected either: capability, opportunity, or motivation components of the model. Four domains adapted from the socio-ecological model: 'individual', 'family life', 'community and healthcare provision', contextualised factors important for these women in terms of behaviour change. 'Emotional response' at the individual level was highly motivating or demotivating. Factors related to 'Family life' and 'Community' were particularly dominant and could

either facilitate or impede change. Many participants relied on 'Healthcare provision' during the postnatal periods with timing and positive relationships key to good care.

### Consequences

The application of the COM-B framework in a socio-ecological context provides novel insight into the factors crucial for postnatal behaviour change in women with GD. Intervention facets need to target the micro through to macro-levels to prove effective in this population. Future research should consider family rather than individual level interventions as this could enable sustained behaviour change and consequently prevent the development of T2DM.

### Funding Acknowledgement

This work was supported by the Royal College of General Practitioners Scientific Foundation Board, grant number SFB 2015-04. The interviews were completed while Brian McMillan was employed as an NIHR Academic Clinical Fellow (award ref: 1897). The views expressed are those of the authors and not necessarily those of the NHS, the National Institute for Health Research (NIHR), or the Department of Health.

## 1.7

### SuMMiT-D - Formative development of a mobile-health based system to support type 2 diabetes medication adherence in primary care: qualitative study with British South Asian patients

**Presenter: Nikki Newhouse**

Co-authors: Suman Prinjha, Ignacio Ricci-Cabello, Andrew Farmer

### Institutions

University of Oxford, Balearic Islands Health Research Institute (IdISBa)

### Abstract

#### Problem

Type 2 diabetes is a lifelong condition affecting four million people in the UK. Alongside lifestyle change, medicines are used to lower blood glucose, blood pressure and lipids. However, up to half of these

medicines are not taken as prescribed and many interventions for improving medicine use are ineffective. British South Asians are up to six times more likely to have type 2 diabetes than the general population, to develop the condition at a younger age, and to experience related complications. Evidence to support the use of mobile phones in type 2 diabetes management has shown positive impacts on glycaemic control. The Support through Mobile Messaging and digital health Technology for Diabetes (SuMMiT-D) project is developing and testing a mobile-device based system delivering short automated messages to offer support for medicine use alongside usual care to people with type 2 diabetes in primary care. This qualitative study explored the views of British South Asian patients with type 2 diabetes on the feasibility of such a system.

#### Approach

Sixty-seven adults took part in eight focus groups from the Punjabi Sikh, Pakistani Muslim, Gujarati Hindu, Bangladeshi Muslim and Gujarati Muslim communities. Purposive sampling reflected community diversity in terms of age group, educational and occupational background, fluency in English, place of birth, time since diagnosis and self-reported use of digital devices. Participants were recruited by the Centre for BME Health through local community organisations in Leicester, and discussions were conducted in Punjabi, Bengali, Sylheti, Urdu, Hindi and English.

#### Findings

Users and non-users of digital devices discussed a range of self-management challenges and suggested ways that a messaging system could help. Five themes were identified: message content and design; language preferences; family involvement; different digital formats for different groups; face-to-face groups for those who do not use digital devices. Participants found messages supporting medication adherence to be acceptable and relevant, but they also wanted more information on topics including South Asian foods and religious fasting. Other information needs included messages about diet, physical activity, stress management, natural and complementary approaches, and current research. Brief messages delivered in English were perceived to be acceptable.

## Consequences

It is recognised that health interventions that are culturally adapted to the needs of specific groups are more likely to be acceptable, but evidence to support the effectiveness of adapted interventions is limited. A messaging intervention that addresses holistic self-management of type 2 diabetes is more acceptable to British South Asian people with type 2 diabetes than one that focuses only on medication adherence. However, for such an intervention to meet specific needs, encourage uptake and credibility, it would also have to include a range of culturally-relevant messages and consider the needs of those who do not routinely use digital devices.

## Funding Acknowledgement

This study was funded by the National Institute for Health Research (NIHR; Programme Grants for Applied Research programme [RP-PG-1214-20003]). The views expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

## 1.8

### People with NAFLD also drink alcohol - how should we advise and manage this expanding group in primary care? A systematic review.

**Presenter: Hannah O'Keefe**

Co-authors: Hannah O'Keefe, Dawn Craig, Daniel Stow, Quentin M Anstee, Barbara Hanratty

## Institutions

Population Health Sciences Institute, Newcastle University

## Abstract

### Problem

Liver disease incidence, morbidity and mortality is increasing in the UK. Most liver disease is lifestyle related with alcohol related liver disease and non-alcoholic fatty liver disease (NAFLD) accounting for the majority of chronic liver disease in the UK. Traditionally, little attention has been paid to people drinking alcohol at above modest recommended limits who also have NAFLD. The incidence of obesity and

diabetes is rising and the percentage of the population drinking at above recommended limits is significant. There is little guidance available on how to advise patients with a diagnosis of NAFLD around safe alcohol consumption. Interest in the relevance and implications of this 'dual' pathology has led to the publication of several recent reviews, each with different questions, remit and methodology, but all looking to elucidate the role of moderate alcohol consumption in the NAFLD disease process. The purpose of this systematic review is to synthesise the evidence around the role of moderate alcohol consumption in influencing progression to severe liver disease in those with NAFLD. This will help guide those working in primary care to advise and manage patients with NAFLD who also drink alcohol.

## Approach

Studies were included if they were looking at the role of moderate alcohol in influencing progression to severe liver disease in those with diagnosed NAFLD. We searched the following electronic bibliographic databases: MEDLINE, EMBASE and The Cochrane Library and clinical trials.gov. We also searched for additional grey literature on CPCI-S (Conference Proceedings Citation Index – Science, Web of Knowledge) and OpenGrey (<http://www.opengrey.eu/>). There were no language restrictions. Titles and/or abstracts of studies were screened independently by two review authors to identify studies that potentially met the inclusion criteria outlined above. The full text of these potentially eligible studies were retrieved and independently assessed for eligibility by two review team members.

## Findings

The searches identified 3780 unique references. Of the titles and abstracts screened 85 were selected for full text screening. At the time of abstract submission full texts were being assessed for inclusion in the systematic review. From screening and early full text assessment it appears there are conflicting results regarding the role of alcohol consumption in NAFLD progression. Some studies report a protective effect and other studies suggest that any level of alcohol consumption is harmful in those with diagnosed NAFLD. The systematic review and conclusions will be completed and presented at the SAPC annual conference.

## Consequences

With increasing levels of obesity and Type 2 Diabetes we are going to be diagnosing an increasing number of individuals with NAFLD. These people will be drinking alcohol in varying amounts and looking for advice from primary care practitioners. This systematic review will allow GPs to give evidence based advice to this increasing population.

## Funding Acknowledgement

This review is independent research supported by the National Institute for Health Research (NIHR In Practice Fellowship, Dr Helen Jarvis, NIHR IPF-2018-12-008). The views expressed in this publication are those of the author(s) and not necessarily those of the NHS, the National Institute for Health Research or the Department of Health and Social Care.

## 1.9

### How common is antidepressant use in people with type 2 diabetes and who is at risk?

**Presenter: Kingshuk Pal**

Co-authors: Manuj Sharma, Naaheed Mukadam, Irene Petersen

## Institutions

UCL

## Abstract

### Problem

Diabetes is the third most common long-term condition in England after hypertension and depression, and it affects around six percent of the population. People with type 2 diabetes (T2D) appear to be more at risk of developing depression and have poorer outcomes if they are depressed. However estimates of the prevalence of depression in people with type 2 diabetes vary widely, ranging from 0-39%. However, there is very little information on populations within the UK. This study examines antidepressant treatment in people with type 2 diabetes and identify those most at risk.

### Approach

This was a retrospective cohort study using data from The Health Improvement Network (THIN) primary care database. THIN contains electronic primary care health records for approximately 12 million patients in the UK. The majority of diabetes and depression is usually treated and managed in primary care hence diagnoses, monitoring and treatments is captured by THIN. We calculated the number of new and prevalent users antidepressant treatment in people with type 2 diabetes compared to the general population. We used a Poisson regression to examine initiation of antidepressant treatment in people with and without type 2 diabetes and the relationship between initiation and gender, age and deprivation (quintiles of Townsend scores).

## Findings

There were 466,399 people with a diagnosis of T2D, of which 328,277 (70%) were newly diagnosed between 2000 and 2016. The total follow up time was 1,199,362 years. The hazard ratio for initiation antidepressant medication was 1.18 (95% CI 1.17 to 1.20) in people with type 2 diabetes compared people of similar age and gender, but without type 2 diabetes. Women with type 2 diabetes were about 50% more likely than men to initiate antidepressants (HR 1.53, 95% CI 1.17 to 1.20). Antidepressant treatment in people with type 2 diabetes increased with social deprivation and rates of anti-depressant prescribing were 62% higher in the most deprived quintile (95% CI 1.59 to 1.65) compared to the least deprived. People who were prescribed insulin were 50% more likely to be on antidepressant treatment than individuals not on insulin (HR 1.51 95% CI 1.46 to 1.57).

## Consequences

Patients with type 2 diabetes are at increased risk of developing diabetes, but the risks vary by age, gender, treatment and deprivation. Targeting screening at higher risk patients may help clinicians to identify, treat and improve outcomes for patients with comorbid common mental health problems and type 2 diabetes.

## Funding Acknowledgement

Kingshuk Pal holds a clinical research post funded by the NIHR SPQR.

## I.10

### Costing the participation of general practice in a pilot randomised controlled trial to increase attendance at diabetic retinopathy screening

**Presenter: Fiona Riordan**

Co-authors: Susan Ahern, Susan Smith, Aileen Murphy, John Browne, Patricia M Kearney, Sheena M McHugh

#### Institutions

School of Public Health, University College Cork, Royal College of Surgeons in Ireland, Department of Economics, Cork University Business School, University College Cork

#### Abstract

##### Problem

Research participation by healthcare providers is critical to the conduct of research and translation of evidence into practice. However, GPs report lack of time, capacity, and the risk of hindering patient flow as inhibiting factors. Nonetheless, the economic cost to general practice of participating in research is rarely investigated or reported.

##### Approach

We have estimated the economic cost of participating in the development and implementation of an intervention to increase attendance at diabetic retinopathy screening from a general practice perspective. In a pilot RCT, eight practices were randomly assigned to either intervention or waitlist control. The intervention, delivered over 6 months, comprised (i) audit of patients with diabetes to identify non-attenders of DRS, (ii) addition of electronic prompts to patient records, (iii) delivery of GP-endorsed reminders and information leaflets to eligible patients. Four intervention components were costed: participation in intervention briefing (human resources), intervention delivery (human resources), intervention delivery (consumables), and contact with the research team (human resources). Data were collected at intervention briefing and during research phone calls with practices to establish the number of eligible patients, profession of staff delivering the intervention, time taken to deliver, and consumables required. Resources were valued in line with the

Health Information and Quality Authority's (HIQA) guidelines for the Economic Evaluation of Health Technologies in Ireland 2019.

##### Findings

Preliminary analysis is based on two practices that have completed intervention delivery. Following the audit, 19 patients were eligible to receive the intervention in Practice A and 30 patients in Practice B. The total cost of participation was €632 and €598 for practices A and B respectively. Intervention delivery (human resources) comprised 73% and 75% respectively of total cost, with delivery of reminders and information leaflets to eligible patients comprising 50% and 75% respectively of this cost. Variation in cost between practices was largely due to the number and profession of staff involved in intervention delivery.

##### Consequences

Economic costs should be captured and analysed routinely from the early stages of intervention development and piloting to inform efficient resource allocation for ongoing programme development and public health policy investment decisions. These costs will be used to inform economic analysis of a definitive trial of this intervention.

#### Funding Acknowledgement

Definitive Interventions and Feasibility Awards

## I.11

### Feasibility of a theory-based implementation intervention to increase attendance at diabetic retinopathy screening: a cluster randomised pilot trial

**Presenter: Fiona Riordan**

Co-authors: Susan Ahern, Emmy Racine, Susan Smith, Aileen Murphy<sup>3</sup>, John Browne, Patricia M Kearney, Sheena M McHugh

#### Institutions

School of Public Health University College Cork, Royal College of Surgeons in Ireland, Department of Economics Cork University Business School University College Cork



## Abstract

### Problem

Although diabetic retinopathy screening (DRS) can prevent blindness, uptake remains sub-optimal in many countries, including Ireland. Routine management of type 2 diabetes largely takes place in general practice with frequent contact between GPs and other primary care staff and people with diabetes. However, few studies have tested the feasibility of interventions delivered in general practice to enhance DRS uptake. To address this gap, we aimed to investigate the feasibility of the IDEAs (Improving Diabetes Eye-screening Attendance) intervention to improve the uptake of DRS in Ireland's national programme, RetinaScreen.

### Approach

A cluster randomised pilot trial with an embedded process evaluation and cost analysis is ongoing. Expressions of interest were sought through established GP networks. Following stratification of interested practices by size, eight practices (clusters) were randomly sampled and allocated to intervention (n=4) or wait-list control arms (n=4). The intervention involves reimbursement, a practice audit of 100 randomly selected patients with diabetes, electronic prompts targeting professionals, GP-endorsed reminders (face-to-face, phone and letter), and a patient information leaflet. Eligible patients had type 1 or type 2 diabetes and not attended DRS. Intervention practices delivered the intervention between July 2019 and January 2020. The intervention is currently being delivered in wait-list control practices. Data were collected during research phone calls with practices, to understand intervention delivery (fidelity, feasibility) and research processes. Semi-structured interviews are ongoing with a purposive sample of staff and patients to examine intervention acceptability and feasibility.

### Findings

Sixty practices expressed an interest in the study. Across intervention practices, at baseline 22-30% of patients had not attended DRS. Preliminary analysis indicates that the intervention was feasible, albeit there were delays to the audit and prompts due to limited access to Excel, and limited experience in audit or adding prompts. In terms of fidelity, practices varied in the sequence or content of reminders:

phone calls were conducted after letters (n=1); reminder letter prepared by the practice were used in lieu of the study template (n=1).

### Consequences

The IDEAs intervention appears to be feasible in GP, though practices may need more specific training in the use of software to support audits. Findings will be used to refine the intervention and study procedures. A definitive trial will determine whether IDEAs is a cost-effective intervention to improve DRS uptake.

### Funding Acknowledgement

Health Research Board Definitive Interventions and Feasibility Award

## I.12

**A THIN database study: What are the effects of the Quality and Outcomes Framework (QOF) on assessment, diagnoses and management of erectile dysfunction and testosterone deficiency in patients with Type 2 Diabetes Mellitus in primary care?**

**Presenter: Patricia Schartau**

Co-authors: Irwin Nazareth, Laura Horsfall, Manuj Sharma, Mariam Molokhia, Mike Kirby

### Institutions

University College London (IN, LH, MS), King's College London (MM), University of Heartfordshire (MK)

## Abstract

### Problem

Erectile dysfunction (ED) and testosterone deficiency (TD) are common and interlinked complications of Type 2 Diabetes Mellitus (T2DM), and independent predictors of cardiovascular disease. International guidelines recommend that men with T2DM are assessed and treated for ED and TD, which was included into the Quality and Outcomes Framework (QOF) from 2013–2014 only. We aimed to explore the effects of QOF on ED and TD diagnoses and management in patients with T2DM.

### Approach

The study population included males ( $\geq 18$  years) with T2DM and contributing to UK GP electronic health

records from 1999–2016. Adjusted incidence rate ratios (IRRs) were estimated using multivariate Poisson regression.

### Findings

In total 110 423 adult males (mean age 60 years) with T2DM were included. During follow-up, 53 003 (48%) had a recorded ED assessment, 14 355 (13%) an ED diagnosis and of these 74% had received at least one phosphodiesterase-5 inhibitor (PDE5i) prescription. ED assessments increased from 7.7 per 1000 PYAR in 2012 (95% confidence interval [CI] = 7.0 to 8.4) to 610 in 2013 (95% CI = 604 to 617) when included into QOF but dropped to 59.4 (95% CI = 56 to 63) in 2016. Compared with 2012, the adjusted incidence of recorded ED diagnoses and PDE5i prescriptions doubled in 2013 (incidence rate ratio [IRR] 2.0; 95% CI = 1.8 to 2.1) before falling to below pre-QOF levels in 2016 (IRR 0.89; 95% CI = 0.82 to 0.97). Of 1187 diabetic men diagnosed with ED or receiving a PDE5i in 2015, 213 (18%) had a minimum of one testosterone measurement, of which 45 (21%) met biochemical criteria for hypogonadism typically requiring treatment (testosterone  $\leq$  8nmol/l). Nine (20%) subsequently received testosterone replacement therapy (TRT). The multiple regression analysis showed a significant effect of age on ED assessment, diagnosis and PDE5i prescriptions ( $p < 0.001$ ) with most assessments, diagnoses and PDE5is prescriptions completed in the 55–60y old age group. There was no effect of Townsend scores (deprivation index).

### Consequences

In order to improve diagnosis and management of ED and TD in T2DM patients and thereby (cardiovascular and metabolic) health and quality of life, incorporation of guidelines into a GP framework and/or financial incentives may be required alongside solid GP education.

### Funding Acknowledgement

Funded by King's College London as part of the ACF

## I.13

### How can we optimise the impact and effectiveness of national clinical audit data?

**Presenter: Thomas Willis**

Co-authors: Ana Weller, Steph Wilson, Mohamed Althaf, Alex Wright-Hughes, Rebecca Walwyn, Amanda Farrin, Robbie Foy

### Institutions

Leeds Institute of Health Sciences, University of Leeds; Centre for HCI Design, City, University of London; Leeds Institute of Clinical Trials Research, University of Leeds

### Abstract

#### Problem

Audit and feedback (A&F) aims to improve patient care by reviewing health care performance against explicit standards. The National Diabetes Audit (NDA) includes around 8,000 general practices in England. A&F has been shown to have significant effects on patient care, with the potential for substantial population impacts. However, the effects are variable and research is needed to optimise the content, format and delivery of feedback.

#### Approach

We conducted an innovative, fractional factorial web-based experiment. We worked with five national clinical audits, including the NDA, to evaluate six ways of enhancing the impact of feedback: recommending specific actions; using comparators that reinforce desired behaviour change; minimizing extraneous cognitive load for feedback recipients; providing feedback in more than one way; providing short, actionable messages following by option detail; and including a patient statement. The experimental design meant that participants were randomised to one of 32 experimental combinations of these six components. The design permitted consideration of the effects of individual experimental components, as well as two- and three-way interactions. Collaborating audits shared an invitation to participate with their existing distribution networks. Participants completed the study via a specially designed online portal. After indicating the audit with which they were familiar, participants were presented with an excerpt of an

audit report. This was followed by a short questionnaire. The primary outcome was intended enactment of a specific clinical recommendation. Other outcomes assessed were comprehension, user experience, preferences and engagement with the content.

#### Findings

Analysis is underway, with the primary analysis drawing upon data from 638 participants, including 204 for the NDA. We will consider the findings from the NDA respondents in comparison with those of the entire sample.

#### Consequences

The findings will have implications for the design of national clinical audits, with the potential to enhance the effectiveness of the NDA and improve the delivery of care for patients with diabetes in UK primary care. We will also highlight more general lessons for the use of clinical audit and feedback in primary care.

#### Funding Acknowledgement

The research was funded by the National Institute for Health Research (NIHR) under its Health Services & Delivery Research Programme (Reference Number 16/04/13). The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.

## J.1

### Clinical Reasoning in Undergraduate Primary Care Medical Education: An International Systematic Review

**Presenter: Nur Faraheen Binti Abdul Rahman**

Co-authors: Nathan Davies, Julia Suhaimi, Sharifah Najwa Syed Jamalullail, Faridah Idris, Sophie Park

#### Institutions

University College London, University of Malaya, Universiti Sains Islam Malaysia, Universiti Putra Malaysia

## Abstract

### Problem

Students learn clinical reasoning for decision making in many settings including in the primary care practice. But, the implications of the primary care setting as an environment to teach and learning clinical reasoning is unclear. To our knowledge, this is the first study conducted on clinical reasoning teaching and learning in the undergraduate primary care practice setting. We designed a systematic review to identify and describe the educational activities, barriers to and facilitators for clinical reasoning teaching and learning in undergraduate medical education.

### Approach

Using the BEME Systematic Review Guideline; empirical studies in English and Malay Languages were selected using a predetermined inclusion and exclusion criteria through searches in the MEDLINE, PsychINFO, EMBASE, CINAHL, ERIC databases and grey literature.

### Findings

An initial scoping search using the key search terms of “clinical reasoning in medical education” in the PubMed database yielded 1583 articles of interest. With the help of an information specialist, a specific search strategy using a combination of expanded MESH terminologies and individual keyword resulted in 814 from a combination of databases i.e. EMBASE, MEDLINE and Psych INFO. Following deduplication, the numbers were reduced to 699 titles. Third scoping using the final consensus terminologies from MEDLINE yielded 313 titles. We reviewed all the abstracts and estimated that approximately 30% of full-text articles are relevant to the review questions. We anticipated this number will double when we include other databases. In the next three months, we will extract and analyse the findings using narrative synthesis. Themes are coded in the areas of clinical reasoning teaching and learning activities, conceptual framework underlying the clinical reasoning education, issues in implementations, facilitators and barriers characteristics, as well as outcomes particularly regarding students’ experiences and roles and experiences of stakeholders.

### Consequences

Curriculum developers and clinical teachers may benefit from this review from the typology of the clinical reasoning education practised globally. It can guide clinical reasoning module design and development in the primary care setting. Gap for future research recommendation will also be highlighted.

### **Funding Acknowledgement**

This review is supported by funding from the Ministry of Education, Malaysia, awarded to Dr. Nur Faraheen Abdul Rahman.

## **J.2**

### **How can we optimise medical education to support the development of person-centred values, beliefs and attitudes?**

#### **Presenter: Dr Aarti Bansal**

Co-authors: Professor Joanne Reeve, Dr Caroline Mitchell, Dr Sophie Park, Dr Katie Shearn, Sarah Greenley

#### **Institutions**

Hull York Medical School, University of Sheffield, University College London, Sheffield Hallam University

#### **Abstract**

##### **Problem**

Person-centred care (PCC) is considered central to the delivery of high quality care in the context of long-term conditions, multimorbidity and complexity where evidence suggests it can lead to improved patient outcomes. Yet current evidence points to an erosion of person-centredness in medical students as they progress through training. This is despite the long-established delivery of person-centred consultation skills training in medical medical schools; leading us to query whether there are gaps in our educational strategy in developing person-centredness. Behaviour change theories suggest that values, beliefs and attitudes drive actions, so perhaps education strategies need to explicitly focus on these elements in developing professional capacity for PCC. However we don't yet know how to best educate clinicians for person-centred values, beliefs and attitudes. We regard education as a complex

intervention with multiple component parts and a variety of potential outcomes depending on the interactions between multiple factors. A realist review is particularly suited to investigating complex interventions. Our research question asks: How, why, for whom and in what circumstances educational programmes that aim to promote a person-centred approach change medical professional's values, beliefs and attitudes?

##### **Approach**

Realist review based on the published RAMESES guidance. With information specialist support we completed a search of key medical and education databases ( MEDLINE, ERIC, EMBASE, HMIC ) and grey literature sources through Boolean combinations of relevant free-text and subject heading terms; limited to papers published from 2000 and in the English language. Inclusion criteria (educational interventions; aimed to change person-centred values, beliefs and attitudes) were applied with double screening of 10% abstracts and full texts to identify final data set. An initial thematic analysis oriented us to the data, before moving to a detailed analysis of Context-Mechanism-Outcome (CMO) configurations to generate our final programme theory.

##### **Findings**

2494 initial identified abstracts were screened to generate a final data-set of 124 papers. At this interim stage of analysis, we have identified three key themes which suggest that person-centred values, beliefs and attitudes may be supported by:

1. Critical engagement with the values, knowledge, concepts and evidence that underpin the practice of PCC,
2. Reflection on clinical practice that supports transformative learning and self-awareness,
3. Clinical placements and experiences in which students engage with patient narratives and develop partnerships in their relationships with patients and preceptors.

##### **Consequences**

Our final output will be a refined programme theory which will describe the key components of an educational framework to optimise the development of person-centredness in medical students. We expect

the findings to have wide curricular implications and to be used to inform, develop and evaluate existing educational strategies.

### **Funding Acknowledgement**

NIHR : This research is funded by an In-Practice Fellowship awarded to Dr Aarti Bansal

## **J.3**

### **Training the Future Doctor: Evaluating General Practice in the HYMS MBBS Curriculum**

**Presenter: James Bennett and Puja Verma**

Co-authors: Puja Verma, Joanne Reeve, Kevin Anderson

### **Institutions**

Academy of Primary Care, Hull York Medical School

### **Abstract**

#### **Problem**

Recruitment and retention of General Practitioners is in crisis. The Wass Report highlighted the relationship between GP careers and undergraduate training, emphasising the responsibility of medical schools to provide experience of authentic general practice. HYMS is rightly proud of its primary care teaching, with the largest proportion of any UK medical school curriculum (19%) delivered by GPs and also the largest proportion of time (15%) that students spend learning in a general practice setting. What is not clear is whether the content and methods of delivery are in keeping with recent national guidance. This study aims to define authentic General Practice in the context of undergraduate medical education. It will evaluate if HYMS meets its duty as an educational institution to expose students to authentic General Practice, enabling them to make more informed career choices and potentially helping address the workforce crisis. As far as we know this is a new approach to evaluating an undergraduate curriculum.

#### **Approach**

We used the Wass report and RCGP-SAPC curriculum guidance, identifying what a curriculum should contain in order to deliver high quality patient-centred community teaching. We also analysed key

curriculum documents from comparable health care systems in Canada, New Zealand and Australia to ensure that themes identified were internationally recognised as crucial to the curriculum of authentic primary care. This structured thematic analysis developed seven core themes on which a novel framework was built to analyse the HYMS curriculum. Our data source included all curriculum documents describing learning outcomes for the MBBS program. We used a modified framework analysis approach to undertake thematic analysis of the data set, identifying the presence/absence of core concepts. For each theme, we described whether the coded entry was fully recognised in content/delivery (marked as green), partially (amber), or not recognised at all (red).

#### **Findings**

Our analysis reveals themes comprehensively covered, including person centred care, communication skills and reflective practice. It also highlights potential gaps such as the hidden curriculum, generalist medicine, and methods of delivery. At this point we are not clear if 'red areas' represent true curriculum gaps, or are an artefact of the stage 1 study design. Therefore stage 2 will involve semi-structured interviews and focus groups with key stakeholders to further evaluate potential gaps.

#### **Consequences**

Medical schools have a key role in exposing their students to authentic general practice during undergraduate training. Although HYMS delivers high volume of teaching in general practice, our analysis reveals that the medical school may not be delivering the recommended content. Our work systematically identifies potential priority areas for the school to address. This model of evaluation may then prove a transferable tool for other medical schools to follow suit.



## J.4

### Learning and recommendations from Significant Event Analyses of Bowel Cancer cases

**Presenter: Nicola Cooper-Moss**

Co-authors: Neil Smith, Umesh Chauhan

#### Institutions

1. School of Medicine, Faculty of Health and Biomedical Sciences, University of Central Lancashire, Preston. Lancashire and South Cumbria Cancer Alliance.

#### Abstract

##### Problem

Bowel cancer is the second leading cause of cancer-related mortality in the UK. Early diagnosis of bowel cancer provides opportunities for curative treatment and improved survival. Significant Event Analysis (SEA) is a well-established quality improvement activity and method for learning from new cancer diagnoses. The existing literature has primarily focused on learning from SEAs of lung cancer cases and emergency admissions. This project aimed to provide additional insights into the diagnostic processes for bowel cancer and to develop the use of multi-site SEA as an educational tool.

##### Approach

Seventy-five General Practices across Pennine Lancashire were invited to undertake SEAs of one or more bowel cancer cases from the preceding three years as part of an incentivised scheme. Anonymised data were collected on a standardised form. Practices provided learning outcomes and recommendations for the practice, hospital and local Clinical Commissioning Groups (CCGs). 51/75 (68%) practices have submitted data so far. Data collection and thematic analysis is currently ongoing and the completed results will be presented at the meeting.

##### Findings

The preliminary analysis of results has highlighted an increased awareness of “red flag” bowel cancer presentations; particularly rectal bleeding and iron deficiency anaemia. Caution should be exercised due to diagnostic overshadowing from haemorrhoids and presumed intentional weight loss. Rectal examination

was considered an essential component to clinical assessment. Clinicians were encouraged to consider a lower threshold for 2-week suspected cancer referrals and the use of faecal immunochemical tests; particularly for younger patients or patients presenting with atypical symptoms. The diagnostic limitations of computed tomography scans were recognised, however, direct access scanning was advocated when endoscopic investigations were deemed inappropriate. Strategies for reducing missed diagnoses included continuity of care, pro-active patient follow-up and safety-netting. Both General Practices and CCGs were recommended to improve the promotion of bowel cancer screening and implementation of standardised systems for the follow-up of non-responders. Conversely, clinicians should not be falsely reassured by previously negative screening results. Commissioners were recommended to continue support of multi-site SEA projects; oversee effective communication between primary and secondary care; improve flexibility with suspected cancer referrals, and to address deficits in patient education on early symptom recognition.

##### Consequences

Thematic analysis of multi-site SEAs provides an opportunity for collaborative learning from new cancer cases. These findings confirm and provide additional insights to the existing literature on bowel cancer from a primary care perspective. The broad range of cases from multi-site SEA should be utilised across Primary Care Networks for peer-peer learning and identification of Network-wide improvements in cancer pathways. Further research is required regarding the use of SEA for improving and sustaining cancer outcomes.

##### Funding Acknowledgement

The analysis was undertaken as part of an academic fellowship from East Lancashire CCG.

## What do students value in their General Practice placements? A multi-centre evaluation.

**Presenter: William Coppola**

Co-authors: Anthony Codd (1), Hugh Alberti (1), Kevin Anderson (2), Martina Kelly (3), William Coppola (4), Sophie Park (4).

### Institutions

(1) Newcastle University, (2) Hull-York Medical School, (3) University of Calgary, (4) University College London

### Abstract

#### Problem

Medical schools are using general practice (GP) placements to deliver a significant proportion of the undergraduate medical curriculum – on average 13% in the UK. Whilst we are developing an understanding of the learning taking place in GP, we are yet to explore fully students' perceptions about the value of their GP placements. The Wass report reminds us of the responsibility of medical schools to improve GP placements, to address the current GP recruitment crisis. We need to identify and understand students' experience in GP placements: firstly, to improve ways to support students' engagement with general practice learning and assessment, secondly, to inform integration of doctor's training with the future needs of society, based on a need for more general practitioners and community care. We sought to identify what students do, and do not value in GP placements, and what students feel is transferable to their future practice.

#### Approach

Student year-groups undergoing GP placements at three UK medical schools were invited to provide feedback via an online survey at the end of their placements. Three additional feedback questions were included:

1. What did you value about your GP placement?
2. What did you not value about your GP placement?
3. What did you learn that might be relevant for your future practice?

Pilot studies across the individual institutions were used to generate initial coding themes. We identified

similarities with the Manchester Clinical Placement Index (MCPI). We mapped themes to the MCPI, developing additional codes for items inductively identified within the data. A process of inductive and deductive thematic analysis is being used across the feedback cohort data, to map to identified codes, and iteratively develop themes. Teleconference data clinics are being held across the sites.

#### Findings

Preliminary data from three of the UK medical schools (560 respondents) show that students particularly value active learning, seeing a wide variety of real patients and receiving feedback. They value welcoming, supportive and well-prepared tutors and staff. Poor timetabling, organisation, and preparation of tutors, and lack of patient contact and protected teaching time were the most common components valued least. Learning for future practice was primarily reported as development of the consultation process, relationships with patients, and career considerations. Full findings from the three UK medical schools will be presented.

#### Consequences

Cross-institutional analysis highlights how GP fulfils many existing MCPI characteristics of good workplace placements. Students reported excellent relevance to future practice. In addition, student reference to GP-based tutorials/seminars and assessments, demonstrate how GP placements can be perceived as holistic learning environments, potentially normalising GP as a 'home' learning context for students. These findings provide useful insights into the development of student learning, quality assurance, and teaching materials, as well as guidance for tutors and faculty.

## J.6

### Can we measure participation in communities of practice? Development and validation of a tool to measure belongingness as a proxy for participation in undergraduate clinical learning.

**Presenter: Rob Daniels**

Co-authors: Professor Alex Harding, Dr Mayam Gomez-Cano and Dr Jane Smith

#### Institutions

University of Exeter College of Medicine and Health, Exeter, United Kingdom

#### Abstract

##### Problem

Participation in communities of practice is postulated as a key mechanism for work-based learning, however the use of both terms in educational discourse is highly variable – ranging from technical to vernacular. Belongingness is a related single concept that is easier to define and measure, representing the bond that holds clinical teams together. As such, it is likely to represent an important component of effective communities of practice. Development of a tool that objectively measures belongingness may be useful in adding rigour to discussions regarding work-placed learning, with the ability to compare clinical placements and other learning environments.

##### Approach

After identifying relevant material from the literature a draft belongingness assessment tool was developed, based on previously published work. This was piloted on 181 undergraduate medical students and the results subjected to factor analysis. The final version was then used to identify whether differences exist between different clinical teaching environments.

##### Findings

This tool had internal and external validity, with Cronbach's  $\alpha = 0.940$ , and detected statistically significant differences between primary and secondary care teaching environments.

##### Consequences

Statistically significant differences in student belongingness exist between primary and secondary

care learning environments. The belongingness scale described in this study is a valid tool for the study of undergraduate medical students, with potential to investigate how varying student experiences of Communities of Practice influence teaching and learning outcomes. This has potential applications in the monitoring of undergraduate and postgraduate training placements, quantifying the strength and effectiveness of student- teacher relationships, in a way that is not currently possible.

#### Funding Acknowledgement

No funding received

## J.7

### Can the integration of Physician Associates into Primary Care Services be facilitated by curriculum design?

**Presenter: Claire Darling-Pomranz**

Co-authors: Benjamin Jackson

#### Institutions

University of Sheffield - Academic Unit of Primary Care

#### Abstract

##### Problem

Designing a curriculum for a new physician associate (PA) programme at the University of Sheffield to address barriers to PA integration into Primary Care services.

##### Approach

Grounded Theory Method research was carried out to understand factors affecting the integration of PAs into primary care services and inform curriculum development of a new PA programme at the University of Sheffield.

##### Findings

A conceptual map of the likely barriers and facilitators to PAs working in primary care teams in the future was developed and two major areas were identified to be addressed through targeted curriculum design including an adaptation of national course requirements. These were the ability to handle complexity and manage uncertainty in a first contact

role and a lack of general understanding of their professional role and competencies within the primary care community.

## Consequences

Specific sessions focusing on developing clinical reasoning skills and the role of the PA as a generalist were developed. In the first year, 30hrs of additional consultation skills and clinical reasoning sessions were scheduled. First year students also complete a project on 'the physician associate as a generalist in UK clinical care' individually and in groups to highlighting the ambassadorial role they needed to adopt in an unfamiliar clinical role. In the second-year clinical placements maximise a robust exposure to patients as first contact providers, allowing students to develop these clinical reasoning skills in practice. Primary care placement hours were more than doubled from the required 180 hours to 420 hours and Emergency Medicine placements from 180 hours to 280 hours meaning that 50% were in first contact roles.

Additionally, wherever possible General Hospital Medical placements were encouraged to be in emergency medical assessment units. To date 36 newly qualified PAs have graduated. Their performance at the Faculty of Physician Associates (FPA) examination ranks our new course as a top performing programme in the UK. The 2018 FPA Census suggests on average 28.6% of PAs work in GP. At the time of writing, 34.6% of PAs employed in the South Yorkshire and Bassetlaw region are employed in GP and of the University of Sheffield PA graduates, 16.6% went directly into GP posts. External engagement with primary care during our curriculum development has helped us to maintain strong PA student clinical placements with very good evaluation in a crowded placement setting. We are now seeing some practices employ more than one PA as part of their team and an increase in utilisation of PAs across primary care. The limited number of our graduates going directly to primary care may be limited by the opportunities for employment and an underlying anxiety of newly qualified clinicians to enter primary care directly. This suggests that ongoing regional developments of a preceptorship model for new PAs entering primary care would be a useful development.

## J.8

### Is it feasible for medical students, trainees and health professionals with little or no research experience to deliver high quality primary care research? A proof of concept study to test out the Primary care Academic Collaborative (PACT)

**Presenter: Polly Duncan**

Co-authors: Polly Duncan, Sam Merriel, Orla Whitehead, Ebrahim Mulla, Victoria Silverwood, Rupert Payne, PACT.

## Institutions

University of Bristol (PD, RP), Exeter University (SM), Newcastle University (OW), University of Nottingham (EM), Keele University (VS)

## Abstract

### Problem

Primary care is seen by many undergraduate medical students and health professionals as a non-academic specialty. In other specialties, such as surgery and anaesthetics, collaboratives of trainee doctors are well established, delivering high impact research published in high ranking academic journals. There are no existing UK-wide primary care trainee collaboratives. PACT aims to engage medical students, GP trainees and primary health care professionals (hereinafter PACT members) in high-quality research by supporting them to collectively take part in research projects. Each project will combine data collected by individual PACT members from their practices. Data may also be used at a practice level, benchmarked against other practices, for quality improvement (potentially an important buy-in for practices). The aim of this study is to evaluate the feasibility of recruiting PACT members from up to 20 GP practices in England to take part in a proof of concept study focusing on home visits. This aim will be met by: (i) Examining the number and characteristics of PACT members and GP practices who express an interest in taking part and, of those selected, the proportion that collect data. (ii) Exploring the barriers and enablers to engaging PACT members and their GP practices in the project

## Approach

This study will take place in up to 20 GP practices in England recruited via the 15 Clinical Research Networks. Five project champions will support project delivery, each responsible for 4 practices in their geographical area. A mixed methods process evaluation is planned comprising serial surveys and semi-structured interviews with PACT members and (where applicable) GP trainers who are responsible for their general supervision. For the qualitative interviews, purposive sampling will be used to capture a range of experiences and views of PACT members (e.g. interested/not interested in taking part, stage of training, previous research experience, geographical region) and GP trainers (e.g. research active/inactive practice, interested/not interested in research).

## Findings

This project will start in the Spring 2020. By July 2020, we will have data on the characteristics of PACT members and practices that register an interest in taking part; data from the first PACT member and GP trainer surveys; and insights from some of the early semi-structured interviews

## Consequences

This study is the first England-wide study to test the feasibility of conducting high quality primary care research using a network of students, trainees and health professionals with little experience in research. PACT has the potential to increase capacity for primary care research in the UK and, through engaging medical students and early career health professionals in research, to change current opinion that primary care is a non-academic speciality. Conducting a thorough process evaluation of the project is key to understanding the barriers and enablers to delivering research using the PACT model.

## Funding Acknowledgement

The study is funded by the RCGP Scientific Foundation Board

## J.9

### Has the Bawa-Garba case had an effect on trainee engagement with reflective learning?

**Presenter: Dr Laura Emery**

Co-authors: Dr Ben Jackson

## Institutions

The Academic Unit of Primary Care

## Abstract

### Problem

Reflective learning is integral to postgraduate medical training, appraisal and revalidation. In general practice (GP) training it is used to evidence curriculum coverage and attainment of General Medical Council (GMC) appointed competencies for progression to Certificate of Completion of Training (CCT). Fears of exposing weakness or incompetence have long been identified as a barrier for engagement with reflection. This is likely to have been amplified following the case of Dr Hadiza Bawa-Garba, a paediatric trainee who was requested to release her ePortfolio reflective entries to inform a GMC investigation which later resulted in the loss of her licence to practice. The aim of this study is to identify themes of the reflections of GP trainees and whether their reflective practice has changed following the Bawa-Garba case.

### Approach

A phenomenological approach to qualitative research was applied. 7 trainees and 4 trainers were recruited from the Doncaster GP training scheme and underwent semi-structured interviews which were later transcribed for analysis. Data was assigned to a coding framework and analysed to identify dominant themes.

### Findings

Entries describing mistakes and near misses were identified as most useful by trainees for developing their practice. This correlates with the dominant themes of trainee entries which were difficulty and challenge. All trainees reported knowledge of the Bawa-Garba case, describing a detrimental effect on their engagement with reflection as a result. Most notably, trainees were afraid to submit reflections on



mistakes and near misses for fear of jeopardising their careers.

### Consequences

This study suggests that the handling of the Bawa-Garba case by the GMC has had a detrimental impact not only on trainee engagement with reflective learning, but also on opportunities for trainee professional development. More research into how trainees might navigate their reflective practice in a way that manages these fears is required to maintain the value of reflection as a development tool.

## J.10

### Can medical students facilitate access to healthcare for a seldom heard group through service-learning?

**Presenter: Me and hopefully a student if they can find funding**

Co-authors: Marina Boulton, Danielle Hartland, Louis Clarke, Bryony MacPherson, Anum Salam

### Institutions

University of Manchester, Division of Medical Education

### Abstract

#### Problem

Medical students are altruistic, highly intelligent, deeply committed and well-motivated members of society. In clinical placements they often struggle to feel useful, consider themselves burdensome on the team and are reliant on supervisors to sign-off decisions. This impedes their autonomy and has potential for dissatisfaction. Our aim was to engage in a project to help asylum seekers understand their rights, navigate the NHS and improve health literacy through undertaking service-learning. This pedagogy, rare in UK medical schools, is recognised widely in North America. The work held importance for students, voluntary sector partners and people seeking asylum.

#### Approach

We undertook action research by trying out an educational intervention, critical reflection by multiple stakeholders on its success, modification of the

intervention and repetition of the process regularly. The data analysed through note-taking and discussion included numbers of people accessing help, types of problems, feedback from refugees, asylum seekers and voluntary sector hosts, and the transformational impact on the students' learning and personal growth.

### Findings

Initially passive didactic interventions were planned with delivery of presentations on how to access care; however, the students quickly realised that more active intervention is better for engagement. Participants were asking for specific advice around their own situations and the session was modified to provide more tailored service. The students were not indemnified for clinical care; however, felt very useful in facilitating GP registration, organising appointments through Choose and Book; filling out HC1 forms and explaining rights to interpretation. An anonymised log of problems was reviewed and the students identified a need for dental care and legal representation. Consequently, they are working up a multidisciplinary approach with dental and law students to widen signposting activities. The voluntary sector hosts were impressed and requested the students to teach their staff about healthcare charging regulations and managing mental health emergencies. Their recommendations led to invitations from a wider range of hosts to participate in their services. Students learning has been around the social determinants of health, inequalities and advanced communication skills. They have embedded themselves within community services where students would usually have limited contact and are producing a handbook for future students to use in the project.

### Consequences

Owning their own project and gaining confidence in managing its development has led to students feeling they have an important role in our local community. The project is thriving and the students are succession planning. In renaming the project Students for Universal Health Access (SUHA) they have demonstrated their understanding of the value of advocacy in care. They plan educational sessions on rights to care for medical students not involved in the project and their passion is palpable. We report the service-learning model has been successful and we recommend this approach.

## J.11

### Do GPs actually use online teaching resources for placements? Initial results from a new theme-based approach to clinical placements

**Presenter: Alex Harding**

Co-authors: Susanna Hill, Shamik Agashi

#### **Institutions**

University of Exeter College of Medicine and Health

#### **Abstract**

##### Problem

To what extent can a medical school curriculum inform placements? This work investigates uptake amongst tutors for a new theme-based approach to a placement curriculum that follows the principles set out in 'Teaching General Practice', the new UK GP curriculum guidelines.

##### Approach

Focus groups with GP tutors at 3 locations in the South West of England. A grounded theory interpretation of data was carried out.

##### Findings

Technical problems predominate. Uptake of new ideas is slow. Universities can do much to ease the technical burden of GPs in busy practices by improving their online access.

##### Consequences

Curriculum interventions that use online platforms may be better designed by reducing to a minimum the technical barriers and content should be as broad as possible, allowing adaptation to the variations of clinical practice.

## J.12

### The effects of small pump priming grants for GP tutors on innovations

**Presenter: Shamik Agashi or myself**

Co-authors: Shamik Agashi, Tim Marwood, Jayshree Ramsurun, Bridget Deasey

#### **Institutions**

University of Exeter College of Medicine and Health

#### **Abstract**

##### Problem

Undergraduate GP tutors often feel constrained by medical school curricula. GP tutors were encouraged to apply for grants of up to £2000 to use in innovative ways to further education at their surgeries or education hubs.

##### Approach

Process evaluation of schemes introduced by participating surgeries.

##### Findings

Given the right amount of encouragement and a curriculum that can be sufficiently adapted, GPs can be very imaginative in their use of relatively small amounts of money. We report on some of these innovations.

##### Consequences

GPs can innovate meaningfully using relatively small amounts of money.

## The Medical School as Multiple Communities of Practice: analysis of a longitudinal GP placement

**Presenter: Me (Dr Liza Kirtchuk)**

Co-authors: Preeti Sandhu, Dr Ann Wylie, Dr Anne Stephenson (co-presenter)

### Institutions

Kings College London

### Abstract

#### Problem

In 2017, GKT School of Medical Education introduced a year-long, one-day-a-week longitudinal placement in General Practice for all 371 second-year medical students. This was introduced to address the need for early integration of clinical experience and basic medical science, align with shifts in healthcare towards community settings, and provide longitudinal support for students. This innovation aligns with international trends towards longitudinal undergraduate medical placements, supported by pedagogical benefits of continuity elements. Such placements aim to develop students' professional identities through becoming part of a Community of Practice (CoP), but research applying this theoretical framework to longitudinal placements is limited. We sought to use CoP as a sensitising theory to further explore student and tutor experiences of the placement.

#### Approach

The programme was researched using a case study methodology, with student and tutor experiences explored through routine evaluation questionnaires, focus groups and field notes from a tutor training event. The entire student (n371) and tutor (n54) cohort were surveyed, with respective response rates of 64% and 41%. Seven tutors and 47 students participated in focus groups. CoP was used as a sensitising theory for inductive thematic analysis of the qualitative data.

#### Findings

Four key themes emerged: role legitimacy, identity trajectories, perceived curriculum congruence and continuity of relationships. Student role legitimacy

was enhanced by engaging authentically in clinical care and feeling welcomed into the clinical environment. The placement supported inbound professional identity trajectories, positively influencing conceptions of a career in General Practice. Tutors delivered course content with varying degrees of fidelity to the explicit curriculum, and divergence was often experienced by students and tutors as disallowed. Educational priorities of the placement were sometimes felt to conflict with those of Faculty, challenging student (and tutor) loyalties. These themes were supported and influenced by the continuity elements of a year-long longitudinal placement; with tutors, peers, learning environment and patients. Data sources were triangulated during analysis, data saturation was met across the modalities, and the authors were mindful of continually maintaining researcher reflexivity; all of which contributed to the trustworthiness of the findings.

#### Consequences

CoP theory contributes to the conceptualisation of the outcomes of an early years longitudinal GP placement, and provides a framework for understanding professional identity formation through legitimate peripheral participation. It can also elucidate tensions between the explicit and informal curriculum. Our findings support adopting the following measures: explicit introduction of CoP theory to students and tutors; supporting students to negotiate dissonance at the boundaries of CoPs through reflective practice and the development of boundary processes between disciplines delivering teaching; orientating CoPs toward clinical care to tackle interdisciplinary and hierarchical divides; encouraging legitimacy through providing students with narrow areas of clinical responsibility and promoting welcoming clinical environments.

## J.14

### Peer-facilitated, small-group learning as a solution to engaging learners in interactive, reflective education following rapid expansion of the VTS cohort.

**Presenter: Sophie Lumley**

Co-authors: Sophie Lumley, Mike Magill, Richard Price, Nicola Roberts, Mark James, Clare Mcdermott, Zoe Hook

#### Institutions

Shropshire Vocational Training Scheme

#### Abstract

##### Problem

Background: Trainees expressed dissatisfaction with learner-delivered teaching at Shropshire VTS. A new format was required to deliver the RCGP core curriculum through reflective, interactive learning for an expanded group of culturally diverse learners with mixed educational experiences. Study Aims:

- Engagement and ownership of VTS sessions by trainees.
- Explore Bloom's higher levels of knowledge through small-group, peer-facilitated discussion.
- Make efficient use of time through a "flipped classroom" strategy
- Use authentic cases to explore uncertainty, attitudes and develop "professional artistry" and synthesis of new knowledge.

##### Approach

A collaborative team of trainees and TPDs developed a format to deliver reflective, interactive learning in peer-facilitated small groups (8-10 trainees). Volunteer peer-facilitators were trained by a TPD. Feedback highlighted the difficulty some registrars had integrating new ideas with their clinical practice, so cases were written by the team to provide authentic scenarios from which to branch out into allied skills and attitudes to promote ideational scaffolding, guided by detailed facilitator notes. Cases and preparatory resources were distributed in advance to provide foundational knowledge allowing group time to be dedicated to deeper exploration in a "flipped classroom".

##### Findings

Feedback has demonstrated a transformation in the educational experience of trainees who now perceive ownership of the process and learning that is deeper, supportive and better integrated.

##### Consequences

Our experience demonstrates that peer-facilitated small group learning can transform reflective learning in a large, diverse cohort of trainees, at different stages of professional development. Involving learners in planning and facilitation promotes ownership, empowerment, leadership and satisfaction.

## J.15

### Trends in early-career general practitioners' prescribing of hormone and non-hormone therapy for menopausal symptoms

**Presenter: Parker Magin**

Co-authors: Jasmine De Giovanni, Amanda Tapley, Elizabeth Holliday, Mieke van Driel

#### Institutions

University of Newcastle (Australia), University of Queensland

#### Abstract

##### Problem

Menopausal hormone therapy (MHT) is effective in managing menopausal vasomotor symptoms, but is not without risk. The Women's Health Initiative (WHI) study in 2002 demonstrated associations between oestrogen plus progestin therapy and invasive breast cancer, coronary heart disease, stroke and pulmonary embolism. With WHI's initial publication in 2002, MHT prescribing reduced markedly. Recent studies, though, (including further WHI findings) have suggested that MHT is not associated with increased risk for all-cause, cardiovascular, or cancer mortality. We aimed to investigate temporal trends in menopausal hormone therapy (MHT) and non-MHT symptomatic drug prescribing by early-career general practitioners (GPs) for menopause-related problems in the eight-to-fifteen years post-WHI's initial 2002 publication. Specifically, we sought to establish any

increase in MHT prescribing (and in the ratio of MHT to non-MHT symptomatic prescribing) following publication of further findings from WHI.

#### Approach

A longitudinal analysis from the Registrar Clinical Encounters in Training (ReCEnT) study of GP registrars' in-consultation clinical and educational experiences in five Australian states. In ReCEnT, registrars (early-career GP vocational trainees) document 60 consecutive general practice consultations, six-monthly, on three occasions. Data collected in ReCEnT include registrar, patient, practice, consultation, and educational variables. The outcome factor for this analysis was MHT (estrogen and/or progestogen) prescribed. All menopause-related problems were included in the primary analysis. The secondary analysis included only menopause-related problems for which MHT or non-MHT symptomatic medicines were prescribed. Associations of MHT-prescribing, including year (2010-2017), were assessed by univariate and multivariable logistic regression.

#### Findings

1,736 individual registrars documented 1,569 menopause-related problems for female patients aged 25 years or over during data collection periods from 2010 to 2017. There were 756 menopause-related problems for which patients were prescribed MHT or a non-MHT symptomatic drug; 626 (39.3% [95% CI 37.4- 42.5] of the total) were prescribed MHT at the index consultation. There was no linear trend in MHT prescription over time. 130 (17.2% [95% CI 14.6- 20.1] of the total) had a non-MHT symptomatic drug prescribed. For MHT prescription versus non-MHT symptomatic menopause medications by year, there was no significant time trend.

#### Consequences

Our finding of the proportion of women prescribed MHT for menopause-related problems by GP registrars remaining constant in the period eight-to-15 years following the initial WHI publication is in the context of publication of follow-up studies providing nuance and context to the initial WHI findings. These studies might be thought to encourage less restrictive MHT use. It may be that it is still too early to see a rise in MHT prescribing following the publication of these findings, given the generally slow uptake of evidence

into practice. Similarly, there was no change in prescribing of non-hormonal medications by early-career GP registrars. Our findings may inform the delivery of menopause management training for both early-career and established GPs.

#### Funding Acknowledgement

The ReCEnT project was funded from 2010 to 2015 by the participating educational organisations: General Practice Training Valley to Coast, the Victorian Metropolitan Alliance, General Practice Training Tasmania, Adelaide to Outback GP Training Program, and Tropical Medical Training, all of which were funded by the Australian Government Department of Health. From 2016-2019, ReCEnT was funded by an Australian Government Department of Health commissioned research grant and supported by GP Synergy Regional Training Organisation. GP Synergy is funded by the Australian Government Department of Health. Jasmine De Giovanni received a GP Synergy Medical Student Scholarship in relation to this work.

## J.16

### Awakening Critical Consciousness in Medical Education: Insights for a Critical Pedagogy in General Practice Teaching

**Presenter: Annalisa Manca**

Co-authors: Nigel Hart

#### Institutions

Queen's University Belfast

#### Abstract

##### Problem

As medicine's social contract evolves, medical schools have a growing obligation to foster doctors who are conscious of social dynamics and inequality in health care, and willing to affect societal change. This approach can be nurtured via the development of a "critical consciousness" (i.e., awareness and questioning) of power and privilege (Freire, 1972 [2017]). Although this discourse is increasing in medical education (Manca et al., 2019), applying a critical pedagogy within curricula in which competency-based orientations are dominant, is not straightforward because of their different philosophical and



theoretical underpinnings. It requires courage towards change from medical educators, and a profound awareness of how context influences educational practices and dynamics. This presentation outlines the affordances of an undergraduate general practice educational context, to provide essential elements, for medical educators to adopt in their teaching, to awaken critical consciousness in their students.

### Approach

This qualitative educational research adopted an overarching (post) critical ethnographic approach, informed by social constructivist theory, postmodern themes and critical theory. The researcher observed a GP undergraduate course writing extensive fieldnotes, and interviewed and collected audio-diaries to elicit participants' viewpoints. Discourse analysis was used to analyse the data in order to answer the question: "How are the affordances for the development of critical consciousness enacted, in an undergraduate general practice learning environment?"

### Findings

The GP teachers, while mitigating hierarchical relations with students, "directed" them by imparting a certain degree of instruction. They cultivated students' understanding of general practice through their educational practices and through their teaching of values, rather than the teaching of skills for immediate practical purposes. Their educational approach acknowledged students' "spontaneity", while pursuing "conscious direction" (Gramsci, 1992). The educational practices guided students into "reading the world" (Freire & Macedo, 1987) of general practice and medicine in general. This involved the observation of the practical social context and the recognition of social issues, an exercise that entails an orientation to action. Both students and teachers used their own voice to "speak" their reading of the world. Speaking the world (ibid.) appeared as a foundation for practical action towards transformation (personal, educational, social): an act of power.

### Consequences

The educational practices and relations embedded in the GP course foregrounded an implicit critical approach to education and an orientation to praxis. Crucially, once these spontaneous, implicit pedagogies

were manifest, it was seen that they were epistemologically developed, fostered and intentionally adopted to support the development of desired attitudes, motive dispositions, and values. The attention to establishing pedagogically sound educational practices and environments is important not only for general practice education, but to improve future doctors' attitude to care in all settings, primary and secondary.

## J.17

### Moan and Groan No More: Making It Meaningful - Learning from Reflective Practice to Transform the Teaching of Reflection

**Presenter: Dr Emma Metters**

Co-authors:

### Institutions

St George's University of London

### Abstract

#### Problem

Reflection is an essential attribute of competent medical practitioners and a formal part of licencing and revalidation. Consequently, teaching reflective practice is an important part of medical training (GMC 2018). Despite different definitions, theories and understandings of reflection, Aronson (2012) suggests little is known as to the best ways of teaching it. Driessen (2017) describes that structured reflection is often met with resistance from students and tutors alike, and highlights concerns that the transformational potential of reflection risks being lost. This study aims to explore GP lecturers' experiences of teaching reflection, drawing on their own experience of reflecting within professional practice, in order to inform how we teach reflection to students.

#### Approach

This was a qualitative study consisting of semi-structured interviews with lecturers in primary care from two London medical schools, which were audio recorded, transcribed and analysed using a thematic analysis approach to identify themes. An interpretivist stance was used to explore the

behaviour, perspectives and experiences of GP lecturers' reflective practice and teaching. Illeris' (2009) theory of learning was used as a framework through which to consider reflective learning. The educational principles of threshold concepts, social constructivist theory and transformative learning provided the lenses through which to understand the teaching of reflection.

### Findings

Lecturers reported that both they and their students have negative perceptions of structured reflection, identifying it as a box-ticking exercise detached from meaningful reflective practice. However, the data suggests that lecturers operate from a transformed perspective where reflection within clinical practice is seen as innate and recognised as valuable, whereas lecturers perceive that students are yet to develop that same transformed perspective and struggle to recognise its value. For reflection to be meaningful lecturers felt it needs to be linked to relevant clinical experiences and facilitated through timely, integrated discussions.

### Consequences

Identifying reflection as a threshold concept can help us see it as a process that occurs over time and to recognise the transformative learning journey the students are on. In order to support students through the liminal state of learning to becoming reflective practitioners, we need to bring reflective practice back into view. To do this, clinicians need to recognise reflection in their daily practice and role model it in an integrated, meaningful way that is evidenced for students to see. We need to differentiate between documentation of learning and reflection, in order to remove the negative associations with structured reflection. Instead reflection needs to be tutor facilitated rather than portfolio driven, through relevant, timely, clinically integrated discussions. By changing the focus of how we teach reflection, we have the potential to change student perceptions of reflective learning, thereby supporting them as they master the necessary skills for becoming competent reflective practitioners.

## J.18

### Informing undergraduate medical education: A systematic review of international policy and mission documents to identify how generalism is described

**Presenter: Maddy Foster and Sophie Park**

Co-authors: Foster, M., Kelly, M., Cheung, S., Elliott, J., Singh, S., Abrams, R. Park, S.

### Institutions

UCL Medical School and Calgary University (Canada)

### Abstract

#### Problem

The need for generalist clinicians is well endorsed by professional bodies across the specialties, and educating graduates with a generalist skill base is a key undergraduate outcome. Despite the large number of position statements on the importance of generalism, the pragmatics of educating for generalism remain unclear. For example, what core concepts of generalism should be integrated into curricula and how can these be taught and learned? Challenges include a plethora of definitions alongside tensions about how Generalism transcends or is located within a particular discipline. Professional bodies (e.g. Internal Medicine, Family Medicine, Surgery) advocate for increased attention to 'generalism', but are the principles and nature of these situated practices the same or different? Further, physician roles in many healthcare settings are increasingly delegated to allied healthcare professionals. What might this mean for generalist practice and training?

#### Approach

This review aims to understand how generalism is described within international healthcare medical education mission and policy documents. It asks:

1. How is generalism described in the policy and mission texts across physician clinical specialties?
  2. What facilitators and challenges are identified in relation to practising generalism?
  3. How might these findings inform physician training?
- Eight Health and Educational databases, and grey literature websites were searched. Inclusion criteria

included 'physician' and 'generalism' or 'generalist'; 1999-present; English-language only. A thematic analysis was used to map how and in what context, the terms are used.

#### Findings

Documents provide a strong imperative for generalism. They describe the need for generalism to deliver effective and efficient patient care, and the need to maintain and develop a workforce able to provide and sustain this. A number of challenges have, however, been identified. These include:

- a) For learning – what 'knowledge' and 'skills' should training focus on and provide; and how should generalism work across boundaries of medical disciplines and across multi-disciplinary teams.
- b) For culture – how to challenge a continued hierarchy which preferences specialised 'expert' work; and a public paradox which values and preferences specialised knowledge, while requiring generalism to support an effective healthcare system.
- c) For organisation structures – contending ongoing organisational change; and related shifts in roles, responsibilities and opportunities for generalism.

#### Consequences

This review highlights how policy and mission texts advocate educating healthcare professionals as Generalists, but remain ambiguous about what this means. The identified challenges will inform a subsequent review of empirical literature, as well as development of recommendations for future spaces in medical education to support generalism across disciplines.

## J.19

### Medical Student Perspectives of a community training experience

**Presenter: Sophie Park**

Co-authors: Melvyn Jones, Jo Yong, Rachel Roberts, Gill Parsons and Will Meyer

#### Institutions

UCL, London HEE, and Barnet Community Education HUB.

#### Abstract

##### Problem

Medical students spend most undergraduate curricula time in hospitals rather than community settings. This collaboration aimed to provide insights into how community, inter-professional healthcare is delivered. The traditional undergraduate GP placement explores some of this territory but contact with pharmacists, community nurses and other professional groups is often ad hoc and quite limited. Newly forming Primary Care Training Hubs (formerly 'community educational provider networks') co-ordinate some community-based multi-disciplinary teaching. We, therefore collaborated, to provide undergraduate medical students with a one-day teaching session in this setting.

##### Approach

Barnet Primary Care Training Hub has collaborated with UCL to deliver a community-based multidisciplinary day to 1st year clinical students (Year 4), complimenting an existing longitudinal general practice peel-out programme. The sessions are facilitated with a mixture of disciplines exploring how care is delivered to those in the community with acute and long-term conditions. The format is a day-long course with 40 students rotating round OSCE style interactive simulated scenarios with input from practice-based pharmacists, expert patients, GPs and practice nurses. This was a mixed methods evaluation utilising content analysis of course documents, direct observation, & facilitator & students' feedback.

##### Findings

The course is delivered for groups of 40 students (total 340 across the year). Patient educators report

enjoying the experience and are pleased to have their voice and expertise heard. The student feedback is largely positive. Students report gaining insights into the patients' perspective, and the clinicians' ability to manage patients with many illnesses in the community. For example, noticing the different resources available between primary and secondary care, the challenge of making sense of patient's symptoms the first time they are presented and the challenge of identifying potentially serious illness within this context. Students wanted the scenarios to link to their "hospital firms" and struggled when they hadn't acquired a working knowledge of all the systems e.g. "not having done cardiology yet". Travel gripes were only mentioned once. Not having cash for refreshments in a community clinic hints at students having a very technological, metropolitan perspective that such educational settings might challenge. PCT hub staff found resourcing the design, review and delivery of teaching challenging, within the available GP tariff.

#### Consequences

Medical students need to develop a wide view of what it is to be ill and how community health care services respond to that need. Community education hubs can contribute to some gaps in students' knowledge and experience. Authentic experiences of delivering actual clinical care in the community (patient's home, pharmacists etc) away from the familiar doctors' clinical territory, while logistically complex, could be the next steps.

#### Funding Acknowledgement

This work was not formally funded.

## J.20

### What is the role of Massive open online courses (MOOC) in continuing professional development (CPD) of healthcare professionals?

**Presenter:** Emily Player

Co-authors: Emily Player, Veena Rodrigues

#### Institutions

Norwich Medical School, University of East Anglia

## Abstract

### Problem

Continuing professional development (CPD) is essential for maintenance and improvement of knowledge and skills of general practitioners. One area of CPD relevant to healthcare professionals is the supervision of junior colleagues. A positive relationship between the supervisor and trainee can be an important factor determining success of a placement. A variety of factors play into this positive relationship, one being a supervisor's approach to constructive feedback and their preparedness to supervise. The general medical council (GMC) now recommend Clinical Supervisors are formally trained but face to face training is not always feasible. Technology enhanced learning could assist, and massive open online courses (MOOCs) providing a platform for content delivery as well as discussion could be a suitable option for busy GPs, however, little to nil is known about the impact of MOOCs on learning and transferral of learning into practice. This study aims to address this gap in understanding and clarify the role of MOOCs in CPD for primary care.

### Approach

A qualitative study using an iterative approach. Methods will include a questionnaire and semi-structured interviews. A questionnaire will be used to identify some of the learner demographics on the MOOC. Semi-structured interviews will be used to gain a learner account of their experience of using the MOOC and whether it has influenced their practice. Interviews are an appropriate form of data collection in this setting, as participants are likely to come from various geographical locations and therefore telephone interviews would be more practical.

### Findings

The interim findings suggest that MOOCs are a valuable interface for providing GPs with CPD in the area of clinical supervision. Inductive thematic analysis is in the early stages at present but highlights areas positive experiences in terms of usability and flexibility with the mode of learning. Interviews suggest the role of discussion and social learning on the MOOC is key to enriching learning, providing interdisciplinary learning and a community of practice.

## Consequences

With increasing demands for GPs, MOOCs could be used as a method of delivering CPD moving forward. This is the first study to follow up on learners experience of MOOCs after a period of time from completion to better understand the impact on higher levels of learning.

## Funding Acknowledgement

No funding to be declared

## J.21

### Medicine and the arts, the role of narrative medicine in medical education

**Presenter: Emily Player and Matthew Gerlach**

Co-authors: Dr Emily Player, Dr Matthew Gerlach

## Institutions

Norwich Medical School, University of East Anglia

## Abstract

### Problem

The topic of 'medical humanities' is not a new area of medicine but it is one which is becoming increasingly recognised within the medical school curriculum. Since the 20th century there has been an increased recognition of the human side of medicine and a need to readdress the balance between this and hard sciences within medical schools. Historically, storytelling has been used as a way to enhance understanding of illness and the effect on the person as a whole, Shakespeare's Hamlet and depressive illness are clear examples of this. More recently the movement of narrative medicine could be said to be a rebirth of this concept. Charon's work discusses narrative medicine in two forms, that of the doctor as a storyteller or listener and the patient as the storyteller. The benefits of involving narrative medicine and medical humanities in the curriculum are suggested to include improved communication, empathy and possibly a more resilient well rounded doctor. However, there is little published on how medical humanities can be delivered in an already compact medical curriculum or the student experience of such teaching. This teaching evaluation

aims to address the role of medical humanities in medical education and its impact on student doctors.

## Approach

This is a teaching evaluation of a 10 week module delivered by a GP and trainee GP to two groups of second year medical students. The content included narrative medicine; involving experts by experience from marginalised groups such as those living with disability and medicine in the narrative; the role of literature in portraying and understanding medicine. For practical purposes the teaching evaluation consisted of pre and post questionnaires which were completed by students over two separate cohorts. Questionnaires were designed to produce quantitative data using a Likert scale for empathy and free text feedback for qualitative inductive thematic analysis of comments to better understand the student experience of the module.

## Findings

Student reported empathy levels increased following the taught module by 2 points on the Likert scale. Preliminary thematic analysis of feedback comments identified the following themes: communication, empathy, medicine as an art, restorative learning. These themes will be further refined and re-defined in the coming months.

## Consequences

The findings imply that narrative medicine and medical humanities have a valuable role in medical student education. This value can be considered from the student perspective; deepening their understanding of medicine in a different context, providing a restorative setting for learning and resilience skills as well improved communication and empathy towards patients, particularly those who are marginalised. Moreover, a structure and format for delivering such education has now been outlined and evaluated.

## Funding Acknowledgement

No funding to declare



**‘What have they learnt? A mixed-methods study assessing for changes in knowledge, skills and attitudes as a result of an Out-Of-Program-Experience (OOPE) in global health during UK General Practice training’**

**Presenter: Aaron Poppleton**

Co-authors: Sam Merriel, Felicity Knights, Hannah Fox, Rebecca Hall, Patrick Kiernan

**Institutions**

University of Manchester, University of Exeter, St George's (University of London),

**Abstract**

**Problem**

GP Global health fellowships, a four year GP training programme incorporating a 12 month ‘Out Of Programme Experience’ (OOPE) within an international health setting are increasingly available in England and Wales. A previous survey of qualified UK GPs who have undertaken international work has shown a range of benefits, including leadership competencies in self-awareness, working with others, setting direction, managing and improving services. The global health fellowship programme has not yet been evaluated, including its influence on GP career trajectory and Global Health involvement, both in the UK and/or overseas. We undertook a mixed-methods exploration to understand the impact of a global health OOPE on practicing UK GPs.

**Approach**

We approached UK-trained GPs who have completed an OOPE in another country and/or a global health fellowship between 2009 and 2015 to undertake an online survey and follow-up interview. Recruitment was via email and social media, distributed via current and past global health fellowship leads within GP training deaneries and global health interest groups. Participants received a link to participate in a telephone interview on completion of the survey. Survey questions included participant demographics and details of the OOPE experience. Questions assessing for change in knowledge, skills, and/or attitudes (mapped to the Academy of Royal Medical Colleges [ARMC] ‘Global Health Capabilities for UK

Health Professionals’) were included in the survey and follow-up interviews. All interviews employed a semi-structured approach. Survey data has been analysed using descriptive statistics in STATA. Interview transcripts have been entered into NVIVO, analysed thematically and cross-checked by two research active GPs. This study received university ethical approval.

**Findings**

23 GPs completed the survey. 20 (87%) participants were female, and all aged between 26-45. 20 (87%) participants had trained in London, and all are currently working as GPs. 19 (86.4%) had extended clinical/professional roles. A minority of participants had undertaken global-health related work within the UK (5 [21.7%]) or internationally (3[13%]), however 16 (69.9%) stated they wanted to in the future. Participants reported their global health OOPE had improved their knowledge and skills in all ARMC capability domains. Analysis of the GP interview transcripts (n=9) is ongoing. Provisional emergent themes include ‘Skill development through novel exposures’ and ‘Improved confidence within the diverse challenges of general practice’. The majority of interview participants (66%) had some ongoing involvement in global health, with the remainder keen to explore opportunities in the future.

**Consequences**

GP Global Health Fellowships may support development of pre-existing and novel clinical, governance, quality improvement and leadership skills, in addition to improving training confidence and resilience within a UK General Practice setting. Global health fellows show a desire to continue involvement in global health-related work within the UK and overseas after training, supporting the cross-cultural outlook of primary care services.

**Funding Acknowledgement**

Funding to cover interview transcription costs was obtained from the RCGP Severn Faculty.

## The Perceived Barriers to Implementing Near- Peer, Multilevel Learning in Primary Care

**Presenter:** Oliver Prescott, Helen Rogers

Co-authors: Oliver Prescott, Helen Rogers

### Institutions

University of Exeter Medical School, Healthcare Education England SouthWest

### Abstract

#### Problem

The 2016 Wass report 'By Choice – not by Chance' acknowledged the relative lack of contact undergraduate students have with General Practice trainees when contrasted to their hospital counterparts. It has also been seen that General Practice trainees are less engaged with teaching activities. Lack of exposure to near-peer mentors can affect early career choices and this lack of exposure can negatively influence undergraduate perceptions of General Practice. With an increase in the demand for educational experiences in community settings driven in part by the appreciation that General Practice provides a unique and ideal learning environment comes an opportunity to address this lack of contact. By utilising multi-level learning within community settings we could yield benefit in the educational experiences for all parties. We are looking to bridge the gap between undergraduate trainees and post graduate trainees in these environments.

#### Approach

The goals were three fold:

- Understand the current landscape and crossover between undergraduate and postgraduate education in GP practices
- Gain feedback from educators on the perceived benefits of multi-level learning in primary care
- Understand barriers that exist to developing multi-level educational experiences

We sought to obtain qualitative data in order to understand current practices and perceptions. Semi-structured interviews were carried out with

educationalists within practices to explore current practices and to discuss the views on involving postgraduate trainees in undergraduate education. Individual structured interviews were chosen in order to gain a deep understanding of local practice and to allow participants time to express their personal views, beliefs and experiences.

#### Findings

We identified a range of different approaches to involving GP trainees in undergraduate education across our region. In the environments where registrars encountered undergraduate trainees the qualitative feedback received from practices was positive. We identified some practices where any interaction was purely on an ad-hoc basis. The perceived positive impacts of educational programs within practices were felt to be multidirectional. The educationalists we spoke to universally felt that near-peers could play an essential role in undergraduate educational experiences with many identifying social congruence as a positive factor. The barriers identified could be considered to exist as part of 3 major domains: organisational, individual and encultured attitudes.

#### Consequences

The level to which multilevel learning is utilised in primary care is varied; we identified multiple interwoven factors influencing this. Highlighting the benefits of multilevel learning for all participants is key to supporting registrars to engage in shared educational experiences with undergraduate students in community settings. Developing simple models for application, supporting educationalist to apply these models and ensuring educational support for trainees could yield collective benefit.

## J.24

### Educational interventions to ensure prescribing competence in new prescribers: a systematic review of quantitative and qualitative evidence

**Presenter: Patrick Redmond**

Co-authors: Michael Naughton, Vibhore Prasad, Lisi Gordon

#### Institutions

King's College London, Dundee University

#### Abstract

##### Problem

Prescribing competency involves the ability to prescribe rationally for the benefit of patients. There has been a sustained policy and workforce shift to increase uptake of prescribing in non-traditional roles. This changing landscape, and new evidence, suggests the need for an updated review of interventions to ensure competence in new prescribers.

##### Approach

A systematic review was undertaken according to the PRISMA guidelines. The review sought to characterise the training and its impact on knowledge, skills, and behaviours of learners; patient outcomes; and resource use. An exhaustive search strategy included all main databases. No restrictions were applied by date nor language. The MERSQI tool was used to critically appraise studies with the Kirkpatrick evaluation framework used to categorize outcomes.

##### Findings

5,758 records were screened with 38 studies meeting final inclusion criteria (8 RCTs, 16 quantitative nonrandomised, 9 quantitative descriptive, and 3 mixed methods studies. Studies were conducted in the UK (n=14), the Netherlands (n=6), Turkey (n=3), Bahrain (n=2), Australia (n=2), USA (n=2), with one study in each of South Africa, Germany, Yemen, Canada, India, Sweden and Malaysia and two multisite studies. Most studies focused on medical students (n=32), or a mixture of nursing and medical students (n=1); three studies focused on nurses and one each included dental students or pharmacists only. The evaluation of interventions was heavily weighted towards the reaction (17) and learning (20) of

participants with only a few evaluating their behaviour (3). A pharmacist facilitated interventions in some studies (6) with the 'near peer' of foundation doctors facilitating teaching in three studies. Some interventions were didactic only (2) but many had applied elements of learning (16).

##### Consequences

There was much heterogeneity in both study design, outcome choice and reporting quality. The vast majority of studies confined their assessment of learners' competence to knowledge assessment neglecting the higher order of Miller's framework of competency. The WHO Guide to Good Prescribing was the most widely evaluated tool and is now incorporated into many national curricula. Future interventions should consider more valuable assessments of higher order downstream competency assessment (e.g. OSCE, prescribing audits) as well as the longer-term impact of educational interventions. Education specific to non-medical prescribers needs more research.

## J.25

### The influence of career aspirations on medical school choice: a national qualitative interview study of applicants to UK medical schools

**Presenter: Eliot Rees**

Co-authors: David Harrison, Karen Mattick, Katherine Woolf

#### Institutions

University College London, Keele University, University of Exeter

#### Abstract

##### Problem

The NHS is critically short of doctors. The sustainability of the UK medical workforce depends on medical schools producing more future GPs who are able and willing to care for under-served patient populations. The evidence for how medical schools should achieve this is scarce. We know medical schools vary in how they attract, select, and educate future doctors. We know some medical schools produce more GPs, but it is uncertain whether those

school recruit more students who are interested in general practice or whether their curriculum influences career aspirations. This study sought to explore how applicants' future speciality ambitions influenced their choice of medical school.

#### Approach

We conducted a national qualitative interview study, taking a critical realist perspective. We purposively sampled applicants and recent entrants to eight UK medical schools. Data were collected through individual and group interviews. Interviews were audio recorded and transcribed verbatim. Transcripts were analysed through framework analysis by one researcher. A sample of 20% of transcripts were analysed by a second researcher.

#### Findings

Sixty-six individuals participated in 61 individual and one group interview. Interviews lasted a mean of 54 minutes (range 22–113). Twelve expressed interest in general practice, 40 favoured other specialities, and 14 were unsure. Three themes were identified from the analysis: speciality motivations, matching aspirations to course, medical school attributes. Participants described their speciality aspirations and what had drawn them to these specialities. Many participants described becoming attracted to specific specialities through work experience, or family experience of care. For those that had identified speciality aspirations prior to applying to medical schools, few described their speciality aspirations influencing their choice of medical school. It appeared, rather, that there were other factors that drew them both to their chosen medical schools and their speciality of interest. Participants' priorities of medical school attributes varied by speciality aspiration; those interested in general practice described favouring medical schools with early clinical experience and problem-based learning curricula, and were less concerned with cadaveric dissection and the prestige of the medical school.

#### Consequences

Many applicants do consider future speciality ambitions before applying to medical school. Participant speciality aspiration, however, doesn't appear to explicitly influence choice of medical school, rather it appears that this is mediated by curricula

features of these medical schools. Further longitudinal research exploring the influences on career aspirations will help us to better understand and plan for future workforce needs.

#### Funding Acknowledgement

Katherine Woolf is funded by a National Institute for Health Research (NIHR) Career Development Fellowship for this research project.

## J.26

**Does the Macmillan Cancer Care course for Practice Nurses and the Primary Care Nurse Facilitator role enhance nurse consultations and holistic care for patients and support the implementation of nurse led cancer care reviews in general practice?**

**Presenter: Julia Roscoe**

Co-authors: Dr Veronica Nanton, Rebecca Appleton, Lisa Hall, Jane Hill, Kate Day

#### Institutions

Unit of Academic Primary Care, Warwick Medical School, University of Warwick

#### Abstract

##### Problem

With increasing numbers of people living with and beyond cancer, the role of primary care in the management of cancer patients is evolving. As new and alternative approaches to patient follow up, are being considered practice nurses have been identified as key professionals who could have a vital role in managing cancer as a long-term condition. This research is an evaluation of the Macmillan cancer care course for practice nurses and the associated role of the Primary Care Nurse Facilitator. The research investigates practice nurse's views on the impact of the course, in particular; perceived benefits, applying new skills and transferring knowledge to clinical practice, increased ability and confidence to administer cancer care reviews, cancer related activity and post course follow up support.

##### Approach

A mixed methods approach was adopted, involving a survey for practice nurses who completed the course

and follow up qualitative interviews. The survey was designed to enable a broad understanding of the impact of the course and contained 20 questions plus 2 questions for open text box responses. The survey was piloted with sub sample of 3 practice nurses. Six semi-structured interviews were conducted, lasting around 20 -30 minutes either face-to-face or by telephone. Topics for the interviews were formed from responses to the survey, aiming for more in depth exploration of key questions. The interviews provided greater depth in understanding the nurses' experience and the variations in implementation that occurred.

### Findings

Twenty-one practice nurses returned a completed survey, ranging in experience from 1-20+ years in a practice nurse role. Survey findings indicate enthusiasm for the course and increase in practice nurse confidence to start a conversation with patients around cancer, care and other issues such as emotional or psychological problems, employment and finances. Skills from the course were used during routine consultations with patients and long-term conditions reviews. These included signposting to local services and referrals to other professionals. The survey findings illustrate some of the challenges of implementing nurse led cancer care reviews in general practice, such as lack of time, administrative support and support from colleagues. Findings from the interviews indicate common facilitating factors for overcoming challenges such as, systems for identifying and recalling patients with cancer, peer support and follow up with the Primary Care Nurse Facilitator.

### Consequences

The Macmillan cancer care course and Primary Care Nurse Facilitator role are a valuable educational resource to upskill practice nurses to conduct nurse-led cancer care reviews and provide holistic, supportive care to patients. This research identifies that there is a need for nurses to have time to establish a system for nurse-led cancer care reviews in their general practice and consultation time to conduct reviews with patients. This can be achieved through a policy initiative such as the LES.

### Funding Acknowledgement

Macmillan Cancer Support, Coventry and Rugby GP Alliance

## J.27

### Influence of cognitive dissonance on clinical judgment of a medical student playing the role of a doctor in an educational program combining ambulatory clerkship and peer role-play: A qualitative study

**Presenter: Kazuki Sahashi**

Co-authors: Kazuki Sahashi [1], Noriyuki Takahashi [2], Mina Suematsu [2], Kentarou Okazaki [2], Masafumi Kuzuya [2]

### Institutions

[1]Nagoya University School of Medicine,[2]Nagoya University Graduate School of Medicine

### Abstract

#### Problem

In some clinical training programs, medical students play patients or doctors in peer role-play, providing opportunities for clinical judgment. Cognitive dissonance is considered to have important effects on clinical judgment. However, the situations in which cognitive dissonance occurs, and how it influences students' clinical judgment, are currently unclear. At Nagoya University, an educational program combining ambulatory clerkship and peer role-play using narratives from outpatients is used for training medical students. The current study was conducted to identify the factors influencing the impact of cognitive dissonance on students' clinical judgment while playing the role of the doctor.

#### Approach

The participant was a male student playing the role of the doctor. In April 2016, the participant was interviewed about what he thought about the training program, and the problem that patient was played by a student. The participant was recruited through purposive sampling. Transcripts of the interview were analyzed using a qualitative data analysis method called "Steps for Coding and Theorization". We used the theory of cognitive dissonance as a framework for analysis. The ethical Committee of Nagoya University approved the study (2015-0043).



## Findings

We found that one of the influential factors was cognitive dissonance between A : a scenario involving a female patient, which was a recognition he wanted to adopt, and B : the visual recognition of a male student, which inhibited adopting A. Thus, two forms of dissonance were identified, that caused by sex and that caused by gender. These dissonances affected the student's clinical judgment by less "presence" and less "particularization" of the patient's information. Less "presence" meant, for example, the lack of visual recognition of a female patient. Less "particularization" meant, for example, that the student playing the role of the patient possessed little information about menstruation. Efforts to reduce cognitive dissonance led to a reduction in the dissonance caused by gender, but dissonance caused by sex could not be reduced. Clinical judgment was partially aided by reducing the cognitive dissonance associated with gender. But asking about sexual background and exhibiting an empathetic attitude were inhibited by the dissonance related to sex.

## Consequences

The current findings suggested that a medical student recognized two kinds of cognitive dissonance caused by gender and sex. The student attempted to overcome both forms of cognitive dissonance; one was overcome, and the other was not. These findings suggested that the biological gap between the patient actor and the scenario could present an important difficulty for students playing the doctor role, particularly during training in clinical judgment for issues related to sexual background, and showing empathy. Because the results suggested that cognitive dissonance caused by gender could be overcome, conducting clinical judgment in consideration of gender may facilitate training in this educational program.

## Funding Acknowledgement

This study was funded by GSK Japan Research Grant 2014.

## J.28

### Generalist learning in specialist environments: Third year medical student perceptions of General Practitioner facilitated teaching during hospital placements

**Presenter: Davinder Singh**

Co-authors: Dr Aarti Bansal, Dr Joanne Thompson, Mr Alexander Kumra, Dr Benjamin Jackson

## Institutions

The University of Sheffield

## Abstract

### Problem

In the UK and elsewhere, the epidemiological context of healthcare is changing towards an ageing society with greater multimorbidity. It is widely recognised that we need more physicians with generalist knowledge and skills and a patient-centred approach [generalist physicians] to manage these needs and that all undergraduate medical students, regardless of final career choice, need a sound generalist medical education to prepare for future clinical practice. With increasing medical specialization and shorter patient stays in hospital, the traditional model of students rotating through short speciality-based placements in hospitals is becoming increasingly less likely to support medical students to develop the generalist skills they will need to support the healthcare needs of our changing society.

### Approach

GP facilitated teaching sessions were delivered each week during medical student hospital placements to small groups of 6-8 students for 90 minutes for six weeks. Students discussed and reflected on real patient cases that they encountered on their placements. The teaching focused on generalist clinical reasoning skills development, professional development and exploring the patient journey before and after hospital admission. Evaluation of learning outcomes was conducted through a student questionnaire using Likert scales with free text boxes for additional explanation. Focus groups were conducted to gain a more in-depth understanding of student perspectives.

## Findings

Three key aspects of the teaching emerged as important to the positive educational outcomes for students: Patient-based learning, General Practitioner facilitation and Continuity of small group. Students expressed that patient-based learning helped them to develop generalist clinical reasoning skills and a patient-centred approach. The breadth of clinical expertise provided by General Practitioner facilitation enabled them to broaden the clinical discussion and to consider the patient journey across the primary and secondary care interface. Small group learning with continuity of facilitator made the learning more memorable, engaging and encouraged them to reflect on ethical and professional practice.

## Consequences

Our findings support existing literature that demonstrates the educational benefits of continuity in the learning environment and focusing clinical learning around real patient-cases. Our study also shows how using General Practitioners as a resource for hospital placement teaching can maximise generalist learning outcomes for medical students during increasingly specialised hospital environments. The additional exposure to GPs role-modelling generalist clinical reasoning with a holistic approach may also help support students to develop career aspirations as GPs.

## J.29

### Factors associated with differential performance in the MRCGP Clinical Skills Assessment: cross-sectional study

**Presenter: A. Niroshan Siriwardena**

Co-authors: Aloysius Niroshan Siriwardena, Iresha Chandraratne, Graham Law, Rich Withnall, Meiling Denney

## Institutions

University of Lincoln, Royal College of General Practitioners

## Abstract

### Problem

Differential performance in medical licensing exams is a continuing concern for candidates, exam bodies and professional organisations. Previous studies investigating doctors' performance in medical exams suggest that personal, educational, cultural or psychological factors may be important influences leading to differential attainment by candidate attributes such as ethnicity, gender or qualification overseas in International Medical Graduates. The 'Fair Pathways' report suggested that poorer relationships between trainee doctors and their seniors, trainers or peers, negative expectations and sociocultural factors may be important sources of difficulty underlying differential attainment. The extent to which such factors contribute to differential attainment is largely unexplored and unknown. We aimed to examine the relative contribution of these factors to differential attainment in a national licensing clinical skills assessment.

### Approach

We used a self-administered questionnaire to candidates which they completed immediately after taking the Clinical Skills Assessment (CSA) of the UK Membership of the Royal College General Practitioners (MRCGP) licensing exam. Candidates volunteered to participate and agreed to link their questionnaire, exam and demographic data for analysis. We analysed data using SPSS version 25 to produce descriptive statistics, comparisons and multiple regression to model factors independently associated with passing or failing the CSA.

### Findings

Overall 44.6% (209 of 469) CSA candidates completed the questionnaire between 30 November and 6 December 2018, and consented to data linkage. Multiple logistic regression showed that being older (odds ratio [OR] 0.86, 95% confidence interval ([CI] 0.75 – 0.99,  $p=0.04$ ), male (vs female OR 0.22, 95% CI 0.06 – 0.79,  $P=0.02$ ), of minority ethnic status (vs white British OR 0.04, 95% CI 0.01 – 0.31,  $P=0.002$ ) or having a negative vs positive relationship with their trainer (OR 0.11, 95% CI 0.01 – 0.88,  $p=0.04$ ) were associated with a reduced chance of passing the CSA. There was no association with passing or failing in International Medical Graduates (IMG vs UK trained

doctors OR 0.38, 95% CI 0.08 -1.91, p=0.24), those who preferred the English language (vs those who preferred another language OR 1.20, 95% 0.13 - 10.72, p=0.87) or candidates' estimated score (OR 1.07, 95% CI 0.99 - 1.16, p=0.07). Candidates who did not declare a specific learning difficulty vs those who did had a greater chance of passing the CSA (OR 11.49, 95% CI 1.27 – 103.51, p=0.03).

### Consequences

CSA failure was associated with older age, male sex, minority ethnic status, specific learning difficulty, and a negative relationship with the candidate's trainer but not with being an International Medical Graduate, preferring English language or estimated score.

Further research is needed to understand why specific learning difficulties and a negative relationship with a trainer are associated with failure, and to evaluate interventions designed to reduce differential CSA performance.

### Funding Acknowledgement

Funded by the RCGP.

## J.30

### Empathico - The Development of an Intervention to train Primary Care Practitioners in Empathy and Optimism

#### Presenter: Kirsten Smith

Co-authors: Kirsten A Smith, Felicity L Bishop, Mary Steele, Jane Vennik, Stephanie Hughes, Leanne Morrison, Emily Lyness, Mohana Ratnapalan, Jennifer Bostock, Christian Mallen, Geraldine Leydon, Jeremy Howick, Lucy Yardley, Hazel Everitt, Paul Little

#### Institutions

University of Southampton, University of Bristol, University of Oxford, Keele University

#### Abstract

##### Problem

Evidence suggests that empathy and optimism can be employed in healthcare consultations to improve outcomes for patients - however, healthcare practitioners (HCPs) face barriers when applying them. This project aimed to develop a digital

intervention that could provide appropriate, effective and acceptable training in empathy and optimism to primary care HCPs to improve outcomes for patients with osteoarthritis.

### Approach

The rigorous Person-Based Approach (PBA; Yardley et al. 2015), which incorporates theory, evidence and qualitative research, was used to develop the intervention. This involved:

1. A meta-ethnography on patients' and practitioners' views on communication in osteoarthritis consultations to discover barriers and facilitators to effective consultations.
2. Two secondary analyses to identify which features of empathy and optimism training were effective:
  - On 7 interventions that trained HCPs in empathy.
  - On 22 interventions that aimed to increase patients' positive outcome expectancies.
3. A qualitative telephone interview study - twenty HCPs (including GPs, nurse practitioners, physiotherapists) were interviewed to explore views of empathy and optimism in consultations and training.

Interviews were transcribed and analysed using inductive thematic analysis. This work informed the intervention's guiding principles, behavioural analysis and logic model.

### Findings

Based on this foundation, using the PBA, the 'Empathico' digital intervention was iteratively developed. Fifteen 'Think-aloud' interviews were conducted with HCPs to help optimise acceptability, feasibility and likelihood of behaviour change. Patients (n=15) provided feedback on simulated videos of an 'Empathico' consultation versus a neutral consultation to ensure their concerns were addressed (in addition to PPI guidance). A 'Table of Changes' approach was used to modify the intervention: comments on each webpage were tabulated, negative comments and positive comments were compared, and solutions developed in accordance with the

guiding principles. For example, participants did not like the terms used in one of the modules, 'professional' and 'cool', so the team changed this to 'attentive' with 'increasing expressions of empathy', which conveyed our message more successfully. Iterative modifications like these resulted in more positive and fewer negative comments, resulting in a highly acceptable intervention. A final study was conducted, checking that the intervention would be acceptable for independent use. Five HCPs, who were given access to Empathico for 1-2 weeks, participated in a telephone interview discussing their experience. Feedback was mostly positive, resulting in only a few small final optimizations to Empathico.

### Consequences

Using this rigorous approach, we were able to create a digital intervention for HCPs with strong, evidence-based training in empathy and optimism. We addressed potential barriers to engagement with Empathico and improved its likelihood of success. The development phase of the project is now complete and entering a feasibility trial phase. Yardley, L. et al. (2015). The person-based approach to intervention development: application to digital health-related behavior change interventions. *JMIR*, 17(1), e30.

### Funding Acknowledgement

The EMPATHICA trial is supported by a National Institute for Health Research (NIHR) School for Primary Care Research (project number 389). The Primary Care Department is a member of the NIHR School for Primary Care Research and supported by NIHR Research funds. MR is an NIHR School for Primary Care Research funded ACF. CDM is funded by the National Institute for Health Research (NIHR) Applied Research Collaboration West Midlands, the NIHR School for Primary Care Research and an NIHR Research Professorship in General Practice (NIHR-RP-2014-04-026). The research programme of LY and LM is partly supported by the NIHR Southampton Biomedical Research Centre (BRC). This paper presents independent research funded by the National Institute of Health Research (NIHR). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR, HEE or the Department of Health. The funders had no role in 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.

## J.31

### Evaluation of undergraduate medical education "Culinary medicine in primary care" course innovation

**Presenter:** Sara Thompson

Co-authors: Poduval S, Xie J, Vickerstaff V, Park S

### Institutions

Department of Primary Care and Population Health  
University College London

### Abstract

#### Problem

There is a growing body of evidence that medical students globally recognise the value of nutrition and dietary intervention in clinical care, and that there is currently an unmet need for teaching in this area in the majority of medical schools (Schoendorfer et al, 2017; Kahan et al, 2017). Culinary medicine is particularly relevant to patient care in the primary healthcare setting in enabling dialogue with patients about lifestyle impact on chronic disease management and promoting and supporting healthy eating for well-being, disease prevention and surgical preparation. Evidence estimates that increasing fruit intake by one portion a day could reduce cardiovascular mortality risk by 8%, 1.6 million deaths per annum globally (Mozaffarian et al, 2011). Another study has identified dietary factors as the most important risk factor for disability and premature death (Murray et al, 2013). A learning needs assessment was conducted (Xie et al, in press) to inform the development of a Culinary medicine course situated within a General Practice rotation. The new course combines practical kitchen experience with motivational interviewing, case-based discussion and presentation of the relevant, emerging evidence-base in this field. In particular, the course focuses on enabling engagement of patients across different socioeconomic and cultural contexts. Our study aims to evaluate student learning including meeting students' unmet nutritional knowledge needs; providing them with the skills to perform a basic

nutritional assessment and to adapt their advice to individual patients' socioeconomic and cultural needs in the primary care setting.

#### Approach

Two online questionnaires evaluating students' pre- and post-course knowledge were carried out throughout the academic year's placements. A variety of Likert-type, multiple choice and free text questions were used. Quantitative analysis of Likert-type and multiple choice questions was carried out and qualitative thematic analysis was used to analyse free text and identify themes for improvements.

#### Findings

First we present quantitative data demonstrating improvement in medical students' familiarity with and ability to take a diet history, discuss dietary changes and give advice appropriate to individual patients' demographics after the course, compared to before the course. Second, we present qualitative data and their implementation in recommendations for course development within undergraduate primary care medical education.

#### Consequences

Our findings show the efficacy and acceptability of a hands-on "Culinary medicine in primary care" medical education course in meeting students' nutritional education needs. We share reflections from students and the organising team about hopes for future improvement in the quality of dietary interventions and potential impact on chronic disease and complex multi-morbidity patient experience.

## J.32

### The effectiveness of "Diabetes Theatre", an educational workshop of diabetes care, on its theatre staffs toward empowerment: a qualitative study

**Presenter: Satoshi Yamada**

Co-authors: Kentaro Okazaki, Mina Suematsu, Noriyuki Takahashi, Masafumi Kuzuya

#### Institutions

Nagoya University School of Medicine, Department of Education for Community-oriented Medicine, Nagoya University Graduate School of Medicine, Department of Community Healthcare and Geriatrics, Nagoya University Graduate School of Medicine

#### Abstract

##### Problem

Every choice of diabetes patient about diet, exercise, and pills are essential to their own care of diabetes. Therefore, "Empowerment approach" is considered one of the most suitable ways for diabetes care. In order to spread empowerment approach in Japan, "Diabetes Theatre (DT)" was developed. DT is an educational workshop for health care professionals (HCPs) who are audiences. The audiences watch plays about common communication problems in diabetes care and discuss what is the problem of that communication, paying attention to the relationship with patients. This allows each of the HCPs audiences to reflect their own relationship with patients and improve the communication. In DT, "Theatre staffs" are also HCPs who make scenarios, prepare for DT, and perform at DT. The aim of this study is to explore what theatre staffs learn through DT.

##### Approach

We interviewed 11 theatre staffs (3 doctors, 5 nurses, 2 nutritionists, 1 clinical technologist) of a DT held at Kobe city in Japan in November 2012. Participants were recruited through convenience sampling and we obtained the approval by documents. We asked them what they felt about the experience of the DT and what kind of change happened about their daily communication with patients after that. The transcripts were analysed using a qualitative data



analysis method called “Steps for Coding and Theorization (SCAT)”.

### Findings

Using SCAT, what the theatre staffs learned through DT were sorted into 3 categories:

- 1) Factors leading to awareness,
- 2) Awareness of the relationship with patients,
- 3) Changes led by the awareness.

We showed some concepts in each category:

- 1) experience at DT putting themselves in patients’ shoes, experience at DT paying attention more to what patients think, similarity of DT to the reality,
- 2) awareness of their unconsciously repeated one-sided behaviors to patients, awareness of their attitude paying attention just to disease and not to patients themselves or patients’ background,
- 3) listening to patients story more carefully, paying attention to patients themselves, acceptance of patients as a whole person, compassion for patients, goal setting by patients.

### Consequences

The concepts of category 3) are true for the key concepts of empowerment. Thereby, the finding articulates the HCPs theatre staffs learn to get empowerment approach through DT. Like the process from 2) to 3), we found that HCPs’ awareness of their unconsciously one-sided attitude led to their empowerment and compassion for patients which would allow them to improve the quality of their relationship. Such awareness is only brought about from their own experience, and DT was the one of effective programs which brings those experience like category 1). Therefore, DT is valuable for its HCPs theatre staffs, and we hope such a program will become more widespread for better and compassionate communication between HCPs and patients.

## K.1

### Exploring the experiences people living with Guillain-Barré Syndrome and its variants: a qualitative interview study

**Presenter: Dr Joseph Akanuwe**

Co-authors: Joseph Akanuwe, Despina Laparidou, Ffion Curtis, Jennifer Jackson, Timothy Hodgson, Aloysius N Siriwardena

### Institutions

University of Lincoln

### Abstract

#### Problem

Guillain-Barré syndrome (GBS) is a rare, usually acute, autoimmune disorder, affecting peripheral nerves within 2-4 weeks of onset and leading to paralysis and sometimes respiratory failure requiring ventilation. Variants of the condition can affect cranial nerves and a more chronic form, Chronic Inflammatory Demyelinating Polyneuropathy (CIDP), also exists. Some people continue to experience difficulties, even months or years after the acute condition. Since there is limited evidence describing the experiences of those living with the condition, we sought to explore the experiences of people with GBS and its variants, including their ongoing physical, psychological and social care needs, in the UK.

#### Approach

Following ethical approval, we recruited a purposive sample of 16 people with a previous diagnosis of GBS or its variants, who consented to interview. Recruitment was through an advert placed in the Guillain-Barré and Associated Inflammatory Neuropathies (GAIN) charity website and through social media. We collected data using individual semi-structured interviews, either face-to-face or by telephone, based on participants’ preferences. Audio recorded data were transcribed verbatim and analysed using thematic analysis method supported by NVivo 11.

#### Findings

We identified six overarching themes which affected the recovery journey for people with GBS:

- (1) the importance of early diagnosis to enable early commencement of treatment;
- (2) the importance of experience of inpatient care; and
- (3) the importance of active support for recovery in relation to healthcare, disease, psychological, prior health, self-care and lifestyle, social and occupational factors. Furthermore,
- (4) the importance of good communication throughout the course of the illness and its recovery;
- (5) the need for greater awareness, knowledge and provision of information by health care staff; and
- (6) the need to adjust to and redefine recovery, were also highlighted by participants as important for their recovery to health and function.

### Consequences

We identified important factors that could facilitate improvements in the quality of care, experiences of illnesses and recovery of people with GBS or its variants. Early effective access to healthcare and treatment were considered important, but a positive experience of care together with physical, psychological and social support were also perceived to be essential for a good recovery. There is a need for greater knowledge and information provision from healthcare workers, including primary care, which has implications for staff training, and for the development of information resources for patients and their families. Patients identified their need to adapt to ongoing difficulties in function and they sought to redefine what recovery meant for them in relation to this.

### Funding Acknowledgement

We acknowledge the GAIN Charity for funding the project

## K.2

### Experiences of people following Guillain-Barre Syndrome and Associated Neuropathies: questionnaire development and validation

**Presenter: Dr Joseph Akanuwe**

Co-authors: Joseph Akanuwe, Zahid Asghar, Despina Laparidou, Ffion Curtis Jennifer Jackson, Timothy Hodgson, and Aloysius Niroshan Siriwardena

### Institutions

University of Lincoln

### Abstract

#### Problem

Guillain-Barré Syndrome (GBS) is a rare inflammatory peripheral nerves disorder with variable recovery and variant or chronic forms. Previous qualitative studies have been published of GBS sufferers' experiences but survey evidence on the experiences and needs of people with GBS or its variants particularly in a UK context is limited. We aimed to develop and validate a survey to quantify the experiences and health and social care needs of people with GBS and its variants in the UK.

#### Approach

We developed a self-administered anonymous online questionnaire survey to explore patients' experiences of care and recovery from GBS. Questionnaire items were based on a systematic review and metasynthesis of qualitative studies and an interview study of people with the condition. After gaining ethical approval, the survey was publicised via a national GBS charity website and social media. Participants with a diagnosis of GBS consented and completed the questionnaire online. Question domains included experiences of the GBS and its care, symptom severity at various stages, and factors that supported or hindered recovery. We conducted descriptive statistical analyses and developed a multiple regression model exploring the relationship between experiences, demographic and disease factors.

#### Findings

Of 291 responders who completed the survey within 6 weeks of its launch, 140 (51.9%) were male, 130 (48.1%) female; 178 (65.9%) married or in civil

partnership whereas 57 (21.1%) were single; 252 (86.6%) were from the UK. Most participants (116; 43%) were diagnosed between 2015 and 2019. Time to diagnosis was usually 1-7 days (161, 61.7%). First medical help was sought more often from a general practitioner (163; 62.2%) than from the Emergency Department (67; 25.6%). Improvement in symptoms was associated with younger age ( $\leq 39$  years vs older), patients who were married (vs civil partnership or single), and those who presented to medical care early within the first 4 weeks compared with later. Improvement in symptoms was also better in responders who had a good response to immunoglobulins and/or plasma exchange therapy, those who were treated in a hospital intensive care unit and those who were positive about occupational therapy. Responders expressed a preference for information from health care staff compared with charities or social media but were more likely to experience better information from the latter. Analysis also showed high completion rates, scale reliabilities and construct validity in relation to previous studies, such as greater symptom improvement in younger people and those who received early intensive treatment.

#### Consequences

The survey showed good evidence of face and construct validity and internal consistency. It could be used to explore experiences and how these could be improved in a larger population of people with GBS, and to evaluate the effect of interventions designed to improve experiences.

#### Funding Acknowledgement

We acknowledge the GAIN Charity for funding the project

## K.3

### Patients' experiences and perceptions of Guillain-Barré syndrome: a systematic review and meta-synthesis of qualitative research

**Presenter:** Despina Laparidou

Co-authors: Curtis, F., Akanuwe, J., Jackson, J., Hodgson, T.L., & Siriwardena, A.N.

#### Institutions

University of Lincoln

#### Abstract

##### Problem

Guillain-Barré syndrome (GBS) is an immune-mediated polyradiculoneuropathy, with an incidence of 1-2/100,000 per year and variable severity. Due to the rarity of this condition there is limited evidence exploring the experiences of patients with GBS. The aim of this study was to review patients' experiences and perceptions of GBS, by conducting a systematic review and thematic meta-synthesis of qualitative studies of patients' experiences of GBS.

##### Approach

We searched twelve electronic databases, supplemented with internet searches and forward and backward citation tracking from the included studies and review articles. Data were synthesised thematically following the Thomas and Harden approach. The CASP Qualitative Checklist was used to assess risk of bias in included studies.

##### Findings

Our search strategy identified a total of 4,204 citations and after removing duplicates and excluding citations based on title and abstract, and full-text screening, five studies were included in the review and meta-synthesis; all included studies were considered of acceptable quality. Through an iterative approach, we developed six analytical themes. The first theme discusses the patients' initial symptoms, how they struggled to receive a diagnosis, their feelings of uncertainty, and how hope of recovery was their main motivation forward. The second theme summarises the effects of GBS on all aspects of patients' lives, including their ongoing physical difficulties (e.g. pain and fatigue), their psychological

well-being (e.g. anxiety and fear), their family and social lives, as well as their ability to work. The third theme describes how participants were not satisfied with the support they received from healthcare services and that this was considered a key barrier preventing their recovery from GBS. In contrast, the fourth theme discussed how some participants had positive feelings towards the healthcare and the support they received from family, friends and peers. The final two themes discuss the participants' path to recovery through achieving milestones and slowly accepting their situation. Their desire to go back to their pre-GBS selves, and the importance of re-evaluating life are also presented. Despite the variety of experiences, it was evident that being diagnosed with and surviving GBS was a life-changing experience for all participants.

### Consequences

Exploring this literature has enabled us to identify how patients may need extra support to cope better with their recovery and also identify ways that healthcare professionals and services can help facilitate further such a recovery.

### Funding Acknowledgement

The study was supported by a grant from the GAIN (Guillain-Barré & Associated Inflammatory Neuropathies) charity.

## K.4

### How do practitioners and older patients with non-valvular atrial fibrillation perceive the optimisation of direct oral anticoagulants? A qualitative study

**Presenter: Yeyenta Osasu**

Co-authors:

### Institutions

Richard Cooper, Caroline Mitchell

### Abstract

#### Problem

Until relatively recently, warfarin was the drug of choice for stroke prevention in AF patients but the upward prescribing trend of DOACs for AF has significant consequences on NHS expenditure. DOAC

optimisation in primary care is important to prevent potential adverse bleeding events and if adherence is suboptimal, their efficacy may be reduced. Older patients with AF are often co-morbid and likely to experience adverse events. For example chronic kidney disease or acute kidney injury due to concurrent illness necessitates dose adjustments, and lack of routine monitoring and healthcare contact may result in poorer adherence compared to warfarin. Study aims: To understand patient and practitioner perception of DOAC optimisation for atrial fibrillation

### Approach

Purposive sample of six practices were identified, stratified by practices by size, population and area profiles. Maximum variety sample of patients, aged ≥ 65 years with NVAf, GPs, practice based pharmacists and community pharmacists were recruited. Semi-structured, face-to-face, taped individual interviews undertaken. Data were organised using NVivo Software (V12) and analysed thematically until data saturation.

### Findings

Thirty-two participants were interviewed comprising 10 pharmacists, 6 GPs and 16 patients aged between 67 to 89 years. Themes identified from the patients' perspectives included co-morbidities and competing health priorities; poor understanding of the illness and treatment; patients' acceptance of illness and treatment as an inevitable consequence of ageing; and diminished risk perception of DOACs. Patients assumed DOACs were a safer alternative to warfarin and relied on their doctors' medical decisions. Though patients received multiple anticoagulant leaflets, they could not readily re-call potential side effects of DOACs. There was a recognition of medication necessity amongst patient who took DOAC for secondary prevention of stroke but patients who took DOACs for primary stroke prevention and who had co-morbidities expressed vagueness in illness and treatment coherence. Most patients gave priority to their co-morbid illnesses for which there was a physical discomfort or burden. GPs expressed increasing confidence and preference for DOACs over warfarin, and they relied on their in-house computer re-call systems for routine medication reviews and blood tests. Practice pharmacists expressed caution and concern for patient safety, and need for checking patients' understanding and adherence regularly.

## Consequences

Factors which hinder the optimisation of DOACs in older patients with AF were identified including co-morbidities, polypharmacy, poor understanding of AF and anticoagulant therapy. These, and increasing practitioner workload has resulted in a welcome acceptance for alternatives to warfarin because they require less medication management. However, diminished risk perception of DOACs, by patients and practitioners has implications for patient safety. It is the responsibility of all professionals, healthcare organisations and patients to ensure medicines use, including DOACs which are high risk drugs, is as safe as possible. Safe processes are required to ensure effective communication and meaningful reviews become routine practice.

## Funding Acknowledgement

Pharmacy Research UK

## K.5

### Routine feedback on patient-reported outcomes to healthcare providers and patients in clinical practice

**Presenter: Ian Porter**

Co-authors: Chris Gibbons, Daniela C Gonçalves-Bradley, Stanimir Stoilov, Ignacio Ricci-Cabello, Elena Tsangaris, Jaheeda B Gangannagaripalli, Antoinette Davey, Elizabeth J Gibbons, Anna Kotzeva, Philip J van der Wees, Evangelos Kontopantelis, Joanne Greenhalgh, Pete

## Institutions

University of Exeter Medical School, Harvard Medical School, University of Oxford, University of Exeter Medical School, Instituto de Investigación Sanitaria Illes Balears, Harvard Medical School, University of Exeter Medical School, University of Oxford, Agency for Health Quality and Assessment of Catalonia, Radboud University Medical Center, University of Manchester, University of Leeds, Universi

## Abstract

### Problem

Patient-reported outcomes measures (PROM) assess a patient's subjective appraisal of outcomes from their

own perspective. Despite hypothesised benefits of PROM feedback supporting decision making in clinical practice and improving outcomes, there is uncertainty surrounding their effectiveness in these areas. We assessed the impact of PROM feedback on patient-reported health outcomes and processes of care.

### Approach

We registered the protocol of this systematic review of randomised controls trials (RCTs) in the Cochrane Library. We searched MEDLINE, EMBASE, CINAHL, clinical trial registries and five other databases, as well as grey literature. We included RCTs directly comparing the effects on outcomes and processes of care of feedback of PROM to clinicians and/or patients with the impact of not providing such feedback. We evaluated the impact on patient-reported outcomes including symptoms, functioning, health perceptions, and quality of life; and a range of processes of health care including communication, clinical management and health service utilisation, and patient satisfaction. Where possible we conducted a meta-analysis of the results.

### Findings

We identified 97 randomised trials assessing the effectiveness of PROM feedback in improving processes and/or outcomes. Studies were conducted across diverse ambulatory primary and secondary care settings in North America and Europe. Certainty of the evidence varied between very low and moderate. Many studies were at risk of bias due to designs which increased the likelihood of allocation concealment and contamination. PROM feedback probably slightly improves quality of life (standardised mean difference (SMD) 0.015, 95% confidence interval (CI) 0.03 to 0.27; 11 studies; 1998 participants), and probably leads to an increase in disease control (odds ratio (OR) 1.56, 95% CI 1.23 to 1.97; 14 studies, 2806 participants), patient-physician communication (SMD 0.37, 95% CI 0.2 to 0.54; 3 studies; 571 participants), and diagnosis and notation (OR 2.56, 95% CI 1.86 to 3.53; 22 studies; 7223 participants), for which we graded the evidence as moderate certainty. The intervention probably makes little or no difference for general health perceptions, social functioning, and pain. We are uncertain about the effect of PROM feedback on physical and mental functioning, as well as fatigue. We did not find studies reporting on adverse effects.



## Consequences

Interventions which assess and feedback patient-reported outcomes using PROMs can improve the detection of healthcare issues, leading to appropriate diagnosis and referral as well as increasing patient perception of their care and disease control. Patient functioning and outcomes were improved slightly in mental health care settings and small improvements to quality of life were associated with the intervention across all studies. There is a need for more high-quality studies in this area, particularly cluster designs and techniques to maintain allocation concealment.

## L.1

### Causal Explanation for Patient Engagement with Primary Care Services in Saudi Arabia: a realist review

**Presenter:** Alaa Alghamdi

Co-authors: Melvyn Jones, Paula Alves, Sophie Park

#### Institutions

UCL (University College London)

#### Abstract

##### Problem

Saudi Arabia (SA) has a rapidly developing universal health care system and is maturing from its very hospital focussed origins. However, health service usage suggests 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). Primary healthcare development in Saudi has lagged behind secondary care, and evidence suggests that citizens are ambivalent or dissatisfied with these services. Previous research has focused on the quality and patient satisfaction of primary care services in Saudi Arabia. Yet, uncertainty still exists about causal explanations of patient engagement with primary care services and potential ways to improve this. The aim of this review is to understand causal explanations of patient engagement with the Saudi PHC.

##### Approach

A realist approach was chosen as patient engagement with PHC is complex. We undertook systematic searches and identified data relevant to the Saudi primary healthcare delivery and patient engagement. A range of types of data such as qualitative, quantitative, mixed-method research and grey literature (incorporating related media items) were included as was stakeholder involvement. A realist review methodology has been used for the data synthesis where we developed an initial programme theory, searched for evidence as outlined, undertook study selection and data extraction. Through data synthesis the programme theory was refined.

##### Findings

We identified 33 articles. The data sources were most frequently cross-sectional surveys and gave us information on different domains in the primary care setting. A pathway of patient engagement was generated with 6 steps. Many CMOs (Context-Mechanism-Outcome Configuration) were identified to produce the programme theory. Important contexts such as; patient's perception, patient's needs, healthcare type, friends/ families' influences, and patient's socio-cultural factors were identified. The causal mechanisms included trust in, disbelief with or misconceptions of primary care, patients' perceptions of GPs' knowledge, GP/patient communication, PHC accessibility & opening hours, specialised care in PHC setting, and strict gatekeeping policies.

##### Consequences

Patient engagement with primary care services is an important topic in SA, particularly in the context of Saudi's 2030 vision for healthcare. Patient engagement with PHC is a complex process, and little is known about patient drivers and how better engagement might be achieved. No previous realist reviews have been undertaken on this or any related topic in the primary care setting in SA. This review has extended our understanding of patient engagement with primary care services in SA. We will develop outputs to inform future interventions aiming to improve patient engagement with primary care services in SA. We believe our findings provide important insights for healthcare providers and policymakers not only in SA but in other settings developing primary healthcare systems.

## Implementing primary care services in or alongside EDs: qualitative analysis of a policy initiative.

**Presenter: Heather Brant**

Co-authors: Voss, S. 1, Adamson, J. 2, Vaittinen, A. 3, Morton, K. 1, Bengner, J.1

### Institutions

1 University of the West of England - 2 University of York - 3 University of Newcastle

### Abstract

#### Problem

Attempts to address increasing demand on emergency departments (EDs) include the use of general practitioners (GPs) in or alongside the ED (GPED). It has been estimated that between 15% and 40% of patients attending EDs in the United Kingdom could be treated in primary care, particularly those aged between 16–44. The 2015 ‘Keogh review’ of urgent and emergency care in England recommended co-locating primary care services alongside the ED and “streaming” of patients attending with primary-care problems to this alternative provision. At that time it was estimated that 43% of UK EDs already had some form of co-location. In March 2017 £100m of Capital funding was allocated by the UK Chancellor to support the development of GPED in England. NHS hospital trusts could bid for funds to support the implementation of GPED, which was a mandated healthcare policy. However, there is limited data on the benefits of introducing such a model; its effectiveness, potential risks and possible unintended consequences. The aim of this study was to explore whether NHS Trust leaders’ expectations of GPED were realised a year after introduction, and how the policy was implemented in practice.

#### Approach

Semi-structured telephone interviews were conducted with managerial and clinical leaders in 59 NHS Trusts that received capital funding to support the implementation of GPED, to explore their expectations. 26 repeat interviews were conducted one year later to discover whether their plans have been realised successfully.

### Findings

Interviewees expected that streaming to a GP in the ED would result in improved management of patients presenting with primary-care problems and a reduction in associated resource use. Expected impacts included improvements in: ED performance against the “four-hour standard”; waiting times; quality of care; patient-safety; patient satisfaction. The actual experience of introducing GPED for both system-leaders and front-line staff, including GPs, was varied. Success of implementation was based on operational, structural and organisational factors. Some reported the introduction of GPED had realised their expectations resulting in positive outcomes. Others reported several challenges, particularly with governance, recruitment and retention of staff (especially GPs), and little impact on patient waits or performance. Some abandoned GPED altogether. Reported concerns included the possibility that introducing GPED increased attendances, but such increases were rarely explained by GPED. The impact on surrounding primary and community healthcare providers was difficult to establish.

### Consequences

Rapid introduction of health policy supported by the offer of capital funding does not always result in the intended outcomes. National policy is implemented by, and in response to, local actors and influences; the result can be a service that is more complex than anticipated. Focusing on a single area of provision may fail to take account of potential impacts on the wider health and care system.

### Funding Acknowledgement

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## L.3

### Primary care streaming in emergency departments and perceived mechanisms for effectiveness

**Presenter: Michelle Edwards**

Co-authors: Alison Cooper, Freya Davies, Adrian Edwards

#### Institutions

Cardiff University

#### Abstract

##### Problem

To manage increasing demand on UK emergency and unscheduled health care services, policy has promoted the streaming of patients presenting to emergency departments (EDs) with non-urgent problems to primary care services. Currently little is known about the different contexts in which primary care streaming is operated, its effectiveness in directing patients to the most appropriate clinician and the impact on flow and waiting times.

##### Approach

Using realist methods we aimed to explore the effectiveness of primary care streaming. We visited 13 hospitals and conducted non-participant observations and semi-structured interviews with staff and patients. Data consisted of field notes and audio-recorded interviews. Transcripts were coded in NVivo v12 and analysed to produce context, mechanism and outcome configurations to help explain how streaming works in different contexts and what mechanisms are perceived to lead to effectiveness outcomes.

##### Findings

Primary care streaming was perceived to help improve flow and waiting times in some settings because GPs saw patients with minor illness and made quick assessments without the need for investigations, enabling ED doctors to focus on more acutely unwell patients. In other settings where there was low demand from patients with primary care problems, there was less perceived improvement on flow. In more integrated services, with a shared governance structure and where there were good working relationships between ED and primary care

clinicians, streaming was perceived to be more effective in terms of patients being streamed to the most appropriate clinician, GPs often saw a wider range of patients. More experienced nurses working in a streaming or triage role were perceived to be effective in streaming patients to the most appropriate clinician because they had more skills and knowledge to support clinical decision-making. Nurses who had knowledge of primary care and of the skillset of primary care clinicians working in the ED were also perceived as more effective. Some higher band nurses also improved waiting times and flow because they could prescribe, order X-rays, discharge patients or redirect them to their own GP. Clear guidance and training was perceived as essential in streaming patients to primary care clinicians and a lack of guidance and miss-matched governance where the services were provided and managed separately was found less effective. Less experienced nurses with less knowledge, skills and confidence to support streaming decisions were perceived as less effective in streaming patients to the most appropriate clinician and took longer in undertaking streaming assessments, contributing to delays in waiting times and flow.

##### Consequences

Effectiveness of streaming relies on experienced nurses, using clear guidance based on the local service, support and training. An NHS Trust managed service, a shared governance structure and a good working relationship between the ED and primary care clinicians improved effectiveness.

#### Funding Acknowledgement

NIHR HS&DR

## L.4

### Attributes of clinical guidelines and association with uptake: a systematic review

**Presenter: Dr Adam Grice**

Co-authors: Dr Paul Lord, Professor Jeremy Grimshaw, Professor Robbie Foy

#### Institutions

University of Leeds

#### Abstract

##### Problem

Rigorously developed clinical guidelines can play a pivotal role in promoting evidence-based practice and improving the quality and outcomes of healthcare. Yet the incorporation of guideline recommendations into routine clinical care is often inconsistent. Uptake of clinical guidelines may be related to their structure, implementation strategies and characteristics of targeted professionals or patients. However, assessment of the quality and structure of guidelines does not necessarily correlate with successful implementation. Attempts to improve uptake of clinical guidelines, through delivery with an implementation strategy, have produced inconsistent results. Successful implementation of clinical guidelines may also be related to the characteristics, or attributes, of the specific recommendations that make up the guideline.

##### Approach

This systematic review aims to identify studies that assess the impact of the specific attributes or characteristics of individual clinical recommendations on uptake of that recommendation. We aimed to include any comparative studies evaluating the characteristics, qualities, attributes or features of a clinical recommendation that assesses association with uptake. We also assessed studies which discussed attributes of recommendations, or barriers and enablers to uptake, but did not test this. We excluded studies assessing or comparing characteristics of individuals or organisations that use clinical recommendations. A database search of MEDLINE, EMBASE, CINAHL, EBM Reviews and HMIC Databases, was conducted. Screening of the titles and abstracts (n= 2330) was undertaken by authors

independently to ensure that the articles satisfied the inclusion criteria. For included articles full text versions were obtained for further assessment.

##### Findings

There were nine studies which tested if the perceived attributes of the guideline influenced guideline uptake and 119 studies which discussed attributes of guidelines or barriers and enablers to uptake but did not test this. Many papers reported that clinicians perceive that concise, specific recommendations, supported by strong evidence, and guidelines which are testable will more likely be used and this is also demonstrated in the papers which tested guideline uptake. Clinicians also felt that guidance should be accessible, concern routine care and be from a trustworthy source, although this was shown in fewer papers and not shown to be important in the research testing guideline uptake. Overwhelmingly, clinicians think guidelines should suit patients and be flexible to their needs and preferences. However, this has no impact on guideline use and the most important factors are if the recommendation is compatible with current practice and does not require new skills and routine change.

##### Consequences

Prospective assessment of the attributes of recommendations that are positively or negatively associated with successful uptake could identify those guidelines that will need greater resources in an implementation strategy and lend further insights into processes of change. Greater understanding of these attributes could guide local and national policy on guideline production, dissemination and use.

##### Funding Acknowledgement

NIHR Research Capability Funding West Yorkshire CCG Health Education England Yorkshire & Humber Post CCT Fellowship

## Are new ways of working in primary care sustainable? Assessing policy interventions using Normalisation Process Theory

**Presenter: Louisa Harding-Edgar**

Co-authors: Louisa Harding-Edgar, Frances Mair

### Institutions

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

### Abstract

#### Problem

Primary care policy in the UK continues to focus on the need to re-design services to address increasing patient complexity, increased demand and respond to the recruitment crisis in general practice. While there is much rhetoric, it is unclear to what extent new models of care can be embedded into routine primary care. We aimed to review recent primary care policies focused on new ways of working to assess the extent to which they consider sustainability and normalisation.

#### Approach

We conducted an analysis of English and Scottish health policies focused on the re-design of primary care services. 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, the National Audit Office and the King's Fund. Initial data extraction identified new models of care, who was involved, potential barriers and facilitators to implementation, resources and monitoring. From this, we applied Normalisation Process Theory (NPT) to explore: (1) if the policy articulated why the described models were 'new'; (2) if it was clear who should be involved in the delivery; (3) if there was consideration of the impact on current work or resources/training for the new work; (4) how implementation would be monitored and evaluated.

#### Findings

We identified 23 policies: 15 English, 8 Scottish. Most were produced by Government, NHS England or NHS Scotland. New models of care included Multispecialty

providers; Integration of health and social care; New unscheduled care; Pharmacy-led care. Most policies cited aging populations and patient complexity as reasons for change; some also focused on GP workforce shortages and inequalities. Current working relationships were acknowledged, and in some cases seen as crucial for the new intervention. However, linking to new stakeholder groups was also important e.g. local authorities and the third sector, but with no acknowledgement of the time this requires. Resources, particularly new ring-fenced monies, and training were outlined in the policies; however, timescales for implementation were often very short. There was little consideration of the evidence required to assess effectiveness nor how new ways of working would be monitored long-term.

#### Consequences

There is no shortage of new ways of working in recent primary care policy in England and Scotland. These are, however, high level descriptions and focus on initial implementation, with little consideration of how these models should be embedded and sustained in the longer term. The result is likely to be continued confusion for patients and additional work for primary care staff. The use of a theoretical framework, such as NPT, highlights what policymakers should focus on if they want to ensure the long-term sustainability of new ways of working.

#### Funding Acknowledgement

Unfunded study.



## L.6

### In general practice, is it possible for patients to participate in research before even entering the consultation room? The Automated Check-in Data Collection Study or the 'AC DC Study'

**Presenter: Sarah A Lawton**

Co-authors: Sarah A Lawton, Toby Helliwell, Simon Wathall, Christian D Mallen

#### **Institutions**

Keele University

#### **Abstract**

##### **Problem**

Despite nine out of ten patient contacts with the NHS taking place in primary care settings, in 2017/18, participation of patients in primary care research studies contributed only 21.3% of total participants in NIHR Clinical Research Network supported research. Barriers to GPs delivering research include; consultation workload and a lack of efficient data collection methodologies. Choosing which data collection method to use when conducting research in the primary care setting is a predicament faced by many researchers.

##### **Approach**

When visiting a general practice for a pre-booked consultation, instead of patients speaking to the receptionist, it has now become commonplace for general practice waiting rooms to host an automated check-in screen. The basic automated check-in screen can be enhanced with additional software to allow the collection of routine data that is saved in the electronic patient record or to deliver patient messages. A research study using this automated process for the purposes of research, to examine patient acceptability for providing brief research information, whilst self-completing an automated check-in screen, prior to any general practice consultation, was designed. Extensive PPIE, clinician and user consultation was undertaken to develop and optimize the process. The design also included an assessment of the impact of check-in completion for general practice operationalisation.

##### **Findings**

A study response rate of 92% was achieved with brief research data obtained using the automated check-in facilities, from 9,274 participants registered at 9 general practices within North Staffordshire. Each practice recruited over a three-week period. There were no significant differences in participation rates or responses across practices, age groups or genders. In addition, the use of the check-in facilities to collect brief research data also had no reported impact on general practice operationalisation. Results data to the questions asked within the study will be presented.

##### **Consequences**

Technology-based methods for data collection, improve accuracy, reduce costs of data processing and can also maximise scalability. Following this research to look at acceptability of the methodology, follow-up studies have been designed to; identify carers and to case find for mental health issues. The restriction associated with this methodology however, is that only brief research data is obtained as limiting the number of questions was identified as a priority to minimise the check in process time and impact on usual GP check in processes. Whilst brief, data can be obtained to provide powerful answers to appropriately framed research questions which could otherwise be cost prohibitive and take a long time to conduct. Next steps for this new methodology, may include research into specific public health issues, service use opinion or identification of potential study participants for research studies either directly or by registering a patient's willingness in their health record.

## L.7

### How to measure the strengthening of primary care?

**Presenter: Michael Wright**

Co-authors: Dr Andrew Bazemore, Dr Yalda Jabbarpour, Professor Kees van Gool

#### Institutions

Centre for Health Economics Research and Evaluation (CHERE), University of Technology, Sydney, Australia, Robert Graham Center for Health Policy Studies, Washington DC, USA

#### Abstract

##### Problem

The 2018 Astana Global Primary Health Care Conference Declaration suggests that “strengthening primary health care is the most inclusive, effective, and efficient approach to enhance physical and mental health.” Recent reforms in the UK and internationally have agreed on the importance of strengthening of primary care, but there is less agreement in how to show evidence of strengthening. The aim of this research is to evaluate if this can be observed using resource allocation methods.

##### Approach

We estimate spending on primary care as a proportion of health spending using Australian national statistics. We compare methods to estimate primary care spending developed by OECD and WHO, with a newer methodology for estimating primary care spending - "PC Spend". Using PC Spend methodology we categorise health spending into 3 categories. Level A is the broadest category and includes all ambulatory care, and dental spending. Level B includes direct spending on primary care services, such as delivery of general practice services. Level C is restricted to high value primary care spending such as patient centred medical home (PCMH) payments or funding to improve care coordination. We use Australian Bureau of statistics data, and will provide comparisons between Australia, USA and UK.

##### Findings

Using OECD methodology (but excluding pharmaceuticals), over 18% of health spending is

categorised as being on primary health care services. Using PC Spend methodology we find results for PC Spend A, B and C at 19.6%, 6.8% and <1% respectively. The multiple levels of the PC Spend methodology provides a more granular assessment of how much of health budget is being spent on first contact, comprehensive, coordinated health services than OECD/WHO measures. This has the potential to better reflect the impact of health system reforms on primary care. Further work is needed for each country's health system to determine what components of high value primary care spending warrant inclusion in PC Spend Level C.

##### Consequences

These results confirm that despite calls for strengthening of primary care, spending on direct delivery of primary care services remains under 10% of health spending in Australia. Changes in primary care spending have potential use as a proxy for strengthening of primary care, and these methods require further testing and refinement.

#### Funding Acknowledgement

This project has been supported with support from an RACGP Foundation Grant

## M.1

### Understanding the management of common infections in out-of-hours primary care

**Presenter: Rebecca K Barnes**

Co-authors: Geraldine Leydon-Hudson, Matthew Booker, Paula Gomes Alves, Gail Hayward, Jennie Hayes, Lydia Holt, Paul Little, Michael Moore, Fiona Stevenson, Beth Stuart, Catherine Woods

#### Institutions

University of Bristol, University of Southampton, University College London, University of Oxford

#### Abstract

##### Problem

Despite a reduction in antibiotic consumption in general practice settings over the last five years, there is evidence that antibiotic prescribing rates in out-of-hours primary care have remained stable. Prior

research has shown that communication plays a significant role in antibiotic prescribing decisions in-hours; and that training promoting clear communication about infection symptoms and treatment has shown some success. Our aim is a) to explore the management of common infections out-of-hours to understand factors influencing prescribing; and b) to develop evidence-based communication training to optimise prescribing decisions tailored to the common challenges faced in this setting.

### Approach

A mixed methods approach was chosen consisting of three sequential phases: i) a realist-informed scoping review of current provider training and clinical guidelines for antibiotic prescribing in primary care; ii) three concurrent studies - one qualitative, making use of recorded encounters with eligible patients/carers and conversation analytic methods to explore the social context of individual prescribing decisions; two quantitative, involving the statistical analysis of survey data from participating clinicians and patients, and routine anonymised case records data from providers, to analyse the wider prescribing context; and iii) a mixed methods component bringing together the findings from phases one and two, with input from clinicians, patients and carers.

### Findings

Our phase one review found existing evidence highlighting specific challenges faced by primary healthcare professionals in managing patient expectations out-of-hours. Some studies reported that antibiotics may sometimes be prescribed to avoid having to negotiate an alternative. A wide range of guidelines and training materials on antibiotic prescribing were found to be available. However, none included guidance specific to the out-of-hours context. Phase two (March 2019 – March 2020) involves two large out-of-hours providers serving populations in the South and West of England. Our qualitative dataset will include up to 300 recordings of advice calls, base and home visits including GPs, nurses and paramedics. Eligible patients include community dwelling children and adults as well as care home residents. Over 50% of our participants are over 70 years old. The two main types of infections being managed currently are respiratory and

urological. 60% of home visits end in an antibiotic prescription compared to 48% of base visits.

### Consequences

Our interim findings show high levels of antibiotic prescribing in comparison to in-hours primary care. Our work will enable new insights into understanding antibiotic prescribing patterns out-of-hours. This will be the basis for a new e-Learning for Healthcare (eLfH) programme hosted by Health Education England, drawing on real examples to guide the management of common infections out-of-hours. The eLfH platform has over one million registered users so the potential to influence future outcomes is significant.

### Funding Acknowledgement

This study/project is funded by the National Institute for Health Research (NIHR) School for Primary Care Research (project reference 414). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

## M.2

### COVID-19 surveillance - Extending the national PHE-RCGP-Oxford Primary Care influenza surveillance with rapid system-wide informatics and deployment

#### Presenter: Simon de Lusignan

Co-authors: Oluwafunmi Akinyemi, Manasa Tripathy, Rachel Byford, , Filipa Ferreira, Michael Feher, Mark Joy, Maria Zambon, Jamie Lopez Bernal, Simon de Lusignan

#### Institutions

University of Oxford, Public Health England

#### Abstract

##### Problem

The UK general practice is highly computerised but there have been no codes to record COVID-19 or countries where people have visited. The Royal College of General Practitioners (RCGP) Research and Surveillance Centre (RSC) and Public Health England (PHE) system is an established national influenza surveillance system. We worked with computerised

medical record (CMR) system suppliers to make the system fit for purpose for COVID-19 surveillance

### Approach

We collaborated to create new codes to record both COVID-19 details and countries visited as well as training materials for practices. A model was developed for weekly data returns and a dashboard to provide data quality feedback and information of cases. Extended virology surveillance for COVID-19 will be undertaken in the mildly unwell, with additional serological surveillance of those who are well.

### Findings

In less than two weeks, we created the required codes across all CMR systems which included clinical codes for recording COVID-19 specific events, local codes that will map 1 to 1 with the official emergency release of the Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) and country codes of travel history. We have used an ontological approach to classify cases into confirmed cases, cases under investigation and those who have been under investigation and now excluded from having COVID-19 infection. We have created an online network observatory and individual practice dashboard updated weekly to provide information similar to RCGP RSC reporting of influenza and other conditions, with the additional option of twice-weekly reporting.

### Consequences

Strong relationships and collaboration between RCGP, PHE, and the primary care informatics community has enabled national deployment of the means to monitor the COVID-19 outbreak in under two weeks.

### Funding Acknowledgement

The work was supported by Public Health England

## N.1

### Awareness and use of online appointment booking in general practice: analysis of GP Patient Survey data

#### Presenter: Gary Abel

Co-authors: Mayam-Gomez Cano, John Campbell, Abi Eccles, Leon Poltawski, Jeremy Dale, Helen Atherton

#### Institutions

University of Exeter Medical School, University of Warwick

#### Abstract

##### Problem

General practices are required to provide online booking to patients in line with policy to digitise access. Online booking services offer the option of booking an appointment 24/7 using the internet. However, uptake of online booking by patients is currently low and there is little evidence about awareness and use by different patient groups.

##### Approach

As part of the OBoE study, we performed a secondary analysis of GP Patient Survey data (2018) making use of two questions, one asking about awareness of online booking of appointments and another asking about use. Multivariate logistic regression was used to examine associations between both awareness and use in relation to age, gender, ethnicity, deprivation, the presence of a long-term condition, long-term sickness and being deaf. Comparison of models accounting for and not accounting for clustering by practice was used to illustrate the extent to which disparities reflect the clustering of certain types of patients in practices where awareness and use of online booking is high or low for all patient groups.

##### Findings

Of 647,064 patients answering the relevant question, 277,278 (43.3%) reported being aware of being able to book appointments online. In contrast, only 14% (93,671 / 641,073) reported having actually booked an appointment online. There was evidence of variation by all factors considered. In particular, strong deprivation gradients in both awareness and use were evident (e.g. most vs. least deprived quintile OR for use=0.63 95%CI 0.61-0.65). There was a strong drop

off in both awareness and use in patients over 75 (e.g. 85+ vs. 65-74 years OR for awareness=0.33 95%CI 0.32-0.35). Patients with long-term conditions were more aware and more likely to use online booking, however, deaf patients were less likely to be aware, but more likely to use online booking (not-deaf vs deaf OR for awareness= 0.78, 95%CI 0.70-0.86, OR for use= 1.29, 95%CI 1.14-1.46). Adjustment for practice suggest that around a third of the deprivation gradient in awareness and a fifth of the deprivation gradient in use is attributable to deprived patients being clustered in practices with low awareness/use for all patients.

### Consequences

Whilst over 40% of patients know that they can book appointment online, the number that actually do so is far lower. Furthermore, awareness and use of online appointment booking varies by patient group. Some of this variability is reassuring, for example that patients with long-term conditions are using the service, whilst other variability is more concerning, for example the strong deprivation gradient and drop off in old age. With the constant push for online services within the NHS, practices need to be aware that not all patient groups will book appointments online and that other routes of access need to be maintained to avoid widening health inequalities.

### Funding Acknowledgement

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## N.2

### The Online Booking Experience study: Early findings from a qualitative interview study.

**Presenter: Helen Atherton**

Co-authors: Abi Eccles, Gary Abel, John Campbell, Jeremy Dale, Leon Poltawski, Graham Roberts

### Institutions

University of Warwick, University of Exeter

### Abstract

#### Problem

Intended as a way to improve access and alleviate pressure, most general practices offer online appointment booking as an alternative booking via telephone. The UK government have invested in online services and recently developed an NHS smartphone app with an online booking feature. Despite such promotion, evidence shows that most patients continue to book appointments via phone, with very few using online booking services. Currently, evidence examining factors mediating booking behaviours is lacking and little is known about how patients use online booking and their perspectives about them. The Online Booking Experience (OBoE) study aims to examine patients' experiences of using, and not using, online booking.

#### Approach

The OBoE study uses mixed methods and comprises of two stages. Initially data from the General Practice Patient Survey (GPPS) was analysed to examine patterns between patients' booking behaviours and demographic backgrounds. This not only demonstrated differing levels of awareness and use across England, but also provided a detailed picture of the types of people who are more and less likely to be aware of, and use, online booking. This abstract focuses on the second stage of the study, whereby we carried out approximately 40 semi-structured qualitative telephone interviews with individuals who had recently booked GP appointments. During the interviews we explored in depth patients' experiences of, and views about, booking appointments online. Participants were recruited from 12 practices selected according to demographic features, aiding maximum variation sampling. Initially a scoping survey was



distributed to collate information about participants' backgrounds and their booking behaviours and awareness. This data enabled us to purposively sample interview participants according to their booking behaviour and awareness, as well as demographic background. The iterative sampling strategy was guided by the stage one findings, ongoing interview analysis and maximum variation sampling. Interview data was analysed by two researchers using framework analysis, enabling comparison of cases in key areas.

### Findings

We will present the early findings from interview analysis (ongoing from March 2020). These qualitative findings will provide further exploration of the patterns identified in the analysis of GPPS data; explaining some of the reasons behind contexts when online booking is, and is not, appealing or feasible for different individuals.

### Consequences

Examination of patients' experiences of online booking will aid understanding in how to improve such services. As the UK government continues to invest in a service which has low levels of uptake, robust evidence identifying barriers to online booking for some groups is vital information needed to improve the quality of services and overcome any potential problems. This evidence will also be of practical use to practices when considering implementation of online booking services for all their patients effectively and efficiently.

### Funding Acknowledgement

This abstract presents independent research funded by the National Institute for Health Research (NIHR) under its Research for Patient Benefit (RfPB) Programme (Grant Reference Number PB-PG-1217-20033). The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

## N.3

### What patients choose and how GPs respond in online consultations with askmyGP

**Presenter: stephen black**

Co-authors:

### Institutions

GP Access

### Abstract

#### Problem

It is often assumed that most patients contacting their GP want a face to face appointment. But what do they choose when their practice has an online tool enabling multiple modes for the GP response and they are given a choice? And do GPs give the patient what they request or something else?

#### Approach

We decided to analyse this problem by using the large dataset (>1m patient requests) automatically collected from askmyGP, an "online consultation" tool. Each patient is offered a preferred method for the GP's response (online message, phone call, video call, face to face appointment). askmyGP also records the actual response used by the GP to resolve the request. So we can analyse the mix of responses requested and whether the GP judgement matches the patient request. We illustrate the patterns of flow by extremely easy to interpret data visualisations using Sankey Charts.

#### Findings

The majority of patients don't want a face to face appointment when given the choice (though numbers vary significantly by practice). GPs do not feel bound by the patients' requested mode: they frequently judge a different response is appropriate for the request. Almost nobody wants a video consultation when given a choice of other, effective, methods.

#### Consequences

The drive to encourage video consultations appears to be a waste of time. GPs should not assume that patients will only be satisfied by a face to face appointment: they are often satisfied by alternatives. Since alternatives often require less GP time, this has

major implications for GP efficiency. GPs do not feel bound by patients' preferred method of contact and their judgement on how to respond frequently overrides patients' requests. Being flexible about how to respond creates more capacity for GPs to give patients a faster, more useful service.

#### **Funding Acknowledgement**

The work was funded internally by GP Access as part of the ongoing development of askmyGP.

## **N.4**

### **Improving communication to GPs at hospital discharge: a systems approach**

**Presenter: Nicholas Boddy**

Co-authors: 2. Barclay S, 3. Bashford T, 4. Clarkson PJ

#### **Institutions**

Engineering Design Centre, University of Cambridge (1,3,4), Primary Care Unit, University of Cambridge (2)

#### **Abstract**

##### **Problem**

Good communication at hospital discharge is critical for patient safety and continuity of care. Recipient GPs rely almost exclusively on discharge summaries that are usually written by the most junior doctors; these are error prone and may lack insight into community care. Previous quality improvement efforts have largely focused on adherence of discharge summaries to standardised templates, which may be less suited to meet the needs of GPs, especially for more complex patients. Communication-related patient harm continues to occur and the limited progress of improvement has led to recognition of the need for a wider and deeper understanding of this complex issue, as the population becomes increasingly aged and multiply-comorbid.

##### **Approach**

Multiple literatures support the exploration of complex problems through structured qualitative enquiry, including Operational Research, Design, and Systems Engineering. Our study adopts a qualitative methodology situated in the 'systems approach' recently defined for healthcare by the Royal Academy

of Engineering, Royal College of Physicians and Academy of Medical Sciences in their 2017 publication Engineering Better Care. Its set of 13 'driving questions' provided a framework to address the research question of "How can communication to GPs at hospital discharge be improved?". One focus group and twenty semi structured interviews were conducted with key clinical and administrative stakeholders across the primary-secondary care interface of a large tertiary hospital in England, and thematically analysed.

##### **Findings**

Data analysis suggests that the system of discharge communication becomes more complex, and incurs greater risks, as a patient's clinical needs increases. This complexity was identified as a key barrier to communication quality, alongside others across the primary-secondary care interface, including time pressures and a lack of insight on the part of discharge summary authors into the nuances of recipient GP needs. Participants reported that system performance was highly variable, with significant negative consequences for both patients and staff attributed specifically to communication quality. Current standardised forms of communication were reported to hinder system performance for many patients. Solutions were identified that would enable GPs to 'close the open loop' of the largely one-way system of communication from hospital to general practice, to support patient safety and continuity of care.

##### **Consequences**

We suggest that a far more collaborative design of this system may improve the quality of care at hospital discharge. More open lines of communication, shared medical records and GP-led teaching sessions for junior doctors are needed to improve stakeholders' insights into the needs of other system users, facilitate a more operant improvement process and reinforce the shared responsibility of all parties in this critical and vulnerable phase of transition of care. Further research is required to verify and validate any changes before widespread implementation into clinical practice.

#### **Funding Acknowledgement**

No funding applied for or received for this study

## The digital health divide: how do patients with chronic disease and socioeconomic disadvantage experience and access digital health?

**Presenter: Melinda Choy**

Co-authors: Katelyn Barnes, Kathleen O'Brien, Elizabeth Sturgiss, Elizabeth Rieger, Kirsty Douglas

### Institutions

The Australian National University, Monash University

### Abstract

#### Problem

The rapidly increasing presence of digital health promises to improve healthcare delivery for all. However, the digital health divide describes a pattern where socioeconomically disadvantaged patients, who already have poor access to traditional health, are now further marginalised through lower utilisation of digital health services. The digital health divide is particularly pronounced in chronic disease and evident in primary care. While some quantitative data describes an association between digital health exclusion and socioeconomic disadvantage, there is scarce qualitative and mixed methods research exploring the barriers and enablers of digital health access in this population. Our aims were to explore how patients with chronic disease and socioeconomic disadvantage experience digital health in the context of Australian primary care, to identify barriers and enablers to digital health access and benefits and to test these findings in a quantitative survey.

#### Approach

The study design was exploratory sequential mixed methods. We completed 19 semi-structured interviews with socioeconomically disadvantaged patients recruited through three general practices and one service organisation in Australian rural, outer-suburban and urban regions. Two interviewers thematically analysed the transcripts with an inductive coding scheme, which was iteratively reviewed by the wider research team. We applied the final themes as the structure for a patient survey, in order to measure the degree and association of observed barriers in a wider population. The specific survey questions were developed out of this

structure, using other survey questions and validated tools where possible, such as eHeals (a digital health literacy scale). Two experts and five patients completed pilot testing for content and face validity. We administered this survey among 400 patients of varying socioeconomic status recruited through 36 Australian rural, outer-suburban and urban general practices.

#### Findings

Barriers to accessing digital health tools included 1) a stronger patient preference for human-based health services, 2) low trust of digital health services, 3) high financial costs of necessary tools, maintenance and repairs, 4) poor public internet access options, 5) reduced capacity to engage due to increased life pressures and 6) low self-efficacy and confidence in starting the digital health process. When patients engaged with digital health, we saw a positive feedback cycle of growing skills and confidence, enabled by good social support and health provider recommendations. Our quantitative analysis of survey data, including how relative socioeconomic disadvantage influences barriers and enablers will be completed by July 2020.

#### Consequences

Barriers to digital health for socioeconomically disadvantaged patients are more complex than financial costs, are often cumulative, and are associated with general socioeconomic determinants for health. Our hope is to communicate with digital health policymakers, practitioner and innovators to highlight target areas for change that will improve the accessibility of digital health for primary care patients.

#### Funding Acknowledgement

This project was funded by the Royal Australian College of General Practitioners' Foundation IPN Medical Centres Grant.

## N.6

### How do you maximise acceptance of novel health care technological solutions to diagnosing and managing health conditions such as virtual reality or non-invasive glucose monitors? A mixed methods study from GW4-Path

**Presenter: Sabrina Grant**

Co-authors: Gemma Lasseter, Sarah Sauchelli, Heungjae Choi, Steffi Colyer, Sabrina Grant, Tim Pickles, Ben Sherlock, Alexandra Voinescu, and Jingjing Zhang

#### Institutions

University of Worcester, University of Bristol, Cardiff University, University of Exeter

#### Abstract

##### Problem

An ageing population in the UK places economic burden on the National Health Service (NHS) and society in managing long term often multiple health conditions. Rapid technological innovation means advances in the applications of common (e.g. Apps) to novel (e.g. virtual reality) technologies targeted to help patients manage their own health are often introduced to market without fully considering the needs of the end-users. Health Education England outlines access and acceptance of these technologies by users is essential to accelerate successful uptake in clinical practice and the optimisation of the benefits they can provide. This is particularly relevant when new technologies can potentially add value to the care of the patient but are not routinely used in practice. This study aims to determine the prevalence and usage of Novel Healthcare Technologies (NHTs). More specifically:(i) Investigate public's perceptions and attitudes towards the use of cutting-edge NHTs to inform the development and introduction of future technologies(ii) Gain insight into how novel approaches are being introduced in the NHS, particularly those involved in implementing NHTs across the primary and secondary care interface. (iii) Identify how health care professionals (HCPs) raise awareness to patients about the availability of the NHTs as tools to facilitate diagnosis, prevention, and treatment.

##### Approach

Sequential mixed methods study of two phases Phase 1 Semi structured interviews with primary/ secondary care HCPs with experience of using novel healthcare technologies. Interviews explored the process of implementation, from conception to delivery exploring issues around how NHTs are introduced to patients, barriers and challenges faced to implementation in the NHS.Phase 2 Questionnaire survey. National distribution of a case study-based questionnaire for completion by the general public. The design and content informed by findings from Phase 1 and consultation with public and patient involvement user groups. The questionnaire captures prevalence of use of NHTs, designed activities explore a range of healthcare technologies. The NHTs under consideration are currently being innovated by collaborators on this project.

##### Findings

12 interviews were conducted with HCPs. Key themes emerging and feedback from user groups informed the design and content of the questionnaire survey aimed to be distributed to approximately 1350 participants across representative regions of the UK Feb-March 2020. Full results from both phases will be reported.

##### Consequences

Before any novel healthcare technology is introduced to patients in primary or secondary care, it is essential to identify some of the key challenges and barriers to implementation in real practice. A combined approach of gathering insight from HCPs currently using innovative healthcare solutions to managing long term conditions in clinical practice with views and opinions from the general public can elucidate a shared learning about tailoring NHTs sensitive to the needs of the intended users.

##### Funding Acknowledgement

This GW4-Path (Perceptions and Attitudes of Technologies for Healthcare) project is funded by GW4 Crucible Seed Corn funding from the GW4 Alliance, (ref: Cru\_19\_2)

**We've Got Your Back! A proof of concept innovative methodology for participant recruitment, real time data collection and data enrichment through the combination of Digital Patient Generated Data and linked health records**

**Presenter: Toby Helliwell**

Co-authors: Toby Helliwell, Mark Stone, Jessica Graysmark, Sandra Martinez de Pinillos, Matthew Cooper, Mick Mullane, Steph Meleck, Paul Davis, Jaskiran Dhanjal

**Institutions**

Keele University, CRN West Midlands, IQVIA, uMotif, EMIS Health

**Abstract**

**Problem**

Traditional methods used to deliver clinical trials and observational research can be burdensome and costly due to the time and data collection effort required by clinicians, CTU's, study teams and patients. Clinical trials create scientifically precise data but the strict/specialised environment can restrict the generalizability of findings. Observational research data can also be limited given a range of biases and barriers to data quality. Hence, novel study and data collection methods are required, to reflect as close as possible, real patient experience. Patient reported outcomes (PRO) data can also be enhanced with an accurate reflection of participants' true health status from their electronic medical record (EMR) to create research outputs that are as relevant to clinicians and patients as possible.

**Approach**

In collaboration between IQVIA, the NIHR, CRN West Midlands, uMotif, EMIS Health and The University of Leeds, the "We've Got Your Back" study (WGYB) was developed which uses a novel recruitment and data capture methodology. This comprised: automated participant identification through the EMR and mobile app (uMotif) prescribed by a GP. After agreeing to receive an invite to the WGYB study, a text/email was automatically sent to the patient during consultation. At this referral point, the EMIS App Library creates a Unique Study ID, which is used to anonymously track

patients study progress and linking the study data with their EMR. Patients could then download the uMotif WGYB app. Consent, enrolment and data collection (QoL, work productivity, physical/mental impacts of back pain) was handled by the WGYB app. PRO data was then combined with each patients' retrospective EMR using a single patient ID to create an enriched dataset. IQVIA developed a live study dashboard where site, user and patient progress could be monitored by the study team and CRN to view data completion, patient recruitment and feedback progress to practices on their performance.

**Findings**

24 practices in the West Midlands took part in the study. 322 patients were invited and 42% downloaded the app, consented to participate and provided regular PRO data comparing favourably with other observational study methods. Data analysis is currently being completed. Further presentation and demonstration of GP app prescription, data management processes, app use demographics and GP critical feedback of the WGYB methodology will be presented.

**Consequences**

This novel method allows seamless combination of real-time patient PRO data through the WGYB app with components from the patients' health record. It represents a significant step forward in the way in which we could utilise technology and digital methods to produce high quality enriched real-world data. The efficient utility and remote study set-up, also means that study set-up time can be rapidly achieved. Further, its use in clinical trials could be valuable, particularly for self-administered or on-line interventions.

**Funding Acknowledgement**

This study was funded by IQVIA and supported by the NIHR, CRN West Midlands and sponsored by Leeds University



## The impact of implementing digital health tools in primary care on clinician-patient communication and relationships: Findings from the DECODE study

**Presenter: Jeremy Horwood**

Co-authors: Andrew Turner, Rebecca Morris, Lorraine McDonagh, Fiona Stevenson, Fiona Hamilton, Michelle Farr, Jon Banks, Helen Atherton, Sarah Blake, Bob Golding, John Powell, Emma Hyde, Gene Feder, Gemma Lasseeter, Lucy Yardley, Sian Jones, Sue Ziebland

### Institutions

University of Bristol, University of Manchester, University of Oxford, University College London, University of Warwick, West of England Academic Health Science Network

### Abstract

#### Problem

Digital health tools, such as online consultation systems and platforms giving patients online access to their medical records, are becoming commonplace. NHS England advocates their use as an essential part of a cost-effective health service to support patient access and care. However, their rapid development and adoption in primary care may lead to unintended consequences (positive and negative) that alter healthcare processes and outcomes. The DECODE study aims to support the adoption of digital health tools in primary care by understanding their unintended consequences. Here we focus on how online consultation systems and online access to health records provide new ways for clinicians and patients to interact with each other, and the consequences this has for clinician-patient communication and relationships.

#### Approach

Semi-structured individual interviews with 25 patients, 25 general practice clinicians, managerial and administrative staff involved in the use of three types of digital health tools (online consultations, patient online access to health records and smartphone apps). Thematic analysis was used to analyse the data using NVivo 11 software for data management.

### Findings

Our interviews highlight how these technologies can make clinician-patient communication more transactional, meaning information flows one-way, or only short question-and-answer exchanges take place. For some, this achieved the intended consequences of improving efficiency and access to care. For example, through patients being able to check test results and medical information online or use online consultation systems to update the practice or receive answers to simple requests. However, the unintended consequences of this shift included patients being uncertain how to interpret information in their medical record, increasing pressure on patients in relation to how they describe their issues, and patients being unclear who they are communicating with, leading to uncertainty and distress. This could be seen to challenge the valued element in traditional clinician-patient relationships; namely personal contact and the opportunity to explore medical concerns.

#### Consequences

Examining unintended consequences of digital tools that increase the scope and extent of transactional communication, shows how prioritising convenience and access for some, can come at the expense of providing holistic, patient centred care for others. Developing an understanding of the unintended consequences of digital health tools is vital to aid their future successful implementation in primary care.

### Funding Acknowledgement

The DECODE study is funded by National Institute for Health Research (NIHR) School for Primary Care Research and supported by NIHR Applied Research Collaboration West (NIHR ARC West). The views expressed are those of the authors and not necessarily those of the NIHR, the NHS or the Department of Health and Social Care

## Exploring the implementation and utilisation of an electronic pharmacy referral service at hospital discharge: Early findings from a qualitative evaluation.

**Presenter: Mark Jeffries**

Co-authors: Hilary Belither, Richard N Keers, Fatema Alqenae, Kay Gallacher, Caroline Sanders, Darren M Ashcroft.

### Institutions

University of Manchester, Salford Royal NHS Foundation Trust

### Abstract

#### Problem

It is known that the transition of patients from hospital to home is associated with a high risk of preventable medication related harm. Patients discharged from hospital are at risk of adverse drug events, errors and non-adherence. The transfer of information between different health professionals is considered important for patient safety especially during care transitions. Patients' understanding of their medicines might be impacted a lack of information-giving at discharge from hospital and by poor explanations from health professionals. Information technology is increasingly being used for medication safety in the NHS. A NHS foundation trust in the North of England has introduced an electronic referral (e-referral) system that enables hospital pharmacists to electronically transfer admission and discharge information of patients in receipt of monitored dosage systems to community-based pharmacists. We aimed to understand the implementation and use of the e-referral service from the perspectives of health professionals and patients.

#### Approach

We used a qualitative methodology to evaluate the e-referral service in a Clinical Commissioning Group (CCG) and NHS Foundation Trust in the North of England. Participants were purposively recruited from relevant stakeholder groups that included hospital pharmacists, hospital pharmacy technicians, community pharmacists, general practice based pharmacists, patients and carers. To explore

perceptions of the e-referral service we conducted face to face semi-structured qualitative interviews. Preliminary analysis was thematic, iterative and conducted alongside data collection with themes developed into coding frameworks. Ethical approval for the study was granted by the North West - Greater Manchester East NHS Research Ethics Committee (reference 19/NW/0110).

#### Findings

Twenty-three interviews were conducted with health care professionals (18) and patients and carers (9). Early findings indicated that the implementation and use of the e-referral service was dependent upon a complex interdependent network. Patients or their carers took an active role in their medicines and initiated informal communication with health professionals. The service led to a building of relationships between different health professionals in secondary and primary care, including between general practices and community-based pharmacists. These relationships aided in the standardisation and streamlining of the exchange of information between hospital and community pharmacy, both at admission and discharge, that could lead to an increase in clinical time for pharmacists a reduction in administrative tasks and was thought to reduce errors in the dispensing of medicines and delays in supply.

#### Consequences

These findings suggest the introduction of an e-referral to community-based pharmacists has the potential to improve communication between different health professionals. Participants saw the potential for the service to lead to greater accuracy of dispensed medicines for patients in receipt of monitored dosage systems. Further analysis of the data will look to unpick the impact upon patients, including their understanding of how the service might build further relationships between patients and health-professionals.

#### Funding Acknowledgement

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## N.10

### Our safety blind-spots when using digital health interventions

**Presenter:** Ciarán McInerney

Co-authors:

#### Institutions

University of Leeds

#### Abstract

##### Problem

Digital technology has revolutionised healthcare but the changes have not all been positive. The effect of digital innovations is mainly seen on processes rather than patient outcomes because healthcare is a large and complex system in which actors often only perceive their local environment. Consequently, the effects that digital innovations have on both patients' health and patients' safety outcomes are not salient to those who use the digital innovations. Instead, enlightening such effects tends to be the responsibility of the relatively few academic and clinical researchers that study healthcare as a complex adaptive system. Lessons learned from such study does not always find its way back to the actors conceiving, developing, implementing and using digital health innovations.

##### Approach

In this talk, I will speak about three blind-spots in current use of digital health innovations, with particular focus on regulation and patient safety.

##### Findings

Firstly, regulations are often ignored because those who write the regulations do not control the access and use of what they are regulating. Secondly, regulations will always play catch up because they are reactive to the unregulated evolution of digital innovations. Thirdly, innovation (and subsequent regulation) is often ineffective for the ultimate goal because there is a tendency to do what can be done rather than what needs to be done.

##### Consequences

It is hoped that an improved awareness of these blind-spots will encourage safer design, implementation and use of digital health innovations.

#### Funding Acknowledgement

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## N.11

### A qualitative exploration of patients' needs and expectations regarding online access to their primary care record

**Presenter:** Brian McMillan

Co-authors: Gail Davidge, Lindsay Brown, Moira Lyons, Helen Atherton, Rebecca Hays, Freda Mold, Rebecca Morris, Caroline Sanders

#### Institutions

University of Manchester, University of Warwick, University of Surrey

#### Abstract

##### Problem

Primary care records have traditionally primarily served the needs and demands of clinicians rather than those of the patient. GP contracts in England state practices must now promote and offer registered patients online access to their primary care record, and research has shown benefits to both patients and clinicians of doing so. Despite this, we know little about patients' needs and expectations regarding online access to their health record.

##### Approach

A community-based qualitative study of a purposive sample of 54 individuals who were either eligible for the NHS Health Check, living with more than one long term condition, or caring for someone. We explored what patients and carers want from online access to their electronic primary care health record, how they would like to interact with their record, and what support they may need. Focus groups and semi-

structured interviews with individuals from a variety of socio-demographic backgrounds were digitally audio recorded, transcribed, and analysed thematically.

## Findings

Participants' needs and expectations regarding online access to their primary care health records centred around issues relating to:

- 1) Privacy and security (e.g. the ability to set different levels of access to different individuals),
- 2) Integration (with other health records, health services, and external systems),
- 3) Self-management (e.g. access to tailored health information or support groups),
- 4) Other features and functions (such as the ability to write into one's own notes, plain English/other language functions, or full retrospective access), and
- 5) Support from practices (such as 'tech surgeries' or demonstration iPads).

In addition to these expressed needs and expectations, the data also illustrated important issues relating to personal experiences of using online records access, perceived benefits, and concerns/barriers regarding online access.

## Consequences

Future development of primary care patient online records access systems should take patients and carers' expressed needs and expectations into account. Service providers should work alongside patients and carers to help develop features and functions that address these needs. For example, patients could be given more control over the level of access they can grant to specific individuals, plain English/other language functions could be incorporated, and the online primary care record could be better integrated with other systems. Patients and carers report requiring additional support with accessing their primary care record and in interpreting the information they contain, which raises questions for policymakers regarding how such additional support will be funded.

## Funding Acknowledgement

This work was funded by the National Institute for Health Research (NIHR) School for Primary Care Research (project reference 429). The views

expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

## N.12

### The Consultation Open and Close Study: developing a generic pre-consultation form for use in primary care.

#### Presenter: Mairead Murphy

Co-authors: Chris Salisbury, Geoff Wong, Richard Morris, Jude Hancock

#### Institutions

University of Bristol, University of Oxford, Bristol North Somerset and South Gloucestershire CCG

#### Abstract

##### Problem

Many patients leave GP consultations without having voiced all their concerns, especially when they want to discuss multiple problems, resulting with reduced satisfaction with the consultation. Also, patients often have difficulty remembering the advice given during consultations, which can increase their concern and reduce adherence to advice. The Consultation Open and Close (COAC) intervention is designed to address both these problems. It is a two-year NIHR Research for Patient Benefit funded study aimed at designing and testing an intervention to allow patients to better share their concerns, incorporating the use of an online form at consultation opening and a printed report at consultation closure. These are being developed separately in accordance with MRC guidance. This abstract discusses development of the COAC pre-consultation form.

##### Approach

Three GP practices in the Bristol and surrounding area are iteratively developing the form by testing it with 15 patients each. Patients fill in the online form before their appointment; this includes problems which might otherwise be missed, such as how worried they are about their health, whether they are low in mood or finding it difficult to adhere to their medication or other health advice. After trying the form and the report in one practice, we will interview the GPs,

nurses, administrators and patients who used them and implement improvements before testing in the next practice.

#### Findings

As of 14/02/2020 two of three practices have recruited 15 patients each. Eight patients and two GPs have been interviewed. All interviewed patients would use the form again. GPs demonstrating that they had read the form was important to patients. Patients noted that completing the form:☐ - Helped them plan before the consultation;☐ - Made them feel more at ease in the consultation, knowing that the GP had read their information in advance.☐ - Helped communicate their problems to the GP more easily;☐ - Uncovered problems which may otherwise have been missed. GPs said the form was not excessively time-consuming and may help uncover information more quickly. The forms were less useful for GPs when patients provided either too much free-text information, or none at all. Adopting an iterative approach resulted in improvements between the rounds including adding information, removing items, changing the colour-codes and format.

#### Consequences

The COAC pre-consultation form is a useful adjunct to the consultation and may have wider applicability. It is particularly relevant in the current context (where practices must offer e-consultations as standard) as including the COAC form in an e-consultation could provide GPs with more information than current available templates. A feasibility study, in which the COAC pre-consultation form and a consultation closure report will be combined, will be carried out from October 2020 – 2021.

#### Funding Acknowledgement

This study was funded by the National Institute for Health Research (NIHR) Research for Patient Benefit programme. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

## N.13

### The Readability of GP Surgery Websites

**Presenter: Dr Guy Rughani**

Co-authors: Dr Peter Hanlon, Dr Neave Corcoran, Professor Frances Mair

#### Institutions

General Practice & Primary Care, The University of Glasgow

#### Abstract

##### Problem

Most GP surgeries in the UK have a website which they commission and update themselves. There is an impetus from government to increase the provision of services that GPs offer online, such as appointment booking and the ability to order repeat prescriptions. The current websites' text and design are of variable quality. This matters because adult literacy levels are low. Similar to elsewhere in the UK, 1 in 4 Scottish adults experience serious challenges due to poor literacy, and those from the 15% most deprived communities are twice as likely as those in the most affluent group to only reach the lowest literacy level. Despite the rising role of GP websites as a source of information and point of interaction, to our knowledge there has been no published research into how understandable GP websites are to their lay audience, or whether practices adapt the readability of their websites to cater for their populations, knowing that affluent areas tend to have higher literacy levels than deprived areas.

##### Approach

Both word choice and webpage design dictate the ease with which online text may be scanned or read. Using a standardised text-difficulty score, we analysed the five most visited webpages of each of the 941 GP surgeries in Scotland. We developed a design score drawing on literature about design factors that facilitate readability and accessibility. We then scored the 'appointments' webpage of each surgery website. We assessed for any correlation between the text-difficulty score for surgery's website, and the Scottish Index of Multiple Deprivation (SIMD) group to which the surgery's population belonged.



## Findings

85% of practices in Scotland had a website, and 77% (2949/3822) of the webpages had a 'reading age' above that of the average UK adult. The majority were also above the recommended reading level for public websites. There was a spread in design scores despite 51% of the websites sharing a small number of design templates from a single website provider ('MySurgeryWebsite'). There was no association between webpage 'reading age' and the measure of a practice population's level of multiple deprivation (SIMD), suggesting that practices do not adjust their websites to suit the potential average literacy levels of their populations.

## Consequences

This is a novel and timely piece of work as it is the first time that the area has been studied in this depth and comes at a time that government is encouraging GPs to conduct more interaction with their patients online. It highlights that most surgery websites are too complex for much of the population to fully understand, and design factors that facilitate accessibility and readability are not widely followed. We have identified simple changes that can be made by GP surgeries to improve the accessibility of their online provision.

## N.14

### The development and deployment of an interactive digital health intervention to aid diagnosis and management of sexual dysfunction problems and underlying cardiovascular disease

**Presenter:** Patricia Schartau

**Co-authors:** Prof Mike Kirby

## Institutions

University of Hertfordshire

## Abstract

### Problem

The uptake of health screenings remains low, especially in men (NHS Health Check Programme, 2017) and with stigmatised conditions. Technology is employed to increase uptake and improve patient

empowerment. We aimed to create a digital health intervention (DHI: mobile App and web-based application) which acts as triage tool and allows (timely) detection of sexual dysfunction problems and potentially underlying cardiovascular disease (CVD) and metabolic problems, thereby providing an opportunity for intervention in primary care.

## Approach

Diagnostic and management criteria for female sexual and erectile dysfunction, premature ejaculation, testosterone deficiency (low libido) and lower urinary tract symptoms (LUTS) were obtained from international guidelines to create an App/website where users access validated questionnaires. Interviews with groups of stakeholders were conducted to develop and refine the DHI.

## Findings

User data (N = 21,846) from March 2016-December 2019 suggested high levels of sexual dysfunction amenable to treatment. Regarding the erectile dysfunction (N= 6533, mean age 67y, SD = 22y) and the premature ejaculation tests (N= 1834, mean age 34y, SD = 14y), 77% and 87% of participants respectively portrayed some dysfunction. Regarding testosterone levels, 47 % (N= 4214, mean age 56y, SD = 16y) produced a score that warranted further investigations. Only 33% of all participants (N= 8955, mean age 30y, SD = 8y) undertaking the female sexual dysfunction questionnaire reported normal function. Similarly, 33% of females (N= 190, mean age 29y, SD= 12y) and 28% of males (N= 120, mean age 49 years, SD = 18y) reported normal urination.

## Consequences

This is the first DHI supporting health screening and management advice for the above conditions. Benefits include easy access, privacy, it is cost free, has a triage tool function, and provides a preliminary diagnosis and management support. The acceptability and usability of the web application was higher than that of the App thereby allowing to draw in a wider age range. Given that, for example, erectile dysfunction is a predictor and independent risk factor of CVD and has recently been incorporated into cardiovascular risk calculators (QRisk 3; Hackett & Kirby, 2017), this tool may aid diagnosis of (early) CVD and metabolic problems, thereby providing a window

of opportunity for lifestyle changes/pharmacological management.

### **Funding Acknowledgement**

Grant from Sexual Advice Association (Charity) Part of ACF work during the academic GP training

## **O.1**

### **How do patients describe their experiences of a pre-operative health optimisation scheme?**

**Presenter: Isobel Avery-Phipps**

Co-authors: Christopher Burton, Cate Hynes

### **Institutions**

Academic Unit of Primary Medical Care, University of Sheffield

### **Abstract**

#### **Problem**

Pre-operative Health Optimisation (POHO) is the delaying of elective surgery to provide time for patients to make positive health behaviour change. Typically, this focuses on smoking cessation and weight management. Its advocates argue it reduces perioperative risk and may promote longer term change at a teachable moment. Despite criticism, mandatory POHO programmes have been introduced in several CCGs. We aimed to understand patients' experience of one mandatory POHO scheme which introduces a delay to the elective surgery referral pathway for patients to stop smoking or lose weight.

#### **Approach**

We conducted a qualitative study involving people who had been referred by their GPs to a mandatory POHO scheme in South Yorkshire. The scheme introduced a delay in the referral pathway for smokers and people with obesity. Patients referred to the POHO scheme by 10 GP practices were invited to take part in the study by mailed invitation. Additional participants were recruited through weight-loss schemes involved in the POHO programme. Data was collected from face to face interviews and transcribed for analysis. We used a thematic approach to analysis and developed themes iteratively over interviews and re-readings of transcripts. We used an interpretive

phenomenological approach in analysing patients' accounts. This recognised the subjectivity of both participant and interviewer. Finally, we considered accounts as examples of "resistance narratives".

#### **Findings**

We invited 150 patients over 3 rounds but only 9 agreed to be interviewed. Participants came from diverse socioeconomic backgrounds and had engaged with the programme to varying extents. We identified four main themes Perceived benefit for some Four of the patients we interviewed had managed to lose some weight during their POHO period. Two felt the programme was instrumental in this. The remainder saw no benefit from delaying surgery. First impressions matter None of the interviewees reported a positive introduction to the POHO programme by their GP. Some used their GP's ambivalence to support their position of non-engagement. Asked the impossible Interviewees saw weight loss and smoking cessation as countering each other and unrealistic at the same time. They felt this showed policymakers hadn't considered the reality for patients in this situation. What's the link? While interviewees recognised a number of health benefits from weight loss and smoking cessation, getting fit before surgery wasn't one of them. Some argued that delaying surgery to improve health was unfair and stigmatising, particularly as those with other behaviours were not targeted.

#### **Consequences**

Patients described several negative experiences of mandatory pre-operative health optimisation. On the one hand these represent points to address in improving delivery of POHO. On the other they represent narratives of resistance by which patients contest the unilateral imposition of POHO. Both these perspectives are relevant for commissioners and providers of POHO schemes.

## O.2

### A change in ceiling of care at hospital discharge towards the end of life: the perfect storm for communication at the primary-secondary care interface

**Presenter:** Nicholas Boddy

Co-authors: 2. Barclay S, 3. Bashford T, 4. Clarkson PJ

#### Institutions

Engineering Design Centre, University of Cambridge (1,3,4), Primary Care Unit, University of Cambridge (2)

#### Abstract

##### Problem

Despite decades of research, avoidable communication-related harm at hospital discharge persists. Discharge summaries written to GPs by time-pressured and inexperienced junior doctors remain the near-exclusive format of this communication system. The limited success of previous interventions to improve quality, such as adherence of summaries to standardised templates, has led to recognition of the need for greater understanding of this complex problem space in order to identify high risk patient groups and targets for future improvement.

##### Approach

A qualitative exploration was undertaken using a 'systems approach', recently redefined for the healthcare domain by the Royal Academy of Engineering, Royal College of Physicians and Academy of Medical Sciences in their 2017 publication Engineering Better Care. A systems approach is of particular value when addressing complex, system-wide issues, and its set of 13 'driving questions' provided a framework to address the research question of "How can communication to GPs at hospital discharge be improved?" One focus group and twenty semi-structured interviews were conducted with key clinical and administrative stakeholders across the primary-secondary care interface of a large tertiary hospital in England, and thematically analysed.

##### Findings

Participants reported that decisions to reduce the ceiling of patient care made during hospital admission

as the end of life approached, acted as the greatest stressors on the system of discharge communication. Conveying plans made to initiate a palliative care approach, and to avoid future treatments, investigations or hospital admissions, were felt to require a level of nuance and detail often missing from discharge letters. Such cases are often complicated by multimorbidity, polypharmacy, cognitive deficits, and involvement with social care and multidisciplinary teams. and this exponential complexity was felt to pose a communication challenge to both discharge summary authors and recipient GPs. Participants noted that the risk of subsequent suboptimal care and avoidable patient harm dramatically increased: discharge communication for patients in this period of care, before the community resources for the end of life phase are needed, was described as one of the largest opportunities to improve system performance and the quality and continuity of post-discharge care.

##### Consequences

We propose that bespoke discharge documentation is refined for this patient group, alongside GP-led teaching sessions for junior doctors, in order to increase system-wide awareness of this vulnerability in the discharge process. Quality feedback loops, more open lines of communication and shared medical records would also have significant benefits for this patient group, as well as for other groups identified at risk of communication-related harm at hospital discharge.

#### Funding Acknowledgement

No funding applied for or received for this study

## 0.3

### Exploring barriers and facilitators to physical activity experienced by young adults in socioeconomically deprived areas of Sheffield

**Presenter: Rachel Crothers**

Co-authors: Dr Helen Twohig, Dr Phillip Oliver

#### Institutions

University of Sheffield Academic Unit of Primary Medical Care

#### Abstract

##### Problem

Increasing physical activity (PA) is an evidence-based public health strategy for primary prevention and management of non-communicable diseases (NCDs). Complex social determinants of health mean that socioeconomically deprived populations experience higher morbidity and mortality from NCDs, and are less physically active. Targeting health-protective behaviour change in these populations has potential to: reduce NCD incidence; enhance healthy life expectancy; reduce pressure on local health services; and ultimately reduce health inequalities. Primary care has a key role in delivery of this lifestyle advice. Current literature shows some exploration of factors affecting PA uptake in deprived areas worldwide, uncovering multiplex barriers and facilitators to PA which affect individuals and communities. Our literature review found few studies examining these influences in the UK and specifically few focussing on young adults, who potentially have most to gain from long-term benefits of physical activity. This study aims to explore reasons behind socioeconomic inequalities in PA uptake in Sheffield, by investigating barriers and facilitators to increasing PA for adults aged 18-35 living in the most deprived areas of the city.

##### Approach

This is a qualitative study using semi-structured interviews with a purposive diverse sample of 18-35 year olds, living in areas ranked in the lowest quintile of English Indices of Multiple Deprivation (IMD). The interviews utilise a topic guide derived from the literature review and a PPI focus group. Participants are recruited through local health trainers, community

organisations, poster advertising and snowball sampling. Interviews with local health trainers are also being conducted to gain another perspective on the research question. Interviews are transcribed and data analysed thematically, with interviews continuing until data saturation.

##### Findings

Interviews and data analyses will be completed by June 2020. It is expected a range of barriers and facilitators to PA will be uncovered, encompassing personal, social, educational, financial and environmental factors.

##### Consequences

Findings will be disseminated among community organisations and local healthcare professionals. Conclusions will be used to inform the planning and delivery of more effective PA interventions in study areas, with the aim of boosting uptake of PA and encouraging healthy living locally.

#### Funding Acknowledgement

Many thanks to The Claire Ward Fund for supporting this research.

## 0.4

### Bereavement and grief in old age – Acceptability of a web-based self-management intervention from the perspective of persons affected and health care experts

**Presenter: Franziska Foerster**

Co-authors: Margrit Löbner, Franziska Welzel, Katja Schladitz, Janine Stein, Steffi G. Riedel-Heller

#### Institutions

Institute of Social Medicine, Occupational Health and Public Health (ISAP), University of Leipzig, Medical Faculty

#### Abstract

##### Problem

The death of a close person is a highly stressful, yet common life event in later life. Objective of the present study was to assess the acceptability, possible access ways and barriers for implementation of a

web-based self-management intervention for older adults with prolonged grief symptoms from the perspectives of older persons affected and health care professionals.

### Approach

The qualitative study comprised the implementation of two focus groups: focus group A consisted of older adults (60+years) with previous loss experience (N=12), and focus group B comprised experts of the medical care system (N=8). Both focus groups have been carried out with the help of a focus group guide by qualified moderators. Qualitative content analyses were performed based on Mayering (2015) using MAXQDA.

### Findings

Participants of focus group A were on average 64.5 years old and balanced with respect to the distribution of gender (50% female). Health care professionals of focus group B were on average 41.1 years old and predominantly female (87.5% female). Participants of both focus groups supported the idea of a web-based self-management intervention focusing on prolonged grief symptoms in old age. According to older individuals with previous loss experience a web-based intervention should include ideas for improving self-respect and activities in everyday life as well as information for relatives, information on beliefs and spirituality and coping strategies for negative emotions. Participants further preferred a flexible use of the intervention modules rather than a fixed sequence. The majority of older individuals affirmed the usability of the web-based intervention. Possible access ways were seen through general practitioners, medical specialists, bereavement groups, local media and undertakers. Personal preferences were perceived as potential barriers (e.g. preferences for personal contact) by persons affected, while the lack of guidance was perceived as a potential barrier by health care experts.

### Consequences

Usability and user acceptance are important aspects and necessary preconditions for the successful implementation and the effectiveness of an e-health intervention targeting individuals with prolonged grief symptoms in old age. The judgements of health care professionals and older persons affected showed a

high user acceptance. Pathways for the implementation of such e-health interventions should consider the mentioned access ways and barriers.

### Funding Acknowledgement

Bundesministerium für Bildung und Forschung (BMBF), Förderkennzeichen: 01GY1613.

## 0.5

### Palliative care for children and young people: What? When? How? A realist inquiry

**Presenter: Sarah Mitchell**

Co-authors: Jane Coad, Anne-Marie Slowther, Jeremy Dale

### Institutions

University of Sheffield, University of Nottingham, University of Warwick

### Abstract

#### Problem

The World Health Organisation defines palliative care as “an approach to care that aims to improve the quality of life for people living facing the problems associated with life-threatening illness, through the prevention and relief of suffering”. The number of children and young people with life-limiting and life-threatening conditions is rising. All could potentially benefit from palliative care, but there are significant inequalities in the provision of such care to children internationally, including the availability of specialist paediatric palliative care services. The aim of the research was to examine the delivery of healthcare, including palliative care, for children with life-limiting and life-threatening conditions and their families. A realist approach was taken to provide understanding into how palliative care is delivered most effectively, and when, leading to policy relevant recommendations.

#### Approach

There were four stages to the research:

1. Development of a programme theory (PT) through systematic and realist literature reviews.



2. 41 serial interviews with 31 participants from 14 families; 10 children with life-limiting or life-threatening conditions and 21 family members.

3. Four focus groups with children's palliative care professionals.

4. Thematic / realist analysis to describe the hidden mechanisms (M), triggered in certain contexts (C), to produce desired outcomes (O). Context-Mechanism-Outcome configurations (CMOCs) are used to refine and refute the PT.

### Findings

Children and their families are vulnerable experts, negotiating a healthcare system that can be rigid and fragmented (C). The delivery of palliative care depends on interpersonal relationships with healthcare professionals (C), who are able to bear witness to the child and family situation (M), underpinned by trust and respect (M). Important child and family outcomes include feeling heard and supported (O). In organisations, an environment that values these relationships and legitimises palliative care as an approach (C) through leadership and role modelling (M) as well as the development of specialist services (C), leads to more equitable palliative care (O).

### Consequences

The realist approach provides increased understanding and description of important child and family outcomes that underpin policy goals in palliative care, achieved in certain contexts. Future service and commissioning models should propose a whole system approach, including primary and community care. Achieving this requires the unwavering commitment of system leaders, recognition of the unique situations of children and families, and individualised palliative care. Service design should place greater emphasis on the need for trusted relationships, should nurture and support professionals who have the motivation and capacity to provide palliative care, and should integrate specialist paediatric palliative care effectively into existing services.

### Funding Acknowledgement

My funding was provided through a National Institute of Health Research Doctoral Research Fellowship, DRF-2014-07-065.

## O.6

### What are the experiences of young people in PPI for palliative care research?

**Presenter: Sarah Mitchell**

Co-authors: Dena Khan, Jane Coad, Anne-Marie Slowther, Jeremy Dale

### Institutions

University of Sheffield, NIHR CRN West Midlands  
Young People's Steering Group, University of Nottingham, University of Warwick

### Abstract

#### Problem

Patient and Public Involvement (PPI) is an integral part of research, advocated by many research funders. However, evaluation of the experiences of PPI group members and the impact of PPI work on the research is inconsistent and rarely reported. This abstract describes an evaluation of the experiences of young people (aged 9-25 years) who provided PPI for a palliative care research project.

#### Approach

PPI group members were asked to provide anonymous written feedback on any aspect of their PPI experience related to this research project, using a method based on "Tell Me...", as outlined in RCPCH & Us Recipes for Engagement. Feedback was collected at two PPI sessions. An inductive thematic analysis of the feedback was conducted using NVivo.

#### Findings

Feedback was provided by all 16 young people who attended the sessions. Two overarching themes were identified:

1. A desire to feel engaged in the research. Group members want the PPI work they are involved in to have an influence on the research, and for the research to have an impact. Young people felt particularly engaged through opportunities to learn both about the research topic and about research more widely, including methods and dissemination activities.
2. Relationship with the researcher. The development of rapport over several sessions allowed

the discussion of sensitive topics. Young people wanted the researcher to listen, respond and demonstrate the results of their PPI in the research.

### Consequences

This small evaluation provided insights to guide the planning of PPI for future research, both in palliative care and with young people more widely. PPI in palliative care research can be a fulfilling experience for young people despite the potentially sensitive subject area. The relationship with the researcher and the conduct of the PPI work are important factors, with regular feedback provided and the development of rapport over time ensuring that young people have the opportunity to learn, to have influence on the research process and for them to see that the research has impact.

### Funding Acknowledgement

My funding was provided through a National Institute of Health Research Doctoral Research Fellowship, DRF-2014-07-065.

## 0.7

**Post Sepsis Syndrome: What is it and do Primary Care professionals know how to treat sepsis survivors or are survivors slipping through the net. Does it even really exist?**

**Presenter: Michael Porter**

Co-authors: None

### Institutions

University of Central Lancashire

### Abstract

#### Problem

Having spent many years teaching about sepsis, it is ironic that I developed sepsis in 2016. Having been in a coma for 3 months, I have developed strong national and international links to sepsis survivor networks. There are conservatively 200,000 cases of sepsis each year in the UK. Of those surviving 40% have one or more of cognitive, psychological or physical sequelae. The aim of this ongoing study was to engage both national and international networks, in order to define the scope of post sepsis syndrome

(PSS), establish best practice methodologies in the identification and treatment of PSS and apparent views of Primary Care professionals to PSS, at the national and international level. Current research in this area is extremely limited and employs either molecular or epidemiological methodologies. Survivor analysis, using both quantitative and qualitative methods is unavailable in the literature.

### Approach

This preliminary and ongoing study employs a survey questionnaire to harvest both quantitative and qualitative data from sepsis survivors. The initial smaller scale study proved informative and has fed forward into refinement of the current questionnaire. This updated survey is currently being rolled out to both UK and international sepsis survivors. Based on data acquisition rates during the preliminary survey, significant responses are expected within 30 days. Framework analysis is being used to assess qualitative data. Results of this study are being additionally assessed through comparison with current scientific research on PSS, although this field is currently severely understudied.

### Findings

Initial work has identified several key components in both the definition and treatment of PSS. Certain thematic symptom types have been identified, which correlate well with the limited scientific research, in this area. A range of best practice methods have also become apparent. There is also initial evidence of variation by country, although this may be the result of statistical anomaly or cultural variation.

### Consequences

While sepsis research is gaining some traction, PSS research is extremely limited. There are debates regarding its existence, variation in research methodologies used and even a suitable definition of the condition. As a result, sepsis survivors may be receiving sub optimal care and perhaps also slipping through the net, as they return from secondary to primary care. This study aims to engage stakeholders, with particular reference to sepsis survivors, as the major stakeholder in their own care. Going forward this work should better inform primary care professionals, allowing sepsis survivors with PSS to live well, despite any related morbidity.

## O.8

### What would an End-of-Life Care Program at Sturgeon Lake First Nation look like?

**Presenter: S Bighead, N Rabbitskin, VR Ramsden**

Co-authors: S Bighead, N Rabbitskin, C Longjohn, B Davis, T Smith-Windsor, S Kirychuk, N Jacobson, D Day, L Bill, VR Ramsden

#### Institutions

Sturgeon Lake First Nation, University of Saskatchewan

#### Abstract

##### Problem

Lack of access to culturally responsive care has been identified as a barrier to health equity among Indigenous peoples and was addressed by the Calls to Action identified by the Truth and Reconciliation Commission of Canada. The aim of having an end-of-life care program in the community that was co-designed with the community and integrates Plains Cree practices and customs into supporting community members who choose to die at home supported by families and health care providers.

##### Approach

The overall design of the study was informed by the integration of community-based participatory research and transformative action research. Thus, this research endeavour has been co-created and co-designed with the community and will be co-implemented, co-produced and co-disseminated (presentations and publications) with members of the community as the project unfolds. Interviews will begin in the near future with oral consent will be obtained from an individual who will be invited to consider questions related to the traditional end-of-life care using Plains Cree customs and practices.

##### Findings

The community is and has been authentically engaged in enhancing their health and well-being. The findings will be analyzed and presented in a short oral presentation.

## Consequences

It is hoped that the results/findings of the proposed project has the potential to co-design a traditional end-of-life program with Elders, Knowledge Keepers and the community which will support community members who choose to die at home supported by families, health care providers and the community.

#### Funding Acknowledgement

Saskatchewan Health Research Foundation (SHRF) & Saskatchewan Centre for Patient-Oriented Research (SCPOR)

## O.9

### Changes in end of life preferences for care and place of death in people age 75+: A population level study using electronic health records

**Presenter: Daniel Stow**

Co-authors: Daniel Stow, Lucy Robinson, Fiona Matthews, Barbara Hanratty

#### Institutions

Population & Health Sciences Institute | Newcastle University

#### Abstract

##### Problem

Death is now an event of later life, and primary care must adapt to meet the complex needs of patients who are dying later in life. The importance of patient preference in guiding end-of-life care is clear in UK National Guidelines. Current evidence suggests that a significant minority of patients change their preferences for place of care and place of death over time, but more longitudinal research is needed - particularly in older adults and those with non-malignant conditions. We aimed to investigate GP records for evidence of preference changes for place of care and place of death for people age > 75

##### Approach

We collected anonymised electronic health records for all 13,149 people age >75 who died in England between 01/01/2015 and 01/01/2016 with a record in GP practices contributing to the ResearchOne

database. We investigated information on Read codes relating to preferences for care and place of death, and how these changed as people approached death.

## Findings

A small proportion (13.0% n=1,713) of decedents had a code for preferred place of death, entered at a median of 6.6 months before death. The majority of people preferred to die in a care home (47.5%) or at home (43.9%). Of these 1,713 people, 358 (20.1%) were asked about their preference for place of death more than once before they died. In this subset, 68 (19.0%) people changed their preference, with the majority (n=25, 36.8%) changing their preference from home to care home. In the 290 (81%) people with a static preference, care home (n=172, 59.3%) and home (n=110, 37.9 %) death were the most preferred. A larger proportion (22.7%, n= 2,987) of decedents had recorded preference for place of care, entered at a median of 7.3 months before death. The most common preference was home (50.9%), followed by care home (41.5%). Of these 2,987 people, 588 (19.7%) were asked about their preference for place of care more than once before they died. In this subset, 115 (19.6%) people changed their preference, with the majority (n=38, 33.0%) changing their preference from home to care home. In the 473 (80.4%) people with a static preference, care home (n=231, 48.8%) and home (n=228, 48.2 %) care were the most preferred.

## Consequences

In this older population, the majority of people preferred to be cared for and to die in a care home, or at home - likely reflecting their place of residence. However, coding of preferences occurred in a minority of people, and often occurred within the last months of life. This study suggests that further work is needed to improve recording of preferences. Further work is also needed to understand what factors influence when and why preferences change.

## Funding Acknowledgement

This project is 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 NIHR or the Department of Health and Social Care.

## O.10

### Survey of social prescribing projects and other social and wellbeing approaches to health in the North West Coast

**Presenter: Nadja van Ginneken**

Co-authors: Nadja van Ginneken, Katharine Abba, Mark Goodall, Adele Ring, Shaima Hassan, Rhiannon Corcoran

## Institutions

University of Liverpool (all)

## Abstract

### Problem

Social prescribing, the process of linking people to wellbeing or social activities are a way of helping people to change social and psychological factors that may be having a negative effect on their health. There has recently been a rapid expansion of social prescribing link workers in primary care (though not an associated expansion of social/wellbeing activities), in the absence of clear evidence of what works to make social prescribing programmes effective and sustainable, or how they should be evaluated. This presents both a need and an opportunity to learn from what is already happening in social prescribing, and to identify important gaps in knowledge where further research is needed. The social prescribing team at Liverpool consulted with members of the Applied Research Collaborative North West Coast (ARC-NWC) - a consortium of health and social organisations and individuals that research and apply interventions and evaluations to improve health inequalities (<https://arc-nwc.nihr.ac.uk>). They highlighted the need to conduct a survey to ascertain the research, evaluation and implementation needs of social prescribing programmes across the North West Coast. Findings from this survey will inform a strategy to develop a programme of social prescribing research and associated funding bids for ARC-NWC.

### Approach

The survey will be conducted in three stages. The first survey conducted between February and March 2020 will provide a baseline of social prescribing and wellbeing/social activities across the NWC. Two further surveys will be conducted midway and at the

end of ARC NWC in September 2024 to show progression and impact of social prescribing activities over time. The survey will be conducted electronically, using Google Forms. The baseline survey link has been sent to 61 ARC NWC partners, to Public Advisors, academic staff, and people who attended the ARC launch event. Participants have been asked to snowball the questionnaire to other organisations or programmes they know. The questionnaire includes questions about project components (including questions related to their target population and addressing health inequalities), referral pathways (including whether there is a link worker and if so their roles), community participation, and evaluation. It also asks about the challenges faced in implementing and evaluating their SP projects. We will analyse the findings using simple descriptive statistics.

### Findings

We will present the findings from the baseline survey at the SAPC conference.

### Consequences

The survey is one of three ARC action research initiatives (which also include an ARC knowledge exchange event for social prescribing in April 2020, and a community/ public advisor survey conducted by a team in Blackpool). These will inform the creation of co-produced research proposals and partnership collaborations which will be taken forward and developed as several grant(s) to apply for external competitive funding.

### Funding Acknowledgement

Applied Research Collaborative - North West Coast (ARC -NWC)

## O.11

### How are spiritual health and burnout associated?

**Presenter: Orla Whitehead**

Co-authors:

### Institutions

Newcastle University

### Abstract

### Problem

Burnout is defined by the World Health Organisation as an occupational phenomenon, resulting in exhaustion, mental distance, feelings of negativity or cynicism towards the job, and reduced professional efficacy. Burnout is thought to be contributing to the current workforce crisis in the UK, as well as higher rates of hazardous drinking and suicide among doctors. While burn out is not seen as an illness, it does appear to be associated with mental illness. General Practitioners (GPs) are particularly vulnerable to burnout, possibly because of high workloads. Previous authors have described a loss of meaning in work, and objectification of patients and their families, rather than engaging with their humanity. Christina Maslach (Maslach Burnout Inventory author) argued that burnout is “erosion of the soul.” Soul, meaning and humanity are terms associated with spirituality, and were used in answers GPs gave in a recent survey on spiritual health. Spiritual health has been linked with reduced risk of burn out in other groups. This study aims to understand the association between burn out and spiritual health.

### Approach

A systematic review of the global literature identified ten studies that had measured burnout in doctors, and made an assessment of spirituality. The quality of the studies does not allow conclusions to be drawn. Key weaknesses were sampling bias, response bias, and the lack of a ‘gold standard’ to assess spirituality. Given the flaws in the current literature on the topic, a robust survey of the primary healthcare team is planned to explore any connection between spiritual health and burnout. The available spiritual wellbeing scales are being evaluated, to identify a scale that has validity for measuring spiritual aspects of health and wellbeing, is cross-cultural, and will be accepted by GPs of all faiths and none, for example the Spiritual Health Scale 2011<sup>1</sup>. Qualitative interviews are planned to explore the spiritual needs of the primary care team who have ‘burnt out’, or are at risk of burning out.

### Findings

While some studies in the systematic review found an association between spirituality and burnout, this was inconsistent across the different domains of the burnout score, and not statistically significant on



meta-analysis. At the time of the SAPC meeting, hopefully interim findings from the survey will be available.

## Consequences

As GPs seek to provide holistic care for patients, they also need to consider their own holistic health, and whether implementing policies to support the spiritual health of staff could reduce burnout rates. This also may contribute to addressing current recruitment and retention problems in primary care.

## Funding Acknowledgement

Thanks to DDES CCG for funding my current post.

## P.1

### Do GPs and patients have differing views about the value of managing anxiety in primary care? A qualitative study

**Presenter: Charlotte Archer**

Co-authors: David Kessler, Nicola Wiles, Katrina Turner

## Institutions

Univeristy of Bristol

## Abstract

### Problem

Anxiety disorders are common, with a 40% increase in generalised anxiety disorder reported in the general population between 2007 and 2014. GP recording of anxiety disorders, however, has decreased between 1998 and 2008. It is not clear why there has been a decrease of GPs' recording of anxiety, when rates in the general population have increased. Could it be due to GPs being reluctant to record anxiety and if so, what might the implications of this be for patients? The aim of this study was to understand patients' and GPs' views about recording of anxiety in primary care.

### Approach

In-depth qualitative interviews were conducted with 20 patients and 15 GPs, purposively sampled from GP practices in the South West of England. Interviews were held either in person or by telephone. A topic guide was used to ensure consistency across the

interviews. The interviews were audio-recorded, transcribed verbatim and analysed thematically.

## Findings

GPs described that they felt management of symptoms was more important than giving a diagnosis of anxiety. They reported preferring to use symptom codes rather than diagnostic codes in order to avoid assigning patients potentially stigmatising labels. In addition, they felt diagnostic codes encouraged some patients to adopt a 'sick-role' or not help themselves. GPs explained that, when coding, they tended to reactivate previously used codes where possible, as this was easier and ensured continuity of codes within practices. The decision to use a diagnostic code depended on severity and chronicity of symptoms, and 'anxiety state' was mentioned as the code most often used. Some GPs reported that it was the role of a psychiatrist (not a GP) to diagnose a 'disorder'. In contrast, patients commented that receiving a diagnosis, and how the GP communicated this, was just as important as the management of symptoms. Patients reported that understanding their diagnosis was beneficial in terms of acceptance and readiness to engage with treatment. They also stated that non-specific codes such as 'anxiousness' or 'anxiety state' were unhelpful, and contributed to them not fully understanding their mental health.

## Consequences

Whilst GPs appear reluctant to diagnose anxiety, patients think doing so would improve patient-practitioner communication, patients' understanding of their symptoms and condition, and would lead to more effective management of anxiety in primary care.

## Funding Acknowledgement

This study/project is funded by the National Institute for Health Research (NIHR) School for Primary Care Research (project reference: CA 2017).

## P.2

### How do people of South Asian origin with long-term physical conditions understand, experience and seek help for emotional distress? A systematic review.

**Presenter: Hassan Awan**

Co-authors: Dr Faraz Mughal, Dr Tom Kingstone, Professor Carolyn A. Chew-Graham, Dr Nadia Corp

#### Institutions

University of Keele

#### Abstract

##### Problem

People with long-term conditions (LTCs) are twice as likely to suffer from depression than the general population. People with physical-mental comorbidity have a poorer quality of life, worse clinical outcomes and increased mortality than those with physical conditions alone. People from some ethnic groups are less likely to recognise symptoms which may represent mental health problems and perceive a need for support. Furthermore, they are an underserved group within health services. South Asians (SAs) are the largest minority group in the UK, and are more likely to have certain LTCs such as diabetes and heart disease. There is limited research of the experience of SAs with comorbid physical and mental health problems in primary care. This systematic review seeks to synthesise studies that explore perceptions of emotional distress in SAs with LTCs. The term emotional distress encompasses distress which can cause significant suffering and may or may not be diagnosed. The systematic review will inform a qualitative study interviewing SA males with diabetes and cardiovascular conditions, to explore their understanding of emotional distress and perceived care needs; and primary care clinicians to explore experiences of supporting SA males with mental-physical comorbidity.

##### Approach

A systematic review is being undertaken to answer the following question: How do SAs with LTCs understand, experience and seek help for emotional distress? An ethnically appropriate PPIE group has been convened, and has reviewed the systematic review question and terms. A search strategy was

formulated for eight databases. This included the population of SAs with diabetes or coronary heart disease. The outcome of interest was conceptualisation of emotional distress. The setting included qualitative studies within primary and community care settings worldwide. 3,910 studies were imported into RefWorks which reduced to 2,609 after deduplication. Two reviewers separately undertook title and abstract screening. Once agreed, 27 full texts were dual screened and disagreements at both stages resolved through discussion or referral to a third reviewer. Data extraction is currently occurring independently and the CASP quality checklist for qualitative data will be used to review the quality of the papers. A PRISMA flow chart has been constructed to summarise the review process. Thematic synthesis will then be undertaken, based on Thomas and Harden's three stages. GRADE-CERQual will be used to review the overall strength of evidence.

##### Findings

The systematic review is in process and the synthesis will be presented for the first time at SAPC 2020.

##### Consequences

The review will provide a greater understanding of SAs understanding and conceptualisation of emotional distress in the context of physical LTCs. This work will lead to improvement in the recognition and management of emotional distress in SAs with LTCs. The research has the potential to influence policy-makers and commissioners about service provision for this patient group.

##### Funding Acknowledgement

Wellcome funded

## P.3

### Quality of care for people with serious mental illness (SMI) following removal of financial incentives.

**Presenter: Katharine Bosanquet**

Co-authors: Lu Han, Peter Coventry, Simon Gilbody, Tim Doran, Rowena Jacobs

#### Institutions

University of York (for all)

## Abstract

### Problem

People with SMI die 15-20 years younger than the general population, principally from the same preventable conditions such as cardiovascular and respiratory disease. This is known as the mortality gap and is one of the biggest health inequalities of our time. In an effort to address the mortality gap, the Quality and Outcomes Framework (QOF) introduced financial incentives for GP practices to conduct physical health checks on this population with the aim of monitoring their cardiovascular risk. However, in 2014/15 incentives were removed. To date research on the removal of QOF indicators has not focused specifically on people with SMI. This study aimed to examine the effect of removing incentives on the quality of care for patients with SMI.

### Approach

Quantitative methods were used to analyse electronic health records data from a UK primary care database, the Clinical Practice Research Datalink (CPRD), linked to other data sources. The study design was a retrospective, longitudinal observational cohort spanning a five year period from 2011/12 to 2015/16. The primary research question stemmed from a natural experiment which arose from the removal of financial incentives in 2014/15 for BMI, cholesterol and glucose, but not for blood pressure. This enabled a difference-in-differences design to be used to examine the effect of removal of incentives on the proportion of eligible SMI patients who received a health check, compared to blood pressure which remained incentivised. Multivariate logistic regression was used to examine the effect key demographic variables such as age, gender, ethnicity, SMI type and deprivation level had on outcomes to predict which demographics affected the likelihood of receiving different types of health check. Data were analysed using Stata version 15.

### Findings

Findings from the difference-in-difference analysis demonstrated that removal of financial incentives was followed by an immediate and significant decrease in the proportion of SMI patients who received a health check, compared to the underlying trend controlled for by blood pressure which remained incentivised. BMI had the most substantial decrease in the initial

year post-removal of incentives. The multivariate logistic regression analysis indicated nuances and subtle variation between the different types of health checks relating to the likelihood of which patients received a check. Overall age, gender and SMI type had the most significant effect.

### Consequences

This study provides new evidence about quality of care for SMI patients in the primary care setting. It demonstrates that removing financial incentives for health checks resulted in a significant reduction in the likelihood of receiving a health check. This raises questions about inequality and unmet need regarding SMI patients, at a time when the mortality gap appears to be widening rather than shrinking. Findings can inform policy about improving quality of care for people with SMI.

### Funding Acknowledgement

'This study is funded by the National Institute for Health Research (NIHR) Fellowship Programme (Katharine Bosanquet, DRF-2016-09-098) part of the NIHR Training Programmes. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care'.

## P.4

### How acceptable is a group Psychosocial intervention for postnatal depression in British South Asian women (ROSHNI-2)?

#### Presenter: Carolyn Chew-Graham

Co-authors: Saadia Aseem, Rebecca McPhillips, Jasmin Begum, Anna Taylor, Nusrat Husain, Penny Bee.

#### Institutions

Keele University, Lancashire and South Cumbria NHS foundation Trust, University of Manchester, East Lancashire Hospitals NHS Trust.

## Abstract

### Problem

Postnatal depression (PND) is a common disorder with negative impact on mothers, infants and families. The World Health Organization states that globally 13% of

women experience a mental disorder, primarily depression, following childbirth, increasing to 19.8% in low and middle income countries. In the UK, studies suggest that PND is more common in British South Asian (BSA) women than in Caucasian women, which suggests that ethnic and cultural differences are significant risk factors for developing PND. The Positive Health Programme (PHP), is a culturally-adapted group CBT intervention for PND, and is being tested in a multi-centred Randomised Trial.

### Approach

A nested process evaluation is being conducted, with semi-structured interviews with women who have completed PHP, women who 'dropped out', and trial therapists, to explore acceptability of the intervention from the perspectives of women and therapists; acceptability of the training and challenges to delivery of the intervention from the perspectives of the therapists. Interviews were digitally recorded with consent. Interviews were transcribed verbatim, the transcripts forming the data for analysis. An initial thematic analysis was conducted within each data-set, followed by a framework analysis, using the Theoretical Framework of Acceptability (TFA) (Sekhon et al, 2017)

### Findings

Nineteen women who have completed PHP were interviewed, along with 3 'drop-outs', and 11 therapists. Analysis will be presented from five of the constructs of the TFA: Affective attitudes Women who had completed the group programme were positive about the support given in order to attend the group, the value of making friends with other group members and sense of achievement following completion of the course. Intervention coherence Women reported that leaving the house to attend the group was a positive step. Strategies learned in the group seemed to make sense to participants. Therapists felt the group programme made sense to them, and to their Community. Perceived effectiveness Women felt the sessions in the group programme provided useful information, helping them to gain confidence, develop ways of managing every-day problems, and improve their mood. Therapists reflected on the key features of the programme which were helpful to women. Burden Even though transport and creche facilities were provided, the effort of leaving the

house and impact on family were too much for some women to manage. Self-efficacy Following the training, the therapists had confidence that they could deliver the programme. Women reported that learning to prioritise their own needs as a key result of participation in ROSHNI.

### Consequences

Using the TFA to explore acceptability of the ROSHNI group intervention for women with PND, from the perspectives of women and therapists, we have established that the programme is acceptable and valued, and has the potential to support British South Asian women with post-natal depression.

### Funding Acknowledgement

This work presents independent research funded by the National Institute for Health Research (NIHR) HTA Project: 14/68/08 - Multi Centre RCT of a group psychological intervention for postnatal depression in British mothers of South Asian origin - ROSHNI-2 (The word Roshni means 'light' in Urdu/Hindi)

## P.5

### Trends and variation in the incidence and prevalence of primary care antidepressant prescribing in children and young people in England: a population-based cohort study

#### Presenter: Ruth Jack

Co-authors: Chris Hollis 1,2, Carol Coupland 1, Richard Morris 1,2, Roger David Knaggs 1, Debbie Butler 2, Andrea Cipriani 3,4, Samuele Cortese 1,2,5,6,7, Julia Hippisley-Cox 3

#### Institutions

1 University of Nottingham, 2 NIHR Biomedical Research Centre and NIHR MindTech MedTech Co-operative, Nottingham, 3 University of Oxford, 4 Oxford Health NHS Foundation Trust, 5 University of Southampton, 6 Solent NHS Trust, 7 New York University Child Study Center

### Abstract

#### Problem

The use of antidepressants in children and adolescents remains controversial. In recent years

antidepressant prescribing for young people has increased both in the UK and other countries. However, there is little evidence about variation in prescribing, particularly taking other factors into account. We aimed to describe trends over time and variation in primary care antidepressant prescribing in England, using the largest cohort of children and young people to date. We examined variation by social deprivation, region and ethnicity, and analysed whether the drugs prescribed reflect UK licensing and National Institute for Health and Care Excellence (NICE) guidelines.

### Approach

The study's open cohort was defined as all eligible children (aged 5-11 years) and adolescents (aged 12-17 years) in 1998-2017 from the QResearch primary care database. Incidence and prevalence rates of antidepressant prescriptions were calculated in each year overall, for four antidepressant classes (selective serotonin reuptake inhibitors (SSRIs), tricyclic and related antidepressants (TCAs), serotonin and norepinephrine reuptake inhibitors (SNRIs), and other antidepressants), and for individual drugs. Adjusted trends over time and differences by social deprivation, region and ethnicity were examined using Poisson regression, taking clustering within GP practices into account using multilevel modelling.

### Findings

Of the 4.3 million children and adolescents in the cohort, 49,434 (1.1%) were prescribed antidepressants for the first time during 20 million years of follow-up between 1998 and 2017. Of the first antidepressant prescribed, 82% were TCAs in children, and 68% were SSRIs in adolescents. Antidepressant prescribing incidence rates decreased in children over the study period to less than 0.3 per 1000 person-years for both sexes in 2017, but more than doubled in adolescents between 2005 and 2017, to 9.7 and 4.2 per 1000 person-years in females and males respectively. Prevalence rates also more than doubled in adolescents in the same period to 16.4 in females and 7.9 in males, per 1000 person-years. The lowest prescription incidence rates were in London and the highest were in the South East, and those living in more deprived areas were more likely to be prescribed antidepressants, for all sex and age groups. Prescribing rates were highest in White and lowest in Black adolescents. The five most commonly first

prescribed antidepressants representing 90% of prescriptions were either licensed in the UK for use in children and young people or included in NICE guidelines.

### Consequences

Our analysis provides evidence of a continuing rise of antidepressant prescribing in adolescents since 2005, driven by SSRI prescriptions. The variation in prescribing found by deprivation, region and ethnicity could represent inequities. Future research should examine whether prescribing trends and variation are due to differences in need and risk factors, access to diagnosis or treatment, prescribing behaviour or young people's help seeking behaviour.

### Funding Acknowledgement

This research was funded by the NIHR Nottingham Biomedical Research Centre.

## P.6

### Secondary care visits by children and young people prescribed antidepressants in primary care: a descriptive study using the QResearch database

#### Presenter: Rebecca Joseph

Co-authors: Ruth H Jack, Carol Coupland, Debbie Butler, Chris Hollis, Richard Morriss, Roger D Knaggs, Andrea Cipriani, Samuele Cortese, Julia Hippisley-Cox

#### Institutions

University of Nottingham, NIHR Nottingham Biomedical Research Centre and NIHR MindTech MedTech Cooperative, University of Oxford, Oxford Health NHS Foundation Trust, University of Southampton, Solent NHS Trust, New York University Child Study Center

#### Abstract

##### Problem

Antidepressants may be used to manage a number of conditions in children and young people including depression, anxiety, and obsessive compulsive disorder. UK guidelines for the treatment of depression in children and young people recommend that antidepressants should only be initiated following assessment and diagnosis by a child and adolescent



psychiatrist. This study aimed to summarise visits to specialists and indications recorded around the time of antidepressant initiation in children and young people in UK primary care.

### Approach

English primary care electronic health records provided by QResearch were linked to Hospital Episode Statistics (HES) secondary care data. The study included 5-17-year-olds first prescribed antidepressants between January 2006 and December 2017. Records of visits to paediatric or psychiatric specialists and potential indications (from a pre-specified list) were extracted. Events were counted if recorded less than 12 months before or 6 months after the first antidepressant prescription. Results were stratified by first antidepressant type (all, selective serotonin reuptake inhibitors (SSRIs), tricyclic antidepressants (TCAs)), and by age group (5-11, 12-17 years old).

### Findings

In total, 33,031 5-17-year-olds were included. The majority were aged 12-17 years (30,701, 93%) and were female (22,279, 67%). The first antidepressant prescribed was an SSRI for 22,130 (67%) patients. Overall, 12,149 (37%) visited a paediatric or psychiatric specialist in the specified time window. Most recorded visits (7154, 22% of the study population) were to paediatricians. Of those prescribed SSRIs, 5463/22,130 (25%) visited a child and adolescent psychiatrist. The proportion who visited a paediatrician increased steadily over the study window, while the proportion visiting a child and adolescent psychiatrist peaked in 2013, before starting to decline. By patient age, 1157/2239 (50%) 5-11-year-olds and 10,992/30,701 (36%) 12-17-year-olds had a record of visiting a paediatric or psychiatric specialist. Overall 17,972 (54%) patients had a record of at least one of the pre-specified indications. This proportion was higher for those prescribed SSRIs (15,295/22,130, 69%) than those prescribed TCAs (2463/10,489, 24%). Depression was recorded most frequently overall (12,501, 38%), followed by anxiety (4155, 13%). Over half of the 12-17-year-olds first prescribed an SSRI had a record of depression (11,474/21,478, 53%).

### Consequences

These results suggest antidepressants are frequently prescribed to children and young people in primary care without the recommended involvement of specialists. As possible indications were identified for just over half of prescriptions, it is difficult to determine whether antidepressants were prescribed in children and young people for evidence-based indications. These findings may justify both greater training for GPs in child and adolescent mental health, and greater access to specialist care and non-pharmacological treatments.

### Funding Acknowledgement

This work has been funded by the National Institute for Health Research (NIHR). The research reported in this paper was conducted by the NIHR Nottingham Biomedical Research Centre. RM is supported by the NIHR MindTech MedTech and in Vitro Fertilisation Collaboration and the NIHR Applied Research Collaboration East Midlands. AC is supported by the NIHR Oxford Cognitive Health Clinical Research Facility, by an NIHR Research Professorship (grant RP-2017-08-ST2-006) and by the NIHR Oxford Health Biomedical Research Centre (grant BRC-1215-20005). The views represented are the views of the authors alone and do not necessarily represent the views of the Department of Health in England, NHS, or the National Institute for Health Research.

## P.7

**Is the community pharmacy an appropriate place to deliver a psychological intervention for adults with comorbid sub-threshold depression and long-term conditions? A feasibility study and pilot randomised controlled trial (CHEMIST)**

### Presenter: Liz Littlewood

Co-authors: Samantha Gascoyne(1), Carolyn Chew-Graham(2), Claire Sloan(1), Charlotte Kitchen(1), Elizabeth Coleman(1), Della Bailey(1), Suzanne Crosland(1), Caroline Pearson(1), Simon Gilbody(1,3), David Ekers(1,4) on behalf of the CHEMIST team.

### Institutions

(1) Department of Health Sciences, University of York; (2) School of Primary, Community and Social Care, Keele University; (3) Hull York Medical School,

University of York; (4) Tees, Esk & Wear Valleys NHS Foundation Trust

## Abstract

### Problem

Approximately 30% of the UK population have a long-term condition (LTC). Depression is two to three times more likely in people with LTCs resulting in poorer health outcomes, reduced quality of life, and increased healthcare costs. Sub-threshold depression, a risk factor for major depression, is prevalent in people with LTCs, but many people remain untreated due to demand on services. The community pharmacy may be an alternative setting to offer psychological support for people with comorbid sub-threshold depression and LTCs.

### Approach

A feasibility study and pilot randomised controlled trial (RCT) evaluated the feasibility of pharmacy staff delivering an Enhanced Support Intervention (ESI) for people with comorbid sub-threshold depression and LTCs. The ESI focussed on Behavioural Activation and involved up to six sessions delivered by trained pharmacy staff (ESI facilitators). Participants were identified via pharmacies or GP practice database searches. Participants (aged  $\geq 18$ , with sub-threshold depression and at least one LTC) were all offered the ESI in the feasibility study. In the pilot RCT, participants were randomised to either the ESI or usual care. Main outcomes included recruitment and retention rates, ESI engagement and depression severity (Patient Health Questionnaire) at four months (primary outcome). Semi-structured interviews were conducted with participants, pharmacy staff (including ESI facilitators) and GPs.

### Findings

Feasibility study: Twenty-four participants were recruited and 17 ESI facilitators were trained. Seventeen participants (71%) commenced the ESI; all completed two or more sessions and ten completed all six sessions. Retention at four months was 83%. Depressive symptoms decreased slightly at four months. Interview data suggested the ESI was acceptable to participants and ESI facilitators, and that the community pharmacy was an appropriate place to offer a psychological intervention. Learning generated led to refinements to study materials/

processes for the pilot RCT. Pilot RCT: Forty-four participants were recruited (out of a target of 100); 24 randomised to the ESI and 20 to usual care. An additional 18 ESI facilitators were trained. Eighteen participants (75%) commenced the ESI with 16 participants completing at least two sessions and nine completing all six sessions. Retention at four months was 93%. Depressive symptoms reduced slightly at four months, with a slightly larger reduction in the usual care group, although the sample size is too small to draw any conclusions. Interview data reported good acceptability of the ESI and identified barriers associated with implementation of recruitment and study processes within routine pharmacy practice.

### Consequences

Community pharmacy represents a new setting for mental health research. This is the first study to demonstrate that pharmacy staff can be trained to deliver a depression prevention intervention. Despite good retention rates and ESI engagement, recruitment was a challenge and this has implications for conducting a definitive RCT. Further research is needed to address recruitment barriers.

### Funding Acknowledgement

This work presents independent research funded by the National Institute for Health Research (NIHR) Public Health Research programme [14/186/11]. The views expressed in this work are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

## P.8

### Prognostic models for predicting relapse of depression: A Cochrane Prognosis Review and implications for primary care

#### Presenter: Andrew Moriarty

Co-authors: Nick Meader, Simon Gilbody, Rachel Churchill, Bob Phillips, Shehzad Ali, Richard D Riley, Dean McMillan, Carolyn A Chew-Graham

#### Institutions

Hull York Medical School, University of York, Keele University, Western University

## Abstract

### Problem

Most people with depression are managed in primary care. After a first episode, approximately half of patients will relapse, and this risk increases for every subsequent episode. Depression severity and treatment-resistance increase with each successive episode, highlighting the potential benefits of intervening early to prevent relapse. Factors associated with increased risk of relapse include adverse childhood events, previous episodes of depression and residual symptoms. Combining several prognostic factors within a multivariable prognostic model can result in improved individualised risk predictions. Our goal is to develop a prognostic model, to be implemented in primary care, to identify patients at increased risk of relapse and allow more effective allocation of relapse prevention interventions to those individuals. This is the first systematic review to set out to identify prognostic models for relapse of depression, a recommended first step in prognostic model development. The two main aims of this review are: To summarise the predictive performance of prognostic models developed to predict the risk of relapse and related outcomes in patients who meet criteria for remission. To summarise the value of updating an existing prognostic model or identify whether the development of a novel prognostic model is required.

### Approach

The methodology is informed by most recent guidance in prognosis research. We searched a wide range of electronic medical databases and used the following eligibility criteria: Population — Adult patients (18 years and over) diagnosed with depression and meeting criteria for remission.

Index model — Prognostic models predicting relapse and related outcomes in patients with depression.

Comparator — None Outcomes — Relapse and related outcomes (recurrence, sustained remission or recovery) in depression.

Timing — Start-point is the point at which a patient has responded to treatment and is identified as meeting criteria for remission.

Setting — Primary, secondary or community care. Data were extracted using the Checklist for Critical

Appraisal and Data Extraction for Systematic Reviews of Prediction Modelling Studies (CHARMS) and risk of bias assessed using the Prediction model risk of bias assessment tool (PROBAST).

### Findings

The review is ongoing (full text screening stage) and SAPC ASM 2020 will be an early opportunity to share the results.

### Consequences

The results will inform future work to improve risk stratification in primary care. If an existing model performs satisfactorily, we will update and refine this, with input from key stakeholders, including patients and the public, for implementation in a UK primary care setting. If no existing model has sufficient predictive performance or clinical acceptability, we will use information from this review to develop a novel prognostic model. The longer-term goal of this study is to improve clinical outcomes and quality of life for patients, as well as facilitating more targeted use of NHS resources in primary care.

### Funding Acknowledgement

This report is independent research supported by the National Institute for Health Research (NIHR Doctoral Research Fellowship, Dr Andrew Moriarty, DRF-2018-11-ST2-044). 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 and Social Care.

## P.9

### The experiences and perspectives of young people who self-harm in general practice: a qualitative study

**Presenter: Dr Faraz Mughal**

Co-authors: Lisa Dikomitis, Opeyemi Babatunde, Carolyn Chew-Graham

### Institutions

School of Primary, Community and Social Care Keele University, Midlands Partnership Foundation Trust

## Abstract

### Problem

Self-harm in young people is a major public health concern. Suicide is the leading cause of death in young people (16-25 years) in the United Kingdom, and self-harm is the strongest risk factor for suicide. Reducing rates of self-harm is a key national priority. Over half of young people who die by suicide have a history of self-harm. There are estimated to be around 200,000 young people who self-harm in the community and do not present to hospital. Self-harm in young people presenting to general practice is rising, and general practice is the healthcare setting young people with self-harm attend for help most often. There is, however, no published evidence on young people's experiences and views of care received for self-harm in general practice, and on access to general practice services. This study aimed to explore the experiences and perspectives of young people (16-25 years) receiving care for self-harm in general practice, and barriers and facilitators to accessing general practice care.

### Approach

Semi-structured, face-to-face or telephone interviews with 13 young people in England were conducted from April-November 2019 to attain rich insights. Sampling was purposive to achieve maximum variation in age, gender, practice location, and socio-demographic status. Interviews were audio-recorded and transcribed verbatim. Transcripts formed the data and are being analysed by inductive thematic synthesis using principles of constant comparison.

### Findings

Preliminary analysis has identified emerging themes including a hierarchy of self-harm behaviour, with method of self-harm changing over time. Young people report that stigma around self-harm behaviour hinders them from openly talking about self-harm with GPs, which is then further exacerbated when self-harm is overlooked by GPs. Young people felt GPs can be dismissive when self-harm is mentioned in the consultation. Young people describe how past experiences of GP care influence future help-seeking for self-harm. For young people who had positive experiences of GP care, continuity with the same GP was important, and acts as a facilitator for accessing future general practice care. Full analysis will be

presented, and all themes agreed upon by the research team.

### Consequences

This is the first study to report on young people's experiences of care received for self-harm behaviour in general practice. These findings will be crucial for improving the care young people receive for self-harm in primary care, and help to reduce repeat self-harm and prevent suicide. This study will inform the development of integrated primary care self-harm models outlined in the NHS Long Term Plan and clinical guidelines for self-harm.

### Funding Acknowledgement

This work is supported by FM's NIHR In-Practice Fellowship and a Practitioner Allowance Grant from the RCGP Scientific Foundation Board.

## P.10

**Could community pharmacy teams enhance mental health support through the Advancing Mental Health Provision In PHarmacY (AMPLIPHY) service? A protocol and preliminary findings.**

### Presenter: Lisa Riste

Co-authors: Hayley Gorton, Darren Ashcroft, Chris Armitage, Nav Kapur, Donna Littlewood, Gary Pickering

### Institutions

University of Manchester, University of Huddersfield, Lloyds Pharmacy

## Abstract

### Problem

The improvement of mental health support is a priority for the NHS, and primary care services. Community pharmacists and their teams are well-placed to contribute to this agenda. Yet, a recent Cochrane review did not identify any formal mental health services which are being delivered by community pharmacists. (1) Given that 1.6 million people visit a pharmacy in England every day (2) and adherence to antidepressants is often poor (3), community pharmacies could be an underutilised resource. We therefore aim to test the feasibility of

implementing a service that has been co-designed with service-users to enhance support related to depression and anxiety.

### Approach

We worked with a patient and public involvement group, pharmacists and leadership at LloydsPharmacy to design a service to support people who are prescribed new medications for depression or anxiety, or have a change in medication, dose or quantity. The resultant programme is a series of consultations, beginning at the presentation of the qualifying prescription, after a further 1-2 weeks and then as further prescriptions are presented, up to 3 months. The participating pharmacists undertook a one-day training programme led by researchers from the Universities of Huddersfield and Manchester. This included review of service development, documentation, embedded research, suicide prevention, safeguarding and identification of local referral pathways. The service has been piloted since November 2019 and will continue to May 2020 in 10 pharmacies across Greater Manchester. We will evaluate the service through triangulation of data obtained through the following methods:

- 1) Monitor service uptake through audit kept by pharmacy teams when identifying eligible patients.
- 2) Review and monitoring of anonymous consultations, which are recorded on PharmOutcomes. Descriptive statistics will be reported and we will use content analysis to describe the content of consultation.
- 3) Semi-structured interviews prior to and after implementation of the service with the participating pharmacists, which we will analyse using the Theoretical Domains Framework. (4)
- 4) Anonymous qualitative surveys of patients as they leave the service, which we will analyse thematically.

### Findings

The first patient was recruited into the service on 11/11/2019, to date 74 patients have been recruited (62% target). Patients range from age 18 to 72 (39 median) and 45 (61%) are female. 54 (73%) entered the service due to a new medication, 13 (18%) due to a change in dose and the remainder had a change in medication or quantity. Female pharmacists were more likely to recruit female patients than male

patients (71% vs. 29%;  $p < 0.05$ ). The initial qualitative interviews with pharmacists were undertaken in November/December 2019, were audio-recorded, and are in the process of being transcribed.

### Consequences

By July 2020, we will be able to comment on the feasibility of this service as indicated from the methods described above. These findings will support potential funding applications to evaluate a wider roll-out of the service across other community pharmacy providers and a wider geographical area.

### Funding Acknowledgement

This study is funded by an Innovation award from NIHR Greater Manchester Patient Safety Translational Research Centre

## P.11

### Interventions for Perinatal Anxiety (PNA) in a general practice population: a systematic review and narrative synthesis

#### Presenter: Victoria Silverwood

Co-authors: Lorna Bullock, Carolyn-Chew-Graham, Tom Kingstone, Katrina Turner, Joanne Jordan.

#### Institutions

VS, LB, JJ, TK, CC-G – School of Primary, Community and Social Care, Keele University  
KT – Centre of Academic Primary Health Care, Bristol University  
TK, CC-G – Midlands Partnership NHS Foundation Trust  
CC-G - WM ARC

#### Abstract

##### Problem

Perinatal anxiety (PNA) occurs during pregnancy or up to 12 months post-partum. Global prevalence of PNA is estimated to be >15%, at least as common as depression. PNA may negatively impact on pregnancy and neonatal outcomes, postnatal mental health, parenting behaviours and childhood development. Previous research has focused primarily on postnatal depression; there is limited evidence for the management of PNA in primary care. Studies that consider anxiety occurring outside of the perinatal period support the use of psychological therapies as



treatment; however, evidence for the specific application of these therapies for PNA seems scarce. There is also limited evidence published around other non-pharmacological interventions such as peer/family support. The NHS Five Year Forward View for Mental Health aims to improve specialist and community Perinatal Mental Health (PMH) support across England and NICE guidelines for PMH state there is a need for further research to specifically develop interventions such as psychological therapies to treat PNA. This study will review the current evidence for non-pharmacological interventions for PNA and highlight gaps in the current literature around the management of PNA.

#### Approach

A systematic review and narrative synthesis will be undertaken, reported in line with PRISMA guidelines and registered on PROSPERO. Systematic searches will be conducted in MEDLINE, CINAHL, AMED, EMBASE, Web of Science and PsycINFO. All titles and abstracts will be independently screened by VS; 20% will be screened by a second independent reviewer (LB) according to pre-defined eligibility criteria. Discrepancies will be solved by discussion or a third reviewer. Both researchers will undertake full paper screening and data extraction. The review will include any primary qualitative, quantitative or mixed methods studies. Data will be extracted about study participants, methodology, and intervention design and context. Quality assessment will be performed alongside data extraction using the Cochrane Risk of Bias tool. A grey literature scoping review will be conducted to identify reports from organisations involved in PMH care such as third sector organisations. A narrative synthesis will be performed as per the Popay guidelines to identify patterns across the data in order to draw informative conclusions. An established patient advisory group was involved in the concept and development of this systematic review and will be involved throughout.

#### Findings

Initial systematic literature searches are underway and results will be available for presentation at Conference in July.

#### Consequences

This review will identify and summarise evidence on the effectiveness of current non-pharmacological

interventions used in general practice to manage PNA. Insights gained will be used to make recommendations for future research, clinical implications and policy changes. It forms the first part of a PhD looking at optimal interventions for PNA, and will support the co-production of an intervention for PNA.

#### Funding Acknowledgement

VS is a Wellcome Trust PhD Clinical Fellow – this systematic review forms part of a PhD.

### Q.1

#### Exploring the relationship between post-migration life difficulties and mental health in asylum seekers and refugees: A Systematic Review

#### Presenter: Alessio Albanese

Co-authors: Professor Catherine O'Donnell, Dr Sara MacDonald, Dr Barbara Nicholl

#### Institutions

University of Glasgow

#### Abstract

##### Problem

Research indicates that asylum seekers and refugees suffer from higher rates of mental health difficulties in comparison to the general population of host countries. The available literature provides only partial explanations for this phenomenon, and much of that research utilises quantitative methods of data synthesis. In order to improve our understanding of the psycho-social context that exacerbates mental ill-health in these populations, we are conducting a systematic review and Critical Interpretative Synthesis (CIS). The present systematic review aims to improve our understanding of post-migration life difficulties and their relationship to mental health in asylum seeking and refugee populations.

##### Approach

MEDLINE, Embase, Web of Science, PsychINFO, SocINDEX were searched using a pre-specified, comprehensive search strategy. The results derived from these searches were imported into DistillerSR (N=9366), and a 4-level screening was performed. All

papers at all levels were screened by two independent researchers. Quality appraisal was conducted using COREQ guidelines (N=35). Papers were included if they focussed on (1) asylum seekers/refugees; (2) mental health; (3) reported qualitative data; (4) clearly addressed post-migration issues.

### Findings

A total of 35 papers were included and synthesis is ongoing. Most studies focus on depression, anxiety and/or PTSD, although only 12 include a clear reference to a diagnosis of at least one common mental health problem. Early findings indicate that the migration journey and experiences of the asylum process and related social issues, such as housing, lack of employment, poor access to healthcare, lack of social connections and family separations contribute to post-migration mental health difficulties. Asylum seekers' and refugees' recognition and conceptualisation of mental health and ill-health is often culturally shaped and may, therefore, differ from that of the health care professionals they encounter in high income health care systems. Access to mental health care may be mediated and shaped, amongst other factors, by these discrepancies between asylum seekers' and refugees' conceptualisation of mental health, and current service provision, which is rooted in diagnosis and categorisation (e.g. through the use of DSM categories). An additional challenge in the process of this review has been the different terminologies used to describe the migration status of participants in each study (e.g. asylum seekers, refugees, undocumented migrants, economic migrants etc.). We found that terms such as migrant or immigrant are, at times, erroneously used to refer to refugees and/or asylum seekers.

### Consequences

The findings from this review can improve our understanding of the saliency of post-migration life difficulties on the mental health of asylum seekers and refugees resettled in high income countries. This has implications for general practitioners and other primary care and community-based mental health professionals, who are often the first point of contact for these patients.

## Q.2

### What is the prevalence and impact of frailty in minority ethnic populations?

**Presenter: Dr Hamish Foster**

Co-authors: Dr Hamish Foster, Dr Bhautesh Jani, Prof Frances Mair, Dr Barbara Nicholl, Prof Catherine O'Donnell

### Institutions

General Practice and Primary Care, University of Glasgow

### Abstract

#### Problem

Few studies have examined the prevalence and associated mortality of frailty among ethnic minorities in the UK. Better understanding of ethnic mortality differentials can inform policy relating to health inequalities. We aimed to describe the distribution and odds of frailty and its associated mortality across ethnic groups in UK Biobank.

#### Approach

A prospective cohort; 502,643 participants aged 37-73 years; self-reported demographics/health/lifestyle data; linked to registries to ascertain deaths. Ethnicity groups: White British, Other-White background, White Irish, Asian/Asian British, Black/Black British, Other, Mixed, or Chinese. Frailty assessed by 5 criteria (Frailty Phenotype): grip strength/walking-speed/exhaustion/weight-loss/physical activity. Participants considered 'frail' if they met  $\geq 3$  criteria; 'pre-frail' if they met 1-2 criteria; and 'not frail' if no criteria met. Frailty prevalence was stratified by sex and age. Multinomial logistic regression models used to estimate likelihood for frailty, adjusting for demographics and lifestyle. Cox proportional hazards models used to examine associations between frailty and all-cause mortality.

#### Findings

485,490 participants had complete data; 17,153 (3.4%) with missing data excluded. Minority ethnic groups were under-represented compared to UK general population: 431,416 (88.9%) White British; 15,860 (3.3%) Other-White background; 12,767 (2.6%) White Irish; 9,124 (1.9%) Asian or Asian British; 7,673

(1.6%) Black or Black British; 4,275 (0.9%) Other ethnicity; 2,862 (0.6%) Mixed ethnicity; and 1,513 (0.3%) Chinese. Compared to White British, minority ethnic groups had more females, were younger, more deprived, smoked less, and drank alcohol less often. After 108.2 months (IQR 17.3) median follow up there were 18,965 (3.9%) deaths. Frailty prevalence (unadjusted) was higher in most minority ethnic groups for nearly all age-sex groups. In those aged 56-65, frailty prevalence was highest in Asian/Asian British women (15.3%) and in Asian/Asian British men (11.0%). Equivalent figures for White British were 4.0% for women and 3.0% for men. White British men and Other-White background women had the lowest prevalence of frailty. Compared to White British participants, adjusted ORs (95%CI) for frailty were significantly higher for nearly all ethnic minorities: White Irish 1.28 (1.16-1.41); Asian/Asian British 4.40 (4.04-4.79); Black/Black British 1.71 (1.55-1.89); Chinese 2.33 (1.78-3.05); Mixed 1.23 (1.01-1.48); and Other 2.65 (2.34-3.00). However, compared to White British, there were significantly lower mortality hazards associated with frailty in Asian/Asian British and Black/Black British: HR (95%CI) 0.54 (0.41-0.72); and 0.59 (0.40-0.87), respectively. For all other ethnic minorities, frailty mortality associations were not significantly different from those of White British.

### Consequences

Prevalence of frailty was higher in ethnic minorities than in White British. After adjusting for sociodemographic and lifestyle factors, odds of being frail remained significantly higher in ethnic minorities. However, frailty was associated with lower or similar mortality compared to White British participants. Developing an understanding of how frailty impacts different ethnic groups could help improve health equity.

### Funding Acknowledgement

This work was not funded.

## Q.3

### What is the prevalence and impact of multimorbidity in minority ethnic groups?

**Presenter: Hamish Foster**

Co-authors: Dr Hamish Foster, Dr Bhautesh Jani, Prof Frances Mair, Dr Barbara Nicholl, Prof Catherine O'Donnell

### Institutions

General Practice and Primary Care, University of Glasgow

### Abstract

#### Problem

The prevalence and impact of multimorbidity in minority ethnic groups is underexplored. Here we describe the prevalence of multimorbidity and its associated mortality across ethnicities in the UK Biobank population.

#### Approach

A prospective study of UK Biobank: 502,643 participants aged 37-73 years; self-reported demographics, health, and lifestyle data; linked to registries to ascertain deaths. Ethnicity groups: White British, Other-White background, White Irish, Asian/Asian British, Black/Black British, Other, Mixed, or Chinese. Long-term condition (LTC) count at baseline allowed categorisation into: 0, 1, 2, 3, or  $\geq 4$  LTCs. Multimorbidity was defined as having  $\geq 2$  LTCs. Prevalence of LTC count was stratified by sex and age. Multinomial logistic regression models were used to estimate likelihood of having 0 (reference), 1, 2, 3, or  $\geq 4$  LTCs, adjusting for demographics and lifestyle. Cox proportional hazards models were used to examine associations between LTC count and all-cause mortality (reference group: White British).

#### Findings

493,646 had complete data; 8,997 (1.8%) with missing data excluded. Minority ethnic groups were under-represented compared to UK population. Compared to White British they had more females, were younger, more socioeconomically deprived, smoked less, and drank alcohol less frequently. After 108.2 months (IQR 17.4) median follow up there were 19,665 (4.0%) deaths. Compared to White British,

multimorbidity (stratified by sex and age) was higher in most ethnic minority groups. In those aged 56-65, the highest prevalence of  $\geq 2$  LTCs was 45.1% in Black/Black British women and 46.1% in Asian/Asian British men. Chinese generally had the lowest prevalence of multimorbidity (e.g. 24.9% Chinese women aged 56-65 had  $\geq 2$  LTCs). This pattern was similar in other age groups and at higher levels of multimorbidity. Compared to White British, adjusted ORs (95%CI) for having multimorbidity (2 vs 0 LTCs) were significantly lower for most ethnic minority groups: White-Other 0.82 (0.78-0.86); Black/Black British 0.87 (0.81-0.93); Chinese 0.63 (0.54-0.74); and Other 0.80 (0.73-0.88). However, equivalent OR for Asian/Asian British was significantly increased: 1.10 (1.04-1.17). There were lower hazard ratios for mortality for all ethnic minority groups at all levels of multimorbidity. Asian/Asian British, White-Other, and Mixed ethnicity with 2 LTCs had significantly lower mortality compared to White British: HR (95%CI) 0.73 (0.57-0.94); 0.82 (0.67-0.99); and 0.53 (0.30-0.93), respectively.

#### Consequences

This is the first study to examine multimorbidity and associated mortality across ethnicities in a UK population. Prevalence of multimorbidity was higher in all ethnic minority groups but, after adjusting for sociodemographics and lifestyle, the odds of having multimorbidity was lower in ethnic minority groups. Multimorbidity was associated with lower mortality in most ethnic minority groups. Caution is warranted due to under-representation of minority groups in UK Biobank. However, multimorbidity may be a key factor in explaining ethnic differences in mortality.

#### Funding Acknowledgement

This work was not funded.

## Q.4

### Barriers to the use of trained interpreters in consultations with refugees in four resettlement countries: A qualitative analysis using Normalisation Process Theory

**Presenter: Anne MacFarlane**

Co-authors: Susann Huschke, Kevin Pottie, Fern Hauck, Kim Griswold, Mark Harris.

#### Institutions

University of Limerick, Ireland, University of Ottawa, Canada, University of Virginia, USA, University of Buffalo, USA, University of New South Wales, Australia

#### Abstract

##### Problem

The forced movement of people as refugees around the globe is increasing and reached record highs in recent years. Refugee resettlement has therefore affected increasing numbers of primary care practitioners. There are concerns about health equity in primary care for refugees. This is primarily because of well-documented communication challenges in consultations due to cultural and linguistic diversity. While access to trained interpreters is a priority for primary care practitioners and refugees alike, there are many barriers to the implementation of interpreted consultations in routine care. There is a lack of international, theoretically informed research to guide policy and practice. The purpose of this research is to conduct a comparative analysis of barriers to interpreter use in primary care consultations in four resettlement countries using Normalisation Process Theory.

##### Approach

We developed and piloted an online survey with closed and open questions about the use of formal interpreting agencies by primary care practitioners who work with refugees. We recruited via email through primary care networks in four countries: Australia, Canada, Ireland and US (n=314). The survey response rates were average ranges for external surveys (10-15%) in all countries except Ireland: Australia 26%, Canada and US (networks overlapped) 12.3%, and Ireland 5.9%. This presentation is based on qualitative analysis of responses to open

questions. We completed a two-stage qualitative analysis of responses about barriers to interpreter use (n= 178). We conducted an inductive thematic analysis, following the principles of framework analysis, and then mapped the emergent themes onto Normalisation Process Theory's (NPT) construct about enactment. We explored whether data fell outside the focus of this NPT construct; there were none that did.

#### Findings

Most respondents to the open questions were over 40 years of age (n = 122, 68.5%), female (n = 131, 73.6%) and were not a refugee or an immigrant (n = 139, 78%). The majority were physicians/doctors (n = 146, 82%) and working in a practice using formal interpreters (n = 11; 62.5%). In all four countries, the use of an interpreter presented interactional challenges between providers and patients (e.g. difficult to develop rapport in a triadic consultation). Primary care practitioners did not always have confidence in interpreted consultations and described poor professional practice by some interpreters (e.g. breaches in confidentiality). There was variation across countries, and inconsistency within countries, in the availability of trained interpreters and funding sources.

#### Consequences

There are shared and differential barriers to implementation of interpreted consultations in the four countries. It is necessary to identify transferrable interventions to address shared barriers and country specific interventions to address system level issues that are specific to the national context. Taken together, this will help reduce the current health inequities experienced by refugees in primary care.

## Q.5

### Engaging the multiply marginalised in Primary Care Research. Reflections on Involvement and Engagement activities within the homeless Central and Eastern European Community in Greater Manchester

**Presenter: Aaron Poppleton**

Co-authors: Caroline Sanders, Aneez Esmael, Nusrat Husain

#### Institutions

University of Manchester

#### Abstract

##### Problem

The UK-Central and Eastern European community (UK-CEE) totals around 2 million people. A range of barriers to effective community engagement within UK primary care services exist, with resultant service dissatisfaction. Such barriers are greater for multiply marginalised 'minorities within the minority', such as the UK-CEE homeless. Despite having significant unmet physical and mental health needs, UK-CEE homeless individuals are routinely absent from demographic data and health services research. Little exploration of their health beliefs and concepts for health utilisation has taken place. Furthermore, the relevance of routine Public and Patient Involvement (PPI) strategies to this population is unclear.

##### Approach

A series of community stakeholder, individual and group PPI meetings are currently being undertaken with UK-CEE homeless individuals within the Booth Centre, Manchester. Meetings are semi-structured and in line with UK Standards for Public Involvement in Research and INVOLVE PPI guidance. Field notes are recorded with participant permission. Discussion topics include: perspectives on UK primary care; practicalities of study recruitment, design, and ongoing participation; and the perceived viability of different methods of PPI and study/intervention co-design.

##### Findings

Meetings are ongoing with completion due by June 2020. Identified themes and their potential



implications for primary care research among the multiply marginalised will be presented. Direct comparison will be made with PPI and engagement activities undertaken within the wider UK-CEE and other UK based ethnic minority communities. Outcomes will inform subsequent qualitative study recruitment/engagement strategies in addition to co-design of primary care service guidance.

### Consequences

Engaging the multiply marginalised in primary care research is key to overcoming health inequalities and achieving community empowerment. Clear guidance on developing sustainable PPI and co-design strategies within the UK-CEE homeless population will support development of engagement strategies for other multiply marginalised communities.

## Q.6

**“I ask God for medicines and my doctors deliver them to me”: How do older Pakistanis living in London experience multi-morbidity?**

**Presenter: Najia Sultan**

Co-authors: Deborah Swinglehurst

### Institutions

Queen Mary University of London

### Abstract

#### Problem

Multi-morbidity, or the co-existence of two or more medical conditions, is an escalating epidemic on a global scale. Living with multiple illnesses increases risk of mortality and decreases quality of life. The effects of multi-morbidity are exacerbated in vulnerable groups, such as those living in poverty, the elderly, ethnic minorities and migrants; where intersectional risk factors compound and result in poor outcomes that are blamed largely on those who are already disadvantaged. London is an increasingly super-diverse city with a South-Asian population, including those of Pakistani origin, who are known to have higher levels of multi-morbidity and an earlier onset of chronic illness than the native population. Urdu is the UK's third most commonly spoken immigrant language and Urdu-speaking Pakistani

patients form a significant ethnic group in London. Existing research on this population has historically focused on health literacy and ‘compliance’ through a biomedical lens. Little is known about how Pakistani patients experience chronic illness in its broad sense, within the context of their life histories and the migrant experience and the relationships that facilitate and maintain their patient-hood.

### Approach

We interviewed 15 first-generation Pakistani migrant patients living with >2 chronic illnesses and on >10 regular medications, aged between 53 and 87, recruited from 7 GP practices in East London. Patients completed an in-depth interview with a bilingual researcher in Urdu at home, lasting on average 1 hour and 12 minutes. The interviews were designed to induce a narrative of patient's experience of health in the context of their life story, and were subsequently translated into English and transcribed.

### Findings

Through analysis we identified the central relational triad of family, faith and health to how these patients make sense of and manage their experiences of chronic illness. Stressful events within the family were identified as precipitants for ill health; whilst care provided by family was a crucial source of support in withstanding the ‘burden of treatment’. Health, good or bad, was seen as God's will and to be accepted stoically. Narratives of being a ‘good patient’ were linked to gratitude to the UK healthcare system, in direct contrast to personal experiences in Pakistan where access had been restricted due to cost or availability of quality care.

### Consequences

As the UK becomes progressively globalised, healthcare practitioners, providers and policy-makers need to better understand the impact of culture on health behaviours. This research could indicate that for older Pakistani patients operating within a collectivist culture with a wide web of concern, neo-liberally rooted public health agendas that focus on individualised responsibility and self-management strategies maybe limited in success. More authentic conversations about the effects of culture on responses to and experiences of chronic illness are needed.

## Funding Acknowledgement

Barts Charity

## Q.7

### Registration without documentation: an exploration of the experiences of General Practice staff registering new patients unable to provide documentation in North East London.

**Presenter: Dr Kitty Worthing**

Co-authors: Dr Megan Clinch, Professor Anita Berlin, Dr Pooja Seta, Dr Isa Ouwehand

## Institutions

Queen Mary University

## Abstract

### Problem

NHS England guidance states that not being able to provide proof of address or identification for GP registration cannot be used as a reason to refuse registration. Despite this, research has found that patients who are unable to produce the documentation requested, are refused registration by some practices. In response to this groups such as Pathway, Groundswell and Doctors of the World have been working to support patients to register and provide training to GP staff. However, GP practice staff's experience of new patient registration processes has never been explored. This on-going qualitative study aims to better understand the process by which registration is refused and factors that operate to influence this. It explores how non-clinical GP staff experience of and current practice regarding patient registration, perceptions of patients without documentation and obstacles to their registration. Also explored is participants' ideas of how to improve access for this group of patients; aiming to produce recommendations that are sustainable and acceptable.

### Approach

Thirty-three participants across three boroughs in North East London have taken part in focus group discussions or individual interviews. A initial thematic analysis, utilising Pierre Bourdieu's theory of power

and practice has been undertaken and will be subject to participant checking before the analysis is completed.

## Findings

Key emerging themes that engender reluctance to register patients without documentation include: perceived lack of clarity of national guidance, perception that this patient group represent increased financial, clinical and administrative burden on the practice, concerns regarding patient & staff safety and illegal activity, concerns regarding specific legal or statutory requirements and duties and a sense of 'moral' responsibility to other patients and the wider NHS regarding resource distribution.

## Consequences

Much current work around improving the inclusivity of registration focuses on ensuring staff are aware of guidance, but this study reveals a picture not just of a lack of knowledge of guidance, but a complex set of factors that work to make staff reluctant to register patients without documents. Specific issues that need to be addressed in on-going advocacy and education initiatives, as well as by policy makers, include: a perceived lack of clarity of NHS England's registration guidance, perceived increased administrative and financial pressure specific to GP practice relating to the registration of certain patient groups, and unanswered questions about the responsibility of individual non-clinical staff regarding new patients. Beyond providing ideas of how to address challenges for registration for patients without documents, further analysis of the data using a Bourdieusian framework aims to contribute to an improved understanding of how individual interactions both reflect, and serve to reproduce health inequalities in view of access, and more broadly.

## R.1

### What is the relationship between rheumatoid arthritis, multimorbidity and adverse health-related outcomes?

**Presenter: Jordan Canning**

Co-authors: Stefan Siebert, Bhautesh Jani, Frances Mair, Barbara Nicholl

#### Institutions

University of Glasgow

#### Abstract

##### Problem

Rheumatoid arthritis (RA) is a common autoimmune inflammatory arthropathy. Multimorbidity (the co-existence of  $\geq 2$  long-term health conditions (LTCs)) is highly prevalent in people with RA however, most research to date has generally focussed on RA and comorbidity (1 other LTC) rather than multimorbidity. This work aims to explore the existing literature to determine what is known about the effect, if any, of multimorbidity on mortality and other health-related outcomes (physical functioning/well-being) in people with RA.

##### Approach

A systematic review was conducted following PRISMA guidelines. Six electronic medical databases were searched: CINAHL, Cochrane Library, Embase, Medline, PsycINFO and Scopus, using a comprehensive search strategy. Studies were screened by two reviewers to identify longitudinal observational studies with extractable data relating to multimorbidity and our outcomes of interest in adults with RA. Studies were restricted to English language, full-text articles. Quality appraisal was undertaken by two independent reviewers using the Cochrane-developed, QUIPS tool, and a narrative synthesis conducted.

##### Findings

In total, 4,772 papers were identified by the search strategy, with 15 studies fulfilling the criteria for inclusion in our review. Of these, 6 studies had all-cause mortality as an outcome, 8 studies reported on a relevant health-related outcome and 1 study reported on both. The number of participants ranged

from 183 to 18,485 across studies and all studies were conducted in developed countries with high-income economies between 1985-2014 with follow-up periods ranging from 6 months to 23 years. The mean age of participants ranged from 53.5 to 66.6 years old with the percentage of females between 60.0-84.2% across studies. Six studies reported a significant association between multimorbidity and increased risk of all-cause mortality in people with RA, using Cox proportional hazard models and Kaplan-Meier survival estimates. While 9 studies reported significant associations between multimorbidity and reduced functional status (measured by the Health Assessment Questionnaire (HAQ)) in people with RA. Three of these studies also reported a further significant association between reduced quality of life and multimorbidity in people with RA.

##### Consequences

Multimorbidity in people with RA is a significant predictor for increased mortality and poorer health-related outcomes. Multimorbidity should therefore be taken into consideration when managing RA, with further research required in this area to guide future health service design and guidelines.

#### Funding Acknowledgement

This work is supported by the Medical Research Council [MR/N013166/1].

## What are patients' and healthcare professionals' experiences of living with multiple long-term conditions alongside arthritis or persistent musculoskeletal pain?

**Presenter: Yvonne Cunningham**

Co-authors: Susan Browne, Sara Macdonald, Bhautesh Jani, Ross McQueenie, Fraser Morton, Stefan Siebert, Frances S Mair, Barbara Nicholl.

### Institutions

University of Glasgow, University of St Andrews

### Abstract

#### Problem

Painful arthritis-related conditions are long-term in nature and often experienced alongside other long-term conditions (LTCs). Multimorbidity, the presence of  $\geq 2$  LTCs, is an urgent healthcare challenge; and leads to increased levels of "work" or treatment burden for patients and healthcare providers (HCPs). We know relatively little about the impact of multimorbidity on the healthcare experiences of people living with persistent musculoskeletal (MSK) pain or rheumatoid arthritis (RA), and their ability to manage their conditions. Furthermore, it is unclear how the presence of multimorbidity in those with persistent MSK pain or RA influences HCP management approaches. Our study uses qualitative methods to answer:

- How does multimorbidity affect self-management and the capacity to cope in those living with persistent musculoskeletal pain or RA?
- What are HCPs experiences of treating and managing patients with persistent MSK pain or RA and multimorbidity?

#### Approach

This study, conducted in Scotland, is ongoing. We are interviewing 80 patients living with persistent MSK pain or RA with and without multimorbidity, and 40 HCPs. This abstract reports preliminary findings from interviews with 20 patients and 17 HCPs. Analysis draws on two inter-related theoretical frameworks - Burden of Treatment Theory and Normalisation

Process Theory which focus on the 'work' done by patients and HCPs.

#### Findings

Key points in patient interviews (5 MSK pain, 15 RA), which describe the onerous work that patients do to manage their conditions, include:

- (1) planning work needed to manage medical appointments and medication routinely and during exacerbations;
- (2) challenges faced by patients with work and family commitments;
- (3) monitoring work required to balance multiple conditions.

Key points from the HCP interviews (seven GPs, a practice nurse, a rheumatology consultant, three pain medicine consultants, a pain specialist nurse, a psychologist, a pharmacist, and two physiotherapists) include:

- (1) poor and limited treatment options for MSK pain;
- (2) challenge of managing pain relief and avoiding analgesic addiction;
- (3) crucial importance of improving patient understanding, managing expectations, and encouraging ownership;
- (4) added complexity from multimorbidity and associated polypharmacy;
- (5) patients' ability to adhere to treatment is affected by a multitude of factors that may be personal, lifestyle related, social or organisational.

#### Consequences

These preliminary findings highlight the challenges faced by patients with MSK pain or RA and their HCPs, including the demanding work involved in monitoring and managing treatment, made more difficult by polypharmacy, work or family commitments, and limited treatment options available. Our findings will be used to inform policy and the development of interventions to help patients and HCPs manage persistent MSK pain or RA in the context of multimorbidity.

#### Funding Acknowledgement

This study was funded by Versus Arthritis (grant number 21970).

## R.3

### Multicomponent self-management interventions for chronic widespread pain including fibromyalgia: A systematic review and meta-analysis

**Presenter: Adam Geraghty**

Co-authors: Adam Geraghty, Emma Maund, Dave Newell, Cathy Price, Miriam Santer, Hazel Everitt, Tamar Pincus, Rachel West, Michael Moore, Paul Little, Beth Stuart.

#### Institutions

University of Southampton, Solent NHS Trust, Royal Holloway University of London

#### Abstract

##### Problem

Chronic widespread pain (CWP) has an estimated prevalence of 10-15%, and is associated with substantial disability, psychological distress and high health care usage. CWP is increasingly viewed as occurring on spectrum, with Fibromyalgia representing its more severe presentation. Guidelines advise moving away from specialist care, placing primary care at the centre of CWP management. Medical treatment options are limited; opiates and gabapentinoids are associated with substantial side-effect profiles and risk of dependence. Supporting those with CWP to effectively self-manage is a priority. Our aim is to determine the effectiveness multicomponent self-management interventions specifically targeting CWP (including fibromyalgia). This review will form the basis of research to develop novel primary care-centred, person-based self-management interventions for CWP.

##### Approach

A systematic review and meta-analysis of randomised controlled trials (RCTs) including adults with a diagnosis of CWP or Fibromyalgia, taking part in a multicomponent self-management intervention. We drew on an established definition of self-management as 'a structured, taught, or self-taught course or intervention programme principally aimed at patients with the goal of improving the participants' health status or quality of life by teaching them skills to apply to everyday' (Miles CL, Pincus T, Carnes D et al. 2011). Multicomponent refers to the intervention containing

at least two of the following components; psychological, mind-body therapies, physical activity, lifestyle and medical education. The following databases were searched from their inception to December 2017 (All searches are currently being updated): The Cochrane Central Register of Controlled Trials, MEDLINE, Embase, PsycINFO, and the WHO International Clinical Trials Registry. The Cochrane Risk of Bias tool was used to assess risk in all trials. The review was prospective registered (PROSPERO ID: CRD42018099212).

##### Findings

Thirty-eight RCTs met our inclusion criteria and will be included in our analysis (n= 4489). Eleven trials limited to trial registry only were identified and will be discussed. Data has been extracted and our analysis is on-going; full findings will be reported at the conference.

##### Consequences

This systematic review will provide the current state of the evidence for multicomponent self-management interventions for CWP. We will describe the format and components of successful interventions, and use the evidence to infer critical elements for a self-management approach targeting those with CWP cared for within a general practice context.

#### Funding Acknowledgement

This research was part funded by Research Capacity Funding from Solent NHS Trust.

## R.4

### A nurse-delivered fracture risk assessment for patients with inflammatory rheumatological conditions in primary care: a mixed-methods study.

**Presenter: Ashley Hawarden**

Co-authors: CA Chew-Graham, D Herron, C Jinks, A Machin, S Hider, EE De-Silva, L Bullock and Z Paskins

#### Institutions

Keele University School of Primary, Community and Social Care, University of Derby, University of Colombo



## Abstract

### Problem

The INCLUDE (INtegrating and improving Care for patients with inflAmatory rheUmatological DisordErs in the community) pilot trial aimed to evaluate the feasibility and acceptability of a nurse-delivered review in primary care, for people with inflammatory rheumatological conditions (IRCs). The purpose was to identify and manage common comorbidities including anxiety and depression, cardiovascular and fracture risk. The aim of this study was to identify the feasibility and implementation of the FRAX component of the review.

### Approach

Ethical approvals obtained. Semi-structured interviews were conducted to explore experiences of participating in INCLUDE with 20 patients, the two nurses delivering the intervention and three General Practitioners (GPs) within participating practices. Interviews were digitally recorded, transcribed and anonymised. Additionally, 24 consenting patients had their INCLUDE review recorded for fidelity checking, and extracts relating to FRAX assessment were transcribed for analysis. Analysis was conducted utilising the Theoretical Domains Framework (TDF), which allows for the cognitive, affective, social and environmental influences on behaviour to be examined.

### Findings

Fidelity checks showed that FRAX was appropriately calculated for 22/24 patients. Consultation data showed that although nurses introduced the reason for calculating fracture risk, explanations of the meaning of risk were limited, and patient's understanding was not always checked. Patient interview findings confirmed a limited understanding of FRAX and the subsequent outcome of the review. Facilitators to implementation, as identified by TDF, related to the domain of beliefs about capabilities and skills. Nurses reported confidence in undertaking FRAX assessments and found the FRAX tool practical and straightforward. Barriers to implementation related to the domains of memory, attention and decision processes, knowledge, beliefs about capabilities, skills, social/professional role and environmental context. GPs and study nurses reported a lack of knowledge and skills in relation to

the identification and management of osteoporosis. Reasons for this included a perceived lack of experience, and repeated changes in clinical guidance making keeping up to date difficult. Opinions differed about whether assessment of fracture risk in people with IRCs was the role of primary or secondary care. GPs and nurses had contrasting views about the limits of the nurse role in communicating risk. They described practical barriers to using FRAX including the difficulty navigating between different IT systems. Nurses also described uncertainty over when to refer to the GP within the INCLUDE trial.

### Consequences

Screening for fracture risk in people with IRCs in a review consultation is feasible and nurses correctly calculated FRAX in 22/24 consultations. Barriers to routine FRAX implementation for those with IRCs include the lack of integration into existing IT systems and lack of clarity over professional roles and boundaries. More work is needed to explore the barriers and enablers of fracture risk assessment in primary care in order to inform the design of targeted interventions.

### Funding Acknowledgement

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## What do patients want and need from an osteoarthritis explanation?

**Presenter: Clare Jinks**

Co-authors: Elizabeth Cottrell, Jonathan Quicke, Zoe Paskins, George Peat, Chris Main, Peter Croft, Mark Porcheret, John Maddison, Joanne Protheroe, Clare Jinks

### Institutions

Keele University

### Abstract

#### Problem

Osteoarthritis is a major cause of disability worldwide, but healthcare professionals often do not have the right words to help patients understand the condition. Patients can feel that their condition is being trivialised or can develop negative beliefs about osteoarthritis as a result. Self-management strategies, such as exercise and weight loss (if needed), are core, but commonly underused, management approaches. Within a mixed-methods project, we are developing a patient explanation package for osteoarthritis (PEP-OA) to help patients' understanding of their condition and make sense of suggested management approaches. This abstract reports findings from the first work-package, to establish what patients want and need to know about osteoarthritis, and to identify appropriate language, to support self-management.

#### Approach

First a mixed expert stakeholder group (health professionals, researchers and patients) was convened to discuss initial development of candidate explanation statements. Informed by theory, existing osteoarthritis statements were divided into topics within 11 sets and were discussed in terms of completeness, accuracy and preferred wording. After the meeting 6 stakeholders red-amber-green (RAG) rated each topic (red: no clear link to supporting self-management, green: clearly linked to self-management). Topics unanimously RAG-rated red were removed. Remaining topics were discussed by a separate patient advisory group (PAG, n=6) for further feedback, exclusion and refinement. Using feedback, the topics were developed into statements to be

prioritised within a two-round nominal group technique (NGT), consensus was defined as 80% agreement among participants. If no consensus was achieved, prioritised statements were identified by applying a numerical weighting to ranking.

#### Findings

Ten people attended the stakeholder group. The word 'degeneration' was rejected and PAG members rejected 'wear and tear', 'loss', 'not inflammatory arthritis/osteoporosis', 'normal' and technical descriptions involving changes in joint anatomy. The words 'condition' or 'disorder' and 'movement' or 'activity' were preferred over 'disease' and 'exercise' respectively. Both groups conceptualised osteoarthritis as: not inevitably progressive; modifiable, and being variable between people, joints and over time. NGT participants (n=5) prioritised myth-busting statements and opposed being told what they already know (e.g. osteoarthritis causes pain). Throughout, patients and stakeholders liked positive statements portraying hope and the benefits of simple self-management strategies.

#### Consequences

These findings outline what patients want and need to know to understand osteoarthritis and its core management. Stakeholders preferred simple explanations which conceptualise osteoarthritis as a manageable and/or modifiable long-term condition. A conjoint analysis survey will now identify patients' preferences for the statements that are most helpful for self-management, before a core patient explanation of osteoarthritis for use in consultations is finalised.

#### Funding Acknowledgement

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## R.6

### Exploring patient views of empathic optimistic communication for osteoarthritis in primary care.

**Presenter: Emily Lyness**

Co-authors: Jane Vennik, Felicity L Bishop, Kirsten A Smith, Mary Steele, Stephanie Hughes, Leanne Morrison, Mohana Ratnapalan, Jennifer Bostock, Christian Mallen, Geraldine Leydon, Jeremy Howick, Lucy Yardley, Paul Little, Hazel Everitt.

#### Institutions

The University of Southampton, The University of Oxford, The University of Keele

#### Abstract

##### Problem

Osteoarthritis (OA), a common primary care presentation, causes pain and can significantly impact quality of life. Clinical research shows that an empathic consultation approach can improve patient quality of life and satisfaction with care. Experimental studies have also demonstrated optimistic communication which conveys a positive message about treatment effects, can reduce patient experience of pain. However, there is limited understanding about patients' views on these approaches. Empathica is an SPCR project developing a digital intervention to enhance practitioner skills in communicating empathy and realistic optimism. Associated with this, we sought to explore patients' views on empathy and realistic optimism in primary care consultations.

##### Approach

Thirty-three purposively sampled patients, aged 45+ with hip or knee OA from primary care practices in Wessex participated in a semi-structured interviews, using stimuli to elicit patients' perspectives on Empathica-style consultations. Fifteen participants watched two filmed consultations in randomised order, one enacting the 'Empathica-trained' approach incorporating evidence-based verbal and non-verbal behaviours, and the other a 'neutral' consultation. They rated each one in turn on a modified Consultation and Relational Empathy (CARE) scale and then answered a series of open-ended questions about the films. Eighteen participants read two

written vignettes in a randomised order. One used positive messages and phrases whilst the other used neutral messages and phrases. Participants then answered a series of open-ended questions about the vignettes and positive messaging in primary care consultations more broadly. Questionnaire data were analysed descriptively. Interviews were transcribed verbatim and analysed using thematic analysis.

##### Findings

Participants rated the Empathica-style consultation video more highly (mean CARE 43 vs 17) demonstrating enhance empathy compared to the neutral consultation. Participants felt the following GP behaviours enhanced the interaction; showing care and respect, demonstrating knowledge of the patient, active listening, open body language and good eye contact. Participants identified important components of the positive communication approach, which included providing a clear rationale for management advice using evidence and reinforcement of the message. They felt effective delivery of a positive message in the consultation required the GP to communicate with empathy in order to reassure the patient that the positive message was credible and trustworthy. There was, however, some scepticism as to whether this approach is achievable in the time and resource constrained environment of NHS primary care.

##### Consequences

These findings highlight components of verbal and non-verbal empathic and optimistic communication that are acceptable to patients and could enhance the primary care consultation for OA. It is important to identify key elements that primary care practitioners could include without adding time to the consultation. These results have informed development of the Empathica intervention which aims to enhance practitioner empathic communication, and ultimately improve levels of OA pain and quality of life for patients.

##### Funding Acknowledgement

The EMPATHICA trial is supported by a National Institute for Health Research (NIHR) School for Primary Care Research grant (project number 389). The Primary Care Department is a member of the NIHR School for Primary Care Research and supported by NIHR Research funds. HDM is funded through an

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## R.7

### How does the presence of multimorbidity in those with rheumatoid arthritis influence hospitalisations?

**Presenter: Ross McQueenie**

Co-authors: Fraser Morton, Bhautesh Jani, Sara Macdonald, Susan Browne, Colin McCowan, Jordan Canning, Stefan Siebert, Frances S Mair, Barbara Nicholl

#### Institutions

University of Glasgow, University of St Andrews

#### Abstract

##### Problem

Rheumatoid arthritis (RA) is a chronic autoimmune disease, resulting in painful joint pathology. Despite high levels of multimorbidity ( $\geq 2$  long-term conditions (LTCs)) in RA, most work has focused on comorbidity (+1 LTC) and little is known about how multimorbidity in RA impacts health outcomes, including hospitalisations. This work aims to analyse the risk of and reasons for hospitalisations in those with RA and multimorbidity using two datasets- population-based and clinical.

##### Approach

We used data from UK Biobank (N=502,533 participants) and the Scottish Early Rheumatoid Arthritis (SERA; N=1095) cohort to study RA and a count of up to 42 other LTCs at baseline. Both datasets were linked to Hospital Episodes Statistics data. Negative binomial regression models were used to ascertain risk of hospitalisation (controlled for both lifestyle factors (smoking status, frequency of alcohol intake, and body mass index (BMI)) and demographic factors (sex, age and socioeconomic status)). Most

common reasons for hospitalisation were calculated using primary ICD-10 codes.

##### Findings

N=5658 (1.1%) of participants in UK Biobank self-reported RA (mean age (SD), %F), whilst N=901 SERA (82.3%) SERA patients (mean age (SD), %F) had clinician diagnosed RA. In UK Biobank, of the N=5625 RA participants with complete LTC data, N=1424 (25.3%) reported having 0 LTCs, N=1694 (30.1%) 1 LTC, and N=2507 (44.6%)  $\geq 2$  LTCs. In SERA, N=226 (25.1%) of participants had 0 LTCs, N=252 (28.0%) 1 LTC, and N=423 (46.9%)  $\geq 2$  LTCs. When examining risk of hospitalisation, UK Biobank data showed that those with  $\geq 2$  LTCs and RA had a 68% increased risk of hospitalisation compared to those with RA alone (relative risk ratio (RRR) 1.68, 95% confidence intervals (CI) 1.55-1.80). In SERA, those with RA and  $\geq 2$  LTCs had a 31% increased risk of hospitalisation (RRR 1.31, 95% CI 1.07-1.63) compared to those with RA alone. When examining reasons for hospitalisation, UK Biobank participants with RA and  $\geq 2$  LTCs were predominantly admitted due to RA ("M06" ICD-10 codes) and chronic kidney diseases ("N18" codes), whilst those with RA alone were admitted predominantly for RA and cancer ("C" codes). In SERA, those with RA and  $\geq 2$  LTCs were predominantly admitted for respiratory disease ("J" codes), myocardial infarction ("I21" codes) and throat and chest pains ("R07" codes), whilst those with RA alone were predominantly admitted for myocardial infarction, cancer and RA.

##### Consequences

These findings suggest that multimorbidity should be taken into account in the management of patients with RA. In both the population based/clinical datasets, participants living with RA and  $\geq 2$  other LTCs were at increased risk of hospitalisation after controlling for demographic/lifestyle factors, although the risk was higher in the population-based cohort. There was overlap in the commonest reasons for hospitalisation, however cancer only featured for those with RA alone.

#### Funding Acknowledgement

This work was funded by a Versus Arthritis research grant (grant number 21970)

## Supporting self-management: intervention design for those with musculoskeletal conditions in the context of health literacy

**Presenter: Noureen Shivji (Me)**

Co-authors: Joanne Protheroe (1), Emma L Healey (1), Danielle van der Windt (1), Nadia Corp (1), Alyn Martyn Lewis (1), Bernadette Bartlam (2)

### Institutions

1. School of Primary, Community and Social Care, Keele University UK ST5 5BG
2. Family Medicine and Primary Care, Lee Kong Chian School of Medicine, Nanyang Technological University Singapore 3082322

### Abstract

#### Problem

Musculoskeletal (MSK) conditions are common and can have a significant impact on individuals and society. Many MSK problems are managed predominantly in primary care, and in the UK, these account for 14% of all general practice (GP) consultations. Evidence shows that 43-61% of the English population have low health literacy (HL) and those individuals have a significantly higher prevalence of osteoarthritis. Furthermore, patients with low HL and MSK conditions are more likely to have a poor prognosis, with more persistent and disabling pain, compared to those with adequate HL. Supported self-management can be effective yet it appears that current interventions are not meeting the needs of all patients. Identifying the components of innovative interventions designed to address this gap is complex. The EASIER study has drawn on a number of methods to identify and reach consensus on intervention components suitable for individuals with MSK conditions and varying levels of HL.

#### Approach

This is a mixed-methods concurrent-sequential study design consisting of four work packages (WPs). Findings from WP1 (secondary analysis of existing data to identify potential components for intervention(s)), WP2 (evidence synthesis of existing interventions) and WP3 (the views of community

members and professionals) were synthesised and evidence tables produced. A stakeholder group meeting is planned where a Nominal Group Technique (NGT) will be employed to discuss the evidence tables and reach consensus on which intervention components are most suitable to form the basis of an evidence-based logic model for supported self-management intervention(s) (WP4). The stakeholder group meeting will consist of a multi-disciplinary group of health care professionals (HCPs) and third-sector workers (n=8-10), who have the expertise or special interest in HL and experience in dealing with a range of individuals with MSK conditions.

#### Findings

The data from the WPs will be synthesized coherently and concisely such that they are accessible and understandable as tables of evidence. The NGT will enable diverse HCPs and third sector workers to reach consensus on the components of interventions and allow for the generation of a logic model for supported self-management interventions.

#### Consequences

Developing interventions that are acceptable to all users is essential to improving patient outcomes. Strategies that enable conversations amongst key stakeholders at the design stage is critical to identifying and developing robust research. The key output of the EASIER study will be the development of an evidence-based logic model for self-management intervention(s) that will be taken forward for testing in subsequent work.

#### Funding Acknowledgement

The EASIER project is funded by Versus Arthritis



## Evaluation of the First Contact Physiotherapy (FCP) model of primary care

**Presenter: Siobhan Stynes**

Co-authors: Goodwin R, Jordan K, Moffatt F, Hill J, Logan PA, Wynne-Jones G, Hendrick P, Cottrell L, Avery T, Golding Day M, Foster NE, Bishop A

### Institutions

Keele University, University of Nottingham

### Abstract

#### Problem

First Contact Physiotherapy (FCP) is a rapidly evolving primary care model where expert musculoskeletal (MSK) physiotherapists undertake the first patient consultation, to enhance and expedite care and free-up GP capacity. A three-phased evaluation of NHS England's pilot of the FCP model has been undertaken (2018/2020). We report Phase 3, which evaluates the FCP model against five predefined service aims and twelve success criteria.

#### Approach

Phase 3 comprises a mixed-methods 24-month service evaluation involving 40 FCP sites across England. Using an online platform, patient reported experience and outcomes were collected immediately following the FCP consultation and at 1, 2 and 3-months. These included the Keele STarT MSK Tool, pain intensity (0-10 NRS scale), overall MSK health (Musculoskeletal Health Questionnaire (MSK-HQ)), and patient experience measures (Friends-and-Family Test). A two-stage qualitative evaluation (focus groups, interviews and observation diaries) involved case studies of eight FCP services to explore views and experiences of FCPs, GPs, patients and practice staff.

#### Findings

Over 13 months, 2825 patients were registered as eligible and 24% (n=680) completed their initial questionnaire. Their mean age was 56.2 (14.9 SD), 61% were female, ethnicity was 97% white, mean pain intensity was 6.1 (2.13 SD) and mean MSK-HQ score was 33.8 (9.5 SD). Duration of MSK problem ( $\leq 3$  months) was 47%, with 25% having pain  $>1$  body region and 49% reporting  $\geq 1$  co-morbidity. The STarT

MSK tool classified 29% low-risk, 58% medium-risk, and 13% at high-risk of persistent disabling pain. On data to date, two success criteria are met: 95% of patients receiving sufficient information on self-care, 94% recommending the FCP to friends-and-family. One success criteria is not met: 29% of those in employment (n=388) receiving work advice (target 75%). Currently follow-up rates at 1, 2 and 3 months are 62%, 62% and 57%. Interim analysis of 295 patients at 3-month follow-up shows a 2.8 (CI 2.5,3.1) mean reduction in pain intensity from baseline, a mean 6.9 (5.7, 8.2) score improvement in MSK-HQ and 63% reporting overall improvement (much better/better) since seeing the FCP. Five themes are identified as important in the success of the FCP model from the qualitative evaluation: Communication (identifying important communicative strategies and considerations); Patient understanding of FCP (lack of awareness/understanding of FCP as a barrier to access); Embeddedness of the FCP service (factors which promote cultural adaptation); Contribution of FCP (patient and staff satisfaction, recognition of MSK expertise); Reconceptualising physiotherapy (extended skills and new models of care). Data collection is ongoing with full results available at the conference.

#### Consequences

Ahead of the UK wide FCP model scale-up, this evaluation shows who accesses this service, their short-term clinical outcomes and which success criteria are being met to add to the body of evidence to optimise FCP service design and delivery.

#### Funding Acknowledgement

We wish to acknowledge our funders: The Chartered Society of Physiotherapy and The Joint Work and Health Unit, Department for Work and Pensions.

## R.10

### Characterising flare-ups of knee osteoarthritis in community-dwelling adults: who gets them and how long do they last?

**Presenter: Martin J Thomas**

Co-authors: Martin J Thomas, Trishna Rathod-Mistry, Emma L Parry, Christopher Pope, Tuhina Neogi, George Peat

#### Institutions

Primary Care Centre Versus Arthritis, School of Primary, Community and Social Care, Keele University, Midlands Partnership NHS Foundation Trust, Keele Clinical Trials Unit, Keele University, Boston University School of Medicine

#### Abstract

##### Problem

Acute flare-ups are experienced by a substantial proportion of adults with osteoarthritis (OA), but these events remain poorly understood. As part of a wider programme of research, the current study aimed to (i) identify participant or knee symptom characteristics associated with higher risk of flare-ups, (ii) describe the time course and consequences of flare-ups of knee OA to provide better information for healthcare professionals and patients on the likely short-term prognosis.

##### Approach

The ACT-FLARE study (ACuTe FLAREs in knee OA) is a 13-week web-based case-crossover study of knee pain in people aged  $\geq 40$  years resident in England, with or without a recorded diagnosis of knee OA, and no inflammatory arthropathy. Participants were recruited from 15 general practice registers, and from the community via distributed flyers/posters and online social media advertisement. After completing a baseline questionnaire, participants were encouraged to self-report a flare-up at any time during the study period via the website. A flare-up was defined as the sudden onset of worsening signs and symptoms, sustained for  $\geq 24$  hours. After characterising their flare-up, from notification date through to flare-up resolution participants completed four daily questions about the last 24 hours: i) average pain (0-10 NRS), ii) level of bothersomeness, iii) pain medication use, and

iv) whether the flare-up had resolved. Associations between selected participant and knee symptom characteristics at baseline and the occurrence of flare-ups were estimated using Poisson regression and expressed as unadjusted incidence rate ratios (IRR; 95%CI). Flare-up characteristics, course and consequences were analysed descriptively.

##### Findings

Of 744 participants recruited between July 2018 and February 2019 (mean age (SD) 62.1 (10.2) years; 60% female, body mass index 29.2 (5.7) kg/m<sup>2</sup>), 493 participants reported 714 flare-ups. Among participants who engaged throughout study follow-up, 242 (51%) reported  $\geq 1$  flare-up. Flare-ups were more common in younger ages (IRR 0.98: 95%CI 0.97, 0.99), females (1.85: 1.43, 2.39), and those with severe frequent knee pain at baseline (2.06: 1.17, 3.63). Associations with prior knee injury/surgery and socioeconomic status were weak or absent. Among those whose end dates were known, number of flare-ups per participant ranged between 1 and 6 (mean (SD) 1.32 (0.64)) and median (IQR) flare-up duration was 5 (3, 8) days. Knee changes noticed since flare-up onset included: stiffness (64%), limping (58%), increased difficulty with everyday activities (57%), sleep disturbance (48%) and swelling (33%). Levels of pain, bothersomeness and medication usage reduced over the period between flare-up onset and resolution.

##### Consequences

Knee OA flare-ups are most commonly reported by working age adults, females and those with more persistent pain patterns. Most flare-ups appear to last between 3 and 8 days.

#### Funding Acknowledgement

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expressed are those of the authors and not necessarily those of the NHS, the NIHR, HEE or the Department of Health and Social Care.

## R.11

### Psychometric evaluation of the Polymyalgia Rheumatica-Impact Scale (PMR-IS); a new patient-reported outcome measure to assess quality of life in polymyalgia rheumatica

**Presenter: Helen Twohig**

Co-authors: Sara Muller, Caroline Mitchell, Christian Mallen

#### Institutions

Keele University, University of Sheffield

#### Abstract

##### Problem

Polymyalgia rheumatica (PMR) causes pain, stiffness and disability in older adults. It usually has a sub-acute onset and responds rapidly to treatment with steroid medication, although the initial large improvement in health is typically followed by longer periods of lower level symptoms and episodes of relapse. Steroids themselves cause significant morbidity and adverse effects have to be balanced against PMR symptoms. Therefore, measuring the impact of PMR and its associated treatments from the patient's perspective is of high importance, yet there are currently no validated outcome measures to support patient and clinician decision making. We have developed a patient-reported outcome measure (PROM) to assess PMR-related quality of life. The development process involved qualitative interviews, iterative item development and application of classical and modern measurement theory methods. The resultant PROM, the polymyalgia rheumatica-impact scale (PMR-IS), assesses key symptoms, function, psychological well-being and steroid side effects. Here we present assessment of the construct validity, test-retest reliability and responsiveness of the PMR-IS.

##### Approach

People diagnosed with PMR within the last 2 years were identified through GP practices (and one secondary care site) and invited to take part.

Participants were asked to complete the PMR-IS, the modified Health Assessment Questionnaire (mHAQ) and the Short Form-36 (SF-36) at baseline and then the PMR-IS, the mHAQ and a series of anchor questions 2-6 weeks later. Questionnaire booklets were sent out via a secure mailing service (CFH Docmail) and returned directly to the research team. Construct validity will be assessed by testing hypotheses about relationships between domains of the PMR-IS and the other questionnaires. Test re-test reliability of each domain will be assessed in the sample of participants who report they 'stayed the same' between the two time points on that domain in the anchor questions. Responsiveness will be assessed by testing hypotheses about relationships between change in scores on the PMR-IS and change responses on the anchor questions.

##### Findings

Data collection is underway, and we will be able to present results of the analysis at the meeting.

##### Consequences

The PMR-IS is a newly developed PROM to assess PMR-related quality of life. Evaluation of its measurement properties is essential prior to being able to promote it as a reliable, valid, responsive measure for use in clinical research studies and in clinical practice. The availability of such a measure will enable the assessment of what truly matters to people with PMR to be incorporated into research into the condition and ultimately improve person-centred care for PMR.

#### Funding Acknowledgement

This work was funded by a Wellcome Trust Doctoral Fellowship awarded to Helen Twohig

## S.1

### Impact of the frequency of advice to quit smoking and experience of care in general practice

**Presenter: Chris Barton**

Co-authors: Johnson George, Liz Sturgiss, Melis Selamoglu, Sanduni Madawala, Ron Borland

#### Institutions

Monash University, University of Melbourne

#### Abstract

##### Problem

General Practitioners (GPs) have an important role in motivating and supporting patients who smoke to quit. Qualitative studies suggest that GPs hold concerns that conversations about smoking cessation may negatively influence doctor-patient relationship and experience of care. We conducted an online survey to determine if experience of care differed between smokers and ex-smokers and the influence of advice to quit smoking on experience of care and patient ratings of care received from GPs.

##### Approach

Current and ex-smokers (quit within the past 5 years) were invited to complete an online survey about experience of care in general practice in the past 12 months. The survey was advertised online through social media across all Australian states and territories. Validated questions were used to assess patient experience of care and anticipated stigma. Care received from GPs was rated on a 10 point scale (higher scores indicated higher rating of care). Smokers were asked how important it was for them to quit, how often GPs had advised them to quit in the past 12 months, if they were advised in a way that motivated them to quit, and if they had tried to quit.

##### Findings

Respondents included n=611 current and n=275 ex-smokers. Respondents' ages ranged from 35-83 years (mean 60 ± 9.5). Relational experiences of care did not differ between smokers and ex-smokers (feeling listened to, being shown respect, having enough time with GP), however, smokers reported poorer access (p=0.042) and were more likely to delay seeking care from GPs (p=0.006). Smokers were more likely to

anticipate stigma in GP clinics (p<0.001), but overall rating of care received from GPs did not differ between smokers and ex-smokers. Nearly all (85.2%) smokers reported that quitting was 'important' or 'very important' to them and 64% had tried to quit in the past 12 months. Almost half (48.8%) reported 'usually' or 'always' being advised to quit and 43% reported being advised in a way that made them feel motivated to try. Smokers who 'always' or 'usually' were advised to quit rated care from GPs more highly (8.1 vs 7.7/10, p=0.016). Despite this, they were more likely to report delaying seeking care (71.6% vs 60.3%; p=0.005) and higher anticipated stigma (10.4 (3.7) vs 9.6 (3.8); p=0.004).

##### Consequences

Consistent with other studies, smokers who were more frequently advised to stop smoking reported better health care experiences and rated GPs more highly. Conversely, these patients were more likely to delay seeing their GP and anticipation of stigma was higher. Frequent advice to quit smoking appears acceptable to patients and may reflect better quality care more generally, however GPs should endeavour to provide advice and support that motivates and does not exacerbate feelings of shame, guilt or stigma.

#### Funding Acknowledgement

Shepherd Foundation, Victoria Australia.

## S.2

### Impact of persistent physical symptoms on the self: qualitative analysis of consultations and patient interviews.

**Presenter: Dr Kate Fryer**

Co-authors: Kate Fryer

#### Institutions

University of Sheffield

#### Abstract

##### Problem

Living well with persistent physical symptoms (PPS), sometimes referred to as "medically unexplained symptoms", poses several challenges. In addition to

the symptoms themselves, the uncertain and contested nature of PPS means that the relationship between illness and identity for patient is often difficult. Recent research described the 'constant identity negotiation' involved in being 'illegitimately ill'. Attributing PPS to psychosomatic causes or dysfunctional cognitions may be particularly threatening to self-identity.

### Approach

Multiple Symptoms Study 3 is a multi-centre trial of an Extended-Role GP intervention for patients with PPS. It includes embedded qualitative research to understand how the intervention works in practice. This uses data from both consultation transcripts and participant interviews; with triangulation used to combine findings from these complementary data sources. Analysis takes an inductive approach drawing on phenomenology and grounded theory. Coding is iterative and emergent themes and conceptualisations are discussed in regular analysis meetings. Here we describe an analysis of how patients describe symptoms in relation to their self-identity, which emerged from an open coding of consultation transcripts and participant interviews.

### Findings

We identified three different types of relationship between symptoms and patient's self-identity within the data. Each may have different implications for treatment: this is being examined in ongoing analysis. Symptoms with intact self-identity: Patients describe their symptoms as things that happen to them, which have implications and make them feel a particular way, but without substantially affecting self-identity. Approaches aimed at challenging and adapting to symptoms (as in CBT) may be appropriate. Losing trust in the body: Symptoms are beyond the patient's control, and the person no longer trusts their body. This has implications for how they feel and act, and is further complicated by their symptoms being contestable by others. Challenging beliefs and behaviours may further threaten the uncertain self. Approaches to validate the person and make sense of PPS may be appropriate before challenge and adaptation. The changed self: The patient feels transformed by their illness, but the new self is not their "true" self or "real me". Approaches which help the person re-find aspects of their "true" self may be an important foundation for work to adapt to and

manage symptoms. These three relationships between symptoms and self appear to form a hierarchy, with potential implications for the content and delivery of care. Applying a mismatched approach may result in rejection of treatment by the patient.

### Consequences

Patients indicate, through the way they speak about symptoms, the relationship between their symptoms and their self. We suggest that the patterns described here can help understand those relationships and has implications for the delivery of care to these patients.

### Funding Acknowledgement

Multiple Symptoms Study 3 is funded by the NIHR Health Services & Delivery Research scheme.

## S.3

### How do transgender people experience their relationships with their GPs?

**Presenter: Adam Shepherd**

Co-authors: Andy Guise, Benjamin Hanckel

### Institutions

King's College London, University of Tasmania

### Abstract

#### Problem

Transgender people face well documented discrimination from healthcare staff which causes them to delay or avoid seeking healthcare in the future. Primary care is often the first entry into the healthcare system, and as a result the relationships people have with their general practitioner (GP) can impact health outcomes. Trans people, on average, have been found to experience greater health inequalities than lesbian, gay, and bisexual people. The Royal College of General Practitioners' position statement on transgender care in June 2019 highlighted some key issues with the current National Health Service (NHS) system for transgender people. However, there is a lack of research into trans peoples' experiences of primary care, much less within the NHS setting. This study aimed to explore how transgender people experience their relationship with their GP and what factors contribute to this.



## Approach

In this exploratory study eight semi-structured, in-depth interviews were completed face to face or over Skype. In-depth interviews are beneficial in exploratory research for understanding the contexts in which people live whilst their versatility enables participants to talk about what is important to them. A purposive sampling methodology was used to select participants registered with a GP in England, and a thematic analysis was carried out on verbatim transcripts.

## Findings

Three main themes emerged from the interviews.

- (1) All participants had one or more long term conditions, but none described the care they received from their GPs for these as a contributing factor to having a meaningful relationship with their GP.
- (2) Communication was central to how participants experienced their relationships with their GPs. It was a facilitator where GPs engaged personally with participants and provided space for the participants to negotiate their needs and wants. Where there was a breakdown in communication due to GP's exercising their professional dominance over participants, this became an interpersonal barrier.
- (3) Participants faced structural barriers within the GP practice and the wider NHS system which impacted on how they related to their GPs.

A perceived lack of administrative staff training resulted in five participants viewing their GP practice as a whole more negatively, whilst the computer system's inability to communicate the anatomy of participants' bodies impeded care delivery.

## Consequences

These results provide a new insight into an area where there is limited previous research available. The implications for GP practice is relate to the significance of communication, and the need for having an awareness of the structural barriers transgender people have to overcome when seeing their GP. However, as an exploratory study, these implications are subject to further research. With further research, a deeper understanding of the underlying processes which impact the healthcare experiences of transgender people can help to promote better health outcomes.

## S.4

### To what extent do patients and GPs have a shared understanding of blood testing in primary care?

**Presenter:** Jessica Watson

Co-authors: Chris Salisbury, Willie Hamilton, Penny Whiting, Jonathan Banks

### Institutions

University of Bristol, University of Exeter

### Abstract

#### Problem

Rates of blood testing are increasing in primary care, with significant implications for NHS costs and GPs workload. Increased testing rates are not mirrored by increased rates of disease, suggesting non-medical reasons such as patient or GP expectations may be important. There is increasing awareness about the importance of shared decision making in medicine, but most research focuses on treatment decisions rather than investigations. The aim of this research is to compare patients' and GPs' experience, expectation and understanding of testing, in order to improve communication and promote patient engagement.

#### Approach

Six general practices were recruited, reflecting a range of socioeconomic and demographic characteristics. Patients were recruited at the time of blood testing by phlebotomists or GPs. Qualitative interviews were undertaken with patients at two time points: (a) at or soon after their blood test and (b) after they had received their test results. We also undertook interviews with the patients' GPs who requested the tests. This gave us paired data which enabled to us to examine areas of congruence and dissonance between GPs' and patients' expectations, experience and understanding of testing.

#### Findings

27 patient and 26 GP interviews have been either booked or completed, out of a target of 30 patients and 30 GPs. Early findings indicate a lack of shared understanding and a mismatch between patients' and doctors' expectations of testing. Patients are frequently unaware which tests have been done and

why. Patients have high expectations of tests; expecting them to provide diagnostic certainty without mistakes, whereas doctors expectations are more modest. Whilst doctors tend to be reassured by normal results, patients with ongoing symptoms may find normal results unhelpful. Patients' expectations that tests will provide answers can be frustrated by a lack of communication about test results.

### Consequences

The results have implications, not just for shared decision making, but more fundamentally, informed consent. Misunderstanding and a lack of communication around testing and test results can lead to uncertainty, anxiety and frustration for patients. Promoting a shared understanding and shared decision making could help rationalise testing, potentially reducing unnecessary investigations and improving patient-centred care.

### Funding Acknowledgement

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## T.1

**What do patients want to improve in their own general practice? Adapting discrete choice experiments for local use.**

**Presenter: Jessica Drinkwater**

Co-authors: David Meads, Maureen Twiddy, Anne MacFarlane, Ruth H 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 experience data is increasingly used as a proxy for public voice in health care design and delivery. However, experience data may not reflect patient values, and raises questions about democratic validity: who decides how data are interpreted and used. An alternative is to ask the public about their priorities directly, using a discrete choice experiment (DCE). DCEs are commonly used to influence regional or national decision making. We tested the feasibility and acceptability of co-designing and delivering a locally contextualised DCE to strengthen patient voice when planning individual general practice service improvement.

### Approach

A template DCE was co-designed as part of a participatory action research study. Two general practices and their patient participation groups (PPGs) agreed to adapt the DCE template (Practice 1=P1 and Practice 2=P2). PPG members (P1=12, P2=5) and staff (P1=23, P2=14) met separately to shortlist, and then together to vote on 24 pre-designed attributes (covering access, personalisation, continuity, co-ordination, equity, and quality of care). Observational notes were taken at each meeting. Two DCEs were produced, each in three formats; online, paper, and a ballot box. All formats included an introduction, a number of choice tasks (five online, three paper, and one ballot box), demographic questions, a free text box, and an advertisement for the PPG. Choice tasks had five attributes and three or four levels. The online DCE was distributed to practice patients via text message. The paper and ballot box DCEs were distributed in the waiting room by the PPG. Data was analysed using mixed logit regression analysis.

### Findings

Initially, PPG members and staff prioritised different attributes. After discussion and voting there was clear consensus on the final five attributes to use, in both practices. P1 attributes were listening skills; shared decision making; comprehensive services; receptionists; and complaints. 333 people completed the survey: 160 online (8.4% response rate (RR)); 115 paper (83.3% RR); 58 ballot box (RR unknown). The most valued attribute was being listened to. P2 attributes were clinician choice; information

continuity; self-management support; social prescribing; and appointment length. 342 people completed the survey: 153 online (3.8% RR); 116 paper (85.2% RR); 74 ballot box (RR unknown). The most valued attributes were information continuity, and appointment length. Free text responses included both preference and experience data. In both practices the most frequent comments were about attributes not included in the DCE.

### Consequences

It is feasible for patients and staff to co-design and deliver a DCE contextualised to local service improvement priorities that is acceptable to most patients. There is evidence from the free text comments that the choice task still lacked democratic validity. Further evidence is needed about whether preference data are more accurate or influential than experience data in producing patient-centred service improvement.

### Funding Acknowledgement

Jess Drinkwater is funded by a National Institute for Health Research (NIHR), Doctoral Research Fellowship for this research project. This abstract 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 and Social Care.

## T.2

### Participatory evaluation of a co-designed intervention to strengthen patient involvement in improving general practice.

#### Presenter: Jessica Drinkwater

Co-authors: David Meads, Maureen Twiddy, Anne MacFarlane, Ruth H 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 health care design and delivery is recognised as important internationally. Health policy cites the moral rationale for involving patients, but also claims involvement will result in more patient centred services, despite little evidence of the mechanism to achieve this. In England, this policy is enacted through contractual requirements for every general practice to involve patients in service improvement through Patient Participation Groups (PPGs). However, there are problems with making this routine and meaningful for all stakeholders. To address this policy-practice gap we co-designed an intervention to strengthen patient involvement in general practice.

### Approach

A participatory action research study, working with a co-research group involving ten patients (seven core members), six general practitioners (two core members), one receptionist, and a PhD researcher, to evaluate a co-designed intervention. The intervention consists of a series of four facilitated meetings, using participatory methods to address power; a bespoke survey to address demographic legitimacy; PPG training focused on representational legitimacy; and a further facilitated meeting to develop a credible action plan. The intervention is being evaluated by the co-research group in two general practices in the North of England. The dataset includes two sets (PhD and patient co-researcher) of observational notes of intervention meetings and four to six follow up meetings (total meeting time per practice: 15 hours over 1 year); and semi-structured interviews with patients (four completed, six outstanding) and staff members (three completed, four outstanding) involved in the intervention. Data co-analysis uses both an inductive and deductive approach drawing on normalisation process theory.

### Findings

This work is in progress. Interim analysis suggests that patients and staff valued working together during the intervention, and one practice rebranded as 'the listening practice'. However, there is little evidence of longer term change in working relationships between patients and staff. Patients and staff were motivated by the opportunity to make patient centred services

changes. Unlike staff, patients were also motivated by the concept of working together. Both patients and staff lacked skills to engage with each other. Where individuals possessed these skills, barriers to enacting them included hierarchical practice structures, institutional norms, and societal expectations about the role of patients. External facilitation and participatory methods helped to address some of these barriers. A lack of reflective space during implementation resulted in missed opportunities to consolidate new long term working relationships.

#### Consequences

The intervention resulted in actions consistent with patient priorities for service change. However, several barriers have been identified that warrant further attention to support implementation and the scope for long term change in how patients and staff work together. The policy of mandatory patient involvement is unlikely to be successful unless patient involvement work is recognised as a separate skill set and adequately resourced.

#### Funding Acknowledgement

Jess Drinkwater is funded by a National Institute for Health Research (NIHR), Doctoral Research Fellowship for this research project. This abstract 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 and Social Care.

## T.3

### How do lay people experience their involvement in research?

**Presenter: Emma Scott**

Co-authors: Jeremy Dale, Veronica Nanton, Joelle Loew

#### Institutions

University of Warwick

## Abstract

### Problem

Caring is an increasingly vital role in society. There are approx. 6.8m informal carers in the UK, providing care worth £130bn. Carers face numerous challenges including responding to changing complex physical, social and psychological needs of the cared for person; finding and verifying relevant information and support; loneliness and isolation; and managing their own health and social needs. Carers need access to support 24/7 and lack of support for carers contributes to unplanned hospital admissions, prolonged hospital stays and delays in discharging patients. Interventions need to meet the users needs in an efficient and effective manner. Patient and public involvement in the development of both interventions and academic research is now considered essential to ensure that work remains relevant and acceptable to the intended beneficiaries. Understanding how non-academic, non-clinical partners experience this process is, however, relatively unexplored territory.

### Approach

Care Companion is novel and simple to use online support platform for carers, which aims to strengthen carer resilience and sustain caring by providing personalised online support. It has been co-produced by a panel of carers, university academics, representatives from local health & social care providers, third sector organisations and a digital media company. The Carers Panel is made up of people with first-hand experience of providing informal care for a loved one and a wide range of IT competency. They have been at the heart of the development process, ensuring that Care Companion meets the needs of informal carers and contains the features that they find relevant. Members of the Carers Panel, content developments and a representative of the digital media company took part in semi-structured interviews exploring their experience of working together to develop Care Companion.

### Findings

Interviews have been completed and transcribed. Thematic analysis is currently underway.

### Consequences

A greater understanding of how non-academic, non-clinical partners experience their involvement in research will enable us, as a research community, to better support them during this process and to maximise the benefits of this engagement.

### **Funding Acknowledgement**

The development of Care Companion was jointly funded by Coventry & Rugby CCG, South Warwickshire CCG, Warwickshire County Council, and the Global Initiative Innovation Fund.

## **U.1**

### **The CHIPPS study: a cluster randomised controlled trial to determine the effectiveness and cost-effectiveness of independent pharmacist prescribing in care homes**

#### **Presenter: Christine Bond**

Co-authors: David Wright, Richard Holland, David Alldred, Carmel Hughes, Fiona Poland on behalf of the CHIPPS team

#### **Institutions**

Universities of Aberdeen, East Anglia, Leicester, Leeds, Belfast

#### **Abstract**

##### **Problem**

Prescribing, monitoring and administration of medicines in care homes could be significantly improved. Research has identified the need for one person to assume overall responsibility for the management of medicines within each care home. The advent of pharmacist independent prescribers (PIPs) provides an opportunity for pharmacists to assume this role. Although this approach is being implemented in practice there has been no randomised controlled trial demonstrating its effectiveness.

##### **Approach**

The approach was to conduct a three nation randomised controlled trial, with internal pilot, to determine the effectiveness and cost-effectiveness of pharmacist independent prescribing in care homes compared to usual GP led care. The trial was designed

following a programme of developmental and feasibility work conducted in accordance with the Medical Research Council framework for developing and evaluating a complex intervention. The unit of randomisation is a triad (a pharmacist-independent prescriber (PIP), a GP practice and a care home(s)). In the intervention group, the PIP will, for 6 months, collaborating with the GP: assume responsibility for prescribing and managing residents' medicines (medication review, pharmaceutical care planning, prescribing and deprescribing); support the care home and optimise communication between the GP, care home, and supplying community pharmacy. The primary outcome is resident falls at 6 months. Secondary outcomes include resident health-related quality of life, falls at 3 months, medication burden, mortality and hospitalisations. A full health economic analysis is being undertaken. The target sample size is 880 residents (440 in each arm) from 44 triads. This number is sufficient to detect a decrease in fall rate from 1.5 per individual to 1.178 (relative reduction of 21%) with 80% power and an ICC of 0.05 or less. There is a parallel process evaluation including in depth qualitative interviews with stakeholders.

##### **Findings**

The trial has recruited to target and will complete in March 2020. The internal pilot study confirmed feasibility of the RCT and no safety concerns. Baseline data showed intervention and control groups are well matched. Characteristics of all residents recruited are: mean age 85 years; 30% male; 13% had capacity to consent; median number medications 7; fall rate 0.55; mean drug burden index 0.64; Charlson Morbidity Index 5.98; proxy EQ 5D utility score 0.32; Barthel index 7.51. Full trial results will be available, for the first time, at the ASM. Preliminary analysis of qualitative stakeholder interviews suggest changing professional roles need to be acknowledged and actively managed and effective communication systems implemented.

##### **Consequences**

We do not currently know the trial outcome, but whether or not we demonstrate a 'positive' finding based on the primary outcome, we will report new information on working practices, PIP roles in care homes and barriers and enablers to placing PIPs into care homes.



## Funding Acknowledgement

This abstract reports independent research funded by the National Institute for Health Research (Programme Grants for Applied Research, Care Homes Independent Pharmacist Prescribing Service (CHIPPS): Development and delivery of a cluster randomised controlled trial to determine both its effectiveness and cost-effectiveness, RP-PG-0613-20007).

## U.2

### Patient acceptability of a proposed clinical pharmacist-led review for persistent pain in primary care (PROMPPT study)

**Presenter: Nicola Cornwall**

Co-authors: Charlotte Woodcock, Clare Jinks, Lisa Dikomitis, Sarah A Harrison, Alison Buttery, Christian D Mallen, Julie Ashworth (on behalf of PROMPPT team)

#### Institutions

School of Primary Community and Social Care Keele University

#### Abstract

##### Problem

Randomised controlled trials of complex interventions often fail to show an intervention effect. This could be due to suboptimal intervention design if the intervention it is not acceptable to participants receiving it or those delivering it. This is a problem for researchers and funders as it leads to poor uptake of interventions and high attrition rates resulting in bias and reduced internal validity. "Acceptability" as a concept is often not defined. We draw on a new Theoretical Framework of Acceptability (TFA) of health care interventions to inform development of a clinical pharmacist-led primary care review for patients prescribed opioids for persistent pain.

##### Approach

Patients in the West Midlands living with persistent pain (> 6 months) and taking regular opioids were invited to participate in face-to-face semi-structured interviews (n=15) to investigate acceptability of a proposed PROMPPT review led by clinical

pharmacists. An online qualitative study (n=69), using a dedicated discussion forum which was live for 11 weeks, was conducted to capture the views of people beyond the West Midlands, and those unable or unwilling to participate in person. The interview topic guide and online discussion questions were informed by TFA constructs of affective attitude, burden, ethicality, intervention coherence, opportunity costs, perceived effectiveness, and self-efficacy. Interviews were transcribed verbatim and online discussions downloaded and analysed in Nvivo12. Data were deductively coded onto constructs of the TFA. Members of the qualitative research team met regularly to discuss analysis decisions.

##### Findings

Data coded into all TFA constructs targeting two areas of intervention acceptability, namely (i) acceptability of seeing a clinical pharmacist for a pain review, and (ii) acceptability of reducing opioid medicines. For example, patients perceived being offered a regular review for persistent pain as valuable (ethicality), however anticipated feeling anxious about attending a review as they expected opioid medicines to be reduced or taken away (affective attitude). When attending the review, patients reported the need for clinical pharmacists to show empathy, compassion, and understanding (perceived effectiveness) and shared ways to support belief in ability to live better with pain (self-efficacy).

##### Consequences

Overall findings indicate elements of the proposed PROMPPT review to be acceptable. Pertinent for the developmental phase, findings also point to areas for improvement in order to enhance levels of acceptability for patients ahead of a feasibility study. Findings have informed PROMPPT review's iterative design and illustrate the importance of evaluating acceptability during the earliest stages of intervention development.

## Funding Acknowledgement

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not necessarily those of the NIHR or the Department of Health and Social Care.

## U.3

### Co-prescription of gabapentinoid and opioid analgesia in a general practice: evaluation of a brief quality improvement exercise.

**Presenter: Melissa Nagar**

Co-authors: Melissa Nagar, Elizabeth Cottrell, John J. Edwards

#### Institutions

Keele University School of Medicine, Wolstanton Medical Centre ST5 8BN

#### Abstract

##### Problem

Chronic pain is common in the UK, affecting one-third to one-half of the population. Patients with chronic pain present to their general practitioner around five times as often as those without. Primary care pain management needs to be of a high-quality to address this population burden. Given contact frequency, primary healthcare professionals are well-placed to deliver this. The National Institute for Health and Care Excellence (NICE) are producing a clinical guideline on chronic pain; presently there are some recommendations listed in the NICE Clinical Knowledge Summaries (CKS). We aimed to assess current practice of prescription of gabapentinoids with opioids in a single general practice against the NICE CKS recommendations and the impact of a brief practice-level quality improvement intervention.

##### Approach

We reviewed co-prescription of opioid analgesia and gabapentinoids in patients without active cancer (defined as a consultation including a Read code for cancer in the previous 15 months, or inclusion on the palliative care register). We determined the number of patients at 01.01.2019 who had been prescribed both opioids and gabapentinoids within the previous three months and then stratified by strong opioids [(dia)morphine, oxycodone, (al)fentanyl, hydromorphone], or tramadol, or weak opioids (including compound analgesics). The data were

presented at a practice quality improvement meeting. It was agreed to try to stop initiating patients on opioid plus gabapentinoid repeat therapy without review and demonstration of clear functional benefit. Tools for non-pharmacological management were highlighted. Data were collected on 01.01.2020 for new patients (those not included in the 2019 cycle) only to assess whether practice had been modified between the time points.

##### Findings

On 01.01.2019, 127 patients were eligible for inclusion (without active cancer and recorded as having been prescribed both opioids and gabapentinoids in the previous three months). Of these, 18 (14%) had been prescribed a strong opioid, 34 (27%) tramadol (but not a strong opioid) and 75 (59%) other opioids. On 01.01.2020, 111 patients in total were potentially eligible for inclusion, 14 (11%) of the original group having left the practice and 72 (56%) no longer receiving opioids plus gabapentinoids within the three months to 01.01.2020. 41 were newly eligible patients. Of these, five (12%) had been prescribed strong opioids, three (7%) tramadol, and 33 (80%) other opioids.

##### Consequences

Through a brief intervention, highlighting the problems associated with co-prescription of opioids and gabapentinoids and practice-based discussion of potential solutions, improvements in prescribing have been attained. Further work is needed to determine if these improvements can be maintained and are generalisable.

## U.4

### What do the public, patients and health professionals think about the design of an intervention trial to reduce anticholinergic burden?

**Presenter: Yvonne Cunningham**

Co-authors: Frances S Mair, Katie Gallacher, Terry Quinn, Karen Wood, Richard Lowrie, Graham Ellis, Christine Bond, Phyo Myint

#### Institutions

University of Glasgow, NHS Lanarkshire, University of Aberdeen

#### Abstract

##### Problem

Medications with anticholinergic properties are prescribed in 20-30% of older people despite their known association with negative health-related outcomes. The risk varies greatly between medications, and accumulates with polypharmacy to create an anticholinergic burden (ACB). NICE highlights that increased ACB is associated with cognitive impairment and should be reduced in those with dementia. Here we explore stakeholder (patients/public/health professionals) perspectives of barriers and facilitators to reducing ACB. The work reported here is preparatory research for a proposed ACB deprescribing trial which aims to reduce ACB in an at-risk population (older people with multimorbidity and polypharmacy) in a primary care setting.

##### Approach

We undertook three focus groups and ten individual semi-structured qualitative interviews with 22 older adults with polypharmacy, as well as two focus groups and seven semi-structured qualitative interviews with a range of health care professionals (HCPs) including GPs, geriatricians, and pharmacists (n=16). We explored views about barriers and facilitators to ACB reduction and the design of any future ACB reduction trial. All focus groups and qualitative interviews were digitally recorded and transcribed verbatim and the transcripts served as the data for qualitative analysis. Data analysis was underpinned by Normalization Process Theory (NPT). NPT explains how the work of enacting an ensemble of tasks or practices is

accomplished through the operation of four mechanisms: 'coherence' (sense-making work); 'cognitive participation' (relationship work); 'collective action' (enacting work); and 'reflexive monitoring' (appraisal work).

##### Findings

Key "take home" messages for any future ACB reduction trial in the community were: (1) The public, patients and health professionals were generally positive about the possibility of running a trial of deprescribing (sense-making work); (2) Ensure patient engagement from the outset to enable concerns and potential pitfalls to be addressed (relationship work); (3) Clear communication is essential so that patients involved in any trial have a very clear understanding of the rationale and to minimise the potential for misconceptions about the reasons for ACB reduction (relationship work); (4) It would be important to provide access to a point of contact for patients throughout the life of a trial to address queries or concerns (enacting work); (5) Minimise the workload implications of any trial and use IT systems, if this would make the enacting work of practitioners easier (enacting work); (6) Pharmacists are best placed to carry out ACB reviews, though overall responsibility for patient medication should remain with the GP (appraisal work).

##### Consequences

These findings, together with other preliminary work carried out by the team provide key insights which will be crucial in planning and developing a large-scale RCT of deprescribing or medication switching that aims to reduce ACB in the older general population.

##### Funding Acknowledgement

This study was funded by CSO Catalyst Fund, grant number: CGA/18/47.

## U.5

### Prescribing at 95+: findings from the Newcastle 85+ Study

**Presenter: Laurie Davies**

Co-authors: Andrew Kingston, Adam Todd, Barbara Hanratty, Newcastle 85+ Study Team

#### Institutions

Newcastle University, Population Health Sciences Institute

#### Abstract

##### Problem

Previous research has described prescribing amongst nonagenarians but little is known about their prescribing within the UK, despite those aged 90+ being a rapidly growing subpopulation. This study aims to characterise prescribing amongst 95-year olds using data from the Newcastle 85+ Study.

##### Approach

The Newcastle 85+ Study is a prospective cohort of people living in north east England, who were born in 1921. Amongst its participants surviving to 95 years of age, the prevalence of polypharmacy and individual medications will be analysed cross-sectionally using R-3.5.0.

##### Findings

The prevalence of polypharmacy, and the most commonly prescribed medications, will be presented through tables.

##### Consequences

Examining medication patterns and features in a cohort of 95-year olds may help to identify inappropriate prescribing. This will support avoidance of adverse outcomes, and inform future investigation of clinical data sets to better understand how we can optimise medical intervention in the very old.

#### 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.

## U.6

### Should clomifene citrate be prescribed in primary care: an in-depth interview study.

**Presenter: Heather Garthwaite**

Co-authors: Scott Wilkes, Jane Stewart

#### Institutions

University of Sunderland

#### Abstract

##### Problem

Clomifene citrate has long been considered the first-line medical treatment for fertility issues associated with polycystic ovary syndrome (PCOS). Twenty years ago, it was commonly prescribed in primary care. Currently, only 250 prescriptions are issued by GPs in England each month. Guidelines do not specifically say where clomifene should be prescribed. NICE CG156 does advise follicular tracking using transvaginal ultrasound (TVUS) during the first cycle of treatment, suggesting that management in specialist care may be more suitable. However, follicular tracking is often not practised by fertility specialists, and so the management of patients treated with clomifene may not differ much between primary care

and specialist services. The aim of this study was to explore the preferences of patients, GPs and fertility specialists in terms of where clomifene is prescribed.

#### Approach

We conducted in-depth interviews with three cohorts: patients (n=10), fertility specialists (n=7) and GPs (n=9). Recruitment was an iterative process, guided by ongoing thematic analysis.

#### Findings

While all three cohorts acknowledged that receiving clomifene from the GP might be quicker and easier, there was an overall preference for an expert input and support from a fertility clinic. There was also emphasis on optimising communication and timely referral between primary and specialist care. None of the GP participants had recent experience of prescribing clomifene. Several said they would consider prescribing if robust guidelines and education were in place, however they recognised their limited exposure to fertility issues and expressed concerns about increasing workload and restricted time in consultations.

#### Consequences

The value of a specialist input was a common theme that resonated throughout the three cohorts. Current guidelines should be modified to standardise practice in terms of where clomifene is prescribed and how it is monitored, and to streamline the referral process from primary to specialist care for patients with PCOS-related subfertility.

#### Funding Acknowledgement

Health Education England (North East)

## U.7

### What are the risks of adverse outcomes associated with polypharmacy?

**Presenter: Peter Hanlon**

Co-authors: Peter Hanlon, Bhautesh Jani, Guy Rughani, Barbara Nicholl, David McAllister, Frances Mair

#### Institutions

University of Glasgow

#### Abstract

##### Problem

Polypharmacy, the use of multiple medications, is increasing in prevalence. Many drug treatments, indicated for individual conditions, carry similar potential risks and are often used in combination. The degree of risk associated with these combinations is often unclear. This study aims to assess risk associated with taking multiple medications with similar adverse side effect profiles.

##### Approach

We used data from SAIL databank (n = 1,175,826 aged ≥40, using primary care records) and UK Biobank (n = 502,533, age 37-73, using baseline assessment data). The Scottish Polypharmacy Guideline was used to identify medications associated with six potential adverse outcomes (fall or fracture, constipation, urinary retention, CNS depression, bleeding, and acute kidney injury (AKI)). Outcomes were identified using Hospital events, identified using ICD-10 codes from linked Hospital Episode Statistics. For each individual, we then calculated the number and type of medications associated with each adverse side effect taken at baseline. Cause specific Cox-Proportional Hazards models were used to assess the risk of each outcome associated with number of medications with similar adverse side effect profiles (0, 1, 2, ≥3). We also tested each combination of 2 medications taken by >100 people. Multi-state Weibull models used to predict 5-year risk associated with number of medications across a range of ages. All models adjusted for age, sex, deprivation and multimorbidity count.



## Findings

Increasing numbers of medications with similar adverse side effect profiles was associated with falls (hazard ratio 1.13 (1.11-1.16) for  $\geq 3$  medications compared to 0 in SAIL), faecal impaction (1.17 (1.13-1.21)), urinary retention (2.21 (2.05-2.38)), delirium (1.86 (1.81-2.07)), bleeding (1.93 (1.81-2.07)) and AKI (2.97 (2.86-3.09)). Effect sizes were similar for UK Biobank. For each outcome, the risk increased with age, meaning that the difference in absolute risk associated with medications was higher for older people. For example, at age 50 the 5-year AKI risk associated with 1 and 3 or more medications linked with AKI was 1.2% (1.0-1.4) and 3.6% (3.4-3.8), respectively. At age 80 the risk was 6.8% (6.5-7.0) for 1 medication and 12.9% (12.4-13.5) for 3 or more medications. When comparing pairs of medication with similar adverse outcomes, the range of risk associated with different combinations of medications was wide (e.g. HR 4.17 (2.93-5.93) for delirium with opiates and benzodiazepines in combination, while many other combinations had null effect).

## Consequences

Taking multiple medications with similar adverse side effect profiles is associated with higher risk of related outcomes. However, in absolute terms, this risk is far greater in older people. Different combinations of medication are also associated with markedly different levels of risk. There is therefore potential for alerts within electronic healthcare systems to incorporate data on magnitude of risk and better inform prescribing decisions.

## Funding Acknowledgement

Peter Hanlon is funded by a Medical Research Council Clinical Research Training Fellowship

## U.8

### What is the Prevalence of Potentially Inappropriate Prescribing (PIP) in Middle-Aged Adults in South London?

**Presenter: Aman Khatter**

Co-authors: Patrick, Redmond

## Institutions

King's College London

## Abstract

### Problem

PIP refers to prescribing medications which may be non-evidence-based, have a higher chance of risk to patients than benefit or may not be cost-effective (Mahony and Gallagher, 2008). Research has primarily focused on PIP in older adults ( $\geq 65$  years) and has consistently found that a substantial number of prescriptions in primary care may be potentially inappropriate. Polypharmacy, strongly associated with multimorbidity, is a key determinant of PIP in older adults. Research suggests that both polypharmacy and multimorbidity are also prevalent in middle-aged adults (45-64 years), yet there is a paucity of research on the prevalence of PIP within this age group (Barnett et al., 2012; Cassell et al., 2018). The PRescribing Optimally in Middle-Aged People's Treatment (PROMPT) criteria were developed for this purpose (Cooper et al., 2014). The primary aim of this study was to calculate the prevalence of the top three PROMPT criteria (as per Cooper et al. (2016)) in South London, an area not yet studied:- Strong opioids should not be prescribed without the co-prescribing of at least one laxative- Proton pump inhibitors (PPIs) should not be prescribed at doses above the recommended maintenance dosage for greater than eight weeks- Benzodiazepines should not be used for greater than four weeks. The secondary aim is to examine which patient and practice factors are associated with PIP.

### Approach

A retrospective cross-sectional study was conducted using data from Lambeth DataNet (LDN) in South London (42 general practices, N=342,046). Prescribing, demographic and coding data were extracted for all those aged between 45-64 years who

were also administered one or more prescriptions during the study period of January 1st to December 31st 2017. Descriptive analysis of the data, including calculation of the percentage prevalence of the three PROMPT criteria, are reported. Adjusted logistic regression will be performed to investigate the association between PIP and polypharmacy, multimorbidity, deprivation, practice variation, gender and age group.

#### Findings

This study included 47,775 patients. 17.3% of the study population have been exposed to at least one PIP, the most common criterion being PPIs (12.1%), followed by strong opioids (5.9%) and benzodiazepines (2.6%). Logistic regression analysis and adjustment for covariates is underway.

#### Consequences

The prevalence of PIP calculated is similar to other studies internationally (Cooper et al., 2016; Moriarty et al., 2016). PIP has been associated with adverse drug events and increased costs from subsequent hospitalisation. Given the prevalence of PIP in middle-aged adults, there may be a significant number of patients exposed to avoidable, costly adverse drug events. It also implies that prescribing quality may be an issue in South London. Efforts should be made to reduce and ultimately prevent PIP in middle-aged adults.

#### Funding Acknowledgement

No Funding

## U.9

### Can a proposed risk assessment and communication tool help New Zealand general practitioners and patients?

**Presenter: Sharon Leitch**

Co-authors: Tim Stokes, Alesha Smith

#### Institutions

University of Otago, Centre for Health Systems and Technology

## Abstract

### Problem

Participating in shared decision-making, understanding the rationale for treatment, and being able to identify potential side effects can maximise wellness for patients across the life course. However these tasks are difficult due to structural barriers, language, cultural barriers, bias, and limited resources appropriately tailored for the health literacy of most patients. These factors contribute to health inequity based on ethnicity and socioeconomic disadvantage, which is widespread in Aotearoa New Zealand (NZ). Decision support tools can address these issues. A novel decision support tool was proposed to alert prescribers of patients at risk of medication harm and provide tailored risk information for patients. It aims to facilitate discussion about medications and support informed decision-making with patients and their whānau (family). This early phase co-design research aims to determine what GPs and patients think about the proposed tool, what factors they felt would increase its utility and avoid increasing health inequity.

### Approach

Fifteen patients (five Māori, five Pasifika and five NZ European) and nine GPs (two Māori and seven European) prospectively evaluated the proposed tool. Semi-structured interviews were based on a topic guide informed by Normalisation Process Theory (NPT). A deductive thematic analysis was conducted into the relevant NPT domains.

### Findings

Three themes were identified. Theme 1 investigated participants' understanding of prescribing safety, medication harm and risk; this is based on experience. Patients want comprehensive information about their medications and potential risk, but doctors find it difficult to communicate that information. Patient participants were keen to actively participate in shared decision making about their healthcare, whereas doctors described a wider range of interest in patient participation. Theme 2 explored what participants thought about a prescribing decision support tool; they were cautiously optimistic, but worried about potential harm arising from its use. Participants identified both requirements for the tool and features to avoid. Theme 3 describes the

collective action required for successful implementation of the tool; namely, culturally safe and trustworthy doctor-patient relationships. Use of Māori and Pacific languages in the proposed tool may enhance engagement and understanding. Patients and general practitioners provided different perspectives when prospectively evaluating the proposed risk assessment and communication tool. NPT provided a comprehensive theoretical framework to conduct this evaluation. This co-design research identified important pre-requisites for the tool and features to avoid, as well as several novel ideas for the proposed tool.

### Consequences

Co-designing interventions tailored for the needs of different groups may reduce barriers to receiving healthcare and may reduce inequities arising from use of technological interventions. A multidimensional approach is required to reduce health inequities, founded on culturally safe and trustworthy relationships.

### Funding Acknowledgement

Health Research Council of New Zealand

## U.10

### Prescribing of Long-term Antibiotic to Adolescents in Primary Care: a Retrospective Cohort Study

**Presenter: Mark Lown**

Co-authors: Sam McKeown, Beth Stuart, Nick Francis, Miriam Santer, George Lewith, Fhanzhong Su, Michael Moore, Paul Little

### Institutions

Primary Care & Population Sciences, Faculty of Medicine, University of Southampton, Aldermoor Health Centre, Southampton SO16 5ST, Cardiology and Electrophysiology, Southampton General Hospital, Tremona Road, Southampton

### Abstract

#### Problem

Antimicrobial resistance (AMR) is a major threat to global health as new resistance mechanisms emerge and spread globally. Unnecessary and inappropriate

use of antibiotics promotes the emergence and spread of resistant bacteria. Lower doses and longer durations of antibiotic therapy are linked with increased risk of AMR. Long-term antibiotics are commonly used for the treatment of acne and prophylaxis of urinary tract infection. As acne is common in adolescence and oral antibiotics are the most common acne-related medication prescribed, we chose to determine the rates and trends and overall burden of long-term antibiotic prescriptions in an adolescent cohort in primary care in Hampshire UK.

### Approach

To describe the prescribing of long-term (28 days or more) antibiotics in a cohort of 11-18 year olds, including trends over time and comparisons with acute antibiotic prescribing using primary care data for participants born between 1979 and 1996 who attended one of the GP surgeries included in the Care and Health Information Analytics database at least once during adolescence (11-18 years).

### Findings

We identified 1,703,786 antibiotic prescriptions for 320,722 participants. Total antibiotic prescriptions increased from around 212 per 1000 person years in 1998 to just under 420 in 2012 and declined to around 361 in 2017. More than 15% of prescriptions were for long-term antibiotics ( $\geq 28$  days). Long-term antibiotic prescribing resulted in a similar magnitude of antibiotic exposure (days of use) as acute antibiotic prescribing in this cohort.

### Consequences

Adolescents' and young adults' exposure to antibiotics comes just as much from prescribing of long-term antibiotics as it does from prescribing of acute antibiotics. Urgent action is needed by to curtail the use of long-term antibiotics, and promote alternative management strategies.

### Funding Acknowledgement

NIHR School for Primary Care Research: FR 13: Project number 374.

## U.11

### How can we optimise medication in older people on complex medication regimens living in the community?

**Presenter: Ian Maidment**

Co-authors: Geoff Wong, Sally Lawson, Andrew Booth, Hadar Zaman, Anne Watson, Judy Mullan, Sylvia Bailey, Jane McKeown

#### Institutions

Aston University, University of Sheffield, Oxford University, University of Bradford, Birmingham Community NHS Trust, University of Wollongong

#### Abstract

##### Problem

Increasing numbers of older people are taking many different medications. The number of older people on five plus medications has increased from 12 to nearly 50% over 20 years. Managing complex regimens can be very challenging for older people, family carers and primary care clinicians. There are key gaps in understanding how, why and for whom complex medication management works and from this, how best to improve practice and outcomes. MEMORABLE (MEdication Management in Older people: Realist Approaches Based on Literature and Evaluation) was funded by the NIHR and aimed to address these gaps (PROSPERO registration: 2016:CRD42016043506). Key aims were: 1. To understand causal paths relating to medication management. 2. To develop a framework for an intervention(s) to optimise medication.

##### Approach

Realism analyses and interprets multiple sources of evidence to understand what works, for whom in what circumstances. As such it is ideal to understand how complex interventions work, or not. Following RAMESES (Realist And Meta-narrative Evidence Syntheses: Evolving Standards) guidelines, MEMORABLE involved three work packages:

1. Realist review: focused on 24 articles on medication management that explore causality;
2. Realist evaluation: 50 realist-informed interviews with older people, family carers and

practitioners, exploring and explaining their experiences; and

3. Synthesis and theorising the outputs from 1 and 2.

##### Findings

Medication management is a complex implementation process that can be mapped onto five separate but linked stages:

- Three individual stages where the older person, sometimes with help from a family carer, fits medication into their daily lives, balancing routines, risk and coping with any burden; and
- Two interpersonal stages where the older person engages with a practitioner, again sometimes with a family carer, sharing decisions about diagnoses and medications.

Using Normalisation Process Theory as an explanatory 'lens' we identified four key steps in each stage:

1. Making sense: information, clarification.
2. Taking action: shared decision making.
3. Reflection and monitoring.
4. Building enduring collaborative relationships underpinned by trust.

To deepen our understanding of what it means for an older person to take medications, a detailed analysis of the Reviewing/reconciling medications stage was conducted and five burdens that needed addressing identified: ambiguity, fragmentation, unfamiliarity, concealment, exclusion. MEMORABLE established a burden-focused, transferable theoretical framework to explore and explain the complexity of medication management, directly applicable to the experiences of older people, family carers and primary care staff.

##### Consequences

Older people find managing complex medication regimens a burden. Primary care staff need to work with older people and family carers to reduce the burden from medication. Two interventions that might potentially optimise medication management were identified: a tool to identify older people struggling and individualised information.

##### Funding Acknowledgement

NIHR (HS&DR)

## U.12

### Defining a medication review model for use in routine clinical practice

**Presenter: Deborah McCahon**

Co-authors: Dr Debbie McCahon, Dr Rachel Denholm, Dr Rupert Payne, Dr Alyson Huntley, Dr Polly Duncan, Dr Shoba Dawson

#### Institutions

Centre for Academic Primary Care, University of Bristol

#### Abstract

##### Problem

NICE define medication review as a “structured, critical examination of a patient’s medicines with the objective of reaching an agreement with the patient about treatment, optimising the impact of medicines, minimising the number of medication related problems and reducing waste”. Within NICE guidance for medicines optimisation, regular medication review is recommended as a key priority for implementation and a mechanism for making medicines optimisation part of routine practice. Despite the guidance, there is still a lack of understanding about what constitutes a clinical medication review. Practical and detailed descriptions for what a clinical medication review should involve and how it should be delivered in clinical practice are lacking. The aim of this study was to; i) identify the ‘active ingredients’ of a medication review, described in trials aimed at improving medication safety and efficacy, when compared with usual care; and ii) develop a model of medication review for use in clinical practice.

##### Approach

The starting point was a systematic review published in 2017 (Huiskes VJ. BMC Fam Pract) summarising the evidence for medication review as an isolated short-term intervention (as performed in clinical practice). An updated literature search, using the same search data sources and strategy was performed. Selection criteria included RCTs with adult participants ( $\geq 18$  years), involving a medication review intervention operationalised as a single, short-term intervention, delivered by a healthcare professional and involving the patient, within which all medicines used by the

patient were considered. Trials in a palliative care setting were excluded. Titles and abstracts were screened, and full-text articles were considered by two reviewers independently. Data related to the characteristics of the intervention were extracted and analysed thematically to develop a framework to classify the components and functions (i.e. the ingredients) of the medication review strategies used. Outcomes investigated in each trial were also extracted.

##### Findings

Overall, 1498 papers were identified and 31 were included. The ingredients of the medication review strategies of included trials have been classified. Outcomes have been organised into the six categories (drug efficacy, treatment safety, service use, cost, patient experience, mortality). Cross tabulation analysis of ingredients per trial according to each outcome is being conducted. A development group comprising the investigators and external advisers representing a range of stakeholder perspectives will be convened to review and synthesise the findings of the systematic review and develop a comprehensive and systematic approach to medication review.

##### Consequences

A medication review model for use in a routine clinical practice setting will be of use to healthcare professionals who have roles in medicines optimisation; help to improve the consistency, transparency and quality of the medication review process; and encourage routine and improved dialogue between patients and prescribers around the use of medicines.

##### Funding Acknowledgement

This research supported by Research Capability Funding from the Bristol, North Somerset and South Gloucestershire CCG



## U.13

### What are the associations between anticholinergic medication exposure and adverse health outcomes in older people living with frailty?

**Presenter:** David Mehdizadeh

Co-authors: David Mehdizadeh, Dr Oliver Todd, Dr Matthew Hale, Hadar Zaman, Dr Iuri Marques, Owen Johnson, Dr Muhammad Faisal, Prof Andrew Clegg, Dr Duncan Petty

#### Institutions

(NIHR) Yorkshire & Humber Patient Safety Translational Research Centre (NIHR YHPSTRC), University of Bradford, University of Leeds

#### Abstract

##### Problem

Routine identification of older people living with frailty has become integral to primary care medicines management strategies, driven by the NHS Long Term Plan. Primary Care Networks (PCNs) will use existing tools to stratify patients by frailty severity, proactively targeting the most severe for medication reviews. A priority area is the review of anticholinergics (ACs); medicines which block the neurotransmitter acetylcholine in the brain and peripheral nervous system. They are commonly prescribed and are indicated for a range of conditions, and although they can have positive outcomes in older people, growing evidence suggests associations with cognitive and physical dysfunction, falls, hospitalisation and even death. Older people living with frailty are likely to be more susceptible to the adverse effects of AC medicines, however this has been understudied, and little is known about the extent of these associations in this syndrome. Similarly, it is unknown whether frailty severity modifies risks of outcomes when exposed to ACs. The aim of this systematic review is to identify, appraise and synthesise existing literature in this field, with a view to answering the following research question: what are the associations between AC medication exposure and adverse health outcomes in older people living with frailty?

##### Approach

MEDLINE, CINAHL, Embase, Web of Science, PsycINFO and The Cochrane Database of Systematic Reviews

were searched, from inception to July 2019. Search terms represented three domains: 1) aged participants 2) AC medicines and 3) observational studies. Studies were selected if participants were 65 and over and exposed to ACs, deemed to be living with pre-frailty/frailty, and where clinical outcomes were measured. Screening of papers, data extraction and quality appraisal were performed by two independent reviewers. Disagreements were resolved by a third reviewer or consensus-based discussion. Citation analysis was conducted using Publish or Perish software and Web of Science.

##### Findings

Titles and abstracts of 12,070 unique papers were screened, identifying 61 papers for full-text review. 12 papers met the inclusion criteria and were subject to a narrative synthesis. Interim findings are that AC exposure can be associated with adverse outcomes in older people living with frailty; particularly falls, physical dysfunction and mortality, however, the risk modifying role of frailty is unclear. Inconsistencies in how studies measure AC exposure and frailty, and the lack of studies designed specifically for frail populations, impairs the generalisability of the findings.

##### Consequences

Although early findings show some associations, there are deficiencies in research which can support reliable and clinically meaningful conclusions in this area. As frailty stratification is now embedded within medicines management strategies, it is essential that the use of ACs in this syndrome is better understood, particularly with regards to whether stratifying by frailty severity for targeted medication reviews is a clinically useful approach.

##### Funding Acknowledgement

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## U.14

### Public acceptance of delayed prescribing in UK primary care: a choice experiment

**Presenter: Liz Morrell**

Co-authors: James Buchanan, Laurence Roope, Koen Pouwels, Julie Robotham, A. Sarah Walker, Sarah Wordsworth

#### Institutions

University of Oxford, Public Health England

#### Abstract

##### Problem

Antimicrobial resistance is recognised as a global threat to public health, and there is a need for improved stewardship of existing medicines. One approach to reducing antibiotic consumption in primary care is delayed (or 'back-up') prescription. The clinician prescribes antibiotics, but the patient is advised to delay initiating treatment. This has shown to be effective in reducing consumption without increasing complication rates. However, despite its inclusion in guidelines since 2008, this strategy is not widely used in the UK. Although the prescribing decision is made by the GP, the expectations of the patient may influence that decision. Our work aimed to identify factors influencing preferences among the UK public for delayed prescription, and understand their relative importance, to help improve implementation of this prescribing option.

##### Approach

We conducted an online choice experiment in two UK general population samples: adults, and parents of children under 18. We used the example of a respiratory tract infection (RTI) - a common reason for GP consultations and a major contributor to antibiotic prescribing. Respondents were presented with twelve scenarios in which they, or their child, might need antibiotics for an RTI, and asked to choose either immediate or delayed prescription. Scenarios were described by seven attributes (including symptoms, duration, and the format of the delayed prescription), allowing exploration of trade-offs between them. Preferences were modelled using mixed-effects logistic regression.

##### Findings

The survey was completed by 802 adults and 801 parents. In the adult sample the probability of choosing delayed prescription was 0.53 (95% CI 0.50-0.56) for a chesty cough and runny nose, compared to 0.30 (0.28-0.33) for a chesty cough with fever, 0.47 (0.44-0.50) for sore throat with swollen glands and 0.37 (0.34-0.39) for sore throat, swollen glands and fever. Probabilities were similar for parents considering treatment for a child. The most important determinant of choice was symptom severity, especially for cough-related symptoms. Respondents were less likely to choose delayed prescription with increasing duration of illness, and if they had to return to the practice to pick up the prescription. Parents differed from the adult sample in giving higher weighting to the duration of illness. Females were more likely to choose a delayed prescription than males, and were particularly likely to do so for minor cough symptoms. Older people, those with a good understanding of antibiotics, and those who had not used antibiotics recently, showed similar patterns of preferences.

##### Consequences

Delayed prescription appears to be acceptable to patients. Certain groups appear to be more amenable to delayed prescription, suggesting opportunities for increased use of this strategy. Prescribing choices for sore throat may need additional explanation to ensure patient acceptance, and parents in particular may benefit from reassurance about the usual duration of these illnesses.

##### Funding Acknowledgement

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## Patient characteristics associated with adverse drug reactions in older community-dwelling adults attending general practice: a prospective cohort study

**Presenter: Norah Murphy**

Co-authors: Dr Fiona Boland, Prof Tom Fahey, Dr Emma Wallace

### Institutions

HRB Centre for Primary Care Research, Royal College of Surgeons in Ireland

### Abstract

#### Problem

Adverse drug reactions (ADRs) are associated with adverse outcomes for patients including emergency admissions. Older people are vulnerable to ADRs due to ageing-related physiological changes and increasing multimorbidity and polypharmacy. While some ADRs can be prevented, identifying those most at risk is challenging and there is limited primary care research to support this. This study aimed to examine patient characteristics associated with ADRs in a prospective cohort of older community-dwelling adults.

#### Approach

Study design and participants: Prospective cohort study (2010-2016), 904 community-dwelling adults aged  $\geq 70$  years taking  $\geq 1$  regular medication recruited from 15 general practices. Outcome measures: review of GP medical record, detailed patient questionnaire, and linked dispensed medications from a national pharmacy claims database. Baseline patient characteristics: age, sex, deprivation, health insurance, marital status, number of drug classes, medication adherence (Medication Possession Ratio) and multimorbidity (Charlson Comorbidity Index). Primary outcome: ADRs, measured by GP medical record review for the six-year follow-up period. ADR severity: mild-no treatment required, moderate-required treatment or resulted in non-permanent disability, severe-resulting in permanent disability/death. Statistical analysis: Descriptive statistics and logistic regression (Odds Ratios [OR], 95% Confidence Intervals [CIs]) are presented.

#### Findings

Of 904 study participants, median age was 78 years (Interquartile Range [IQR] 73, 81), 489 (54%) were female with a median of 6 regular drugs (IQR 3, 8). A total of 205 (23%) participants experienced  $\geq 1$  ADR with 61 (7%) experiencing  $\geq 2$  ADRs. Of 266 ADRs identified, 236 (88%) were mild, 28 (11%) moderate and 2 were severe. A total of 26 ADRs (10%) resulted in an emergency admission. Cardiovascular system drugs resulted in 30% of all ADRs. In multivariable analysis, female sex (OR 1.7, 95% CI 1.2-2.5 p 0.003) and being in receipt of 5-10 drug classes (compared to  $< 5$ ) (OR 1.8, 95% CI 1.2-7.4 p 0.003) and  $> 10$  drug classes (OR 2.0, 95% CI 1.1-3.7 p 0.017) were associated with ADRs.

#### Consequences

ADRs are common in older people attending general practice with one in four study participants experiencing at least one ADR. One in 10 identified ADRs resulted in an emergency admission. Cardiovascular drugs were most commonly implicated, while females and those with polypharmacy were more likely to experience an ADR. This study highlights the importance of proactive medication review for older people taking multiple medications to reduce their risk of ADRs. Future research could examine risk stratification to identify those older people at highest risk of experiencing an ADR and consider strategies to reduce the overall drug burden including dose reduction and deprescribing.

#### Funding Acknowledgement

We would like to acknowledge funding from the Health Research Board (HRB) in Ireland through grant no. HRC/2014/1

## U.16

### Spatial Exploration of Deprivation Driven Inequalities in Opioids Prescribing in English Primary Care: a Cross Sectional Analysis

**Presenter: Magdalena Nowakowska**

Co-authors: Salwa Zghebi, Rosa Parisi, Li-Chia Chen, Darren M Ashcroft, Evangelos Kontopantelis

#### Institutions

University of Manchester

#### Abstract

##### Problem

Over 23 million opioid prescription items were prescribed in English primary care in 2018-2019 and the levels of prescribing are not distributed equally across regions and populations. A greater understanding of the geographical differences and social drivers of opioid prescribing is needed to guide policy responses and interventions. The aim of this study is to explore regional variations in opioid prescribing in England and the role of socio-economic deprivation in driving inequalities in opioid prescribing.

##### Approach

Cross-sectional study using national prescription data from primary care settings. The prescribing of opioids in each general practice was quantified by Defined Daily Doses (DDD) and then attributed to 32,844 Lower Layer Super Output Areas (LSOAs), the geographical units representing approximately 1,500 people. Linear regression was used to model the effect of socio-economic deprivation, measured using the Index of Multiple Deprivation (IMD) 2019 quantiles, on levels of prescribing, measured by DDDs/1,000 populations/day. The model accounted for the proportion of females and people over 65-year-old, rurality/urbanity classification of the area, and prevalence of cancer, palliative care, depression, severe mental illness (SMI), rheumatoid arthritis, and obesity. Within higher organisational areas (Clinical Commissioning Groups, CCG), adjusted DDD estimates were obtained and compared at each deprivation level.

#### Findings

In total, 5,350,151,699 DDD of opioids were prescribed. Prescribing of opioids was not distributed randomly between LSOAs and varied between 4 and 1,905 DDD/1000 population/day. On average, 93.77 (SD: 1.90,  $p < 0.001$ ) more DDD/1000 population/day were prescribed in the most deprived areas compared to the least deprived areas. Prevalence of cancer and SMI were negatively associated with opioid prescribing, and the remaining conditions had a positive association. Smaller LSOAs and LSOAs with smaller proportion of females prescribed fewer opioids. A higher proportion of population over 65 was associated with higher prescribing. On average, opioid prescribing was 33.6 DDD/1000 populations/day (SD: 2.16,  $p < 0.001$ ) higher in urban compared to rural areas. Within individual CCGs, the difference between prescribing in the least and most deprived areas varied by up to 200%.

#### Consequences

Even after adjusting for differences in population structure, opioid prescribing practices differ significantly across the country, and geospatial deprivation is a key prescribing driver. Future policies and interventions should focus on high-prescribing low-geography areas and tackling deprivation driven inequalities.

#### Funding Acknowledgement

This study was funded as part of a PhD studentship from the National Institute for Health Research (NIHR) School for Primary Care Research (SPCR) and the NIHR Greater Manchester Patient Safety Translational Research Centre (PSTRC).

## U.17

### Do General Practitioners' antibiotic prescribing decisions follow the STARWAVE clinical prediction rule?

**Presenter: Martine Nurek**

Co-authors: Brendan Delaney, Olga Kostopoulou

#### Institutions

Imperial College London

#### Abstract

##### Problem

When children present with cough in primary care, prognostic uncertainty can lead to defensive antibiotic prescribing ("treat, just in case"). To combat this, a clinical prediction rule called "STARWAVE" was developed and validated. STARWAVE uses seven clinical factors (Short illness duration, Temperature, Age, Recession, Wheeze, Asthma, Vomiting) to estimate a child's risk of deterioration ("very low" if  $\leq 1$  factor is present, "normal" if 2-3 are present, "high" if  $\geq 4$  are present). In so doing, it aims to reduce prognostic uncertainty and unnecessary prescribing in non-high risk cases. Providing STARWAVE as a decision aid to General Practitioners (GPs) could improve risk assessment and prescribing decisions. However, a risk score is merely a probability and could be ignored, especially if it contradicts the decision maker's intuitive assessment of risk. We aimed to compare GPs' intuitive risk assessments and prescribing decisions to those of STARWAVE.

##### Approach

252 UK GPs were randomly assigned to view four (out of a possible eight) clinical vignettes online. Each vignette depicted a child presenting with cough, who was described in terms of the seven STARWAVE factors. Systematically, we varied patient age (20 months vs. 5 years), illness duration (3 vs. 6 days), and the presence (vs. absence) of vomiting and wheeze, holding the remaining STARWAVE factors constant. Per vignette, GPs selected between "very low (e.g. 1 in 300)", "medium (e.g. 1 in 70)" and "high (e.g. 1 in 8)" risk of deterioration. GPs also indicated whether they would prescribe antibiotics. We compared GPs' risk classifications and prescribing decisions to those of STARWAVE, and assessed the influence of the

manipulated factors using mixed-effects logistic regression.

##### Findings

GPs underestimated risk of deterioration in almost half of instances (46%, 459/1008) and overestimated it in 9% (88/1008). Despite underestimating risk, they overprescribed: 78% of prescriptions were unnecessary relative to GPs' own risk classification (121/156), and 83% relative to STARWAVE's risk classification (130/156). In accordance with STARWAVE, GPs classified risk as higher for patients of 20 months vs. 5 years ( $OR=1.49$  [1.14-1.95],  $p=0.003$ ), though this did not influence prescribing ( $OR=0.92$  [0.69-1.23],  $p=0.569$ ). In contrast to STARWAVE, a shorter illness duration (3 vs. 6 days) decreased both risk classification ( $OR=0.54$  [0.42-0.69],  $p<0.001$ ) and prescribing odds ( $OR=0.34$  [0.24-0.49],  $p<0.001$ ). Vomiting and wheeze increased both risk classification and prescribing odds, in accordance with STARWAVE ( $OR_{vomiting\_risk}=1.92$  [1.57-2.36],  $OR_{vomiting\_prescribe}=1.49$  [1.24-1.80],  $OR_{wheeze\_risk}=3.33$  [2.66-4.16],  $OR_{wheeze\_prescribe}=3.89$  [2.66-5.69], all  $ps<0.001$ ).

##### Consequences

Relative to the STARWAVE rule, GPs underestimated risk of deterioration. This was mainly because they assigned lower risk to a short (vs. long) illness duration. Still, they overprescribed, which suggests that risk classifications (as measured in this study) and prescribing decisions were not well-linked. Providing STARWAVE as a decision aid necessitates that GPs are aware of and agree with its assessment of clinical factors.

##### Funding Acknowledgement

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## U.18

### Organisational variation and reliability of national polypharmacy performance indicators

**Presenter: Rupert Payne**

Co-authors: Gary Abel, Rachel Denholm, Deborah McCahon

#### Institutions

University of Bristol, University of Exeter

#### Abstract

##### Problem

The national ePACT2 polypharmacy prescribing indicators were introduced in 2017, and use patient-level primary care electronic dispensing data to identify patients taking multiple medicines or certain potentially high-risk combinations of medicines. The indicators can be used to facilitate the identification of patients in individual GP practices, but it is unclear whether they might have a role in comparing prescribing across practices.

##### Approach

We used practice-level ePACT2 data from all GP surgeries in England from June 2019. Five key indicators were studied, applied to patients prescribed at least one drug during the study month: mean number of drugs per patient, and percentage of patients per practice receiving  $\geq 10$  drugs, exposed to an anticholinergic burden score (ABS)  $\geq 9$ , receiving  $\geq 3$  anticoagulant or antiplatelet drugs, and receiving  $\geq 2$  unique medications likely to cause kidney injury. Indicators were based on prescribing for all ages, and for patients  $\geq 75$  years. Basic descriptive statistics were calculated describing variation (mean and standard deviation) across all practices for each indicator and age group. We calculated inter-unit (Spearman-Brown) reliability to determine how reliably practices can be distinguished (classified) from each other for a particular indicator, using mixed-effects Poisson (mean drug number) or logistic (other indicators) regression.

##### Findings

Across practices ( $n=6974$ ) and all age groups, the mean ( $\pm$ SD) number of drugs prescribed was  $3.5 \pm 0.5$ , with  $5.2 \pm 2.5\%$  of patients receiving  $\geq 10$  medicines,

$0.08 \pm 0.10\%$  with  $ABS \geq 9$ ,  $0.09 \pm 0.24\%$  taking multiple anticoagulants/antiplatelets, and  $31 \pm 5.8\%$  taking drugs likely to cause kidney injury. Polypharmacy was considerably higher in patients  $\geq 75$  years (mean number drugs  $5.1 \pm 0.8$ ,  $10.7 \pm 5.8\%$  on  $\geq 10$  medicines), but other indicators had similar prevalence. For prescribing for people of any age, reliability was excellent for indicators looking at mean number of drugs ( $0.98 \pm 0.08$ ) and percentage patients taking  $\geq 10$  medicines ( $0.93 \pm 0.08$ ). Reliability of the kidney injury prescribing indicator was lower although still acceptable ( $0.82 \pm 0.13$ ). Reliability of indicators measuring high ABS or high risk of bleeding was poor ( $0.39 \pm 0.16$ ,  $0.17 \pm 0.06$  respectively). For patients  $\geq 75$  years, reliability remained high for mean number of drugs ( $0.95 \pm 0.10$ ), but was notably lower for percentage patients taking  $\geq 10$  drugs ( $0.85 \pm 0.12$ ) and kidney injury prescribing ( $0.61 \pm 0.18$ ).

##### Consequences

Polypharmacy is common in primary care, and use of multiple drugs likely to cause kidney injury is widespread. However other measures of potentially inappropriate prescribing are relatively uncommon. Further research is required to determine to what extent prescribing variation reflects differences in practice demographics. Indicators may have utility for individual practices for identifying patients receiving potentially problematic medication regimens. Although the basic polypharmacy indicators may have utility in distinguishing practices with varying levels of multiple drug use, including potentially in high-stakes applications, the other indicators cannot be reliably used to assess differences in potentially inappropriate prescribing between practices and their use as quality indicators is inadvisable.

##### Funding Acknowledgement

This study is funded by the National Institute for Health Research (NIHR) School for Primary Care Research (project reference 409). The views expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care.

## U.19

### The barriers to stopping inappropriate medicines (deprescribing): A patient and supporting peer perspective

**Presenter: George Peat**

Co-authors: Iuri Marques, Beth Fylan, Janice Olaniyan, DK Theo Raynor, Liz Breen, David P Alldred

#### Institutions

University of Bradford, University of Leeds, Bradford Institute for Health Research (BIHR)

#### Abstract

##### Problem

Older people with frailty are frequently prescribed multiple medicines for co-morbidities resulting in polypharmacy (the concurrent use of five or more medicines). Polypharmacy can be beneficial; however, inappropriate polypharmacy is common and can lead to adverse health outcomes, particularly in this population. The National Health Service (NHS) recognises this issue in its Long Term Plan (2019), with Primary Care Networks (PCNs) responsible for implementing structured medicine reviews to stop unnecessary or harmful medicines (deprescribing). However, little is understood from the patient's perspective, particularly around the barriers older people with frailty face when reducing or stopping their medicines. The aim of this research was to investigate the barriers older people with frailty and their supporting peers (i.e. SPs, those who help patients manage their medicines at home) experience when stopping medicines. This is part of a wider programme of work investigating how deprescribing can be safely implemented in primary care using a behaviour change approach.

##### Approach

A qualitative design was adopted. Patients (n=9) 65 years and older, who were taking five or more medicines, and had received an invitation from their GP to discuss stopping a medicine, were recruited across four GP practices in Yorkshire and Humber. If patients managed their medicines with the help of a SP, these were also invited to an interview (n=3). Semi-structured interviews were conducted with participants immediately after their deprescribing

consultation, and again five to six weeks later (n=24). This enabled the elicitation of the patients' experiences of the initial consultation, and their experiences of stopping medicines in the follow-up period. Interviews lasted approximately 30 minutes, were audio-recorded and analysed using Framework Analysis and underpinned by the Theoretical Domains Framework (TDF - a behaviour change framework).

##### Findings

Several barriers were identified, such as habitual and emotional attachments to medicines, inadequate support and guidance, and a lack of involvement from clinicians throughout the deprescribing process. Patients and their SPs expressed a lack of knowledge and understanding as to the reasons behind reducing their medication, and the benefits for doing so. Post-appointment, patients and their SPs conveyed a sense of abandonment due to the absence of a clear plan or follow-up support conveyed in the following quote "...I'm left alone now. Yes. I'm left alone now...".

##### Consequences

The exploratory nature of this research provides insight into the barriers older people with frailty and their SPs face when reducing or stopping their medicines. It is part of a wider body of research on deprescribing that will inform the development and design of interventions aimed at safely implementing deprescribing within primary care. This research is particularly timely, given both the global and national aim to improve medicines safety outlined in the World Health Organisation's 'Medicines Without Harm' Programme (2017).

##### Funding Acknowledgement

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## Determinants of Inappropriate opioid prescribing: A cross sectional study in a South London population

**Presenter: Patrick Redmond**

Co-authors: Patrick Redmond, Mariam Molokhia

### Institutions

King's College London

### Abstract

#### Problem

Opioid prescribing in the UK has been increasing in recent years. While opioids are known to be effective for treating cancer related pain, their role in non-cancer pain is less clear. There is emerging evidence that long-term use of opioids for non-cancer pain can lead to adverse health outcomes, including dependency, falls and premature mortality. Opioid prescribing has been noted to be more likely in deprived groups; this may be due to confounding by other health factors. The aim of this study was to examine determinants of opioid PIP, and the relation to deprivation, adjusted for potential confounders.

#### Approach

Study design: Retrospective cross-sectional study of patients reported according to the RECORD-PE criteria. Prescribing and clinical records for all patients aged  $\geq 18$  years registered at a Lambeth GP for the period 03/06/19-30/11/19 were extracted (N=323,980; Practices N=41). Exclusions: Cancer diagnoses, substance abuse disorders prescribed oral methadone or buprenorphine. Potentially inappropriate prescribing (PIP) of opioids was defined using the Guidelines of the Faculty of Pain Medicine; PIP being greater than 90 days of continuous opioid use for non-cancer pain or a morphine daily dose equivalent of  $>120\text{mg}$ . Both partially and fully adjusted multilevel (adjusted for practice) logistic regression models were developed to analyse the association between PIP and patient deprivation (Indices of Multiple Deprivation), as well as other relevant covariates (age, sex and co-morbidities).

#### Findings

Opioid prescribing rates were 2% in Lambeth, of those patients prescribed an opioid in the last 3 months,

more than half met the criteria for PIP. Determinants of inappropriate prescribing in the fully adjusted model were, increasing multi-morbidity, increasing age, relative deprivation and female sex. Following adjustment, relative deprivation was associated with inappropriate prescribing of an opioid with those in the most deprived quintile in Lambeth at increased risk of being inappropriately prescribed an opioid compared with the least (AOR 1.59, 95%CI 1.41-1.79,  $p<0.001$ ). Patients also had increasing odds of being inappropriately prescribed opioids if female (AOR 1.33, 95%CI 1.24-1.43,  $p<0.001$ ), increasing age ( $p<0.001$ ) and increasing multi-morbidity ( $p<0.001$ ).

#### Consequences

We found lower prescribing rates of opioids in Lambeth significantly lower than national figures. This would be in line with previous studies that have shown lower prescribing rates for opioids in London. Key determinants of inappropriate opioid prescribing were multi-morbidity, increasing age, relative deprivation and female sex. This study has identified inequalities in opioid prescribing, with potential for avoidable drug dependencies and undesirable side effects. Identifying and addressing reasons for this variation will help improve prescribing quality. I think this would be worthy of further exploration looking at PIP trends overtime and validating these findings in a national database.

## U.21

### Building a replication model for the national rollout of PINCER using a social franchising approach.

**Presenter: Dr Sarah Rodgers**

Co-authors: Tony Avery, Hannah Barker, James Barrett, Lauren Fensome, Jennie Johnson, Kerry Oliver, Tony Panayiotidis, Martha Paren, Oli Smithson.

#### Institutions

PRIMIS University of Nottingham, Division of Primary Care University of Nottingham, Spring Impact, Health Foundation.

#### Abstract

##### Problem

PINCER is a proven pharmacist-led IT-based intervention to reduce clinically important medication errors in primary care. Having demonstrated its effectiveness in a randomised controlled trial, we then assessed whether PINCER could be 'scaled up' with the same effect. Findings from this further project showed that large scale rollout to 370 general practices was effective and demonstrated statistically significant reductions in hazardous prescribing (particularly for preventing gastrointestinal (GI) bleed). Our objective was to develop a replication model for the further scale and spread of PINCER using a social franchising approach and to use this model to roll PINCER out to at least 60% of GP practices in England over a five year period to make primary care prescribing even safer for patients.

##### Approach

Social franchising involves enabling another team or organisation to deliver a proven intervention to agreed standards under a franchise agreement, with the primary aim of maximising social benefit. Over the last two years, we have been funded by the Health Foundation to work with Spring Impact, a non-profit global leader in social replication, to implement their systematic five-stage process to design a replication model for the scale and spread of PINCER.

##### Findings

We have designed a replication model for the national rollout of PINCER using a social franchise approach, and are working with Medicines Optimisation Leads

from all 15 Academic Health Science Networks to roll PINCER out to GP practices across England. As of February 2020, 4,318 (62%) GP practices in England across 126 (66%) Clinical Commissioning Groups have engaged in the PINCER rollout. Of these, 2,264 (55%) practices have uploaded baseline data to the national PINCER comparative analysis service showing that a minimum of 21.9 million patient records have been searched to identify instances of potentially hazardous prescribing using 13 evidence-based prescribing safety indicators. Almost 176,000 at-risk patients have been identified in at least one prescribing safety indicator at baseline. Early findings from analysis of follow-up data from 816 practices show overall reductions in numbers of at-risk patients (12.3%) with greatest reductions for those indicators associated with GI bleed (23.1%). Over 1,100 pharmacists (of a total 1,579 individuals) have been trained to deliver the PINCER intervention and further training sessions are planned as the rollout progresses.

##### Consequences

We have used the concept of social franchising to develop a replication model for the national rollout of PINCER. Early findings have demonstrated that this approach has been successful in terms of both reach and impact. There is potential for this approach to be used for the scale and spread of other proven interventions in healthcare.

##### Funding Acknowledgement

We would like to thank the Health Foundation, NHS England and the Academic Health Science Network for funding this work.

## Delayed Antibiotic Prescribing for Respiratory Tract Infections: an Individual Patient Data Meta-Analysis

**Presenter: Beth Stuart**

Co-authors: Beth Stuart, Taeko Becque, Hilda Hounkpatin, Guiqing Yao, Shihua Zhu, Dankmar Böhning, Jennifer Bostock, Heiner C C Bucher, Michael Moore, Paul Little

### Institutions

University of Southampton, University of Leicester, Basel Institute for Clinical Epidemiology and Biostatistics

### Abstract

#### Problem

Antibiotics are still frequently prescribed for respiratory tract infections (RTIs), most of which are self-limiting and for which symptomatic benefit from antibiotics is modest at best. Delayed prescribing can be a useful strategy to reduce antibiotic prescribing. Whilst in some situations delayed antibiotic prescribing is appropriate, for other patients it may be unsuitable. It is important to understand which subgroups of patients may require immediate antibiotics and which patients might benefit from a delayed or no prescribing strategy.

#### Approach

This study undertook a systematic review in Cochrane Central Register of Controlled Trials, Ovid MEDLINE, Ovid Embase, EBSCO CINAHL Plus and Web of Science to identify all randomised controlled trials (RCTs) and observational cohort studies of delayed prescribing. The primary outcome of interest was symptom severity scores. Secondary outcomes include duration of illness and reconsultation. Interaction terms for differential effects in subgroups were explored in the following pre-defined groups: shorter prior duration of illness, age, fever at baseline consultation, comorbid lung condition and severity of symptoms at baseline consultation. IPD meta-analysis was conducted using a one-stage approach, using generalised linear mixed modelling with a random effect for study. All models controlled for baseline severity of illness and diagnosis. Propensity scores

were used as inverse probability weights to control for confounding in observational studies.

#### Findings

We obtained data from 4 observational studies and 9 RCTs, totalling 56,301 patients. For the primary outcome, there was no statistically significant difference in symptom scores between delayed and immediate antibiotics (mean difference 0.04;95% CI -0.05,0.13) nor between delayed and no antibiotics (MD 0.03;95% CI -0.13,-0.19). The symptom duration was slightly shorter in those given immediate antibiotics (RR 1.07;95% CI 1.00, 1.14).

Reconsultation was significantly less likely in those given a delayed prescription compared to those given no prescription (OR 0.69;95% CI 0.56,0.84). Subgroup analyses showed a statistically significant interaction term for those under 16 years. Compared to those aged 16-64, those aged under 16 were more likely to have improved symptom scores with delayed prescribing compared to none and slightly poorer symptom scores with delayed compared to immediate. However, the difference did not represent a clinically meaningful difference. There were no statistically significant interactions in any of the other subgroups.

#### Consequences

Delayed prescribing appears to be a safe and effective strategy for most patients, with no clinically significant increase in symptom severity in any of the pre-defined subgroups. Encouraging delayed prescribing as a tool in consultations may reduce reconsultation and is unlikely to be associated with an increase in symptoms or illness duration.

#### Funding Acknowledgement

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## U.23

### How can we support general practices to implement effective interventions to reduce unnecessary antibiotic use?

**Presenter: Sarah Tonkin-Crine**

Co-authors: Monsey McLeod, Aleksandra Borek, Anne Campbell, Alison Holmes, Chris Butler, Sarah Walker on behalf of the STEP-UP team.

#### Institutions

University of Oxford, Imperial College London, University of Southampton, Public Health England

#### Abstract

##### Problem

Antibiotic resistance is a worldwide public health priority. Interventions are required to reduce unnecessary antibiotic use. Several types of interventions are effective at reducing antibiotic prescribing by primary care clinicians and antibiotic use by patients. Three are: training in use of C-reactive protein point-of-care testing (CRP POCT), communication skills training for clinicians and use of delayed prescriptions (DP). However, these interventions appear to be rarely used in UK general practice. We sought to develop support materials to increase engagement and adoption of these three interventions in general practice.

##### Approach

We used the Person-Based Approach to inform the development of support materials. This approach combines theory, evidence and person-based approaches. We used intervention content from previous interventions shown to be effective and drew on relevant theories of change. We sought clinicians' views and experiences to make decisions about the content and delivery of materials in three stages:

- Focus groups with clinicians in 9 high-antibiotic prescribing practices discussing use of the three interventions.
- Four workshops, two with clinicians and two with citizens, discussing initial ideas for, and drafts of, support materials.

- Think-aloud interviews (22) with clinicians to feedback on draft support materials.

##### Findings

Focus group data indicated that clinicians struggled to identify scenarios for which interventions would be most useful and often had contradicting views. Clinicians had no access to POCT CRP, mainly due to cost, but varied in whether, and how, they thought tests would be helpful. Training in communication skills and use of DP were sometimes seen as unnecessary but some were open to the idea of refining their existing skills for "difficult patients". In workshops, clinicians wanted brief materials that covered multiple scenarios. They suggested one patient booklet which would "suit all ages and cover all infections" and communication skills on "one A4 sheet". Preference for type of CRP POCT was based on cost and time to result. Clinicians felt that a 'champion' within each practice could help adoption of interventions. Citizens initially struggled with the concept of a DP but identified communication strategies which could be better understood by patients. In think aloud interviews clinicians requested minimal content, clear links to evidence, examples of other clinicians' experience and easily accessible summary sheets. Some particularly liked examples of alternative explanations for patients when not giving a prescription or when giving a DP. Some terminology needed to be adapted to better resonate with clinicians.

##### Consequences

There appeared to be a clash between the format and length of support materials which clinicians considered ideal and the breadth and detail of content which was thought to be useful. With detailed input from clinicians we developed support materials for practices which are currently being evaluated in an implementation study with 9 high-antibiotic prescribing general practices.

#### Funding Acknowledgement

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(HPRU) in Healthcare Associated Infections and Antimicrobial Resistance at the University of Oxford in partnership with Public Health England (PHE) [HPRU-2012-10041], and the NIHR Oxford Biomedical Research Centre. The support of the funders is gratefully acknowledged.

## U.24

### Optimising a whole-person-centred approach to stopping medicines in older people with multimorbidity and polypharmacy: the Tailor Medication Synthesis

**Presenter: Amadea Turk**

Co-authors: Amadea Turk, Richard Byng, Tom Fahey, Ruairaidh Hill, Janet Krska, Daniel Lasserson, Michelle Madden, Dee Mangin Kamal Mahtani, Elizabeth Mitchell, Edward Ranson, Nia Roberts, Emma Wallace, Tom Walley, Geoff Wong, Joanne Reeve

#### Institutions

University of Oxford, University of Liverpool, University of Hull, University of Exeter, University of Birmingham, McMaster University,

#### Abstract

##### Problem

Problematic polypharmacy, the concurrent use of multiple medicines in a single person, on a long term basis when the intended benefit is not achieved, is a significant problem in Primary Care. Polypharmacy can be appropriate, extending life expectancy and improving quality of life. However ~40% of people taking 5 or more medicines a day report feeling significantly burdened by their medication. Discontinuing long-term-medicines can cause anxiety and concern for clinicians and patients. Despite guidelines on stopping inappropriate medicines, clinicians report a broader problem of knowing how and when to stop medication that may be clinically 'appropriate' but not right for individual patients. Balancing clinical and patient and theory carers needs and priorities is increasingly recognised as a research and policy imperative.. To help clinicians and patients make these often challenging decisions on optimising medications, we are conducting a realist review. It will unpack and understand optimisation of medicines to

answer the broad question "what works, for whom, in what circumstances, to what extent, how and why?"

##### Approach

The Tailor Medication synthesis is a 21 month NIHR funded project comprising of a parallel scoping review and realist review. Here we report the realist review component. The realist reviews are a theory-driven approach to synthesising qualitative, quantitative and mixed-methods literature. Our review followed established steps and the RAMESES quality standards for realist reviews (<http://www.ramesesproject.org>). Briefly, after initial programme theory development we systematically search electronic databases, articles were screened, data extracted and analysed to explore issues surrounding the patient-centred management of polypharmacy. Relevant sections of text were analysed both inductively, retroductively and deductively and used to critically challenge, examine and refine the programme theory.

##### Findings

Early findings highlight complex social, professional and system-level dynamics underlying patient-centred medication management. Prescribing is influenced by a range of social norms. For example the symbolic value of medicines for both prescribers and patients and their families shape the ways in which medicines are prescribed, deprescribed and managed in general. Furthermore the presence of multiple prescribers and transitions between primary and secondary care make it difficult to keep track of medication-related decision making. This is compounded by the absence of unified electronic systems. Clinicians also report they lack the skills necessary to manage polypharmacy and multimorbidity making them reluctant to challenge the decisions made by clinicians in other specialties.

##### Consequences

Optimising medication is a complex process and whilst primary care clinicians can be skilled up to do so, any training must consider the important influences of societal and professional norms and practices on this process and create an enabling environment.

##### Funding Acknowledgement

NIHR HTA 17/69/02

## V.1

### Exploring the Career Intentions of primary care doctors in Kuwait: A questionnaire survey

**Presenter: Abdulaziz Alhenaidi**

Co-authors: Jill Morrison, Kate O'Donnell

#### Institutions

Department of General Practice and Primary care,  
University of Glasgow

#### Abstract

##### Problem

The recruitment and retention of primary care doctors have been one of the prominent dilemmas internationally. Kuwait has also been suffering from this problem, in which a high number of doctors have left clinical practice for administrative positions, and others have resigned from the Ministry of Health in Kuwait. As part of a wider study of recruitment and retention, this study aimed to explore the career intentions of primary care doctors in Kuwait.

##### Approach

A cross-sectional survey of medical doctors working in primary care services in Kuwait was conducted. All primary care doctors working in a sample of primary care medical centres were included, with no limitations to the physicians' age, nationality, or qualification. However, doctors working in specialised clinics, such as surgery, were excluded from the study and doctors currently in the family medicine training programme were excluded. The survey was distributed in 25 centres broadly representative of size and geographical location (urban vs less urban), representing more than >25% of the primary care centres in Kuwait. The survey instrument, which was designed for the UK, was adapted to fit the Kuwaiti health care system and piloted before distribution. Analyses included Chi-square tests and regression analysis.

##### Findings

One hundred ninety-one surveys were returned with 80.9% response rate. The majority of the participants were female, aged 35 to 44 years, and non-Kuwaitis. Approximately one-third of the participants were senior registrars and the majority, 27%, hold the

qualification of medical degree only. Most were working in centres which operated 17 hours per day and covered a population of up to 25000. The most common five-year career plan was to increase teaching and research activities followed by increasing management responsibilities. However, 23.6% of participants stated their desire to leave primary care. Several factors were identified as important in contributing to participants' decision to leave: workload, working hours, job satisfaction, and family commitments. Factors which would encourage them to stay in primary care were reduction in workload and working hours, increasing clinical autonomy and annual leave, providing protected time for education and increasing payment. An intention to leave primary care was associated with working for less than ten years, being currently dissatisfied, and being less satisfied with work in the last two years. Workload, working hours, and spending time on unimportant tasks were identified as important drivers by those intending to quit primary care. Reducing workload, reducing administrative tasks, and shorter clinic hours were significant encouraging factors for remaining in primary care.

##### Consequences

Work-related factors and job satisfaction were the leading influencers on primary care doctors' decisions to leave practice in the next five years. Policies are required to address primary care physicians' working conditions and create a more supportive environment to improve their retention.

## Why do primary care doctors quit clinical practice in Kuwait? A qualitative study

**Presenter: Abdulaziz Alhenaidi**

Co-authors: Jill Morrison, Kate O'Donnell

### Institutions

Department of General Practice and Primary care,  
University of Glasgow.

### Abstract

#### Problem

The recruitment and retention of primary care doctors have been one of the prominent dilemmas internationally. Kuwait is also suffering from the same problem, in which a high number of doctors left clinical practice for administrative positions, and others have resigned from the Ministry of Health. Using a qualitative approach, this study aimed to explore the main factors influencing the decision to quit among primary care doctors in Kuwait.

#### Approach

Qualitative semi-structured interviews were conducted with twenty primary care doctors working in Kuwait. Participants were recruited during a previous cross-sectional study, in which participants asked if they wish to be involved in this interview study. Purposeful selection from those willing to participate was carried out to ensure representation by gender, age, and nationality (Kuwaiti vs non-Kuwaiti). Interviews were transcribed by professional transcribers, and thematic analysis was conducted.

#### Findings

Eleven interviews were done with males, of which three were Kuwaitis and eight were from other nationalities; nine interviews were conducted with female doctors, seven Kuwaitis, and two were from other nationalities. Participants age ranged from 29 to 68, although most were in their thirties. Although some participants had replied in the survey that they did not wish to quit their primary care job, during the interview they indicated that they would quit if the circumstances were right. Most participants felt that the ideal of primary care is not applied in Kuwait, with a lack of clinical autonomy frequently cited as an

issue. Work-related factors, such as workload and working hours, were among the leading influencers to quit. Other issues related to health system organisation, e.g. the lack of appointment systems.. Although relationships with patients were cited as a positive factor, the increase in patient demand for documentation relating to sick leave was viewed as a particularly negative aspect of primary care work in Kuwait. Participants also talked about the shortage of doctors, and the discrepancy between governorates in the allocation of doctors and resources. Promotion systems were criticised as there is no formalised career development or promotions system, this was a particular difficulty for non-Kuwaitis. Introducing the concept of primary care doctors with a special interest was viewed as a positive way of supporting doctors' retention in primary care. Increasing opportunities for Continuous Professional Development and medical education activities, with dedicated time allocated for such activities, were also suggested as key retention strategies.

#### Consequences

Work-related factors, clinical autonomy, and rules and regulations were the main issues influencing primary care doctors' decisions to leave. Primary care reform policies, especially establishing appointment systems and primary care doctors with special interest might increase doctor's retention. Increasing the recruitment of primary care doctors and decreasing the discrepancy of doctors and resources might also improve doctor's retention.

## How can we support service delivery in primary care through role substitution?

**Presenter: Bethany F Anthony**

Co-authors: Miss Bethany F Anthony<sup>1</sup>, Professor Nefyn H Williams<sup>2</sup>, Dr Joanna M Charles<sup>3</sup>, Dr Julia Hiscock<sup>4</sup>

### Institutions

1School of Healthcare Sciences, Bangor University,  
2Department of Health Services Research, Institute of Psychology, Health and Society, University of Liverpool  
3Centre for Health Economics and Medicines Evaluation (CHEME), Bangor University,  
4North Wales Centre for Primary Care Research, Bangor University

### Abstract

#### Problem

The workload crisis in primary care is one of the most urgent and important issues facing the delivery of primary care in the UK. The increased use of nurses and allied health professionals to perform some roles instead of GPs is now widespread. A scoping review of reviews identified qualitative and economic evidence gaps in the literature. Based on this, the aims of this study were to explore the advantages, disadvantages and consequences of role substitution in primary care.

#### Approach

A mixed methods design was chosen to respond to the breadth of the study aims. Two systematic reviews were conducted to uncover the economic and qualitative evidence on role substitution in primary care. A survey of twenty primary care cluster leads was run to assess the current use of role substitution within primary care practices in Wales. Qualitative interviews were conducted with twenty-one purposively sampled patients and healthcare professionals and analysed using Framework to explore the barriers and facilitators to role substitution. A health economic analysis (case study of two practices) was used to explore the budget impact of role substitution in primary care.

#### Findings

The systematic review identified six economic evaluation studies. There was some evidence that substituting GPs with nurses to treat common minor health problems is cost-effective. A separate qualitative systematic review focusing on pharmacists, physiotherapists and occupational therapists identified eleven qualitative studies; highlighting a number of barriers and facilitators to pharmacists and physician associates providing general medical services instead of GPs. The primary care cluster leads who completed the survey reported that on average, 96.6% of practices across these clusters were using role substitution. Respondents offered a variety of strategies to increase the uptake of role substitution including ongoing support to employ and train allied health professionals and increase independent prescribing by nurses and pharmacists. The budget impact analysis indicated a reduction in GP appointments, and a rise in nurse and allied health professional consultations across the two practices. The qualitative analysis is ongoing and includes findings on allied health professional and care navigator roles, patient factors and factors relating to the primary care team and wider healthcare system.

#### Consequences

This PhD study has suggested a need for information, guidance or standards on role substitution to help the development of this model of care. Despite the growing prevalence of role substitution, a lack of information for practices was identified on how best to implement role substitution successfully and how best to enhance service delivery under this model. The fact that these standards do not yet exist could have significant implications on service delivery as well as patient care and satisfaction.

#### Funding Acknowledgement

This PhD studentship is funded by Health and Care Research Wales.



## An opportunity to future-proof the primary care workforce? A qualitative study of paramedic home visiting in primary care

**Presenter: Dr Robert Barker**

Co-authors: Rachel Stocker, Siân Russell, Barbara Hanratty

### Institutions

Newcastle University Population Health Sciences Institute

### Abstract

#### Problem

Primary care services in England are at saturation point. Integrating community paramedics into primary care teams is advocated as an innovative way to build resilience in the primary care workforce. However, there is little evidence for the effectiveness of community paramedics working in primary care, or an understanding of how paramedics and GPs might develop interdisciplinary working. The aim of this project is to explore experiences and acceptability of an acute primary care home visiting service delivered by paramedics.

#### Approach

Three practices in a rural area of north east England, with a combined patient population of approximately 20,000 patients, piloted a paramedic acute home visiting service, between October 2018 and March 2019. Four focus groups were conducted, three with each primary healthcare team (14 participants) and one with five community paramedics, and nine individual patient interviews from across the three practices. Data were analysed using a modified thematic framework approach.

#### Findings

Community paramedics integrated successfully into primary care teams, to deliver an acute home visiting service. They relieved some of the workload pressures faced by GPs, providing increased time for care planning and other duties. Role perception and professional boundaries dominated the discourse within focus groups. Initially, GPs were apprehensive because of their preconceptions about the paramedic

role and skillset, stemming from traditional professional identities. Collaboration was a key factor in mitigating this uncertainty and supporting interdisciplinary working. Paramedics had opportunities to discuss their clinical decisions with GPs, allowing the two professional groups to learn from each other. By the end of the pilot phase, GPs and paramedics were working together to define their roles and re-shape their professional boundaries. Patients held traditional perceptions of the paramedic role. Some feared a visit from a paramedic would result in hospital admission, or were concerned that paramedics were being taken away from their emergency response role. These fears were overcome as patients appreciated the interpersonal skills and thoroughness of paramedics. However, patients' confidence in the paramedics was based on an awareness that they were working collaboratively with GPs.

#### Consequences

The introduction of paramedics into the primary care skill-mix provides an important opportunity to future-proof the primary care workforce. Practice teams need time to find a way of working with paramedics that fits their local context. Further research is required to assess the impact on healthcare outcomes such as conveyance to hospital, and to explore the potential of paramedics to take on other aspects of primary care, such as consultations in GP practices.

#### Funding Acknowledgement

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## GP burnout, patient safety, and the importance of connecting with colleagues.

**Presenter: Louise Hall**

Co-authors: D.B. O'Connor, I. Watt, J. Johnson

### Institutions

University of Leeds, Bradford Institute for Health Research, University of York, Hull York Medical School

### Abstract

#### Problem

Levels of burnout in general practitioners (GPs) are consistently higher than the mean across physicians specialties. A recent UK survey found that 73% of GPs reported severe exhaustion and 49% severe disengagement. Burnout is linked with a range of negative personal and organisational outcomes, including suicidality and reduced patient safety. Potential interventions for burnout have often not been investigated within primary care settings. Furthermore, existing research has primarily focused on reducing burnout, without also investigating whether patient safety has improved. One potential low cost and pragmatic intervention could be the introduction of scheduled, shared breaks: these could reduce isolation through providing opportunities for positive social interactions with colleagues, whilst also allowing time for physical needs to be met. However, there is a lack of evidence exploring this. This study aimed to examine whether: 1) on days when physicians took a break at work, their levels of burnout improved, along with their ability to provide safe care; 2) effects of taking a break only impacted on burnout/safety that same day, or whether effects carried over onto the following day; 3) taking a break per-se was associated with lower burnout/improved safety, or whether positive interactions with colleagues were the central aspect of the break.

#### Approach

A within-subjects, interval contingent, daily-diary design was used. Fifty-eight GPs in the UK completed short online questionnaires before and after work, for seven consecutive days. Burnout, patient safety incidents, safety perceptions, and work breaks, were

measured. Hierarchical linear modelling was conducted.

#### Findings

Taking at least one break during the working day was associated with lower disengagement that day, and lower exhaustion the following day. Having a positive interaction during the break was important: GPs who had at least one break with at least one positive interaction reported significantly lower overall burnout, disengagement, and exhaustion that day, and higher perceived patient safety that day, as well as lower exhaustion and improved perceptions of patient safety the following day.

#### Consequences

Having a break during the work day where GPs can interact with colleagues may be one path to alleviate and prevent burnout, and improve patient safety. Whilst it may not be the ultimate solution to the current GP shortages, it is practical, feasible, and could be implemented with relative ease compared to alternative solutions (e.g. recruiting more staff to reduce workload burdens and other job-stress causes). These findings have relevance for healthcare managers; the finding that the opportunity for positive social interactions was of key importance, suggests that breaks need organising at the organisation level, so physicians can take these together. GPs who are able to carve out time to take breaks, as a personal intervention, are unlikely to gain the full benefit of these, if they are not coordinated with their colleagues' breaks.

#### Funding Acknowledgement

This study was undertaken as part of a PhD studentship, awarded jointly by the University of Leeds, and Bradford Institute for Health Research (funded by the National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care Yorkshire and Humber).

## Helping us grow generations of GPs in Derbyshire (HUGG- GP Derbyshire). A longitudinal support network (LSN) pilot study

**Presenter: Shehla Imtiaz-Umer**

Co-authors: Shehla Imtiaz-Umer<sup>1</sup>, Anjla Sharman<sup>2</sup>, Jaspal Taggar<sup>3</sup>, Gail Allsopp<sup>3</sup>

### Institutions

1GP Task Force 2Health Education East Midlands  
3University of Nottingham – GP Academy

### Abstract

#### Problem

These are unprecedented times in the GP workforce with a reported a 1.2% reduction in GPs up to September 2019. In Derbyshire, work is being undertaken to address the recruitment & retention crisis. The Derbyshire GP academy applied the Waas report recommendation by bringing GP trainees into the medical school to teach students. The project showed the expected benefits from near-peer teaching, but also showed increased resilience and desire in the GP trainees to stay working in the region. Focus groups showed linking GP trainees, students and academic GPs made them feel part of a supportive team. To evaluate the impact of longitudinal support, we took those interested in primary care from medical school, through GP training, and all stages of the GP career, including retired GPs; joining them together in networks to enable us to evaluate the feasibility, barriers and benefits of this approach. We aim to determine if it's feasible to set up a LSN in Derbyshire covering all stages of general practice from medical school to retirement, reviewing the benefits and barriers of this approach when building resilience, promoting recruitment and retention locally.

#### Approach

42 participants were randomly split into 5 LSN's with all stages of GP represented in each. Each month (n=6), a different method of communication (e.g. social media, face to face meeting) are given to the LSNs to encourage group communication. A mixed method approach, using focus groups and surveys, comprising 5-point Likert scale, (1=low; 5=high) and

free text open questions are undertaken at the beginning and end of the study, to ascertain information about the experience and views of participants. Each month, the number and type of contact within each LSN are measured. Quantitative analyses and thematic analyses are to be conducted for closed and open questions, respectively.

#### Findings

The initial survey and focus group have been completed. Monthly data continues to be collected. Once the final focus group has been completed, formal analysis of the results will be undertaken. The mixed method nature of the study with regular collection of data and paired (beginning and end) surveys and focus group ensures the data we collect is robust and trustworthy, although the small number of participants could add bias.

#### Consequences

Building on the soft data collated with the GP academy regarding the impact of LSNs on GPs in Derbyshire; we aim to determine the best approach to setting up and sustaining these networks, the best method of communication within the LSN and ideal frequency of contacts. By establishing the benefits and barriers of using such schemes, our aim is to then run a larger project starting in September 2020 based on these findings. HUGG-GP would be easily transferable to other areas once this data is available and shared.

### Funding Acknowledgement

GP Task Force

## Have Primary Care Networks Increased Practice-Level Workforce Inequalities?

**Presenter: Claire Nussbaum**

Co-authors: Marcello Morciano, Rebecca Fisher, Efthalia Massou, John Ford

### Institutions

Institute of Public Health, University of Cambridge; Health Organisation, Policy and Economics, University of Manchester; Health Foundation; Department of Public Health and Primary Care, University of Cambridge

### Abstract

#### Problem

In June 2019 Primary Care Networks (PCNs) were established to bring together practices covering 30,000 to 50,000 patients. The Long Term Plan set out to expand primary care recruitment of additional roles including pharmacists, social prescribing link workers, physiotherapists, physician associates, and paramedics. With limited staff in these specific roles available, workforce shortages may disproportionately affect practices and PCNs in more deprived areas. The overall aim of this research is to assess the impact of PCNs on practice-level workforce inequalities and determine which types of PCNs are best or least able to recruit.

#### Approach

We will assess the trends in practice-level workforce inequalities over time. The Slope Index of Inequality (SII) and Relative Index of Inequality (RII) for GPs, nurses, other clinical staff, and each additional role will be calculated at each quarter from September 2015 to March 2020, with and without adjustment for patient need using the Carr Hill formula. This will allow for an evaluation of whether the introduction of PCNs in 2019 changed or exacerbated these inequality indices. We will then identify broad types of PCNs using Latent Class Analysis (LCA) based on deprivation, rural/urban classification, patient age structure, patient satisfaction and care quality ratings. Finally, each LCA group will be evaluated on the basis of its ability to recruit additional roles throughout the first

fiscal year of PCN rollout, from March 2019 to March 2020.

#### Findings

As the practice-level workforce data for December 2019 and March 2020 have yet to be released, data analysis is still in progress and specifically findings regarding additional roles recruitment is still preliminary. However, emerging findings suggest that, after adjustment, there is an inverse relationship between deprivation and number of paramedics per 10,000 patients, with fewer paramedics employed in more deprived deciles. This trend in inequality appears to be increasing from September 2015 to September 2019. Moreover, for GPs and for clinical staff excluding GPs and nurses, there is similarly an inverse relationship between deprivation decile and workforce. On the contrary, the number of physician associates employed in more deprived areas is relatively higher than in less deprived areas, especially in recent quarters. The inequality indices and trends over time for physiotherapists, pharmacists, social prescribing link workers and nurses are less clear with the workforce data available thus far. Evaluation of the recruitment ability of certain types of PCNs is still in progress as it is dependent on December 2019 and March 2020 workforce data.

#### Consequences

Policies regarding PCNs should work to limit both workforce and health inequalities, with funding and resources allocated proportionate to need. Reducing health inequalities is a long-term goal of the NHS, but if workforce inequalities continue to increase so will health inequalities.

## Operational failures and how they influence the work of general practitioners: A qualitative study in primary care

**Presenter: Carol Sinnott**

Co-authors: Alexandros Georgiadis, Mary Dixon-Woods

### Institutions

THIS Institute (The Healthcare Improvement Studies Institute), University of Cambridge; ICON Plc, The Translation & Innovation Hub Building, Imperial College London

### Abstract

#### Problem

General practice faces a workforce recruitment and retention crisis. While the pressures experienced by General Practitioners (GPs), including unmanageable workloads, the complexity of patients' needs and policy expectations to move more care from hospitals to the community have been well documented, there has been less focus on whether the wider health system facilitates the work of GPs by supporting an efficient primary care work environment. This study aims to understand what and how system-level operational failures in the primary care work environment interfere with and influence GPs' work, with a view to identifying failures that may be tractable to improvement.

#### Approach

We conducted a qualitative interview study, using "operational failures" - defined as disruptions, inadequacies or errors in the information, supplies, or equipment needed for patient care - as a sensitising concept. Twenty-one GPs were recruited via the East of England Clinical Research Network, using criteria of length of time since qualification, location, and practice size. The technique of chart-stimulated recall was utilised during interviews. Analysis was based on the constant comparative method.

#### Findings

Operational failures experienced by GPs arose mainly from inadequate channels of communication external to their own practices, but also related to problems in

practice technology and suboptimal distribution of work within practices. GPs were obliged to undertake compensatory labour to fulfil their duties of overseeing, coordinating and safeguarding patients' care. Though individual operational failures often took only minutes to resolve, the additional strain they imposed in the context of already stretched daily schedules, threatened job satisfaction, patient safety and the quality of care. Though GPs often believed that working around these problems was the simplest solution, compensatory labour may be counterproductive in the longer term by keeping problems obscured as learning opportunities.

#### Consequences

Operational failures within general practices and the wider healthcare system interfere with and configure GPs' work and signal system-level weaknesses that cause pressure within the primary care work environment. Using failure occurrence as a trigger for improvement efforts at a local and collective level will be critical to making the primary care work environment more attractive and efficient.

#### Funding Acknowledgement

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## W.1

### Do school students want to be General Practitioners?

**Presenter: Magdy Abdalla**

Co-authors: Blanchard, D., Beddows, J., Hammond, E., Hay, F., Jensen, K., Panesar, A., Smithson, S, Webb, M. Protheroe, J.,

#### Institutions

School of Medicine. Keele University

#### Abstract

##### Problem

General practice is currently facing a recruitment crisis. One possible solution suggested is to raise awareness in high school students of general practice and the role of General Practitioners (GPs).

##### Approach

For the past two years, we have organised a “My day in General Practice” for year 12 college and school students who were participating in Keele’s widening participation program “Steps 2 Medicine”. They were offered the opportunity to spend a full day in a local GP surgery. The students were briefed about the visits, especially regarding confidentiality, behavior and dress code. Each student completed a pre-visit questionnaire to explore their views of general practice and the role of GPs. The practice visit was organised using a simple observation and activity log sheet entitled “My day in General Practice”. Following the visits, students gave written and verbal feedback and their attitude toward general practice was reassessed.

##### Findings

Exposure of college and school students to the authentic learning environment of general practice can change their attitude towards the role of GPs and the attractiveness of general practice as a future career.

##### Consequences

This will likely impact on applications to medical school and improve diversity of future health professionals.

## W.2

### Rapid and cost-efficient recruitment of focus group participants using Instagram

**Presenter: Richard Ma**

Co-authors: Ms Rebecca Blaylock, Dr Lorna Hobbs, Professor Helen Ward, Professor Sonia Saxena

#### Institutions

Imperial College London, British Pregnancy Advisory Service (BPAS), Tavistock and Portman NHS Foundation Trust

#### Abstract

##### Problem

Recruiting individuals into studies such as trials, focus groups and interviews can be difficult. Often this process can be time consuming, resource intensive and particularly for participants who might be “hard to reach”. Our research project includes focus group study of young women between ages of 16 to 24 years on their experiences on using contraception. We aimed to recruit between 8 to 12 people for each of 16-19 and 20-24 age-based focus groups.

##### Approach

Following advice from our patient and public involvement group, we designed a poster for social media format (including a £50 Amazon voucher) and posted on Twitter account of one of the authors. After a period of poor response, we chose another platform – Instagram – and used their promotions feature. There are guidelines for promoting content on Instagram (which is owned by Facebook). This includes subtle differences in wording that do not inadvertently disclose personal information for anyone who interacts with the advertisement. The Instagram feature allows targeted promotion according to gender, age, location and content. The cost of promotion was a product of the number of days of promotion and the intensity of exposure each day, i.e. the same budget could pay for a longer, less intense promotion or vice versa. We had a budget of £60 for recruitment and planned to run the promotion for a week.

## Findings

At the time of the promotion, the Instagram account used by one of the authors had a small following of fewer than 20 people. We had just over 30 enquiries within three days and had to stop the promotion due to high demand. We had 30 participants who responded and requested study information; nine participants confirmed and attend the focus group for 16 to 19 years and ten attend focus group for 20 to 24 years. There was a total of 217 promotion clicks and 284 profile visits, 76% of which were from the promotion alone. The promotion reached 3860 accounts, with 5629 impressions, 77% were from the promotion alone. The total spend for the promotion was £18.48 or 31% of the £60 budget. The recruitment cost was less than £1 per participant.

## Consequences

Instagram can be a rapid and cost-efficient way of recruiting participants especially young women. This and other social media platforms might be useful ways to target recruitment for research depending on the demographic. However, there are ethical considerations when using social media to recruit participants for research studies. Researchers need to consider how to protect potential participants from privacy breaches or inadvertently sharing potentially identifying information about themselves.

## Funding Acknowledgement

RM was funded by an NIHR Doctoral Research Fellowship SS and HW have received funds from NIHR School for Public Health Research

## W.3

### Views and experiences of managing eczema: systematic review and thematic synthesis of qualitative studies

#### Presenter: Emma Teasdale

Co-authors: E Teasdale, I Muller, K Sivyer, D Ghio, K Greenwell, S Wilczynska, A Roberts, MJ Ridd, N Francis, L Yardley, KS Thomas, M Santer

#### Institutions

University of Southampton, University of Bristol, University of Nottingham

## Abstract

### Problem

Eczema is a common skin condition that has a substantial impact on quality of life. Increasingly, qualitative approaches have been adopted to explore people's perceptions of eczema and eczema treatment. Synthesising qualitative studies can provide a comprehensive overview of existing literature, greater understanding of people's perspectives and experiences and can inform clinical practice. We sought to synthesise existing qualitative studies exploring the views and experiences of people with eczema and parents/carers of children with eczema about the condition and its treatment.

### Approach

We systematically searched four databases (MEDLINE, PsycINFO, CINAHL and EMBASE) from the earliest date available to February 2019. Papers were selected that primarily focused on views and experiences of eczema and eczema treatments, and barriers / facilitators to eczema self-management. We excluded papers that focused solely on models of health service provision or the views and experiences of health professionals. No language restrictions or date limits were placed on the search. Reference lists of selected papers were searched for additional relevant papers. Two authors and two additional research assistants performed assessment of study quality and data extraction. A thematic synthesis approach was used to synthesise the findings.

### Findings

We identified and synthesised 39 papers (reporting 32 studies) from 13 countries exploring the views and experiences of 1,007 participants. Four key themes were identified 1) Eczema not viewed as a long-term condition, 2) Significant psychosocial impact of eczema not acknowledged by others, 3) Hesitancy (patient uncertainty) about eczema treatments and 4) Insufficient eczema information and advice. Our findings suggest that people with eczema and parents of children with eczema experience frustration at having to manage a condition that is seen by others as mundane but has significant psychosocial impact and treatment burden and concerns. This frustration appears to be exacerbated by experiences of conflicting and inconsistent information and advice,

from both health professionals or friends, family and others.

## Consequences

Our synthesis suggests that effective self-management of eczema could be supported by addressing beliefs and concerns about treatments and seeking positive ways to promote a 'control not cure' message. Acknowledging the significant psychosocial impacts of eczema and burdensome nature of treatment as well as providing clear consistent information and advice or signposting towards reliable information, may address people's concerns that distress caused by the condition is not taken seriously.

## Funding Acknowledgement

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## W.4

### Examining the impact of an innovative online qualitative study (netnography) in developing a clinical pharmacist-led review for persistent pain patients in primary care (PROMPPT study)

**Presenter: Charlotte Woodcock**

Co-authors: Julie Ashworth, Nicola Cornwall, Sarah A Harrison, Alison Buttery, Clare Jinks, Christian Mallen, Lisa Dikomitis

## Institutions

School of Primary, Community, & Social Care, Keele University

## Abstract

### Problem

Qualitative methods are central to adopting a person-centred approach to intervention development in order to maximise intervention effectiveness. Face-to-face interviews and focus groups are often used, but risk omitting views of those unable or unwilling to

participate in person, a barrier more likely to affect those living with a chronic illness or stigmatized condition. Online methods have the potential to extend participant inclusivity and contribute towards a comprehensive assessment of an intervention's acceptability and inform its development. To further understand the value of online methods, we compared findings from face-to-face interviews with those from an online discussion forum used in the iterative development of a clinical pharmacist-led primary care review for patients prescribed opioid medicines for persistent pain.

## Approach

An online discussion forum was available for 11 weeks, with a new discussion topic posted approximately weekly. In this time 69 participants joined the forum, with 31 of these posting 160 comments ranging in length from 19 to 2,143 words. The discussion topics (n=10) and semi-structured interviews (n=15) were informed by behaviour change theories, and explored patient experiences of living with persistent non-cancer pain, pain management and taking opioid medicines, to identify facilitators of and barriers to delivering a pain review in primary care. All interviews were carried out by one researcher, whilst the forum was moderated by a team of six researchers specialising in behaviour change, psychology, applied health research and clinical pain management. A framework approach to data analysis was used, and findings between the two methodological approaches were compared in terms of thematic codes.

## Findings

Preliminary findings indicate thematic overlap between interview and forum data including provision of multidisciplinary care, importance of clinical pharmacist consultation skills, and development of individualised plans for patients' pain self-care. The discussion forum attracted participants who had experience of reducing off opioids and led to additional themes concerning patient support when reducing opioid medicines, and alternative ways to help manage pain and self-care strategies. Findings fed into refining the content of the PROMPPT intervention and training programme ahead of a formal feasibility study.

## Consequences

The present study highlights the contribution of online qualitative methods in maximising intervention development. Inclusion of a discussion forum allowed participants with different experiences of using and changing pain medicines, from a wider geographical region to engage in research at a personally convenient time and location. Initial findings suggest research targeting patient populations involving chronic and/or stigmatized conditions could benefit from including online methods as an accessible alternative to face-to-face approaches when evaluating facilitators of and barriers to intervention implementation and delivery.

## Funding Acknowledgement

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## X.1

### International Primary Care Respiratory Group (IPCRG) Research Prioritisation Exercise: A Qualitative Analysis of the Most Important Respiratory Research Themes Relevant to Primary Care as Viewed by Clinicians Worldwide

**Presenter: Dr Arwa Abdel-Aal**

Co-authors: Dr Arwa Abdel-Aal: Clinical Research Fellow in Primary Care, HYMS. Dr Rachel Jordan: Reader in Epidemiology and Primary Care, University of Birmingham

## Institutions

For a full list of authors and their affiliations, please follow this link:

<https://www.theipcr.org/display/DoResearch/Research+Prioritisation+2020>

## Abstract

### Problem

Respiratory diseases impose a substantial burden on global health where over 1 billion people worldwide suffer from respiratory conditions. Primary care has a fundamental role in identifying, diagnosing and managing respiratory diseases and good quality evidence is needed to effectively manage respiratory conditions worldwide. In 2010, the International Primary Care Respiratory Group (IPCRG) published its Research Needs Statement which was followed by an e-Delphi prioritisation exercise in 2012 to identify the most important respiratory research questions that are relevant to primary care. An updated IPCRG research prioritisation exercise that considers a wider range of clinical conditions and embodies global perspectives is currently due. Aim: To identify the most important respiratory research themes from the perspective of primary care clinicians in low-, middle- and high-income countries.

### Approach

An online e-Delphi was conducted to prioritise the most important research questions for respiratory primary care. Clinicians who manage people with respiratory conditions in the community were recruited via the IPCRG network of 34 member countries. An initial open questionnaire elicited participants' views on the most common and important respiratory conditions seen in their daily practice. In addition, they were asked to suggest 5-10 research questions that are relevant to primary care. Here we report a qualitative analysis of participants' responses to identify the main cross-cutting respiratory research themes relevant to primary care practitioners. Thematic analysis (Using the Braun and Clarke 6-step approach) was conducted using NVIVO software.

### Findings

112 participants from 27 countries responded to the open questionnaire and 608 research questions were suggested. The most common and important conditions reported were COPD, asthma and respiratory infections. For common conditions, asthma was the most frequently mentioned single condition (17.2%), followed by COPD (15.2%) and upper respiratory tract infections (URTI) (7.1%). Asthma was the most clinically important condition

mentioned (25.7%) followed by COPD (24.5%) and URTI (5.8%). Five main themes emerged from the thematic analysis: uncertainties about the best way to diagnose and treat respiratory conditions in primary care; need for locally relevant and accessible guidance; need to explore methods to better empower patients to manage their own conditions; the role of the wider healthcare team, and the need for simple point-of-care tests in the diagnosis, monitoring and management of respiratory conditions in primary care.

### Consequences

Participants suggested a broad range of questions within 5 themes, some of which reflected a basic lack of knowledge of evidence-based guidelines. These results emphasise the need for better methods of educating practitioners to provide evidence-based practice and the development/evaluation of locally relevant approaches accessible and affordable for primary care in all settings. The next stage of the e-Delphi will provide a refined list of relevant research questions for prioritisation.

## X.2

### Self-management interventions to reduce healthcare utilisation and improve quality of life among patients with asthma: a systematic review and network meta-analysis

**Presenter: Alex Hodkinson**

Co-authors: Peter Bower, Christos Grigoroglou, Salwa S Zghebi, Hilary Pinnock, Evangelos Kontopantelis and Maria Panagioti

### Institutions

University of Manchester

### Abstract

#### Problem

Asthma is one of the most common chronic conditions worldwide. Guidelines for treating asthma recommend the use of self-management interventions. However, it is unclear which self-management models are most effective at reducing healthcare utilisation and improving quality of life (QoL).

### Approach

A systematic review and network meta-analysis (NMA) of randomised controlled trials to compare the effects of three different Self-management intervention models (multi-disciplinary case-management, regularly-supported self-management and minimally-supported self-management) and self-monitoring models, against usual care and education. The primary outcomes include healthcare utilisation (i.e. hospitalisation or emergency visit) and QoL. Summary standardised mean differences (SMDs) and 95% credible intervals (95%CrI) were estimated using Bayesian NMA with random-effects. Heterogeneity, inconstancy and publication bias were assessed.

### Findings

From 1,178 citations we included 105 trials comprising 27,767 participants. In terms of healthcare utilisation, both multi-disciplinary case-management (SMD=-0.18, 95%CrI: -0.32 to -0.05) and regularly-supported self-management (SMD=-0.30, 95%CrI: -0.46 to -0.15) were significantly better than usual care. For QoL, only regularly-supported self-management (SMD = 0.54, 95% CrI: 0.11 to 0.96) showed a statistically significant increase when compared to usual care. For trials including adolescents/children (aged 5-18 years), only regularly-supported self-management showed statistically significant benefits (healthcare utilisation: SMD=-0.21, 95%CrI: -0.40 to -0.03; QoL: SMD=0.23, 95% CrI: 0.03 to 0.48). Multi-disciplinary case-management (SMD=-0.32, 95%CrI: -0.50 to -0.16) and regularly-supported-self-management (SMD=-0.32, 95%CrI: -0.53, -0.11) were most effective at reducing healthcare utilisation in patients with symptoms of severe asthma at baseline.

### Consequences

This is the largest study to use NMA to assess the relative merits of different models of self-management in the treatment of asthma. We conclude that regularly-supported self-management is the most optimal intervention model for improving healthcare utilisation and QoL. Future research and policy investments need to focus on implementing regularly supported self-management, targeting multi-disciplinary case management on those with complex disease.



## Funding Acknowledgement

Study is funded by the National Institute for Health Research School for Primary Care Research (project 269)

## X.3

### Self-management interventions to reduce healthcare utilisation and improve quality of life among patients with asthma: a systematic review and network meta-analysis

**Presenter: Alex Hodkinson**

Co-authors: Alexander Hodkinson (1), Peter Bower (1), Christos Grigoroglou (1), Salwa Zghebi (1), Hilary Pinnock (2), Evangelos Kontopantelis (1), Maria Panagioti (1)

#### Institutions

(1) University of Manchester, (2) University of Edinburgh

#### Abstract

##### Problem

Asthma is one of the most common chronic conditions worldwide. Guidelines for treating asthma recommend the use of self-management interventions. However, it is unclear which self-management models are most effective at reducing healthcare utilization and improving quality of life (QoL).

##### Approach

We performed a systematic review and network meta-analysis (NMA) of randomised controlled trials to compare the effects of three different Self-management intervention models (multi-disciplinary case-management, regularly-supported self-management and minimally-supported self-management) and self-monitoring models, against usual care and education. We searched MEDLINE, the Cochrane library, CINAHL, EconLit, EMBASE, Health Economics Evaluations Database, NHS Economic Evaluation Database, PsycINFO and ClinicalTrials.gov for published and unpublished trials from January 2000 to April 2019. We assessed risk of bias in accordance to the Cochrane Handbook and certainty

of evidence using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) framework. The primary outcomes include healthcare utilization (i.e. hospitalisation or emergency visit) and QoL. Summary standardised mean differences (SMDs) and 95% credible intervals (95%CrI) were estimated using Bayesian NMA with random-effects. Heterogeneity was quantified with heterogeneity-variance ( $\tau^2$ ) and through inconsistency analysis. Publication bias was assessed with funnel plots. This study is registered with PROSPERO, number CRD42019121350.

##### Findings

From 1,178 citations we included 105 trials comprising 27,767 participants. In terms of healthcare utilization, both multi-disciplinary case-management (SMD=-0.18, 95%CrI: -0.32 to -0.05) and regularly-supported self-management (SMD=-0.30, 95%CrI: -0.46 to -0.15) were significantly better than usual care. For QoL, only regularly-supported self-management (SMD = 0.54, 95% CrI: 0.11 to 0.96) showed a statistically significant increase when compared to usual care. For trials including adolescents/children (aged 5-18 years), only regularly-supported self-management showed statistically significant benefits (healthcare utilization: SMD=-0.21, 95%CrI: -0.40 to -0.03; QoL: SMD=0.23, 95% CrI: 0.03 to 0.48). Multi-disciplinary case-management (SMD=-0.32, 95%CrI: -0.50 to -0.16) and regularly-supported-self-management (SMD=-0.32, 95%CrI: -0.53, -0.11) were most effective at reducing healthcare utilization in patients with symptoms of severe asthma at baseline.

##### Consequences

This is the largest study to use NMA to assess the relative merits of different models of self-management in the treatment of asthma. We conclude that regularly-supported self-management is the most optimal intervention model for improving healthcare utilisation and QoL.

## Funding Acknowledgement

Work was funded by the NIHR Evidence Synthesis Working Group

## X.4

### Health care professionals' experiences of using a cognitive behavioural approach with patients living with chronic obstructive pulmonary disease

**Presenter: Sian Newton**

Co-authors: Anna Moore, Hilary Pinnock, Stephanie Taylor, Ratna Sohanpal, Moira Kelly

#### Institutions

Institute of Population Health Sciences, Queen Mary University of London, United Kingdom; Usher Institute, University of Edinburgh, United Kingdom; Barts Health NHS trust, London, United Kingdom

#### Abstract

##### Problem

There is an increased risk of psychological co-morbidities for people with chronic obstructive pulmonary disease (COPD), which often go unnoticed and untreated. The TANDEM trial developed a tailored, cognitive behavioural approach (CBA) intervention for patients with COPD and anxiety and/or depression. The aims were to improve mood in patients with anxiety and/or depression and increase uptake of pulmonary rehabilitation (PR). Respiratory healthcare professionals (facilitators) were recruited and received tailored training in CBA. Supported by telephone supervision from a clinical psychologist, the facilitators saw trial patients for six to eight sessions, usually in the patient's home.

##### Approach

##### ObjectivesTo explore

- The experiences of health care professionals working as CBA facilitators with patients living with COPD.
  - The facilitators' views regarding the implementation of the TANDEM model in usual care.
- MethodsAs part of the process evaluation, qualitative interviews were conducted via telephone with facilitators who consented to participate.

Interviews, conducted by two researchers, addressed the core objectives. Sampling was purposive, aiming to achieve a maximum variation sample. Thematic

analysis (assisted by NVivo) was iterative using a small team approach, to aid interpretation.

##### Findings

Interviews were conducted with ten facilitators, including three nurses, three occupational therapists and four physiotherapists. Facilitators considered the CBA skills they had learnt enabled them to improve the quality of care they provide patients. Using CBA opened up a broader view of patients' lives and facilitatorsto 'show more empathy to these patients' and appreciate that some patients were often dealing with co-morbidities. Facilitators were 'struck at how complicated everyone's lives are' with concerns other than their COPD which could be overlooked in a time-limited clinical setting. Though the time to be able to commit to these participants with complex lives was valued, facilitators also mentioned that it wasn't always easy to manage. Most facilitators said that they found it difficult to adapt from their problem-solving approach to the patient-centred CBA, describing the training as having 'massively changed my approach with patients'. Facilitators gave examples of how they would use the CBA skills in their professional roles outside of TANDEM 'because it would make us all better at actually supporting our patients'. Supervision from a clinical psychologist was new to all facilitators and valued. Most facilitators believed that a major obstacle for implementing the TANDEM intervention in usual care would be time and that this time is focusing on a holistic approach rather than simply addressing the physical symptom(s).

##### Consequences

The CBA training was valued by facilitators in the context of the TANDEM trial, and also for the transferable skills that could be applied in their routine work. The patient-centred approach was time-consuming but considered worthwhile, albeit raising concerns about implementation in a time-limited NHS.

#### Funding Acknowledgement

The study is funded by the NIHR Health Technology Assessment Programme 13/146/02.

## X.5

### Using linked healthcare records to identify the prevalence, characteristics and clinical outcomes of patients with Severe Eosinophilic Asthma in Northern Ireland

**Presenter: Johnny Stewart**

Co-authors: Professor Frank Kee, Professor Liam Heaney, Dr Nigel Hart, Dr John Busby

#### **Institutions**

Queen's University Belfast

#### **Abstract**

##### **Problem**

Severe Asthma (SA) is asthma that does not respond to standard treatment and is characterized by one or more exacerbations in the previous year despite high dose inhaled or oral corticosteroids. This patient subgroup is difficult to diagnose and associated with significant morbidity and preventable premature mortality. There is evidence of improved clinical outcomes if these patients can be identified and offered specialist assessment and management including novel monoclonal antibody treatment. However, there is significant inequality in access to specialist asthma care across the United Kingdom, with unacceptable variation in prevalence, frequency of exacerbations, and health outcomes across geography, age, ethnicity and socio-economic groups. Data linkage presents a unique opportunity to identify this high-risk subgroup. Asthma patients have healthcare records held in various databases throughout the Health and Social Care system. Primary Care healthcare records have many unique properties which make them essential to gain an accurate picture of SA clinical burden. These include the representativeness of the entire asthma population and the high quality of clinical data coding, in particular for Quality and Outcome Framework (QOF) data. An unrealised opportunity may exist via data linkage with a variety of other datasets (including those from secondary care) to identify those likely to have SA.

##### **Approach**

The General Practice Intelligence Platform (GPIP) is being established to extract primary care data from all

GP practices in Northern Ireland under agreed governance processes. Data will be extracted and de-identified at source. A secured data governance and linkage framework is being developed to incorporate primary healthcare data into established systems for linkage of secondary care records. We plan to use this process to link primary healthcare record data from the Northern Ireland asthma population including QOF, prescribing and laboratory data to secondary healthcare record datasets including admissions and emergency department attendances. We aim to use this linked dataset to determine the prevalence, characteristics and clinical outcomes of patients with SA in Northern Ireland and identify potential candidates for monoclonal antibody treatment. Linkage of these records into a single anonymised dataset presents a unique opportunity to better understand this high-risk subgroup and to shed light on how inequalities in care and outcomes might be mitigated.

##### **Findings**

In preparation for this study we have conducted a scoping review on how primary care records linked to secondary and administrative data can help identify the prevalence and characteristics of SA. Results from this review have been used to guide the design of our study.

##### **Consequences**

This novel proof of concept study, which plans to link primary and secondary healthcare records of an entire asthma patient population, could lead to improved clinical outcomes and pave the way for similar linkage studies for other conditions.

##### **Funding Acknowledgement**

Queen's University Belfast HSC Research and Development Northern Ireland

## Y.1

### Are persistent physical symptoms associated with low socioeconomic status: a meta-epidemiologic study?

**Presenter: Chris Burton**

Co-authors: Jon M Dickson, Joanne Leaviss, Gillian Rooney

#### Institutions

University of Sheffield

#### Abstract

##### Problem

Persistent (“medically unexplained”) physical symptoms reduce quality of life. Risk factors for these disorders include early life adversity. However, there has been no systematic study of the relationship between socioeconomic factors and the prevalence of persistent physical symptoms or related functional symptom syndromes. Reflecting the “deep-end” approach to the most deprived sections of the population, we were particularly interested in comparing the most deprived 10-20% with the remainder of the population.

##### Approach

We carried out a meta-epidemiologic study in which we systematically identified studies describing one or more of the following: multiple “medically unexplained” symptoms (including somatoform disorders); chronic widespread musculoskeletal pain (including fibromyalgia); fatigue (including chronic fatigue syndrome); functional GI disorders (including IBS); chronic pelvic / genitourinary pain; and functional neurological disorders. We searched Medline and Embase from 1980 to the present for papers including one or more of the symptoms / syndromes along with terms relating to epidemiology or socioeconomic status. Data extraction is complete for multiple symptoms and for other symptoms / syndromes since 2017. Full data extraction and analysis will be completed by May 2020. We are conducting meta-analysis of the results of case-control studies with meta regression to examine the influence of study variables.

#### Findings

To date, we have identified 9420 titles with 1126 abstracts identified for full text searching. So far, we have extracted data from 25 studies with case and control data from 426 full text papers. To date the pooled odds ratio for the prevalence of multiple symptoms in the most deprived sector of the population is 1.7 (95%CI 1.5 to 1.9) and for prevalence of fibromyalgia is 1.6 (1.1 to 2.5). We will report full study findings across all symptoms/ syndromes in July.

#### Consequences

This is the first study to systematically show that at least some persistent physical symptoms and functional syndromes have an adverse socioeconomic gradient. Symptom disorders contribute to the excess burden of ill-health in poorer people. As this demographic group may be least likely to engage with programmes such as IAPT symptom management programmes, interventions are needed to enable people living in, or close to, poverty to live well despite persistent physical symptoms.

#### Funding Acknowledgement

Funded by NIHR through Research Capability Funding to NHS Sheffield CCG.

## Y.2

### Do GP's practices which employ Social Prescribing exhibit similar patterns in the prescription of pain and antidepressant medication?

**Presenter: Lawrence Dawson**

Co-authors:

#### Institutions

DPhil applicant University of Oxford

#### Abstract

##### Problem

One of the goals of the NHS 'Long Term Plan', is to greatly increase the access to social prescribing schemes through 'link workers' working within GP's practices. It is hoped that through the increased uptake of such programmes problems such as over-medication can be addressed. To date, the trends of

prescription rates for pain and anti-depressant medications, within practices employing social prescribing, have not been compared and contrasted. This study aims to inform further research into the role of social prescribing in the treatment of chronic musculoskeletal conditions.

#### Approach

This study took three NHS locations with award-winning social prescribing programmes and compared their opioid, non-opioid, anti-inflammatory, and anti-depressant medication rates, both with each other and the NHS means over a five-year period. These medications were selected as they are relatively common and they can possibly be seen as surrogate indicators for chronic musculoskeletal health conditions. The prescription data was taken from the University of Oxford's DataLab, and the practice patient numbers from NHS Digital. Linear regression analyses were performed for each medication type, at each of the three locations and the NHS England mean figures for the same period.

#### Findings

In all but one medication type, in one location, the prescription rates of opioid, non-opioid, anti-depressant, and anti-inflammatory medication decreased over the study period in comparison with NHS means. However, the actual prescription rates varied considerably between locations with, as an example, prescription rates of opioids and anti-depressants being over twice as great within a Somerset market town, compared to those from a deprived inner-city CCG.

#### Consequences

Although the three study groups showed a greater decrease in prescription rates, in almost every case, compared to NHS means, it cannot be ascertained whether the improvements are representative of improvements from patients actually involved in social prescribing schemes. It could be that these improvements are due to a general change in culture within these health locations. However, from these findings, it would appear important to consider also the clinical and financial change which could be achieved if the individual, health culture or community factors behind the disparity in prescription rates could be identified and changes made accordingly.

## Y.3

### Understanding the interactions between lifestyle and deprivation to support policy and intervention development: an overview of a mixed methods PhD.

**Presenter: Hamish Foster**

Co-authors: Fellow: Dr Hamish Foster; Supervisors: Prof Catherine O'Donnell, Prof Frances Mair, Prof Jason Gill, Prof Duncan Lee

#### Institutions

General Practice and Primary Care, University of Glasgow

#### Abstract

##### Problem

Lifestyle factors are the strongest modifiable risk factors for non-communicable diseases (NCDs). Deprived populations have the highest clustering of unhealthy lifestyle factors and disproportionately high lifestyle-associated mortality. How combinations of 'old' (e.g. smoking) and 'new' (e.g. sleep) lifestyle factors interact with each other and with socioeconomic status is largely unknown. This mixed methods PhD aims to improve understanding of the risks associated with combinations of lifestyle factors across the socioeconomic spectrum to inform policy and interventions.

##### Approach

There will be four work-packages (WPs): WP1) Systematic review of the literature to collate evidence for lifestyle factor combinations associated with adverse health outcomes (mortality; cardiovascular and cancer incidence) and for interactions between lifestyle factor combinations and deprivation. We will include prospective observational studies which examine the adverse health risk associated with a combination of at least three lifestyle factors. The main aim will be to identify candidate lifestyle factors to be examined in WP2. WP2) Statistical analysis of UK Biobank (>500,000 participants with self-reported lifestyle data linked to routine health outcomes) to examine how lifestyle factor combinations are associated with adverse health outcomes and how deprivation modifies those associations. Use of Cox proportional hazard models to examine risk; variable selection algorithms to identify the highest risk



lifestyle factor combinations in deprived groups. WP 3) Perform similar analysis using HUNT Databank, Norway (>50,000 participants in each of 3 survey waves with detailed self-reported lifestyle and socioeconomic data linked to routine health outcomes), to assess generalisability of findings. WP 4) Evaluate how public and professionals view lifestyle factor combinations in the context of deprivation. Qualitative approach combining focus groups of members of the public from areas of deprivation and interviews with primary care nurses/physicians and public health professionals/policy makers, analysis guided by Normalisation Process Theory. This will identify the work required by individuals and groups to incorporate new evidence into policy and practice to support healthy living in deprived areas.

#### Findings

This PhD programme has just started. Previous work from our group has shown the disproportionate all-cause and CVD mortality from the interaction between a wide combination of unhealthy lifestyle factors and lower socioeconomic status. This highlighted the need to identify the highest risk lifestyle factor combinations. Preliminary scoping of the literature suggests there is a large body of evidence for the adverse health associated with traditional/old lifestyle factor combinations. However, there appears to be a lack both of studies that include 'new' lifestyle factors and of studies that assess the impact of deprivation.

#### Consequences

This mixed methods PhD will provide new quantitative and qualitative evidence that will develop practice and policy to support healthier living in areas of deprivation.

#### Funding Acknowledgement

This is a Medical Research Council (UK) Clinical Research Training Fellowship.

## Y.4

**Link workers providing social prescribing and health and social care coordination for people with multimorbidity in socially deprived areas ( The LinkMM trial): A pragmatic randomised controlled trial protocol and pilot.**

**Presenter: Susan M Smith**

Co-authors: Mark Murphy, Barbara Clyne, Fiona Boland, Patrick O'Donnell, Deirdre Connolly, Eamon O Shea, Susan M Smith

#### Institutions

Royal College of Surgeons Ireland, Trinity College Dublin, University of Limerick, National University of Ireland, Galway

#### Abstract

##### Problem

Multimorbidity, defined as two or more chronic conditions, is increasing in prevalence and affects 66.2% of patients over 50 attending primary care in Ireland (1). It is associated with increased health care use, fragmented care and poorer health outcomes (2). There is a link between social deprivation and multimorbidity (3). Link workers are non-health or social care professionals based in primary care who support people to develop and achieve a personalised set of health and social goals by engaging with community resources. Link workers have been piloted in areas of deprivation (4), but there remains insufficient evidence to support their effectiveness (5). This study aims to test the effectiveness of link workers based in General Practices in deprived areas in improving health outcomes for people with multimorbidity.

##### Approach

This will be a randomised controlled trial involving a total of 10 GP practices and 600 patients, serving areas of deprivation in four Irish cities. Eligible participants will be community dwelling adults with multimorbidity suitable for referral to a practice based link worker. Baseline data will be collected, followed by randomisation to intervention or control groups. The intervention group will meet with a link worker based in the GP practice and receive support over three months to develop and achieve a personalised

set of health and social goals. The 'wait list' control group will receive usual care from their GP during this time. Primary outcomes will be health related quality of life as assessed by EQ5D5L and mental health assessed by HADS. Secondary outcomes will be based on the core outcome for multimorbidity (6) and include a range of patient reported outcome and healthcare utilisation measures. Data will be collected at baseline and on RCT completion at 3 months using questionnaires self-completed by participants. Health care utilisation will be extracted from GP records by researchers. The final protocol was informed by an uncontrolled pilot study in single practice to test feasibility and acceptability of the intervention and trial processes.

#### Findings

The pilot demonstrated that the intervention was received positively. Adjustments were made to the selection process to allow inclusion of GP identification of patients they felt could benefit from a linkworker intervention. This was felt to reflect real world practice. Additional time was built into the recruitment stages. Recruitment and baseline data for the main trial will be complete by June 2020.

#### Consequences

This will be the largest trial of link workers with individual randomisation that we are aware of and will provide some of the most robust evidence to date in this area. This will help to inform policy makers in Ireland who are currently actively considering ways to move care into the community and of providing holistic care for people with multimorbidity.

#### Funding Acknowledgement

This trial is jointly funded by the Health Research Board Ireland and the Health Service Executive Slaintecare Integration Fund. The funders did not have any role in the design of this study.

## Z.1

### Is PID a consideration for GPs, and what are their practices around diagnosis?

**Presenter: Helen Bittleston or Meredith Temple-Smith**

Co-authors: Jane Goller, Jacqueline Coombe, Meredith Temple-Smith, Jane Hocking

#### Institutions

Centre for Epidemiology and Biostatistics, Melbourne School of Population and Global Health, The University of Melbourne, Department of General Practice, The University of Melbourne

#### Abstract

##### Problem

Pelvic Inflammatory Disease (PID) comprises a range of inflammatory disorders of the upper female genital tract and can lead to reproductive complications. Sexually transmissible infections (STIs) are often implicated as a cause. Diagnosing PID is challenging due to the wide variety of symptoms and severity. This can lead to under-diagnosis. Speculum and bimanual examinations are recommended to support PID diagnosis in women considered at risk and who report recent onset pelvic pain. There is limited evidence regarding general practitioner (GP) PID diagnosis practices. We investigated the PID diagnosis practices of GPs in Australia.

##### Approach

An online survey about chlamydia management was distributed in 2019 to GPs in Australia. It included Likert scale questions pertaining to investigating PID symptoms in women diagnosed with chlamydia, the frequency GPs conduct pelvic examinations for women reporting pelvic pain or dyspareunia, and a free-text question about barriers to performing pelvic examinations. From 323 respondents, 85.8% (n=277) responded to quantitative questions about PID and 74.6% (n=241) provided 452 comments regarding pelvic examination barriers. Adjusting for gender, age and additional sexual health training/education we used multivariable logistic regression to analyse factors associated with the frequency that GPs conducted pelvic examinations. Barriers to performing

pelvic examinations were explored using thematic analysis.

### Findings

Most GPs reported they frequently asked patients with an STI about symptoms suggestive of PID, including pelvic pain (86.2%), abnormal vaginal discharge (95.3%), dyspareunia (79.6%), and abnormal vaginal bleeding (89.5%). Over half reported they would frequently conduct speculum (69.0%) or bimanual (55.3%) examinations for women reporting pelvic pain. Multivariable analysis found female GPs were more likely to frequently perform speculum (adjusted odds ratio, AOR: 4.6, 95% CI 2.6-8.2) and bimanual examinations (AOR: 3.7, 95% CI 2.1-6.5). GPs with additional sexual health training/education were more likely to perform speculum (AOR: 2.2, 95% CI 1.1-4.2) and bimanual examinations (AOR: 2.1, 95% CI 1.2-3.7). Of the free-text comments, the most common barrier focused on was a lack of patient consent or desire to proceed with a pelvic examination, highlighting the need for further research into patient perspectives and expectations of pelvic examinations outside of cervical screening. Other barriers included GP gender, concerns about patient health, time pressures, and GP reluctance to perform examinations due to inexperience and/or a lack of certainty that an examination would add value to their assessment. This experience was not universal, however, with several GPs reporting that they did not face barriers to performing pelvic examinations.

### Consequences

Under-diagnosis of PID is a global issue, and results in reproductive complications including chronic pain and infertility. While GPs typically ask about PID symptoms when managing patients with chlamydia, they are not consistently able or willing to perform pelvic examinations to support a diagnosis, potentially reducing capacity to diagnose PID.

### Funding Acknowledgement

National Health and Medical Research Partnership Project (Application ID: APP1150014)

## Z.2

### What are GPs' and Psychiatrists' perceptions of post-traumatic stress disorder in postnatal women? A qualitative study with a case vignette

**Presenter: Elizabeth Ford**

Co-authors: Harriet Mortimer, Haniah Habash-Bailey, Max Cooper, Daron Aslanyon, Jennifer Cooke, Susan Ayers and Judy Shakespeare

### Institutions

Brighton and Sussex Medical School, Sussex Partnership NHS Foundation Trust, City University of London,

### Abstract

#### Problem

Up to a third of women describe their experience of giving birth as psychologically traumatic, and post-traumatic stress disorder (PTSD) following childbirth is common, affecting 3-4% of women who give birth. Evidence-based treatments for PTSD are available, however UK women presenting to NHS services in the postnatal period with mental health problems are often underdiagnosed and report feeling dismissed. Especially little is known about women's pathway into NHS services when they are experiencing postnatal PTSD. Thus far, no studies have investigated GPs' and psychiatrists' perceptions of PTSD in a postnatal population following a traumatic birth, to help us understand women's experiences of seeking a diagnosis and appropriate care for this condition.

#### Approach

This qualitative study, making use of a vignette case study, aimed to investigate whether GPs and psychiatrists perceive PTSD symptoms after birth to be indicative of a disorder and what diagnosis and management options they would give a postnatal patient with a classic presentation of PTSD symptoms. Semi-structured interviews were conducted with 6 GPs and 7 psychiatrists based around a fictional vignette featuring a diagnostic case of PTSD in a postnatal woman, based on DSM-5 criteria. Interview transcripts were analysed using thematic analysis and a framework approach.

#### Findings

None of the six GP participants acknowledged that the woman in the vignette was experiencing PTSD, instead GPs sought to normalise traumatic symptoms or made a postnatal depression diagnosis. GPs said they would offer a combination of antidepressants, referral for psychological therapy, debriefing services and referral to specialist perinatal mental health teams to help manage the presentation. GPs distrusted the timeliness of the referral process both to psychological therapy and secondary psychiatry services. The psychiatrists who took part clearly identified the vignette to be a presentation of PTSD however, like the GPs, the majority were keen to refer this patient to the specialist perinatal mental health team.

### Consequences

GPs did not recognise the case study as PTSD and diagnosed distress as postnatal depression. Psychiatrists recognized PTSD but felt specialist treatment in perinatal women was beyond their remit. There is a clear demand from clinicians for specialist perinatal mental health services, which may still be unmet in some geographical areas due to high thresholds for accepting referrals. More research is required to understand the challenges facing GPs caring for such patients, including whether targeted professional education and specialist care ultimately improve outcomes.

### Funding Acknowledgement

Royal College of Psychiatrists Pathfinder Fellowship (awarded to Haniah Habash-Bailey).

## Z.3

### Socioeconomic status and prescribing of hormone replacement therapy in general practice: a cross-sectional study of practice-level data in England

**Presenter: Sarah Christine Hillman**

Co-authors: Saran Shantikumar, Jeremy Dale

### Institutions

Unit of Academic Primary Care, Communicable Disease Control Evidence & Epidemiology, Warwick Medical School

## Abstract

### Problem

Prescribing rates of various drugs in general practice are associated with socioeconomic deprivation, but until now evidence has been lacking around its relationship with rates of hormone replacement therapy (HRT) prescribing in women. Concerns have been raised that women from more deprived backgrounds are less likely to be receiving HRT treatment and its associated benefits. We aimed to investigate the association between general practice HRT prescription rates and socioeconomic deprivation in England.

### Approach

In this cross-sectional study, monthly primary care prescribing data for 2018, as well as practice age and sex profiles, were downloaded from NHS digital. Practice-level Index of Multiple Deprivation (IMD) scores – a marker of socioeconomic deprivation – were obtained from Public Health England. Quality Outcomes Framework (QOF) data for 2017/18 were obtained for the proportions of patients of each practice with a diagnosis or risk factor that may influence decisions around HRT prescribing. Practice-level prescribing rate was defined as the number of items of HRT prescribed per 1000 registered female patients over the age of 40 years. The association between IMD score and HRT prescribing rate was tested using univariate and multivariate Poisson regression. Multivariate analyses adjusted for the practice proportions of obesity, smoking, hypertension, diabetes, coronary heart disease and cerebrovascular disease, as well as practice list size. The analysis was repeated for (1) only oral and (2) only transdermal preparations.

### Findings

The overall rate of HRT prescribing was 29% lower in practices from the most deprived quintile compared with the most affluent (Incidence rate ratio [IRR] 0.71, 95% CI 0.68-0.73). After adjusting for all cardiovascular disease outcomes and risk factors, the prescribing rate in the most deprived quintile was still 18% lower than in the least deprived quintile (adjusted IRR 0.82, 95% CI 0.77-0.86). In more deprived practices, there was a significantly higher tendency to prescribe oral HRT over transdermal preparations ( $p < 0.001$ ).

## Consequences

This study has highlighted inequalities associated with HRT prescription. This may reflect a large unmet need in terms of post-menopause care in areas of deprivation. Further research is needed to confirm these results with individual-level patient datasets, and to identify the underlying factors from patient and GP perspectives that may explain this.

## Z.4

### Understanding primary care usage, treatment and referral patterns for women with common menstrual disorders

**Presenter: Hannah Knight**

Co-authors: Professor Christina Pagel, Dr Ipek Gurol-Urganci

#### Institutions

University College London, London School of Hygiene and Tropical Medicine

#### Abstract

##### Problem

Menstrual disorders have an adverse impact on women's physical, social, emotional and material quality of life. It is estimated that among women of reproductive age, one in four suffers from menorrhagia, one in five from severe dysmenorrhea, and one in ten from endometriosis. In the United States, dysmenorrhea alone has been estimated to cause an annual loss of nearly 140 million working hours. Recent studies highlight concerns about how effectively menstrual disorders are being managed and treated in primary care. However, the number of women seeking help from GPs for heavy and/or painful periods is not well understood and neither are their healthcare needs. Most studies that report the prevalence of these conditions in the UK are surveys carried out in the 1960s to early 1990s. In this study, we use a nationally representative sample of electronic primary care records to estimate the prevalence of common menstrual disorders and to understand primary care use, treatment and referral patterns among women affected by these conditions.

##### Approach

We are conducting a retrospective cohort study using a random sample of 500,000 patients drawn from the Clinical Practice Research Datalink (CPRD) linked to Hospital Episode Statistics (HES). Our sample is restricted to female patients aged 8 to 60 years in 2013 who meet acceptable data quality criteria. Code lists for common menstrual disorders are being developed following best practice guidelines. We will use an expert panel of clinicians to reach consensus on inclusion and exclusion of codes and allow sensitivity analysis to explore the impact of uncertainty in coding.

##### Findings

Based on preliminary code lists, of the 500,000 women in the cohort 117,873 (23.6%) have one or more codes to indicate a menstrual disorder during the study period. We will describe the incidence and point prevalence of menstrual disorders (overall and by sub-condition) in 2013 and primary care utilisation over a 5-year follow-up period, exploring associations with age, ethnicity and deprivation status. We also show sensitivity analysis on the impact of coding uncertainty on estimates.

##### Consequences

The code list development and analysis will be complete by June 2020 and will inform a grant application for a larger, mixed-methods programme of work to explore which aspects of care are particularly important to women with menstrual disorders and how they can be improved or better integrated in the services that are already available. The study aims to support GPs, gynaecologists and commissioners to understand the health service needs of patients with menstrual disorders, to identify opportunities to improve access to existing treatments and to highlight any disparities that exist in the care that they are given.

#### Funding Acknowledgement

The Health Foundation



## Shame, bluffs and drug mules – experiences of young women obtaining contraception

**Presenter: Dr Richard Ma**

Co-authors: Ms Rebecca Blaylock, Dr Lorna Hobbs, Professor Helen Ward, Professor Sonia Saxena

### Institutions

Imperial College London, British Pregnancy Advisory Service (BPAS), Tavistock and Portman NHS Foundation Trust

### Abstract

#### Problem

Despite a wide range of available contraceptive methods, clinical guidelines and national policies, young women continue to be at highest risk of unplanned and unwanted pregnancies. We aimed to explore the experiences of young women about information and access to contraception.

#### Approach

We recruited young women from Instagram and allocated them into: 16 to 19 and 20 to 24 age groups to reflect the different life stages, experiences and policy focus. Focus group discussions lasted 90 minutes and were facilitated by two researchers. These were recorded digitally and sent to commercial transcription service; transcripts were validated with the participants. We used a topic guide and a range of contraceptive methods out on display to stimulate discussions about experiences and access from healthcare settings. Three researchers analysed the transcripts through discussions of categories from initial reading, further thematic analysis, comparing and agreeing on coding. We used NVivo to organise the data.

#### Findings

10 women aged 16 to 19 years and 11 aged 20 to 24 years participated in their respective focus groups. They were ethnically diverse, and most were from London. Contraceptive pills and patches were often a default and only choice that was discussed and made available to them. Hormonal side effects were recognised as a common trade off of these methods. Condom use was encouraged from an early

age, particularly from school. Some chose to purchase condoms as "free" condoms incurred other costs such as efforts to get on a "condom card scheme", time to attend a venue, and condoms were often limited in quantity and variety. Female condoms were neither popular or acceptable. Women reported they assumed responsibility for contraception and sexual health within a relationship no matter how brief, and men were seen as complacent. Some women had to bluff to test out their trust in partners' attitudes to contraception and sexual health. Sex was shameful and disapproved by family and cultural norms. Women felt judged obtaining contraception and some resorted to asking peers to obtain on their behalf. In addition to confidentiality and accessibility, women want services that recognise their maturity and responsibility, as well as being holistic, empathic and non-judgemental. Parents (particularly mums) were viewed as overprotective and controlling, often restricting what young women were allowed to use. However, they also wanted a degree of "mothering"; for example, they reminisced about support school nurse offered them. Women also found it liberating and informative discussing sex and contraception in the focus groups setting. The data from focus group are still being analysed and further themes will be presented at the conference in July.

#### Consequences

Young women face challenges obtaining contraception they need. Although individual services can make changes to improve individual experiences, more needs to be done to change societal attitudes to gender roles and sexuality.

#### Funding Acknowledgement

RM was funded by NIHR Doctoral Research Fellowship SS and HW have received funding from NIHR School for Public Health Research

## Z.6

### Barriers and facilitators for General Practitioner Doctors to report domestic violence cases to the authorities

**Presenter: Diana Nadine Moreira**

Co-authors: Mariana Pinto da Costa

#### Institutions

Portuguese Northern Region Health Administration,  
Institute of Biomedical Sciences Abel Salazar,  
University of London

#### Abstract

##### Problem

Domestic Violence (DV) is a serious, prevalent and yet preventable public health problem. The Portuguese law defines it as ‘actual or threaten physical, psychological or sexual harm perpetrated by a current or former partner or against someone of particular vulnerability with which the aggressor co-habits’. Since 2000 in Portugal DV is a public crime, which means that everyone that is aware of it has the duty to report it. Although the number of reports has been growing in the last few years there are anecdotal impressions that only a small number of cases are denounced to the authorities. Evidence shows that DV has a considerable health impact, in short and long term physical and mental health of the victims. When it comes to provide assistance to potential victims and their family, general practitioners (GPs) are in a particularly central position to detect and report cases of DV to authorities. However, they may be faced with a complex decision-making position. In fact, little is known about what drives doctors to present, or not, an official report.

##### Approach

To address this question, a national qualitative study has been conducted in Portugal, to further understand what leads GPs to present or not, a report of DV when they become aware of such cases in their clinical practice. Semi-structured interviews were conducted to GPs of each of the five Health Regional Administrations of continental Portugal and Madeira and Azores Regional Offices. The interviews were transcribed, coded and analyzed using thematic analysis.

##### Findings

The preliminary results show as common themes: concerns about breaking doctors-patient confidentiality, the victims safety before and after making a report and doctors personal safety. Doctors have also expressed many doubts about the right procedures and availability of means.

##### Consequences

The presentation of these preliminary results is key to further discuss and reflect from the ongoing analysis. Hopefully with a better understanding in this matter we can define new strategies to guide GPs when dealing with patients suffering from DV.

## Z.7

### What do primary care providers need in a prescriber checklist for mifepristone medication abortion?

**Presenter: Wendy V. Norman**

Co-authors: Sarah Munro, Kate Wahl, Sheila Dunn, Edith Guilbert.

#### Institutions

University of British Columbia, London School of Hygiene & Tropical Medicine, University of Toronto, Laval University.

#### Abstract

##### Problem

Primary care providers are challenged to bridge the gap between medical abortion guidelines and a comprehensive approach to prescribing and follow up within a primary care visit. We aimed to develop and implement a charting checklist and quick reference guide to support the adoption of medication abortion among Canadian primary care providers.

##### Approach

The preliminary checklist and reference guide were adapted from 7 clinical exemplars using the 2016 Society of Obstetricians & Gynecologists of Canada guidelines on medical abortion. Materials were subjected to expert review (n=6). Front-line providers (n=5) gave feedback on the revised materials in ‘think-aloud’ interviews and rated the materials using the

System Usability Scale (SUS). Final materials were approved by expert reviewers; English and French versions were shared with providers through communities of practice convened online and in person.

## Findings

Expert reviewers were 4 clinician-researchers, 1 community stakeholder, and 1 knowledge translation scientist. Front-line participants were 2 family physicians, 1 obstetrician-gynecologist, 1 family medicine resident, and 1 registered nurse. Front-line participants had between 2 and 20+ years in practice; 3 had previous experience with medication abortion and 2 did not. Changes to the materials focused on alignment with clinical guidelines and best practices as well as suitability for the clinical context. The median SUS was 86.25 (69.4-97.5), indicating good-to-excellent usability. Between April 2018 and October 2019, the checklist was downloaded or distributed 1423 times (1354 English, 69 French) and the reference guide was downloaded 912 times (841 English, 71 French).

## Consequences

Primary health care providers are starting to add medication abortion to their scope of practice for the first time, particularly in Canada where this innovation has been recently approved. The tools described above have been optimized to support the implementation of medical abortion services in the primary care context.

## Funding Acknowledgement

The authors have no competing interests to declare. This study was supported by a Canadian Institutes of Health Research Partnership for Health System Improvement Grant (PHE148161), in partnership with the Michael Smith Foundation for Health Research (16743), and by a research grant from the Society of Family Planning (SFPRF11-19). SM was supported as a Trainee and a Scholar of the Michael Smith Foundation for Health Research (16603, 18270). WVN was supported as a Scholar of the Michael Smith Foundation for Health Research (2012-5139 (HSR)), and as an Applied Public Health Research Chair by the Canadian Institutes of Health Research (CPP-329455-107837). In kind support was contributed by the Women's Health Research Institute of British Columbia Women's Hospital and Health Centre of the

Provincial Health Services Authority of British Columbia. Planned Parenthood Ottawa supported this project in many ways including contributions of staff time, recruiting and coordination.

## Z.8

### **Just Walk It! Encouraging use of the Active10 app to promote brisk walking after a hypertensive pregnancy: pilot study**

**Presenter: Dr Mohammad Sharif Razai**

Co-authors: Professor Pippa Oakeshott

## Institutions

St George's University

## Abstract

### Problem

Each year in England, 70,000 women have high blood pressure during pregnancy (known as hypertensive disorders of pregnancy or HDP). Women who have high blood pressure during pregnancy are at increased long-term risk of cardiovascular disease. Regular brisk walking at 3-4mph starting in the postnatal period might reduce this risk. The Free Active 10 app, developed by Public Health England, encourages at least 10 minutes brisk walking every day. It has never been evaluated in a trial. Aims: To conduct a pilot study over 3 months of giving postnatal women who had HDP a 'Just walk it' leaflet encouraging use of the Active 10 app. We will assess: 1. How many women downloaded the Active 10 app 2. How many women used it to monitor their brisk walking 3. How many achieved 10 minutes brisk walking in a day as recorded on the app

### Approach

We will recruit 20 women with HDP from hospital postnatal wards. Two months after delivery a researcher (MR) will visit them at home and measure BP, height, weight and waist circumference and administer a health questionnaire. A week later the women will be posted a "Just walk it" leaflet providing information on possible benefits of brisk walking after HDP and encouraging them to download and use Active 10. MR will telephone them after 2 weeks to see how they are getting on with brisk walking and

Active10. If they have not downloaded or used the app he will encourage them to try it and arrange a further call after 2 weeks. Outcomes at 3 months by telephone questionnaire to patient backed by GP medical record search: 1. How many women downloaded the Active10 app 2. How many women used it to monitor their brisk walking 3. How many achieved 10 minutes brisk walking in a day – from a screenshot of participants' Active 10 record. 4. Exploratory data on any change in BP, weight, waist circumference from patient questionnaire/GP records

## Findings

The pilot study was designed with the help of 17 postnatal mothers (including four with HDP) in two general practices. All welcomed the advice and were keen to do brisk walking. Comments included: "I've downloaded the app and I am more aware of my walking briskly now. I didn't know whether my walking was good enough or not but now I look at the app and it tells me if I am walking fast." "I will continue to use the app." "I think it is good to know how fast I am walking. I try to be active but it's difficult with a baby."

## Consequences

Promoting Active 10 could be a simple, cheap way of increasing long-term brisk walking after HDP. If beneficial, it could be offered routinely by GPs/health-visitors during postnatal reviews.

## Funding Acknowledgement

St George's University of London

## Z.9

### Factors associated with postpartum return to smoking in two UK cohorts

**Presenter: Lauren Taylor**

Co-authors: Sophie Orton 1, Libby Laing 1, Sue Cooper 1, Katharine Bowker 1, Lucy Phillips 1, Sarah Lewis 1, Michael Ussher 2,3, Tim Coleman 1

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## Abstract

## Problem

Helping women quit smoking in pregnancy and remain abstinent postpartum is an important public health target. Approximately half of UK women who smoke will attempt to quit in pregnancy but, despite wishing to remain abstinent, up to 76% return to smoking within two years. Since the introduction of e-cigarettes, the methods people use to attempt to stop smoking have changed substantially. To investigate factors which influence postpartum return to smoking (PPRS) and whether these have changed since e-cigarettes became popular, we present findings from analyses of two longitudinal pregnancy cohorts conducted in 2011-2012, when e-cigarettes were not widely used, and in 2017, when they were, comparing the prevalence of and factors associated with PPRS.

## Approach

The 2011-2012 cohort 'PLS Nottingham' recruited participants from antenatal clinics in two Nottingham hospitals. The 2017 cohort 'PLS National' was multicentre, recruiting from 17 hospitals in England and Scotland. In both cohorts, questionnaires were completed by pregnant women at baseline (8-26 weeks gestation), in late pregnancy (34-36 weeks) and at 12 weeks postpartum. These asked about women's characteristics, smoking behaviours and, in PLS National, e-cigarette use. For each cohort, we calculated the prevalence of postpartum relapse in a subgroup of women that were abstinent in late pregnancy. In both subgroups, we conducted exploratory, multiple logistic regressions to identify factors significantly associated with PPRS.

## Findings

From 850 women in the PLS Nottingham cohort, we identified a subgroup of 255 who reported having quit smoking at the late pregnancy questionnaire. In PLS National from 750 women we identified 162 women who had quit. Baseline characteristics for the groups were similar. The postpartum questionnaire response rate for women who had quit in late pregnancy in PLS Nottingham was 81.6% (n=208) and in PLS National 84.6% (n=137). Prevalence of PPRS was 25.2% (95% CI 0.20-0.32) in PLS Nottingham and 35.8% (95% CI 0.28-0.44) in PLS National. Factors independently and significantly associated with a change in relapse rates in PLS Nottingham were education at GCSE level or above (adjusted OR 0.25, 95% CI 0.07-0.91),

breastfeeding at 12 weeks postpartum (adjusted OR 0.39, 95% CI 0.17-0.89) and reporting, in the postpartum, living with someone who smoked (adjusted OR 3.27, 95% CI 1.07-9.98). In PLS National, both breastfeeding at 12 weeks postpartum (adjusted OR 0.12, 95% CI 0.04-0.35) and having used an e-cigarette in pregnancy (adjusted OR 0.41, 95% CI 0.17-0.99) were associated with reduced PPRS rates.

### Consequences

Both before and after e-cigarettes became widely available, breastfeeding at 12 weeks postpartum was associated with lower PPRS rates. In the survey that measured it, e-cigarette use during pregnancy was also associated with a lower rate. Further qualitative work is required to understand why these associations are noted, and help design future interventions aimed at relapse prevention.

### Funding Acknowledgement

NIHR School for Primary Care Research (Personal fellowship – Sophie Orton)



## Presenter index

| Name of presenter                | Twitter handle               | Abstract Number | Topic                                |
|----------------------------------|------------------------------|-----------------|--------------------------------------|
| Abdalla, Magdy                   |                              | W.1             | Qualitative methods                  |
| Abdel-Aal, Arwa                  | @Arwa75865543                | X.1             | Respiratory disease                  |
| Abdul Rahman, Nur Faraheen Binti |                              | J.1             | Education                            |
| Abel, Gary                       | @garyabel                    | C.1             | Cancer                               |
| Abel, Gary                       | @garyabel                    | N.1             | Information Technology               |
| Ahmed, Nadeem                    |                              | H.1             | Database research                    |
| Akanuwe, Joseph                  | @jakanuwe                    | K.2             | Experience of illness in health care |
| Akanuwe, Joseph                  | @:jakanuwe                   | K.1             | Experience of illness in health care |
| Albanese, Alessio                | @alessio_alba                | Q.1             | Migration and migrant health         |
| Alderson, Sarah                  | @Dr_SarahA                   | F.1             | Clinical trials                      |
| Alghamdi, Alaa                   |                              | L.1             | Health service research              |
| Alhenaiddi, Abdulaziz            |                              | V.2             | Primary care workforce               |
| Alhenaiddi, Abdulaziz            |                              | V.1             | Primary care workforce               |
| Al-Jabr, Hiyam                   | @Twitter for<br>@HiyamAljabr | I.1             | Diabetes                             |
| Ando, Daiki                      |                              | B.1             | Ageing, frailty and dementia         |
| Anthony, Bethany                 | @BethanyFAnthony             | C.2             | Cancer                               |
| Anthony, Bethany                 | @BethanyFAnthony             | V.3             | Primary care workforce               |
| Apenteng, Patricia               | @p_apenteng                  | D.1             | Cardiovascular                       |
| Archer, Charlotte                | @ArcherCS                    | P.1             | Mental health                        |
| Atherton, Helen                  | @h_atherton                  | N.2             | Information Technology               |
| Avery-Phipps, Isobel             |                              | O.1             | Living and dying well                |
| Awan, Hassan                     | @HassanA14462660             | P.2             | Mental health                        |
| Azcoaga-Lorenzo, Amaya           |                              | H.2             | Database research                    |
| Bansal, Aarti                    | @draartibansal               | J.2             | Education                            |
| Bareham, Beth                    | @BKBareham                   | B.2             | Ageing, frailty and dementia         |
| Barker, Robert                   | @R_O_Barker                  | V.4             | Primary care workforce               |

|                         |                        |     |                                |
|-------------------------|------------------------|-----|--------------------------------|
| Barnes, Rebecca         | @DrRebeccaBarnes       | M.1 | Infectious disease             |
| Barry, Tomas            | @DrTomasBarry          | D.2 | Cardiovascular                 |
| Barton, Chris           | @dr_chris1             | S.1 | Patient-clinician relationship |
| Bennett, James          | @HYMS_APC              | J.3 | Education                      |
| Bittleston, Helen       |                        | Z.1 | Women's health                 |
| black, stephen          | @sib313                | N.3 | Information Technology         |
| Boddy, Nicholas         | @drNickBoddy           | O.2 | Living and dying well          |
| Boddy, Nicholas         | @drNickBoddy           | N.4 | Information Technology         |
| Bond, Christine         | @christinebond20       | U.1 | Prescribing                    |
| Bosanquet, Katharine    | @MHARG_york            | P.3 | Mental health                  |
| Brain, Kate             | @Katebrain             | C.3 | Cancer                         |
| Brant, Heather          | @HeatherBrant4         | L.2 | Health service research        |
| Burton, Chris           |                        | Y.1 | Social determinants of health  |
| Butterworth, Jo         | @JO_Butterworth        | B.3 | Ageing, frailty and dementia   |
| Campbell, Jennifer      |                        | H.3 | Database research              |
| Canning, Jordan         | @JordanCanning_        | R.1 | Musculoskeletal                |
| Cassidy, Thomas         |                        | C.4 | Cancer                         |
| Chatterton, Mary Lou    | @MLChatterton          | F.2 | Clinical trials                |
| Chew-Graham, Carolyn A. | @CizCG                 | P.4 | Mental health                  |
| Choy, Melinda           | @melinda_choy          | N.5 | Information Technology         |
| Clark, Christopher      | @chrisellesclark       | D.3 | Cardiovascular                 |
| Cooper-Moss, Nicola     | @CooperMossGP          | J.4 | Education                      |
| Coppola, William        |                        | J.5 | Education                      |
| Corcoran, Neave         | @neaveyc               | C.5 | Cancer                         |
| Cornwall, Nicola        | @NJCornwall @KeelePain | U.2 | Prescribing                    |
| Cottrell, Elizabeth     |                        | U.3 | Prescribing                    |
| Crothers, Rachel        |                        | O.3 | Living and dying well          |
| Cunningham, Yvonne      | @YvCunningham          | R.2 | Musculoskeletal                |
| Cunningham, Yvonne      | @YvCunningham          | U.4 | Prescribing                    |
| Daniels, Rob            |                        | J.6 | Education                      |
| Darling-Pomranz, Claire |                        | J.7 | Education                      |
| Davies, Laurie          |                        | U.5 | Prescribing                    |

|                          |                  |      |                                 |
|--------------------------|------------------|------|---------------------------------|
| Dawson, Lawrence         |                  | Y.2  | Social determinants of health   |
| de Lusignan, Simon       |                  | M.2  | Infectious disease              |
| Dennis, Sarah            |                  | A.1  | Access and equity               |
| Devoy, Emily             |                  | E.1  | Child health and development    |
| Drinkwater, Jessica      | @jessdrinkwater  | T.1  | PPIE                            |
| Drinkwater, Jessica      | @jessdrinkwater  | T.2  | PPIE                            |
| Duncan, Polly            | @polly_duncan    | J.8  | Education                       |
| Edwards, Michelle        |                  | L.3  | Health service research         |
| Emery, Laura             | @drlemery        | J.9  | Education                       |
| Everitt, Hazel           | @HazelEveritt    | F.3  | Clinical trials                 |
| Farrington, Rebecca      |                  | J.10 | Education                       |
| Fauré, Isabella          |                  | I.2  | Diabetes                        |
| Ferrer, Robert L         |                  | A.0b | Distinguished paper from NAPCRG |
| Foerster, Franziska      |                  | O.4  | Living and dying well           |
| Ford, Elizabeth          | @DrElizabethFord | Z.2  | Women's health                  |
| Foster, Hamish           | @hamishfoster    | Q.3  | Migration and migrant health    |
| Foster, Hamish           | @hamishfoster    | Y.3  | Social determinants of health   |
| Foster, Hamish           | @hamishfoster    | Q.2  | Migration and migrant health    |
| Free, Caroline           |                  | F.4  | Clinical trials                 |
| Friedemann Smith, Claire | @CFrieders       | C.6  | Cancer                          |
| Fryer, Kate              |                  | S.2  | Patient-clinician relationship  |
| Gallacher, Katie         | @GallacherKatie  | B.4  | Ageing, frailty and dementia    |
| Garthwaite, Heather      | @h_garthwaite    | U.6  | Prescribing                     |
| Gayatri, Aghnaa          |                  | I.3  | Diabetes                        |
| Geraghty, Adam           | @AdamWAGeraghty  | R.3  | Musculoskeletal                 |
| Grant, Sabrina           | @DrSabrinaGrant  | N.6  | Information Technology          |
| Grice, Adam              | @AdamGrice       | L.4  | Health service research         |
| Gunn, Jane               |                  | F.5  | Clinical trials                 |
| Hall, Louise             | @louisehall_7    | V.5  | Primary care workforce          |
| Hanlon, Peter            | @PHanlon17       | I.4  | Diabetes                        |
| Hanlon, Peter            | @PHanlon17       | F.6  | Clinical trials                 |

|                          |                  |      |                                |
|--------------------------|------------------|------|--------------------------------|
| Hanlon, Peter            | @PHanlon17       | U.7  | Prescribing                    |
| Harding, Alex            | @alexhardingexe  | J.11 | Education                      |
| Harding, Alex            | @alexhardingexe  | J.12 | Education                      |
| Harding-Edgar, Louisa    | @louhardingedgar | B.5  | Ageing, frailty and dementia   |
| Harding-Edgar, Louisa    |                  | L.5  | Health service research        |
| Harris, Teresa J.        |                  | F.7  | Clinical trials                |
| Hawarden, Ashley         | @ashley_hawarden | R.4  | Musculoskeletal                |
| Helliwell, Toby          | @HelliwellToby   | N.7  | Information Technology         |
| Hillman, Sarah Christine | @sarahhillman26  | Z.3  | Women's health                 |
| Hilton, Andrea           | @Andrea_Hilton1  | G.1  | Comorbidity and multimorbidity |
| Hilton, Andrea           | @Andrea_Hilton1  | B.6  | Ageing, frailty and dementia   |
| Hoare, Sarah             | @SarahEHoare     | D.4  | Cardiovascular                 |
| Hodkinson, Lucy          | @lucyhodk        | B.7  | Ageing, frailty and dementia   |
| Hodkinson, Alex          | @drAlexHodkinson | X.3  | Respiratory disease            |
| Hodkinson, Alex          | @drAlexHodkinson | X.2  | Respiratory disease            |
| Hornsey, Samantha        | @SamJHornsey     | E.2  | Child health and development   |
| Hornsey, Samantha        | @SamJHornsey     | E.3  | Child health and development   |
| Horwood, Jeremy          | @JPHorwood       | N.8  | Information Technology         |
| Hossain, Muhammad        | @drmzh           | D.5  | Cardiovascular                 |
| Hynes, Catherine         |                  | C.7  | Cancer                         |
| Imtiaz-Umer, Shehla      | @drsheelaiu      | V.6  | Primary care workforce         |
| Jack, Ruth               |                  | P.5  | Mental health                  |
| Jani, Bhautesh           | @BhauteshJani    | C.8  | Cancer                         |
| Jeffries, Mark           | @DrMarkJeffries  | N.9  | Information Technology         |
| Jinks, Clare             |                  | R.5  | Musculoskeletal                |
| Jones, Nicholas          | @drnrjones       | D.6  | Cardiovascular                 |
| Jones, Owain             |                  | C.9  | Cancer                         |
| Jong-Wook, Ban           | @JongWookBan     | D.7  | Cardiovascular                 |
| Jordan, Kelvin           |                  | H.4  | Database research              |
| Jordan, Kelvin           |                  | D.8  | Cardiovascular                 |
| Joseph, Rebecca          |                  | P.6  | Mental health                  |
| Kaneko, Mitsunobu        |                  | E.4  | Child health and development   |

|                     |                                    |      |                                      |
|---------------------|------------------------------------|------|--------------------------------------|
| Kendrick, Denise    |                                    | C.10 | Cancer                               |
| Khatteer, Aman      |                                    | U.8  | Prescribing                          |
| Kirtchuk, Liza      | @lkirtchuk                         | J.13 | Education                            |
| Knight, Hannah      | @HannahEllin                       | Z.4  | Women's health                       |
| Konya, Judit        |                                    | D.9  | Cardiovascular                       |
| Laparidou, Despina  | @DespiLaparidou                    | K.3  | Experience of illness in health care |
| Lassa, Samuel       |                                    | B.8  | Ageing, frailty and dementia         |
| Lau, Tin Man Mandy  |                                    | C.11 | Cancer                               |
| Law, Rebecca-Jane   | @RebeccaJaneLaw2<br>@NefynWilliams | B.9  | Ageing, frailty and dementia         |
| Lawton, Sarah A     |                                    | L.6  | Health service research              |
| Leitch, Sharon      | @dr_leitch                         | U.9  | Prescribing                          |
| L'Esperance, Veline |                                    | H.5  | Database research                    |
| Littlewood, Liz     |                                    | P.7  | Mental health                        |
| Logan, Anne-Marie   | @AnneMarieLogan2                   | B.10 | Ageing, frailty and dementia         |
| Lown, Mark          |                                    | U.10 | Prescribing                          |
| Lumley, Sophie      |                                    | J.14 | Education                            |
| Lyness, Emily       |                                    | R.6  | Musculoskeletal                      |
| Ma, Richard         | @Richard_GP                        | Z.5  | Women's health                       |
| Ma, Richard         | @Richard_GP                        | W.2  | Qualitative methods                  |
| MacFarlane, Anne    | @macfarlane_anne                   | Q.4  | Migration and migrant health         |
| Magin, Parker       |                                    | D.10 | Cardiovascular                       |
| Magin, Parker       |                                    | J.15 | Education                            |
| Maidment, Ian       | @maidment_dr                       | U.11 | Prescribing                          |
| Manca, Annalisa     | @annalisamanca                     | J.16 | Education                            |
| Mant, Jonathan      | @prof_mant                         | D.12 | Cardiovascular                       |
| Mant, Jonahan       | @prof_mant                         | D.11 | Cardiovascular                       |
| Margham, Tom        |                                    | H.6  | Database research                    |
| Mason, Ellen        |                                    | C.13 | Cancer                               |
| Mason, Ellen        |                                    | C.12 | Cancer                               |
| Mathur, Rohini      | @ladyroho                          | I.5  | Diabetes                             |



|                       |                      |      |                                |
|-----------------------|----------------------|------|--------------------------------|
| Mazza, Danielle       |                      | A.0a | Distinguished paper from AAAPC |
| McCahon, Deborah      |                      | U.12 | Prescribing                    |
| McCarthy, Caroline    |                      | F.9  | Clinical trials                |
| McCarthy, Caroline    |                      | F.8  | Clinical trials                |
| McInerney, Ciarán     | @CMc_PhD             | N.10 | Information Technology         |
| McMillan, Brian       | @brwmcmillan         | N.11 | Information Technology         |
| McMullen, Sarah       | @sarahmcmullen96     | B.11 | Ageing, frailty and dementia   |
| McQueenie, Ross       | @RossMcQueenie       | R.7  | Musculoskeletal                |
| Mehdizadeh, David     | @DM_Zadeh            | U.13 | Prescribing                    |
| Metters, Emma         |                      | J.17 | Education                      |
| Mitchell, Sarah       | @MacGPSarah          | O.5  | Living and dying well          |
| Mitchell, Caroline    | @dclovesGP           | A.2  | Access and equity              |
| Mitchell, Sarah       | @MacGPSarah          | O.6  | Living and dying well          |
| Mitchell, Caroline    | @dclovesGP           | I.6  | Diabetes                       |
| Moreira, Diana Nadine |                      | Z.6  | Women's health                 |
| Moriarty, Andrew      | @A_S_Moriarty        | P.8  | Mental health                  |
| Morrell, Liz          |                      | U.14 | Prescribing                    |
| Mughal, Faraz         | @farazhmughal        | P.9  | Mental health                  |
| Mulla, Ebrahim        | @EbMulla             | B.12 | Ageing, frailty and dementia   |
| Muller, Ingrid        | @IngridMuller7       | F.10 | Clinical trials                |
| Murphy, Mark          | @drmarkmurphy        | F.11 | Clinical trials                |
| Murphy, Mairead       | @mairead_murf        | N.12 | Information Technology         |
| Murphy, Norah         |                      | U.15 | Prescribing                    |
| Nagar, Melissa        |                      | U.3  | Prescribing                    |
| Newbould, Louise      | @NewbouldL           | E.5  | Child health and development   |
| Newhouse, Nikki       | @nikkinewhouse       | I.7  | Diabetes                       |
| Newton, Sian          |                      | X.4  | Respiratory disease            |
| Norman, Wendy V.      | @wvnorman, @cartgrac | Z.7  | Women's health                 |
| Nowakowska, Magdalena | @Mag_n               | U.16 | Prescribing                    |
| Nurek, Martine        | @martine_nurek       | U.17 | Prescribing                    |
| Nussbaum, Claire      |                      | V.7  | Primary care workforce         |

|                         |                       |      |                                      |
|-------------------------|-----------------------|------|--------------------------------------|
| O'Donnell, Kate         | @odo_kate             | G.2  | Comorbidity and multimorbidity       |
| Oke, Jason              | @oke_jason            | C.14 | Cancer                               |
| O'Keefe, Hannah         |                       | I.8  | Diabetes                             |
| Osasu, Yeyenta          | @Pharma2wit           | K.4  | Experience of illness in health care |
| Oyinlola, Jessie        |                       | C.15 | Cancer                               |
| Pal, Kingshuk           |                       | I.9  | Diabetes                             |
| Palmer, Victoria        |                       | F.12 | Clinical trials                      |
| Park, Sophie            | @SophieparkUCL        | J.18 | Education                            |
| Park, Sophie            | @sophieparkUCL        | J.19 | Education                            |
| Payne, Rupert           |                       | U.18 | Prescribing                          |
| Peat, George            | @gpeat1               | U.19 | Prescribing                          |
| Player, Emily           | @e_player1            | J.20 | Education                            |
| Player, Emily           | @e_player1@MGHGerlach | J.21 | Education                            |
| Poppleton, Aaron        | @aaronpoppleton       | J.22 | Education                            |
| Poppleton, Aaron        | @aaronpoppleton       | Q.5  | Migration and migrant health         |
| Porter, Ian             |                       | K.5  | Experience of illness in health care |
| Porter, Michael         | @portersDNA           | O.7  | Living and dying well                |
| Prescott, Oliver        | @OliRPres             | J.23 | Education                            |
| Quinn-Scoggins, Harriet | @HQuinnScoggins       | F.13 | Clinical trials                      |
| Ramsden, Vivian         |                       | O.8  | Living and dying well                |
| Razai, Mohammad         | @mohammadrazai        | Z.8  | Women's health                       |
| Redmond, Patrick        |                       | U.20 | Prescribing                          |
| Redmond, Patrick        | @PatrickNRedmond      | J.24 | Education                            |
| Rees, Eliot             | @elrees1              | J.25 | Education                            |
| Reeves, David           |                       | H.7  | Database research                    |
| Riordan, Fiona          | @riordanfiona1        | I.11 | Diabetes                             |
| Riordan, Fiona          |                       | I.10 | Diabetes                             |
| Riste, Lisa             | @riste_lisa           | P.10 | Mental health                        |
| Roberts, Kirsty         | @BrsTrialsCentre      | F.14 | Clinical trials                      |
| Robinson, Louise        | @LouiseProfessor      | B.13 | Ageing, frailty and dementia         |
| Rodgers, Sarah          |                       | U.21 | Prescribing                          |

|                       |                  |      |                                |
|-----------------------|------------------|------|--------------------------------|
| Roscoe, Julia         |                  | J.26 | Education                      |
| Rughani, Guy          | @gppcglasgow     | N.13 | Information Technology         |
| Sadhwani, Shanu       |                  | B.14 | Ageing, frailty and dementia   |
| Sahashi, Kazuki       | @k_sahashi       | J.27 | Education                      |
| Schartau, Patricia    |                  | N.14 | Information Technology         |
| Schartau, Patricia    |                  | I.12 | Diabetes                       |
| Schichtel, Markus     | @MS_CAM_UNI      | D.13 | Cardiovascular                 |
| Scott, Emma           |                  | T.3  | PPIE                           |
| Shepherd, Adam        | @amshep95        | S.3  | Patient-clinician relationship |
| Shivji, Noureen       | @noureenkaramali | R.8  | Musculoskeletal                |
| Silverwood, Victoria  | @v_silverwood    | P.11 | Mental health                  |
| Singh, Davinder       |                  | J.28 | Education                      |
| Sinnott, Carol        | @cmsinnott       | V.8  | Primary care workforce         |
| Siriwardena, Aloysius | @nsiriwardena    | J.29 | Education                      |
| sloan, Claire         |                  | B.15 | Ageing, frailty and dementia   |
| Smith, Susan          | @susanmsmith     | Y.4  | Social determinants of health  |
| Smith, Kirsten        | @tip_study       | J.30 | Education                      |
| Smith, Timothy        |                  | D.14 | Cardiovascular                 |
| Smith, Lesley         |                  | C.16 | Cancer                         |
| Sowden, Emma          |                  | D.15 | Cardiovascular                 |
| Spiers, Gemma         | @GFSpiers        | B.16 | Ageing, frailty and dementia   |
| Stafford, Mai         | @stafford_xm     | G.3  | Comorbidity and multimorbidity |
| Stewart, Johnny       | @JohnnyStewart1  | X.5  | Respiratory disease            |
| Stow, Daniel          | @_danielstow     | O.9  | Living and dying well          |
| Stuart, Beth          | @bethstuart97    | U.22 | Prescribing                    |
| Stynes, Siobhán       | @SiobhanStynes   | R.9  | Musculoskeletal                |
| Sullivan, Frank       | @primarycare_sta | F.15 | Clinical trials                |
| Sultan, Najia         |                  | Q.6  | Migration and migrant health   |
| Taylor, Lauren        | @laurentaylor196 | Z.9  | Women's health                 |
| Taylor, Anna          | @Anna_K_Taylor   | C.17 | Cancer                         |
| Teasdale, Emma        |                  | W.3  | Qualitative methods            |
| Thomas, Martin        |                  | R.10 | Musculoskeletal                |

|                     |                  |      |                                |
|---------------------|------------------|------|--------------------------------|
| Thompson, Sara      |                  | J.31 | Education                      |
| Tonkin-Crine, Sarah | @SKGTonkinCrine  | U.23 | Prescribing                    |
| Tsimpida, Dalia     | @DaliaTsimpida   | G.4  | Comorbidity and multimorbidity |
| Turk, Amadea        | @AmadeaTurk      | U.24 | Prescribing                    |
| Twohig, Helen       | @H2Norman        | R.11 | Musculoskeletal                |
| van Ginneken, Nadja |                  | O.10 | Living and dying well          |
| Watson, Jessica     | @drjessicawatson | S.4  | Patient-clinician relationship |
| White, Patrick T    |                  | F.16 | Clinical trials                |
| Whitehead, Orla     | @orlawhitehead   | O.11 | Living and dying well          |
| Willis, Thomas      | @AU_PrimaryCare  | I.13 | Diabetes                       |
| Woodcock, Charlotte | @DrCWoodcock     | W.4  | Qualitative methods            |
| worthing, kitty     | @kitdempsey      | Q.7  | Migration and migrant health   |
| Wright, Michael     | @wrightdrmc      | L.7  | Health service research        |
| Yamada, Satoshi     |                  | J.32 | Education                      |
| Yong, Mostyn        |                  | B.17 | Ageing, frailty and dementia   |
| Yu, Esther          |                  | D.16 | Cardiovascular                 |
| Zghebi, Salwa       | @salwasz278      | D.17 | Cardiovascular                 |