Poster sessions

Developing acceptable and feasible mindfulness-based interventions to improve outcomes for patients with asthma.

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The association between chronic respiratory disease and psychological dysfunction has become increasingly apparent in recent years through epidemiological studies; it is associated with poor outcomes of all types. Research and treatment guidelines increasingly emphasise the need to improve functional outcomes, and psychological interventions may well be a cost-effective way to do so. We use findings from two feasibility studies of mindfulness for patients with asthma to explore mechanisms through which psychological treatments can benefit asthma outcomes, and inform further treatment development.

The first mixed-methods study used pre- and post-test measures of quality of life, anxiety/depression and asthma symptom severity to explore the impact of a 4-week group mindfulness course in 18 patients from the Wessex Asthma Cohort, as well as conducting interviews and focus groups at 3-month follow up. The second study uses a similar mixed-methods approach to explore the impact of Headspace (a 30-day online mindfulness intervention) in 120 asthma patients from primary care (80 intervention vs. 40 control).

In study one, qualitative findings that patients found mindfulness a beneficial treatment were complemented by some evidence of improved quality of life and reduced anxiety. Uptake and adherence to the intervention was low (9 of 17 participants attended all/most intervention sessions), which was explored in follow-up interviews. In study two we will explore whether online mindfulness can address barriers to adherence and increase intervention uptake while maintaining patient benefit.

Findings will inform the development of a disease-specific mindfulness intervention for patients with asthma (and psychological interventions for asthma more broadly).

Frailty in the new GMS contract – what does it mean to GPs?

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Background: The new GMS contract requires GP practices to identify and code all their moderately and severely frail patients and to provide appropriate care. However, frailty is a relatively new, and possibly contentious, concept to health care professionals in primary care.

Objective: This study explores how GPs understand the concept of frailty, whether they find this a useful way for looking at their patients, and if and how they take frailty into account in shared decision-making and care management for individual patients. We will also investigate methods GPs are using for identifying their frail patients, such as the Electronic Frailty Index (eFI), and their views on the utility of these.

Research Design: Qualitative study in primary care settings. Qualitative interviews are conducted with up to 20 primary health care professionals including GPs, practice nurses, and healthcare assistants. Normalization Process Theory will provide the framework for analysis and interpretation of the data.

Result: The work is still ongoing. We will present some initial findings.

Conclusion: Frailty has been introduced into the new GP contract but it is not clear whether GPs and their patients will find this a helpful concept and assist them in making better shared decisions about care, or whether it will be perceived as excessive medicalization creating unnecessary additional work. An understanding of the experience of primary care professionals in operationalizing frailty in their daily practice will help to evaluate this new policy initiative.

Development of a brief, positive affect (mood) intervention for older adults for use in and around primary care

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Introduction: In a prospective, observational cohort study, we recently found that positive affect (mood) on the day of vaccination significantly predicted antibody responses post-vaccination above and beyond known demographic and clinical determinants. This points to the possible utility of brief positive mood enhancing interventions delivered close to vaccine administration as a way of improving vaccination outcomes in older adults.

Methods: To develop a novel intervention suitable for older adults and practical for use in primary care, three individual studies were planned:

1. A systematic review of the existing brief positive mood interventions and their influence on immunity;
2. Focus groups with older adults to understand approaches to promoting positive mood are most acceptable to patients;
3. Semi-structured telephone interviews with healthcare professionals to gain perspectives on positive mood interventions that would be appropriate in primary care, and barriers to implementing such interventions (and how to overcome them).

Results: A wide variety of intervention forms that reliably induced positive mood change and corresponding improvements in immune function were identified. However, most were unsuitable, in their current form, for primary care. Further, very few studies included older adults. Focus groups highlighted the importance of age-appropriate content and high arousal. Comedy, uplifting music, and positive social interactions were favoured by patients. Telephone interviews with healthcare professionals remain ongoing.

Discussion: The intervention to be developed will be piloted and feasibility tested in an upcoming SPCR funded trial focusing on influenza vaccination response in older adults.

Comparative Effectiveness of Treatment Options for Subacromial Shoulder Conditions: A Network Meta-Analysis

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Background: Subacromial shoulder conditions (SSCs) account for nearly 70% of all shoulder pain presentations to primary care, affecting one in three persons, half of whom still report pain and functional limitations 12 months post initial diagnosis. Various treatments are available for management of SSCs, but clinical decision making is complex partly due to limited evidence on comparative effectiveness of treatments. This network meta-analysis (NMA) aimed to determine the comparative effectiveness of treatments for improving pain and function in SSC patients.

Methods: Databases were searched to identify randomised controlled trials in adults with SSCs. Using predefined criteria, titles, abstracts, and full texts were independently screened by two reviewers. Methodological quality of trials was assessed using Cochrane Risk of Bias Tool, and extracted data regarding study characteristics and results were independently checked. A random-effects NMA is currently being undertaken. Effectiveness of interventions will be summarised using pooled effect estimates, 95% confidence intervals and intervention rankings for pain and function at various follow-up times. Clinicians and patients with SSCs formed an advisory group contributing to study design, interpretation and dissemination of findings.

Results: 142 trials of 21 treatments for SSCs were identified. Networks are currently being developed. Sensitivity analyses will address several issues including; (i) trials testing combinations of treatments; (ii) risk of small trial bias; (iii) age and baseline severity.

Conclusions: A summary of evidence on the comparative effectiveness of conservative and surgical interventions in the management of SSCs will provide further insight to inform clinical decision making. PROSPERO ID: CRD42014009788.

Exploring the role of social participation in maintaining health in older people with musculoskeletal pain: A focus group study

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Introduction: Social participation refers to activities involving direct interactions with others and fulfilment of social roles. Older people with musculoskeletal pain who maintain social participation are more likely to report better health outcomes (e.g. reduced levels of depression) than those who report restriction of social participation. The aim of this study was to explore the perspectives of older people with musculoskeletal pain on how social participation can contribute towards good health.

Methods: Focus group comprised of residents of a retirement village in the West Midlands. Recruitment by questionnaires distributed at the retirement village and participants included those who reported troublesome pain, maintaining social participation and having good health (n=6; all female). A template analysis approach was used. An exploratory model of the relationship between pain and self-reported good health was developed.

Results: Existing morbidity, personal characteristics (e.g. positive mental attitude and self-efficacy) and environmental factors emerged as key themes impacting on the relationship between pain and social participation. Social participation positively contributed to good health in older people with musculoskeletal pain via physical activity, social support and a sense of purpose in life.

Conclusions: A model will be presented illustrating the link between musculoskeletal pain and maintaining good health in older people. The model will identify where interventions may be targeted to help reduce the impact of pain on individual wellbeing. Encouraging older people to increase or maintain social participation is a potentially useful approach to the management of older people with chronic pain.

A qualitative exploration of older adults' and associated health and social care workers' perception of the positive and negative consequences of drinking in later life, and how these are considered and prioritised in practice

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Introduction: Drinking in later life presents health risks for older adults at levels that were safe at earlier stages in life. Moderate alcohol use is also linked to some health benefits, and wider positive implications for the wellbeing of older adults through its role in their social and leisure lives. With growing concern for non-dependent drinking amongst older people, it is important to explore what is considered and prioritised by older adults and associated health and social care workers surrounding drinking in later life.

Methods: Semi-structured interviews and focus groups are being conducted with around thirty participants: a) older adults (aged 65+) and b) health and social care workers working with older adults in their job role. Interviews explore perceptions for the positive and negative consequences of drinking in later life, which are prioritised and why. Experiences of health and social care workers' discussion with older people is also explored. Data are analysed by applying the principles of thematic analysis.

Results: Emerging findings will be presented. Early stage analysis suggests older adults' drinking is governed by social rather than health-related considerations. Health and social care workers recognise the significance of drinking for older peoples' wellbeing and do not generally discuss their drinking as they are not perceived to drink heavily. Gendered and age-related patterns are explored.

Discussion: The findings presented will help direct developing policy and practice targeting older people's drinking. Through understanding thought processes amongst the public and practitioners, interventions can be effectively shaped.

A systematic mapping review of the methods used to evaluate implementation fidelity in primary care trials

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Background: Implementation fidelity is described as the extent the intervention-as-delivered matches the intervention-as-planned. Most primary care trials are complex, with multiple intervention components being delivered by multiple providers. The aim of this review was to map the extent to which implementation fidelity has been evaluated across trials and the range of methods in use.

Methods: A search strategy was developed with input from information specialists, trial managers, and the extant literature. Medline, Excerpta Medica Database, and Cumulative Index to Nursing and Allied Health Literature were searched for citations. To be included in the review studies had to be reporting on a randomised controlled trial of a primary care intervention; state in title or abstract that they had assessed implementation fidelity; and have been published between 2006-2016.

Findings: Title and abstract screening of 6246 citations was performed by two reviewers. Discordant decisions were discussed and where necessary referred to a third reviewer. 6035 studies were excluded. Full papers were extracted for 218 studies. Following the completion of full paper screening, data extraction will be performed by one reviewer and checked by a second. Mapping will include information on study design, the planned intervention, and the nature and extent of implementation fidelity assessment including aims, methods of data collection and analysis.

Discussion: We will discuss the strengths and limitations of our methodological review and, in light of the evidence produced, what practical steps we might recommend regarding the evaluation and reporting of implementation fidelity in the design of future primary care trials.

Effect of consultation in primary care on knee pain and function adjusting for longitudinal propensity to consult

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Introduction: Routinely recorded longitudinal primary care data, linked to self-reported information, may provide the only opportunity to quantify the “real world” outcomes of primary care consultation relative to non-consultation. The aim is to estimate the effect of consulting primary care for knee pain on long term patient-reported pain and physical function, adjusting for longitudinal propensity to consult.

Methods: A population-based prospective cohort study linking self-reported data at baseline, 18, 36, 54 and 72 months to primary care records. The cohort comprised 673 participants aged over 50 years reporting knee pain at baseline, registered at 3 general practices. A novel time-dependent propensity score methodology was used to address confounding by indication when determining the relationship between consultation for knee pain (measured for each time period

between survey follow-up time points) and WOMAC Pain (score range 0-20) and Function (0-68) outcomes (measured at the succeeding survey time point).

Results: 341 (51%) participants consulted for a knee problem during the 6 year follow-up (median number of consultations: 2 (range 1-22)) Consultation for knee pain was related to a mean 0.79 (95% CI 0.38, 1.20) worse WOMAC Pain score and 1.98 (95% CI 0.72, 3.25) worse Function scale score, following adjustment for time-dependent propensity scores. These estimates were smaller, though still significant, among those with radiographic osteoarthritis.

Discussion: After longitudinal propensity score adjustment, general practice consultation did not favourably alter the long-term outcome of knee pain. Residual confounding and misclassification of exposure remain possible alternative explanations for the adverse outcomes observed.

Overcoming challenges of conducting an IPD meta-analysis in primary care

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Introduction: Evidence-based decision-making in primary care should be underpinned by high quality evidence synthesis of data from existing studies. Individual participant data (IPD) meta-analysis is the synthesis of the individual-level information from multiple studies, which is especially relevant in this era of stratified care, where, ideally, treatment and management decisions are tailored towards individual patient characteristics. However, the process of collecting, checking, and analysing IPD is far more complex than for a traditional meta-analysis and hence numerous challenges are frequently encountered.

Methods: An ongoing IPD meta-analysis (Subgrouping and TargetEd Exercise pRogrammes for OsteoArthritis (STEER OA)) is used to illustrate some of these challenges.

Results: Many of the challenges encountered in the STEER OA example are common to general IPD meta-analyses; they typically result in increased project time and can often be resolved by working better together with study authors. For example, study authors may not feel obliged to share their data, however, providing mutual benefits including authorship on future publications can help overcome this issue. For STEER OA, authors will share their data with the OA Trial Bank, a collaborative group that initiates meta-analyses in osteoarthritis, provides central storage for data, and offers rich future opportunities for the research community. However, this requires additional legal processes and increased efforts for authors to agree to share their data, further increasing project time.

Discussion: IPD meta-analysis is essential in advancing stratified medicine, but it comes with plentiful challenges. Working better with study authors may be fundamental to overcoming these challenges.

The Tip of the Iceberg: Can We Identify Patients with Heart Failure with Preserved Ejection Fraction in Primary Care?

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Aim: Although comprising 50% of patients with heart failure (HF), patients with HF with preserved ejection fraction (HFpEF) are often under-identified. The aim of this study was to determine what information was available in primary care that could identify patients with HFpEF or possible HFpEF.

Methods: Practice nurses completed anonymised case report forms (CRFs) from medical records on patients on HF registers in two East of England primary care practices. Anonymised echocardiogram reports were requested on patients with ejection fraction (EF) $\geq$ 50%. CRF and echo data were entered into a SPSS database.

Results: 128 patient reports from two primary care practices were completed. The sample was 39% female, mean age 77 $\pm$ 12.3 years, with high prevalence comorbidities. Natriuretic peptides were assessed in 12.5%. Echocardiogram information varied greatly: only 46% had a numerical value for EF provided, echo information was missing or unclear in 23%. HF with reduced EF could be identified in 23%, 12% had a mid-range EF, and 41% had documented or possible EF $\geq$ 50%. Two or more recommended diastolic function parameters or mention of diastolic function were found only on 22/37 reports available. Left atrial volume (LAV) was reported in 22, E/e' in 19, peak TR velocity in 13, and e' velocity in 3; diastolic function was mentioned in 10 reports.

Conclusions: Patients with HFpEF remain under-identified due to a lack of consistent reporting of recommended parameters of diastolic function, with a potentially deleterious effect on patient management and recruitment into studies.

The Newcastle 85+ study - 10 year follow up

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Introduction: The demands on health and social care may increase in the tenth decade as levels of disability, cognitive impairment, multimorbidity, frailty and loneliness increase. The aim of this 10 year follow up study is to explore predictors of good and poor health, and the relationship to health and social care.

Methods: The Newcastle 85+ study is an observational cohort study of people born in 1921, who reached the age of 85 during the year of 2006 when recruitment commenced. Surviving participants are now aged 95 years. A structured interview is being conducted with these surviving participants and a GP record review undertaken.

Results: Extending follow up from 5 to 10 years will increase the precision of our estimates of health transitions and enable better differentiation between possible patterns of disability, as well as the association of these with underlying biological, medical and social factors. Specifically we will (i) confirm trajectories of disability, and estimate years spent with disability and frailty between age 85 and 95, (ii) identify predictors of "healthy" ageing to age 95, (iii) establish how

health and social care resources change between the ninth and tenth decade, particularly regarding informal care, (iv) determine late life factors influencing frailty, in particular cognition, (v) explore levels of participation and loneliness.

Conclusion: Determining medical and social factors in the tenth decade, and the subsequent burden on informal and formal care, is key for developing and planning appropriate services in the coming years.

Preferences for hypertension management - do patients prefer pharmacist-led care to GP-led?

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Introduction: New models of care for hypertension are needed, and patient preference is likely to be an important predictor of their success.

Methods: A stated preference discrete choice experiment (DCE) using an on-line questionnaire investigated:

- The relative importance of various factors (attributes) that influence patients' decision making process in the management of hypertension
- Trade-offs between those factors
- Estimate the probability of uptake of defined packages of care

Four attributes were included:

- Model of care (GP, pharmacist, telehealth, self-management)
- Frequency of BP measurement (monthly, three monthly, six monthly, yearly)
- Reduction in 5 year risk of cardiovascular events (5%, 10%, 15%, 25%)
- Cost (£)

Results: All attributes contained levels with significant coefficients, showing that they were all important in decision making.

Risk reduction was a significant driver of choice, and patients were willing to pay £1,129.82 for 25% reduction in 5 year risk compared to 5% (highest v lowest attribute level), known as the marginal willingness to pay.

Participants were willing to trade some risk reduction for other attributes, as shown by marginal rates of substitution. For example, participants were willing to accept 2.5% increase in their 5 year CVD risk to have pharmacist management of hypertension.

Discussion: Reduction of CVD risk was a significant component of choice. Models of care outside the clinic environment were preferred to the standard GP management option, and the reasons for this require further investigation in order to provide the package of care that is provides the greatest utility, and therefore high levels of uptake/adherence.

Does Pay-for-Performance improve mental health related patient outcomes? The association between quality of Primary Care and suicides in England.

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Introduction: Pay-for-Performance (P4P) policies target improvements in population health by incentives to improve quality of care. In this study we assess and quantify the relationship between general practice performance on severe mental health (SMI) and depression indicators under a national P4P scheme for Primary Care and suicides in England for the period 2006–2014.

Methods: Longitudinal spatial analysis, at the lowest geographical level for England using population-structure adjusted number of suicides in each Lower Super Output Area (LSOA) as our outcome variable. Negative binomial models were fit to investigate the relationship between spatially estimated recorded quality of care and suicides. Analyses were adjusted for deprivation, social fragmentation, prevalence of depression and SMI as well as 2011 census variables.

Results: IRRs of suicides were associated with greater area social fragmentation (1.053 CI [1.047-1.059]), greater area deprivation (1.015 CI [1.014-1.016]), increased prevalence of depression (1.012 CI [1.003-1.021]) and rurality (1.048 CI [1.017-1.080]). No significant relationship was found between practice performance on the mental health indicators of the QOF and suicides in the practice locality.

Conclusion: Despite the important role that Primary Care needs to play in suicide prevention, we could not observe a link between higher achievement on mental health-specific activities incentivised in the QOF and suicides. Although high QOF performance in the mental health domains may have led to positive changes in other outcomes, our findings suggest that the indicators included in the programme would need to be reconsidered, if one of the overarching aims of incentivisation was suicide prevention.

Planning and 'inappropriate' end of life admissions

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Introduction: Planning is considered to be a key solution for preventing hospital admissions at the end of life. Healthcare staff and patients are encouraged to participate in discussions about the patients' wishes for their end-of-life care, with the hope that greater preparation will facilitate more deaths in the community. This presentation explores the salience of end-of-life planning to prevent admissions and the desirability of dying at home.

Methods: Interviews about the admission of patients who died in hospital conducted with family carers and healthcare staff from both hospital and community settings.

Results: Discussions about, and planning for, the end of life involved significant challenges, reflecting in part the clinical difficulty of predicting the dying process. Moreover, the desirability of home was not always apparent. Building on the work of sociologists including Twigg and Exley, and in contrast to the idealised image of home often implicit within policy, home death often required a significant amount of care, which was typically expected to be provided by family with great personal cost. Care at home additionally changed the home environment, meaning that for patients and their families 'home' may no longer feel 'home-like'.

Discussion: These interpretations of the effectiveness of planning a death at home and home care contribute to an amended understanding of hospital admissions at the end of life, such that hospital is neither necessarily inappropriate for dying patients, nor admissions inherently 'preventable'.

Rosa Canina fruit (Rosehip) for osteoarthritis: a Cochrane review

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Introduction: The aim of this systematic review is to evaluate the benefits and harms of *R. canina* fruit for symptoms of osteoarthritis (OA) in adults.

Methods: Cochrane Library, MEDLINE, EMBASE, CINAHL, AMED, ISI Web of Science, CNKI, LILACS, ABIM; grey literature databases; clinical trials registers; and relevant websites were searched from the inceptions to November 2016. Randomised controlled (placebo or active control) parallel and crossover trials examining the effects and safety of oral R. canina fruit for treating osteoarthritis were included, with no language restrictions imposed. The primary outcome measures were pain, physical function, joint stiffness, radiographic joint changes, quality of life, and safety. Two reviewers independently screened eligibility and extracted trial data. Random effects model was used to pool the mean differences and risk ratio with 95% CI reported. Methodological quality was evaluated using the Cochrane risk of bias.

Results: findings of this review will be available by September.

Discussion: This review will provide effective and safety data of using Rosa Canina for OA in adults. Characteristics of Rosa Canina intervention These findings will inform a mixed methods randomised placebo controlled pilot feasibility study.

Standardised Chinese herbal medicine for oligomenorrhoea and amenorrhoea in polycystic ovary syndrome

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Introduction: Primary and secondary care management of polycystic ovary syndrome (PCOS) typically involves oral contraceptives and insulin-sensitising agents. However, studies suggested that metformin, the most frequently prescribed insulin-sensitising agent for PCOS, is associated with increased gastrointestinal side-effects. Preliminary findings of the previous ORCHID feasibility study suggested both standardised and individualised Chinese herbal medicine (CHM) treatment appear to be safe and have promising effects for PCOS-related oligo- and amenorrhoea.

This study aims to determine a four-herb standardised remedy while exploring the decision making process of seeking consensus amongst herbal practitioners; and to evaluate clinical effects, safety and adverse events relating to the standardised herbal remedy for PCOS-related oligo-and amenorrhoea.

Methods: The first phase is a consensus-seeking study using nominal group technique. Herbal practitioners will be invited to determine the contents and regimen of a 4-herb standardised remedy. The second phase is a prospective observational study, in which the standardised herbs will be provided for a period of 6 months to 22 women with PCOS-related oligo-and amenorrhoea. The primary outcome measure will be menstrual cyclicity and adverse events. Other data will also be collected on health-related quality of life, hirsutism and safety by evaluating liver and kidney function.

Discussion: The findings of this study will inform a fully-powered RCT in the UK primary care, evaluating the standardised CHM treatment that is potentially licensable by the Medicines and Healthcare products Regulatory Agency.

Understanding perceptions and experiences of acne vulgaris and its treatments: systematic review and synthesis of qualitative research

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Introduction: Acne vulgaris is a common condition, particularly amongst people aged 14-19 years. Potentially substantial physical and psychological impact can improve with effective treatment. First and second line treatments for acne are topical preparations but non-adherence to these is common. A substantial proportion of patients progress to oral antibiotics which leads to antibiotic resistance. This study aims to identify the extent of qualitative literature on acne and to explore views and experiences around:

1. causes of acne
2. treatments for acne
3. impact of acne

Method: Papers were identified through five databases, resources including Google Scholar, citation searching and contacting authors of key papers. Papers were included if they reported on qualitative data and analysis from studies carried out amongst people with acne, their carers or health professionals. There were no age or date restrictions. Study quality was reviewed using the Critical Appraisal Skills Programme tool. Analyses will take the form of a thematic synthesis with elements of meta-ethnography.

Results: 2311 papers were identified through the database searches and six through other methods. Papers were screened for relevance by two independent researchers resulting in 15 papers to be included in the synthesis. We are currently undertaking the analysis and will complete this in May.

Discussion: This review will enable us to identify the extent of literature on acne and provide insight into people's views about the causation, treatment and impact of acne. The conclusions will inform the development of a digital intervention to support self-care among young people with acne.

Vaping whilst breastfeeding? Motivators and barriers from online parenting forum discussions

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Background: Increased popularity and research concerning Electronic Nicotine Delivery Systems (ENDS) suggests the potential use as harm reduction from smoking. Little is known about ENDS use, especially in the postpartum period. Postpartum relapse is a public health concern; both for mother/child. Although continuing to breastfeed and smoking is preferable to not breastfeeding and smoking, breastfed infants are exposed to harmful tobacco substances via breastmilk. ENDS are shown to have significantly lower levels of harmful substances, around 1000th of those found in cigarettes. ENDS may be a safer alternative to smoking for nursing mothers, but before interventions can be considered, we must understand the acceptability and motivators towards ENDS use as a nursing mother.

Methods: A template approach to thematic analysis will be used to qualitatively analyse online parenting forum discussions. Data will be collected via google searches. The use of forum-data offers naturalistic data which less biased by social construction.

Implications: This research will increase our understanding of ENDS use and perception amongst this demographic of women. As we know one of the biggest risk factors for smoking is having a parent who smokes, finding ways to reduce postpartum relapse not only improves health outcomes during infancy, it reduces the likelihood of smoking during adulthood. This may highlight miscommunication to the public regarding ENDS and assess whether they are currently being used by nursing mothers. If indeed women are using ENDS, or are open to considering their use, this can provide the foundation for interventions to be developed.

Implementation and evaluation of an Interactive Voice Response intervention to support adherence to anti-hypertensive medications, as an adjunct to primary care consultations. A pilot study.

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Background: non-adherence to prescribed medication is a significant challenge to public health and current practices show limited time to effectively address each patient's reasons for medication non-adherence. The Interactive Voice Response is a theory and evidence based intervention developed to support adherence to anti-hypertensive medications. This presentation will describe the factors that impacted on intervention fidelity and engagement, and the acceptability of the intervention content to support medication adherence.

Methods: mixed methods study generated data from call log files, inbound voice messages, and interviews with participants. Quantitative data informed qualitative data analyses, and integrated into a thematic analysis.

Results: The tailored schedule of the calls, the personalisation and the variation of the message content were perceived to be particularly appealing, and to promote engagement with the intervention. Messages that included reminders to take medications as prescribed, advice tailored to each participant's reasons for medication non-adherence, and information about health consequences were perceived to support medication adherence. Participants recommended phone calls that coincide with medication schedules, and include coping plans to support medication adherence when they anticipate a change in their routine.

Discussion: overall, participants agreed on the need for, and the potential benefits of, an IVR intervention to support medication adherence between Primary Care consultations. It was emphasised that it would be highly beneficial to those who initiate or change medications, enabling them to incorporate their new medications into a routine. Future studies could usefully test the feasibility of tailored IVR interventions to support medication adherence in primary care.

Preventing depression in the community by voluntary sector providers (PERSUADE): Protocol

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Introduction: Incidence and prevalence of depression is high, and depression is predicted to be the leading cause of disability worldwide by 2030. However, existing treatments only reduce the prevalence by around 35%. As outcome has been found to relate to the duration of depression, developing an early intervention for people at risk of depression could significantly reduce the incidence and prevalence of depression.

We aim to adapt an existing CBT based intervention into a one day, group-based, intervention supported by a manual and delivered by voluntary sector workers.

Methods: We will develop a Theory of Change model through focus group events and will develop the training and support materials with user and service provider input. The intervention will then be piloted with a randomised sample of 64 participants, (32 treatment/32 care as usual). Recruitment will include a number of strategies which will be assessed for time and yields. Participants must have a PHQ-9 score between 5-9 and be aged 18 years or over.

Participants in the treatment group will attend either a one day session, up to 8 hours, or two half-day sessions. Outcome assessments will be done at baseline and three months following intervention. The intervention will be delivered by specially trained voluntary sector workers.

Results: Outcomes will include feasibility, mood, function, participation, costs and acceptability.

Discussion: Early intervention that moves away from reliance on the NHS, is key to reducing the burden of depression on communities and on the health system.

Exploring the acceptability and appropriateness of metaphors to explain cognitive behaviour therapy principles for people with medically unexplained symptoms: a qualitative study

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Introduction: Medically Unexplained Symptoms (MUS) are persistent physical symptoms without sufficient explanation/pathology despite adequate examination. MUS account for 20-40% of new consultations in primary care. Evidence suggests cognitive behaviour therapy (CBT) can be effective to manage MUS but access is restricted and may not be acceptable to patients. To improve acceptability, a set of metaphors have been developed to explain CBT principles, and trialled in Sri Lanka. This study aims to explore the acceptability of these metaphors for people with MUS and those who manage their care in the UK.

Methods: Semi-structured interviews and focus groups with general practitioners (GPs), psychiatrists, psychologists, Improving Access to Psychological Therapies (IAPT) practitioners, and people with self-reported MUS, explored: experiences of managing and living with MUS and views about 10 metaphors. Interviews/groups took place at Keele University or at the healthcare practitioner's place of work, were digitally recorded and transcribed with consent. Thematic analysis was conducted by the research team using principles of constant comparison. Content analysis was used to categorise views on individual metaphors.

Results: Twenty-one HCPs and three people with MUS participated in interviews/focus groups. Key themes identified were: inadequacy of the bio-medical model, tortuous diagnostic process, neglected emotional dimension, complex treatment pathways, and barriers to accessing specialist care. The use of metaphors in principle was acceptable, but not all metaphors discussed were considered appropriate by all participants.

Discussion: The findings have informed the development of an intervention using metaphors to explain CBT principles to be tested in a feasibility study.

Exploring the illness perceptions of patients with type 2 diabetes mellitus, with or without depression: a mixed methods study

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Introduction: Type 2 Diabetes Mellitus (DM) presents a global health challenge. Around two-thirds of people with DM also experience depression, which often remains untreated. Depression is associated with poor self-management and non-adherence to DM self-care including following dietary restrictions, medication compliance, and blood glucose monitoring, resulting in worse overall clinical outcomes. Where comorbid, both conditions should be optimally managed to maximize patient outcomes. This study explores patient illness perceptions and explanatory models of DM; seeking views from a range of people with DM with different levels of glycaemic control and with or without comorbid depression.

Methods: A Patient and Public Involvement and Engagement (PPIE) group is supporting development and conduct of the study. To explore illness perceptions the views of a diverse group of 60 people with DM who vary by: time since diagnosis, good and poor control (assessed by HbA1c), and without and without depression (assessed by patient health questionnaire: PHQ-9). Interviews are being conducted using: Revised Illness Perceptions Questionnaire (IPQ-R), Short Explanatory Model Interview (SEMI), and a topic guide to explore personal experiences of diabetes identification and management. Interviews will be digitally recorded and transcribed with consent.

Results: Input from the PPIE group has contributed to development of the study protocol and documents, and NHS ethics application. Ethical approval has been granted, data collection is in progress preliminary findings will be discussed.

Initial findings of exploring the views of key stakeholders on an intervention aimed at improving the safety of prescribing of GP Associates in training

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Introduction: The GMC PRACtICe study identified prescribing errors in general practice occurring at a rate of about 5%. GPs in training (GP AiTs) were highlighted as a group who may benefit from further help to reduce their prescribing errors.

We conducted a pilot study (REVIST) which explored the effect of giving targeted feedback to ten GP AiTs after review of 100 sequential prescriptions by a specially trained pharmacist. The error rate in REVISIT was found to be nearly double that reported in the PRACtICe study (9%).

Although having face validity, the REVISIT process was costly in terms of pharmacist time. We wanted to ascertain if there is the potential for targeted or widespread adoption of the REVISIT process as it stands, if modification of the process would be needed, or if a larger scale intervention trail would be beneficial.

Method: Interviews and focus groups are being conducted with at least 20 stakeholders to scope further development of REVIST. Stakeholders include organisations involved with training and regulating GPs and pharmacists, as well as GP AiTs, GP trainers and members of the public.

Results: Interviews are taking place between February and June. Preliminary findings are universally supportive of REVISIT. Areas for future development have been presented.

Discussion: GP AiTs benefited from personalised prescribing review, and reported behaviour change. By conducing systematic stakeholder interviews we aim to elucidate whether a larger intervention study is required, or whether the REVISIT process can be implemented universally or in a targeted or amended format.

Longitudinal multiple imputation approaches for body mass index or other variables with very low individual-level variability: the mibmi command in Stata

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Background: In modern health care systems, the computerization of all aspects of clinical care has led to the development of large data repositories. For example, in the UK, large primary care databases hold millions of electronic medical records, with detailed information on diagnoses, treatments, outcomes and consultations. Careful analyses of these observational datasets of routinely collected data can complement evidence from clinical trials or even answer research questions that cannot been addressed in an experimental setting. However, 'missingness' is a common problem for routinely collected data, especially for biological parameters over time. Absence of complete data for the whole of an individual's study period is a potential bias risk and standard complete-case approaches may lead to biased estimates. However, the structure of the data values makes standard cross-sectional multiple-imputation approaches unsuitable. In this paper we propose and evaluate mibmi, a new command for cleaning and imputing longitudinal body mass index data.

Results: The regression-based data cleaning aspects of the algorithm can be useful when researchers analyse messy longitudinal data. Although the multiple imputation algorithm is computationally expensive, it performed similarly or even better to existing alternatives, when interpolating observations.

Conclusion: The mibmi algorithm can be a useful tool for analysing longitudinal body mass index data, or other longitudinal data with very low individual-level variability.

"We got more than we expected." Exploring older people's experience of an exercise intervention. A qualitative study.

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Introduction: Many older people do not reach recommended physical activity (PA) targets. We previously conducted a randomised controlled trial evaluating group (FaME) and home based (OTAGO) exercises to promote physical activity in older people. This study explores trial participants' experiences of the group and home based exercise programme, the views of their partners, family members or friends and barriers and facilitators to PA amongst older people.

Methods: 5 general practices in the Midlands, UK invited previous ProAct 65+ participants to a face-to-face semi-structured interview. Interviews took place at participant's homes. 30 previous ProAct 65+ participants whose ages range from 70–95 years of age. Their data was analysed using framework analysis.

Results: There were 5 main themes identified; reactions to FaME and OTAGO allocation; commitment, discipline and motivation; benchmarking, feedback and monitoring; benefits of the exercise programme and reactions to the end of the FaMe and OTAGO programmes

Discussion: Despite the variance of opinion amongst the participants, generally those interviewed shared positive experiences but the long-term behaviours and attitude to physical activity varied. Most barriers have the potential to be modified and will be useful to consider when looking at implementing exercise interventions that aim to increase older peoples exercise and physical activity. The different intervention factors have to fit conveniently around the activities of everyday life or it will compete with them. Overall, the different experiences that the participants underwent went some way into shaping the transition from intervention into ongoing routines.

'Use it or lose it': Maintenance post participation in a physical activity programme for older adults

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Introduction: Lack of physical activity (PA) is the 4th leading risk factor for global mortality. In the UK, older adults comprise the most sedentary group, with only 57% of males and 52% of females aged 65-74 years and 43% of males and 21% of females aged 75-84 years meeting PA recommendations.

Despite the health benefits experienced during PA programmes, this increased PA is not always continued. This study aims to provide a better understanding of PA maintenance behaviours in the elderly.

Methods: Semi-structured interviews were conducted with older adults in their own home who had previously completed one of two exercise programs as part of the ProAct 65+ trial: group (FaME) and home based (OTAGO) exercises. Interviews explored PA levels pre-and post intervention, perceived health benefits, inhibitors, promoters and use of technology for PA.

The interviews were transcribed verbatim and analysed using framework analysis and the software NVivo10. A sample of the transcribed data was validated.

Results: The FaME group consisted of 10 females and 5 males, age range of 70-88 years. The OTAGO group consisted of 12 females and 3 males aged between 72–95 years.

The OTAGO group reported more difficulty maintaining their PA levels. Important themes for maintenance included: autonomy, perceived control, enjoyment and positive self-evaluation of the activity, importance of social support and environment, positive feedback and habit formation.

Conclusion: A range of modifiable factors influence maintenance of PA after exercise programmes. The findings from this study will inform commissioning and quality improvement of future PA programmes.

Developing a patient safety guide: co-producing a patent safety tool with GPs, pharmacists, patients and carers

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Introduction: Increasingly interventions to improve primary care patient safety are moving beyond involving patients in the identification of errors to actively involving them in preventing and reducing them. Co-production approaches have been used to develop, implement and evaluate participatory approaches in quality improvement initiatives. This project aimed to co-produce a patient safety guide and identify processes that may enable or constrain its implementation into routine primary care.

Method: The co-design approach was used to develop a prototype of the patient safety guide (including paper and online versions) and cue cards. After an initial scoping exercise of patient safety issues, 2 co-design events were conducted with GPs, pharmacists, patients and carers. Semi-structured interviews with 20 patients and carers were conducted to examine in-depth existing patient safety strategies and the work required to implement the guide into routine care.

Results: Healthcare professionals, patients, carers, and researchers worked together to co-design the patient safety guide and identify key patient safety questions that need to be addressed. Participants identified actions that could be implemented to improve patient safety along the primary care interface. Factors affecting use of the guide related to collective engagement within and across services as well as uncertainties around how to embed it in clinical encounters.

Discussion: Using a co-production approach to develop the guide the priority areas where patients can increasingly become active in their patient safety in primary care were identified. This type of collaborative approach to improvement has implications for the development, implementation, and potential sustainability of initiatives.

The future of primary care patient safety research? A James Lind Alliance (JLA) prioritisation setting partnership

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Introduction: Increasingly there is recognition of the need to examine patient safety within primary care as this is where the majority of contacts with UK healthcare services occur. As resources are limited it is important to address questions that matter to service users and providers. The JLA is a priority setting approach and this partnership aimed to identify the top 10 research questions for primary care patient safety research.

Methods: The JLA approach adopts a structured approach to the identification of unanswered questions, or uncertainties, and their prioritisation. A national survey of patients, carers, and primary care health care staff was conducted. Questions were then categorised and refined into research questions and the literature was searched. A second national prioritisation exercise was conducted and the priority questions taken forward to a final prioritisation workshop.

Results: 443 research questions were initially submitted. After checking for relevance and rephrasing, a total of 173 questions were collated into themes. The themes largely focused on communication, teams and system working, interfaces across primary and secondary care, medication, self-management support and technology. After the second national prioritisation exercise, the top 30 questions were taken forward to the final workshop. The top 10 research questions prioritised in the final workshop will be presented.

Discussion: The top 10 research questions identified a range of systems of care where there are outstanding questions in primary care patient safety research. The final top 10 research priorities will be used to guide future funding of primary care patient safety research.

Impact of the introduction and withdrawal of financial incentives on the delivery of screening and brief alcohol interventions in English primary health care: an interrupted time series analysis

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Background: Despite substantial evidence for their effectiveness, the implementation of alcohol screening and brief interventions in primary care remains inconsistent. Financial incentives were introduced in England between 2008-15 to encourage their delivery. Under the national Directed Enhanced Service for alcohol, practices were paid £2.38 for each newly registered adult patient they screened to identify risky drinking. Local Enhanced Service schemes were also introduced, varying in their scope and reimbursement rates. There is limited published data on the extent to which such Enhanced Service schemes were successful. This study aims to assess the impact of financial incentives on rates of screening and brief alcohol intervention delivery in English primary health care.

Methods: Using a large primary care database (THIN - The Health Improvement Network), we will use interrupted time series methods to quantify the impact of the introduction and subsequent withdrawal of financial incentives on rates of: (1) eligible patients aged 16+ screened for an alcohol use disorder; (2) screen positive patients who received a behavioural alcohol

intervention. Patients will be stratified by registration status: new (under one year) and existing (registered 1+ year). Potential confounding factors (calendar month and other key patient characteristics) will be fitted as covariates.

Discussion: The study is ongoing. This poster will present descriptive analyses summarising practice performance against our primary outcomes of interest, along with emerging results from the time series study. The findings will improve our understanding of whether financial incentives were effective at increasing rates of alcohol intervention delivery in English primary care.

Developing a measure of appropriate polypharmacy in primary care: systematic review and RAND appropriateness study

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Introduction: Increasing multimorbidity and a culture of single-condition guideline-driven prescribing are important factors contributing to widespread polypharmacy in primary care. Optimising care for these patients necessitates identifying those most likely to benefit as well as monitoring response to interventions. This requires a valid, reliable measure of polypharmacy, relevant for all patients, that considers clinical appropriateness and generic prescribing issues. We report work undertaken to identify what experts consider key elements of a measure of appropriate prescribing in the context of polypharmacy.

Methods: A systematic review was undertaken to identify potential indicators of polypharmacy. Using a 2-stage RAND consensus process, indicators were rated for clinical importance, clarity and feasibility of implementation by a panel of 10 clinical experts.

Results: We identified 20,879 papers for title/abstract screening, obtaining 273 full papers. We extracted 189 generic indicators, and presented 160 to the panel, grouped into 18 classifications (e.g. adherence, dosage, clinical efficacy). We focus here on panel ratings for clinical importance. After both rounds, there was consensus that 140 indicators were of clinical importance. Panel members particularly valued indicators concerned with adverse drug reactions, contraindications, drug-drug interactions, and the conduct of medication reviews.

Discussion: We identified 140 generic indicators of clinical importance to appropriate polypharmacy prescribing. We are operationalising highly rated indicators to develop a measure of appropriate polypharmacy suitable for use in clinical practice and informatics systems, with utility for risk stratification and targeting and monitoring polypharmacy interventions.

Postnatal depression and pharmacological and non-pharmacological treatment

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Introduction: Many women experience an episode of depression in the year after delivery, which may have severe consequences. Limited information is available on how and when depression is recognised and treated in clinical practice in the year after women have given birth. Often the GP would be the first point of contact for women seeking help.

Methods: Using UK primary care electronic health records, we estimated prevalence of depression, antidepressant and non-pharmacological treatment within a year after delivery between 2000 and 2013.

Results: Of 206,517 women 11% had records of depressive diagnoses or symptoms in the year after delivery, 12% received antidepressant treatment and 3% non-pharmacological treatment. Recording and treatment peaked 6 to 8 weeks after delivery coinciding with postnatal check-up consultations. Initiation of SSRI treatment has become earlier in the more recent years. Women below 30 had substantial risk compared to women above the age of 30. (Relative risk for postnatal depression: Age 15-19: 1.92 (1.76 to 2.10) Age 20 -24: 1.49 (1.39 to 1.59) vs Age 30 - 34). Nearly 1 in 5 women aged 15 - 19 received SSRI treatment. The risk of depression increased with increasing social deprivation and similar patterns were observed for both SSRI treatment and non-pharmacological treatment.

Discussion: Our study demonstrates that for many women depression were 'picked up' and treatment initiated at the time of the maternal check-up consultation with their GP, but further work is needed to identify women at high risk of depression in the year after birth.

Development of an improved electronic Frailty Index (eFI) for use in primary care

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Introduction: The new GMS contract requires GPs to identify their severe and moderately frail patients. NHS England recommends the electronic Frailty Index (eFI) as a tool for this. The eFI uses over 2,000 clinical codes from a patient's electronic health record to construct 36 health "deficits", which are then used to calculate a frailty score. However, the current eFI has some important limitations, most notably around mental health factors and chronic versus resolvable deficits. The Patient Frailty Informing Stratified Healthcare (Pfish) study is producing an improved version of the eFI by addressing some of these limitations.

Methods: We used expert review to refine the set of health deficits and associated clinical codes and then mapped them to theoretical models of frailty. Using the CPRD we applied factor analysis methods to determine the best-fitting models, including those with a distinct cognitive

subdomain. We validated our final choice of model on its ability to predict hospitalisation and mortality, and used it characterise the epidemiology of patient frailty in the UK.

Results: Work is ongoing but we will report our findings on models and domains of frailty and the epidemiology of frailty, including practice and regional variations.

Discussion: An improved version of the eFI will help GPs to more accurately identify their frail patients, and information on sub-domains of frailty can help to inform decisions about care. The knowledge generated will be used to inform the design of a large-scale trial of an intervention using the frailty index to better target patient care.

Patient frailty in the new GP contract: implications and challenges

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Introduction: The new GMS contract requires GPs to identify patients with severe and or moderate frailty. NHS England suggests the electronic Frailty Index (eFI) - which computes frailty from the electronic health record - as a suitable tool. However, even though elderly people with complex health needs represent an increasing proportion of the primary care workload, labelling patients as frail is a contentious topic in primary care.

Methods: We are investigating the properties of the eFI and developing an improved version, building on the strengths whilst reducing the limitations of the current version.

Results: Key eFI strengths include: a grounding in theory; comprehensive use of patient data; calculates frailty automatically; stratifies patients into subgroups (fit, mild, moderate, or severe). Limitations include: not yet validated against alternatives; frailty cut-points not clinically anchored; “black box” single score. Crucially, connections between frailty ratings and implications for subsequent management decisions still require a great deal of development.

Discussion: The identification and coding of frailty will only be perceived by GPs as beneficial if it helps them better understand their individual patients, supports better decision-making, and promotes better patient outcomes, without increasing “alert fatigue”, over-medicalization or unnecessary workload. The benefits of the eFI - and its alternatives - need to be proved within the context of daily clinical practice. Critical disjunctions exist between the new contract requirement to identify all moderately and severely frail patients, and the knowledge and resource capacities of primary care to optimise care provision and delivery to this patient population.

Attitudes and Preferences of People regarding Long-term Antidepressant Use for Depression: The APPLAUD Study

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Between 2009 and 2013, the number of antidepressant prescriptions rose by 36%, while the prevalence of depression rose by only 3.9%, due to the rise in long-term use. Some patients have no evidence-based indications to continue long-term antidepressants, and could stop treatment. However, many are prepared to continue indefinitely. Patient beliefs, attitudes, and behaviours towards antidepressant treatment may be important in determining their use and subsequent depression management.

The PhD aims to investigate constructs of the Theory of Planned Behaviour and other psychological models of health behaviour in predicting the intentions of individuals with depression to continue or stop their long-term use of antidepressants, and whether these intentions are translated into actual behaviour. It aims to elicit patient beliefs about long-term antidepressant use and long-term depression management in primary care.

Approximately 400 patients from primary care practices receiving antidepressant treatment for 2 years or more will complete postal questionnaires concerning their beliefs about long-term antidepressant use, and their intentions to stop or continue treatment. Structural equation modelling will analyse the relationships between measured variables and latent constructs, to see if the theoretical models can explain patients' behaviour towards long-term antidepressant use. Qualitative interviews will be conducted with a purposive sample of patients who complete the questionnaires, to further explore their understanding and views of their depression and current treatment.

The findings will illustrate patients' attitudes and behaviours towards long-term depression management in primary care. Findings may suggest strategies to reduce inappropriate antidepressant prescribing and encourage greater self-management of the illness

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Getting the full picture of the STI landscape in the UK: Development of a multi-STI disease model

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Introduction: Sexually transmitted infections (STI) affect the sexual health and general wellbeing of patients. STIs do not operate in isolation and patients with one STI are likely to another simultaneous infection. The early detection of STIs and interventions tailored to high risks groups can decrease the disease burden and health care expenses.

Methods: We are developing an individual based multi-STI model, using a discrete event simulation approach. The disease model consists of several interacting sub-models for each STI. All sub-model are connected with the same sexual network to enable transmission and

coinfection. The model is developed cooperatively by a computer scientist, a health economist, clinicians, and decision makers in medicine.

The disease model is embedded in a computer program to facilitate its usage. We currently develop user interfaces for the tool in cooperation with potential users of the multi-STI model. By including them in the development process we assure to get a result which satisfies their needs.

Results: The work is in progress. So far, we have set up a prototype which simulates Chlamydia and Genital Herpes and their related sequelae. The model is designed in a flexible way so that it can easily be adapted, as changes in medical knowledge might emerge.

Discussion: We are currently developing the first disease model simultaneously incorporating the most important STIs in the UK. In future this result of interdisciplinary research might help to spend the very limited money in health care cost effectively.

Inside information - Overcoming the challenges of GP recruitment through analysis of Foundation Programme doctors' narratives

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Introduction: A shortfall in recruitment and difficulty with retention of GPs has contributed to increasing problems for patients and practitioners. Levels of GP recruitment varies between UK medical schools and Foundation schools with recent evidence associating GP recruitment with the quantity of training time spent in GP settings. This presentation draws on data which reports on broader contexts and experiences which influence career decision-making.

Methods: A mixed methods study included a series of narrative interviews with 20 Foundation programme doctors (F2s) from a range of backgrounds and with differing career plans. Thematic analysis of their accounts revealed many aspects of medical school and early career experience which influenced their specialty choices and future plans.

Results: Doctors reported many positive aspects of GP work; the challenges of a broad knowledge base, the inherent variety of patients and presentations of illness and opportunities to work independently. Conversely, some had difficulty dealing with uncertainty when removed from reassuring tests and direct specialist advice. Others reported feelings of isolation and were uncertain about choosing a less-competitive, lower status specialty.

Discussion: In-depth investigation of factors which inform junior doctors career decisions enhances our understanding of how influential their early contact with general practice can be and the potential recruiting power of inspirational GP role models. Better recognition of how students and junior doctors perceive GPs work moves us a step closer to demonstrating the attractive opportunities of general practice and working towards construction of sustainable careers for a new generation of GPs.

An exploration of the help-seeking behaviours of cancer survivors enrolled in a supported self-management care pathway

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Introduction: More people are surviving cancer, with an estimated 2.5 million people living with the disease in the UK. Many people experience physical or psychosocial consequences of their cancer or its treatment that can affect their lives on a long-term basis. Cancer survivors may be placed into a specific supported self-management (SSM) care pathway to further enable the person to manage their own condition, which involves taking responsibility for seeking help and support, being able to articulate preferences and needs, and identifying and acting on early signs of possible disease progression.

Patients can feel abandoned and vulnerable at the end of treatment, and may struggle to seek timely help and support, which could have serious implications for the success of SSM approaches. It is vital to understand the help seeking behaviour (HSB) of cancer survivors within a SSM pathway, in order for health care professionals to provide appropriate information and support.

Methods: A literature review is underway to establish what can be learned from existing theoretical and methodological approaches to HSB research.

Results: The review is on-going, and is expected to be completed by the end of April 2017.

Discussion: The results of this review will identify the extent of the existing HSB research within cancer survivorship, and will provide insight into the challenges of conducting this type of research, as well as recommendations for overcoming these challenges in future study within the cancer survivorship population. The conclusions will inform the development of the appropriate research methodology for the PhD.

Initiation and discussion of information from the internet in GP consultations: lessons from the HaRI study

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Introduction: Although patients increasingly report using the internet for health information they may be reluctant to discuss the information found with GPs for fear of perceptions of a challenge to medical authority. In turn, many GPs report concerns about how best to respond. The **Ha**rnessing **R**esources from the **I**nternet (HaRI) study presents an additional perspective through video recording GP consultations.

Methods: Three hundred consultations will be video recorded, supplemented by a baseline questionnaire to patients determining the information sources accessed prior to the consultation and semi-structured interviews with 30 patients and 10 GPs after consultations. Conversation

and thematic analysis will be conducted to identify patterns of interaction and the interactional consequences of what is said.

Results: Analysis will identify examples of both smooth and awkward communication patterns between GPs and patients relating to the introduction and discussion of internet-derived health knowledge, supplemented by accounts of actions relating to the discussion and use of the internet drawn from analysis of interviews.

Discussion: As even simple miscommunications around online health information may have deleterious effects on the GP-patient relationship, evidence is needed on how to best manage and proceed with the introduction and discussion of internet-based health information. This study will present evidence of strategies that make discussion of materials from the internet smoother to aid both GPs and patients in the potentially interactionally-fraught area of discussion of the internet in consultations.

A Comparison of Cox and Flexible Parametric Time-to-Event Models for Risks in Early Onset Pre-eclampsia.

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Prognostic models are used in primary care to predict an individual's future health outcomes, including risk of disease progression and the development of further complications. Communicating these risks enables clinicians to help a patient understand their own risks and to plan and manage a patient's illness.

The time to a given outcome is often of interest in prognostic model research; for example, time to death following the diagnosis of breast cancer. Time-to-event (or survival) analysis methods are used to incorporate the effects of the multiple prognostic factors on the rate and overall risk of the outcome.

The Cox proportional hazards model is considered to be the most commonly used model for the analysis of time-to-event data. However, as the Cox model does not provide estimates of the underlying baseline hazard function, additional calculations are needed to generate absolute risk predictions.

Flexible parametric models, such as the Royston and Parmar models offer an alternative approach. These models directly estimate the underlying baseline hazard function using restricted cubic splines, providing a smooth estimate of the baseline cumulative incidence function, thus allowing for the direct estimation of an individual's absolute risk.

In this presentation, data collected for the Prediction of Risks in Early Onset of Pre-Eclampsia (PREP) study will be used to develop prognostic models using the Cox and flexible parametric modelling approaches. The regression coefficients, baseline hazard functions and prognostic performance of the two models will be demonstrated and compared.

Optimising the monitoring and management of raised blood pressure during and after pregnancy

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Introduction: Raised blood pressure (BP) is a common problem in pregnancy. Pre-eclampsia is diagnosed if the mother has raised BP and protein in her urine after the 20th week of pregnancy. Raised BP and pre-eclampsia affect about one in ten women and are a major cause of death and premature birth in the UK and worldwide. We have recently conducted a pilot study which suggests that, with support from midwives and doctors, it is possible for women to monitor BP and urine safely, potentially identifying problems earlier and controlling BP better.

Methods: We are currently developing our self-monitoring interventions to design the best method of introducing self-monitoring of BP (SMBP) and urine into current practice. We are conducting focus groups and interviews with NHS staff (obstetricians, community and hospital midwives) and 'think alouds' with pregnant women. A large multi-centre randomised controlled trial, underpinned by theories of behaviour change, is planned to determine the usefulness of SMBP in the detection and management of raised BP during pregnancy.

Results: Focus groups and interviews in participating hospitals and primary care have iteratively contributed to our trial design. 'Think aloud' sessions with pregnant women have helped develop user friendly, accessible patient facing materials.

Discussion: This work will test whether optimising the monitoring and management of raised BP during pregnancy through SMBP and urinary protein is effective, acceptable and cost-effective compared to usual care. Our initial analysis suggests that SMBP will be welcomed by staff and patients, while highlighting barriers to be addressed.

Antibiotic Negotiations: Conversation Analytic Pilot (ANCAP)

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Introduction: Many patients in primary care are being prescribed antibiotics to treat mild infections such as a colds, earaches and sore throats. Many of these are viral rather than bacterial infections that often improve on their own and which can be treated with better self-care. Evidence-based research shows that 'open' and 'clear' communication between GPs and patients is important in order to improve antibiotic prescribing practices; but, there is little evidence about how to achieve this during 'real-time' consultations. The aim of this research is to provide empirical understandings about how GPs and patients discuss and negotiate the need for antibiotics. Key findings will be used to develop a pilot training tool for GPs about how to discuss the need for antibiotics in ways that promotes prudent prescribing practices.

Methods: This research is conducting a conversation analytic examination of three existing datasets of GP-patient consultations held at the University of Southampton, the University of Bristol and the University College London (approximately 100 video-recordings).

Results: The project began in April 2017. By September we will have identified the predominant patterns within GP-patient negotiations for antibiotics including patient problem presentations (and whether they were in the service of receiving antibiotics); the design of GP diagnosis (i.e. viral, bacterial or uncertain); and their subsequent treatment recommendations (antibiotics, self-care advice, reassurance).

Discussion: We will discuss these findings in relation to what constitutes 'open/clear' communication about antibiotics as described in the literature, and our future plans for turning these results into a communication workshop.

Healthcare use by the very old as they age and implications for primary care: findings from the Newcastle 85+ study

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Background: The fastest growing sector of our population is *the very old,* those aged 85 years and over. With increasing age comes greater risk of cognitive decline and physical frailty and thus risk of admission to hospital and long term care. One could hypothesise that a rapidly ageing population places considerable demands on GP and community services. Using data from the Newcastle 85+ study, we aim to investigate GP services and other health care use by 85 year olds as they age further.

Methods: The Newcastle 85+ Study is a representative cohort born in 1921 and aged 85 at baseline. Health and social care use was recorded for the 12 months prior to their multidimensional health assessment (MDHA), at baseline, 36 and 60 months. Information gathered included 14 different types of professional seen. All consultation were analysed at all three time points.

Results: A total of 845 participants had complete data at baseline, 485 at 36 months and 344 at 60 months. Significant increases were observed in the mean number of all consultations over the five years regardless of whether all participants or those surviving five years were included (both $p<0.001$). Mean number of consultations with the GP also increased significantly, whereas GP out of hours service use decreased significantly during the same period.

Conclusions: Our study reveals interesting data about primary, secondary and community care use as the very old age. Additional data will be provided and the implications for future primary and community care service provision discussed.

Quantifying the Severity of Chronic Conditions with English Primary Care and Hospital Admissions Data: Part I - Type 2 Diabetes

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Introduction: The worldwide increasing prevalence of type 2 diabetes (T2D) present a significant burden on health care resources (now almost 10% of total NHS expenditure). There is, however, no agreed validated measure to infer T2D severity from electronic health records. This NIHR funded project aims to quantify the severity of T2D with regard to adverse outcomes in a collaboration between Manchester, Oxford, Keele, Bristol and Nottingham.

Methods: Data from the Clinical Practice Research Datalink (CPRD) and hospitalisation records of people with T2D registered in linked English general practices will be used. We will develop a clinical decision algorithm to define and grade T2D severity using annual data between 2006-2015. The algorithm will incorporate the main risk factors for adverse outcomes (severity domains) to stratify case cohorts by baseline and longitudinal severity scores. The algorithm will be then validated using survival analysis models.

Results: At this preliminary stage, we have defined the main severity domains for T2D from relevant literature: age, duration of diabetes, HbA_{1c}, diabetes complications (retinopathy, nephropathy, neuropathy), comorbidities (cardiovascular and cerebrovascular disease, mental illness, cancer), patterns of prescribed treatments, hospitalisation and frequency of consultations.

Discussion: The proposed approach will summarise and quantify the severity of T2D for primary care performance management and remuneration and to inform the methodology of measuring the severity of other chronic conditions managed in primary care. The developed severity algorithm will be informative to practitioners and could stratify clinical management of people with T2D and support commissioning and public health programmes for T2D.