In this issue of our Wolfson Institute of Population Health Newsletter, we celebrate the achievements and work of staff and students in the second half of February and first week of March.

FROM OUR DIRECTOR

Dear All

Despite all the rain of recent weeks, it's lovely to be writing this morning as sun streams through the window and the magnolia is in full bloom outside my window. Spring is in the air!

This newsletter is another great example of the breadth and depth of our work in the Wolfson Institute – well done all.

In particular, it is excellent to see the impact of some of our work as it is reported in the popular press.

Carol Dezateux and her team's work on the measles epidemic, and Ranjit Manchanda's work underpinning the new NHS BRCA screening programme for people with Jewish ancestry are two excellent examples of how our work has a direct positive impact on peoples' lives. Many congratulations to both on these fabulous outputs.

With best wishes

Fiona

MEET WIPH

MEET EMILY LANE (Statistician, Centre for Evaluation and Methods)

How would you describe your roles and responsibilities?

My role primarily involves working as the study statistician on various ongoing cancer screening trials. I am currently working predominantly with colleagues at Imperial College on the CHAIROS and PACIFIC prostate cancer screening trials, writing statistical analysis plans, preparing reports for trial management meetings, and performing interim and final statistical analysis of trial data. I also work with colleagues in the Women's Precision Prevention team, providing statistical consultation on the design of upcoming studies, including performing sample size calculations in novel ways. I am on the committee of the Wolfson Statistical Meeting group, which hosts academic presentations and social events for statisticians across the institute, and am also a teaching assistant on two BCI masters modules.

What has been your greatest professional achievement?
Receiving MRC-NIHR funding for my PhD, which I will be starting at WIPH this autumn.

What aspects of your role do you enjoy the most?
I particularly enjoy getting stuck into programming, so days performing analysis are often my favourite! I also like the opportunity to travel for conferences.

What would be your second choice as a profession?
I am obsessed with books, so I think perhaps a book seller, librarian, or (totally unrelated) a psychotherapist.

What do you enjoy doing outside work?
I love the outdoors and spend a lot of time hiking, camping, sailing, and wild swimming.

Something most people don't know about you?
Before I became a statistician I spent almost two years as an A-level maths teacher.

GENERAL INSTITUTE NEWS

Screening and prevention of ovarian cancer in Australia
14 February (Michail Sideris, Ranjit Manchanda. Centre for Cancer Screening, Prevention and Early Diagnosis)

Ovarian cancer (OC) cases and deaths are predicted to increase in Australia by 42% and 55% respectively by 2040. A review focusing on the current status of OC screening and prevention in Australia notes that screening is not currently recommended for women at average risk, but that there is broadening access to risk-reducing salpingo-oophorectomy (RRSO), which reduces OC incidence and mortality and is recommended for women at high (>4-5%) lifetime OC risk. Currently RRSO and delayed oophorectomy should only be offered to high-risk women in the context of a research trial. Authors conclude that greater unselected testing at cancer diagnosis and upcoming population-based testing strategies can effect a pivotal change to optimise identification of women at increased OC risk who can benefit from preventive strategies.

Health insurance cost-sharing and choice of hospital tier in China
14 February (Boby Mihaylova. Centre for Evaluation and Methods)

Health insurance costs for hospital treatment in China are graded according to the tier of hospital, in order to reduce overcrowding in the largest and best equipped hospitals and encourage patients to attend the less expensive ones. A 9yr follow up of a prospective study of 0.5 million adults from 10 areas in China examines the associations between this 'differential health insurance cost sharing' and choice of hospital tier for patients with a first hospitalization for stroke or ischaemic heart disease (IHD). Results show that 64-68% of stroke and IHD patients in urban areas and 27-29% in rural areas chose highest tier (3) hospitals, suggesting that patient choice was influenced by differential costs sharing in urban, but not rural areas. Further strategies are required to promote more efficient hospital use.

Five Lives smartphone app to monitor future dementia risk

15 February (Erin Laurence. Centre for Psychiatry and Mental Health)

Digital assessments of dementia risk and cognitive function may outperform in-person assessments in affordability, accuracy and longitudinal tracking abilities, but their accessibility and reliability for older adults is unclear. In a study evaluating the usability and reliability of the Five Lives smartphone app to assess lifestyle and cognitive factors relevant to dementia risk, 756 older UK adults completed 3 assessments of cognitive function and dementia risk over 3-months, and provided usability feedback. Participants found the app easy to use, quick to complete, and enjoyable. The cognitive tests showed normal or near-to-normal distributions, variable test-retest reliabilities, and age-related effects. Authors conclude that the findings highlight the potential of digital assessments in dementia research and clinical practice, enabling improved accessibility and better monitoring of cognitive health on a larger scale than traditional in-person assessments
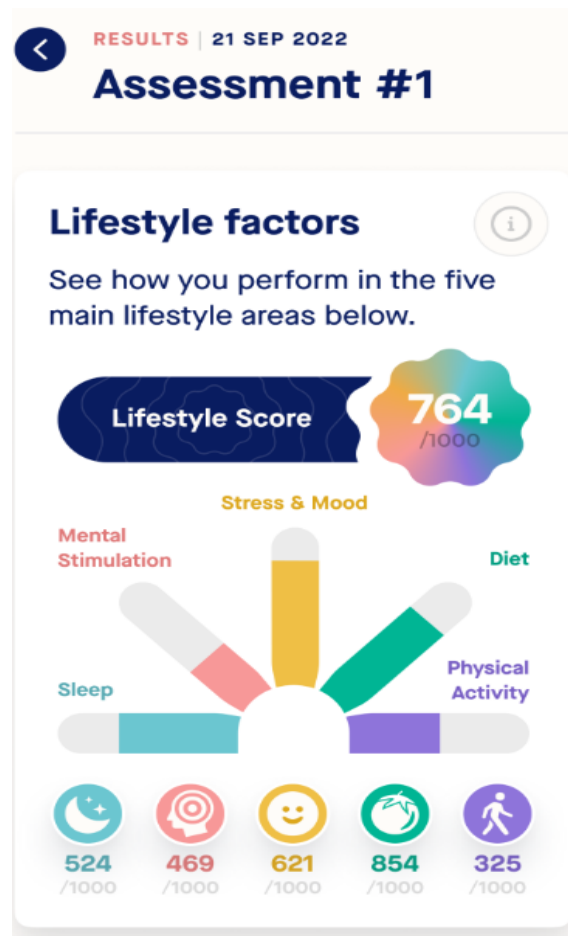

Multimorbidity in survivors of 28 cancer sites
15 February (Tahania Ahmad, Dipesh Gopal, Fabiola Eto, Miriam Samuel, Sarah Finer, Steph Taylor. Centres for Cancer Screening, Prevention and Diagnosis/Primary Care)

To address an evidence gap on the prevalence of specific comorbidities in survivors of different cancers, a nationwide English cross-sectional study uses electronic health data to determine the prevalence of multimorbidity in 28 cancer sites. The comparison of 347,028 adults who had survived 2yrs with cancer with 804,299 matched controls without cancer found that cancer survivors had a higher prevalence of multimorbidity across all the cancer sites. Hypertension (56.2%), painful conditions (39.8%), osteoarthritis (38.0%), depression (31.8%) and constipation (31.4%) were the five most frequent chronic conditions reported. Prevalence of constipation, anaemia and painful conditions were higher after cancer diagnosis than before. Authors say there is a need to consider integrated management of chronic conditions tailored to specific cancers to improve cancer survivorship.
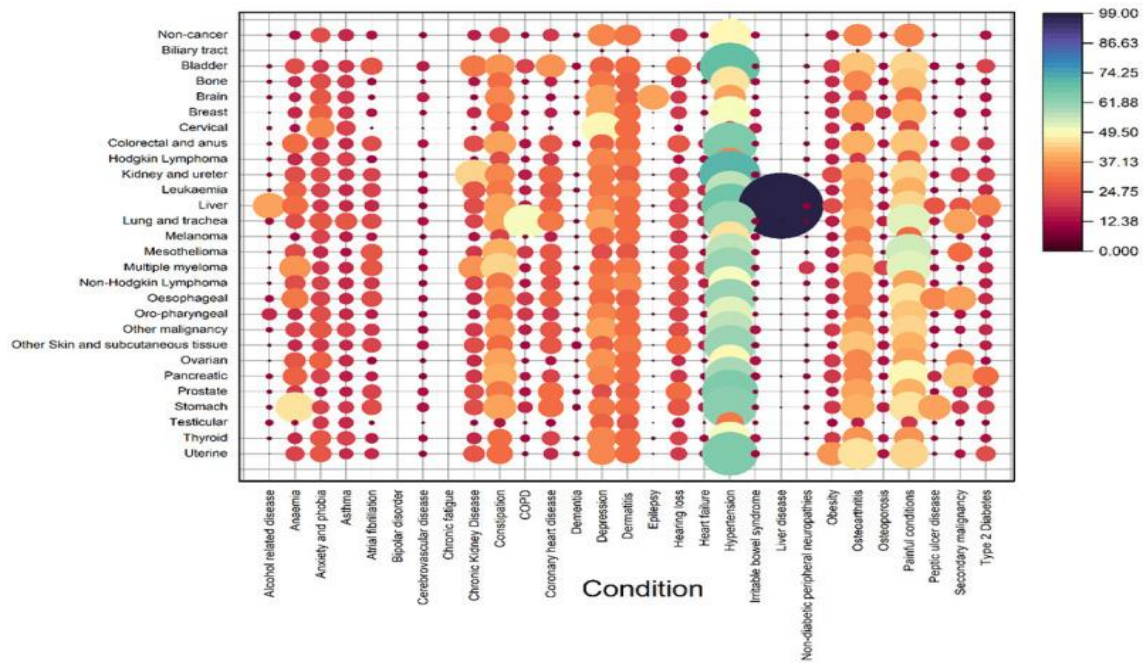
Health outcomes after myocardial infarction in 56 million people
15 February (Jianhua Wu. Centre for Primary Care)
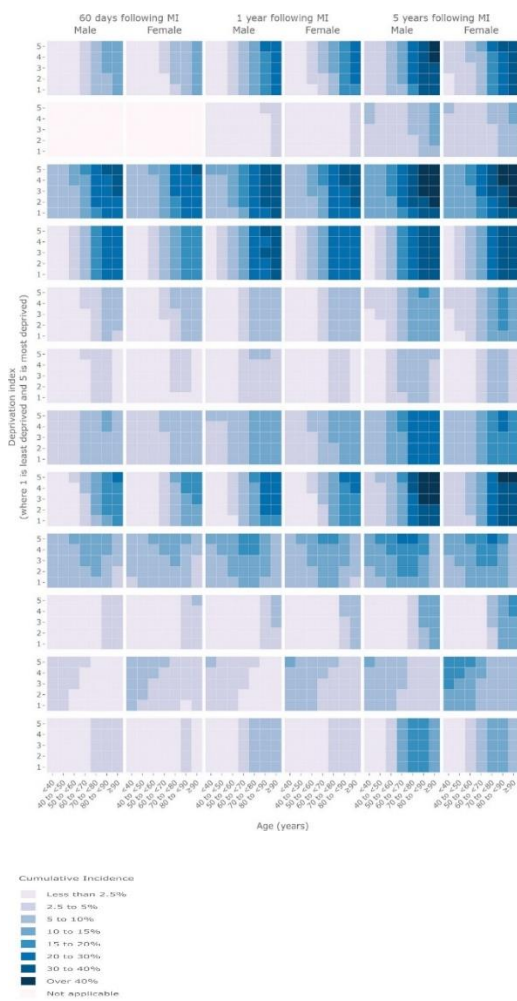
To determine the long-term risk of major health outcomes following myocardial infarction (MI), a cohort study of all adults admitted to NHS Trusts in England over a 9yr period identified 433,361 individuals with MI. Following MI, all-cause mortality was the most frequent event, followed by heart failure, renal failure, atrial fibrillation, severe bleeding, diabetes, cancer, cerebrovascular disease, depression, dementia, subsequent MI, and peripheral arterial disease. Compared with a risk-set matched 2,001,310 individuals, first hospitalisation of all non-fatal health outcomes were increased after MI, except for dementia and cancer. Up to 1/3 of patients with MI developed heart or renal failure, 7% had another MI, and 38% died within 9 yrs (v 35% deaths among matched individuals). Authors conclude that targeted efforts to prevent or limit the accrual of chronic, multisystem disease states following MI are needed, and should be guided by the demographic-specific risk charts derived in this study.

BRCA genetic screening for people with Jewish ancestry
17 February. (Ranjit Manchanda. Centre for Cancer Screening, Prevention and Early Diagnosis)

A Telegraph article about a woman whose mother died of breast cancer at age 35 ponders whether the new NHS BRCA screening programme for people with Jewish ancestry could have saved her mother's life. Katie Kay, who is herself BRCA positive, told the Telegraph that after learning she carries the BRCA gene she underwent a double mastectomy, and that while her fear of the gene will never go away, the surgery has allowed her to move on. In expert comments in the article, Ranjit Manchanda explained the significance of the BRCA gene, and the new testing programme: 'It's taken 16 years of work to demonstrate a benefit to the Jewish population and roll out this scheme. There's no doubt that as the field evolves and research is undertaken, genetic screening could be more broadly applicable on the NHS for other chronic diseases in the future.'

The Telegraph
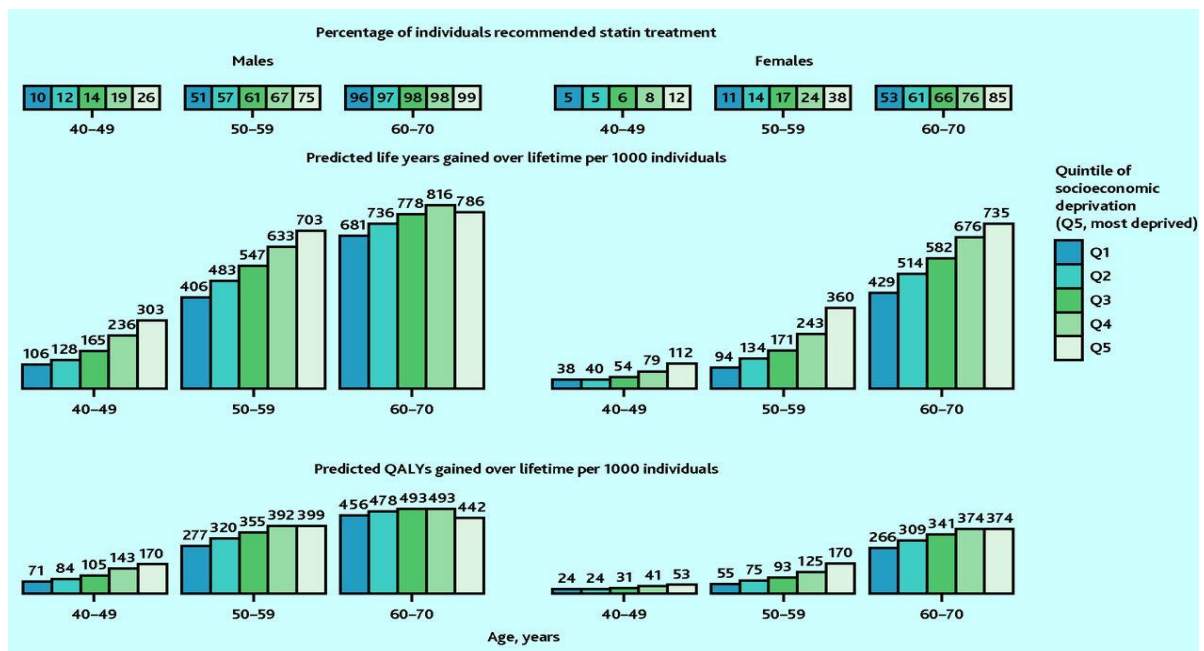
Health / Conditions

Cancer

My fear of the cancer gene will never go away – but after my double mastectomy I can finally move on

My mother died aged 35 of breast cancer – the new NHS BRCA screening programme for people with Jewish ancestry may have saved her life

New model predicts impact of statin treatment on socioeconomic inequalities
19 February (John Robson, Boby Mihaylova. Centres for Primary Care/Evaluation and Methods)

A new cardiovascular disease (CVD) model, developed to predict CVD incidence, life expectancy, quality-adjusted life years (QALYs), and the impact of statin treatment across socioeconomic deprivation quintiles, demonstrates the potential of guideline recommended statin treatment to increase QALYs and reduce socioeconomic inequalities, with larger gains in quintiles of higher deprivation. Key CVD risk determinants were age, sex, socioeconomic deprivation, smoking, hypertension, diabetes, and cardiovascular events. The model, developed using data from statin trial and UK Biobank participants, projected strong gradients in remaining life expectancy, with 4-5yr gaps between the least and most socioeconomically deprived quintiles. Authors say the model is a novel resource for individualised long-term projections of health outcomes of CVD treatments.

Percentage of individuals recommended statin treatment

Predicted life years gained over lifetime per 1000 individuals

Predicted QALYs gained over lifetime per 1000 individuals

Age, years

Genetic drivers of heterogeneity in type 2 diabetes pathophysiology
19 February (Sarah Finer. Centre for Primary Care)

A paper published in *Nature* characterizes the genetic contribution to the pathophysiological processes through which type 2 diabetes (T2D) develops across ancestry groups, by aggregating genome-wide association study (GWAS) data from over 2.5 million individuals, including 428,452 with T2D. Authors identify 1289 independent association signals at genome-wide significance that map to 611 loci, of which 145 are previously unreported. The work defines 8 non-overlapping clusters of T2D signals characterized by distinct profiles of cardiometabolic trait associations, building cluster-specific partitioned polygenic scores in a further 279,552 individuals of diverse ancestry (including 30,288 T2D cases), and test their association with T2D-related vascular outcomes. Cluster-specific partitioned polygenic scores are associated with coronary and peripheral artery disease and end-stage diabetic nephropathy across ancestry groups, highlighting the importance of obesity-related processes in the development of vascular outcomes. The findings show the value of integrating multi-ancestry GWAS data with single-cell epigenomics to disentangle the aetiological heterogeneity that drives development and progression of T2D, which may offer a route to optimize global access to genetically informed diabetes care.
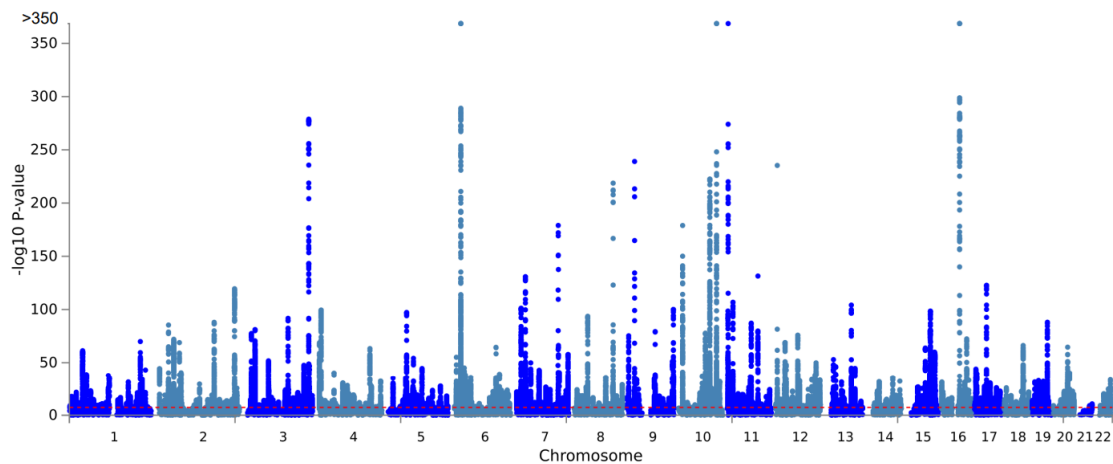
Rehumanising admission clerking
20 February (Stephen Hibbs. Centre for Primary Care)

In a BMJ letter Stephen Hibbs writes about how dehumanising hospitals could be for people with advanced dementia, and that admission clerking notes contribute to this: *Bedbound. Dependent for all activities of daily life. Doubly incontinent. Multiple falls. Unable to give history.* Experimenting with a different approach for patients who could no longer tell their own stories, he began notes with a brief anecdote from a patient's family: *Mr X is a lifelong bird lover. On one occasion a large bird sat down on a major road and refused to move, resulting in a backlog of traffic. Mr X confidently approached the bird, carried it to safer ground, and the traffic bottleneck was relieved. Today, he has been brought to hospital because…* He hoped readers would have their curiosity kindled about who they were about to meet. Stephen suggests that medical notes tend to focus attention on data rather than personhood, but 'perhaps we can also gently subvert them to recentre the individual'.
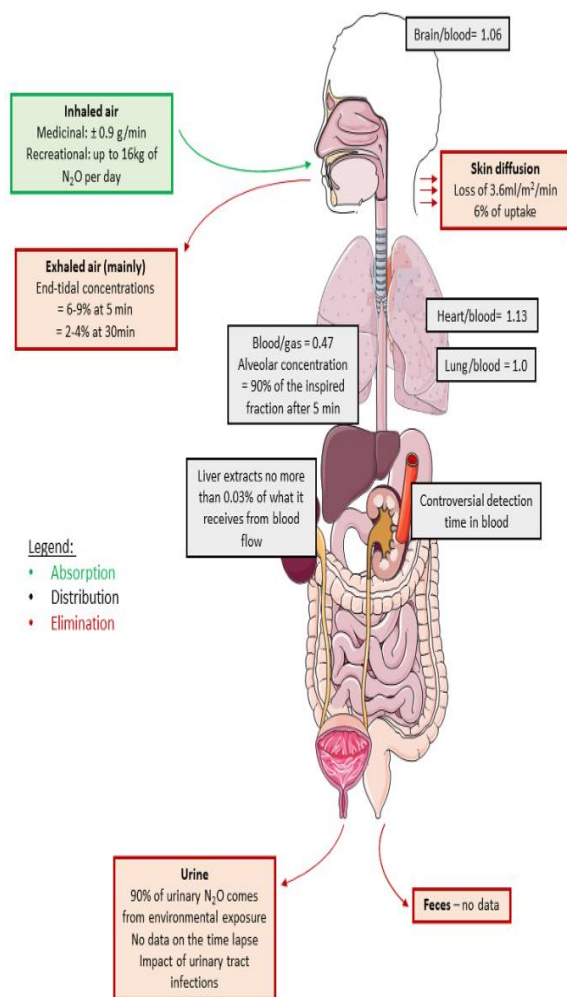
APOLLO Social Science Podcast
21 February (Sophie Spitters. Centre for Primary Care)

In February's episode of the APOLLO Social Science Podcast, Sophie Spitters (CPC) speaks about her journey from physics to psychology to social science, and explains three big ideas that have influenced her thinking. She gives a brilliant introduction to the concepts of Systems Theory, Dialectical Critical Realism, and Boundary Spanning.
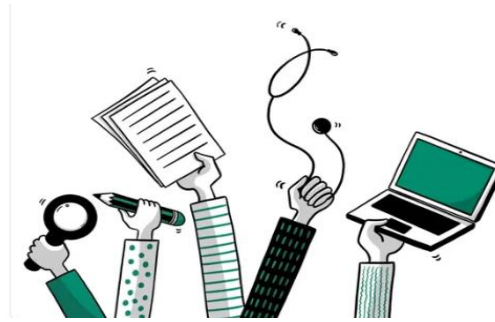
Nitrous oxide abuse direct measurement for diagnosis and follow-up
21 February (Alastair Noyce. Centre for Preventive Neurology)

Brain/blood = 1.06

Inhaled air
Medicinal: ± 0.9 g/min
Recreational: up to 16kg of
N_2O per day

Skin diffusion
Loss of $3.6ml/m^2/min$
6% of uptake

Exhaled air (mainly)
End-tidal concentrations
= 6-9% at 5 min
= 2-4% at 30min

Heart/blood = 1.13

Blood/gas = 0.47
Alveolar concentration
= 90% of the inspired
fraction after 5 min

Lung/blood = 1.0

Liver extracts no more
than 0.03% of what it
receives from blood
flow

Controversial detection
time in blood

Legend:
• Absorption
• Distribution
• Elimination

Urine
90% of urinary N_2O comes
from environmental exposure
No data on the time lapse
Impact of urinary tract
infections

Feces – no data

To address the lack of recommendations for detecting nitrous oxide (N_2O) in cases of recreational misuse, researchers have conducted a literature review to identify biomarkers of intoxication and of clinical severity for laboratory use. N_2O is eliminated 5min post inhalation so measuring it in exhaled air is of no value, and while many studies found that urine and blood matrices concentrations are connected to ambient concentrations, there are no similar data for direct exposure. There are no studies on N_2O measurement in direct consumers. Patients actively abusing N_2O are currently monitored using biomarkers related to the effects of N_2O on metabolism (eg: B12, homocysteine, methylmalonic acid), but while these indirect markers are of major interest, data on the kinetics of these markers in the context of N_2O use are lacking, and these markers still lack specificity. Authors conclude that there is a need for a better understanding of consequences and related pathophysiology to identify new markers, such as oxidative stress markers or other metabolites.

Inaugural Lecture
21 February (Richard Hooper. Centre for Evaluation and Methods)

In Richard Hooper's inaugural lecture, *Emerging Patterns*, delivered at the Derek Willoughby Lecture Theatre on 21 February, he reflected on his career as a medical statistician, and on his research aimed at improving the design of randomised evaluations of health interventions. Richard focused on the patterns and symbols that have figured in his career to date, and how they have followed him in his journey from mathematics to health research. He also discussed the importance of patterns and symbols in health research.

CRUK Philanthropic Campaign

22 February (Peter Sasieni. Centre for Cancer Screening, Prevention and Early Diagnosis)

Creating a cervical cancer-free future

"It was a huge collaborative effort by scientists all over the world. Knowing that science and health service implementation can virtually eliminate a cancer that had once been one of the most common causes of death of women worldwide was incredibly uplifting.

– Professor Peter Sasieni, Director of the Cancer Research UK Cancer Prevention Trials Unit

In its largest ever philanthropic campaign, launched in February, Cancer Research UK has created a new set of webpages featuring the work of Professor Peter Sasieni. Peter's quote relating to his work on cervical cancer is used in the pages on 'Translation and Innovations' which aim to translate discoveries into tests and treatments.

GBA1 rs3115534 and sleep behaviour disorder in Parkinson's disease in Nigerians

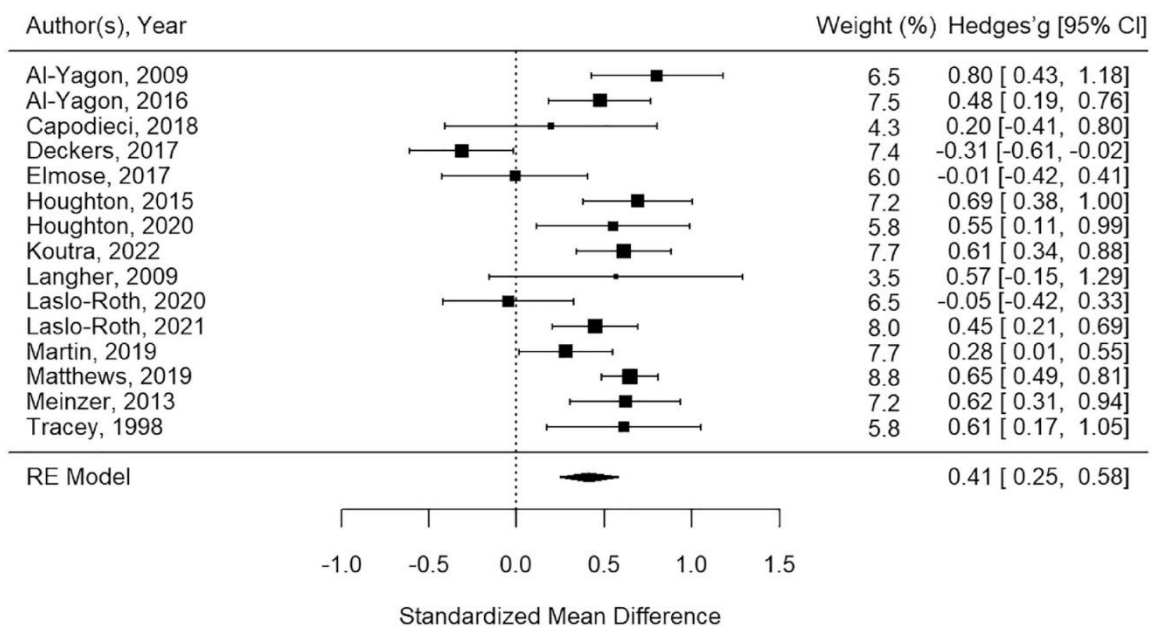23 February (Alastair Noyce. Centre for Preventive Neurology)

Coding variants in Glucocerebrosidase (GBA1) are a known genetic risk factor for rapid eye movement sleep behaviour disorder (RBD), an early feature of Parkinson's Disease (PD). In 2023 a study reported a risk variant (rs3115534) to be associated with PD risk and earlier onset in people of African ancestry. To determine whether the GBA1 rs3115534 PD risk variant is associated with RBD in people with PD, researchers genotyped DNA samples from 709 people with PD and 776 controls from Nigeria. Results showed that that the variant is associated with possible RBD in individuals of Nigerian origin, as well as in all samples after adjusting for PD status, suggesting that this variant may have the same downstream consequences as GBA1 coding variants.
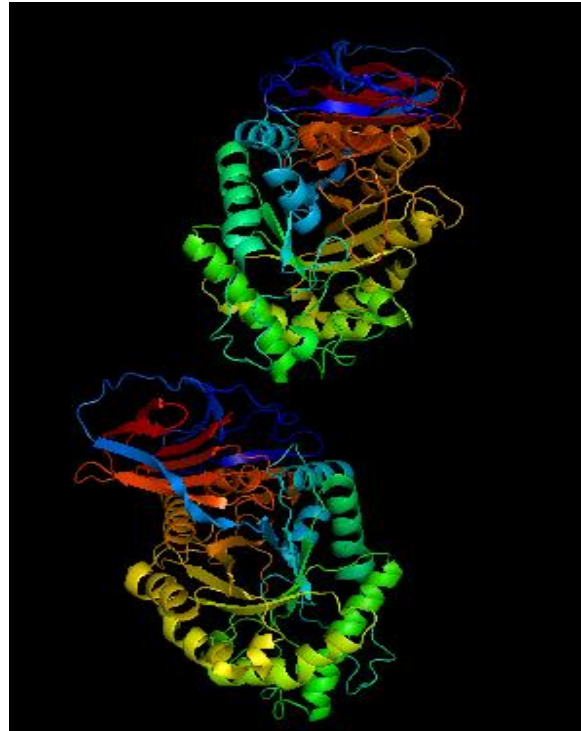
Loneliness in Young People with ADHD
23 February (Jennifer Lau. Centre for Psychiatry and Mental Health)

A systematic review and meta-analysis compares loneliness in people aged <25 with and without attention deficit/hyperactivity disorder (ADHD), and examines the association between loneliness and mental health difficulties in those with ADHD. Researchers found that young people with ADHD reported significantly higher loneliness than those without. Associations were found between loneliness and mental health difficulties in ADHD. Authors recommend targeted research and interventions on loneliness in young people with ADHD.

Author(s), Year	Weight (%)	Hedges'g [95% CI]
Al-Yagon, 2009	6.5	0.80 [0.43, 1.18]
Al-Yagon, 2016	7.5	0.48 [0.19, 0.76]
Capodieci, 2018	4.3	0.20 [-0.41, 0.80]
Deckers, 2017	7.4	-0.31 [-0.61, -0.02]
Elmose, 2017	6.0	-0.01 [-0.42, 0.41]
Houghton, 2015	7.2	0.69 [0.38, 1.00]
Houghton, 2020	5.8	0.55 [0.11, 0.99]
Koutra, 2022	7.7	0.61 [0.34, 0.88]
Langher, 2009	3.5	0.57 [-0.15, 1.29]
Laslo-Roth, 2020	6.5	-0.05 [-0.42, 0.33]
Laslo-Roth, 2021	8.0	0.45 [0.21, 0.69]
Martin, 2019	7.7	0.28 [0.01, 0.55]
Matthews, 2019	8.8	0.65 [0.49, 0.81]
Meinzer, 2013	7.2	0.62 [0.31, 0.94]
Tracey, 1998	5.8	0.61 [0.17, 1.05]
RE Model		0.41 [0.25, 0.58]

Standardized Mean Difference

Reproductive Justice in the Climate Crisis
26 February (Health McMullen. Centre for Public Health and Policy)

Heather McMullen formed part of a panel in the third in a University of Cambridge Department of Sociology Seminar Series: Reproductive Justice in the Climate Crisis. Responding to the question: *Why highlight the centrality of reproduction when studying climate change?*, Heather highlighted her research relating to climate policy, the disproportionate impacts of the crisis on marginalised groups, and the existential questions raised by the crisis in relation to bearing and raising children.

How might secondary dementia prevention programmes work in practice
26 February (Claudia Cooper. Centre for Psychiatry and Mental Health)

How targeted lifestyle changes for personalised dementia prevention might be scaled to population level is unknown. A pre-implementation study for the APPLE-Tree programme explores stakeholder perspectives on developing system-readiness for dementia prevention programmes. Interviews with health and social care professionals with experience in services for older adults with memory concerns but no dementia diagnosis revealed favourable beliefs in the effectiveness of dementia prevention programmes in enhancing cognition and wellbeing and their potential to fill a service gap for people with memory concerns, challenges for funding and capacity to deliver such programmes at organizations without staff capacity or higher prioritization of dementia services, and modifications to delivery and guidance required for compatibility with organizations and patients. The results highlight likely challenges in scale-up to make personalized dementia prevention widely available.

Most Vegan cheeses saltier than cheddar
27 February (Action on Salt team. Centre for Public Health and Policy)

An Action on Salt report on the salt content in cheese has received widespread media attention. The findings in the latest report show that cheese is a staple ingredient in most households, and contributes 6% of average daily salt intake. Plant-based cheese was found to be nutritionally worse than dairy products, containing on average 10% more salt than cheddar. Retailer own brand cheeses were on average lower in salt than branded cheeses. The report calls on companies to do more to prioritise salt reduction, and on the Government to level the playing field with mandatory salt reduction targets to prevent thousands of premature deaths from heart disease and stroke.

Presentations at the CRUK Data-driven Cancer Research Conference
27-28 February (Joy Li, Ruggiero Santeramo. Centres for Cancer Screening, Prevention and Early Diagnosis/Evaluation and Methods)

Joy Li and Ruggiero Santeramo both presented posters at the inaugural CRUK Data-driven Cancer Research Conference held in Manchester. Joy's poster, *Breast cancer care in North East and Inner East London*, was a descriptive analysis of a collaboration with NIHR ARC North Thames and Bart's Trust to address potential issues in local breast cancer healthcare, with some preliminary results. Using datasets collected from primary and secondary care, the project identified gaps in delivery of referrals and diagnostic for patients in Northeast and Inner East London. Ruggiero's poster, *Are better AI algorithms for breast cancer detection also better at predicting risk? A paired case–control study* showed that algorithms that excel at cancer detection also perform well for risk assessment.
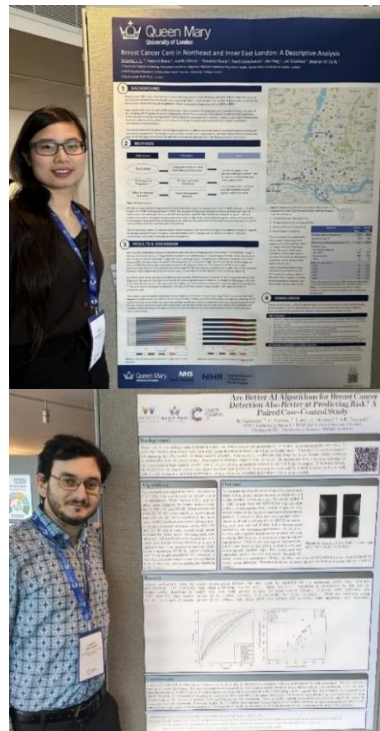
New UK Research and Innovation research hub
27 February (Jennifer Lau. Centre for Psychiatry and Mental Health)

Accelerating research in severe mental illness

A UKRI blog has announced details of 5 new research hubs that will form the basis of the £22.5 million UKRI mental health research platform to tackle key challenges in severe mental illness. The QMUL platform, *Building recovery and resilience in severe mental illness: Leveraging the role of social determinants in illness trajectories and interventions*, will be run by Jennifer Lau, and aims to generate new knowledge on the role of social determinants in influencing the course and outcomes of SMIs and explore how we can leverage protective social factors to build resilience and recovery in people with SMIs. Jennifer said: *Our community in East London is one of the most diverse in the country. It is also one that faces major health inequalities affecting peoples' accesses to services and support. We want to look at how things like the conditions in which people are born, grow, work, live and age influence the journeys and outcomes of people living with severe mental illness – and how we can change those things to lead to better health outcomes.*

Long-term air pollution exposure and risk of COVID infection
27 February (Mohammad Talaei, Seif Shaheen, Chris Griffiths. Centres for Preventive Neurology/Primary Care)

Using serological data from over 10k participants from the COVIDENCE UK population-based cohort and estimated annual average air pollution exposure at each participant's home postcode, researchers investigating the association between air quality and risk of SARS-CoV-2 infection have found a positive association between risk of seropositivity and 5yr nitrogen dioxide (NO_2) and fine particulate matter ($PM_{2.5}$) exposures. Results also showed a positive association between NO_2 and antibody titres (seropositive participants), but no association between NO_2 and $PM_{2.5}$ and the severity of COVID-19. These findings suggest that the long-term burden of air pollution increased the risks of COVID infection. This evidence has important implications for future pandemic preparedness, and strengthens the case for reducing long-term air pollution exposures to reduce the vulnerability of individuals to respiratory viruses.

- Seronegative participants
- Seropositive participants
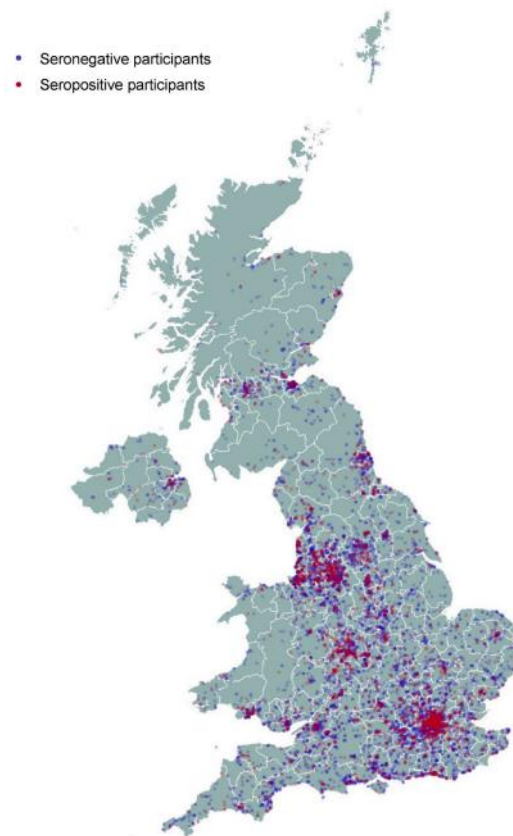
Fig. 2. Distribution of 10,489 participants over the UK, by sero status.

Tackling multiple sclerosis: Could a vaccine be the answer?
28 February (Ruth Dobson. Centre for Preventive Neurology)

A podcast hosted by the Science and Technology Editor for The Economist discusses treatment options for Multiple Sclerosis with expert guests including Professor Ruth Dobson. MS occurs when the immune system attacks the fatty tissue insulating the nerve cells. In 2022 Epstein-Barr virus was identified as the trigger for this process, a discovery that opened new potential treatment options for MS, including the possibility of a vaccine. Ruth's work was also featured in an Economist article about potential treatments, published on the same day.

Haemoglobin thresholds to define anaemia
29 February (Genes & Health Research Team. Centre for Primary Care)

Existing WHO anaemia definitions are based on statistical thresholds set >50yrs ago. To establish global haemoglobin thresholds for anaemia and inform WHO

clinical guidelines, researchers identified data sources from populations in the USA, England, Australia, China, the Netherlands, Canada, Ecuador, and Bangladesh with sufficient recent clinical and laboratory information to obtain a healthy reference sample. From 8 data sources comprising 18 individual datasets haemoglobin thresholds (ie. 5th centiles) were estimated for children aged 6-23 months, 24-59 months, 5-11yrs, and 12-17yrs, and adults aged 18-65 yrs (including during pregnancy). There was insufficient data to estimate thresholds for the 3rd trimester of pregnancy or for adults aged >65yrs. No evidence was found to suggest that thresholds should differ between people of differering ancestries. The results enable global harmonisation of clinical and public health haemoglobin thresholds for diagnosis of anaemia.
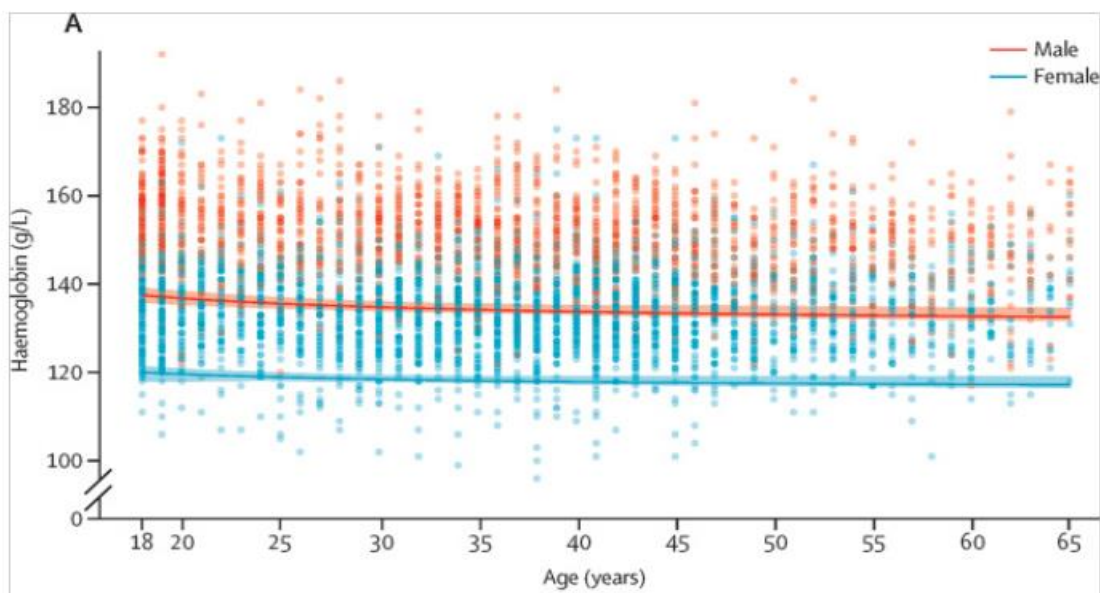
Evaluation of a tool for upper limb rehabilitation in people with MS
29 February (Alison Thomson, Andrea Stennett, Canan Metin, Jon Bestwick, Ruth Dobson. Centre for Preventive Neurology)

Upper limb function impairment is common in Multiple Sclerosis (MS) and rehabilitation remains a key strategy to manage symptoms and improve quality of life. The Under & Over study assessed the effectiveness of a rehabilitation programme in 106 people with MS over 3 months with the cardboard 9-hole peg test as the primary outcome measure. Participants were randomised to 3 arms: *1a* using the Under & Over tool daily for 30min, *1b* using the same tool without time limits but with an added community sharing platform, and arm *2* completing the peg test for 3 months before switching to 'Free Use'. 41% of participants completed the final
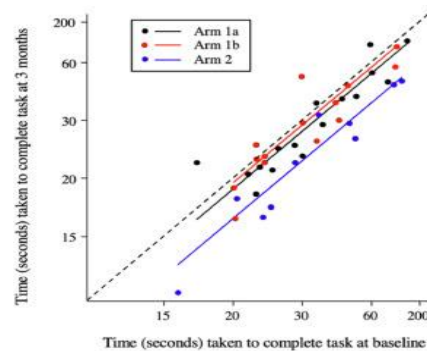
Arm 1b v Arm 1a p = 0.396
Arm 2 v Arm 1a p < 0.001
Arm 2 v Arm 1b p < 0.001

assessment. No significant difference between the peg test at baseline and 3 months was seen in Arms *1a* or *1b*. Participants in Arm *2* who had been completing the peg test 5 days/wk for 3 months showed a training effect in the dominant hand. No significant difference was seen in peg test time following 3 months of active use of the Under & Over tool.
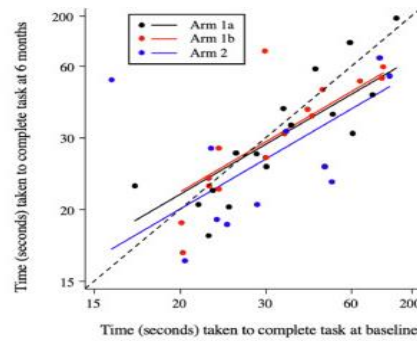
Arm 1b v Arm 1a $p = 0.870$
Arm 2 v Arm 1a $p = 0.415$
Arm 2 v Arm 1b $p = 0.342$

FMD Staff awards
29 February (Georgina Hosang, Megan Clinch, Deborah Swinglehurst. Centres for Psychiatry and Mental Health/Public Health and Policy/Primary Care)

The Annual Faculty Staff awards, recognising colleagues who have made outstanding contributions to scholarship, collegiality, and students over the past year, were held at the Barbican Conservatory on 29 February. Congratulations to Georgina Hosang, who was selected as the EDI Champion, in recognition of her outstanding efforts to embed EDI into her work and her commitment and dedication to furthering equality, diversity, and inclusion in the faculty. Megan Clinch received a commendation for Inspirational Leadership, and Deborah Swinglehurst was commended for Research Supervision. Well done all!

Post-TB lung disease
1 March (Dominik Zenner. Centre for Public Health and Policy)

Dominik Zenner calls for international evidence-based guidelines for the identification and treatment of post-TB lung disease (PTLD) in a new editorial. He notes that Brazil is the first country to approve national guidelines on the management and vaccination of PTLD patients, following the establishment of clinical standards for PTLD, and cites a new paper demonstrating that individuals previously thought to be at lower risk, such as those with only one episode of TB, exhibit a potential risk of PTLD. He concludes that much remains to be done to improve our understanding of PTLD diagnosis, management and treatment, as well as the impact on individuals, communities and health systems, and exhorts researchers to '*keep going – beyond TB!*'.

Table. Areas of research on PTLD.

Area	Current priority for research
Clinical definition of PTLD	++
Diagnosis of PTLD	++
Classification of patients for appropriate treatment	++
Management and treatment of patients	+++
Pharmacological approach	++
Inclusion in national programmes	+++
Implementation	++
Role of radiology	+
Role of functional evaluation	++
Targets and limits of rehabilitation	+
Tiered levels of pulmonary rehabilitation	+
Monitoring of lung function during TB treatment	++
Vaccination against other conditions	+++
Role of anti-inflammatory treatment during anti-TB treatment	++

+ = low; ++ = medium; +++ = high.
PTLD = post-TB lung disease.

## PhD Success
1 March (Imogen Skene. Centre for Primary Care)

Congratulations are in order for Imogen Skene, who passed her PhD viva on 1 March. Imogen was supervised by Liz Steed and Paul Pfeffer, and the title of her PhD is: Understanding the beliefs and behaviours of adults presenting to the Emergency Department with asthma with a view to developing guidance for a medication optimisation intervention.

Cost-benefit of genetic screening for breast cancer in Iran
1 March (Hiro Farabi. Centre for Evaluation and Methods)

An economic <u>evaluation</u> of population- and family history (FH)-based screening for breast cancer in women >age 30 in Iran (where <10% of cases are attributable to a gene mutation) calculates the benefit-cost ratio. The monetary value of a test was $20, or $27 for women with a family history or breast cancer gene mutation. Costs per test for population- and family history-based screening were $167 and $8 respectively, and benefit-cost ratios were 0.12 and 3.37 respectively. Authors recommend the implementation of an FH-based strategy instead of a population-based genetic screening strategy in Iran.

Decision model for FH-based genetic screening BRCA tests
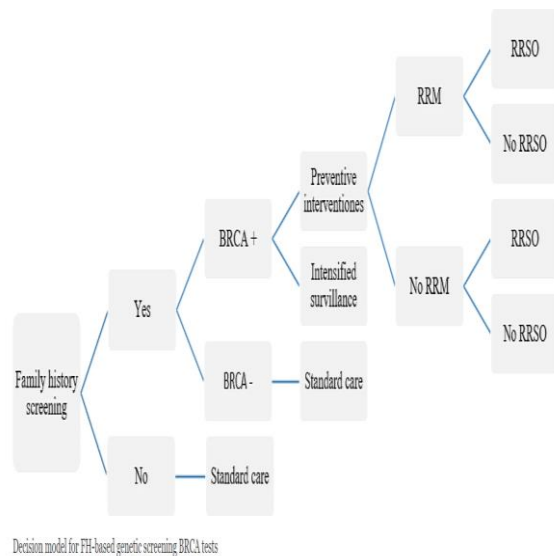
Olena Zelenska attends roundtable on post-war mental health needs of young people in Ukraine

1 March (Dennis Ougrin. Centre for Psychiatry and Mental Health)

QMUL was honoured to welcome Olena Zelenska, First Lady of Ukraine, to a roundtable discussion on how to address the complex mental health needs of young people affected by war. The meeting, organised by Dennis Ougrin, brought together leading policymakers and experts in mental health from the UK and Ukraine, including Health Minister Lord Markham, Royal College of Psychiatrists President Lade Smith, and Ukrainian Minister of Health Viktor Liashko. The meeting aimed to support the development of clinical services in post-war Ukraine, particularly those that help children deal with trauma, and to facilitate mental health professional training. Dennis said: *Developing community mental health services for young people is a strategic priority for both Ukraine and the UK. Ukraine has gained valuable experience of developing trauma-focused clinical services for young people who continue to experience the effects of the war. This experience will shape the response to future wars globally.*

Understanding psychosis complexity through a syndemic framework
2 March (Erin Lawrence, Georgina Hosang. Centre for Psychiatry and Mental Health)

Psychotic conditions pose significant challenges due to their complex aetiology and impact on individuals and communities. Syndemic theory may offer a framework to understand the interconnectedness of various health and social problems in the context of psychosis. A systematic review identifies 5 papers testing whether psychosis is better understood as a component of a syndemic. Findings indicate that psychosis largely emerges from an interplay of factors, mostly in ethnic groups, and that a syndemic framework accounts for the interplay between multiple risk factors. Authors say that there is a compelling need for a new paradigm and datasets that can investigate how psychosis emerges in the context of a syndemic, ultimately guiding more effective preventive and care interventions as well as policies to improve the health of marginalised communities living in precarity.

European Congress of Radiology 2024
2 March (Oleg Blyuss. Centre for Cancer Screening, Prevention and Diagnosis)

In a talk delivered at the European Congress of Radiologists in Vienna, Oleg Blyuss spoke on 'Developing a dynamic predictive model for baseline detection and follow-up re-evaluation of the risk of prostate cancer progression on active surveillance'. The ECR is the largest European radiological conference, and is conducted under the auspices of the European Society of Radiologists.

Effect of maternal trauma and psychopathology symptoms on refugee children's mental health

2 March (Julia Michalek. Centre for Psychiatry and Mental Health)
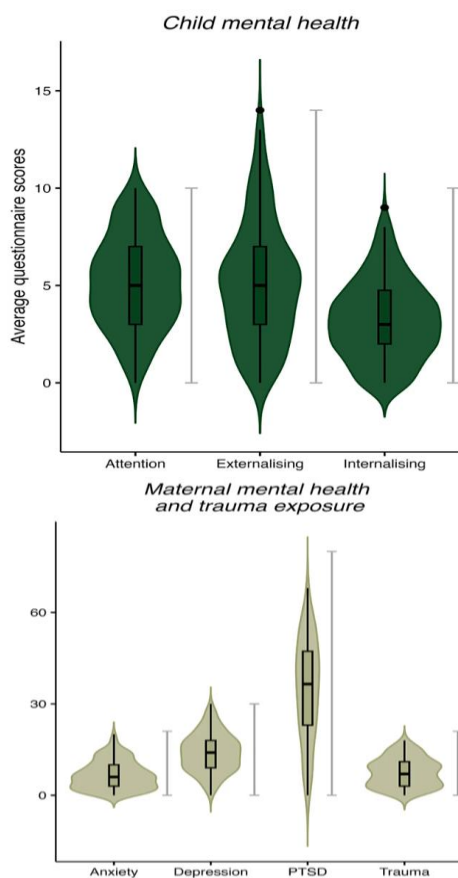
An investigation into the impact on refugee children's mental health of their mothers' trauma exposure and mental health in a sample of 324 Syrian mother-child dyads in Jordan finds that maternal trauma and PTSD symptoms were linked to child internalising and attention problems, while maternal anxiety and depression symptoms were associated with child internalising, externalising, and attention problems. Mothers and children were hypervigilant towards expressions of anger, but surprisingly, mother and child biases were not correlated with each other. Authors say their findings highlight the importance of refugee mothers' trauma exposure and psychopathology on their children's wellbeing, and suggest that intergenerational transmission of mental health problems might involve mechanisms other than attentional processes relating to emotional expressions.

Measles outbreak in Britain

3 March (Carol Dezateux. Centre for Primary Care)

A *New York Times* article about the 2024 measles outbreak in Britain quotes Carol Dezateux, who told the reporter that the outbreak was 'entirely predictable'. Problematic low levels of immunization mean that vaccination levels for measles 10% or more below the 95% level

needed to prevent outbreaks. The article notes that the effects of MMR vaccine hesitancy have been further exacerbated by a lack of resources in the most deprived areas. Carol said that prevention through vaccination costs about 4% of the cost of an outbreak, showing the need for a coordinated plan to work toward better vaccine uptake: 'We know that where resources are brought in, then people can do more. It's not rocket science.'

Centre for Preventive Neurology Launch symposium
4 March

The CPN marked its official launch with a symposium centred around three key themes: Early detection and biomarkers, Early interventions in neurological disease, and Addressing inequalities in health care provision and shaping government policy. The day began with an introduction from Centre lead, Ruth Dobson, followed by a keynote talk by Bas Bloem (Radboud University, Netherlands) on 'Modifying the course of Parkinson's through exercise.' Other speakers included Claudia Cooper (CPMH) and Paul Matthews (Imperial College), as well as CPN researchers who presented their work on dementia, Parkinson's Disease, Multiple Sclerosis, and other neurological disorders. The symposium concluded with a panel discussion, moderated by Charles Marshall and Alastair Noyce, on the future of research in neurological conditions. The imperative to include diverse populations in genetic studies was a key theme of the day.

Adolescent school-based mental health intervention in Tanzania
4 March (Fiona Samuels. Centre for Public Health and Policy)

Findings from a programme co-creating and piloting in-person and digital approaches for an adolescent school-based mental health intervention in Tanzania

are presented in an ODI report. The programme focused on 4 schools in Morogoro and Mwanza cities, where students co-created an intervention blending digital (a computer-based platform) and in-person activities (outdoor sports, group discussion, debate, or arts creation). Implementation of the intervention showed positive effects on key measures of emotional literacy, coping strategies and mental health status for participants *v* a control group. Mental health awareness amongst people not directly participating in the intervention (parents, siblings, peers, teachers) increased over the project period, suggesting potentially important diffusion effects. Recommendations to take the work forward include embedding the approach in the curriculum, exploring potential to benefit harder-to-reach children, and increasing engagement with the wider community.

Figure 1 Emotional literacy: changes among population groups between baseline and endline, treatment and control groups
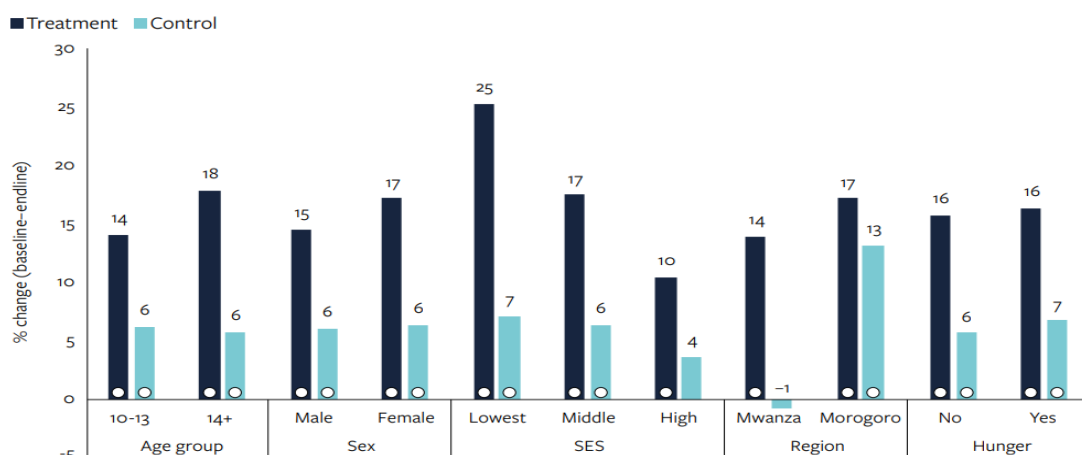
Note: Circles denote statistically significant changes ($p < 0.05$).

Joint UK/Dutch Clinical Genetics Societies and Cancer Genetics Groups Meeting
4/5 March (Sam Oxley, Caitlin Fierheller, Xia Wei. Centre for Cancer Screening, Prevention and Early Diagnosis)

A team from the CCSPED Women's Precision Prevention Group presented their work at the Joint UK/Dutch Clinical Genetics Societies and Cancer Genetics Groups Meeting at the Royal College of Physicians of Edinburgh on 4 and 5 March. Sam Oxley delivered a presentation on the PROTECTOR trial, a study for premenopausal women who are at risk of developing ovarian cancer. In her presentation titled 'Population-based BRCA1 and BRCA2 testing in Canada: an economic evaluation,' Caitlin Fierheller discussed the cost-effectiveness of population BRCA testing in Canada, and Xia Wei presented an economic evaluation of prevention strategies in individual and ovarian cancer genes.

GP access for groups who struggle to engage with health care
6 March (Aaminah Verity, Victoria Tzortziou Brown. Centre for Primary Care)

To examine post-pandemic GP access for groups who struggle to access and engage with health care (inclusion health groups), a study explores direct experiences of people from these groups at 13 East London GP practices. Using a mystery shopper exercise involving 39 in-person practice visits and 13 phone-calls. Results showed that 31% of the mystery visits resulted in registration and the offer of a GP appointment for an urgent problem. None of the mystery shoppers was able to book an appointment by phone but most felt that they would be able to register and make one if they followed the receptionist's instructions. Most mystery shoppers felt respected, listened to and understood the information provided to them. The research identified practice and system level recommendations for improving access for this vulnerable population.
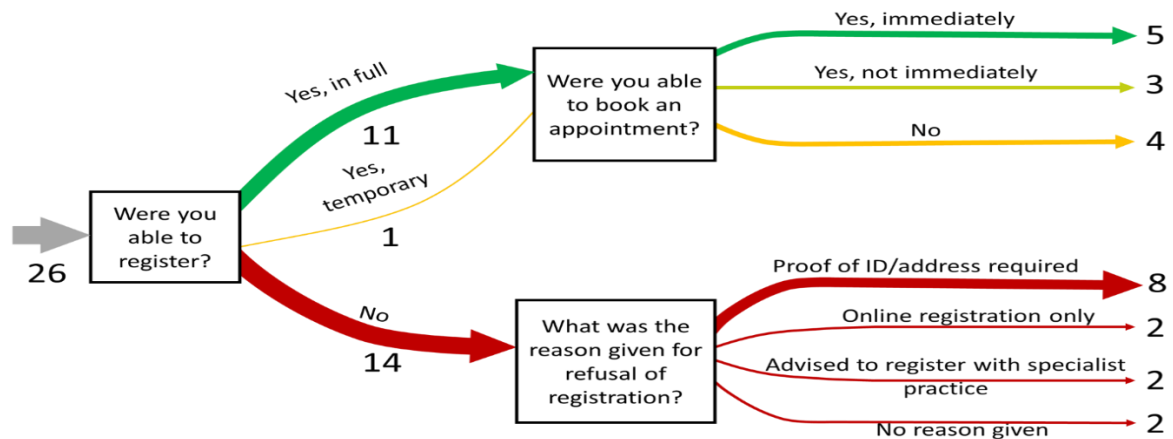
Risk calculator for incident atrial fibrillation
6 March (Jianhua Wu. Centre for Primary Care)

To develop prediction models to identify individuals at high-risk of atrial fibrillation (AF) across prediction horizons from 6 months to 10yrs, researchers use secondary care-linked primary care electronic health records from adults without AF. Models were derived from known risk factors for incident AF, for prediction periods of 6 months and 1, 2, 5 and 10yrs. Of 2,081,139 individuals in the cohort, new cases of AF were 7386 (0.4%) within 6 months, 15349 (0.7%) in 1yr, 38487 (1.8%) in 5yrs, and 79997 (3.8%) by 10yrs. Valvular heart disease and heart failure were the strongest predictors, and association of hypertension with AF increased at longer

prediction horizons. The optimal risk models incorporated age, sex, ethnicity and eight comorbidities. Authors conclude that the Future Innovations in Novel Detection of Atrial Fibrillation (FIND-AF) models demonstrate high discrimination and calibration across short- and long-term prediction horizons in 2 million individuals.


Inaugural Lecture
6 March (Dennis Ougrin. Centre for Psychiatry and Mental Health)

Professor of Child and Adolescent Psychiatry and Global Mental Health, and co-lead of the Youth Resilience Unit in the Centre for Psychiatry and Mental Health, Dennis Ougrin delivered his Inaugural Lecture on Self Harm and Suicide in Young People on 6 March. Dennis also spoke about therapeutic approaches, and art groups for Ukrainian children.


Effects of testosterone & sex hormone binding globulin on lung function
7 March (Seif Shaheen. Centre for Preventive Neurology)
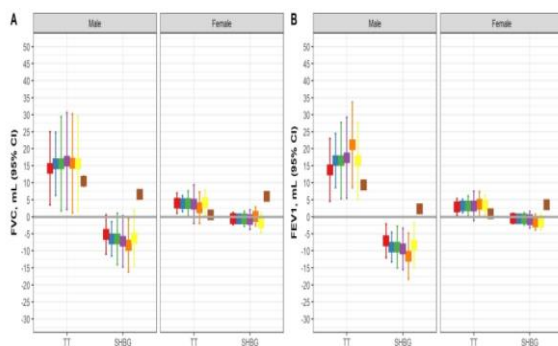
Researchers investigating the independent causal effects of total testosterone (TT) and sex hormone-binding globulin (SHBG) on lung function for males and females compare genome wide association analysis from the UK biobank, and lung function multivariable mendelian randomisation. Results showed a strong beneficial effect of TT on forced expiratory volume (FEV_1) and forced vital capacity (FVC) in both males and females, but a moderate detrimental effect of SHBG on FEV_1 and FEV_1/FVC in males only. Subgroup analyses suggested stronger effects of TT among obese and older males. The findings suggest that testosterone improves lung
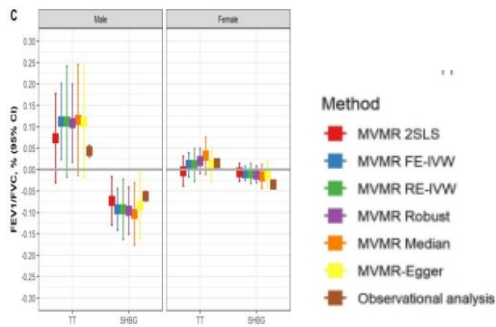
function in males and females, while SHBG has an opposite independent effect in males.

25th European Congress on Gynaecological Oncology (ESGO)
7-10 March (Xia Wei, Ranjit Manchanda, Caitlin Fierheller. Centre for Cancer Screening, Prevention and Early Diagnosis)

Presenting at the ESGO conference in Barcelona from 7-10 March, the CCSPED Women's Precision Prevention group team included Xia Wei, Ranjit Manchanda, and Caitlin Fierheller. Their talks (respectively) covered cost-effectiveness of gene-specific prevention strategies for ovarian and breast cancer, the NHS Jewish BRCA testing programme and general population panel testing for cancer susceptibility genes, and an economic evaluation of population-based BRCA1 and BRCA2 testing in Canada.

FORTHCOMING EVENTS

(Cancer) Pathways, Symptoms and Psychology
27 March. Inaugural Lecture of Professor Suzanne Scott

Professor of Health Psychology and Early Cancer Diagnosis, and Co-Lead of the WIPH Centre for Cancer Screening, Prevention, and Early Diagnosis, Suzanne Scott will present her QMUL inaugural lecture at the Perrin LT, Blizard Building, Whitechapel on 27 March. The title of her lecture will be '(Cancer) Pathways, Symptoms and Psychology'. The event starts at 17:15, and will be followed by a reception from 18:05. Book here

Many thanks to all who so enthusiastically contribute. Please send any news items for the next newsletter to j.a.mackie@qmul.ac.uk