School for Primary Care Research

Annual Trainees’ Event 2016

19-20 September 2016
The Queen’s College
University of Oxford

NIHR at 10
Arrive at The Queen's College on 19 September from 10am. Leave luggage at the Porters' Lodge until check in (after lunch or early evening). Vacate rooms on 20 September by 10am and use the Porters' Lodge to leave luggage before departing.

### DAY ONE

**19 September**

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<td>11.00 - 11.15</td>
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Board Members & Training Leads

**University of Bristol**  
Chris Salisbury  
Debbie Sharp, Alice Malpass and Rebecca Barnes

**University of Cambridge**  
Jonathan Mant  
Fiona Walter

**Keele University**  
Elaine Hay  
Christian Mallen and Carolyn Chew-Graham

**University of Manchester**  
Peter Bower  
Aneez Esmail

**Newcastle University**  
Louise Robinson  
Barbara Hanratty

**University of Nottingham**  
Joe Kai  
Nadeem Qureshi

**University of Oxford**  
Carl Heneghan  
Paul Aveyard, Katherine Tucker and Kay Wang

**University of Southampton**  
Paul Little  
George Lewith

**University College London**  
Elizabeth Murray  
Kate Walters

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**We welcome the external presenters:**

Lynne Maddocks (University of Oxford and CLAHRC Oxford)  
Nicola Melody (NIHR TCC)  
Andy Ridgway (UWE)  
Jen Harrison (Health Research Authority)  
Sarah Tonkin-Crine (University of Oxford)  
Sophie Park (UCL)

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**And guests from the NIHR Trainees Coordinating Centre:**

Caroline Magee, Sharmila Soekhoe and Leicia Feare
# Poster Sessions

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Ryan Irwin

General practice type and clinical quality of care: A mixed methods study

Introduction
The presented research sought to understand variation in the clinical quality of primary care at practice level, whilst subsequently identifying implications for quality improvement.

Methods
Clinical indicators relating to Cardiovascular Disease and Diabetes were analysed in general practices in Sandwell (West Midlands). General practices showing unusually high or unusually low performance across these indicators were identified. Semi-structured interviews were then conducted with practice staff to explore reasons for variation and understand practice approaches to quality improvement.

Results
Clear differences emerged between practices’ leadership, culture and care systems, and approaches to quality improvement. General practices could be categorised into four types: “biomedical”, “holistic”, “corporate” and “risk-focussed” practices. Practices were differentiated particularly in relation to beliefs and attitudes held around the primary driver of quality improvement in primary care practice. Practices demonstrating unusually high performance on clinical quality indicators were most commonly “biomedical”, with those demonstrating unusually low performance “risk-focussed”.

Discussion
Clinical quality appears to be linked to fundamental differences between general practices’ philosophy of care, motivations for quality improvement and attitudes to care delivery. Individual practices placed different emphasis and importance on various aspects of primary care in quality improvement, such as implementation of standardised clinical protocols and processes, care centred around patient activation and experience, and focus given to organisational growth and development (delivering “primary care at greater scale”), for example. Understanding a practice’s philosophy of care and practice type potentially offers a simple way to support practice self-reflection and identification of individual practice quality improvement strategies.

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Feroz Jadhakhan

The effects of impaired glucose tolerance on the development of chronic kidney disease in young adults aged (18 to 40 years)

It is relatively clear that the risk of chronic kidney disease (CKD) is elevated in patients with diabetes mellitus but it is not clear whether the risk is also elevated in patients with impaired glucose tolerance (IGT). As many studies have used a single determination of glycaemic status at baseline, it is not clear whether the risk of developing a CKD event is confined to people with IGT who progresses to overt diabetes or whether the risk is still increased among people with IGT even if they never develop diabetes. Also many studies do not particularly include young adults aged (18 to 40 years) in their analyses. Due to these limitations it is inappropriate to extrapolate rates and relative risks to this cohort of individuals and in particular to primary care where majority of decisions for early prevention are made. The overall aim of this study is: 1) Determine the prevalence of IGT in young adult aged (18 to 40 years); 2) Determine the incidence of CKD in young adult aged (18 to 40 years) with and without IGT and after adjustment for confounders; 3) Determine whether patients with IGT have an increased risk of CKD during the period when they have IGT or whether any increased risk only occurs after the develop type 2 diabetes (T2DM) and finally design a prediction model to estimate the risk of developing future CKD outcomes in young adult aged (18 to 40 years) with IGT.

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DUTY-PCAAR: retrospective cohort study investigating the prevalence of, and risk factors for, resistance in paediatric urinary bacteria – a follow-up to the DUTY study

Introduction

Bacterial resistance to antibiotics is an internationally recognised health threat, particularly in primary care where 80% of antibiotics are prescribed. There is limited knowledge around the prevalence of resistant bacteria in children, and even less known about risk factors associated with resistance. This study aims to explore the prevalence of resistance to common primary care antibiotics in children’s urinary bacteria, and identify risk factors associated with resistance.

Methods

DUTY-PCAAR was a follow-up to the DUTY study. Children were aged between 0-5 years presenting to primary care across England and Wales with acute illness. Escherichia coli urinary isolates were obtained from a subset of DUTY children’s urine samples and antimicrobial susceptibility testing was conducted. Risk factor information was collected including demographics, symptoms, medical history and previous exposure to antibiotics. Logistic regression analysis was used to obtain crude and adjusted odds ratios.

Results

Antimicrobial sensitivities were obtained for 824 E. coli urinary isolates, 79 were laboratory-diagnosed UTI and 745 non-laboratory-diagnosed UTI. Resistance was highest against amoxicillin (38.5%), co-amoxiclav (21.0%) and trimethoprim (17.6%). No isolates were nitrofurantoin-resistant. Children with a UTI were more than twice as likely to carry a resistant E. coli isolate as those without a UTI (aOR: 2.36, 1.26-4.48). There was no association between being prescribed an antibiotic in the 12 months prior to urine sampling and resistance.

Conclusions

Prevalence of resistance to several common primary care prescribed antibiotics in children’s E. coli isolates is high. Being prescribed an antibiotic did not appear to increase the likelihood of resistance in children’s urinary E. coli. There is a need for prescribing guidelines to reflect local resistance patterns to prolong their effectiveness as first-line treatments.

Isabel Lane

What are the effects of providing real-time population-based data on locally circulating microbes and syndromic presentations on clinician management of common infections in primary care? A quantitative systematic review.

The problem

The WHO describes antimicrobial resistance (AMR) as one of the greatest challenges to global public health. Clinician uncertainty has been identified as a key driver for over prescription of antibiotics in primary care. Bayesian diagnostics asserts that clinicians first establish a pre-test diagnostic probability, which is modified (post-test probability) as further clinical evidence becomes available. The aim of this study is to investigate if interventions to inform clinicians about locally relevant population-based surveillance reduces diagnostic uncertainty and improves antibiotic prescribing.

The approach

We are systematically reviewing studies that evaluate provision of population-based, locally relevant, microbiological or syndromic surveillance data to primary care clinicians. The main outcomes of interest are antibiotic prescribing and secondary care referrals.

Databases searched were Medline, EMBASE, CINAHL, and Web of Science. Grey literature sources, thesis databases and trial registries are being searched, with additional studies being identified through screening references and contacting experts.

Quality assessments are specific to study design: Cochrane Risk of Bias tool for RCTs; and the ROBINS-I tool for non-randomised intervention studies.

The findings

Electronic searches identified 9292 hits. Screening identified 38 records to retrieve in fulltext. Findings will be presented on effect sizes, quality and validity of studies, with meta-analyses conducted if appropriate. Development, execution and evaluation of interventions as well as use of behaviour change models will be assessed.

The consequences

This systematic review will provide an essential contribution to inform design of future interventions and guide the design of ethical and robust studies seeking to evaluate complex interventions in primary care.

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Sophie Turnbull

Cultural and socioeconomic differences in the use of web-based health interventions for self-care of high burden health conditions

The problem

Chronic conditions can place a huge burden on the sufferer’s quality of life, causing disability and potentially premature death. Around 15 million people in England are living with a long-term condition.1 Prevalence is higher in older people and in those with a lower socioeconomic status.1 The complex needs of these conditions, coupled with the increasing demand on healthcare services, has led to the NHS making the development and promotion of self-care interventions a core strategy.2 With the rapid increase in access to the internet across the world, there is a potential to improve access to health care and decrease health inequality via the provision of self-care web interventions. Web-based interventions are already being used to deliver self-care, and evidence suggests that they can be effective for a range of different healthcare outcomes.3,4,5,6,7,8 However, there has been little investigation into the generalisability of the effect of the web-based health interventions to different socioeconomic and cultural groups and whether the uptake is equivalent.

The approach

Diabetes Mellitus, Depression, Asthma, Osteoarthritis, COPD and Substance abuse were selected as they: i) pose the highest burden of disease to individuals in high income countries; ii) are treated in primary care, and; iii) are well suited to self-care web-based interventions. A systematic review is being conducted to establish two main aims i) differential effectiveness (on symptom relief or prognosis) of behavioural change techniques used in web-based self-help interventions, and; ii) differential uptake of web-based interventions in different socioeconomic and cultural groups. The project is in the data extraction phase.

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Gemma-Claire Ali

Developing a dyadic mental health intervention for people living with chronic physical conditions and their family and friends: The literature review phase

Introduction

Chronic physical conditions can negatively affect the mental health of both patients and their family and friends (F/F). A wide and growing literature exists on the effectiveness of interventions designed to improve the mental health of people living with chronic conditions and their F/F independently of each other, but very little research focuses on dyadic interventions. The literature review phase of my research seeks to identify and review the existing literature, to inform the development of an evidence-based dyadic mental health intervention.

Methods

The literature is reviewed in three ways: a) systematic scoping review of trials of non-pharmacological interventions delivered to people living with chronic conditions and/or their F/F to improve mental health understanding or outcomes within the dyad; b) review of systematic reviews summarising the effectiveness of non-pharmacological mental health interventions for people living with chronic conditions; c) review of systematic reviews summarising the effectiveness of non-pharmacological mental health interventions for F/F.

Results

The systematic scoping review search returned a total of 14,456 unique hits, from which 53 eligible studies were identified. The reviews of reviews identified 39 systematic reviews. Findings highlight discrepancies in the degree of research interest afforded to different chronic conditions. Intervention components that are supported by findings from the literature review and which therefore will be considered for the dyadic intervention are: mental health education delivered through active-learning; psychological therapies, particularly cognitive-behavioural therapy, acceptance-based therapy and mindfulness; problem-solving; couples/family therapy regarding communication and relationship intimacy; emotional expression; relaxation; music therapy; physical therapy; and peer contact.

Discussion

Findings will be synthesised with those of forthcoming formative work to inform the development of a dyadic mental health intervention for dyads living with chronic physical conditions. This formative work will use qualitative methods with patients and their F/F to ascertain their needs and preferences for the intervention.

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Jenny Lund

Screening for atrial fibrillation (AF) in primary care

Background
Approximately 25% of strokes are associated with AF and about 25% of those who have a stroke do not have AF diagnosed until the time of their stroke. The presence of untreated AF increases the risk of stroke fivefold and this risk can be reduced by appropriate anticoagulation. At this time the National Screening Committee recommends against screening due to insufficient evidence of benefit however there have been recent advances in both detection and treatment of AF. From 2008 a number of locally enhanced services (LES) were offered to GPs to screen for AF with pulse palpation at the annual influenza vaccination.

Method
A cohort study using data from GP records held within CPRD (Clinical Practice Research Datalink). Patients aged over 65 who received an influenza vaccination between 2008-2011 will be included and their records followed until 2016. As the project is still in the very early design stage the exact statistical plan is yet to be confirmed but is likely to include survival analysis and modelling of time to first stroke. A secondary outcome of rates of appropriate anticoagulation will also be modelled.

Objectives
To investigate whether screening for AF with pulse palpation in general practice is effective in reducing mortality and morbidity and whether screen detected AF is appropriately anticoagulated.

Discussion
It is hoped that the information gained from this study will contribute to the development of a larger, nationwide trial of screening for AF.

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Shula Baker

Maintaining mental health in older people with musculoskeletal pain: A longitudinal cohort study

Background
Musculoskeletal pain increases the risk of becoming depressed in some, but not all, older people. Social participation (SP) (i.e. activities involving interaction with others) has been linked to good mental health, but whether it is associated with maintaining mental health in older adults with pain is not known.

Objectives
To test the hypothesis that among older people with pain higher levels of SP would be associated with good mental health.

Methods
Data from 2654 people aged ≥50 years participating in the English Longitudinal Study of Ageing (ELSA) were used. At baseline participants were asked ‘are you often troubled with pain?’ (response options yes/no). Mental health was classified at baseline and 4 years using the 8-item Centre for Epidemiologic Studies Depression scale. SP at 2 years was defined using a variable, and coded as low/high. Path analysis assessed the total, direct and indirect (via SP) effects of baseline pain on mental health at 4-year follow-up. Results were expressed as odds ratios (OR) with 95% confidence intervals (95% CI).

Results
863(32.5%) reported being often troubled by pain at baseline. Pain at baseline was associated with a 70% decreased odds of good mental health (total effect OR:0.30;95%CI (0.23,0.38)). Among those with pain at baseline, high SP at 2 years indicated 3 times the odds of good mental health at 4-year follow-up. Results were expressed as odds ratios (OR) with 95% confidence intervals (95% CI).

Conclusions
In older people with pain frequent SP was associated with good mental health 4 years later. The pathway between pain maintaining mental health is however better explained by factors other than SP.

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Melanie Holden

How do UK and Australian physical therapists manage patients with hip osteoarthritis? Results of a cross-sectional survey

Background

Hip osteoarthritis (OA) is common, painful and disabling. Physical therapists have an important role in managing patients with hip OA, however little is known about their current management approaches and whether these differ internationally.

Methods

A cross-sectional survey was conducted in the United Kingdom (UK) and Australia. In the UK, the survey was mailed to 3126 physical therapists and in Australia, a link to an online survey was provided. The survey explored physical therapists' self-reported management of a patient with hip OA using a case vignette and clinical management questions, and captured demographic and practice data.

Results

The UK response rate was 53% (n=1646), with 1148 physical therapists having treated a patient with hip OA in the last 6 months. These, along with 207 Australian physical therapists, were included in the analyses. In both countries, a package of treatment incorporating advice, exercise (typically strength training (>90%)) and other non-pharmacological modalities, predominantly manual therapy (>60%) and gait re-training (>60%) was commonly provided. Australian physical therapists provided more treatment sessions than therapists in the UK (5 or more sessions: Australia: 75%, UK: 40%, p<0.001).

Conclusions

This is the first international survey of physical therapists’ management of patients with hip OA. A package of care broadly in line with clinical guideline recommendations was typically provided, although evidence supporting commonly used interventions is limited. There are some differences in management approaches between UK and Australian physical therapists, but further research is needed to determine whether these differences impact on clinical outcomes.

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Cliona McRobert

Selecting Primary Care Treatment for Patients with Shoulder Disorders: An International Conjoint Analysis Study

Introduction

Prognostic factors can help identify subgroups or individuals with a shoulder disorder likely to have a poor prognosis, however tools to support first-line clinical treatment selection are lacking. Treatment selection rationale for commonly used primary care shoulder pain treatments; (i) advice+analgesia, (ii) corticosteroid injection, and (iii) physiotherapy are unknown.

Methods

Previous research identified 12 patient attributes relevant to treatment selection. Hypothetical patient profiles were developed for an online international conjoint analysis study. Hierarchical multinomial analysis of survey data identified each attributes’ impact on likelihood of selecting corticosteroid injection or physiotherapy over advice+analgesia.

Results

Data was received from 387 clinicians from 31 countries (64% UK). Patient attributes influencing treatment selection included; lack of condition improvement, previous positive response to injection/physiotherapy, and presence of weakness or instability. For patients with sleep disturbance clinicians selected corticosteroid injection over advice+analgesia (Relative Risk Ratio RRR(95%CI)=1.49(1.45,1.95)) but were less likely to select physiotherapy (RRR=0.67(0.55,0.82)). Similar results were found for high pain severity. Patients’ treatment preference significantly influenced clinicians’ treatment choice. Co-morbid neck pain and overuse significantly influenced choosing physiotherapy but not injection. Severe work/ function impact increased injection but not physiotherapy selection, whilst having a traumatic onset, unstable diabetes or cardiac problems reduced injection selection.

Discussion

The relative importance of specific patient attributes in clinicians’ selection of shoulder treatments was quantified. Logical clinical patterns emerged suggesting that clinicians use moderators of treatment effect to guide treatment selection. RCT secondary data analysis is indicated to test if the attributes identified in this study indeed modify effects of treatment.

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Lucy Teece

Competing Risks in Prognostic Models

Prognostic models are used in primary care to predict an individual’s risk of future health outcomes, including disease progression and the development of further complications. Communicating these risks enables clinicians to help patients understand their own risks and can also help in planning and management of the patient’s illness.

Competing risks are present when one event prevents another from occurring. These are common in primary care when predicting risks in an ageing population where multiple comorbidities are common. For example, when predicting the risk of hip-fractures in an elderly population a competing risk would be death.

Though competing risks are common, very few prognostic models account for the presence of competing events. My thesis will explore the current practice for accounting for competing risks in the development of prognostic models through a systematic review of the International Register of Clinical Prediction Rules for Use in Primary Care. I will then go on to examine different approaches to incorporate competing risks methodologies into the development and validation of prognostic models, to investigate how these influence the prognostic performance and predictions given by the models. This will be investigated by applying competing risks methodologies to construct prognostic models using the Prediction of Risks in Early Onset Preeclampsia study data. Finally I hope to determine under which circumstances accounting for competing risks become beneficial, which will be evaluated through a simulation study. My overall aim is to provide guidance for the optimal approaches to incorporate competing risks in prognostic model research.

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Martin Thomas

Acute Flares of Knee Osteoarthritis in Primary Care: A Feasibility and Pilot Study Proposal

Introduction

Knee osteoarthritis (OA) affects 25% of adults aged over 50, and leads to over 400,000 general practice consultations in the UK each year. Contrary to its popular image as a slowly progressive condition, some patients complain of acute flares that are difficult to cope with, particularly when severe and unpredictable. It is unclear what these events are and what they signify. Existing guidance for patients and practitioners does not specifically address their management and prevention. Our study aims to develop and test a system for capturing ‘real-time’ information on these acute flare-ups, the things that trigger them, and which patients are most often affected.

Methods

The study comprises the following stages: 1) Questionnaire development. 2) Web-based data collection platform development. 3) Pilot data collection with 50 participants from general practices using the web-based data collection platform. Using a combination of time- and event-contingent data collection we will explore a range of potential physical, psychological and social triggers. Pilot analysis will estimate key parameters for the main study, including recruitment (eligibility, screening, consent), retention, flare-up frequency, and participant characteristics and willingness to be considered for biomarker data collection. Process data will be gathered on usability of the website and questionnaire completeness. A patient advisory group will engage with all stages of development.

Discussion

This study will establish whether a large-scale online case-crossover study is feasible. It forms part of a series of investigations that we hope will lead to greater recognition of these phenomena and more effective management and prevention.

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Sarah Cotterill

Development and feasibility of an intervention using social comparison and social pressure in primary care to change GP behaviour in relation to test ordering.

Background

Fatigue or tiredness is a common symptom among people presenting to GPs. Fatigue can be a symptom of serious illness, but this is rare, and there are usually accompanying symptoms. Guidance to GPs is to order blood tests if fatigue lasts a month, is unusual or accompanied by certain symptoms. Despite this GPs order lots of tests. Social comparison involves providing information on the actions of others in a peer group, and comparing it to the behaviour of the recipient. Social pressure is letting someone know that their behaviour is being observed and will be communicated to others.

Objectives

Investigate the use of social comparison and social pressure to persuade GPs to order fewer blood tests. We will use the example of fatigue without any other symptoms, but this approach could be applied to other tests and treatments.

Methods

WP1. Develop an intervention for use with GPs ordering blood tests for fatigue, using evidence from previous studies, qualitative research with GPs and analysis of EHRs. Combine these sources following MRC intervention development guidelines.

WP2. Investigate the use of EHRs for conducting brief behaviour change trials with GPs. This will concentrate on the example of fatigue testing, but the methodology will be adaptable to other conditions.

WP3. A randomised feasibility study: 20 GPs in 10 practices randomised to receive the intervention or control.

Preliminary work: The application of social comparison and social pressure to the behaviour of health professionals and its impact: a systematic review (funded by SCPR).

Edmore Chamapiwa

Application of Marginal Structural Models to unbalanced logitudinal health data (Clinical Cohort): A simulation study

Background

Marginal Structural Models (MSMs), a class of structural causal models, are being increasingly used in the analysis of complex longitudinal health data because of their ability to give unbiased effect estimates of a time-varying treatment in the presence of time-varying confounding/mediating covariates. However, MSMs have shown good performance to settings where observations occur at regularly separated time points for all patients, whereas in ‘real-life’ health record data, different patients are commonly seen and measured at different and irregular time points. In addition, the frequency with which a patient is seen may well be related to their health outcomes. The impact of irregular, but more realistic, data on the performance of MSMs is unknown.

Objective

To evaluate the performance in effect estimation of inverse-probability-weighted MSMs in unbalanced longitudinal health data (clinical cohort)

Methods

A simulation study was conducted to compare treatment effect estimates from inverse-probability-weighted MSM, adjusted and unadjusted regression models. Irregular longitudinal data was generated by sampling time between consecutive visits for an individual from an inverse Gaussian distribution. Treatment at each observation time was sampled from a Bernoulli distribution with likelihood of getting treated dependent on the confounder level, and confounder values were sampled from a Bernoulli distribution. Continuous outcome values were simulated from a Normal distribution. Data simulation and analysis were conducted in R.

Results

This simulation study showed that inverse-probability-weighted MSMs outperform stratification based estimation methods when longitudinal data is unbalanced and when confounders and treatments are time-varying.

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The recession of 2008 was accompanied with a rise in suicides especially among men. Despite the end of the economic downturn in 2010, figures on suicides published by the Office for National Statistics exhibited no reduction in suicide rates. On the contrary, suicides rates have been rising steadily ever since the beginning of the recession, reaching in 2013 their highest rate since 2002.

Primary care has enormous potential to prevent suicides and connect people to needed specialty care, thus contributing substantially to the reduction of suicide rates though co-ordinated preventive services, early diagnosis and disease management. In this study we aim to investigate and quantify the relationship between quality of Primary Care as measured across clinical mental health indicators from the mental health domain of the QOF and suicide mortality in a spatial framework. We aim to answer whether a nationwide pay-for-performance scheme has resulted in reduced incidence of suicide mortality in the population. Additionally we quantitatively assess the associations between a range of social, cultural, health-related factors and age-specific, sex-specific suicide rates at the lowest geographical level available for England. Data availability in factors that have been documented to affect suicide rates, such as deprivation and social fragmentation, available at the lowest geographical level for England allows us to capture and quantify more accurately the respective associations as opposed to studies that use data defined across practice postcodes. Using the most recent official data on suicides we assess these relationships over time for the whole of England.

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Lisa Riste

The role of telephone-based health coaching for older people on perceived social support and it’s potential to improve self-management of Long Term Conditions.

Introduction

As people get older they develop more health problems, with 80% of the over 65’s having at least one long term condition (LTC). Whilst LTCs cannot be cured, their impact on people’s lives can be reduced by following advice and people looking after themselves.

Friends and family, and engaging with local groups may all help provide emotional, practical and financial help but people’s support networks tend to shrink as people get older.

Methods

The Comprehensive Longitudinal Assessment of Salford Integrated Care (CLASSIC) study evaluates Salford’s Integrated Care Programme for older people, via:

i) a longitudinal cohort of people aged 65 years or older with at least one LTC - complete questionnaires about their health and wellbeing including self-management, Social Support, and use of community assets at baseline, 6, and 12 months, with final 18 month follow-up due Sept 2016.

ii) a nested Randomised Controlled Trial (PROTECTS) - 250 people selected from the longitudinal cohort with 2 or more LTCs and scoring 2-3 on the Patient Activation Measure Scale, were invited to receive 6 sessions of health coaching delivered by telephone over 6 months.

Outcome measures were derived from the ongoing longitudinal survey and from semi-structured interviews conducted with a sample of members from the PROTECTS RCT.

Preliminary Results

4377 people aged 65 years or older completed our baseline questionnaire. 198 people participated in the PROTECTS study. We will report preliminary findings on the potential of telephone-based health coaching interventions to improve social support and self-management of LTCs in older people.

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Bethany Bareham

A qualitative systematic review of older adults’ and health and social care practitioners’ perceptions and experiences of alcohol consumption in later life.

Introduction
Alcohol presents many health risks to older adults, even when consumed in moderation. However, alcohol is also associated with a small number of health benefits in later life, and has implications for wider aspects of wellbeing. In order to improve policy and practice targeting alcohol use in later life, we need to understand how older adults and their health and social care practitioners perceive and experience the use of alcohol in old age. This study aims to synthesise available qualitative research evidence on the views of older adults and health and social care practitioners on alcohol consumption in later life.

Methods
A systematic search strategy has been developed and implemented to five relevant databases. Selected qualitative studies will be synthesised through meta-ethnography, with third order constructs produced describing themes identified within the data.

Results
2029 papers were screened against inclusion and exclusion criteria, with 68 papers identified for screening by full text. Themes are expected to include perspectives of the impact of alcohol use on health and socialisation, as well as its role in relaxation and coping, and views surrounding the normalisation and stigmatisation of alcohol use in old age.

Discussion
This review will provide timely input into understanding the roles of alcohol consumption in later life given recent changes in the United Kingdom’s Chief Medical Officer’s guidance for alcohol consumption. Exploration of both older adult and health professional perspectives will challenge stereotypes held within the medical profession of drinking in later life.

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Amy O’Donnell

Are screening and brief alcohol interventions adequately embedded in routine primary care? A qualitative study of patients and practitioners

Background
Between 20-30% of UK primary care patients are drinking above recommended limits, with heavy drinkers attending more frequently than those drinking at lower risk levels. Excessive alcohol consumption has been shown to be causally related to 60+ medical conditions, including liver cirrhosis, cancer and cardiovascular disease. Despite robust evidence for the effectiveness of alcohol screening and brief interventions, their provision in primary care remains highly inconsistent. Some of the challenges faced by GPs in delivering alcohol interventions are well-known, including lack of time, training and financial incentives. However, the views and experiences of other primary care staff and patients themselves remain under-researched.

Methods
Normalisation Process Theory (NPT) informed interviews with up to 15 practice staff (GPs, nurses, administrators) and 15 patients in North East England who have experience of screening and / or brief alcohol interventions in primary care. NPT helps explain the ‘work’ involved in enacting a set of practices through the operation of four mechanisms: coherence; cognitive participation; collective action; reflexive monitoring.

Results
Interviews are ongoing. This poster will present emerging findings focussed around three study objectives, to: (1) investigate the acceptability / feasibility of screening and brief alcohol interventions to patients and practitioners; (2) understand the barriers / facilitators to delivery; (3) assess the extent to which screening and brief alcohol interventions are effectively embedded within UK primary care.

Conclusion
This study will improve our understanding of why alcohol interventions are not routinely adopted and delivered in the UK, and thus help inform the design of future policy initiatives to reduce alcohol consumption.

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**Daniel Stow**

**Use of a frailty index in primary care**

Frailty has been defined as a distinct health state related to the ageing process in which multiple body systems gradually lose their in-built reserves. It is associated with increased morbidity and mortality in older adults, and as the population ages, the number of older adults living and dying with frailty will increase. Providing appropriate, effective and timely care for frail older adults can be a challenge. This project investigates the use of a frailty score - the electronic frailty index (efi) - available in routine electronic health records (EHRs), and assesses the potential contribution to end of life care.

We requested anonymised primary care EHR data from ResearchOne for individuals aged 75+ who died between 2015 and 2016. These individuals were matched to individuals aged 75+ with no record of death in the same time period. Monthly frailty scores were calculated over one year using the eFI. Latent class linear mixed model analysis was used to identify unobserved classes of patients and mean eFI trajectories.

In total, 30,000 records were extracted. In a preliminary analysis of data from a random subset of 1000 patients (54.6% female, mean age 85.8, sd 6.2), three latent classes of eFI trajectory were observed: low stable, high stable and accelerating accumulation. Ongoing work will describe class membership in the whole dataset and examine the accuracy of the model when additional covariates are included.

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**Sarah Audsley**

**Facilitating long-term physical activity adherence following the completion of a community-based falls prevention exercise programme in older people.**

**Background**

Falls are extremely common in older people and low physical activity levels exacerbate functional impairment and increase falling risk. FaME (Falls Management Exercise programme) has been shown to increase physical activity levels, improve physical function and reduce the risk of falls in older people. However, these beneficial effects diminish if people do not maintain physical activity after the exercise programme. Currently little is known about maintaining physical activity in older adults after structured exercise interventions have ceased. This evidence gap is being addressed in the present study.

**Study design**

We are currently conducting a systematic review to inform the development of an intervention to promote the maintenance of physical activity after participation in the FaME programme. The maintenance intervention will be tested in a feasibility trial in which people coming to the end of the FaME programme will be randomised into the intervention or usual care group. Physical activity levels, physical function and fall-related factors will be measured on cessation of the FaME programme and 6 months after the completion of the feasibility trial.

**Results**

The results of the systematic review and the description of the intervention will be presented at the anniversary event.

**Conclusion**

This study will investigate the implementation of a physical activity maintenance intervention in older people who have completed the FaME programme. The intervention developed and the knowledge gained will help inform the design of future randomised controlled trials to increase physical activity adherence in older adults following structured exercise programmes.

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Kieran Ayling

Psycho-behavioural Influences on Influenza Vaccine Responses in Older Adults

Objectives

Effective vaccination relies on an individual’s immune system responding robustly to antigens present in the vaccine. Therefore, those with reduced immune functionality (e.g., the elderly), frequently achieve sub-optimal vaccine outcomes. Psycho-behavioural factors (including diet, mood and physical activity) have been shown to impact both directly and indirectly on immune responses to vaccination. Thus, interventions targeting these factors have the potential to act as an effective, non-pharmacological vaccine adjuvant. As the first step in developing a psycho-behavioural vaccine adjuvant, this study aimed to establish which psycho-behavioural factor(s) exerts the greatest influence on vaccine outcomes and at what time (pre- or post-vaccination) this influence occurs.

Method

138 older adults (65-85 years) were be recruited from primary care. Behavioural (Diet, Physical Activity, Sleep) and psychological factors (Positive and Negative Affect, Perceived Stress) were assessed at frequent intervals during the two weeks before, and four weeks following influenza vaccination. Antibody responses were assessed via antibody microarray performed on serum samples taken pre-vaccination, at 4 weeks and 16 weeks post-vaccination.

Results

Multiple psychological and behavioural factors significantly influenced vaccination responses, with greater positive affect over the entire observation period most frequently associated with enhanced responses. This was most evident in the vaccine strain with the lowest immunogenicity (H1N1) at 16 weeks post-vaccination.

Conclusions

Positive affect impacts on influenza vaccine responses in older adults. As such, positive affect may be a suitable target as a psycho-behavioural adjuvant to enhance vaccine efficacy in older adults.

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Libby Fergie

Enhancing NHS behavioural smoking cessation support for pregnant women

Background

In the UK, smoking is responsible for more deaths than obesity, alcohol, road traffic accidents, illegal drugs and HIV infection, with the current estimate being 6 million deaths annually. In addition to the standard dangers of smoking to an individual, smoking in pregnancy also poses further risks to both the mother and baby. Although the prevalence of smoking in pregnancy has generally been decreasing in the UK over recent years, around 10.6% of women in England currently smoke during pregnancy which remains of a major Public Health concern.

Free of charge, Stop Smoking Services (SSS) have been available throughout England since the late 1990s which pregnant ladies can access. However, although behavioural change techniques (BCTs) used by SSS advisors can be effective in successfully supporting cessation, the behavioural support provided across services for pregnant women has been inconsistent.

Overall aim

The overall aim of this research is therefore to identify BCTs that are most acceptable and most feasible to be delivered as components of behavioural support to assist women to achieve smoking cessation during pregnancy. Such findings will be used to develop of a new and novel, evidence-based, pregnancy specific behaviour change intervention.

Methods

A systematic review, expert group meetings, a modified Delphi survey with stop smoking advisors and qualitative interviews with pregnant smokers will be conducted. The systematic review is aimed to establish effective BCTs for other detrimental behaviours in pregnancy which includes alcohol consumption, illicit drug use and excessive gestational weight gain. The results will be used to enhance the findings from a similar smoking in pregnancy review. The expert group meetings and modify Delphi survey will be carried out in order to gain consensus, amongst experts in the field of smoking in pregnancy, on: which barriers and facilitators pregnant women can face in regards to smoking cessation, which of these are considered to be the most salient and important to address, which BCTs could be used or adapted to address such barriers and facilitators and how could this feasibly be implemented in practice through an intervention. The qualitative interviews will aim to establish how the views and experiences of pregnant smokers match or differ from the experts in the field.

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Stephen Weng

Can machine-learning algorithms enhance cardiovascular risk prediction using routinely collected primary care data?

Introduction

Cardiovascular disease (CVD) risk prediction tools are being widely used. However, individuals at risk of cardiovascular disease (CVD) are not being identified whilst too many individuals are given treatment unnecessarily. We evaluated whether machine-learning can improve predictive accuracy of CVD.

Methods

Comparing diagnostic test accuracy of CVD risk prediction models using a population-based cohort (Clinical Practice Research Datalink) consisting of 378,356 UK primary care patients with routinely collected data, aged 30-84 years free from CVD at baseline (1 Jan 2005). Thirty risk factor variables potentially associated with CVD were included in the analysis.

Diagnostic test accuracy of four machine-learning algorithms: logistic regression, random forest, gradient boosting machines, and neural networks. A baseline risk prediction model was developed using the published American College of Cardiology/American Heart Association (ACC/AHA) 10-year CVD risk prediction algorithms.

Results

There were 24,970 incident cases (6.6%) of CVD during the 10-year follow-up period. All four machine-learning algorithms improved prediction compared to the ACC/AHA model (AUC 0.728, 95% CI 0.723 - 0.735): random forest +1.7% (AUC 0.745, 95% CI 0.739 - 0.750), logistic regression +3.3% (AUC 0.761, 95% CI 0.755 - 0.766), gradient boosting machines +3.2% (AUC 0.760, 95% CI 0.755 - 0.766), neural networks +3.6% (AUC 0.764, 95% CI 0.759 - 0.769).

Conclusions

Computer clinical systems now have the capacity to efficiently use machine learning methods to predict future risk of disease which can improve accuracy in the case of CVD risk prediction, increasing the number individuals identified who could benefit from primary prevention while reducing unnecessary treatment.

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Charlotte Albury

Interactional Snakes and Ladders: Negotiating Referral Acceptance During the BWeL Trial

During the BWeL (Brief intervention for Weight Loss) trial some overweight patients were offered a free referral to a commercial weight management (CWM) programme from their GP. However, not all patients accepted this referral and, from those who did accept, not all attended.

Detailed conversation analysis is being applied to audio recordings of these consultations between GPs and their patients. With an aim to improve patient uptake and attendance at their commercial weight management referral each phase of the interaction has been explored to uncover key conversational strategies used by GPs which motivate patients to both accept and attend.

Preliminary analysis of these encounters indicates that by using specific verbs and tenses when GPs talk to patients about their treatment options, or carefully chosen words during the opening of a GP encounter, it can be possible to motivate patients to both agree to a CWM referral, and also to attend this referral following their consultation.

Through detailed analysis of these conversations between GPs and patients during the BWeL trial it is becoming possible to identify language used by GPs which may lead to a lack of patient uptake of a CWM referral. It is also possible identify GP language which could motivate patient CWM attendance, and to train GPs to utilize these effective conversational strategies during future brief interventions for weight loss.

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Oghenekome Gbinigie

Clinical Predictors of Serious Bacterial Infection in the Elderly

Background
There is a growing population of elderly patients, and these patients are more susceptible than their younger counterparts to serious bacterial infections. These infections often present in an atypical fashion in the elderly, which can present a diagnostic conundrum for clinicians. If these infections are not promptly treated, significant morbidity and mortality can ensue. There is a paucity of clinical guidance to aid clinicians in recognising and diagnosing these atypical clinical presentations.

Aim
To critically appraise and evaluate the evidence from observational studies, which have examined which symptoms and signs are clinical predictors of serious bacterial infection in the elderly, in the outpatient setting.

Methods
Electronic searches will be conducted using search terms such as: ‘sepsis’, ‘elderly’, ‘fever’, ‘nursing home’ and derivatives of these.

Analyses
Data from studies eligible for inclusion will be extracted and the sensitivity, specificity, positive and negative likelihood ratios for a specific symptom or sign in diagnosing a specific bacterial infection calculated.

Conclusion
Summarize which symptoms and signs predict serious bacterial infection in the elderly, and, if possible, generate clinical prediction rules, which can be used to aid primary care clinicians in diagnosing these infections.

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Jamie Hartmann-Boyce

Cognitive and behavioural strategies for weight management in obese adults: results from the Oxford Food and Activity Behaviours (OxFAB) cohort study

Objective
To assess cognitive and behavioural strategies used for weight loss and examine their associations with weight change.

Method
Prospective, web-based cohort study of overweight UK adults (BMI ≥ 25kg/m2) trying to lose weight through behaviour change. Strategy use was assessed using the OxFAB questionnaire and evaluated firstly at the domain level (groups of theoretically linked strategies), secondly, through exploratory factor analysis to derive data-driven patterns of strategy use, and finally, in a statistical model testing those strategies deemed a priori to be essential to weight management. Associations with weight change at three months were tested using linear regression.

Results
486 participants answered all survey questions, and 194 reported their weight at baseline and after 3 months (mean weight change of -3.25kg (SD 4.07)). Motivational support was the only domain significantly associated with weight change (-2.39kg, SE 1.01, p=0.020). Factor analysis identified two patterns significantly associated with greater weight loss: dietary impulse control (-0.55kg, SE 0.27, p=0.039) and weight loss planning and monitoring (-1.29kg, SE 0.38, p=0.001). Higher scores in the model of essential behavioural strategies were significantly associated with greater weight loss (compared to participants using 6 or fewer of the 9 strategies, using 7 or more of the 9 strategies was associated with a 2.13kg greater weight loss (SE 0.58, p<0.001)).

Conclusions
Despite heterogeneity in the strategies employed for weight loss, coherent patterns of behaviours emerged for individual participants, some of which were associated with greater weight loss. More research is needed to test these associations in future trials.

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Sarah Stevens

Current practice of blood pressure measurement: results from a patient survey

Background
UK and European guidance for hypertension diagnosis recommend repeat clinic and confirmatory out-of-office blood pressure (BP) measurement. However, adherence to guidance is variable and there is no guidance for routine BP measurement.

Aim
To determine the current practice of BP measurement during routine general practice (GP) appointments in UK primary care.

Design and setting
Online survey advertised to UK charities and patient groups. Respondents were asked to recall whether and how BP was measured during their last appointment and to take part in a follow-up survey after their next appointment.

Method
Patient demographic and clinical history data was summarised using means and standard deviations or proportions. Proportions were compared using two-sided tests at the 5% level.

Results
Data from 743 individuals was included in the analysis of which 334 people completed the follow-up survey. Of these 217 people had their BP measured at their last appointment. Those who had multiple readings had higher mean systolic BP (1 reading= 130.9 mm Hg, 95% CI [127.0 to 134.8]; 2 readings=139.7, [132.4 to 146.9]; 3 or more readings=141.2, [133.6 to 148.9]) and were more likely to be asked to monitor their BP at home (1 reading=11.4%, 95% CI [5.9 to 16.8%]; 2 readings=25.0%, [13.7 to 36.3%]; 3 or more readings=32.5% [17.2 to 51.8%]).

Conclusions
Results indicate awareness amongst healthcare professionals of potential white-coat effects in BP measurement but not of masked effects. Further research is warranted to assess whether other aspects of BP measurement (e.g. cuff sizing) are carried out correctly.

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Rachel Ryves

What is known about long-term depression management and long-term antidepressant use in primary care?

Background
Depression affects more than 1 in 10 adults in the UK. Research has shown that the prevalence of depression rose by only 3.9% between 2009 and 2013, while the number of prescriptions rose by 36%, which is due to the rise of long-term antidepressant use. While some of this long-term treatment may be indicated, much of it may be inappropriate, and the way in which longer-term depression is managed and reviewed in primary care should be explored.

Aim
To explore what is known about long-term depression management and long-term antidepressant use in primary care.

Method
To conduct a critical interpretive synthesis (CIS) of the literature, which aims to produce a theoretical understanding of evidence. Both qualitative and quantitative data can be used, which will allow for wider range of evidence to be incorporated for review.

Bibliographic database searches, reference chaining and contact with experts will be used to identify literature. The quality of the papers will be reviewed and prioritised based on their relevance to the research topic, and then by the methodological quality of the study, following CIS recommendations. Analysis will take a predominantly meta-ethnographical approach.

Results
To date 3819 papers have been identified through the electronic searches, and 50 papers have been identified through other resources. The papers are currently being screened for relevance by title and abstract.

Conclusion
CIS will inform the development of theory surrounding depression management in primary care, and how the behaviours of both patients and health professionals influence management and treatment outcomes.

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Jane Vennik

Development an online resource for families of children with otitis media with effusion.

Introduction

Otitis media with effusion impacts on the quality of life of young children and their families. Nasal balloon autoinflation is a feasible and effective treatment during the watchful waiting period, however there are uncertainties about its practical use in primary care and wider implementation. Our aim was to develop and evaluate an evidence-based online resource (LittleEARS website) to support self-management and use of the nasal balloon in primary care.

Methods

We used a 3 phased approach including i) qualitative semi-structured interviews with 31 GPs, 19 nurses and 14 parents ii) iterative development of the website with 9 think-aloud interviews and expert panel review, iii) feasibility study.

Results

Qualitative work identified key areas to promote self-management and use of the nasal balloon. The final resource included topic information, self-help advice for home and school, instruction videos and guidance for continued monitoring. Overall feedback was good, with parents reporting the site as comprehensive, informative, relevant and practical. Most changes were focussed on improving the layout of the web pages and improving site navigation.

Conclusion

The multi-phased approach to development of the LittleEARS website, underpinned by implementation theory, used evidence from the literature and feedback from end-users, to develop a resource that was considered relevant to parents and provided practical advice to support self-management and use of the nasal balloon during the watchful waiting period. The feasibility study is currently underway.

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Nathan Davies

Care for people with Dementia given by Relatives at the End of life: CADRE

There are increasing numbers of people living with dementia, making it a global health problem. With no known cure for dementia’s progressive course, end-of-life care is a major priority for people with dementia and their families. Most care for people with dementia is provided at home by family or friends. Few carers make use of sources of support outside the home due to the difficulty of leaving their relative. Some evidence suggests that internet-based interventions have the potential to improve carer well-being and could address this problem. The aim of the current study is to develop and conduct user testing of an internet-based intervention to support family carers in caring for their relative with dementia at the end of life at home. We have adopted a co-design approach to development, with three phases: 1) a systematic review of available evidence of digital/internet based interventions for family carers of people with dementia, 2) qualitative interviews with family carers of people with dementia to determine the optimal content, format and focus of the intervention, and 3) user testing with family carers to assess the acceptability and content of the intervention using focus group methods. A co-design group will synthesise the findings to produce and refine the intervention. This study is currently underway and preliminary findings from the systematic review and qualitative interviews will be presented. If successful this project will create a software product that is helpful to those caring for an individual with dementia at the end of life.

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Consideration of preventive treatment use in risk prediction modelling studies

Introduction
Numerous studies involve the development of risk scores; algorithms for predicting an individual’s risk of developing a certain outcome, for example fractures, to facilitate targeted intervention. In this study, data from a cohort, typical of cohorts used in contemporary fracture risk score development, is used to illustrate the importance of consideration of preventive treatment use when developing a risk score.

Methods
The cohort was derived from the SIDIAP database, which comprises anonymised longitudinal electronic health records from 274 general practices in Catalonia, Spain. The cohort included 92,360 patients aged 50-100 years followed for eight years from 2006 for hip fracture and all major osteoporotic fracture.

Results
Among 92,360 individuals, 10,050 (10.9%) were using bisphosphonates (preventive medications) at baseline (prevalent users). A further 7,202 (8.7%) individuals began using bisphosphonates during follow-up (incident users). If there were no prevalent users, the hip fracture rate in the cohort was estimated to be 9.4% higher (range 1%-21%) than the observed rate of 3.78 events per 1000 person-years, and the major fracture rate estimated to be 6.6% higher (range 3%-11%) than the observed rate of 10.7 events per 1000 person-years. If there were also no incident users, the hip and major fracture rates would be estimated to increase by a further 5.1% and 3.4% respectively.

Conclusions
Retention of individuals in receipt of preventive treatment leads to a cohort at lower risk than might be expected in the absence of treatment use, and therefore could lead to underestimation of patient risk when the risk score developed from the cohort is applied in practice. It is therefore important to identify and account for preventive treatment use in cohorts used for risk score development to ensure risk score validity.

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Implementing change to improve access in general practice: a focused ethnographic case study

Background
Access to general practice is often stated by politicians as an issue the public are concerned about. There are three main dimensions of access: availability and proximity of care, timeliness of care, and ability to see their preferred GP or nurse. Across the UK, GP practices are testing diverse approaches to improve patient access to their services, while under financial and workload pressure. Implementing any kind of change within the NHS is challenging. The objective of this study was to explore how general practices implement change to improve access and understand the complex change processes, by focusing on the role of context.

Methods
A case study was undertaken in three general practices across two UK Clinical Commissioning Groups. Cases were selected to provide diversity. A focused ethnography was conducted in a number of settings, which included: waiting rooms, administrative offices, behind reception counters, various staff and clinical meetings. Transcripts of observations and informal and formal interviews with key stakeholders, as well as relevant documentary evidence were analysed thematically to explore aspects of context that influence implementation of a number of access initiatives.

Findings
Analysis suggests the three GP practices have adopted different approaches to improving access, e.g. variations in appointment structure, online services, telephone services and Named GP scheme (allocating and informing patients). Many of these interventions evolve over time to meet the changes in local context and policy. Recurring themes include change in policy, competing priorities, resource management, team structure/ functions, what is expected of reception staff, practice manager role, practice identity/ history and patient involvement.

Consequences
This case study provides insights into the complexity and challenges involved in implementing and delivering access initiatives, alongside the service commitment in general practices, in the context of the ever changing landscape of health care policy.

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Clare Oakland

Female genital self-image. A qualitative interview study with women and professionals

Introduction
Healthcare professionals have reported increased numbers of women expressing dissatisfaction with their genitals. There is increasing demand for female genital cosmetic surgery. Concerns can be focused on various characteristics including appearance, smell, or how they feel to the touch. Surgical procedures are heavily marketed online using medicalised, authoritative language but evidence of safety and effectiveness are lacking. Day-to-day practices like vaginal douching with household cleaning products may be related to dissatisfaction. The side effects of these practices are seen in primary care. There is limited information available on the way that professionals address concerns about genital aesthetics. The aim of this research is to explore women’s perceptions and experiences of their own genitals as well as any modification or hygiene practices they use and any experiences of help seeking. It will also explore professionals’ experience of encountering women who are distressed or dissatisfied by their genitals.

Methods
Participants will be recruited via social media and in primary care health settings. Women will be purposively sampled according to age and interest or no interest in undergoing genital cosmetic surgery. Data will be collected using qualitative semi-structured interviews. I will also carry out qualitative semi-structured interviews with professionals from the multidisciplinary team such as GPs, psychologists and nurses. Interviews will be audio recorded and transcribed. Data will be analysed using thematic analysis.

Results
I will begin data collection in summer 2016.

Discussion
In this presentation I will provide reflections on the data collection process and preliminary findings.

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Shoba Poduval

Online diabetes self-management education: a pilot study

Aim
To pilot an online structured self-management education programme for type 2 diabetes, evaluate its impact on participants and explore user experiences and views of the programme.

Methods
A mixed methods study was conducting involving patients recruited from general practices in London. Pre- and post-intervention questionnaires were used to measure impact on diabetes self-management self-efficacy and diabetes-related distress. Patients and healthcare practitioners were interviewed about their experience of the programme and their views about what worked well and what could be improved.

Results
Two iterative cycles of piloting were conducted, and improvements made to the programme and procedures.

201 patients were recruited to the programme for the second cycle of piloting and we have baseline and end of programme questionnaire scores for 24 patients.

15 interviews were carried out with patients and healthcare practitioners.

Findings show that distress scores decreased and self-efficacy scores increased for completers of the programme. Participants found the programme helpful and would recommend it to others. Barriers to completion included lack of time, lack of computer skills, lack of understanding of diagnosis and perceived lack of need for education.

Conclusion
An online structured self-management education programme is effective in improving patient distress and self-efficacy, and could provide a helpful alternative to face-to-face education for those who do not want to attend group sessions. However, there are problems which affect engagement with an online programme which need to be addressed. These include computer skills, perceived need for education by people with type 2 diabetes and referral by healthcare practitioners. These challenges need to be explored more fully.

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Current trainees include those from previous School membership (2010 - 2015) when the School’s membership consisted of the Universities of Birmingham, Bristol, Keele, Manchester, Nottingham, Oxford, Southampton and UCL.
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