2025/2026 Applications approved by HSC-PBPP to 31st March 2026

Click on the application reference to access the lay summary for this application.

Application Reference	Applicant	Applicant Organisation	Title of Study	Outcome	Level of decision	Days to decision (clocked)
2324-0248	Dr Suzanne Breeman	University of Aberdeen	Female Urgency, Trial of Urodynamics as Routine Evaluation (FUTURE) – Longer-term follow-up study	Approved with conditions	Tier 1 Panel Meeting	17
2223-0097	Dr Ashley Agus	Northern Ireland Clinical Trials Unit, Belfast Health and Social Care Trust	MARCH Trial	Approved	Tier 1 Panel Meeting	10
2223-0188 SR340	Dr Clare Mackie	King's College London	Mortality rate amongst lay people who were provided with take-home naloxone	Approved	Tier 1 Panel Meeting	10
2324-0085	Professor Ajitha Rajan	University of Edinburgh	Clinically Explainable AI for Radiography and CT-based Diagnosis	Approved	Tier 1 Review	23
2425-0221	Lynn McMahon	University of Glasgow now University of Edinburgh	SteatoSITE2	Approved with conditions	Tier 1 Review	50
2324-0198	Dr Ting Shi	The University of Edinburgh	Characterising early RSV exposure in relation to asthma and investigating the short-term impact of RSV maternal vaccination	Approved	Tier 1 Panel Meeting	14
2425-0243	Dr Cosmika Goswami	University of Strathclyde	Optimising Antipsychotic Prescribing Among Hospitalised Patients in the Acute Care Setting in	Approved with conditions	Tier 1 Panel Meeting	8

			Scotland: A national retrospective cohort study (using MACCS 2324-0239 Kurdi Research Resource)			
2425-0187	Dr Melanie Turner	University of Aberdeen	How do co-existing health conditions affect stroke? An electronic data linkage study to investigate the relationship between comorbidity and stroke management and outcomes.	Approved with conditions	Tier 1 Review	19
2223-0069	Maulik Patel	University of Cambridge & Cambridge University Hospitals NHS Foundation Trust	Pragmatic randomised trial of High Or Standard PHosphAte Targets in End-stage kidney disease (PHOSPHATE)	Approved	Tier 1 Panel Meeting	13
2425-0173	Miss Ruth Darbyshire	Leeds Teaching Hospitals Trust	Thermal retinal injury: discovering the risk of handheld laser devices	Approved with conditions	Tier 1 Panel Meeting	9
2425-0030	Dr Joseph Symonds	University of Glasgow	EPI-SCOT database	Approved with conditions	Tier 1 Review	33
2425-0249	Dr Owen Hibberd	Queen Mary University of London	Is Admission Hypocalcaemia Associated with Haemodynamic Instability in Paediatric Major Trauma? - A Multi-Centre Retrospective Cohort Study	Approved	Tier 1 Panel Meeting	11
2425-0217	Professor William Whiteley	University of Edinburgh	Developing a Foundation Model for Brain Imaging via the Brain Health Data Pilot (2223-0005 Whiteley)	Approved with conditions	Tier 1 Review	24
2223-0203	Professor Michelle Williams	Health Data Research UK	Improving access and use of national imaging data for cardiovascular research	Approved with conditions	Tier 1 Review	18
2425-0261	Gregor Boyd	Scottish Government	Scottish Health and Care Experience Survey	Approved	Tier 1 Review	16

2425-0132	Dr Nora Mielke	Scottish Government	Scottish Health Survey child boost eligible sample	Approved	Tier 1 Panel Meeting	16
2425-0279	Dr Khaled Bedair	University of Dundee	Developing and validating a multivariable model to predict severe bleeding in patients using direct oral anticoagulants (using MACCS 2324-0239 Kurdi Research Resource)	Approved with conditions	Tier 1 Panel Meeting	8
2223-0012 SR330	Rose Buckland	Our Future Health Ltd	Our Future Health Cohort – longitudinal follow-up through linkage to certain health records datasets in Scotland	Approved with conditions	Full Committee	278
2425-0049	Professor Kevin Blyth	University of Glasgow	Living Laboratory Advanced Imaging: Radiogenomics	Approved with conditions	Full Committee	122
2122-0186	Dr Andrew McKechanie	University of Edinburgh	Translating routine data into improved outcomes for individuals and families affected by fragile X.	Approved with conditions	Tier 1 Review	39
2324-0207	Euan Smith	Scottish Government	Maternity Care Survey 2025	Approved with conditions	Tier 1 Review	38
2324-0245	Professor Susan McVie	University of Edinburgh	Policing Mental Health Distress	Approved with conditions	Tier 2 OOC	53
2324-0171	Dr Laura Ciaccio	University of Dundee	Associations between antidepressants and antibiotic resistance: population-based cohort studies (The ADAR study)	Approved	Tier 1 Review	15
2425-0120	Kim Munnery	Cardiff University	Clinical and cost-effectiveness of a maternity quality improvement programme to reduce excess bleeding and need for transfusion after childbirth: the Obstetric Bleeding Study UK	Approved with conditions	Tier 1 Review	19

2223-0038	Dr Katie Marwick	University of Edinburgh	Understanding postpartum psychosis in Scotland	Approved	Tier 1 Review	20
2324-0083	Mr George Ramsay	University of Aberdeen	A population wide analysis of the management of Colorectal cancer in Scotland	Approved	Tier 1 Panel Meeting	17
2425-0192	Llion Roberts	London School of Hygiene & Tropical Medicine	CRASH-4 Trial	Approved	Tier 1 Panel Meeting	17
2324-0186	Dr Iain Atherton	Edinburgh Napier University	The social circumstances of veterans in Scotland: an analysis of linked census and administrative data	Approved with conditions	Tier 1 Review	23
2324-0027	Dr Dwayne Boyers	University of Aberdeen	Selective Caries Removal compared to complete caries removal in Permanent Teeth (SCRiPT)	Approved	Tier 1 Panel Meeting	34
2425-0057 SR266	Professor Peter Sever	Imperial College London	Long term follow-up of the ASCOT trial into Electronic Health Records (LATER)	Approved	Tier 1 Review	34
2425-0212	Rebecca Underwood	University of Edinburgh	Development of data integration methods to exploit SARS-CoV2 viral sequence data in care home settings	Approved with conditions	Tier 1 Review	37
2526-0133	Professor William Whiteley	University of Edinburgh	SWARM learning for imaging-based dementia prediction using the Brain Health Data Pilot (2223-0005 Whiteley)	Approved with conditions	Tier 1 Review	28
2425-0115	Richard Hunter	Public Health Scotland	Radiotherapy Dataset for Scottish Cancer Registry Intelligence Service (SCRIS) Project	Approved with conditions	Tier 1 Panel Meeting	17
2324-0176 SR311	Karen Dennison	University College London Social Research Institute	Generation New Era (GNE)	Approved with conditions	Full Committee	46

1920-0053	Professor James Wilson	University of Edinburgh	Record Linkage in VIKING II and Harmonisation of Record Linkage in Two Northern Isles Cohorts – "Viking Genes"	Approved	Tier 1 Review	38
2526-0147	Joe Schofield	University of St Andrews	Chronic opioid exposure and atherosclerotic cardiovascular disease	Approved	Tier 1 Review	30
2425-0017	Professor Colin McCowan	University of St. Andrews	Improving Unscheduled Care for People in their Last Year of Life	Approved with conditions	Tier 1 Review	25
2526-0007	Dr Helen McDermott	Imperial College London	Clinical Management and Short-Term Outcomes of Neonates Born at 22 Weeks in UK Neonatal Intensive Care Units	Approved with conditions	Tier 1 Review	29
2526-0042	Dr Alessandra Glover Williams	University of Bristol	Epilepsy In Children after Hypoxic Ischaemic Encephalopathy (EPIC after HIE) (BPSU	Approved with conditions	Tier 1 Panel Meeting	68
2526-0045	Ms Megan Glancy	Public Health Scotland	Evaluating the Public Health Impact of Interventions for the Prevention of Drug-related Death in the Population: in Scotland (EPHESUS)	Approved with conditions	Tier 1 Review	29
2526-0062	Dr Mathew Lyons	University of Edinburgh	The role of epidural timing in birth outcomes (the EARLY study — Epidural timing And outcomes in Labour and birth study)	Approved with conditions	Tier 1 Review	46
2324-0157	Ms Elizabeth Thomson	University of Glasgow	Follow-up of clinical outcomes, healthcare episodes and prescriptions in individuals with microvascular angina: The PRIZE Registry	Approved	Tier 1 Review	57
2324-0170	Dr Gavin Chapman	University of Edinburgh	Cardiovascular Risk Assessment for Kidney Transplantation - Utility of Computed Tomography Coronary Angiography in the Assessment of Patients awaiting Kidney Transplantation	Approved	Tier 1 Panel Meeting	16
2324-0229	Jennie Huynh	The University of Edinburgh	Severe mental illness and outcome from and quality of care for colorectal cancer	Approved	Tier 1 Review	17

2425-0213	Professor Jill Belch	University of Dundee/NHS Tayside	Air Quality, Low Emission Zones & Hospital Admissions in Scotland	Approved with conditions	Tier 1 Review	49
2324-0259 MR1224	Michelle Nunn	University of Oxford	REVEAL (Randomized EValuation of the Effects of Anacetrapib through Lipid-modification): Post-trial follow-up	Approved	Tier 1 Review	33
2324-0087	Dr Olivia Swann	University of Edinburgh	How are childhood respiratory infections linked to hard to heat homes and does modifying existing housing stock affect infection risk?	Approved with conditions	Tier 1 Review	17
2425-0059	Professor Peter Hall	University of Edinburgh	Bowel-Star-UK: Risk stratification in UK bowel screening programmes	Approved with conditions	Tier 1 Review	37
2526-0018	Dr Caroline Young	University of Leeds	Can microbiome data improve the NHS Bowel Cancer Screening Programme? Additional site: Scottish Bowel Screening Laboratory	Approved	Tier 1 Review	28
2425-0139	Dr Ilsa Louisa Haeusler	UCL	Surveillance of children admitted to hospital with carbon monoxide poisoning in the UK and Republic of Ireland	Approved with conditions	Tier 1 Panel Meeting	8
2425-0146 MR542	Michelle Nunn	University of Oxford	Heart Protection Study (HPS) Long-term Follow-up	Approved with conditions	Tier 1 Review	16
2324-0197	Dr Kevin Gallagher	University of Edinburgh	Analysing variation in prostate cancer care and outcomes across Scotland.	Approved with conditions	Tier 1 Review	11

Lay Summaries

1920-0053 Professor James Wilson University of Edinburgh
Record Linkage in VIKING II and Harmonisation of Record Linkage in Two Northern Isles Cohorts – "Viking Genes"

The first aim of this proposal is to link to routinely collected NHS data about people recruited to the VIKING II online research cohort, using their CHI numbers. Secondly, two similar studies that have approval from PBPP, together named "VIKING", will be incorporated. This will combine the three studies and their permissions relating to the use of health data about the volunteers.

The three research cohorts are collectively called "Viking Genes", a programme in the College of Medicine and Veterinary Medicine at the University of Edinburgh. The research uses unique features of people with ancestry from Scottish islands to identify and analyse genetic variations, particularly rare changes, that influence health and disease.

All Viking Genes volunteers, more than 10,000 across the studies, gave informed consent to allow researchers to access their medical record data.

This proposal for linkage to NHS records will add detailed information to the research data collected directly from the volunteers and from their samples. It will include the conditions that participants living in Scotland have been diagnosed with. This includes the Cancer Registry, the medicines prescribed, hospitalisations they have had and lab test data. Participants from all three cohorts, ORCADES, VIKING I and VIKING II will be analysed together going forward.

Future updates of the data requested here will also allow the health of the volunteers to be monitored over time, an important further purpose for the proposal. Outcomes of this proposal will include research papers and talks at scientific conferences. Lay summaries of results and findings will be put on the Viking Genes website, and communicated to participants and other stakeholders in e-Newsletters.

2122-0186 Dr Andrew McKechanie University of Edinburgh
Translating routine data into improved outcomes for individuals and families affected by fragile X.

This study aims to improve the healthcare of individuals with fragile X syndrome and the fragile X premutation; genetic conditions, which are only diagnosed after genetic testing). Fragile X syndrome is the most common inherited cause of intellectual disability, as well as being associated with higher rates of autism, anxiety and ADHD; and physical health conditions including epilepsy and heart valve problems. The fragile X premutation is a related genetic change affecting family members and is associated with early ovarian failure, a progressive neurological condition called FXTAS (Fragile X Tremor-Ataxia Syndrome) and higher rates of mood and anxiety disorders. We will do so by linking the genetic records of all individuals diagnosed with these conditions in Scotland to corresponding routinely-acquired general medical, mental health and prescription records. By comparing those affected with individuals of the same age and sex in the general population we will establish how these conditions affect mental and physical health. This should

improve our knowledge of how these conditions affect people and allow for the early identification and treatment of common health problems. For example, we know that early menopause and a serious condition affecting the nervous system can affect people with the fragile X premutation. However, our knowledge of these is limited to small groups of individuals who have been studied before. By looking at everyone known to have these conditions in Scotland, we hope to get a much fuller picture of the ways in which people are affected. We are particularly interested to expand our knowledge of these conditions to inform the potential future development of treatments for some of the common problems. With its excellent record linkage systems, Scotland is well-placed to examine the health outcomes for individuals with rare genetic diseases. We hope that this study will demonstrate the power of this approach, and pave the way for similar research in other rare genetic neurodevelopmental conditions.

2223-0012 SR330 Rose Buckland Our Future Health Ltd
Our Future Health Cohort – longitudinal follow-up through linkage to certain health records datasets in Scotland

Our Future Health is funded by an ambitious collaboration between the public, charity and private sectors. It is supported by UK Research and Innovation, life sciences companies and disease-related charities. Note that provision of funding does not confer exclusive, guaranteed access to the data. All applications to use the data for research are subject to the same process and scrutiny and are approved based on meeting published criteria, including assessment of public benefit. Exclusivity periods over use of Results data, prior to the return of such data to the Resource for onward sharing, can be applied for where there is a justifiable reason (e.g. part of a regulatory submission). Given that all studies by industry funders have a commercial intent at the outset we grant a default exclusivity period for the use of Results data, we have also done this for one of our charity funders given their ambition to translate and commercialise research outputs. To be clear, any Registered Researcher can apply to the Access Board for an exclusivity period if they have a justifiable reason.

Like many countries, the UK is facing a decline in population health and life expectancy. The burden of late-stage disease affects all 4 home nations and is predicted to rise significantly. Our Future Health is the UK's largest ever health research programme, designed to enable the discovery and testing of more effective approaches to prevention, earlier detection and treatment of diseases. It collects and links multiple sources of health and health-relevant information, including genetic data, across a cohort of a goal of 5 million people that truly reflects the UK population. This will create a world-leading resource for academic and commercial researchers to undertake discovery research on early indicators of disease, plus the opportunity to re-contact participants on a risk-stratified basis for secondary studies. People joining Our Future Health give their informed consent to:

- Enable Our Future Health to link their data with health-related records held by PHS and NHS Scotland and other organisations within the UK (priority will be given to primary and secondary care, cancer, and death registry data.)
- Our Future Health storing and sharing identifiable information with these organisations (such as name and date of birth) to allow data linkage.
- Provide lifestyle and biological data.

Volunteers can partially or fully withdraw consent at any time, with an option to leave existing data in the programme or opt for all data to be destroyed. They do not need to give a reason.

Building this large world-leading resource with linkage, feedback and re-contact is facilitating a new generation of research by academic and commercial researchers that will advance the development and testing of early diagnostic technologies and preventive interventions, improving outcomes and helping future generations live in good health for longer.

2223-0038 Dr Katie Marwick University of Edinburgh
Understanding postpartum psychosis in Scotland

Importance: Postpartum psychosis is when someone who has recently given birth loses touch with reality, and may become suicidal or have thoughts of harming their baby. The cause is unknown, although leading theories are the large shifts in reproductive hormones and/or immune function that occur after labour. However, little is known about affected individuals' susceptibility to hormone fluctuations at other times, or to other types of immune system disruption. In other psychotic conditions, heart disease and diabetes are more common and life expectancy is reduced, but this has never been assessed in postpartum psychosis.

Aim: Improve understanding of risk factors and long term outcomes of postpartum psychosis.

How: Good electronic health records have been kept in Scotland for four decades. Pseudonymised records will be used to ask whether having postpartum psychosis increases the risk of physical health disorders (e.g. immune disorders, heart disease, diabetes), a different pattern of hormonal medication use, significant mental health problems around the time of menopause, and reduced life expectancy.

Outcomes and Impact: The information gathered will be valuable for guiding individuals and families about future outcomes and times of risk. For example, should women who have had a postpartum psychosis be monitored more often for signs of heart disease or diabetes? Should they be advised that the menopause is a time of risk for relapse? It will provide evidence for or against possible causes of the disorder, helping to prioritise future research. For example, should future biological samples assess metabolic or immune system changes?

2223-0069 Maulik Patel University of Cambridge & Cambridge University Hospitals NHS Foundation Trust
Pragmatic randomised trial of High Or Standard PHosphAte Targets in End-stage kidney disease (PHOSPHATE)

Phosphate is a vital blood component, an electrolyte crucial for various bodily functions. Dialysis patients often have higher levels of phosphate compared with people with healthy kidneys. Research suggests that higher phosphate levels may increase the risk of heart disease and death. The current treatment guidelines suggest that high phosphate levels should be reduced towards the normal. But evidence for these guidelines needs to be improved. Doctors don't know if lowering blood phosphate towards a normal level is always a good option for patients receiving dialysis.

Phosphate levels can be reduced by diet, dialysis and medication. Dialysis patients taking phosphate binders, medicines that control phosphorus levels, may experience side effects and a higher pill burden.

The study will examine whether reducing phosphate levels in dialysis patients will improve:

- Life expectancy
- Heart health
- How patients feel or function

Participants will be split randomly into two groups. One group will get standard of care treatments to lower their phosphate levels aggressively to keep them within the normal range. The other group will stop all phosphate-lowering medications unless their levels become very high (above 2.50 mmol/L), at which point treatment can be started.

Instead of requiring a lot of hospital visits, we will use information that has already been collected by other NHS organisations such as Public Health Scotland that routinely holds patient data in the national datasets. We will also ask participants to fill out questionnaires to understand how the treatments affect their quality of life.

2223-0097 Dr Ashley Agus Northern Ireland Clinical Trials Unit, Belfast Health and Social Care Trust

MARCH Trial

I am requesting the data from participants recruited to the MARCH trial (Mucoactives in Acute Respiratory failure: Carbocisteine and Hypertonic saline). Many patients in intensive care (ICU) need help to breathe from a breathing machine (ventilator). However, one problem that can occur as a result of being on a ventilator, is difficulty clearing secretions (mucus) from the lungs. These secretions can make breathing harder if they become very thick and dry. The breathing tube from the ventilator can make coughing up secretions more difficult. Patients may also feel too sleepy from their medication to cough by themselves. This may result in developing a lung infection (called ventilator-associated pneumonia).

To reduce the problem of thick secretions, the air coming from the ventilator can have moisture added to it (humidification). Other treatments can include using a suction tube to remove secretions via the breathing tube. Physiotherapists may also use techniques to help clear thick secretions. In some cases medications called mucoactive drugs may be prescribed. Two common mucoactive drugs used in ICUs in the UK are ‘hypertonic saline’ and ‘carbocisteine’. However, we do not know if these mucoactive drugs really help patients with thick secretions or not. In our trial we want to know if using one, or both, of these mucoactive drugs helps with clearing thick secretions, and if as a result, this means patients spend less time on the ventilator. We also want to know how safe they are, and if they are cost-effective.

2223-0188 SR340 Dr Clare Mackie King's College London
Mortality rate amongst lay people who were provided with take-home naloxone

The current study will investigate whether participants recruited as part of a completed project (NaLPORS: Naloxone Prospective Observational Cohort Research Study), and who were lost to follow-up at the 6-month stage, died after experiencing an opioid overdose.

The completed NalPORS study recruited N=153 non-medical persons (i.e., individuals who were opioid users, family or friends of opioid users or staff members) who had been provided with Take-Home Naloxone (THN). The aim of the NaLPORS study was to examine the effectiveness of THN in a real word setting and to better understand naloxone administration and related overdose reversals by lay people to prevent fatal outcomes from opioid overdose.

However, people who use opioids have a high risk of premature mortality, with a mortality rate ten times that of the general population. It is possible that those study participants who were opioid users may have experienced a fatal overdose or a related premature death over the course of the study. This may be one of the reasons why we were unable to follow-up those participants at the 6-month stage.

Therefore, we are requesting death data from 33 participants who a) provided consent for a mortality database search, b) are currently opioid users and c) were lost to follow-up 6 months post enrolment.

2223-0203 Professor Michelle Williams Health Data Research UK
Improving access and use of national imaging data for cardiovascular research

This project aims to enhance the use of medical imaging for cardiovascular research. Cardiovascular disease, which affects the heart and blood vessels, is a leading cause of illness and death Imaging tests are widely used to diagnose heart conditions and. the Scottish Medical Imaging dataset (SMI) is the first national collection of routine imaging data. However, researchers face challenges accessing this dataset because they lack information about its contents, such as the types and numbers of imaging tests, and how best to use it.

In this project, supported by the British Heart Foundation Data Science Centre, we aim to make SMI more accessible to for researchers. We will use information about what imaging tests have been performed along with other linked electronic health care records to summarise information needed to plan research studies. We will summarise the types of imaging tests (including technical information about the test), cardiovascular disease risk factors, types of cardiovascular disease which are diagnosed, and impact on treatments. We will include imaging tests done to look for cardiovascular disease (e.g. computed tomography scans of the heart) and also imaging tests done for other reasons (e.g. wrist x-rays), because both contain hidden information about cardiovascular disease. We will not use the images (pictures) for this project. We will make our analysis code available for other researchers to replicate what we have done.

This will provide important information about how imaging tests for cardiovascular disease are used in Scotland, and help researchers plan research using the SMI dataset.

2324-0027 Dr Dwayne Boyers University of Aberdeen
Selective Caries Removal compared to complete caries removal in Permanent Teeth (SCRiPT)

Tooth decay (dental caries) is one of the most common non-communicable diseases worldwide. Most people experience dental caries during their lives. Treatments for dental caries involve removal of carious tissues and placement of fillings. These treatments are one of the most performed dental procedures in the UK, costing significant sums of money for the NHS and patients.

Two approaches to caries removal include selective removal, maintaining as much of the natural tooth as possible, or complete removal of caries, where all the diseased tissue is removed. Evidence suggests selective removal might increase tooth vitality, reducing the need for more complex and costly treatment or eventual tooth loss. However, the evidence is of low scientific quality.

The SCRIPT (Selective Caries Removal in Permanent Teeth) study was commissioned and funded by the National Institute for Health Research (NIHR) Health Technology Assessment programme to investigate the clinical and economic outcomes of selective vs. complete caries removal.

Access to the routine dental data set is required to compare treatments received (e.g. repeat fillings, crowns, extractions etc) as part of the trial, and to estimate the costs of care received by trial participants. To do this, we need to know about all dental care received by trial participants for the duration of study follow-up including information on individual treatment items provided, patient exemption status and treatment dates. The data will allow us to estimate costs to NHS and patients, so that different stakeholders are provided with the most relevant information for decision making.

Depending on the results of the study, we may submit a future amendment for longer-term follow up data in the future.

2324-0083 Mr George Ramsay University of Aberdeen
A population wide analysis of the management of Colorectal cancer in Scotland

Colorectal cancer is one of the most common cancer types and is the second most common cancer related cause of death in the UK. Patients who have early colorectal cancer detected (where a cancer is confined to the bowel and is not causing any complications such as a blockage) have an improved chance of surviving more than 5 years than later cancers that have spread into other areas of the body.

However, sometimes patients present with emergency symptoms of a blocked bowel (an obstruction) or a perforation, (where the bowel breaks open) which require emergency treatments. Emergency operations for colorectal cancer have worse outcomes compared to those carried out as planned (elective) procedures. Therefore, reducing the number of patients who need emergency surgery for colorectal cancer would have significant benefits for patients in Scotland.

The national bowel screening programme aims to detect colorectal cancer at its earliest stages thereby potentially reducing the risk of the tumours becoming growing to cause emergency symptoms.

However, it is unclear if the bowel screening programme has reduced the rates of emergency bowel operations. In this work, we aim to assess the rates of bowel cancer operations undertaken electively and as emergencies before and after the start of the national bowel screening programme roll out.

We will use Scotland's world leading healthcare data to address this question, and to describe the changes in the rates and types of colorectal cancers seen within the population of Scotland over the past 25 years.

2324-0085 Professor Ajitha Rajan University of Edinburgh
Clinically Explainable AI for Radiography and CT-based Diagnosis

Medical imaging, like X-rays and CT scans, helps doctors detect diseases such as lung cancer and pneumonia. Artificial intelligence (AI) can assist in this process, but doctors need to understand how the AI reaches its conclusions. Our project aims to develop a reliable AI system that not only identifies diseases but also explains its reasoning in a way that makes sense to doctors.

To do this, the AI will first learn to recognize key medical features—such as abnormal tissue or masses—using the same terms doctors use in their reports. This requires training the AI on a high-quality collection of medical images and expert reports. Then, the AI will use these features to predict diseases like lung cancer or an enlarged heart.

By making the AI's decision process more transparent, doctors can better trust and verify its findings. This approach improves patient care and ensures that AI follows important medical and legal guidelines, such as the EU AI Act.

2324-0087 Dr Olivia Swann University of Edinburgh
How are childhood respiratory infections linked to hard to heat homes and does modifying existing housing stock affect infection risk?

What is the problem?

Young children spend long periods at home while their lungs are still developing. Cold, damp housing is known to increase the risk of chest infections. Many Scottish homes are old, hard to heat and expensive to run, and the cost-of-living crisis has pushed more families into fuel poverty, making adequate heating even harder to afford.

Improving home energy efficiency can reduce costs and support Net Zero by lowering energy use. But if poorly installed or used, some measures can also trap indoor pollutants such as mould spores or smoke, potentially increasing respiratory infections. We still do not fully understand when energy efficiency measures help, when they may harm, and which families are most affected.

What are we doing?

Using Scotland's unique linked data, we can now study the relationship between housing and children's health in greater depth than ever before by connecting information on children's health with every home they have lived in.

This project will examine how cold, damp housing influences chest infections across Scotland, with a focus on reducing health inequalities. We will combine information on housing characteristics, energy use, family finances, weather and outdoor air pollution to understand how these factors interact across a child's life.

What will we find out?

- How best to identify children living in cold homes
- How many childhood chest infections could be prevented if all homes were adequately heated
- Which energy-efficiency measures improve warmth and reduce infections

This work will inform energy, building and climate policy, helping ensure that progress toward Net Zero does not inadvertently worsen health inequalities.

2324-0157 Ms Elizabeth Thomson University of Glasgow
Follow-up of clinical outcomes, healthcare episodes and prescriptions in individuals with microvascular angina: The PRIZE Registry

Microvascular angina is caused by abnormalities of the small blood vessels in the heart. It may cause anginal chest symptoms during exercise and at other times e.g. cold weather, emotional stress. The current medicines that doctors prescribe for patients with microvascular angina were not developed for this condition and are given on a trial-and-error basis.

Endothelin is a chemical that circulates in the blood and can accumulate in the blood and blood vessel walls in patients with microvascular angina. Endothelin works by acting on one of two pathways (A or B) and it is the 'A' pathway that causes the blood vessel problems in the heart. Endothelin is therefore implicated in causing microvascular angina.

The PRIZE study involved patients with microvascular angina. The study had two main objectives.

The first objective was to develop a registry population of individuals with microvascular angina and to describe the natural history of this condition in the longer term.

The second objective was to undertake a registry-based study (clinical trial) of a drug (zibotentan) that blocks the endothelin A pathway.

Based on peer review, the study was funded by the Medical Research Council and the study took place between 2019 – 2023. Two hundred and twenty two (222) individuals in the UK entered the registry and 118 individuals were also included in the zibotentan study. We now wish to gain follow-up information on health outcomes and medicines use to better understand the natural history of microvascular angina (objective 1). We also wish to assess whether the effects of zibotentan during the study might associate with the clinical outcomes in the longer term, hence our application to HSC-PBPP.

This application seeks to include continuous data for up to 5 years for all participants, with annual updates for the data until they have all reached 5 years. A future application may be submitted when all of the participants have reached 10-years of follow-up.

2324-0170 Dr Gavin Chapman University of Edinburgh Cardiovascular Risk Assessment for Kidney Transplantation - Utility of Computed Tomography Coronary Angiography in the Assessment of Patients awaiting Kidney Transplantation

Patients with kidney disease are at increased risk of heart disease. This risk is highest for patients with kidney failure (i.e., patients who are receiving dialysis or awaiting a kidney transplant). When patients develop kidney failure, they may be referred for a kidney transplant and undergo transplant assessment to assess the potential risks and benefits of transplantation, including their risks of future heart disease.

The tests we use to assess the risk of heart disease are not very accurate. In this clinical study, we are evaluating whether a new type of scan, called CT coronary angiography (CTCA), could better predict a patient with kidney failure's future risk of heart disease.

This study is open to all patients waiting for a kidney transplant in Scotland and those awaiting kidney transplant at sites in England that are enrolled in the study. When they have given informed consent, they will be invited for a CTCA scan and additional blood tests (to look at other blood markers of heart disease). They will consent for long term follow-up of heart and kidney outcomes (SD02). We will look for associations between the CTCA scan findings, and the blood markers, and these heart and kidney outcomes.

As patients will be recruited from across Scotland, we will collect this long-term outcome data from routinely collected health data sets. This will ensure accurate collection of all relevant outcomes from all patients and ensure their data is kept safe and secure as it will be analysed within the National Safe Haven.

2324-0171 Dr Laura Ciaccio University of Dundee Associations between antidepressants and antibiotic resistance: population-based cohort studies (The ADAR study)

Antibiotic resistance (when bacteria don't respond to drugs that normally work) is a major global public health problem. We know that people who have received antibiotics are more likely to have future antibiotic-resistant infections than those who have not. There is new research that shows antidepressant drugs, which are used to treat mental health problems and pain, can cause bacteria such as E. coli (Escherichia coli - a bacteria which can cause infections in your body) to become resistant to antibiotics when tested in the laboratory. There are no published studies that look at whether people who take antidepressant drugs are more likely to have antibiotic-resistant infections.

Depression is also a major global public health problem. There are increasing numbers of people being prescribed antidepressant drugs worldwide. More than one in five people in Scotland received one or more prescriptions for an antidepressant drug in 2019. It is important to know if these commonly prescribed drugs increase antibiotic-resistant infections. Resistant infections are harder to treat and can cause people to be ill longer, or even die. This means it is important that the right antibiotic is prescribed to make sure patients receive the best care.

We will use pseudonymised Scottish population data to look at possible links between antidepressant prescriptions and antibiotic resistance in people with E. coli bloodstream

infections. E. coli is the most common cause of these infections, in Scotland and globally. These findings could have real-world influence on prescribing guidelines and patient care.

2324-0176 SR311 Karen Dennison University College London Social Research Institute Generation New Era (GNE)

Generation New Era (GNE) is the first UK wide national birth cohort study in over 20 years, aiming to follow the lives of 30,000 children born in 2026 across the UK, and their families. Funded by the UKRI Economic and Social Research Council and run by UCL, this £42.8 million investment will provide vital new evidence to answer important scientific and policy questions, informing decisions about early years and childcare services to help improve the lives of parents with young children across the UK.

In Scotland, the study proposes in this application to use the Public Health Scotland Scottish Linked Pregnancy and Baby Dataset (SLiPD) and NRS Births to select around 11,500 mothers of babies born across 12 months. The study will select a sample that will ensure that voices of key and often under-represented families are heard. Mothers will be invited by letter to participate in a voluntary interview in their own home – it is anticipated that around half of those invited will choose to participate. Fathers/other parents will also be invited to participate. Public Health Scotland will screen out sensitive cases and provide the study's fieldwork agency with contact details of those selected, as well as additional fields to monitor response and tailor invitation letters/leaflets/incentives/additional fieldwork effort. The fieldwork agency will first interview families when the baby is around 10 months old, when parents will be asked about their baby's health and growth, behaviour and development, sleep, diet and the activities they might do with their baby; their experiences as a mother or father; and some questions about themselves and the family. Parents can also choose to download a free smartphone app designed by academics to help parents capture their child's learning and development and help scientists study child development. Parents can also consent for their survey responses to be linked to records held by government departments and agencies (such as health, education and social care records) for themselves and their child, in order to build a more complete picture of their lives. With consent, the study will collect saliva samples from parents and children for DNA extraction to help understand how environmental and genetic influences interact to shape infant development. Families who take part in the first interview will be invited to take part again when their child is 3 years old, and every few years thereafter as their child gets older.

The study will use fields from SLiPD and NRS Births (such as social factors, ethnicity, occupation) to compare the characteristics of those chosen to take part with those for all births in 2026. This will be used to help understand how representative the study is of the wider population, to see if certain groups are more or less likely to participate in the study and to adjust the results of statistical analyses to better reflect the wider population.

2324-0186 Dr Iain Atherton Edinburgh Napier University
The social circumstances of veterans in Scotland: an analysis of linked census and administrative data

People who have served in the UK armed forces should not face disadvantages when returning to civilian life. Across the UK, government and charitable organisations work hard to support veterans. Data can help to understand groups veterans and their needs. It is to this aim that this study is focused.

Using routinely collected data relating to service leavers, and information from the national census, the research will explore the lives of military veterans across Scotland. It will look at who they are (such as their age, sex, and religion), where they live, what jobs they do, and their health. It will also show how these factors vary across different parts of the country, how things have changed over the last ten years, and how veterans compare to people who have not served.

By linking this information with records about military service, the study will explore how veterans' experiences differ depending on whether they served in the Army, Navy, or Air Force — and for how long. These findings will provide valuable insights for those who plan and deliver services to veterans.

A key focus will be on early service leavers — those who left the military after serving for three years or less. Previous research suggests they may have worse health outcomes. This study will look at how likely they are to be in full-time education or employment, compared to others of the same age who haven't served. The results will help shape more effective support for this group.

2324-0197 Dr Kevin Gallagher University of Edinburgh
Analysing variation in prostate cancer care and outcomes across Scotland.

Despite Scotland offering universal healthcare to all patients, variation and inequalities in prostate cancer outcomes and care exist. There are multiple reasons for this, ranging from poorer health at baseline to possible differences in the delivery and quality of healthcare.

This study aims to measure variation in prostate cancer healthcare delivery and outcomes for the whole of Scotland, assessing a wide range of factors that may impact this but with a focus on determining how much socio-economic and geographic factors impact variation.

This project will directly address actions listed within the Scottish Government's Cancer Action Plan 2023 and aligns with the Cancer Strategy 2023-2033.

If we can learn which aspects of variation in care most impact prostate cancer outcomes, we can inform policies and allocation of resources to ensure all patients with cancer have an equal chance of survival.

This project uses routinely collected NHS health data to understand variation fairly and accurately across Scotland. All information will be securely linked and de-identified within the National Safe Haven, and only anonymised results will be used to inform service improvement for patients.

As an output from this project, we want to develop understandable, trackable, fair "metrics" (like scores, we call these "equity metrics") that will help healthcare providers identify where improvements can be made and provide the ability to track this over time. We believe that

providing this as a tool to healthcare providers will be a tangible tool that can drive change and benefit to patients as a result of this project.

2324-0198 Dr Ting Shi The University of Edinburgh
Characterising early RSV exposure in relation to asthma and investigating the short-term impact of RSV maternal vaccination

Respiratory syncytial virus (RSV) causes a common respiratory infection in young children – almost all children have been infected with RSV by their second birthday. For most children RSV infection is mild, causing temporary symptoms such as fever, cough, and runny nose. However, up to 5% of children require treatment at a hospital. Data from electronic health records in Scotland can be used to explore how many children develop the more serious forms of RSV infection and to help sooner identify and treat children who might be at a higher risk.

Additionally, studies have shown that an RSV infection in early childhood might increase the risk of developing asthma in later life. Asthma is a common, long-term lung disease that causes wheezing, coughing, and breathing difficulties and affects almost 10% of the population in the UK. Studying this link is important in understanding how RSV treatment or vaccines in early life might help protect people from developing asthma and reduce costs to the NHS.

In August 2024, RSV vaccines for pregnant people were introduced in Scotland to help protect infants from severe RSV-associated disease. This study will investigate the uptake of these vaccines in the first year after roll-out, as well as explore their impact on the severity of RSV-associated disease and frequency of wheezing episodes in infants under one year of age. This data will be useful to understand the effects of the RSV vaccine and help inform vaccination strategy in Scotland.

2324-0207 Euan Smith Scottish Government
Maternity Care Survey 2025

The Maternity Care Survey asks women about their most recent NHS maternity care experience in Scotland. It covers the maternity care journey - from care during pregnancy (antenatal care) through to care after the baby is born (postnatal care) .The survey provides important national data and helps NHS Boards understand what is going well and where maternity services could be improved.

To carry out the survey, the Scottish Government are asking for permission to select a sample of mothers who gave birth in February and March 2025, live in Scotland and are aged 17 and over, from the Scottish Linked Pregnancy and Births Dataset (SLiPBD). These women will be approached to take part in the Maternity Care Survey.

Mothers who have died, or whose baby has died, will be removed from the sample. We will also remove any records where the mother and baby's addresses do not match, or where there may be other reasons not to contact the mother (including where the address is not reliable).

The names and address of those selected will be shared with contractor to carry out the survey. The appointed contractor will need to comply with the Scottish Government's standards for ethics, data protection and cyber security.

Mothers selected will be contacted by post, and participate online, by phone or by completing a paper questionnaire.

Analysts in the Scottish Government will analyse the survey dataset and publish anonymised national and local results on the Scottish Government website as Official Statistics.

2324-0229 Jennie Huynh The University of Edinburgh
Severe mental illness and outcome from and quality of care for colorectal cancer

This study will examine whether people in Scotland with severe and complex mental illness, such as schizophrenia or bipolar disorder, experience differences in colorectal cancer incidence, clinical care, and survival compared to those without mental illness.

Colorectal cancer is the third most common cancer and the second leading cause of cancer-related deaths in Scotland. Early detection and treatment improve survival, but people with severe mental illness may face challenges in accessing healthcare. Research from other settings suggest that they are less likely to receive routine cancer screening or recommended treatments, but this has not been examined in Scotland and the reasons for these differences and the extent to which they contribute to differences in survival are not fully understood.

Using pseudonymised NHS Scotland health records, this study will compare receipt of colorectal cancer in people with and without severe and complex mental illness. It will investigate whether those with mental illness receive the same level of screening, diagnosis, and treatment, as well as examine survival rates and explore factors that may contribute to differences. The study will also assess whether inequalities vary by age, sex, or socioeconomic status and whether the COVID-19 pandemic had an impact.

The findings will help identify gaps in cancer care and highlight areas where improvements are needed. This research will inform healthcare policies and strategies to ensure fair access to cancer screening and treatment for people with severe and complex mental illness, ultimately improving their health outcomes.

2324-0245 Professor Susan McVie University of Edinburgh
Policing Mental Health Distress

Individuals experiencing mental health distress frequently come into contact with the police. There is a lack of information about the underlying health conditions and health service use among these individuals, and filling this gap in understanding could improve pathways of care for these individuals and have practical implications for how to respond from both a policing and public health point of view.

The goals of this research are to improve understanding of who comes into contact with Police Scotland while experiencing mental health distress and assess their sociodemographic

characteristics, health vulnerabilities, and patterns of healthcare use before and after the mental health distress-related police contact.

We will first examine the prevalence, frequency and nature of all police interactions involving mental health distress. This will include: types of mental health distress incident; socio-demographic characteristics of those involved; spatial and temporal nature of incidents; and involvement in other types of police incident (e.g., missing persons, national negotiators).

We will then examine the prevalence, frequency and nature of access to health services amongst people with mental health distress-related police contact and compare this to a sample of the general population. This will include comparing: socio-demographic characteristics; types of health vulnerabilities (based on diagnoses); and spatial and temporal nature of health service contact over time.

Given Public Health Scotland and Police Scotland's Strategic Collaboration and partnership with the University of Edinburgh through the Prevention Hub, our goal is that the findings from the project will inform and help drive improvements in prevention work and feed into planning for integrated service delivery.

2324-0248 Dr Suzanne Breeman University of Aberdeen
Female Urgency, Trial of Urodynamics as Routine Evaluation (FUTURE) – Longer-term follow-up study

Overactive bladder (OAB) affects 12-14% of UK women. Treatments include pelvic floor exercises, bladder training and tablets. Sometimes these treatments don't work (refractory OAB), with many requiring more invasive procedures.

Before having these procedures, it is normal UK practice to undergo urodynamics. This involves passing thin tubes into the bladder and back passage or vagina. The bladder is filled with water to show how it behaves during different activities.

Some women find urodynamics embarrassing and/or uncomfortable. Afterwards, some get urine infections, and in about one third of women, urodynamics does not show the cause of their symptoms. This may result in some women not being offered treatments which may help them.

This application relates to a wider study (FUTURE) in which women with refractory OAB, who required invasive treatments and who agreed to participate, were randomly allocated to receive urodynamics plus comprehensive clinical assessment or comprehensive clinical assessment only. Between November 2017 and January 2021,1099 women from 63 NHS hospitals consented. Short-term outcomes are being analysed and will be published soon.

This study will conduct longer-term follow-up of the women. It will investigate how the women are now, an average of 5-years after joining the FUTURE study. The women will be asked to complete a questionnaire regarding their symptoms and treatments. We will also collect routinely collected health data.

This research will benefit the public by informing patients, clinicians, and policy makers whether routine urodynamics improves treatment outcomes in women with refractory OAB and whether it is cost-effective.

2324-0259 MR1224 Michelle Nunn University of Oxford
REVEAL (Randomized EValuation of the Effects of Anacetrapib through Lipid-modification): Post-trial follow-up

Having high levels of bad cholesterol can increase the chances of having a heart attack or stroke. Statins are an excellent way to lower bad cholesterol and prevent these conditions. Combining statins with a different type of cholesterol-lowering drug, called a CETP inhibitor, could provide greater protection.

The REVEAL trial showed that a CETP inhibitor called anacetrapib lowered the chance of having a heart attack by 9% in around 30,000 people who had previously had heart problems.

When the trial ended in 2017, the same people were followed up for another two years. During this time, they did not take anacetrapib. This 'Post-Trial Follow-Up' (PTFU) study found that the benefits of anacetrapib increased, but doctors cannot prescribe it because it takes a long time to wash out of the body.

New CETP inhibitors that don't stay in the body as long and have stronger cholesterol-lowering effects are being developed. As well as helping to prevent heart attacks and strokes, they might also help other conditions, like dementia or diabetes.

Our study will extend the follow-up of around 8000 people who took part in REVEAL in the UK. Using NHS healthcare data, we will look at the longer-term effects of anacetrapib on heart attacks, strokes, cancers, diabetes and dementia.

We will also see whether any harmful effects of anacetrapib emerge that we did not see during the main trial or the PTFU. If there is a harmful effect, it may be relevant to the new CETP inhibitor drugs being developed.

2425-0017 Professor Colin McCowan University of St. Andrews
Improving Unscheduled Care for People in their Last Year of Life

Pressures on health services across Scotland are high. As people live longer, with more long-term health problems, pressures will get worse meaning people may struggle to access the care they need.

Unscheduled healthcare services - including General Practice Out-of-Hours (GPOOH), Accident & Emergency Departments (A&E), NHS24, and the Scottish Ambulance Service (SAS). These services, often needed for accidents or sudden illnesses, are facing the brunt of this challenge and struggle to meet the growing needs of patients. In 2022, A&E waiting times hit record levels and over a quarter-million calls to NHS24 went unanswered. Such delays worsen medical problems and contribute to avoidable deaths.

Care for people in the last year of life is important. The NHS has a duty to make sure that people can access the care they need from the most appropriate person at the right place and right time no matter where they live. When people struggle to access the care and support, they need, it causes distress and suffering.

Our research team will study healthcare data to see how people have used unscheduled care in their last year of life and identify which patient groups access which kinds of unscheduled care services the most. We will then create prediction models to help forecast how people might use healthcare in the future. These preliminary steps will help us to design healthcare services to better meet people's needs in their last year of life and advance understanding of national trends. The findings will be a useful evidence base for public policy decision-making. Furthermore, they will help inform decisions about how to effectively allocate and evaluate funding according to health needs.

2425-0030 Dr Joseph Symonds University of Glasgow
EPI-SCOT database

Epilepsy is the most common serious neurological condition. One in 100 people is diagnosed with epilepsy during childhood. Children with epilepsy have a significantly increased risk of learning, behavioural, and psychological difficulties.

This study aims to understand which features of a child's epilepsy help predict whether they go on to have seizures that are difficult to control, or other difficulties. All children in Scotland diagnosed with epilepsy before their 16th birthday will be included. We will ensure that children are consistently investigated for underlying causes.

Having obtained informed consent, we will gather data from electronic health records for each participant and put this into a secure database. Parents/carers and participants will be asked to provide updates on treatments and seizures using a secure online health record platform called vCreate Health. vCreate Health is an NHS-approved platform that is used for sharing videos between patients and medical teams, for example when a parent is concerned that their child has had a seizure. Families will be supported here by the research team. Questionnaires will sent out to assess development, behaviour and the impact of epilepsy on the quality of life of participants. We will capture in depth information about the participants at baseline – i.e. as soon as they have been given a diagnosis of epilepsy – and again one year after diagnosis. Between baseline and one year follow-up we will ensure that accurate records of every epilepsy treatment used are kept so we can investigate which treatments are associated with better seizure control. We will carefully study relationships between the baseline and follow-up data so we can learn about which factors are associated with which outcomes for children and young people with epilepsy.

2425-0049 Professor Kevin Blyth University of Glasgow
Living Laboratory Advanced Imaging: Radiogenomics

The Living Laboratory Radiogenomics project is creating a research database focused on lung cancer, which is the commonest cause of cancer-related death in Scotland. The database will link information contained inside tumour samples (e.g. genetics) with information in diagnostic scans (e.g. CT scans), allowing discovery of new shared patterns that may explain treatment failure or shorter survival. In a separately approved stage of the project, governed by an NHS Research Ethics Committee, world-leading cancer experts (including university, hospital and industry researchers) will be able to apply to use the database to generate new discoveries using Artificial

Intelligence (AI). Access to the database will be tightly controlled by an access committee involving patients. Project outcomes will include tools/apps that help doctors select the right treatment for the right patient (e.g. surgery v radiotherapy, addition of an anti-cancer drug before treatment). This approach, known as 'Precision Medicine', has the potential to dramatically improve survival while minimising side effects. Use of the database may also reveal new directions for development of cancer medicines. The project will use 'routinely collected' tissues and scans from patients previously treated for lung cancer. Identifiable information will never be shared and approved researchers will do their research inside a secure computer system known as a 'Trusted Research Environment (TRE)'. This will be controlled by the project team and data will never leave the TRE, only research results, ensuring maximum data security. The project will also train cancer researchers and generate new jobs in precision medicine in Scotland.

2425-0057 SR266 Professor Peter Sever Imperial College London
Long term follow-up of the ASCOT trial into Electronic Health Records (LATER)

The Anglo-Scandinavian Cardiac Outcomes Trial studied different drug treatments for hypertension and explored the benefits of cholesterol lowering in the same population.

The trial demonstrated that treatment with an amlodipine-based regimen was superior to an atenolol-based regimen in preventing most cardiovascular outcomes and cholesterol lowering with atorvastatin reduced coronary heart disease events and other cardiovascular outcomes compared with placebo. The long term follow up of UK based participants for a further 20 years confirmed extended benefits of the preferred treatment strategies throughout the follow up period.

Both the original trial and the extended follow up have identified that blood pressure variability rather than average blood pressure achieved in the trial is a powerful and independent predictor of cardiovascular and renal events. We now wish to extend the analyses on the existing database to further characterise the profile of subjects with raised blood pressure variability using clinical information derived from the original trial and during the extended follow up to phenotype blood pressure variation and to determine how it is best treated. We propose that blood pressure variation will be a new paradigm in blood pressure management and its identification will allow better models of patient care.

2425-0059 Professor Peter Hall University of Edinburgh
Bowel-Star-UK: Risk stratification in UK bowel screening programmes

The Scottish Bowel Cancer Screening Programme uses home stool tests to detect cancer early. While it works well, it still misses some cancers. The BOWEL-STAR project aims to find and monitor people who are at higher risk but are not currently sent for further tests.

We will study existing NHS bowel cancer screening data from Scotland to understand how different amounts of blood in stool samples link to the risk of bowel cancer and pre-cancerous growths (advanced adenomas). This will help us find people whose risk is higher than average but not high enough under current rules to be sent for more tests.

This work will help us decide who should be invited to join BOWEL-STAR, a new study. BOWEL-STAR will test whether regular stool checks help this higher-risk group who would not normally get further investigation. We hope to find more cancers earlier when they are easier to treat and prevent more cancer deaths.

Screening programmes may work differently for different groups of people who have sometimes been left out of past research. We will therefore look at the whole Scottish population to check how well screening works for people based on different ages, sexes, ethnic backgrounds, medical histories (including rare conditions), and past screening participation. This ensures our findings help all communities across Scotland fairly.

By understanding risk better and making sure our findings work for Scotland's diverse population, this research will help NHS Scotland use screening resources more effectively, potentially saving more lives and ensuring everyone has fair access to early cancer detection.

2425-0115 Richard Hunter Public Health Scotland
Radiotherapy Dataset for Scottish Cancer Registry Intelligence Service (SCRIS) Project

The purpose of the standard Radiotherapy dataset (RTDS) is to collect consistent, comparable data from all NHS providers of radiotherapy services across England, Wales and Scotland. The proposal outlined uses radiotherapy data which is already being collected for patients and provides the ability to analyse the data to enable improved national monitoring of disease rates and trends, measure the impact of national policies, evaluate programmes and treatments, thereby improving services and benefitting cancer patients through their journey, their families, carers and the wider public.

The National Disease Registration Service (NDRS) in NHS England, has responsibility for RTDS. A supply of services agreement exists between NHS England and NHS Scotland, for the processing of RTDS from the five Scottish radiotherapy centres. The NDRS in NHS England collect, quality assure and report the RTDS on behalf of Scottish NHS radiotherapy providers and as part of a 3-nation evaluation programme. The Scottish Cancer Registry and Intelligence Service (SCRIS) within Public Health Scotland (PHS) wish NHS England to continue providing this service for collection of the RTDS via a monthly data upload.

NHS England provides regular data feedback to PHS and radiotherapy centres via a set of agreed monthly reports on NHS England’s secure CancerStats2 platform and a full extract of validated Scottish data direct to PHS. This enables a regular overview of radiotherapy activity for PHS and Scottish Radiotherapy providers, allowing additional added-value analysis and cancer intelligence specific to Scotland and RTDS data to be included within the SCRIS Cancer Intelligence Platform (CIP) alongside other cancer datasets.

2425-0120 Kim Munnery Cardiff University

Clinical and cost-effectiveness of a maternity quality improvement programme to reduce excess bleeding and need for transfusion after childbirth: the Obstetric Bleeding Study UK

Bleeding is the most common complication of childbirth. Every year about 50,000 women in the UK lose 1L (2 pints) of blood or more. Many women develop post-traumatic stress disorder, need blood transfusion or admission to intensive care. There is a lack of knowledge about how best to treat excess bleeding.

A new way of managing bleeding after birth

We are recruiting approximately 189,000 women from 36 UK maternity units including 3 NHS boards in Scotland (Lanarkshire, Grampian and Tayside), over 30-months. All women giving birth in these units will be included, whether they have excess bleeding or not. Maternity units have a period during which standard care will continue, and data collected. Units then adopt the new care bundle over 9-months followed by at least 3-months of data collection. We will compare the rate of blood transfusion after childbirth before and after OBS was introduced.

We will use Scottish electronic health record data collected from women giving birth between 1st February 2024 to 31st July 2026. By analysing this data, we will be able to take into consideration any events that may contribute to the risk of excessive bleeding and the need for blood transfusion. We cannot obtain this information from the data collected during the trial. We also want to investigate the conditions and treatment received in the time between the first appointment with maternity services to birth to allow health service costs to be analysed. All women with excessive bleeding can opt out of this part of the study in Scotland.

2425-0132 Dr Nora Mielke Scottish Government

Scottish Health Survey child boost eligible sample

This proposal is to identify addresses with a child resident for the child boost element of Scottish Health Survey by linking a sample from the Postcode Address file to health records.

The child boost aims to interview around 1,000 children (or their parents for younger children) about the child's health and wellbeing. In the past, around 5,000 addresses were visited to achieve the 1,000 interviews as only around a fifth of household contain children. Identifying addresses with a child resident through linkage to health records means that interviewers visit fewer addresses, resulting in cost savings and freeing up interviewer time.

Covid has resulted in lower levels of response to household surveys than previously as some people feel uncomfortable with allowing an interviewer into their home. Around 41% of sampled addresses responded to the 2023 survey, compared to around 57% pre-pandemic. This means a bigger sample is now needed to achieve the target number of interviews.

The size of the sample needs to be increased further because of a degree of error between health records identifying an address as having a child resident and a child living there when the interviewer visits. This is due to some health records not being up-to-date and to changes in occupancy between the date the addresses are matched to health records and the date of interview.

As such, a total of 8,000 (plus a 10% reserve) addresses now need to be matched to health records to allow the target of 1,000 child interviews to be met.

2425-0139 Dr Ilsa Louisa Haeusler University College London
Surveillance of children admitted to hospital with carbon monoxide poisoning in the UK and Republic of Ireland

Carbon monoxide (CO) is a colourless, odourless, tasteless, poisonous gas produced by incomplete burning of carbon-based fuels, including gas, oil, wood, and coal. Carbon-based fuels are safe to use. It is only when the fuel does not burn properly that excess CO is produced, which is poisonous. When CO enters the body, it prevents blood from bringing oxygen to organs.

A brief exposure to small amounts of carbon monoxide may cause headache, flushing, nausea, dizziness, vertigo, muscle pain or personality changes. Exposure to larger amounts may cause movement problems, weakness, confusion, lung and heart problems, loss of consciousness and death.

There is little information about how often CO poisoning affects children and what happens when it does. Living costs, including fuel costs, are increasing. With one third of UK children living in households experiencing poverty, the cost-of-living crisis may force families into situations where they are unable to safely maintain fuel-consuming devices.

Over 13 months, we want to collect data on every child under 16 years of age in the UK and the Republic of Ireland who is admitted to hospital with CO poisoning. We want to find out how many children are admitted with CO poisoning each year. We also want to find out the characteristics of these children, as well as what happens after poisoning (such as the need for intensive care and how many children die).

2425-0146 MR542 Michelle Nunn University of Oxford
Heart Protection Study (HPS) Long-term Follow-up

The Heart Protection Study (HPS) began in the 1990s to investigate the effects of cholesterol-lowering medication (statins) on reducing the risk of heart attacks, strokes, and other serious health problems. Participants in the original study were randomly assigned to take either a statin or a placebo (a pill with no active ingredients). The results showed that statins reduced the risk of these illnesses by about 25%. At the same time, the study also tested whether taking anti-oxidant vitamins had any health benefits, but no clear effects were seen at the time.

Now, researchers are conducting long-term follow-up of the original participants to understand the lifetime benefits and safety of starting statin treatment earlier. They are also studying whether statins reduce the risk of developing dementia and exploring how factors like genetics and biological markers affect health. Additionally, they will re-examine the possible long-term effects of the anti-oxidant treatments.

To achieve this, researchers will securely link the participants' health records collected by the NHS (e.g., hospital visits and diagnoses) to track their health over time. The information is managed securely to protect privacy, and no individual's identity will be shared.

This research will help provide evidence on how to prevent heart disease, strokes, and potentially dementia, benefiting future generations. Understanding the long-term safety and effects of treatments ensures better healthcare for all.

For more information, visit the HPS website: https://www.ctsu.ox.ac.uk/research/hps

2425-0173 Miss Ruth Darbyshire Leeds Teaching Hospitals Trust
Thermal retinal injury: discovering the risk of handheld laser devices

Study Background and objectives

In our study, a review of the records of patients in the United Kingdom with a new diagnosis of Hand-held laser induced maculopathy (HLIM) will be undertaken. HLIM describes damage to the part of the eye that sees fine detail, the macula, either by, accidental or otherwise, use of a hand-held laser device. Such injuries from handheld lasers are relatively uncommon, however, the number of reported cases has increased since 2008 and they may result in permanent visual loss.1 As the majority of cases involve paediatric patients any resultant visual loss may represent a significant disability throughout their life.

The study will be coordinated by the British Ophthalmological Surveillance Unit (BOSU), who will assist us in collecting all new cases of HLIM in current clinical practice using an established digital case-reporting system for hospital eye specialists. We aim to ascertain what demographics are particularly affected, the context in which the injury is sustained, to further elucidate presentation, clinical features, current treatments and outcomes. The aim is to use this information to improve recognition and management of future cases as well as pushing for change in legislation to the sale of hand-held laser pointers to the general population.

2425-0187 Dr Melanie Turner University of Aberdeen
How do co-existing health conditions affect stroke? An electronic data linkage study to investigate the relationship between comorbidity and stroke management and outcomes.

Stroke can have a devastating impact on a person's life and family. This could be made worse if they have other illnesses at the time of stroke. There is a lack of research investigating this, but it is an important area that needs to be explored. The aim of this study is to investigate how other illnesses can affect stroke treatment and outcomes. A dataset of all stroke patients in Scotland will be linked to hospital admission data, death records, and a record of medicine prescriptions. This will be used to investigate how the number and type of other illnesses occurring in people with stroke influences their stroke treatment in hospital. Analysis on what happens after the stroke will include how long a person has stayed in hospital, their risk of having another stroke and/or being admitted to hospital again, and their risk of death. Medicines used to prevent stroke, for example to lower blood pressure or cholesterol, before and after a patient has had a stroke will also be investigated. This study will improve our understanding of how other illnesses affect the treatment and outcome of stroke. Using information on a person's health and medicines to assess their risk of having another stroke will help ensure they are receiving the best treatment. The

results of this study will help influence current medical practice and provide evidence for care guidelines. This will help support improvements in stroke care for patients in the UK and beyond.

2425-0192 Llion Roberts London School of Hygiene & Tropical Medicine
CRASH-4 Trial

Every year, over one million people in the United Kingdom suffer a mild Traumatic Brain Injury (TBI) needing hospital care. Bleeding into the brain is a common and serious complication of TBI and older adults are at highest risk. A small bleed into the brain can cause disability and even death if bleeding is more severe. TBI is a strong risk factor for dementia, particularly in older adults – mild TBI without loss of consciousness doubles dementia risk.

We know giving Tranexamic acid as an infusion into the vein after a TBI reduces the chance of death due to bleeding into the brain.

The CRASH-4 trial will assess if giving an injection of tranexamic acid into the muscle of older adults with mild TBI can prevent bleeding into the brain and lead to better health outcomes. Patient outcomes, including discharge from hospital, bleeding into the brain, death, measures of disability, patient management, re-admission to hospital and any reactions or adverse events, will be assessed in-hospital at discharge, death, or 28 days after randomisation, whichever occurs first.

Additionally, 1-year after randomisation, we will assess the neurological impact of the TBI on dementia, death and other key TBI associated outcomes (mood disorders, intracranial bleeding and convulsions). We will do this by collecting data on these outcomes held by Public Health Scotland.

If early injection of tranexamic acid reduces death and disability in older adults with mild TBI this would be a major medical advance that would improve the care of millions of patients worldwide

2425-0212 Rebecca Underwood University of Edinburgh
Development of data integration methods to exploit SARS-CoV2 viral sequence data in care home settings

COVID-19 had a disproportionate effect on care home residents. Policies implemented during the pandemic to protect residents, such as visitation restrictions and isolating residents are now known to have been detrimental to the health and well-being of residents. Despite substantial research into COVID-19 transmission much remains to be done to understand COVID-19 transmission within care homes and the factors that impact introduction and transmission.

Viruses that cause diseases can be sequenced to obtain the viruses' "fingerprint". In recent years, this technique has become more readily available and was used extensively during the pandemic to identify new strains of COVID-19 such as the "Omicron" variant. This project aims to use previously collected SARS-CoV-2 (COVID-19) sequence, or "fingerprint", data and epidemiological data (e.g., the date of a COVID-19 test result), along with mathematical and statistical models to investigate COVID-19 in care homes

The results of the project will make a unique contribution to the wider scientific evidence used by policy makers to design and update care home policy and guidance, which should will ultimately help to reduce the risk and impact of outbreaks of COVID and similar respiratory infections on care home residents, their friends and family and the care home staff. This project aims to investigate how the level of COVID-19 in the area around the care home affects the risk of an outbreak occurring within the Care Home. This work will be able to able define the areas surrounding the Care Home down to a much smaller local level than previous studies. We also aim to investigate how care home staff infection levels may influence COVID-19 transmission within the care home, as there is little published research on it. We also aim to investigate the contribution that care home staff, visitors and others make to the introduction of COVID-19 into the care home which starts an outbreak. Overall, we aim to identify the risk factors associated with outbreaks, to then identify the types of care homes that are more vulnerable and require more support to minimise the risk and size of outbreaks of COVID-19 and other respiratory infections. We also aim to develop methods that would enable us to use genetic information ("fingerprint") about viruses to help reduce the health impacts of not just COVID-19, but other respiratory infections in the future.

2425-0213 Professor Jill Belch University of Dundee/NHS Tayside

Air Quality, Low Emission Zones & Hospital Admissions in Scotland

Scotland has some of the cleanest air globally. However, significant transport-linked air pollution still exists. Furthermore, harmful effects of air pollution are seen at low levels of air pollution, leading the World Health Organisation to recommended more stringent air quality guidelines below current Scottish levels. Thus, Scotland has introduced Low Emission Zones (LEZ) in Glasgow, Dundee, Aberdeen and Edinburgh. Air pollution affects almost every organ in the human body, estimated to contribute to the equivalent of 30,000 deaths in the UK in 2025 and cost more than £27 billion annually (Royal College of Physicians Report Oct 2025)

Our previous Dundee and Perth work showed increased cardiovascular hospital admissions in adults, and asthma in children, linked to days of high air pollution. Others have shown deleterious effects on mental health, and pregnancy outcomes. It is expected that by introducing LEZs in Scotland that city centre pollution levels fall, but we wish to examine if health also improves, measurable by reduction in hospital admissions.

This study aims to investigate the effects on hospital admissions before and after the introduction of LEZs in the 4 Scottish cities. We aim to link publicly available air pollution data, measured by the Scottish government, with hospital admissions, NRS deaths. Our outcomes of interest are: all hospital admissions, cardiovascular, respiratory, and a cost-consequence analysis will also be undertaken. PIS will be requested to assess confounders to health outcomes (i.e. medications for CV conditions etc). This study will guide Government policy on LEZ strategy, hopefully it will raise awareness of the health benefits or otherwise of the LEZs, bringing air pollution higher up on the Scottish agenda. A cost consequence analyses will inform on cost/benefit. Public engagement with the data will hopefully address LEZ concerns if health benefits shown, and will allow public roadshows, presentations, and lay literature preparation. In this way the public are informed not only about the results, but about the scientific studies carried out on their health data.

2425-0217 Professor William Whiteley University of Edinburgh Developing a Foundation Model for Brain Imaging via the Brain Health Data Pilot (2223-0005 Whiteley)

Brain imaging is an essential part of clinical practice and scientific research into brain diseases, including Alzheimer's disease and other dementias. Uses include measuring the size of different brain regions or looking for patterns of brain changes that may indicate disease, often done automatically use image analysis software. However, the current software used for analysing brain images is not sufficiently accurate or robust for routine clinical use.

Meanwhile, artificial intelligence researchers have developed so-called 'foundation' models for analysing text or images. The most well-known of these is 'ChatGPT', a 'chatbot' that uses natural language processing (NLP) to understand patterns in words and sentences, while 'DALL-E' and 'StableDiffusion' are examples of image-based foundation models. These are 'foundation' models as they provide the basis for lots of different tasks, achieved by 'fine-tuning' these large models with extra data, and generally lead to more accurate results than other methods.

We plan to create a foundation model for the brain, using approximately 1.7 million magnetic resonance imaging (MRI) or computed tomography (CT) scans available via Public Health Scotland's Scottish Medical Imaging archive. This foundation model will then be fine-tuned to help clinicians better treat and care for people with, or at risk of, brain diseases.

This foundation model will be created using a popular AI method, known as self-supervised learning (SSL). In SSL, a model is trained with brain images, though a small section of the input image is missing. This is repeated many times with different sections of different images removed, until eventually the model is able to 'reconstruct' input images accurately. This way, the model can learn information about different patterns in the images and in this case how different parts of the brain relate to each other.

One of the strengths of foundation models is their flexibility — once developed, they can be adapted for various tasks in the future. For example, we will fine-tune our model to better measure the size of the hippocampus, an important brain region in Alzheimer's, or to better predict whether someone with memory complaints will develop dementia in the future. The models might also help identify strokes, tumours, and other brain abnormalities, measure important brain areas over time, or help distinguish between different types of dementia. These tools could also improve how clinical trials for new treatments are run, by helping select suitable patients and monitoring their brain health during the study.

Beyond immediate clinical use, this technology could benefit scientific research by improving the quality of data analysis, enabling researchers to work with older or lower-quality brain scan data that was previously difficult to use. This could lead to new discoveries about how brain diseases develop and progress. The foundation model will be shared to help other scientists with related projects. It will be open-source, meaning researchers and doctors worldwide can use it for free.

2425-0221 Lynn McMahon University of Edinburgh SteatoSITE2

Metabolic dysfunction-associated steatotic liver disease (MASLD) is a long-lasting condition caused by having too much fat in the liver which affects how well it can function. It now affects around 38% of people worldwide. A key challenge in MASLD is identifying who has the disease as often people have no symptoms. Also, its often not clear what people will go onto develop a more serious form of the disease (metabolic dysfunction-associated steatohepatitis (MASH)) which can lead to serious health problems including liver cirrhosis (severe liver scarring) affect other organs such as the heart and cause liver cancer.

Only those people with the serious form of the disease (MASH) or liver scarring (fibrosis) have an increased risk of dying but we currently don't know very much about why people develop more serious disease. We are particularly interested if this progression to more serious disease is caused by a genetic cause and finding out the reason why only very few people are seriously affected. We hope by looking at data from people's health records, scans and other images, and sequencing their RNA (looking at their genetics) we can build a set of information or data set to understand this disease better. We would like to understand what changes happen at different stages of the disease and how people who go onto have serious disease are different from those who don't.

This collection of information, or database, can also be used for biomarkers, which are substances present in the blood or tissues which can tell us that a disease is present. This may allow us to develop personal treatments for people living with MASH and help people get an earlier diagnosis. By using the existing information from patients in Scotland, which has a stable population and a joined-up healthcare system, we can quickly develop this resource. This will help us to meet the urgent needs of this growing group of people who currently have very little information and no specific treatments.

2425-0243 Dr Cosmika Goswami University of Strathclyde Optimising Antipsychotic Prescribing Among Hospitalised Patients in the Acute Care Setting in Scotland: A national retrospective cohort study (using MACCS 2324-0239 Kurdi Research Resource)

Antipsychotics are a type of medicines used to treat certain mental health conditions, such as schizophrenia or bipolar disorder. It is essential that these medicines are used appropriately to ensure they are having the intended effect. Research shows that high-dose antipsychotic prescribing is common in hospitals, particularly in non-psychiatric settings where specialist mental health expertise may be lacking. High doses can increase the risk of serious side effects, including movement disorders, metabolic issues, heart problems, and even increased mortality, while the benefits of using higher doses over standard doses remain uncertain.

This study aims to improve the safety and effectiveness of antipsychotic prescribing in Scottish hospitals. Utilizing the Medicines in Acute and Chronic Care in Scotland (MACCS) data resource, which links a wide range of NHS Scotland health records, a key outcome of the study will be an improved understanding of how antipsychotics are used in Scotland, and how they affect patients. This will help to assist healthcare professionals in making safer and more effective prescribing choices including close monitoring of patients identified to be at high risk of harms from high-dose antipsychotic.

By identifying trends in prescribing practices and their impacts on health outcomes, this research will provide valuable insights to improve patient care. The findings will support efforts to reduce the risks associated with high-dose prescribing and help ensure that patients receive the most appropriate treatment for their needs.

2425-0249 Dr Owen Hibberd Queen Mary University of London

Is Admission Hypocalcaemia Associated with Haemodynamic Instability in Paediatric Major Trauma? - A Multi-Centre Retrospective Cohort Study

Significant injuries are still one of the leading causes of death and disability in children. Many of the deaths that occur following an injury are due to severe bleeding. Recognising and controlling bleeding and the factors within the body which make it worse is key to reducing preventable deaths from injury.

Calcium helps blood to clot, the heart to beat stronger, and blood vessels to better respond to blood loss. Low calcium levels have been seen in injured adults. This might be due to the body's response to the injury, some of the treatments we give in the early stages of injury treatment, or a combination of both. Amongst injured adults, low calcium appears to be associated with a more difficult injury journey, needing bigger treatments such as blood transfusions or operations, and having an increased chance of disability and death. We don't know if the same is the case amongst injured children and young people.

This study is looking to use archived data from multiple hospital between 2016 to 2023 to see how common low calcium levels are in injured children and whether these are associated with having worse blood pressure, needing more treatments, and having worse outcomes such as disability or death.

The local hospital teams will anonymise the data. Even if the injury was so rare or unusual that it made the news, the data will be anonymised in a way that the researchers will not be able to link this to the data.

2425-0261 Gregor Boyd Scottish Government

Scottish Health and Care Experience Survey

The Health and Care Experience Survey (HACE) asks about people’s experiences of their GP practice; Out of Hours healthcare; care, support and help with everyday living; and caring responsibilities.

This application seeks permission for Public Health Scotland (PHS) to select a random sample of people who are registered with a GP Practice in Scotland, live in Scotland and are aged 17 and over. PHS will co-ordinate checks against the NHS Central Registry and the Community Health Index (CHI) database to remove people from the sample who have died.

People selected will be contacted by post, and can participate online, by phone or by completing a paper questionnaire. Survey responses will be linked to information from the CHI database including GP Practice, sex, age band, urban/rural and index of multiple deprivation. Professional

analysts in the Scottish Government and PHS will analyse this dataset to publish national and local results of the survey. Anonymised free text comments will be shared with GP practices to allow them to act on feedback, while not being able to identify who has commented.

HACE is part of the Scottish Care Experience Survey Programme of national surveys measuring the quality of health and care services from the perspective of people using them. This supports three strategic objectives – that care be safe, effective and person-centred.

The surveys support the person-centred quality ambition to put people at the centre of care; ensure care is responsive to personal preferences, needs and values; and that individual values guide all care decisions.

2425-0279 Dr Khaled Bedair University of Dundee
Developing and validating a multivariable model to predict severe bleeding in patients using direct oral anticoagulants (using MACCS 2324-0239 Kurdi Research Resource)

Direct Oral Anticoagulants (DOACs) are medicines used to prevent strokes and treat blood clots in people with conditions such as atrial fibrillation or deep vein thrombosis. These medicines are widely used across Scotland and are often preferred over older treatments like warfarin because they do not require regular blood tests. However, DOACs can still cause serious side effects, including major bleeding, particularly in people who are older, have multiple health problems, or take many other medications.

This study aims to improve the safety of DOAC use in Scotland by identifying which patients are most at risk of severe bleeding. Using the Medicines in Acute and Chronic Care in Scotland (MACCS) dataset, which links health records across GP practices, hospitals, labs, and mortality data, researchers will develop a new tool to predict bleeding risk in people starting DOAC treatment.

By analysing data from adults in Scotland who began taking DOACs between 2009 and 2024, the study will develop and test a risk model using advanced statistical. The goal is to help doctors personalise treatment, avoid harm, and make better prescribing decisions—especially for those at higher risk of side effects.

The findings will support safer, more effective care, reduce unnecessary hospital admissions or deaths from bleeding, and ultimately help NHS Scotland use its resources more efficiently. This research will contribute to national efforts to make medicine use safer and more targeted for people with complex health needs.

2526-0007 Dr Helen McDermott Imperial College London
Clinical Management and Short-Term Outcomes of Neonates Born at 22 Weeks in UK Neonatal Intensive Care Units

In the UK, babies born at 22 weeks of pregnancy have only been offered stabilisation (sometimes called resuscitation or survival-focused care) since 2019. Very few babies are born this early each year and sadly a lot of them do not survive. Therefore, healthcare teams don’t have much

information about this new population of tiny babies and there is much to learn about how they respond, the problems they face and the best way for intensive care units to look after them.

This study aims to collect information available in babies' medical notes, analyse it and share learning to start improving this knowledge. There will be no changes to the babies' care, only observation of what happens.

A team of doctors and nurse practitioners who have/are looking after a baby, will put a small amount of selected information, without 'identifiers' such as the baby's name, date of birth or hospital number, onto a secure database (REDCap) platform at Imperial College London (a university). Researchers will analyse the information from all the babies around the UK together to look for trends and to describe common things that happen to them, as well as their outcomes.

Parents will be made aware this information is being collected and used through a leaflet. It will not be possible to identify an individual baby in the published results.

We are aiming for around 45 hospitals across the UK to participate. 5 NHS Boards in Scotland will be involved: Lothian, Grampian, Glasgow and Greater Clyde, Lanarkshire, Tayside. Babies born at 22 weeks gestation, who are attended to at birth by a neonatal team (or admitted) at an intensive care site over a 12-month period can be included.

While collecting this information will not impact the babies included, it may help the treatment of babies in the future and give families more accurate information about what they might expect to happen.

The results of the study will be published and provided on the neonatal trainee research network website (www.neotrips.org), estimated in 2027.

2526-0018 Dr Caroline Young University of Leeds
Can microbiome data improve the NHS Bowel Cancer Screening Programme? Additional site: Scottish Bowel Screening Laboratory

Additional site: Scottish Bowel Screening Laboratory

The Scottish Bowel Cancer Screening Programme looks for blood in poo using a FIT test. We propose that after this standard testing, the left over FIT samples will be given an anonymisation code and sent to the University of Leeds. Researchers at the University of Leeds will analyse the bacteria within the samples (the microbiome).

The clinical data associated with the samples (age, gender, level of blood detected, and diagnosis) will be extracted from the Scottish Bowel Cancer Screening Database, given an anonymisation code, and transferred securely to the University of Leeds LASER secure environment. The researchers at the University of Leeds will import the bacterial data to perform analysis within LASER, to see if the microbiome can be used to predict bowel cancer.

The researchers at the University of Leeds have already performed similar research using bowel cancer screening samples collected by the English Bowel Cancer Screening Programme – they would like to expand the study to include the Scottish Bowel Cancer Screening Programme, in order to see if the results are generalisable and relevant to the Scottish bowel cancer screening population.

The researchers will not ask screening participants for consent as it is important not to put people off from taking part in screening or to confuse people about the purpose of screening. The samples and data shared with the University of Leeds will not contain any identifiable information (as they will have been given an anonymisation code).

2526-0042 Dr Alessandra Glover Williams University of Bristol Epilepsy In Children after Hypoxic Ischaemic Encephalopathy (EPIC after HIE) (BPSU)

Between Nov 2025 and Nov 2026 we will conduct a national, observational study using the British Paediatric Surveillance Unit (BPSU). The BPSU holds a directory of the majority of Paediatricians in the UK. Every month they will email asking all members to report any children diagnosed with new-onset epilepsy in children who underwent cooling therapy for lack of oxygen at birth (or "HIE"). We will describe the characteristics of who and when epilepsy develops, which is minimally known, and unknown past the age of 8years. Parents have told us that this is of significant importance to them in order to know what to expect after Neonatal Intensive Care Unit (NICU) and it could also inform the design of NHS services. Consent will not be sought and families will not be contacted by the research team. Advertisements for the study will be displayed in local hospitals and on the BPSU website.

Clinicians will be sent an individualised link to enter patient details from local medical records onto the University of Dundee Data Safe Haven; here it will processed by the study team. With HSC-PBPP approval, CHI number will be collected to rule out cases being reported twice. Full postcode will be used to establish deprivation data. After this patient identifiable data has been used, it will be deleted. We have had this approved-in-principle by parent representatives from our partner-charities.

We will also collect data on: age at diagnosis, type of epilepsy, brainwave findings (EEG), anti-seizure medications, other medical diagnoses, genetics and results of MRI head scans.

2526-0045 Ms Megan Glancy Public Health Scotland Evaluating the Public Health Impact of Interventions for the Prevention of Drug-related Death in the Population: in Scotland (EPHESUS)

Drug-related deaths are a public health crisis in the UK, with rates in Scotland more than doubling over the past decade. Most of these deaths involve opioids, often in combination with other drugs such as benzodiazepines or cocaine.

A key intervention for people at risk of a drug-related death is opioid agonist treatment with methadone or buprenorphine, which international evidence has shown can significantly reduce risk. However, people are often at high risk when starting or stopping treatment, and many stop treatment early. New types of opioid agonist treatment (OAT), such as injectable buprenorphine, may also help more people stay in treatment.

This project – Evaluating the Public Health Impact of Interventions for the Prevention of Drug-related Death in the Population: in Scotland (EPHESUS) – will use existing healthcare data from the

SHIeLD (Substance Use and Health Intelligence Linked Dataset) to examine how OAT affects drug-related deaths in Scotland. It will assess which factors influence treatment success and survival. We will also build a mathematical model to estimate how many lives have been saved through OAT and assess how future changes – such as new treatments or overdose prevention strategies – could improve outcomes. This study will further enhance the value of SHIeLD by generating new evidence on treatment outcomes, developing methods and informing future updates to the dataset, and demonstrating how it can be used to evaluate interventions.

The findings will provide evidence to guide policymakers on improving current treatment and introducing additional measures. This work directly supports the Scottish Government's National Mission to reduce drug deaths and efforts to improve standards of care for people with opioid dependence (Medication Assisted Treatment Standards).

2526-0062 Dr Mathew Lyons University of Edinburgh
The role of epidural timing in birth outcomes (the EARLY study — Epidural timing And outcomes in Labour and birth study)

This research aims to study the effects of early versus late epidural pain relief during labour. Epidurals are a type of pain relief given through a small tube in the back.

The study will look at medical records of women who gave birth in Scotland and Ireland over a five-year period. It will compare outcomes between women who had epidurals early in labour, late in labour, or not at all. The team will examine things like how the baby was born and if there were any complications for the mother or the newborn.

The timing of epidurals for women is currently debated. Some think early epidurals might be better, especially for women living with obesity or complex medical conditions, while others worry it could lead to more caesarean births. This study aims to provide evidence to help guide this decision. The team will use advanced statistical methods to analyse the data. They will account for other factors that might affect the results, such as the mother's age and previous pregnancies.

The findings could help improve care for pregnant women. If early epidurals are found to be beneficial, it might change how hospitals plan their services. This could ensure women get pain relief at the best time for them. If epidurals are found to increase rates of intervention in childbirth it will have important implications for consent discussions.

This study is important because it addresses a gap in current knowledge. The results could help doctors and midwives make more informed decisions about pain relief during labour. Ultimately, this research aims to improve the health outcomes for both mothers and babies.

2526-0133 Professor William Whiteley University of Edinburgh
SWARM learning for imaging-based dementia prediction using the Brain Health Data Pilot (2223-0005 Whiteley)

What we plan to do: We will build and test a computer program (artificial intelligence, or AI) that can use brain scans (CT and MRI) taken as part of routine clinical practice linked together with health records, to predict who might develop dementia in the next few years. We will test how

well this works and share the results with researchers and the community. We think that using data from two health systems – Scotland and Finland – will improve our predictions by making the populations more diverse.

Where the data come from:

- Scotland: the Brain Health Data Pilot is run by Public Health Scotland. The data are kept in a very secure system called the National Safe Haven.
- Finland: HUS Helsinki University Hospital, where the data are kept in a secure system like the one in Scotland.

In both places, the data is anonymised (instead of using names or addresses), so the researchers do not know who anyone is.

Swarm: Swarm is a safe way for different places to train AI together without sharing people's data. Think of it like "sharing the recipe, not the ingredients." Each country keeps its data locked away. The computer learns from the local data, then shares only what it has learnt (in technical terms 'model weights'), not the raw scans or records. This is a way of securely improving dementia predictions when dementia cannot be shared.

How we will use SWARM

- In Scotland, the team works only inside the National Safe Haven. In Finland, the team works only inside the hospital's secure system which has similar security
- SWARM sends the learning between the two sites over secure links and combines them. No patient images or records move between countries
- Both the Scottish and the Helsinki secure systems will finish with a copy of the trained dementia prediction models
- All results from Scotland are checked by Public Health Scotland before anything leaves the Safe Haven.

Why include Finland: Training in both Scotland and Finland helps the AI work well for different people and health systems. It allows validation on unseen data. Finnish data stay in Finland; Scottish data stay in Scotland. In future there is the potential to link together multiple systems that store data securely.

Expected outcomes: A tested, privacy-preserving AI tool for to predict who might develop dementia in the next few years to predict who might develop dementia in the next few years.

- Clear guides and shared code so others can repeat the work.
- Safer, faster ways to do international research without moving patient data.

2526-0147 Joe Schofield University of St Andrews
Chronic opioid exposure and atherosclerotic cardiovascular disease

Cardiovascular disease, including heart attacks and strokes, is one of the leading causes of death in Scotland. Opioid drugs, such as morphine and codeine, are commonly prescribed for long-term pain, but they can also be used non-medically, including as illicit drugs such as heroin. Some research suggests that people who use opioids over a long period may be at greater risk of developing heart and blood vessel disease, but the evidence is currently unclear.

This study will use pseudonymised health records from across Scotland to investigate whether long-term exposure to opioids increases the risk of atherosclerotic cardiovascular disease (ASCVD), conditions such as heart attacks, angina, and strokes that happen when blood vessels are narrowed or blocked. We will focus on two main types of opioid exposure: (1) people prescribed opioids long-term for chronic pain, and (2) people with non-medical opioid use, including dependent use of illicit / street opioids such as heroin.

By linking NHS data on prescriptions, hospital admissions, addiction services, and deaths over a 10-year period, we will examine whether, and how, the risk of ASCVD differs between these groups. We will also consider factors such as age, sex, and social disadvantage.

The findings from this study could help improve treatment and prevention strategies for people living with chronic pain and those affected by opioid dependence. No individuals will be identifiable in the research, and all data will be handled securely and confidentially in accordance with strict ethical and legal standards.