

2020/21 Applications approved by HSC-PBPP to 31st March 2021

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Application Reference	Applicant	Applicant's Organisation	Title of Study	Outcome	Level of Approval	Clocked time (days)
1920-0272	Diogo Marques	Public Health Scotland	SARS Co-V-2/COVID-19 enhanced surveillance	COVID19 Approved with recommendations	COVID19 rapid review panel	5
1920-0088	Dr Iain Atherton	Edinburgh Napier University	What is the health and social circumstances of military veterans in Scotland? A data linkage study	Approved with conditions	Tier 1 Panel Meeting	11
2021-0001	Prof Jennifer J Kurinczuk	University of Oxford	Neonatal complications of coronavirus disease (COVID-19)	COVID19 Approved with recommendations	COVID19 rapid review panel	4
2021-0002	Dr Nicole Priddee	Scottish National Blood Transfusion Service (SNBTS)	Convalescent Plasma collection and distribution for management of COVID 19	COVID19 Approved with recommendations	COVID19 rapid review panel	5
1920-0054	Dr Mahi Muqit	Moorfields Eye Hospital NHS Foundation Trust	National Prospective Cohort Study and Surveillance of Sympathetic Ophthalmia in the United Kingdom In association with the British Ophthalmological Surveillance Unit (BOSU)	Approved	Tier 1 Review	45
1819-0119	Dr Holger W Unger	Liverpool School of Tropical Medicine	Holistic counselling and decision-making regarding mode of delivery for singleton breech babies in spontaneous preterm labour – building evidence from a large-scale Scottish retrospective birth cohort study	Approved	Tier 1 Review	22
1920-0048	Professor Andrew Evans	University of Dundee	MEDICI (Mammographic Predictors of Cancer Recurrence after Breast Conservation and Adjuvant Endocrine Therapy)	Approved with conditions	Tier 1 Review	30

<u>1920-0282</u>	Professor Richard Haynes	University of Oxford	RECOVERY trial	COVID19 Approved with recommendations	COVID19 rapid review panel	5
<u>1819-0297</u>	Professor Jürgen Haas	University of Edinburgh	VIRADE	Approved	Tier 1 Review	22
<u>1920-0273</u>	Professor Malcolm Semple	University of Liverpool	COVID-19 Clinical Information Network (CO-CIN)	COVID19 Approved with recommendations	COVID19 rapid review panel	4
<u>2021-0008</u>	Carole Morris	Public Health Scotland	Scottish Collaborative COVID Research Data Platform	COVID19 Approved with recommendations	COVID19 rapid review panel	5
<u>1920-0083</u>	Linsey Galbraith	Information Services Division (ISD) Scotland, NHS National Services Scotland (NSS)	Weight Management Core Dataset Reporting	Approved	Tier 1 Panel Meeting	21
<u>2021-0013</u>	Dr David A McAllister	Public Health Scotland	COVID19 in healthcare workers, including primary and secondary care	COVID19 Approved with recommendations	COVID19 rapid review panel	5
<u>1920-0279</u>	Professor Chris Robertson	Strathclyde University and Public Health Scotland	Early Assessment of COVID-19 epidemiology and Vaccine/anti-viral Effectiveness (EAVE II)	COVID19 Approved with recommendations	COVID19 rapid review panel	5
<u>1819-0124</u>	Dr Heather Clark	University of Aberdeen	The Aberdeen Children of the 1950s cohort study - ongoing linkage to routinely collected healthcare data	Approved	Tier 1 Review	8
<u>1920-0037</u>	Professor Emily Jefferson	University of Dundee	A transfer of image data held by NSS / eDRIS from the Scottish Medical Images (SMI) Database to the Tayside safe haven environment for the consented Tayside and Fife participants from the GoDARTS and GoSHARE cohorts (combined as GoFUSION)	Approved with conditions	Tier 1 Panel Meeting	10
<u>2021-0007</u>	Professor Rowland Kao	University of Edinburgh	The Scotland Coronavirus Model (SCoVMod)	COVID19 Approved with recommendations	Tier 1 Panel Meeting	6

2021-0019	Dr Philip Dunne	NHS Greater Glasgow and Clyde	Audit of Upper GI Bleeding in the Covid-19 Pandemic	COVID19 Approved	Tier 1 Panel Meeting	4
2021-0041	Dr Shamez Ladhani	Public Health England	Enhanced surveillance of multisystem inflammatory syndrome temporally associated with Covid 19 in children in the UK and Republic of Ireland through the BPSU	COVID19 Approved with recommendations	COVID19 rapid review panel	5
2021-0024	Dr Louise Marryat	University of Edinburgh	COVID-19 in pregnancy	COVID19 Approved with recommendations	Tier 1 Panel Meeting	8
2021-0051	Dr Kyle Gibson	NHS Lothian	Pulmonary Embolism in COVID-19 Patients requiring Critical Care	COVID19 Approved with recommendations	Tier 1 Panel Meeting	9
2021-0054	Dr Thomas Manship	NHS Lothian	Scottish study on the impact of COVID-19 on chronic liver disease	COVID19 Approved with recommendations	Tier 1 Panel Meeting	4
2021-0033	Professor Bryan Williams	UCLH / UCL	CAPACITY-COVID: Cardiac complications in Patients With SARS Corona vlrus 2 regisTrY	COVID19 Approved with recommendations	COVID19 rapid review panel	7
1819-0266	Dr Melanie Turner	University of Aberdeen	Interactions between cancer and stroke: A national electronic data linkage study	Approved with conditions	Tier 1 Review	25
1920-0091	Jane Robertson	University Hospital Southampton NHS Foundation Trust & Southampton Clinical Trials Unit, University of Southampton	FORECAST	Approved	Tier 1 Review	50
2021-0049	Dr Michael McGettrick	NHS Greater Glasgow and Clyde	Pulmonary Thromboembolism in Covid-19 pneumonia	COVID19 Approved with recommendations	COVID19 rapid review panel	9
1819-0284	Professor Colin McCowan	University of St Andrews	HDRUK - MurMur- Comorbidities Study	Approved with conditions	Tier 1 Review	38

2021-0030	Dr Prabhu Arumugam	Genomics England Limited	GenOMICC Study	COVID19 Approved with recommendations	COVID19 rapid review panel	10
2021-0037	Mohamed Bekheit	NHS Grampian	Hospital-level variation in the management and outcome of patients with acute cholecystitis: a view on service relocation	Approved with conditions	Tier 1 Panel Meeting	7
2021-0077	Dr Nick Hamilton	University College London	COVIDTrach	COVID19 Approved with recommendations	Tier 1 Panel Meeting	8
2021-0042	Dr David Fitzpatrick	University of Stirling	Covid-19: Prehospital identification and management of people presenting to the ambulance service	COVID19 Approved with recommendations	Tier 1 Panel Meeting	6
1819-0300	Dr Rachael Wood	Public Health Scotland	Autistic Spectrum Disorder and associations with literacy skills at the start of primary school	Approved with conditions	Tier 1 Panel Meeting	8
1920-0258	Dr Clarisse Florence de Vries	University of Aberdeen	Retrospective clinical evaluation of a novel medical technology (Mia) on Scottish Breast Screening cases as part of the iCAIRD (Industrial Centre for Artificial Intelligence in Digital Diagnostics) Programme	Approved with conditions	Tier 2 OOC	26
1920-0286	Karen Dennison	UCL Institute of Education	Centre for Longitudinal Studies cohort study data linkage	Approved	Tier 1 Review	35
2021-0117	Dr David Henderson	Edinburgh Napier University	Community based COVID-19 mortality	COVID19 Approved with recommendations	Tier 1 Panel Meeting	7
2021-0116	Dr Rachael Wood	Public Health Scotland	COVID-19 in Pregnancy in Scotland (COPS)	COVID19 Approved with recommendations	COVID19 rapid review panel	5
1920-0029	Dr Janet Hanley	Edinburgh Napier University	Scale Up BP	Approved with conditions	Tier 1 Review	20
2021-0073	Dr David McAllister	Public Health Scotland	COVID19 in secondary, primary, early years and additional needs teachers and teaching assistants.	COVID19 Approved with recommendations	COVID19 rapid review panel	5

<u>2021-0100</u>	Professor John Crichton	NHS Lothian	Predictors of Outcomes for Mental Health Inpatients Diagnosed with Covid 19	COVID19 Approved with recommendations	Tier 1 Panel Meeting	13
<u>2021-0082</u>	Dr Josie Evans	University of Stirling	Ambulance call-outs for psychiatric emergencies during the COVID-19 pandemic	COVID19 Approved with recommendations	Tier 1 Panel Meeting	12
<u>2021-0098</u>	Dr Alasdair Jubb	Cambridge University Hospitals	European Society of Intensive Care Medicine UNITE – COVID STUDY	COVID19 Approved with recommendations	Tier 1 Panel Meeting	12
<u>1920-0209</u>	John Richardson	NHS Blood and Transplant	Potential Donor Audit - Collection of information	Approved with conditions	Tier 1 Review	23
<u>2021-0102</u>	Professor Cathie Sudlow	Health Data Research UK	CVD-COVID-UK	COVID19 Approved with recommendations	COVID19 rapid review panel	8
<u>1920-0097</u>	Professor Scott Nelson	University of Glasgow	Association of lifestyle factors and pre-existing medical conditions with perinatal, childhood and maternal outcomes - a population-based linkage study	Approved	Tier 1 Review	104
<u>1920-0202</u>	Dr Chenqu Suo	University of Cambridge	Incidence of Chronic Recurrent Multifocal Osteomyelitis (CRMO) in the United Kingdom and Republic of Ireland	Approved with conditions	Tier 1 Review	23
<u>2021-0064</u>	Dr Frederick Ho	University of Glasgow	COVID-19 Infection and Subsequent Thromboembolic Events	COVID 19 Approved with recommendations	Tier 1 Review	25
<u>1920-0231</u>	Fiskani Kondowe	University of Manchester	EpiHealth Outcomes – The effect of maternal age, embryo cryopreservation and culture on perinatal outcomes and child health: Scottish Data Linkage Study. Secondary Analysis	Approved with conditions	Tier 1 Panel Meeting	24
<u>1819-0207</u>	Dr Linda Young	NHS Education for Scotland	Training in Practice intervention to Target Antibiotic Prescribing (TiPTAP)	Approved with conditions	Tier 1 Review	18
<u>1920-0010</u>	Onyema Ibe	Blake Stevenson Ltd	Evaluation of Primary Care Dementia Innovation Sites	Approved with conditions	Tier 1 Review	29

2021-0134	Dr Sharon Hutchinson	Public Health Scotland	Impact of COVID-19 on prisoners in Scotland	COVID19 Approved	Tier 1 Panel Meeting	7
2021-0025	Dr Satveer Mahil	Guy's and St Thomas' NHS Foundation Trust / King's College London	PsoProtect (Psoriasis Patient Registry for Outcomes, Therapy and Epidemiology of Covid-19 infection)	COVID19 Approved with recommendations	Tier 1 Panel Meeting	20
2021-0018	Dominic Cushnan	NHS X	National COVID-19 Chest Image Database (NCCID)	COVID19 Approved with recommendations	Tier 1 Review	22
2021-0148	Albert King	Scottish Government	The Scotland Coronavirus Model (Regression Modelling)	COVID19 Approved with recommendations	COVID19 rapid review panel	5
2021-0129	Albert King	Scottish Government	Carehomes Analysis	COVID19 Approved with recommendations	COVID19 rapid review panel	6
2021-0115	Professor Vittal Katikireddi	University of Glasgow	Early pandemic evaluation and enhanced surveillance of COVID-19 (EAVE II): additional analysis of ethnic inequalities	COVID19 Approved with recommendations	COVID19 rapid review panel	17
1920-0096	Dr George Greenhall	NHS Blood and Transplant	The safety of solid organ transplantation from deceased donors with a history of cancer	Approved	Tier 1 Panel Meeting	33
2021-0124	Dr Agnes Tello	University of St Andrews	Characterisation of COVID-19 outcomes in a high-risk cohort: Assessment of background levels of autoantibodies as a prognostic marker for severe COVID-19 infection	COVID19 Approved with recommendations	Tier 1 Panel Meeting	9
1920-0177	Dr Michael Fleming	University of Glasgow	Investigating whether in utero exposure to maternal medication is associated with adverse pregnancy outcomes and adverse health, neurodevelopmental and educational outcomes in offspring	Approved with conditions	Tier 1 Review	50
2021-0111	Professor Sarah Wild	University of Edinburgh/ NHS Lothian	ABCD audit of in-patients with diabetes and Covid-19	COVID19 Approved with recommendations	Tier 1 Review	18
1819-0231	Dr Melanie Turner	University of Aberdeen	Do patients who travel further present with more advanced head and neck cancer?	Approved with conditions	Tier 1 Panel Meeting	34

2021-0071	Dr Helen Brown	University of Edinburgh	Data extraction to inform Scottish COVID-19 Response Consortium: epidemiological modelling and Data-driven now-casting & forecasting of health-care resource requirements associated with COVID-19	COVID19 Approved	Tier 1 Review	27
1920-0014	Dr Chris Cardwell	Queen's University Belfast	Use of hormone replacement therapy and survival from cancer	Approved	Tier 1 Panel Meeting	9
1920-0158	Mary Abed Al Ahad	University of St Andrews	Climate Change, Air Pollution, and Ethnic Inequalities in Health: Analysis and Projection Based on Longitudinal Register Data from Scotland.	Approved with conditions	Tier 1 Panel Meeting	12
1819-0049	Dr Pia Hardelid	UCL Great Ormond Street Institute of Child Health	Air Pollution, housing and respiratory tract Infections in Children: National birth Cohort study (PICNIC) – Scotland	COVID19 Approved	Tier 1 Panel Meeting	7
1819-0287	Dr Christopher McGovern	University of Glasgow	Mortality and long term morbidity in survivors of burn injuries and acute pancreatitis	Approved	Tier 1 Review	58
1819-0344	Joanne McLean	ScotCen Social Research	Application for data linkage as part of the Evaluation of the Distress Brief Intervention Programme	Approved with conditions	Tier 1 Panel Meeting	11
2021-0127	Dr Lucy Teece	University of Leicester	UK-REACH: United Kingdom Research Study into Ethnicity And COVID-19 outcomes in Healthcare workers	COVID19 Approved with recommendations	Tier 1 Panel Meeting	6
2021-0193	Professor Rowland Kao	University of Edinburgh	Wastewater surveillance project (N-Wesp)	COVID19 Approved with recommendations	COVID19 rapid review panel	7
2021-0151	Dr Parvinder Aley	University of Oxford	Accessing Oxford COVID19 vaccine trial weekly swab data via NPEX/NHSDigital	COVID19 Approved with recommendations	COVID19 rapid review panel	4
2021-0181	Elaine Strange	Public Health Scotland	DAISy – Drug and Alcohol Information System	Approved with conditions	Tier 1 Review	22
2021-0119	Dr Serena Pattaro	University of Glasgow	Investigating socioeconomic, household and environmental risk factors for COVID-19 in Scotland	COVID19 Approved with recommendations	COVID19 rapid review panel	31

2021-0203	Professor Sharon Hutchinson	Public Health Scotland / Glasgow Caledonian University	Impact of COVID-19 on people who use and inject drugs in Scotland	COVID19 Approved with recommendations	Tier 1 Panel Meeting	7
2021-0029	Dr Nicholas Conway	NHS Tayside	The SCI-Guide quality improvement project	Approved	Tier 1 Review	26
1920-0189	Onyema Ibe	Blake Stevenson Ltd	Evaluation: implementation of the framework for the prevention, early detection and intervention of type 2 diabetes	Approved	Tier 1 Review	36
1819-0331	Leanne Banks	NHS State Hospital	The relationship between adverse childhood experiences, violence, empathy and psychosis within forensic settings	Approved with conditions	Tier 1 Review	14
1819-0091	Lynn McMahon	University of Glasgow	SteatoSITE	Approved with conditions	Tier 2 OOC	28
2021-0170	Dr Larry Doi	University of Edinburgh	FNP Insights Evaluation (COVID-19)	COVID19 Approved with recommendations	Tier 1 Review	32
2021-0108	Professor Helen Colhoun	University of Edinburgh	Risk factors and outcomes associated with positive and negative COVID-19 in rheumatology clinic attendees	COVID19 Approved with recommendations	COVID19 rapid review panel	6
1920-0188	Dr Katherine Forrester	SNBTS (National Services Scotland)	Account for Blood (AfB) Scottish Transfusion Epidemiology (STED)	Approved with conditions	Tier 1 Review	21
2021-0113	Dr Dasha Nicholls	Imperial College London	Incidence of Avoidant/Restrictive Food Intake Disorder (ARFID) in children and young people presenting to secondary care in the UK and Ireland	Approved	Tier 1 Review	23
1920-0137	Dr Matthew Northgraves	University of Hull	Leukaemia In Pregnancy Study	Approved	Tier 1 Review	30
2021-0004	Professor Emily Jefferson	University of Dundee	Provision of chest, abdomen and cardiac CT images for development of Artificial Intelligence (AI) algorithms to detect lung nodules and coronary artery calcification	Approved	Full Committee	44
1920-0078	Dr Samira Bell	University of Dundee	Incidence and outcomes of patients receiving renal replacement therapy admitted to the ICU/ HDU –	Approved	Tier 1 Review	98

			linkage with Scottish Intensive Care Society Audit Group (SICSAG) data.			
2021-0021	Professor Susan McVie	University of Edinburgh	A profile of problem drug users with Criminal Justice contact in Scotland	Approved	Tier 1 Panel Meeting	5
2021-0114	Su-Gwan Tham	University of Manchester	National Confidential Inquiry into Suicide and Safety in Mental Health (NCISH)	Approved	Tier 1 Review	20
1920-0196	Dr Kathryn Skivington	University of Glasgow	A systems approach to exploring syndemic health and social condition clustering among individuals who experience a drug-related death: developmental work for co-produced intervention(s).	Approved with conditions	Tier 1 Review	16
1920-0116	Ryan Ottridge	University of Birmingham	PD MED Trial - A Large Randomised Assessment of the Cost of Different Classes of Drugs for Parkinson's Disease	Approved	Tier 1 Panel Meeting	6
1920-0280	Dr. Amanj Kurdi	University of Strathclyde	Utilisation Trend and Clinical Outcomes of Antidiabetics in Type II Diabetes Patients in Scotland over the Period of 2010-2019: a multi-studies project	Approved	Tier 1 Review	10
1920-0073	Elizabeth Watt	NHS GGC & MSN CYPC	Teenage & Young Adult cancer Palliative Care: End of Life Care Audit	Approved	Tier 1 Review	15
2021-0234	Professor Tariq Ahmad	Royal Devon and Exeter NHS Hospital Foundation Trust	CLARITY IBD	COVID19 Approved	Tier 1 Review	13
1920-0262	Dr William Stewart	University of Glasgow	Football's Influence on Lifelong health and Dementia risk: Late Outcomes and Neuroradiology (FIELD:LONG)	Approved with conditions	Tier 1 Review	31
2021-0152	Professor Christopher E Brightling	University of Leicester	Post-hospitalisation COVID-19 study: a national consortium to understand and improve long-term health outcomes (PHOSP-COVID)	COVID19 Approved with recommendations	COVID19 rapid review panel	12
2021-0003	Michael Abbott	University of Aberdeen	Should Scotland Provide Whole Genome Sequencing for the Diagnosis of Rare Disorders?	Approved with conditions	Tier 1 Review	75
1718-0293	Professor Anthony Swerdlow	The Institute of Cancer Research	A cohort study of people with insulin-treated diabetes in the UK.	Approved with conditions	Tier 1 Panel Meeting	14
2021-0215	Dr Adrian Brown	University College London	Surveys to exploring the continued impact of coronavirus (COVID-19) on weight management and	COVID19 Approved	Tier 1 Review	18

			bariatric surgery services and people living with obesity including those accessing weight management and bariatric services in the UK.			
2021-0255	Hazel Dodds	Public Health Scotland	Scottish Cardiac Audit	Approved with conditions	Tier 1 Review	21
1819-0162	Dr Victoria Coathup	University of Oxford	Maternal Body Mass Index and Childhood Infection: a Data Linkage Study (MaBIL study)	Approved	Tier 1 Review	23
2021-0120	Professor Morag Treanor	Heriot-Watt University	Understanding Children's Lives and Outcomes Project 1 - Exploring context, factors and approaches to educational exclusions and absences	Approved with conditions	Tier 1 Panel Meeting	8
1920-0240	Anne Birch	Mental Welfare Commission for Scotland	Deaths in Detention Reviews Project (DIDR)	Approved	Tier 1 Panel Meeting	15
2021-0217	Dr Tanja Mueller	University of Strathclyde	Atrial fibrillation, stroke, and the use of oral anticoagulants in Scotland	Approved	Tier 1 Review	33
2021-0194	Danish Mahmood	NHS Digital	Inclusion of Scotland onto the Pelvic Floor Registry as part of the Surgical Devices and Implants System	Approved with conditions	Tier 1 Review	13
2021-0109 SR268	Professor Anthony Swerdlow	The Institute of Cancer Research	Generations Study (Breakthrough Breast Cancer UK Women's Cohort Study)	Approved with conditions	Tier 1 Panel Meeting	19
2021-0180	Professor Jill P Pell	University of Glasgow	Defining and understanding the longer-term effects of COVID-19: A mixed methods study exploring the frequency, nature, and impact of 'long COVID' in the Scottish population	COVID19 Approved with recommendations	COVID19 rapid review panel	33
2021-0302	Dr Annemarie Docherty	University of Edinburgh	National Burden of Paediatric COVID-19	COVID19 Approved with recommendations	COVID19 rapid review panel	7
2021-0241	Dr Till Hoffmann	Imperial College London	How can NCS healthcare data be connected with wastewater surveillance of COVID-19 in a privacy-preserving fashion to inform epidemiological models and democratise data access?	COVID19 Approved with recommendations	Tier 1 Review	17

Lay summaries for approved applications

1718-0293 Professor Anthony Swerdlow The Institute of Cancer Research

A cohort study of people with insulin-treated diabetes in the UK.

This is a large-scale follow-up study of risks of cancer and mortality in patients with insulin-treated diabetes aged under 50 (largely under 30) at diagnosis who were identified in the UK during 1972-1993. It is to our knowledge much the largest study worldwide to provide information on such long-term follow-up of risks of cancer and death in this important patient group, to inform patients, parents of children with type I diabetes, and clinicians.

1819-0049 Dr Pia Hardelid UCL Great Ormond Street Institute of Child Health

Air Pollution, housing and respiratory tract Infections in Children: National birth Cohort study (PICNIC) – Scotland

What is this research project about?

We will investigate to what extent exposure to air pollution during pregnancy and the first five years of life and poor housing conditions (such as overcrowding and damp/mould) contribute to hospital admissions and medicines dispensed for respiratory tract infections (RTIs) in children less than five years old. We will also examine the association between environmental, clinical and socio-economic risk factors for specific viruses causing RTIs including SARS-CoV-2.

Why are we doing this research?

RTIs, including bronchiolitis and pneumonia, are a key reason for healthcare contact in young children in the UK. They are the most common reason for hospital admission in babies, and three quarters of all antibiotics prescribed in primary care to children are for RTIs. We will examine whether exposure to air pollution in the womb or during early childhood, and poor housing conditions are associated with a child's risk of developing RTI symptoms requiring a drug prescription or hospital admission.

How are we going to do it?

We will use data collected from birth certificates, linked to maternity records, hospital admission, infection surveillance and community dispensing data for all children born Scotland between 1997 and 2020: approximately 1.4 million children in total. We will link in data about children's air pollution exposure during pregnancy and childhood, building characteristics, and information about housing and socio-economic background from the 2001 and the 2011 Censuses. The Census data will be linked to mothers giving birth between 2000 and 2002 for the 2001 Census and 2010 and 2012 for the 2011 Census.

We will use these data to examine whether exposure to air pollution and poor housing conditions are associated with an increased risk of being admitted to hospital with an RTI, or being prescribed an antibiotic or asthma medicine during the first five years of life. We will also examine the association between environment, socio-economic and clinical factors and the risk of testing positive for specific viruses causing RTIs, including SARS-CoV-2.

1819-0091
SteatoSITE

Lynn McMahon

University of Glasgow

Non-alcoholic fatty liver disease (NAFLD) is the commonest cause of liver disease, affecting 1 in 4 adults. However, not everyone with a fatty liver goes on to have serious liver problems; only about 20% progress to the more severe form, called non-alcoholic steatohepatitis (NASH), which can lead to liver cirrhosis (where healthy cells are replaced by scar tissue), liver cancer and premature death. Currently, we have no way of telling which people with NAFLD might develop NASH or cirrhosis and there are no medicines 'on the market' to treat this condition.

The crucial question is why does NAFLD progress in some people but not in others? The answer to this will lead to new diagnostic tests, and effective treatments.

To address this, we aim to build up a large group (n=1000) of NAFLD cases from across Scotland, using NHS liver samples that are no longer needed and collecting relevant clinical information from electronic health records. This information will help us to understand about: 1) the sort of liver damage that can develop in NAFLD ; 2) which genes are present in the liver as NAFLD gets more severe; and 3) how this relates to various health problems in people with NAFLD. We will keep this information in a secure database and analyse it using bioinformatics (an approach that uses computer science to understand biological data) in order to improve the care of people with NAFLD.

1819-0119
Medicine

Dr Holger W Unger

Liverpool School of Tropical

Holistic counselling and decision-making regarding mode of delivery for singleton breech babies in spontaneous preterm labour – building evidence from a large-scale Scottish retrospective birth cohort study

In Scotland most women labouring with one baby at or greater than 37 weeks ('term pregnancy') that presents breech (bottom or feet are nearest to the exit of the womb) are offered a caesarean section to deliver baby. The evidence for this practice comes from two big studies (clinical trials). These showed that term babies born by elective caesarean section (CS) were less likely to come to short term harm compared to those planning a vaginal delivery. A study using routinely collected Scottish education data found that CS in term babies also led to better school examination results.

There is great uncertainty regarding what to recommend to mothers who labour before 37 weeks (preterm labour) with a singleton breech baby. Researchers designed clinical trials but women opted not to join these studies. What clinicians are left with is information from studies looking at data collected routinely in hospitals (called cohort studies). These suggest that preterm singleton breech babies in labour who are delivered by CS do better in the short term. Long term outcomes (e.g. later health, school attainment scores) are poorly described, as are outcomes for very preterm babies (e.g. 24 weeks) or less preterm babies (e.g. 36 weeks).

We want look at how mode of delivery affected these children and mums both in the short and longer term in Scotland over the last 22 years. We also aim to identify clinical indicators of safety of one mode of delivery over another for a particular mother.

1819-0124 Dr Heather Clark University of Aberdeen
The Aberdeen Children of the 1950s cohort study - ongoing linkage to routinely collected healthcare data

The ACONF research database is made up of information collected both in a survey carried out on all primary school children in Aberdeen in 1962, and a follow-up of these children as adults by questionnaire in 2001. This information includes school test and medical records, data from birth records and information on their social circumstances. The 2001 questionnaire asked about their health and wellbeing; lifestyle; employment and family. These data have been enriched by linkage to data describing the environment in the 1960s and relating to their schools.

The ACONF research database has been used extensively by researchers investigating life course epidemiology and has been pooled with information from other cohorts. Increasingly projects also request to use data collected routinely through other sources, such as from the NHS.

We request that we hold a database of routinely collected data for this cohort (SMR 00 – outpatients, SMR 01 – inpatients and day cases, SMR 04 – mental health, SMR 06 – cancer registration, PIS – prescribing information), and the ACONF steering committee should manage access to this linked data to other researchers in the future. The IT and data management infrastructure are well established in Aberdeen and allow researchers to anonymously and securely investigate their hypotheses within Grampian Data Safe Haven. The approach of using routinely collected data has been discussed with members of the cohort at engagement events. The strong consensus was that it is the duty of researchers to use all the available data, including that routinely collected, for health and welfare research.

1819-0162 Dr Victoria Coathup University of Oxford
Maternal Body Mass Index and Childhood Infection: a Data Linkage Study (MaBIL study)

Less than half (45%) of pregnant women living in Scotland in 2019 were a healthy weight during the first trimester. Although most children born to women who are underweight, overweight or obese will be a fine, some are more likely to experience health problems, such as asthma and diabetes, when they grow up.

A small number of studies have looked at whether children born to mothers who are not a healthy weight will experience higher numbers of infections when they are children and teenagers. The findings might not be relevant to mothers and children in the UK because these studies either: included small groups of children, which means results might not be reliable; were carried out in another country; or because of the way the information was collected. To answer our questions, we need to carry out a study that includes a large number of mothers and children from the UK.

There are also other factors that mean children might be more or less likely to get infections, such as: breast or bottle feeding; caesarean-sections; a child's body weight; and if their mother took antibiotics while she was pregnant.

The aims of this study are to:

- 1) Compare the number and types of infections in children who are born to mothers who are underweight, normal weight, overweight and obese.
- 2) Investigate if breastfeeding, caesarean sections, antibiotics and a child's weight lead to children being more or less likely to get infections.

1819-0207 Dr Linda Young NHS Education for Scotland
Training in Practice intervention to Target Antibiotic Prescribing (TiPTAP)

Dentists prescribe 8% of antibiotics dispensed in community pharmacy. Despite national prescribing guidance (SD1), dentists often prescribe antibiotics unnecessarily.

It is known that using national data to provide dentists with individualised graphical feedback depicting their antibiotic prescribing rates can lead to a reduction in dentists' antibiotic prescribing (SD2). One potential way of increasing the impact of this type of feedback is to deliver it in conjunction with in-practice training, but the evidence is currently uncertain.

In Scotland, as part of their NHS inspection requirements dental practices undertake in-practice infection control (IC) training every three years, delivered by NHS Education for Scotland's Quality Improvement In-Practice Training (QiiPT) team. The QiiPT team have developed an antibiotic prescribing component, which includes graphical feedback of practice-level antibiotic prescribing data for possible inclusion within the existing IC training.

This proposal aims to evaluate the impact of the antibiotic prescribing training component in addition to the receipt of individualised graphical feedback. In order to do so, practices will be randomly allocated to receive the antibiotic prescribing component or not as part of their IC training. In addition, dentists in all practices that request in-practice IC training over a period of 12 months will be provided with individualised graphical feedback generated from national dental prescribing and course of treatment data at 0, 6 and 12 months.

The primary outcome is dentist antibiotic prescribing rates measured using national data. This will be measured at baseline and at 6 and 12 months after the training session. Secondary outcomes are rate of amoxicillin 3g dispensed and the rate of broad spectrum antibiotics (clindamycin, co-amoxiclav, clarithromycin, cefalexin, and cefradine) dispensed. These will be measured at baseline and at 6 and 12 months after the training session. The consistency and adherence of the delivery and receipt of the antibiotic prescribing component will be measured using a brief questionnaire after the training session is completed.

1819-0231 Dr Melanie Turner University of Aberdeen
Do patients who travel further present with more advanced head and neck cancer?

Rural patients with head and neck cancers may have significantly worse survival than those who live closer to a hospital. Patients with lung and bowel cancers who live far from a hospital have been shown to have a worse prognosis than those living nearer a hospital, despite starting treatment more quickly. This could be because they have more advanced disease when they first present at the hospital.

Head and neck cancers present differently to most other cancers, usually with painless ulcers in the mouth and throat. Therefore, the negative rural effect may be stronger in this group of patients because their disease can become more advanced before presentation. Identifying this effect, and understanding the strength of this effect, will help us to design referral pathways in the future which minimise the disadvantage suffered by rural patients.

1819-0266 Dr Melanie Turner University of Aberdeen
Interactions between cancer and stroke: A national electronic data linkage study

Both stroke and cancer are common and can have a devastating impact on a person's life and family. This is much worse if they have both conditions together, raising difficult questions about best treatment and most likely outcome. There is a lack of research investigating the impact of stroke and cancer for people suffering with both but it is a very important area which needs to be researched further. National datasets on cancer, stroke, hospital admissions, economic and social status, medication prescribing, health board performance targets, and death will be linked to create the first extensive and novel research database of patients with both cancer and stroke. We will research: the risk of stroke in cancer patients, the risk of cancer in stroke patients, the effect of a cancer diagnosis on stroke treatment and outcome, and the effect of a stroke diagnosis on how cancer is managed and treated. This project will allow us to recommend personalised treatment and medication plans, based on real life data, for patients suffering from both diseases. This will lead to better informed decisions, improved patient management and a reduced burden on the National Health Service.

1819-0284 Professor Colin McCowan University of St Andrews
HDRUK - MurMur- Comorbidities Study

More people are living into older age but it is now common for them to have more than one disease or condition, which we call multimorbidity. However, the exact scale of multimorbidity is difficult to understand because of the many ways that people try to measure it. We know that different groups of people may have different levels and types of multimorbidity so it is important to look at large populations to determine the number of people affected.

We plan to work with researchers across the UK bringing together 6 different datasets which hold pseudonymised information on over 15m people. This information will allow us to explore multimorbidity in the UK at a scale never done before. Researchers and some members of the general public will inform what diseases and conditions to look at and how to identify them using the available data.

We will use these data to find out more about what diseases and conditions are found together, how they develop as people age and also which cause the most problems for people and the health service. This will allow researchers and health care workers to better plan how to deliver care to people with various types of multimorbidities.

The first stage of this is to look at the data we hold on the Scottish population so that we can identify how much multimorbidity there is and accurately compare it against the populations from elsewhere in other datasets.

1819-0287 Dr Christopher McGovern University of Glasgow
Mortality and long term morbidity in survivors of burn injuries and acute pancreatitis

Burn injuries are often life changing with many patients suffering persistent pain, mobility problems and loss of independence. Psychological problems such as depression, anxiety and post-traumatic

stress disorder (PTSD) can occur not only from the acute injury, but also the treatment required and sometimes disfiguring scars.

The consequences of burn injuries extend beyond the skin and tissues damaged, damaging other organs which can require prolonged stays in intensive care.

Existing research has shown that survivors of burn injuries have a shorter life expectancy, with an increased risk of dying from heart problems, strokes and infections. This may be due to ongoing effects on the body long after the initial burn injury.

We aim to investigate the long-term health effects of sustaining a burn injury by comparing these patients to two groups; patients admitted to hospital with pancreatitis and patients from the general population.

Pancreatitis is a condition with similar effects on the body as a burn. Inflammation of the pancreas can result in damage and failure of other organs including the lungs, heart and kidneys. Such an illness may have similar long-term effects on the body, but no research to date has asked this question.

We want to better understand why individuals that survive a burn have such long lasting consequences. By comparing these groups, we will better understand whether these effects are common among patients with a similar inflammatory disease, or are these effects unique to burn injuries?

1819-0297 Professor Jürgen Haas University of Edinburgh
VIRADE

A group of researchers in Taiwan (Tzeng et al. 2018) recently reported that aggressive antiviral medication reduced the subsequent incidence of Alzheimer disease in patients presenting with severe virus infections (predominantly herpes simplex virus 1 and 2). This single study has not yet been replicated.

Because of potential implications for the management of Alzheimer disease, a condition for which no effective medications are available, our objective is to confirm or refute this finding by studying patient groups in Scotland. In addition, we will compare the association of anti-herpes viral medication and Dementia with the association of anti-herpes viral medication with Parkinson Disease (PB).

1819-0300 Dr Rachael Wood Public Health Scotland
Autistic Spectrum Disorder and associations with literacy skills at the start of primary school

Evidence suggests that older children with Autism Spectrum Disorder (ASD) have poorer reading skills, particularly in comprehension (Ricketts 2011), and this varies depending on the severity of ASD (MacIntyre, 2017). Less is known about early literacy skills, and whether these differ from children without ASD. Educational failure has been associated with a range of poorer health and social outcomes (Marmot, 2005). If we can support children with ASD to achieve better literacy skills,

leading to greater educational attainment, we have the opportunity to positively influence health over the life course.

This study will bring together detailed information on literacy in early primary school, collected over a period of four years in Edinburgh City Council schools, along with socio-demographic data about the children who took the assessments, and combine this with health data about ASD diagnosis and other conditions which may affect the children's development e.g. low birth weight, and brain injury. Once linked securely through the safe haven, these data will be explored to tell us more about the early reading skills on children with and without ASD, and what other factors may lead to different abilities.

1819-0331 Leanne Banks NHS State Hospital
The relationship between adverse childhood experiences, violence, empathy and psychosis within forensic settings

In the past, studies have shown that the experiences that individuals have when they are children can have an impact on their physical health and psychological wellbeing as adults (Anda, Butchart, Felitti, & Brown, 2010; Felitti, 2002; Felitti et al., 1998). Some research has shown that adverse childhood experiences such as abuse, neglect or household dysfunction increase the chances of a person perpetrating violence when they are an adult (Gratz et al, 2009; Denney et al, 2006). Similarly, links have been identified between these variables and symptoms of psychosis and levels of empathy (Varese et al, 2012; Parlar et al, 2014). In Forensic Mental Health services, there are often high levels of violence, and high numbers of people who have experienced trauma in their childhood.

It is important to identify what contributes to violent incidents within forensic services in order to minimise and manage risk to staff and service users and to help target interventions to reduce violence and associated distress; therefore, this study aims to explore the relationship between Adverse Childhood Experiences and violence whilst also exploring whether symptoms of psychosis and level of empathy may mediate this relationship.

Over 12 months, data will be extracted from the pre-existing census data and patient case-notes for all patients who were involved in the 2013 census. Participants will all have been detained across the Forensic Network. Approval will be obtained to access, review and collate the 2013 census data, service user case-notes and the NHS incident record keeping system (DATIX) to obtain information relating to adverse childhood experiences, violent incidents and data relating to symptoms of psychosis and empathy.

1819-0344 Joanne McLean ScotCen Social Research
Application for data linkage as part of the Evaluation of the Distress Brief Intervention Programme

A study to explain how a short intervention for people with emotional distress affects them and frontline emergency/health services.

The Scottish Government wants to reduce suicide rates and improve mental health in Scotland, so has asked for a short intervention to help people who are looking for help while experiencing distress to be developed. This programme is called the Distress Brief Intervention (DBI) and has two

stages. Firstly, it offers training to frontline staff (e.g. NHS staff, police officers) who may be trying to help the person in distress, but currently have little time and few ways of supporting the person beyond emergency treatment. The second stage provides a practical option for frontline staff to steer the person in distress to specialist organisations who help people with poor mental health. The specialist organisation will contact the person in distress within 24 hours and offer support on an individual basis in the community for up to 14 days. During stage 2, support workers will work with the person who has experienced distress to: develop a plan for how they will manage future feelings of distress; help them find out about and start taking part in ongoing community support.

Through this study, which is funded by the Scottish Government, our research team wants to find out what has worked well in delivering the DBI Programme and what might need to be done differently. We will also consider whether and how the DBI Programme has made any difference to the individuals who have been involved. To give us the information we need, people who were offered support by the DBI Programme have completed evaluation questionnaires and staff and individuals have taken part in interviews.

1920-0010 Onyema Ibe Blake Stevenson Ltd Evaluation of Primary Care Dementia Innovation Sites

Commitment 2 of Scotland's 2017-20 National Dementia Strategy states that the Scottish Government will test and independently evaluate the relocation of post-diagnostic dementia support (PDS) services in primary care hubs as part of the modernisation of primary care.

The Scottish Government has commissioned Blake Stevenson to undertake an evaluation of the three 'innovation sites' that are testing the delivery of PDS in primary care hubs. These innovation sites are run by NHS Dumfries & Galloway (Nithsdale), NHS Lothian (East Edinburgh), and NHS Shetland.

The study will involve fieldwork in each area to interview the NHS innovation site project manager/lead, staff delivering PDS from NHS and voluntary sector organisations, service users (including people with dementia/mild cognitive impairment (MCI) and unpaid carers), local partners and collaborators, and national stakeholders. Interviews with people with dementia and carers will be conducted by phone or via a web-based tool (Microsoft Teams), depending on the preference of the interviewee. Interviews will collect information about interviewees' views and experience of PDS.

We will also analyse anonymised data collected by the innovation sites about the uptake and experience of post-diagnostic support.

1920-0014 Dr Chris Cardwell Queen's University Belfast Use of hormone replacement therapy and survival from cancer

Hormone replacement therapy (HRT) is widely used and has proven benefits in women with menopausal symptoms. The role of oestrogen in cancer development and progression is complex. Recent studies have suggested HRT could be protective in women with melanoma, colorectal and liver cancer. In contrast, there have been concerns that HRT could accelerate cancer progression in women with lung, bladder, gastric, and brain cancer. Consequently, some researchers have recommended against using HRT in women with these cancers. However, epidemiological studies

have not investigated the survival of women using HRT after diagnosis of most cancers and therefore the safety of HRT use in cancer patients remains unclear.

Our objectives are to determine the association between HRT use after cancer diagnosis and cancer-specific mortality in patients with common female cancers, excluding breast cancers. Analyses will be conducted in cohorts of cancer patients from England, Scotland and Wales identified from cancer registries with linked medication and national mortality data.

1920-0029
Scale Up BP

Dr Janet Hanley

Edinburgh Napier University

In Scotland blood pressure (BP) monitoring accounts for 1.2 million primary care appointments annually. Reducing high BP decreases cardiovascular disease. However, BP checked by patients at home is more accurate than when checked by doctors or nurses in the surgery. The Scale Up BP service aims to improve the quality of BP monitoring and management by allowing patients to measure their own BP at home and electronically report it to their practice. In the current COVID19 emergency it could support remote management of BP.

In the pilot phase people found Scale Up BP helped them manage their BP more effectively. This should lead to reduced rates of cardiovascular disease but this is difficult to measure without a matched comparison group. This project therefore aims to use anonymised data to compare rates of hospital admission for cardiovascular disease for Scale Up BP users with multiple matched patients from GP practices which do not offer this service yet. It will also compare patterns of service use before and during the current covid19 pandemic.

We will ask up to 200 GP practices to share a limited amount of information about their patients with high BP with the NHS research data service eDRIS, collected by software supplied by Albasoft. EDRIS will link the data to hospital admission records and (for those patients who use it) Scale up BP records. They will then anonymise the records and transfer them to the national safe haven which does not allow any data to be copied or taken away. The researchers will analyse the anonymised dataset to develop and test methods of measuring the impact of Scale Up BP.

1920-0037

Professor Emily Jefferson

University of Dundee

A transfer of image data held by NSS / eDRIS from the Scottish Medical Images (SMI) Database to the Tayside safe haven environment for the consented Tayside and Fife participants from the GoDARTS and GoSHARE cohorts (combined as GoFUSION)

This proposal relates to the transfer of identifiable image data for consented Tayside and Fife participants from the GoDARTS and GoSHARE cohorts (combined as GoFUSION), currently held by Public Health Scotland (PHS) from the Scottish Medical Images (SMI) Database to the Health Informatics Centre (HIC) Regional Safe Haven environment. GoFUSION is a research cohort with consent from individual patients in Tayside and Fife to link their routinely collected health data and use for research.

The HIC Regional Safe Haven now has an existing feed (with appropriate Caldicott approval) to obtain images for this cohort from the 'local' NHS Tayside PACS system, with plans to set up a similar live feed for NHS Fife images in future. However, routinely collected images like these are archived

to the National Picture Archive Communication System (PACS) after approximately 9 months. The images requested in this PBPP application are for historical images (captured > 9 months ago) from the National SMI data i.e. those images no longer stored on the local NHS Tayside PACS system.

Once transferred from SMI to HIC, the GoFUSION images will be further linked with other existing data (including genetic data) held at HIC. Anonymised images will be made available for many research projects using the GoFUSION cohort via the existing data access and governance processes.

There are for example 2 existing funded projects which require this GoFUSION imaging data to work on now. Both are components of the Interdisciplinary Collaboration for efficient and effective use of clinical images in big data health care REsearch (PICTURES), a 5-year programme grant:

- Exemplar 2 of PICTURES requires these images to train an Artificial Intelligence (AI) algorithm to predict Dementia (linking to genetic data and other Electronic Health Record data).
- The core PICTURES workstream needs the images to develop the functionality of cohort hosting, building and de-identification software within a regional environment, to ensure that it mirrors the National safe haven process and can pass back any learnings/improvements from that.

1920-0048 Professor Andrew Evans University of Dundee
MEDICI (Mammographic Predictors of Cancer Recurrence after Breast
Conservation and Adjuvant Endocrine Therapy)

Female hormones can help some breast cancers to grow. So most women who have had breast cancer are put on endocrine therapy such as tamoxifen which stops oestrogen from helping the cancer to grow. However in many women the cancer comes back while they are on endocrine therapy. Often we learn too late that the treatment wasn't working so we need to know much sooner whether it's effective.

We can tell from mammograms how dense a woman's breast tissue is. For some women their breasts become less dense while they are on endocrine therapy. We think that might mean that the treatment is working. We think if a woman's breasts remain dense while on treatment, her cancer may be more likely to come back. The aim of this study is to prove whether a reduction in breast density really does mean that the endocrine therapy is keeping the cancer away.

We have identified 2000 women who have been recruited into a research project called Mammo50. These women are all over 53 years old, have had a lump removed and they are on endocrine therapy and did not have chemotherapy.

We want to transfer their mammograms to a central imaging centre and use a computer and radiologists to assess if the breast tissue has become more or less dense.

The progress of these women are then followed so that we will then see if a change in density of the breast tissue is related to the effectiveness of the endocrine therapy.

National Prospective Cohort Study and Surveillance of Sympathetic Ophthalmia in the United Kingdom In association with the British Ophthalmological Surveillance Unit (BOSU)

Sympathetic Ophthalmia is a very rare but important and potentially blinding complication of surgery and ocular injury. There is no contemporary agreed, uniform agreement regarding its prevention and optimal management in the United Kingdom.

The light-seeing part of the eye known as the retina. Sympathetic Ophthalmia is an eye disorder condition where the body produces an immune reaction and attacks the healthy retinal cells of the fellow eye. In this condition, the retinal cells stop working normally and the healthy eye can lose vision as it becomes damaged by the body's immune reaction. The name of Sympathetic Ophthalmia condition is due to the healthy fellow eye "sympathising" after a period of time following ocular surgery or eye injury to the surgically affected, or traumatised that represents the inciting eye.

However, despite increasing population and increasing surgical volumes, there is a professional medical impression that the numbers of patients with Sympathetic Ophthalmia may not be greatly increased. Vitreoretinal surgery is an operation carried out for complications of the retina, and there is a professional medical opinion that causes of Sympathetic Ophthalmia are less likely to be related to vitreoretinal surgery.

Vitreoretinal surgery is a common operation performed for disorders of the jelly inside the eye "vitreous" and disorders of the light seeing part of the eye "retina." Sympathetic Ophthalmia remains a primarily clinical diagnosis with no uniform agreement regarding its optimal management.

In the last 20 years, there have been many new changes in clinical diagnostics and standard ophthalmic practice would potentially improve the accuracy of making the diagnosis of Sympathetic Ophthalmia. These modern changes in hospital care can help further refine the true incidence rates. Our study will explore these real-world aspects of the clinical management.

For a patient who requires complex and repeated vitreoretinal procedures for their eye disease, the decision to proceed with an additional operation(s) can be decided solely by the risk of Sympathetic Ophthalmia. It is recognised that some patients decline further eye operations due to the risk of Sympathetic Ophthalmia. In our planned study, we aim to establish a contemporary and more accurate and truer risk of Sympathetic Ophthalmia risk. This study may in fact show that Sympathetic Ophthalmia is not directly related to multiple vitreoretinal surgery interventions. Ultimately, we aim to demonstrate a lower patient risk of Sympathetic Ophthalmia would lead to patient benefit as they would then more safely proceed with sight-saving eye surgery.

In our study, a review of the records of patients in the United Kingdom with a new diagnosis of Sympathetic Ophthalmia will be undertaken. The study will be coordinated by the Royal College of Ophthalmologists, British Ophthalmic Surveillance Unit, who will assist us in collecting all new cases of Sympathetic Ophthalmia in current clinical practice using an established case-reporting system for hospital specialists. We will aim to try to make clear what the factors causing it the condition, and whether it is linked to a particular type of surgery, eye procedure, or eye injury.

1920-0073 Elizabeth Watt NHS GGC & MSN CYPC
Teenage & Young Adult cancer Palliative Care: End of Life Care Audit

The MSN CYPC want to identify if there are gaps in palliative and end of life care for teenagers and young adults (TYA) age 15 – 24 years and 364 days in Scotland and their carer's. It is envisaged this information will facilitate the development of age specific palliative and end of life care initiatives in order to respond to emerging need and plan future care for patients, families and carers.

In phase one of this work the MSN CYPC obtained aggregated data from Public Health Scotland (PHS) for deaths in Scotland of sixty-four TYA 15 – 24 years with a cancer diagnosis from January 2014 until December 2016. In phase two the MSN CYPC would like to access non-aggregated data from the same cohort of deceased TYA identified by PHS in the phase one.

The e-DRIS application is requesting approval from the PBPP to obtain CHI numbers from PHS for those TYA identified previously by PHS in phase 1. The e-DRIS application also seeks permission to request and access the identified patient health records, hard copies and electronic, in the relevant health boards and GP practices in order to conduct an audit, collecting information indicating if; the patient and carer's palliative and end of life care needs were identified and assessed, the patient had an electronic anticipatory care plan and if the patient's preferred place of death was achieved. These characteristics of care are defined in Paper 1. the Strategic Framework for Action on Palliative and End of Life Care as key objectives to achieve for all people in Scotland (Scottish Government 2015).

1920-0078 Dr Samira Bell University of Dundee
Incidence and outcomes of patients receiving renal replacement therapy
admitted to the ICU/ HDU – linkage with Scottish Intensive Care Society Audit
Group (SICSAG) data.

Chronic kidney disease (CKD) is an increasing health problem, due to increased rates of high blood pressure, type two diabetes and increasing age. The number of people who suffer from end stage kidney disease (ESKD) requiring renal replacement therapy (RRT), in the form of dialysis or kidney transplant, at any one time in the population continues to rise. These people often have an increased burden of other health problems that mean they are more likely to need admission to an intensive care unit (ICU) or high dependency unit (HDU).

The Scottish Renal Registry (SRR) routinely collects data on individuals with ESKD and the Scottish Intensive Care Society Audit Group (SICSAG) collects data on patients who are admitted to Scottish ICU/HDUs.

Currently we lack studies that assess outcomes for people with ESKD admitted to ICU/HDU. We propose performing data linkage between the SICSAG and SRR. This will allow us to describe the population of people with ESKD who receive RRT that are admitted to ICU/HDU and to assess what their short and long term survival is. This is important as it will provide healthcare professionals with important information about patient outcomes that may influence future medical practice but that can also be used to inform patients who receive RRT and are admitted to ICU/HDU. This work will also provide us important information about whether there is any variation in practice across regions of Scotland and any differences in practice that result in a difference in patient outcomes (positive or negative) can be used to change practice and benefit future patients.

1920-0083 Linsey Galbraith Information Services Division (ISD)
Scotland, NHS National Services Scotland (NSS)
Weight Management Core Dataset Reporting

This proposal relates to the central submission, processing and reporting of new data currently being collected by individual NHS Boards from their commissioned tier 2 (targeted lifestyle weight management interventions) and tier 3 (specialist NHS) weight management services. Note: the tier 2 services commissioned by Boards include NHS, local authority, commercial/private sector and voluntary/third sector delivered provision.

A core dataset for weight management services was introduced in October 2019 to record all new referrals over a fixed test period from 1st October 2019 to 31st March 2020. The data requirements were issued by the Scottish Government to NHS Board Healthy Weight Leads on 2nd October 2019, on behalf of the National Type 2 Diabetes (T2D) Oversight Group (see 2.4).

The dataset aims to support the evaluation of both the Type 2 Diabetes Prevention, Early Detection and Early Intervention Framework and the Standards for the Delivery of Tier 2 and Tier 3 Weight Management Services for Children, Young People and Adults in Scotland.

A copy of the core dataset will be provided to ISD via Healthy Weight Leads in each of the NHS Boards. ISD will validate the data and process a cumulative national dataset. ISD will undertake analysis of the file to produce aggregate outputs comprising a Scotland level report, along with tailored feedback reports for each individual NHS Board, by August 2020.

The reports will incorporate data completeness/compliance summaries and will begin to evidence variations in access to and the effectiveness of weight management services across Scotland. The dataset incorporates standard definitions that offer the possibility to answer key questions on the range of services offered, the users of those services and the outcomes achieved. For example:

- How many individuals in Scotland are being referred to weight management services and which interventions are proving most effective?
- What are the outcomes for individuals including average weight loss?

And; in the context of diabetes prevention:

- Are services succeeding in reaching higher risk groups and vulnerable communities?

1920-0088 Dr Iain Atherton Edinburgh Napier University
What is the health and social circumstances of military veterans in Scotland? A
data linkage study

The veteran population is potentially vulnerable. The transition from armed forces to civilian life represents a marked change as military personnel move away from previous support structures whilst facing the upheavals of changing occupation and residential relocation. These changes occur for many at a stage in their life course with many years of active life ahead. For some, this transition might be especially challenging given health problems resulting from the physical and psychological trauma resulting from conflict. There are potential groups that are especially vulnerable. Sub-sections of the veterans' population have been demonstrated to have different outcomes with regard to health, with those who served for very short periods of time having poor mental health outcomes (Bergman et al., 2016). The veteran population is projected to decrease in numbers over the coming decade. However, notably the proportion who are of working age are anticipated to increase (ONS, 2019). That the government, UK and Scottish, sees the wellbeing of the veteran

population as a key concern has been demonstrated by the publication of a Veterans' Strategy (Armed Forces Covenant, 2018). This strategy sets out to address the needs of veterans across the UK over the coming 10 years. These needs include the development of data resources (to which this proposed study will contribute) as well as more substantively to addressing wellbeing in six themes each of which will be addressed in analysis resulting from the study proposed in this application. The six themes are as follows: (1) community and relationships; (2) employment, education and skills; (3) finance and debt; (4) health and wellbeing; (5) making a home in civilian society; and (6) veterans and the law. Little data exists that enables information about veterans. This study sets out to address this gap whilst broadening understanding of the social circumstances of veterans in Scotland.

1920-0091 Jane Robertson University Hospital Southampton
NHS Foundation Trust & Southampton Clinical Trials Unit, University of
Southampton
FORECAST

The FORECAST Trial assesses a new non-invasive test, looking at blood flow in the vessels around the heart.

The most common test to show heart arteries is called an invasive coronary angiogram. This provides a picture of the coronary arteries highlighting narrowings that may cause problems. The angiogram doesn't tell doctors how easily blood can flow through the arteries. Reduced blood flow can cause symptoms and damage to the heart muscle. A device called a 'pressure wire' is used to assess blood flow. It involves threading a small tube into the heart artery to measure the pressure across a narrowing. This allows doctors to create a treatment plan for each patient and only treat narrowings that reduce blood flow.

Developments in technology mean that pictures of the heart arteries can now be taken using a CT (computerised tomography) heart scanner. This is more convenient and less invasive for patients. Until recently, CT has been unable to provide additional information about whether heart arteries are restricting blood flow. A company called HeartFlow Inc[®], have developed new software that allows a computer to generate information called FFRCT (Fractional Flow Reserve). The CT scan then not only give results about the size and shape of the blood vessels around the heart but also calculates how well they function, by measuring the flow of blood.

FORECAST will compare two ways to manage patients undergoing testing for suspected problems in the heart arteries Routine testing versus testing with CT + FFR.

1920-0096 Dr George Greenhall NHS Blood and Transplant
The safety of solid organ transplantation from deceased donors with a history of
cancer

Organ donation carries a small risk of transmitting cancer from a donor to the recipient of one of the donor's organs. The risk of cancer transmission is not the same for all types of cancer. For some patients, staying on the waiting list is also risky. Many lives have been saved by performing transplants from donors with a history of cancer, but it is likely that many more opportunities have

been missed. Spreading cancer in this way is extremely rare, and transplant specialists take all possible steps to prevent it.

However, as the UK population ages and cancer care improves, more people with a history of cancer and being considered as potential organ donors. It is therefore important to gain a better understanding of the risk of donor transmitted cancer (DTC), what can be done to reduce the risk, and how it can be treated. We aim to examine the safety of solid organ donation from deceased donors with a history of cancer in the United Kingdom. We will link data from national transplant and cancer registries to analyse detailed information on many organ donors and recipients and estimate the risk of cancer transmission as accurately as possible. This will help to provide the best evidence available to doctors and patients, who often face difficult, time-critical decisions in the course of their care.

1920-0097 Professor Scott Nelson University of Glasgow
Association of lifestyle factors and pre-existing medical conditions with perinatal, childhood and maternal out-comes - a population-based linkage study

Adverse health behaviours such as smoking, alcohol and drug misuse show strong social patterning and interventions to influence these behaviours may reduce health inequalities and improve health. Early intervention is a priority, with a focus on pregnancy and preconception as the most effective time to intervene. During pregnancy, women are concerned about their baby's health and are in frequent contact with their healthcare provider making this a powerful "teachable moment" for promoting positive behavioural change. Despite some evidence for the efficacy of individualised interventions addressing these behaviours, these may conversely lead to a widening in health inequality and may furthermore be impeded by factors such as lack of resources and time.

Recent whole population interventions such as smoke-free legislation, minimal unit pricing for alcohol, and alcohol abstinence in pregnancy advice have the potential to improve maternal lifestyle choices, modify the risk profile of pregnancy and impact on childhood development. We will investigate the impact of adverse lifestyle choices, the population level interventions employed to address these, and other maternal comorbidities on pregnancy and offspring outcomes using natural experiments on an unselected cohort of mother-infant pairs. A whole population approach is required if these natural experiments are to be robust in assessing impact at a population level using appropriate statistical methods to ensure results are minimally affected by confounding or bias.

The translational nature of this research will influence future policy and direct practice. This work will provide new, globally relevant information which will facilitate effective, shared, informed decision making.

1920-0116 Ryan Ottridge University of Birmingham
PD MED Trial - A Large Randomised Assessment of the Cost of Different Classes of Drugs for Parkinson's Disease

Parkinson's Disease (PD) is a common cause of chronic disability in the elderly. Parkinson's UK estimates that in 2018, 145,519 people in the UK were diagnosed with PD with the prevalence increasing as the population ages. PD has no cure - its motor symptoms have long been treated with Levodopa (LD); however, long-term and/or high-dose LD usage is associated with involuntary movements. Currently, there are other medications used to treat PD patients' motor symptoms,

either alone or with reduced doses of LD, with hopes that this delays the onset of LD's involuntary movements or controls later worsening motor symptoms. These new medications belong to different classes of drugs: dopamine agonists (DA), monoamine oxidase type B inhibitors (MAOBI) and catechol-O-methyltransferase inhibitors (COMTI). Although studies have suggested that these new medications are beneficial, there still remains uncertainty regarding their effectiveness.

Thus, the PD MED trial was initiated. Patients with Early Disease were randomised between DA, MAOBI and LD alone, with the option to omit either MAOBI or LD. Patients with Later disease, which couldn't be controlled with the initial class of drug despite increased dose titrations and/or addition of LD, were randomised between COMTI, MAOBI and DA, with the option to omit either MAOBI or DA.

PD MED's objective is to determine the relative cost-effectiveness of the different classes of PD medications in treating Early and Later disease PD patients.

Long term follow-up data from these patients, especially death data, is essential in assessing the safety and cost-effectiveness of these different treatments.

1920-0137 Dr Matthew Northgraves University of Hull
Leukaemia In Pregnancy Study

Acute leukaemia (AL) is an aggressive but potentially curable cancer that can affect women of childbearing age. When a pregnancy is complicated by a diagnosis of AL, clinicians face a complex dilemma: to balance risking the mother's survival through delaying treatment, against the potential harm to the foetus through exposure to cancer drugs. Reports suggest that, providing the first trimester is avoided, successful treatment of AL during pregnancy is possible, and considered safe. However, there is currently no standard approach to treatment of these women.

This observational study aims to monitor and record the current treatment and outcomes of patients diagnosed with acute leukaemia during or prior to pregnancy. Patients will receive the treatment recommended by their doctor. This study will establish a new research database of Leukaemia in Pregnancy, collecting data from cases since August 2009, and any new cases that are diagnosed during the current funding period.

The initial analyses will enable more robust, evidence-based recommendations to be made on how to monitor and manage these patients, and will add value to and improve the existing British Society for Haematology (BSH) guidelines (Ali et al 2015) [Included], which were largely derived from expert opinion. This should enable healthcare professionals to have greater confidence in managing these patients, leading to a more standardised approach to providing high quality care. The study will benefit NHS Trusts and patients across the UK through more informed clinical decision making with regards to the care they receive.

1920-0158 Mary Abed Al Ahad University of St Andrews
Climate Change, Air Pollution, and Ethnic Inequalities in Health: Analysis and
Projection Based on Longitudinal Register Data from Scotland.

Air pollution and extreme weather events (e.g. heat waves and cold spells; flooding) are increasingly common and have become part of our lives in the 21st century. Little research (if any) has examined

whether and how environmental effects on population health vary by race and ethnicity. Our project aims to study the effects of air pollution (using yearly concentrations of No₂, So₂, PM₁₀, PM_{2.5}, Ozone, and CO) and extreme weather changes (hot and cold temperature and relative humidity on a monthly basis) on mortality and hospital admission across the general population and by ethnic sub-groups in Scotland. The study will use individual-level data from the Scottish Longitudinal Study (SLS), which include information on socio-demographic characteristics and residential postcodes of individuals and their cause-specific deaths in Scotland. We will link these data based on individual's postcodes to weather data from the MetOffice and air quality data from DEFRA, at a 1x1 km spatial resolution. Also, we will use eDRIS services to link hospital admission SMR01 data on acute and inpatient hospitalisations to the SLS data using the CHI patient identification.

The project will apply random-effects and spatial survival models with time-varying contextual variables to study environmental effects on mortality and hospital admissions. Additionally, the study will project hospital admissions and mortality levels based on various assumptions of future weather changes and the levels of environmental pollution using microsimulation technique.

1920-0177 Dr Michael Fleming University of Glasgow
Investigating whether in utero exposure to maternal medication is associated with adverse pregnancy outcomes and adverse health, neurodevelopmental and educational outcomes in offspring

Use of medicines during pregnancy is avoided where possible but is unavoidable for some chronic conditions. Medications may also be required for acute conditions occurring throughout pregnancy. Whilst the acute adverse effects following fetal exposure in utero have been assessed for several medicines, the possible longer-term adverse effects following in utero exposure on the developing foetus, in particular educational outcomes and neurodevelopmental delay, are not well understood and remain largely unstudied.

Pregnancy is a vulnerable period during which the fetus undergoes rapid development. Exposure to adverse risk factors can therefore have lifelong health and wellbeing implications. Most randomised controlled drug trials exclude pregnant women because of ethical concerns. Therefore, we lack crucial information on which medications, if any, taken during pregnancy impact adversely on the mother and child and in what way.

Scotland is world leading in having comprehensive countrywide health and education data which can be linked at an individual level. As a result, we are able to conduct important, novel research to answer important clinical questions which cannot be undertaken in most countries or using other methodologies. This research will address important gaps in understanding factors affecting maternal and fetal health and provide new insights to inform clinical practice.

We specifically want to investigate the association between specific medications taken during pregnancy and:

1. subsequent pregnancy outcomes
2. subsequent child health outcomes
3. subsequent child educational outcomes

1920-0188 Dr Katherine Forrester SNBTS (National Services Scotland) Account for Blood (AfB) Scottish Transfusion Epidemiology (STED)

The Scottish National Blood Transfusion Service (SNBTS) is the specialist provider of safe, high quality blood, tissues and cells products and services in Scotland. Our key priority is to ensure that NHSScotland (NHSS) has enough blood to meet the transfusion needs of patients in Scotland. As the blood supply continues to be constrained by a reducing donor pool and changing transfusion needs of an ageing population it is ever more important to understand how, where and why blood is used.

The SNBTS data marts Account for Blood (AfB) and the Scottish Transfusion Epidemiology Database (STED) (AfB linked to ACaDMe* Scottish Morbidity Records inpatient records (SMR01)) are embedded and utilised as SNBTS and NHSS business intelligence assets for i) national benchmarking and trend analysis by SNBTS to inform stock management and donor collection; ii) local benchmarking and review of clinical transfusion practice by NHSS clinical professionals to identify unwarranted variation and optimise practice. Scottish national data from 2009 onwards may be used routinely in reports and dashboards, and to fulfil ad hoc requests for data to support SNBTS/NHSS/NHS audit and research.

This application seeks to ensure the provision of data by enabling the:

- Continuation of the existing routine, linked operational data mart STED
- Continuation of the release of patient identifiable data from AfB and STED to clinicians
- Continuation of collaborative work with eDRIS** to develop data linkage requirements
- Development of STED to improve medical indication data and relevant clinical requirements.

**Acute, Cancer, Death, Mental health data mart*

*** Electronic Data Research & Innovation Service*

1920-0189 Onyema Ibe Blake Stevenson Ltd Evaluation: implementation of the framework for the prevention, early detection and intervention of type 2 diabetes

Diabetes is a growing problem in Scotland, with incidence and prevalence of all types of diabetes steadily growing in the past 10 years, partly due to an aging population and people surviving longer with diabetes. In July 2018, the Scottish Government published 'A Healthier Future: Type 2 Diabetes prevention, early detection and intervention framework' to provide guidance to delivery partners as to the implementation of a specific weight management pathway for those at risk or diagnosed with type 2 or gestational diabetes. In order to enable effective implementation and allow opportunities for improvement of the type 2 diabetes prevention framework, the Scottish Government has decided to first implement the framework across three early adopter areas ahead of national roll-out: NHS Tayside, NHS Ayrshire & Arran and the East Region (NHS Lothian, NHS Fife and NHS Borders).

The purpose of this evaluation is for the Scottish Government to gain an understanding of any practical and systemic barriers encountered by the early adopter areas and to share learning and improve guidance in order to inform the national roll-out of the framework. The methodology will involve surveys, interviews (telephone and internet-based using Microsoft Teams) with patients/service users and providers of weight management programmes, healthcare staff, local framework programme leads and local stakeholders.

1920-0196 Dr Kathryn Skivington University of Glasgow
A systems approach to exploring syndemic health and social condition clustering among individuals who experience a drug-related death: developmental work for co-produced intervention(s).

Drug-related deaths in Scotland are at an all-time high (n=1,187 in 2018), having increased markedly in the past decade. An ageing population of drug users, alongside the existence of multiple co-occurring health conditions (multimorbidity), are proposed as contributing factors. However, little is known about multimorbidity in this group. This study aims to increase understanding of commonly co-occurring conditions, prescriptions, and concurrent social factors that may play a role in drug-related deaths, and explore opportunities for action. Statistical analysis of all drug-related deaths in Scotland will explore the clustering of health and social conditions. We will facilitate a stakeholder workshop series, with those with professional and lived-experience of drug use. Workshops will both inform the statistical analysis and then use its findings to develop ways forward. The aim of the workshops is to discuss the problem, taking account of the wider context surrounding drug-related death, to identify potential opportunities to intervene e.g. where problematic combinations of health and social conditions are identified, and decide what further data analysis and development work is required to progress to testing an intervention(s). This study will provide new evidence on the substantial problem of drug-related deaths.

1920-0202 Dr Chenqu Suo University of Cambridge
Incidence of Chronic Recurrent Multifocal Osteomyelitis (CRMO) in the United Kingdom and Republic of Ireland

Chronic Recurrent Multifocal Osteomyelitis (CRMO) is a rare disease where a patient's immune system attacks their bones by mistake, causing bone pain and swelling. It occurs primarily in children and teenagers. It can be very painful for some children with serious complications such as spine fracture. Though first described over four decades ago, we still do not know how common CRMO is. There is also a delay to diagnosis due to under-recognition.

Our study aims to capture all new cases of CRMO by reaching out to all paediatric consultants and paediatric orthopaedic surgeons in the UK and Ireland. We can then determine how common CRMO is, who is involved in the care and this will guide resource allocation and service planning. We would also promote awareness of CRMO among general paediatricians and orthopaedic surgeons by asking them about it and potentially identify any resolvable obstacles to diagnosis. In turn, patients will be diagnosed earlier in the future, with earlier treatment and fewer complications.

1920-0209 John Richardson NHS Blood and Transplant
Potential Donor Audit - Collection of information

The Department of Health commissioned an Organ Donation Taskforce to begin work with a brief to identify the obstacles to organ donation and suggest solutions which would deliver the increase in transplants that is so desperately needed. The report was published 2008.

Creation of a system to track referrals assists NHSBT to meet the specific recommendations in the report, especially recommendation 6: Donation activity should be monitored. Rates of potential

donor identification, referral, approach to the family and authorisation to donation should be reported.

The application is an electronic system that allows specialist nurses to enter and look at information on people who have died within a critical care area and may have been referred for donation.

It tracks donation outcomes including refusal or authorisation for donation and also identifies areas where donation opportunities may have been lost. The data that is collected supports the NICE guidelines.

This is an amendment to the existing approval from Scottish Caldicott Guardians to collect new items of potential donor audit data (CHI_Number and date of birth) from Scottish Health Boards.

1920-0231 Fiskani Kondowe University of Manchester
EpiHealth Outcomes – The effect of maternal age, embryo cryopreservation and culture on perinatal outcomes and child health: Scottish Data Linkage Study.
Secondary Analysis

Scientific evidence clearly indicates that ageing and health in adult life are programmed early in life, extending as far back in development as early conception. Assisted Reproductive Technology (ART) treatments, particularly In-Vitro Fertilization (IVF), alter the early environment to which the embryo is exposed. Currently, there are over 8 million children born following ART worldwide. Whilst ART has benefited millions, increasing usage emphasises the need for investigation of potential health risks to ART-conceived children.

Over time, it has become clear that to provide reliable risk estimates for this growing population, very large, well designed, cohort studies are needed. Given the rising usage of ART over the past 20 years, we propose to investigate these risks using the world’s largest ART database; that is held by the Human Fertilisation & Embryology Authority (HFEA), containing details of all treatment cycles from August 1991 to October 2009.

The primary aim is to assess the role of parental ages, IVF treatment method, in-vitro culture and embryo cryopreservation (freezing) on neonatal health and subsequent growth in IVF-conceived babies (singletons and twins only), adjusting for known confounders. We have already looked at the growth of singletons in this cohort, finding small, but potentially important, differences between IVF and naturally conceived children. We now wish to extend the analysis to consider twins and more child health outcomes.

1920-0240 Anne Birch Mental Welfare Commission for Scotland
Deaths in Detention Reviews Project (DIDR)

Following a wider government review, Scottish Ministers asked the Mental Welfare Commission to develop a system for investigating all deaths of patients who, at the time of death, were subject to an order under either the Mental Health (Care and Treatment) (Scotland) Act 2003 or part VI of the Criminal Procedure (Scotland) Act 1995 (whether in hospital or in the community, including those who had their detention suspended). ‘

<https://www.gov.scot/binaries/content/documents/govscot/publications/progress-report/2018/12/review-arrangements-investigating-deaths-patients-being-treated-mental-disorder/documents/00544242-pdf/00544242-pdf/govscot%3Adocument/00544242.pdf>

The MWC DIDR project (October 2019 - June 2021) will focus on current systems and practices, and experience of families and carers. We will work closely with Healthcare Improvement Scotland, the Scottish Government's section 37 review implementation group and the National Suicide Prevention Action Plan officers. We will:-

- ☐ Clarify how information on deaths of people who have been detained for the care and treatment of their mental health are recorded and reported.
- ☐ Examine data from the last six years about deaths in detention.

In developing the system we will engage with a wide range of professional organisations and bereaved families and carers. We will consult on draft proposals for a Scotland wide system and plans for implementation will be discussed with Scottish Government.

This application for access to linked data held by Public Health Scotland (PHS) will enable us to more fully report on deaths in detention in Scotland and make recommendations about how such deaths are reported on in the future.

We are asking for 6 years data 1st Jan 2015 to 30 Apr 2020. This will allow us to obtain a reasonable number of types of cases which occur infrequently (e.g. deaths of persons with learning disabilities under detention, cases from smaller health boards). Extension to 30 Apr 2020 allows us to pick up deaths occurring one month after detention ceasing at 31 March i.e. end of financial year. We will be able to consider in light of other data sets which report by calendar or financial year.

Addendum: At 09/02/2021 The Scottish Government has in principle agreed to the Deaths in Detention Reviews project continuation funding up to 31 March 2022 tbc

1920-0258 Dr Clarisse Florence de Vries University of Aberdeen Retrospective clinical evaluation of a novel medical technology (Mia) on Scottish Breast Screening cases as part of the iCAIRD (Industrial Centre for Artificial Intelligence in Digital Diagnostics) Programme

There has been significant interest in evaluating artificial intelligence (AI) tools to see if they can be used effectively in the NHS. Until recently, datasets and methods for evaluation have been limited by technology and patient privacy concerns. The Industrial Centre for Artificial Intelligence Research in Digital Diagnostics (iCAIRD) programme, which is a pan-Scotland collaboration of 15 partners from across industry, the NHS, and academia, is a 3 year funded research initiative which aims to address this.

iCAIRD has been awarded £10m by Innovate UK, a government body which is part of UK Research and Innovation (UKRI). Partner companies including Canon Medical Research Europe Ltd and Philips will provide £5M of additional supportive funding, along with seven actively-engaged SMEs (Small-Medium Enterprises).

Canon have developed SHAIIP (Safe Haven Artificial Intelligence Platform) as a method for researchers to train and validate AI models on non-identifiable patient data sets. The iCAIRD model brings the researchers to the data thereby safeguarding patient data within NHS systems. SHAIIP is

currently deployed in NHS Greater Glasgow and Clyde and in Grampian across NHS Grampian and the University of Aberdeen.

With iCAIRD established in April 2019, Kheiron will be the first SME to trial the platform in Grampian. Kheiron's product Mammography Intelligent Assessment (Mia) has European CE regulatory approval. Under this research initiative the aim is to evaluate the tool against Grampian Breast Screening data whilst also validating SHAIP.

1920-0262 Dr William Stewart University of Glasgow
Football's InfluencE on Lifelong health and Dementia risk: Late Outcomes and
NeuroradioloGy (FIELD:LONG)

Previously, we have shown that, compared to the general population, former footballers have considerably higher neurodegenerative disease mortality; ranging from a doubling in risk of death with Parkinson's disease to a fivefold increase in deaths with Alzheimer's disease.

With additional funding, we now seek to extend our studies in this rich cohort. We aim to gain further understanding of the association between participation in professional football and neurodegenerative disease.

In parallel work under FIELD looking at brains donated for research, we see the pathologies in former footballers and rugby players with dementia are similar to those in non-athlete dementia, with one notable difference - a structural change in the brain involving a thin membrane deep in its centre, known as the septum pellucidum. There is the possibility that this structural change in the brain might be one way of identifying neurodegeneration related to sport in 'at risk' populations. Intriguingly, this structural change is often visible on routine brain scans in life, but appears not to be recognised or reported.

We seek to capture health records and death certification for a cohort of former professional footballers aged 30 years or over. This will enable us to greater inform on neurodegenerative disease risk and other long-term health outcomes in this population. Furthermore, we will interrogate brain scan images to identify prevalence of abnormalities in the septum pellucidum in our footballers and their controls and establish the potential diagnostic utility of this feature in distinguishing dementia in former footballers from that of non-footballers.

Neurodegenerative outcomes are the main focus of this study, however, in order to fully understand the health risks that are present in this cohort, we must also greater understand health benefits, and overall health outcomes of the sport. Similar to the FIELD study, we will firstly investigate neurodegenerative disease in this cohort, and then interpret these results alongside other health outcomes, in order to get a full picture of health.

1920-0272 Diogo Marques Public Health Scotland
SARS Co-V-2/COVID-19 enhanced surveillance

COVID-19 emerged as a novel Coronavirus infection identified initially in Wuhan City in China at the end of 2019. The infection spread rapidly within China and is now affecting many other countries worldwide with a number of countries reporting large outbreaks. As of 05.03.20, the UK has confirmed 90 cases of the infection. The virus that causes COVID-19 has been officially designated

SARS-CoV-2 by the World Health Organisation, and the outbreak was designated a Public Health Emergency of International Concern on 30th January 2020.

Current understanding of the extent of infection, the epidemiology, infectivity and other aspects of this illness are based on testing of symptomatic people who meet an agreed case definition based on specific respiratory symptoms and a history of either contact with a known case or travel to designated risk areas (see HPS website for risk areas: <https://www.hps.scot.nhs.uk/web-resources-container/covid-19-risk-areas/>).

As with any outbreak of a new disease, this approach has limitations, for example it will fail to identify asymptomatic carriers if they exist, it will fail to identify those who present with atypical symptoms and it will fail to detect people whose exposure is in a country or region where the virus is only beginning to emerge. In Italy, for example, evidence suggests the virus may have been circulating for some weeks before the recently identified upsurge in clinical cases.

This is true of many novel and indeed established pathogens, and routine surveillance systems are designed to run alongside clinically-led testing to enhance the epidemiological understanding of the pathogen, provide early warning signals, inform control measures and enable monitoring of the effectiveness of control measures, and, from modelled data, make inferences about what to expect in the future and the likely impact of the disease on the population.

This proposal is to seek approval to extend existing respiratory surveillance systems, long established in HPS (GP sentinel swabbing, SARI), to add COVID-19 and SARS-CoV-2 to these surveillance schemes with immediate effect. The additional data collected would include positive and negative respiratory viral screens for SARS-CoV-2 and collection of relevant enhanced surveillance metadata such as travel history, comorbidities and other emerging risk factors, and other metadata on control measures (e.g. vaccine status or antiviral treatment/prophylaxis) when available.

The proposal also includes screening for SARS-CoV-2 of all respiratory viral samples submitted to the West of Scotland Specialist Virology Centre (WOSSVC) from the community or secondary care settings. No additional enhanced surveillance metadata will be collected for these cases, but positive and negative laboratory results will be extracted from ECOSS.

1920-0273 Professor Malcolm Semple University of Liverpool
COVID-19 Clinical Information Network (CO-CIN)

The COVID-19 Clinical Information Network (CO-CIN) has been established by the UK Government Chief Medical Officer to collate rapidly the clinical information of people admitted to hospital with COVID-19, analyse that information in real-time and provide reports to policy makers to inform public health and clinical care policies. This project is now live with recruitment of 7471 patients as of 06/04/2020.

The network includes all the devolved nations of the UK.

As CO-CIN currently operates, it does not collect personal identifiers. The investigators wish to add personal identifiers (CHI/NHS number) to the CO-CIN case report form. This is because there is a need to link COVID-19 CRF data to routinely collected national health care data sets, which can only be done if direct identifiers are collected to enable this. Linking information from prior and future primary care and hospital data and from death registries will massively enhance the ability of the CO-CIN dataset to address clinically relevant questions about the determinants of good or poor

outcome following hospitalisation with COVID 19 infection. The CO-CIN study also needs to collect direct identifiers to ensure that no individual is counted more than once and to enable the identification of rare recurrent episodes of hospitalisation with COVID-19 infection. Finally, the study requires access to information about all COVID-19 laboratory test positive patients to ensure recruitment, clinical data collection and data linkages for all eligible patients.

Applications are being made to PBPP for recruitment and data linkages across Scotland, and to the Confidentiality Advisory Group for recruitment in England and Wales. Applications to various data custodians in England and Wales for linked data are also being prepared.

CO-CIN will collate information about COVID-19 hospitalised patients, including NHS Number (England), Community Health Index (Scotland) and equivalents in Wales and Northern Ireland, age, sex, underlying medical problems and current medications, information about treatment in hospital and finally the outcome of their episode of illness. Individual patient information will not be made publicly available. Reports will only include summary information for groups of patients. Aggregate extracts will be shared with Public Health England, Health Protection Scotland and the World Health Organisation.

1920-0279 Professor Chris Robertson Strathclyde University and
Public Health Scotland
Early Assessment of COVID-19 epidemiology and Vaccine/anti-viral Effectiveness
(EAVE II)

This study will provide real time surveillance and research on the COVID19 pandemic in Scotland. It will permit the estimation of the risk to the whole population and relatively small subgroups and areas. This study, known by the acronym EAVE-2, is based upon a previous pandemic preparedness project known as EAVE (Early Estimation of vaccine and Anti-Viral Effectiveness) which is an NIHR-funded project on pandemic influenza. EAVE created a Scotland-wide cohort of 227,000 individuals recruited from 40 general practices together with stored serology samples from 1,000 individuals. EAVE has also established a national electronic cohort through linking health data sets from general practice, prescribing, hospitalisations and virology testing using the unique Community Health Identification (CHI) number for residents of Scotland.

1920-0280 Dr. Amanj Kurdi University of Strathclyde
Utilisation Trend and Clinical Outcomes of Antidiabetics in Type II Diabetes
Patients in Scotland over the Period of 2010-2019: a multi-studies project

In recent years, new antidiabetic classes, including drugs with unique cardiovascular and renal benefits, have been introduced for type II diabetes management. Examining antidiabetics' utilisation trends, factors influencing their selection, and their impact on clinical outcomes and adherence using real world data is crucial in order to assist clinicians in making treatment decisions. This is vital because findings from clinical trials might not be generalizable and it is challenging for clinicians to apply the results of clinical trials into clinical practice because of strict patients' characteristics compared to real-world setting. Therefore, it is key to ensure that these new medications are of good value for money as they are more expensive.

This proposal aims to provide evidence with regards to the current prescribing practice in Scotland; whether this practice is consistent with existing guidelines (by assessing features of both patients and drugs), and the effectiveness of the new drugs in clinical practice.

Firstly, this study will examine the utilisation/prescribing patterns of antidiabetics over the period of 2010-2019 as well as factors influencing class selection. This would be stratified by the 14 health boards in Scotland to explore any regional variations.

Secondly, assessing patients' adherence/persistence to antidiabetics and the association of adherence with glycaemic control – as well as potential predictors of adherence – are key for optimal clinical outcomes.

Lastly, evaluating clinical outcomes of antidiabetics' combination in terms of glycaemic control as well as renal and cardiovascular outcomes. Additionally, examining time to drug intensification to understand current practice and potential conditions that may influence their decision.

1920-0282 Professor Richard Haynes University of Oxford
RECOVERY trial

The RECOVERY trial is a study which is testing treatments for COVID-19. This condition is caused by a type of virus called SARS-CoV-2, or coronavirus for short. About 19 out of 20 patients who get coronavirus get better without coming to hospital. Of those who are admitted to hospital, most also get better, but some may need oxygen or mechanical ventilation before they do so. However, a few percent do not get better.

There are no drugs of proven value against COVID-19 although there are several which may turn out to be helpful (or possibly harmful) when added to the usual standard of care. This study aims to find out whether any of these additional treatments are of any help. These treatments have been recommended for testing by the expert panel that advises the Chief Medical Officer in England. These include tablets, injections and also inhaled medicines. Although these treatments show promise, nobody knows if any will be more effective in helping patients recover than the usual standard of care given in hospitals (which all patients will receive).

The treatments, which may be given in addition to usual care in participating hospitals, are: Lopinavir-Ritonavir (commonly used to treat HIV); dexamethasone (a type of steroid, used in a range of conditions to reduce inflammation); hydroxychloroquine (a treatment for malaria); or azithromycin (a common antibiotic). Other treatments may be added to the protocol during the trial.

1920-0286 Karen Dennison UCL Institute of Education
Centre for Longitudinal Studies cohort study data linkage

The Centre for Longitudinal Studies (CLS) at the UCL Institute of Education is responsible for running the National Child Development Study (NCDS), British Cohort Study (BCS) and the Millennium Cohort Study (MCS) (we are also responsible for Next Steps which covers England only so not relevant to this application). These are all ongoing studies, following the lives of respondents, surveying them every few years. These studies have collected survey data covering a range of data which have focused on diverse information on aspects of cohort members' lives, including physical and educational development, economic circumstances, employment, family life, health behaviour,

wellbeing, and social participation and attitudes. We have explicit informed consent from the majority of study participants for their NHS health records to be extracted and linked matched to their survey data and to be deposited with the UK Data Archive Service (UKDS). We have previously received and still hold matched records from NHS Scotland for all three of the above-mentioned cohorts and seek to extend the duration of the existing approval. For all three cohorts we are also enacting linkages to health records from England and Wales.

2021-0001 Prof Jennifer Kurinczuk University of Oxford Neonatal complications of coronavirus disease (COVID-19)

Coronavirus disease (COVID-19) is an international public health crisis and is rapidly spreading around the world. So far it looks like most newborn babies and infants are not severely affected, but this is based on small numbers of cases so there might be important effects of COVID-19 in babies that we don't yet know about.

There are three main ways that COVID-19 might affect newborns and babies that need neonatal care:

1. Newborn babies might catch COVID-19 before, during or soon after birth and this may lead to problems with breathing or feeding that need support in hospital.
2. COVID-19 could affect babies that are already on neonatal units with other medical conditions (like being very premature) that make them more at risk of severe infection.
3. COVID-19 might affect that way that pregnant women are looked after in pregnancy or labour which could lead to problems for some babies, even if they do not catch COVID-19

We plan to look at how COVID-19 is affecting newborns and babies on neonatal units in the United Kingdom through the British Paediatric Surveillance Unit (BPSU). To do this we will ask paediatricians to report any baby that is affected by COVID-19 as described above.

We will then ask paediatricians looking after babies affected by COVID-19 some simple questions about how the baby is affected, what treatment they need, and what happens after the infection. We will use information that is routinely collected by doctors and nurses on neonatal units and paediatric intensive care units to better understand what medical treatments babies with COVID-19 receive. We will also link up with a similar surveillance study looking at COVID-19 in pregnant women and work with Public Health Scotland (PHS) and similar organisations in England, Wales, and Northern Ireland to get a complete picture of the neonatal complications of COVID-19.

2021-0002 Dr Nicole Priddee Scottish National Blood Transfusion Service (SNBTS) Convalescent Plasma collection and distribution for management of COVID 19

There are no licensed treatments available for COVID 19 but clinical trials of various drugs and vaccine development are underway. The use of passive immunity, i.e. antibodies from people who have recovered from this disease, appears to be safe and clinically effective (7&8).

SNBTS propose to gain access to details of patients diagnosed with COVID 19 in Scotland, currently held centrally by HPS (PHS from 1.4.2020), to enable recruitment of those who meet donor selection criteria to donate COVID 19 convalescent plasma. This will allow SNBTS to manufacture and

distribute COVID 19 convalescent plasma to treat people with or at risk of COVID 19 infection primarily through the convalescent plasma arm of the Randomised Evaluation of COVID 19 Therapy (RECOVERY) trial, other clinical trials using convalescent plasma (eg REMAP CAP) and/or for compassionate use on a named patient basis.

The RECOVERY trial is being co-ordinated centrally by the Nuffield Department of Population Health in Oxford, with the convalescent plasma arm being developed and led in collaboration with NHS Blood and Transplant (NHSBT) (5). The ReMAP CAP trial is being co-ordinated by Tony Gordon, looking at management of community acquired pneumonia in intensive care settings. They are currently developing a convalescent plasma arm in collaboration with NHS Blood and Transplant (9).

There is Scottish clinical interest in acquiring COVID 19 convalescent plasma as part of clinical trials and potentially for compassionate use.

2021-0003 Michael Abbott University of Aberdeen
Should Scotland Provide Whole Genome Sequencing for the Diagnosis of Rare Disorders?

Rare conditions affect 6-8% of the Scottish population. The journey to diagnosis for patients with suspected rare genetic disorders, known as the 'diagnostic odyssey,' often involves a series of costly and invasive tests, hospital visits and missed diagnoses. Many families never receive a diagnosis, and the diagnostic odyssey has a detrimental impact on quality of life. It is hoped that new technologies such as Whole Genome Sequencing (WGS) will enable quicker and more accurate diagnosis for this patient group. However, there is limited economic evidence to support the transition of WGS from research into clinical practice. This study aims to address this evidence gap by assessing the costs of the diagnostic odyssey for patients with suspected rare genetic disorders.

In order to assess the costs of the standard testing pathway (diagnostic odyssey), NHS Scotland research nurses at each of Scotland's four regional genetics centres will extract data on prior genetic testing, genetics clinic attendance and confirmatory testing for each patient. This data will then be pseudonymised using SGP or DDD study IDs, before it is securely transferred to researchers at the University of Aberdeen, who will attach unit costs to each test/appointment. The total cost of the diagnostic pathway will be calculated for each patient. Average costs of the diagnostic odyssey will be calculated per patient, and costs will also be analysed for various subgroups. This costing exercise will inform an economic evaluation of the cost-effectiveness of WGS for the diagnosis of rare disorders. This evidence will inform Scottish Government policy for the future of genetic testing in the NHS.

2021-0004 Professor Emily Jefferson University of Dundee
Provision of chest, abdomen and cardiac CT images for development of Artificial Intelligence (AI) algorithms to detect lung nodules and coronary artery calcification

This proposal is for routinely collected, anonymised medical images to be made available for the purposes of training and developing two algorithms: a lung nodule algorithm for detection of pulmonary nodules on chest CT scans and an algorithm for the detection of coronary heart calcification. All CT chest, abdomen and cardiac images from the Scottish population aged =>40

years held within the Scottish Medical Imaging Database will be de-identified and made available to train and develop the algorithms within the National Safe Haven environment.

This medical exemplar is a collaboration between University of Edinburgh and industry partner Aidence B.V., it is a sub-project of the University of Dundee led 'Interdisciplinary Collaboration for efficient and effective Use of clinical images in big data health care REsearch' (PICTURES) programme, which is a 5-year programme to provide safe and secure resources for delivering large-scale, anonymised, routinely collected clinical radiological images for research.

2021-0007 **Professor Rowland Kao** **University of Edinburgh**
The Scotland Coronavirus Model (SCoVMod)

The "Scotland Coronavirus Model" is a computer simulation describing the spread of COVID-19. It will be used to inform Health Protection Scotland about the possible trajectory of future Scottish COVID-19 patterns (no. infections, hospitalisations, deaths, and recoveries) under different scenarios of disease control (e.g. easing lockdown restrictions by region, re-opening of schools etc.). SCoVMod uses human population density, age structure and commuter movements to predict how COVID-19 infection would spread in space and time. Past COVID-19 infection patterns are then used to identify model parameters that best explain them and to estimate uncertainty, also providing estimates of the hidden burden of infection in the population. Using publicly available data on COVID-19 deaths recorded by Health Board, SCoVMod generates a statistically consistent fit over time. This fit shows that the mean index of multiple deprivation index (SIMD) per Health Board is an important predictor of COVID-19 death rates. Thus substantially better predictions would be expected when using COVID-19 data at the same spatial resolution as the SIMD (i.e. "Data Zone" as used in the Scotland Census). In addition, data for the number of admissions, ICU patients and deaths per day in hospital will allow for better identification of where existing cases are being distributed to, and therefore under our model projections, where the burden to the healthcare system burden may lie.

2021-0008 **Carole Morris** **Public Health Scotland**
Scottish Collaborative COVID Research Data Platform

The Scottish Government COVID-19 Advisory Group will be a time limited expert group chaired by Professor Andrew Morris, Professor of Medicine at the University of Edinburgh and Director of Health Data Research UK (HDRUK). The advisory group will consider the scientific and technical concepts and processes that are key to understanding the evolving COVID-19 situation and potential impacts in Scotland. The advisory group will apply the advice coming to the four nations from the Scientific Advisory Group on Emergencies (SAGE) and other appropriate sources of evidence and information and use it to inform local decisions in Scotland during the pandemic. (See document 0 Scottish Government CMO COVID advisory group - data and evidence strategy - 30 March 2020.pdf)

A COVID Data Task Force has been established under this group to oversee the need for rapid access to data to support urgent research to help inform decision making and protect the population. The COVID Data Task Force has representatives from key stakeholders such as Public Health Scotland (PHS), HDRUK, Administrative Data Research (ADR) and Academia. Its remit will be to work with data controllers to identify and agree the datasets that are key to supporting rapid research and analysis.

Currently, providing the data required for urgent COVID-related research could take several months which would severely delay this urgent critical work. The purpose of this project is to gather all

relevant data (as specified by the COVID Data Task Force), link these datasets (which will include key health and non-health data) and hold it within the National Safe Haven. This will allow a rapid provision of data for any urgent COVID-related research projects, which is currently not possible.

This application is to create the data resource only. All projects that wish to use this data will require approval from the original data controllers or their agreed approval mechanisms (e.g. Public Benefit and Privacy Panel for Health data) before any access to this data will be given.

2021-0013 Dr David A McAllister Public Health Scotland COVID19 in healthcare workers, including primary and secondary care

By the nature of their work, healthcare workers (HCWs) have greater exposure to SarsCoV2 than the general population. To inform HCWs and make optimal decisions about minimising risk, we need to know whether and how this increased exposure translates to an increased risk of COVID19-related (i) hospitalisation, (ii) mechanical ventilation and (iii) death. We need to know both the overall risk, and the risk according to the HCWs role as well as their age, sex and the presence/absence of any underlying long-term conditions.

To inform infection transmission models (such as the produced by the Imperial College London team) to help stop the spread of COVID19, it is also necessary to estimate how much transmission is occurring through healthcare workers.

Please also note that healthcare workers within diabetes may be at particular risk. In order to address this issue, Professor Helen Colhoun will be putting in a separate PBPP application (an amendment) to link the same databases described in this application (SWISS and GPCD) to the existing Scottish diabetes cohort. That application will refer to the list of variables from this document.

2021-0018 Dominic Cushnan NHS X National COVID-19 Chest Image Database (NCCID)

The National COVID-19 Chest Imaging Database (NCCID) is a joint initiative established by NHSX and the British Society of Thoracic Imaging (BSTI) to create a centralised UK database of chest X-ray, CT and MRI images.

This aims to support a better understanding of the disease and develop technology that will enable the best care for patients who are hospitalised with a severe infection.

The benefits of collecting chest imaging data are extensive. This data has the potential to:

- enable faster patient assessment in A&E;
- save radiologists' time;
- increase the safety and consistency of care across the UK.

The NCCID database will support clinicians and researchers to better investigate the disease and will provide technology developers with the right data to improve already existing models and develop new solutions to support the response to COVID-19.

To better support researchers in Scotland, a copy of the image and clinical data will also be held in the National Safe Haven. A full PBPP application will be submitted to create this associated research database.

2021-0019 Dr Philip Dunne NHS Greater Glasgow and Clyde
Audit of Upper GI Bleeding in the Covid-19 Pandemic

Bleeding in the upper gastro-intestinal tract (UGIB) is a common reason for presentation to hospital. Patients with suspected UGIB require an endoscopy test to confirm the diagnosis, apply treatment if necessary, and to facilitate timely discharge from hospital. The Glasgow Blatchford Score (GBS) is a risk assessment tool used for patients with suspected UGIB. Currently, patients are deemed “low-risk” (if GBS = 0-1) and can be discharged from hospital to reattend for a planned out-patient endoscopy. Patients with a GBS of ≥2 remain in hospital for an in-patient endoscopy.

In light of the COVID-19 pandemic together with the aerosol generating nature of endoscopy and related issues of patient and staff safety, the British Society of Gastroenterology have recommended scaling down of endoscopy to “true emergencies” only. Therefore, the “low-risk” threshold has been temporarily extended to a GBS score of 0-3. This has minimised demand for inpatient endoscopy. Patients with a GBS of ≥4, will still require an inpatient endoscopy due to the higher rates of endoscopic treatment required and lower survival in this group.

We would like to audit the impact of this change to determine whether it has had a negative effect on patient care, as well as assess the prevalence of Covid-19 and its effect on patient outcomes, amongst those presenting with suspected UGIB.

2021-0021 Professor Susan McVie University of Edinburgh
A profile of problem drug users with Criminal Justice contact in Scotland

Scotland has a severe problem with problematic drug use and, especially, drug related deaths. UK drugs policy, which is reserved to Westminster, currently treats drugs as a criminal justice issue; however, concern that criminalising problem drug users may contribute to the death rate has led to calls for a ‘public health’ approach to be taken in Scotland (House of Commons Scottish Affairs Committee 2019). The prevalence of criminal justice contact amongst problem drug users is not known, although it is widely believed to be high. Nevertheless, the Scottish Drugs Misuse Database (SDMD) shows that, in 2015/16, only 15% of those referred to specialist treatment services were from criminal justice social work (ISD Scotland 2019). Furthermore, the profile of criminal justice referrals was younger, more male dominated and indicated higher benzodiazepine use compared to those referred by drug treatment services and hospital admissions. Better understanding the characteristics and outcomes of problematic drug users with criminal justice contact, and how they compare to others, could improve the effectiveness of responses to high-risk individuals and reduce deaths. This study will use the SDMD to provide a detailed analysis of the individual and geographical profile of problem drug users with criminal justice contact, including their characteristics, associated morbidities and treatments. Linking to mortality records, it will also examine their risk of premature death through drug-related and other causes. The outcomes of this study could help to inform the future development of UK drugs policy.

2021-0024

Dr Louise Marryat

University of Edinburgh

COVID-19 in pregnancy

Pregnant women are at particular risk when contracting COVID-19 as pregnancy is an ‘immuno-suppressive condition’, where the body is less able to combat infection than usual. Early evidence, thus far based on case studies, suggests the possibility of negative outcomes associated with COVID-19, including miscarriage and premature birth. Additionally, in many countries, pregnant women are being required to self-isolate for substantial periods of time. They may receive less antenatal care, and less formal/informal support. Choice is also being restricted in where and how to give birth, with home births and non-emergency caesarean sections being limited. Although current NHS guidance suggests COVID-19 carries modest risk for pregnancy or giving birth during the quarantine period, there is little supporting evidence.

This project aims to look at routine data on all births during the first two months of ‘lockdown’ in the UK, and compare these with data from the same months in 2018, to explore outcomes for both mothers and infants. We will explore experience of labour (including place of delivery, induction, and type of delivery), birth outcomes (such as gestation, birth weight, and time spent in neonatal care), as well as early infancy outcomes (such as breastfeeding at discharge). Outcomes for women with confirmed COVID-19 infection during pregnancy and their infants will be examined separately within the study.

2021-0025

Dr Satveer Mahil

Guy’s and St Thomas’ NHS

Foundation Trust / King’s College London

PsoProtect (Psoriasis Patient Registry for Outcomes, Therapy and Epidemiology of Covid-19 infection)

PsoProtect is an international registry for reporting outcomes of COVID-19 in individuals with psoriasis. Cases of COVID-19 in psoriasis are reported by clinicians using the online PsoProtect case report form, which collects de-identified data only. The information provided has the potential to rapidly inform clinicians when assessing risk and treating COVID-19 in patients with psoriasis. It may help to improve our understanding of how factors such as immunomodulator treatments and underlying health conditions affect outcomes of COVID-19 in psoriasis. Please see attached protocol for further information (1. 282395_PsoProtect_Research_Database _Protocol_v3_18.04.2020_clean)

This PBPP Application Form is for PsoProtect only (for healthcare professionals to report cases, as detailed above), but to give some further context, we have also launched PsoProtectMe, which is an online self-report survey for people with psoriasis from any country in the world. People with psoriasis are invited to complete the survey, whether or not they have had symptoms of COVID-19. The information collected in PsoProtectMe will help to improve our understanding of patients’ experiences, symptoms and health behaviours during the pandemic.

2021-0029

Dr Nicholas Conway

NHS Tayside

The SCI-Guide quality improvement project

Automated clinical decision support systems (CDSS) are associated with improvements in health care delivery to those with long-term conditions, including diabetes. A CDSS (“SCI-Guide”) was introduced to the national diabetes electronic health record (Scottish Care Information Diabetes Collaboration

(SCI-Diabetes), approx. 300,000 people with diabetes of any kind) in 2018. The system provides SCI-Diabetes users with recommendations to improve clinical care at an individual patient level, via a series of logic-based algorithms. If triggered, the algorithm provides the user with automated recommendations on patient care via a series of pop up messages displayed within the clinical record. These recommendations include reminders for the clinician to initiate routine investigations or drug recommendations tailored to the specific patient circumstances (e.g. age, sex, co-morbidities etc). Further information regarding SCI-Guide is available via the Scottish Government eHealth website (<https://www.ehealth.scot/case-studies/clinical-decision-support-for-diabetes-in-scotland/>) and a user guide demonstration video (<https://vimeo.com/279234605>) is available from SCI-Diabetes.

Previous pilot studies (see Appendix 3) within NHS Tayside and Lothian have demonstrated favourable user opinion and significant improvements in both clinical processes and outcomes. Clinical processes were described as the proportion of patients adhering to routine surveillance for diabetes related complication, as recommended by national guidelines (e.g. foot examination, blood pressure recording, measurement of cholesterol). The clinical outcomes were the key performance indicators of good diabetes control e.g. blood glucose control, avoidance of hypertension and kidney disease. These studies were completed within 2015-2017 and were instrumental in achieving national roll out of the system.

This study aims to assess the impact (if any) of SCI-Guide on national diabetes outcomes. In doing so, we aim to identify which components on the SCI-Guide system are proving to be most effective, with a view to improving the system to support future health gains.

2021-0030 Dr Prabhu Arumugam Genomics England Limited GenOMICC Study

Genomics England is partnering with the GenOMICC consortium, Illumina and the NHS to study the genetic code of thousands of patients affected with COVID-19. The aim is to help scientists understand whether a person's genes may influence their susceptibility to the virus and therefore why some patients with COVID-19 experience a mild infection, while others are affected much more severely. The study is led by Dr Kenneth Baillie, University of Edinburgh. We propose to study the genomes of up to 20,000 people currently or previously in an intensive care unit with COVID-19, and up to 15,000 individuals who have mild or moderate symptoms. We can then bring the patients' genome data together with data about their individual strain of the virus, which is being established by the COVID-19 Genomics UK Consortium, for a deeper understanding of the impact of different strains on patients with different genes. The study hopes to gain new insights into why some people are at greater risk of developing life-threatening symptoms, identify treatments which have the best chance of success in clinical trials, and potentially identify people at extreme risk if they develop COVID-19.

2021-0033 Professor Bryan Williams UCLH / UCL CAPACITY-COVID: Cardiac complicAtions in Patients With SARS Corona vIrus 2 regisTrY

Coronavirus disease (COVID-19) is a rapidly emerging pandemic caused by an infection with SARS-CoV-2. Most patients require admission to the hospital due to the development of

pneumonia, which may necessitate mechanical ventilator support. Besides the respiratory symptoms, some patients develop severe cardiac damage (1, 2). In addition, underlying cardiovascular disease may worsen the prognosis of these patients (2). There are concerns that the use of angiotensin-converting enzyme (ACE) inhibitors, angiotensin II type-I receptor blockers (ARBs), ibuprofen and thiazolidinedione's can worsen the course of COVID-19. These concerns are based on the fact that SARS-CoV-2 bind to their target cells through the ACE2 receptor. The expression of the ACE2 receptor can be substantially increased with the use of these drugs (3). To gain insight into the rate of cardiac complications and the course of COVID-19 in patients with underlying cardiac disease, high-quality data collection is needed. In prior pandemics data collection was not done in a standardized manner. It is of pivotal importance that the data collection during the COVID-19 pandemic is standardized. Cardiac complications in Patients with SARS Corona vlrus 2 regisTrY (CAPACITY) offers a WHO-recommended comprehensive data collection tool that facilitates uniform data collection on patients infected with SARS-CoV-2 with cardiovascular disease.

2021-0037 Mohamed Bekheit NHS Grampian
Hospital-level variation in the management and outcome of patients with acute cholecystitis: a view on service relocation

General Surgery is a mixture of different surgical specialties. Approximately half of admissions present in an unscheduled manner and have conditions such as appendicitis, diverticulitis and blocked bowel as a result of cancer.

One of the most commonly encountered conditions in the Emergency General Surgery (EGS) is gall stone disease. While guidelines have recommended for years that it is best to manage these pathologies on their first admission, this seems to be difficult to realize because of several potential obstacles. In a tertiary centre for instance, acute gall bladder admissions do not get an easy chance to be operated on promptly. Service design is tailored to accommodate cancer patients in elective and more life threatening conditions in emergency. While the cancer load is typically lower in general hospitals, in theory, this hospital should be more capable of providing a prompt service to the acute gall bladder patients. Case-load is known to be an influential factor on outcome. However, the surgical management of Gall Bladder stones is one of the most commonly practiced operations in general surgery. The question of this proposal addresses the notion of variation in service provision based on the hospital type (academic versus non-academic) and the relevance of case-load to the decision making (to operate in emergency versus deferred treatment) and the treatment outcomes.

2021-0041 Dr Shamez Ladhani Public Health England
Enhanced surveillance of multisystem inflammatory syndrome temporally associated with Covid 19 in children in the UK and Republic of Ireland through the BPSU

The British Paediatric Surveillance Unit (BPSU), based within the Royal College of Paediatrics and Child Health (RCPCH), supports the surveillance of rare conditions affecting children in the United Kingdom (UK) and Republic of Ireland (ROI). Every month, the BPSU asks paediatricians across the UK

and ROI whether they have seen children presenting with specified rare conditions. If they have, the paediatrician is asked to provide clinical information on the child to the team leading surveillance of that particular condition.

The BPSU is already supporting surveillance of SARS-CoV-2 infection/Covid 19 disease in very young babies. The BPSU is now seeking to separately establish surveillance of multisystem inflammatory syndrome in children. This syndrome may be occurring more commonly than usual since the start of the Covid 19 pandemic.

2021-0042 Dr David Fitzpatrick University of Stirling
Covid-19: Prehospital identification and management of people presenting to the ambulance service

Paramedics face unprecedented challenges in identifying and appropriately managing patients with Covid 19 (C-19). Little is known about C-19 patients or how the decisions the paramedics make affect their outcomes. We will analyse routinely collected patient data to investigate how C-19 patients present to paramedics, the decisions paramedics make about their transportation to hospital, whether these patients access other services and how these decisions affect patient outcomes.

2021-0049 Dr Michael McGettrick NHS Greater Glasgow and Clyde
Pulmonary Thromboembolism in Covid-19 pneumonia

There are emerging reports of Covid-19 disease leading to a higher number of people suffering blood clots within the lung (pulmonary embolus (PE)). There may be a number of reasons for this, including, firstly, that that patients are immobile during the illness and, secondly, the virus causes abnormalities in blood clotting, making it more likely for the blood to clot in the veins and arteries.

We intend to look at the number of patients with pulmonary embolus who were Covid-19 positive on swab tests or have changes consistent with Covid-19 on CT scans across Scotland between 23rd March and 31st May 2020. We also plan to assess the results of blood test results (D-dimer troponin, Lactate, lymphocytes, C-reactive protein) can predict the presence of pulmonary embolus. We also plan to look for evidence of other medical diagnoses in the patients with pulmonary embolus to assess for any risk factors that may increase the risk of PE.

By using the existing figures from the Scottish Government on the number of Covid-19 diagnoses in Scotland, we will be able to estimate the incidence. This data includes the number of hospitalised patients. We plan to compare the findings with existing reports on the frequency of pulmonary embolus in other infections of the lung to determine if there is increased risk in Covid-19. This will inform clinicians, decision makers and public health about the perceived increased risk of venous thromboembolism in this population.

2021-0051 Dr Kyle Gibson NHS Lothian
Pulmonary Embolism in COVID-19 Patients requiring Critical Care

A number of adults have been admitted to Critical Care Units in Scotland with COVID-19 and significant blood clots in the blood vessels supplying the lungs (pulmonary embolism). This is

concerning as ICU clinicians have noted anecdotally that there are more people being admitted with the condition than they would expect to see, and the pattern of the disease is more severe. This proposal seeks to understand how often this is happening, the symptoms and signs patients have when they arrive in hospital, the factors which increase the likelihood of this happening, the treatment provided and the outcome of patients. This will help the understanding of this potential complication of COVID-19 and/or the lockdown.

2021-0054 Dr Thomas Manship NHS Lothian
Scottish study on the impact of COVID-19 on chronic liver disease

We have seen very few patients with chronic liver disease (CLD) admitted with COVID-19. This is interesting as it is one of the few leading causes of mortality in the UK where the prevalence is not declining and CLD patients are in the high risk group for COVID-19 infection.

We therefore are interested in how COVID-19 has affected the care of CLD patients being admitted to hospital. We plan to analyse those patients with CLD admitted in April 2020 (during the COVID-19 pandemic) and comparing them to and auditing them against those admitted in April 2017, '18 and '19.

2021-0064 Dr Frederick Ho University of Glasgow
COVID-19 Infection and Subsequent Thromboembolic Events

Early reports from hospital studies have shown that people who have had COVID-19 are more likely to develop blood clots. This might explain why there have been more strokes than usual among healthy young people. But the studies done so far have been small and of poor quality. We will use existing data covering the whole of Scotland to study whether people who have had COVID-19 infection go on to have more blood clots in the brain (stroke), heart (heart attacks), lungs or legs.

2021-0071 Dr Helen Brown University of Edinburgh
Data extraction to inform Scottish COVID-19 Response Consortium:
epidemiological modelling and Data-driven now-casting & forecasting of health-care resource requirements associated with COVID-19

The Scottish Covid-19 Response Consortium (SCRC) is developing a suite of open source epidemiological and statistical models of COVID-19, and reproducible validation pipelines to show how these models relate to source data and assumptions. This includes testing of models, both against one another and in terms of their real world predictions. The aim of this work is to provide a transparent evidence base to inform the formation of policy in response to the pandemic.

We aim to develop models and analyses that quantify key aspects of disease spread from available data, and then use this information to enable data-driven assessment of potential public health interventions such as the impact of lockdowns, wider testing and track and trace programmes and the impact of potential vaccines. We also aim to generate evidence-based data-driven predictions of the effect of COVID-19 on short- and long-term demands on primary health care and hospital resources in Scotland. This will help individual health care units and hospitals in Scotland to better allocate resource, and government to coordinate distribution of resources across units.

2021-0073 Dr David McAllister Public Health Scotland
COVID19 in secondary, primary, early years and additional needs teachers and teaching assistants.

Teachers and teaching assistants are in close contact with children. For this reason, they may be at increased risk of Sars-CoV-2 infection compared to the general population. To inform teachers, local authorities, and government, and to minimise risk, we need to determine of infection, hospitalisation, ICU admission and death in teachers and teaching assistants and (if the risk is high in teachers) their household contacts in February, March and April 2020. We need to know both the overall risk, and the risk according to the teacher or teaching assistant's setting (e.g. primary or secondary school) as well as their age, sex and the presence/absence of any underlying long-term conditions.

We then want to establish surveillance from August 2020 (or as soon as possible thereafter) to report on Sars-CoV-2 infection among teaching staff.

2021-0077 Dr Nick Hamilton University College London
COVIDTrach

When COVID-19 leads to a severe infection in the lung patients need to be placed on a ventilator. Clinical practice before the pandemic was for patients who were expected to be on the ventilator for over 7 days to undergo a tracheostomy, a surgical procedure to put a breathing tube through the neck into the airway. It is uncertain whether patients with COVID-19 also benefit from this operation due to the severity of their respiratory illness and high death rate. Furthermore, there is concern that opening the airway through the tracheostomy puts health care professionals performing the procedure at risk of being infected by the corona virus.

COVIDTrach is collaborative project by surgeons and intensive care doctors that looks at the outcomes of ventilated COVID-19 patients undergoing tracheostomy and evaluates the use of personal protective equipment and rate of COVID-19 infection amongst operators. So far data on 800 patients have been entered in an online database; this proposal focuses on expanding and completing this database to answer the fundamental questions of the safety and effectiveness of tracheostomy in COVID-19.

2021-0082 Dr Josie Evans University of Stirling
Ambulance call-outs for psychiatric emergencies during the COVID-19 pandemic

It is likely that the COVID-19 pandemic and/or associated social distancing restrictions will have mental health implications for many people in Scotland, at a time when services are already under strain. This may precipitate some into mental health crises requiring emergency ambulance attendance. At least 10% of ambulance call-outs in Scotland are mental health related (9,014 such calls from 6,802 people in Scotland in 2011). We will examine patterns of ambulance call-outs for emergency mental health crises during the COVID-19 pandemic. By comparing with an equivalent study period in 2019 during 'normal' times, this will:

1. Help to build an objective picture of the mental health consequences of the pandemic on the general population
2. Provide an indication of the knock-on effects on other NHS services

2021-0098 Dr Alasdair Jubb Cambridge University Hospitals
European Society of Intensive Care Medicine UNITE – COVID STUDY

The defining healthcare challenge of 2020 is the COVID19 pandemic. This novel disease has brought tens of thousands of people to hospital and many of these have required admission to the intensive care unit. One of the many difficulties faced by the ICU community across the world has been trying to understand and provide for the demands of this new illness. The pressures it has placed on some systems has meant that the normal standards of care have been hard to implement with potentially important effects on outcome. Descriptions of the burden of disease and organ system failure have only emerged in a piecemeal fashion, but it is clear that the experience can vary widely with location both within and between countries.

UNITE-COVID is the Europe-wide strategy co-ordinated by the European Society of Intensive

Care Medicine to obtain a clear and detailed picture of the burden of COVID19. We will collect retrospective, cross-sectional, fully anonymised but detailed clinical data from all units that choose to participate at their point of maximum occupancy. We currently have expressions of interest from many units all across the UK we would estimate between 40 and 50 will submit data, but it may be more. This data is crucial both to understand the needs of patients and the units that are caring for them during the current wave and also to interpret outcomes. It will help guide service design and resilience for future waves and indeed other viral pandemics such as a severe influenza which remain a very real threat.

2021-0100 Professor John Crichton NHS Lothian
Predictors of Outcomes for Mental Health Inpatients Diagnosed with Covid 19

The Covid-19 pandemic poses huge risks to society but particularly to vulnerable individuals. Many studies have looked at predictors of outcomes in Covid 19 cases to enable us to identify vulnerability factors.

Mental health patients are both at increased risk of exposure to the virus as well as being at increased risk of more severe disease or complications for a variety of reasons. However this group have been overlooked in the majority of studies to date.

As well as an increased incidence of known vulnerability factors in this group such as co-morbidities, we hypothesise that this group could also harbour further risk factors as yet unidentified which may predict poorer outcome. This includes exposure to psychotropic medications known to affect immune responses or medications putting patients at risk of complications in the face of infection. Our main objective is to study and identify these potential additional vulnerability factors.

Management of inpatients on psychiatric wards during this pandemic has also proved a major challenge. We hypothesise that some of the difficulties experienced by these units may also increase the risk of patient's exposure to the virus. Such factors involve the difficulties in implementing social distancing and the use of restraint for acute behavioural disturbance. We intend to clarify the difficulties faced by individual units and investigate the difference

Patients with cardiovascular disease have increased risk of symptomatic SARS-CoV-2 infection and mortality. This could be due to cardiovascular conditions themselves (e.g., heart disease, stroke), their risk factors (e.g., age, raised blood pressure), medications, or combinations of these. Understanding which patients are affected and why will help in developing strategies to reduce this risk.

Just as important as the effects of pre-existing cardiovascular disease on COVID-19, are the impacts of COVID-19 on cardiovascular disease.

The *direct* impacts include immediate complications (e.g., acute cardiac injury, stroke) and potentially increased risk of heart attack, stroke and other cardiovascular events in the longer term, through inflammation, blood clotting risk or other factors. However, the nature and extent of these direct effects are not well understood.

The response by the government and health services to the COVID-19 pandemic also has *indirect* impacts on the presentation, diagnosis, management and outcomes of cardiovascular diseases. The numbers of people attending hospital with heart attack and stroke have declined dramatically in recent weeks. Further, patients are more often arriving too late for beneficial acute treatments (e.g., clot busting drugs) and after potentially preventable complications have developed. To inform government and NHS policy, we urgently need a deeper understanding of these unintended consequences.

We propose to address these issues through analyses of de-identified, linked, nationally collated healthcare datasets across the four nations of the UK, accessed within trusted research environments provided by the National Data Safe Haven in Scotland and equivalents in Wales, England and Northern Ireland.

2021-0108 Professor Helen Colhoun University of Edinburgh
Risk factors and outcomes associated with positive and negative COVID-19 in
rheumatology clinic attendees

In this project we will bring together data from rheumatology clinics that captures among people with rheumatoid conditions those on and no on biologic therapies (these are certain kinds of drugs affecting the immune system called biologics) and link it to data on who developed evidence of COVID-19 infection in Scotland so far as well as to other health related data such as hospital admissions and prescription history. Biologic therapies are a relatively new class of drugs that work partly by suppressing immune reactions. They are prescribed to people with rheumatoid, psoriatic and some other conditions. Because of this there is concern that they could leave people more vulnerable to infections and accordingly people on such therapy were advised to shield early in the COVID-19 epidemic. By bringing these data together we can evaluate whether in fact despite shielding advice such persons did or did not experience a higher rate of COVID-19. We can also use data from the very earliest part of the epidemic before shielding advice was issued to evaluate risks in the absence of shielding advice. We can compare risks in those with rheumatoid on and not on these drugs to make sure that any differences seen are due to the drugs not the underlying condition.

2021-0109 SR268 Professor Anthony Swerdlow The Institute of Cancer Research
Generations Study (Breakthrough Breast Cancer UK Women's Cohort Study)

The Generations Cohort study was set up in 2003, to investigate the causes of breast cancer with exceptional focus, size and comprehensiveness, and also to investigate the causes of other cancers and causes of death in women. The Generations Study is of cohort design, recruiting volunteer women from the general population of the UK aged 16 years and older, who have completed an extensive questionnaire about breast cancer risk factors, given a blood sample, and given informed consent for follow-up via national routine data systems. Over 110,000 women have been recruited since 2003. A cohort study is the methodologically most rigorous study design that can be undertaken of long-term cancer and mortality risks. Follow-up is primarily by 3-yearly questionnaires but also from routine data sources. It is planned that collection of exposure and follow-up data will continue for at least 40 years.

Finding the causes of cancer is important to enabling its prevention and identifying high risk groups for screening and early detection. Cancer now accounts for 26% of deaths in women in England, so is a major public health problem. Breast cancer is the most common cancer in women in the UK and worldwide.

2021-0111 Professor Sarah Wild University of Edinburgh/ NHS Lothian
ABCD audit of in-patients with diabetes and Covid-19

Early in the pandemic it became clear that people with both main types of diabetes were at higher risk of getting COVID-19 and were at higher risk of severe illness than people without diabetes. Many unanswered questions about the impact of COVID-19 on people with diabetes remain. This audit aims to provide more detailed information about factors that affect severity of illness among people admitted to hospitals in the UK with diabetes and COVID-19. The audit is being run by the Association of British Clinical Diabetologists, a group of doctors who have extensive experience of collecting information for audits of diabetes care. Information on people who were admitted with diabetes and COVID-19 will be collected by NHS staff at participating hospitals. The information that is used in the national audit will not include name, address or date of birth. This non-identifiable data will be sent safely using an approved NHS email address to Oxford where statistical analysis will be done. Data collection and analysis will be a rolling process while the pandemic continues. The findings will be reported through reports to Diabetes UK and their Balance magazine for members with diabetes, local professional groups, national and international professional publications and conferences. Data governance approvals for the work have been obtained from Caldicott guardians.

2021-0113 Dr Dasha Nicholls Imperial College London
Incidence of Avoidant/Restrictive Food Intake Disorder (ARFID) in children and young people presenting to secondary care in the UK and Ireland

The study aims to collect data on Avoidant/Restrictive Food Intake Disorder (ARFID), a serious disorder introduced as a new mental and behavioural disorder diagnosis in 2013. ARFID is an umbrella term used to describe restrictive eating patterns which result in significant health problems, including weight loss, poor growth, nutritional deficits or poor emotional wellbeing.

Unlike in anorexia nervosa, restrictive eating in ARFID is not associated with concerns about body image, weight or shape. To date very little is known about this disorder and its associated behaviours and outcomes in British and Irish children and adolescents and, as a new diagnosis, it is of great international interest.

By using questionnaires sent to paediatricians through the British Paediatric Surveillance Unit (BPSU) and child and adolescent psychiatrists through the Child and Adolescent Psychiatric Surveillance system (CAPSS), this study aims to establish incidence rates (number of new cases) of ARFID presenting to secondary health care, referral pathways, patterns of presentation, and clinical features (eating behaviours, medical complications and the types of medical or psychiatric presentations it is associated with).

This will allow us to compare rates, presentation and management of ARFID with other countries, as well as generating new priority research questions that could in turn inform decision making to better match patient need with sufficient funding allocations. Study results we hope will prompt further research into information on prognosis, long-term outcomes and treatment of ARFID.

2021-0114 Su-Gwan Tham University of Manchester
National Confidential Inquiry into Suicide and Safety in Mental Health (NCISH)

As the UK's leading research programme into suicide prevention in clinical services, The National Confidential Inquiry into Suicide and Safety in Mental Health has the overall aim of improving safety for all mental health patients. We provide crucial evidence to support service and training improvements and, ultimately, to contribute to a reduction in patient suicide rates and an overall decrease in the national suicide rate.

We previously collected detailed clinical and socio-demographic questionnaire data on people who had been convicted of homicide and had been in contact with secondary mental health services within a year prior to the offence. Since April 2018, our NCISH work programme changed with our research into patient suicide continuing but a reduction in our homicide programme. Currently, we only report the number of homicides by people in contact with mental health services. We no longer collect the more detailed questionnaire data on homicides by mental health patients.

Our current core database is a national consecutive case series that:

- Examines the circumstances leading up to and surrounding the deaths by suicide of people under the recent care of, or recently discharged from, specialist mental health services;
- Identifies factors in the management and care of patients which may be related to suicide;
- Recommends measures to reduce the number of suicides by people receiving specialist mental health care.

We also undertake studies into suicide prevention in the general population, and report on the incidence of homicide by people in contact with mental health services.

2021-0115 Professor Vittal Katikireddi University of Glasgow
Early pandemic evaluation and enhanced surveillance of COVID-19 (EAVE II):
additional analysis of ethnic inequalities

Evidence suggests that ethnicity influences the risk of both infection and adverse outcomes for COVID-19. However, empirical research remains limited, especially within Scotland. Initial analyses within Scotland have not identified elevated risks, but they have been subject to major limitations arising from likely systematic misclassification of ethnicity. This is to be conducted as part of the wider project *Early pandemic evaluation and enhanced surveillance of COVID-19* (EAVE II) which will provide real time surveillance and research on the COVID19 pandemic in Scotland, and will permit the estimation of the risk to the whole population and relatively small subgroups and areas. EAVE II study aims to investigate the risk of COVID-19 in various at-risk groups of the population including ethnicity. The ethnicity study is a substudy of the EAVEII project that aims to assess the epidemiology of SARS-CoV-2 infection by ethnic group and investigate the mechanisms through which ethnic inequalities in COVID-19 arise. The Scottish Government have announced the establishment of an expert group to provide advice on ethnicity and COVID-19. Understanding whether ethnic inequalities are present in Scotland is therefore a major policy priority for Scottish Government. Given the increasingly consistent evidence that Black and South Asian ethnic groups are at increased risk internationally and in England, there is a need for more robust analyses within Scotland to describe the epidemiology and hence urgently inform the policy response required

2021-0116 Dr Rachael Wood Public Health Scotland
COVID-19 in Pregnancy in Scotland (COPS)

The COVID-19 in Pregnancy in Scotland (COPS) study is a sub-study linked to EAVE II (Early Assessment of COVID-19 epidemiology and Vaccine/anti-viral Effectiveness). EAVE II is the key national study tracking the epidemiology of COVID-19 in the Scottish population. COPS will support EAVE II by providing more detailed information on the epidemiology of COVID-19 in pregnancy, and its impact on maternal, pregnancy, and neonatal outcomes.

In COPS, we will link together a range of routine health data sources to:

- Identify all women in Scotland who were pregnant on, or became pregnant after, 1st March 2020 (the date of the first confirmed case of SARS-CoV-2 infection in Scotland), and all live births in Scotland from 1st March 2020 onwards
- Identify women with confirmed, probable, or possible COVID-19 during their pregnancy
- Identify relevant maternal, pregnancy, and neonatal outcomes among women with, compared to without, COVID-19 during pregnancy. The outcomes examined will include maternal admission, severe disease, and death; congenital anomaly; pregnancy loss; fetal growth and preterm birth; and neonatal infection, admission, and death

We will also assess the proportion of confirmed cases of COVID-19 in neonates that were associated with maternal COVID-19. In addition, we will examine the extent to which pregnant women and neonates with COVID-19 have been included in existing enhanced surveillance studies such as CO-CIN and BPSU studies.

2021-0117 Dr David Henderson Edinburgh Napier University
Community based COVID-19 mortality

Older people, particularly those living in care homes, have been profoundly affected by the COVID-19 pandemic in Scotland. As of the 5th July 2020, 76% of all deaths related to the virus occurred in those over the age of 75 and 90% in those over the age of 65. Almost half of COVID-19 deaths have occurred in care homes with a similar amount occurring in hospital. In terms of excess all-cause deaths (the number above the average of the past five years) a 67% increase has been recorded in care homes – much higher than seen in hospital or other settings.

To date, we know less about the characteristics of those that have died outside of hospital in relation to COVID-19 than those that did die in hospital. This study aims to help fill that gap in knowledge.

As Scotland moves out of the first wave of the COVID-19 pandemic, this research is urgently required to a) help inform policy and practice regarding potential future waves of the virus and b) help inform future research into what happened during the first wave.

2021-0119 Dr Serena Pattaro University of Glasgow
Investigating socioeconomic, household and environmental risk factors for
COVID-19 in Scotland

There is a growing concern that the ongoing COVID-19 pandemic has widened existing health and social inequalities. Emerging evidence from Scotland and the UK has shown that the lockdown and social distancing measures are likely to disproportionately affect vulnerable groups in the population, such as low-income earners, the unemployed, older people and those with caring responsibilities. Environmental factors linked to deprivation, such as poorer housing conditions, population density, modes of transport to work and air pollution, can add to socioeconomic disadvantage by worsening pre-existing health conditions and may increase risk of COVID-19.

As part of the COVID-19 Data Intelligence Network and COVID-19 Data Taskforce, a research team from the Scottish Centre for Administrative Data Research (SCADR) has been tasked by Scottish Government to model the socioeconomic, household and environmental risk factors for COVID-19 disease outcomes. The research team will identify how underlying health conditions in the general population and among those currently shielding mediate the effects between exposure to socioeconomic and environmental factors and adverse COVID-19 disease outcomes. We plan to model the transition to adverse outcomes, including the risk of testing positive for SARS-CoV-2, being admitted to hospital with COVID-19 symptoms, receiving critical care and death due to COVID-19 disease. By using linked administrative data at individual-, household- and area-level, we wish to obtain a more accurate estimation of the social (non-health) risk factors associated with COVID-19 outcomes. The results of this study will help to inform timely government policy responses, as lockdown measures are lifted and continuing interventions may be needed to contain the resurgence of infections among vulnerable groups, such as those advised to shield due to underlying health conditions.

2021-0120 Professor Morag Treanor Heriot-Watt University
Understanding Children's Lives and Outcomes Project 1 - Exploring context,
factors and approaches to educational exclusions and absences

This research aims to explore the variation between schools and local authorities in their policies and practice in relation to temporary exclusions and authorised/unauthorised absences. This will be done by analysing central and local government policies, by analysing the linked data on a school/catchment/local authority basis, and by exploring their associations with young people's educational outcomes and post-school destinations. This hopes to establish 'what works' in reducing exclusions and authorised/unauthorised absences and improving attainment/post-school destinations.

The research will also explore the role of personal and health circumstances (e.g. longstanding health issues), and how these connect to explained and unexplained absences, as well as family characteristics, such as material poverty and associated factors (e.g. unemployment, disability) and household living arrangements. This will allow us to explore the extent to which it is policy and practice, and not the demographics of the catchment or the characteristics of the family that make the difference to absences, exclusions and outcomes.

2021-0124 Dr Agnes Tello University of St Andrews
Characterisation of COVID-19 outcomes in a high-risk cohort: Assessment of
background levels of autoantibodies as a prognostic marker for severe COVID-19
infection

The recent emergence of SARS-coronavirus 2 (SARS-CoV-2) has developed into a global health emergency. Older adults and those with underlying health conditions appear to be most at risk of dying of SARS-CoV-2 infection. However, we do not yet know of all the risk factors that contribute to poor outcomes from coronavirus disease 2019 (COVID-19).

Patients whose immune system becomes over activated because of COVID-19 are more likely to have more severe illness. Antibodies are molecules used by the immune system to fight bacteria and viruses, such as SARS-CoV-2. Autoantibodies are antibodies that are directed against our own cells, for example, they cause autoimmune diseases such as lupus.

We are interested to find out if patients who have higher background levels of autoantibodies are more likely to develop more severe COVID-19 compared to patients with lower background levels. The EarlyCDT-Lung test measures the levels of seven autoantibodies, and 12,208 participants in Scotland have taken this test as part of the ECLS early lung cancer detection clinical trial. Using routinely collected health records, we plan to follow-up ECLS participants to find out if higher levels of autoantibodies, as measured by the EarlyCDT-Lung test in the ECLS trial, are linked to poor clinical outcomes from COVID-19.

2021-0127 Dr Lucy Teece University of Leicester
UK-REACH: United Kingdom Research Study into Ethnicity And COVID-19
outcomes in Healthcare workers

COVID-19 has spread rapidly across the world causing significant illness and deaths in many countries. Healthcare workers (HCWs – those who work in a healthcare setting) are more likely to be exposed to the virus. We have evidence that people from ethnic minorities have a higher chance of going to intensive care and dying from COVID-19. There is a concern that HCWs from ethnic minority groups may be at increased risk of poor outcomes. It is important that we understand differences in COVID-19 diagnosis, hospitalisation, and death rates between ethnic minority and White HCWs to inform policies to protect the health of these key workers. The UK-REACH programme will address this gap in understanding using existing data held by national healthcare organisations to understand if and why ethnic minority HCWs are more susceptible to the virus.

Specifically, this study will investigate the incidence of COVID-19 diagnosis, hospitalisation, and death in HCWs across England, Wales, Scotland, and Northern Ireland. We will establish whether there are differences in these COVID-19 outcomes between ethnic minority workers compared to their White colleagues. We will try to

2021-0129 Albert King Scottish Government
Carehomes Analysis

Some care homes have been affected by COVID-19 more severely than others. We are seeking to understand whether there are modifiable factors that could reduce harm in the second wave.

There is an immediate operational need, tied to the second wave beginning now, to identify, at the care home level, factors that affect vulnerability of residents. We want to understand if there are links between care home outbreaks and care home use of agency staffing, staff to resident ratios, staff sickness absence, manager experience, care home quality rating etc.

A study, published in July 2020, systematically examines care-home outbreaks of COVID-19 in NHS Lothian using linked care-home, testing and mortality data for care-homes (<https://www.medrxiv.org/content/10.1101/2020.07.09.20149583v1>). Further analyses at a national level will focus on lessons learnt from the first wave and build on / enhance this work undertaken (in which analyses was carried out on limited care home service data) with more care home data from the various data controllers.

Much data exists already and the focus of this work will be on re-use of these existing datasets, held by Care Inspectorate, SSSC (Scottish Social Services Council), Scottish Government and NHS.

2021-0134 Dr Sharon Hutchinson Public Health Scotland
Impact of COVID-19 on prisoners in Scotland

People in prisons are potentially more vulnerable to the COVID-19 pandemic than the general population. In the absence of prevention and control measures, the confined conditions in which prisoners live together for prolonged periods of time provides an environment for SARS-CoV-2 to spread quickly. Also, people in prisons typically have worse health conditions than the general population that could potentially heighten the risk of severe COVID-19 disease. Past experience

shows that prisons can act as a source of infection and spread of infectious diseases both within and beyond prisons. Thus it is important to monitor the extent of testing, diagnosis and severity of disease for COVID-19 and overall mortality among prisoners in Scotland and those recently released from prison. Linkage of the Scottish Prison Service (SPS) Prisoner Records 2 (PR2) system on individuals held in custody to healthcare records held within Public Health Scotland will be used to examine the extent to which prisoners and those recently released from prison in Scotland are at different risk from COVID-19. This information is important to assess: i) the effectiveness of measures introduced to prevent and control transmission in the prison setting, and ii) the impact of COVID-19 and associated prevention measures on the health of individuals who have been in prison.

2021-0148 Albert King Scottish Government
The Scotland Coronavirus Model (Regression Modelling)

The University of Edinburgh have developed an agent based model for which they have submitted and receive approval under previous PBPP application (ref: Application number 2021-0007). They have now delivered a well-developed regression model based on this to the Scottish Government. Scottish Government are going to take over responsibility for running and developing this regression model. This application therefore seeks PBPP approval for access to the necessary data aligned to the initial request form from Edinburgh University to run this regression model within a secure environment. The University of Edinburgh project lead by Professor Kao is still ongoing.

This data will also be used to undertake our exceedance modelling which we run each day and publish each Thursday when appropriate on the Scottish Government website on a Thursday at local authority level (<https://www.gov.scot/collections/coronavirus-covid-19-modelling-the-epidemic/>)

2021-0151 Dr Parvinder Aley University of Oxford
Accessing Oxford COVID19 vaccine trial weekly swab data via NPEX/NHSDigital

The novel coronavirus SARS-CoV-2 has been responsible for over 24 million cases and 800,000 deaths worldwide to date (August 2020). Vaccination is a key approach to mitigate both morbidity and mortality.

The ChAdOx1 nCoV-19 vaccine is undergoing Phase 1, 2 and 3 testing in the UK led by the University of Oxford with over 10,000 participants enrolled. In these studies participants receive either one or two doses of the investigational SARS-CoV-2 vaccine or a control vaccination. During follow up if they develop symptoms of Covid-19 disease they undergo testing for the virus. In addition, in the Phase 2/3 studies (COV002 study) participants also perform weekly PCR self- swabs when they do not have symptoms. These results contribute to the assessment of whether the ChAdOx1 nCoV-19 vaccine can protect individuals from infection.

When a participant performs home testing it is processed by the Department of Health and Social care (DoHSC). The participant registers their kit and receives the result directly, this is essential to allow for provision of advice regarding isolation directly to the participant. For trial purposes, to assess the impact on asymptomatic infection and evaluate potential implications for herd immunity the results from these tests need to be linked to participant trial records. PCR positive individuals are also required to have further immunological tests. Although the University of Oxford is able to obtain details of the number of positive/negative/void processed per day we are not able to identify the individual this data relates to and thus need NHS Scotland to provide this linked data.

2021-0152 Professor Christopher E Brightling University of Leicester
Post-hospitalisation COVID-19 study: a national consortium to understand and
improve long-term health outcomes (PHOSP-COVID)

The COVID-19 pandemic has tragically led to severe acute illness, hospitalisation and death. Beyond the health of those affected, it has had widespread economic, psychological and societal effects. The clinical spectrum is broad, ranging from those with no or minimal symptoms to severe pneumonia in 15-20% with evidence of widespread disease beyond the lung. As we emerge from the first wave of the pandemic, we have new insights into the acute phase of this disease but very little information concerning long term effects of COVID-19 and the ongoing medical, psychological and rehabilitation needs of these patients. We shall establish a national consortium and a research platform embedded within clinical care to understand and improve long-term outcomes for survivors following hospitalisation with COVID-19. We have built the consortium from existing expert groups across the UK and shall use standardised assessments of patients, including advanced imaging, recording of information and collection of samples. This study will provide us with a comprehensive understanding of the impact on the health of those that have been hospitalised with COVID-19. This will enable trials of new strategies of clinical care including personalised treatments to improve the long-term outcome of current and future COVID-19 survivors.

2021-0170 Dr Larry Doi University of Edinburgh
FNP Insights Evaluation (COVID-19)

In response to the current COVID-19 health crisis, the Scottish Government has commissioned a rapid service evaluation of the Family Nurse Partnership (FNP) programme. The service evaluation seeks to understand how the FNP is being delivered in these circumstances and the impact of this on the quality of care provision, from both the viewpoint of practitioners and clients.

Guidance published by the Scottish Government in April 2020 stated that the FNP “provides an essential service to the clients and children enrolled on the programme. The ReValuation Report demonstrated that families receiving the programme have high levels of complex vulnerabilities and health needs including mental health challenges and domestic violence with 88% identified with socio economic disadvantage. Families will continue to need the support of FNP and, in fact, will likely need their connection to their FNP nurse more than ever”.

In response to guidance issued and changes to working practices following the COVID-19 outbreak, it is vital to gain an understanding of the impact this is having on clients and their children at this time.

This proposal therefore seeks to conduct one-to-one semi-structured interviews with a number of clients from mainland NHS Scotland Health Boards who are currently in receipt of the FNP.

2021-0180 Professor Jill P Pell University of Glasgow
Defining and understanding the longer-term effects of COVID-19: A mixed
methods study exploring the frequency, nature, and impact of ‘long COVID’ in the
Scottish population

Most people with COVID-19 recover within three weeks, but some don’t. Our study will identify how many people continue to be unwell, their symptoms, and how it affects their lives. Scottish adults

who had a positive COVID-19 test, and a negative test comparison group, will be sent an SMS message inviting them to take part in the study. If they agree, they will use an app to answer questions about their health before and after COVID-19, and any effect on their lives. They will answer the questions again 6, 12, 18, and 24 months after testing. Their health records will tell us if they have been in hospital or taking medicines. This can be done without us knowing their name or speaking to them. They will be asked if they agree to be contacted directly. Some who agree will have one-to-one interviews to discuss, in more detail, the impact of COVID-19 on their health and relationships. We will also ask for their suggestions on what help they need. Anyone can refuse to take part, or withdraw from the study, at any time. Patients with lived experience of COVID-19 symptoms will be members of a steering group providing advice during the project. The results of our study will be shared with the Scottish Government's COVID-19 Advisory Group and will be published in scientific journals that are read across the world.

2021-0181 Elaine Strange Public Health Scotland
DAISy – Drug and Alcohol Information System

The Drug and Alcohol Information System (DAISy) is a web based data collection system that records information about individuals in contact with services that provide Tier 3 (structured, care-planned drug and alcohol treatment in the community), and Tier 4 (drug and alcohol specialist inpatient treatment and residential rehabilitation). Services may be delivered by NHS Boards, Local Authorities or the 3rd sector

Drug and Alcohol misuse are major public health problems in Scotland. Public Health Scotland is developing a single Drug and Alcohol Information System (DAISy) to enable comprehensive, high quality data collection at a local and national level. This will support service monitoring, quality improvement, management, national policy and service planning.

DAISy will:

- Collect social and demographic information about individuals that receive Tier 3 and Tier 4 drug and alcohol interventions.
- Replace the current Scottish Drug Misuse Database and the Drug and Alcohol Treatment Waiting Times system
- Collect information on alcohol treatment and outcomes where there is currently an information gap. The information provided by DAISy will: ☐ Provide a better understanding of the patient journey and pathway during treatment and therefore better inform the effectiveness of treatment options for service users. ☐ Enable the delivery of person-centred care through better sharing of information and a broader understanding of the factors which impact on people.
- Lead to reduced duplication of data entry and service users being asked for the same information several times. ☐ Support referrals between service providers and thereby the multi-agency care required by many service users for recovery. Better sharing of information leading to improved delivery of person-centred care.

2021-0193 Professor Rowland Kao University of Edinburgh
Wastewater surveillance project (N-Wesp)

It is now known that wastewater collected from sewage processing plants contains coronavirus RNA that, if present, provides considerable information on the severity of COVID-19 infection in

communities and recently, the use of these data across Great Britain for purposes of COVID-19 surveillance was announced (<https://www.bbc.co.uk/news/science-environment-53635692>). As part of the “N-Wesp” project, the investigators named above are involved in using combinations of epidemiological models and RNA detection in Wastewater, in order to better determine the value of the RNA signals (<https://nwesp.ceh.ac.uk>).

In this project, we shall use a combination of statistical analyses and simulation models in order to describe these relationships and develop alternative surveillance strategies that use wastewater sampling to augment or ideally replace existing surveillance methods, as it is potentially both faster and much more cost-effective. For the statistical analysis, we shall use a combination of well-established regression and machine learning approaches.

For the simulations, we shall use the “Scotland Coronavirus Model”, a computer simulation describing the spread of COVID-19 throughout Scotland using explicit individual data. Past COVID-19 infection patterns will be used to identify model parameters that best explain them and to estimate uncertainty, also providing estimates of the hidden burden of infection in the population. In another project with PHS, available 20/10/2020 9 data on COVID-19 deaths and cases recorded by data zone, SCoVMod generated a statistically consistent fit over time to the recorded COVID-19 epidemic in Scotland thus far, providing confidence that it will be a robust tool for identifying alternative testing strategies.

2021-0194 Danish Mahmood NHS Digital Inclusion of Scotland onto the Pelvic Floor Registry as part of the Surgical Devices and Implants System

High-profile incidents such as Poly Implant Protheses silicone breast implants and metal-on-metal hip replacements have highlighted the lack of data available nationally to support surveillance and monitoring of surgical devices and implants and to assist in subsequent patient recall for review or removal.

This has resulted in the establishment of multiple clinical registries and registers to identify patients who have surgical devices and implants, including the specific details of the device or implant. The Independent Medicines and Medical Devices Safety Review under Baroness Cumberlege has published its report “First Do No Harm” covering the use of abdominal and vaginal pelvic mesh procedures. <https://www.immndsreview.org.uk/Report.html> NHS Digital has received a Direction from the Secretary of State for Health for England to establish and operate an information system to support the development of a Surgical Device and Implant Information System which will support the national reporting of any surgical device or implant. This supports Recommendation 7 of the report. – creation of a central patient level database of all implantable devices. NHS Digital is developing a Surgical Devices and Implants Information System as directed by the Secretary of State for England following the recommendations of the Cumberlege Review. See link:

<https://digital.nhs.uk/about-nhs-digital/corporate-information-and-documents/directions-and-data-provision-notices/secretary-of-state-directions/surgical-devices-and-implants-directions> The data will be processed for the following purposes: ☐ to enable surveillance of specific medical devices through linkage to other data assets including patient outcomes, to enable the earlier identification of potential issues with a specific surgical device or implant which may warrant further investigation e.g. by the Medicines and Healthcare products Regulatory Agency (MHRA) which could result in a product recall. Management of recall activities lies with the Scottish authorities. ☐ to support identification of a cohort of patients and verify their latest address and deceased status as part a

patient recall for review or removal of a particular implanted device in the event of a product recall being issued. The aim of the Surgical Devices and Implants Information System is to collect UK wide data and support surveillance and monitoring of surgical devices and implants and to assist in subsequent patient recall for review or removal. The Surgical Devices and Implants information system will be mandatory for England from April 2021. This application proposes to include Scotland on the Surgical Devices and Implants Information System. This proposal covers piloting in Scotland and future roll out.

See attached letter confirming intention of Scottish Government to join.

2021-0203 Professor Sharon Hutchinson Public Health Scotland /
Glasgow Caledonian University
Impact of COVID-19 on people who use and inject drugs in Scotland

Due to the extent of poverty, poor physical and mental health, and reliance on access to clinical and public health services, people who use and inject illicit drugs (PWUID) may be disproportionately affected by the COVID-19 pandemic and measures in place to address it. Risk of COVID exposure and transmission could be elevated for these populations typically resident in densely populated areas of social deprivation. With higher prevalence of pre-existing health problems, these populations may also be at increased risk of severe COVID disease. Access to clinical and public health measures – such as blood borne virus testing, sterile injecting equipment provision and opiate agonist therapy – essential to reduce harms among PWUID will inevitably be affected by physical distancing interventions. Pre-COVID, PHS had already highlighted a key priority for the organisation was to address the harms associated with PWUID, tackling the record numbers of drug-related deaths and the largest outbreak of HIV among people who inject drugs for 30 years in Scotland. It is as yet unclear what impact the pandemic has had on these wider drug-related harms. Enhanced surveillance and epidemiological analysis are thus required to understand and monitor the effects of COVID-19 and associated prevention measures on this population. It is important to monitor the extent of testing, diagnosis and severity of disease (i.e. hospitalisation, critical care and death) for COVID-19 and other harms (in particular extent of blood borne virus infection and drug-related mortality) among PWUID in Scotland.

2021-0215 Dr Adrian Brown University College London
Surveys to exploring the continued impact of coronavirus (COVID-19) on weight management and bariatric surgery services and people living with obesity including those accessing weight management and bariatric services in the UK.

Coronavirus (COVID-19) pandemic has impacted healthcare. It is important that we understand and support people who have and continue to manage their health conditions in the Scotland. People with obesity are at 'higher risk' from COVID-19 infection including increased risk of hospitalisation and respiratory support due to COVID-19. During the national lockdown, clinical service was impacted and access to support was reduced. This appears to have had a negative impact on health-related behaviours and mental health of people living with obesity. In response to the COVID-19 pandemic we have develop a research project to understand the impact of COVID-19 on people living with obesity and service providers. This project involves two surveys the first is getting service provider view on how COVID-19 has impacted service provision in weight management service including changes in communication, how redeployment has impacted care. The second is focussed

on the impact of COVID-19 on people living with obesity including changes to diet, physical activity, sleep and mental health and how their care has been impacted. The survey will be distributed to Scottish Health Boards for service providers to complete and then for them to share with their patients, along with recruiting through social media. The results of the study will provide insight into how COVID-19 has impacted services and patient and aims to help policy to support for people living with obesity and improve delivery of weight management services.

2021-0217 Dr Tanja Mueller University of Strathclyde
Atrial fibrillation, stroke, and the use of oral anticoagulants in Scotland

Atrial fibrillation (AF) is an arrhythmia (an irregular heartbeat) common among mainly elderly patients which can increase a patient's risk of suffering a stroke. To prevent strokes, patients with AF are usually prescribed oral anticoagulants – for decades, the most commonly prescribed drug was warfarin, but four additional drugs have been made available to patients in Scotland since 2008: dabigatran, rivaroxaban, apixaban, and edoxaban. Similar to warfarin, these drugs – commonly referred to as direct oral anticoagulants (DOACs) – may increase a patient's risk to experience bleeding events. Little is known to-date regarding how DOACs are being prescribed across Scotland, and to which patients; it is also still unclear which factors might influence whether a patient will have a stroke or a bleed while on treatment. We will investigate these questions in order to provide information which might be used to further develop treatment guidelines, and improve patient care.

Furthermore, a substantial share of patients who experienced a stroke had AF but were not prescribed any anticoagulants. Since strokes may have severe consequences for both patients (e.g. subsequent disability) and the health and social care system (such as hospital and care home admissions), we will evaluate why some patients do not receive anticoagulants; and further investigate the unmet needs of AF patients and their consequences, including the associated economic impact. This will support the NHS in future planning and decision making.

2021-0234 Professor Tariq Ahmad Royal Devon and Exeter NHS
Hospital Foundation Trust
CLARITY IBD

Patients with inflammatory bowel disease (IBD) are usually treated with immunosuppressive drugs. By inhibiting the immune system, these drugs increase the risk of serious infections and prevent vaccines fully working. Because COVID-19 is caused by a new virus, SARS-CoV-2, we don't yet know if these drugs increase the risk of infection, life-threatening illness or reduce immunity that usually follows infection or vaccination. As a precaution the UK Government advised patients taking these medicines to follow strict social distancing measures, known as shielding, during lockdown periods. This study will investigate the impact of specific drugs and shielding on COVID-19 infection and subsequent immunity following infection or vaccination. The results of this study will help inform public health policy decisions for patients with IBD as well as millions of other UK patients treated with immunosuppressive drugs.

2021-0241 Dr Till Hoffmann Imperial College London
How can NCS healthcare data be connected with wastewater surveillance of COVID-19 in a privacy-preserving fashion to inform epidemiological models and democratise data access?

COVID-19 is a serious disease caused by a virus called SARS-CoV-2. To protect communities, we need to find out how many people have this virus, and who they might infect.

Most people get tested when they start to feel ill. However, some people never feel ill when they're infected with the virus. But they can pass it on to their families without knowing. We're developing new ways to identify how many people have the virus but don't have symptoms, so we can protect communities.

Fortunately, traces of the genetic material of the virus can be found in the poo of everyone who is infected, even if they don't feel ill. The poo travels through the sewerage network to sewage treatment centres in your local area. Here, samples of the sewage are taken to measure the amount of genetic material it contains. This allows us to estimate how many people in the community are infected.

We want our estimates to be as accurate as possible. We therefore need to compare them with information from local hospitals to understand how many people get sick and need medical help. We will collect the information needed for the comparisons in this project. In the end, it will allow us to use the sewage measurements to predict whether hospitals will get busy and need extra help to keep the community safe.

2021-0255 Hazel Dodds Public Health Scotland
Scottish Cardiac Audit

Cardiac disease remains a major cause of death and disability in Scotland. In all its forms it is responsible for a substantial burden for NHS Scotland, and for people in Scotland.

This proposal seeks to ensure continued data collection and audit of secondary and tertiary cardiac services in Scotland enabling us to measure and understand the delivery of care for people with cardiac disease across Scotland.

It will also enable the identification of differences in care across Scotland unwarranted variation and support improvement in order that we can improve the experience of equitable care, and patient outcomes for people with cardiac disease.

At present, datasets for various cardiac conditions Percutaneous Coronary Intervention (PCI), Transcatheter Aortic Valve Implantation (TAVI), Adult Cardiac Surgery and Congenital Heart Disease are routinely submitted directly to the National Institute for Cardiovascular Outcomes Research (NICOR) from all relevant adult and paediatric cardiac centres in Scotland (6 PCI sites, 3 TAVI sites, 3 cardiac surgical sites and 2 congenital services – adult and paediatric). We propose that, in future, this Scottish data is held by the Scottish National Audit Programme (SNAP) within Public Health Scotland (PHS) to enable linkage with outcome data in Scotland, and the establishment of an effective Scottish governance structure which will support improvement.

The datasets for each of these areas are provided in supporting documents:

- 2021-0255-CardiacAudit-3-National Adult Cardiac Surgery Audit Dataset

- 2021-0255-CardiacAudit-4-Percutaneous Coronary Intervention Dataset Standard
- 2021-0255-CardiacAudit-5-National Congenital Heart Disease Audit Dataset Standard
- 2021-0255-CardiacAudit-6-TAVI Audit Dataset

In addition, some hospitals in Scotland contribute to the Cardiac Rhythm Management dataset.

2021-0255-CardiacAudit-7-Cardiac Rhythm Management Dataset

We seek to continue to collect this data in order that there is not a gap in collection for this important information. However, our initial focus on establishing a governance structure has focused on the areas where current submission is full and complete due to clinical demand for continued audit in these areas.

Once that structure is operational we will focus attention on a second phase which will be to improve data collection for other aspects of cardiac care and establish corresponding governance processes. We will submit an updated Public Benefit Privacy Panel (PBPP) application for this work as appropriate.

Our ability to hold this information at a Scottish level will provide a continued benefit of demonstrating that these services are providing safe, effective and person-centred care, and through engagement with the SNAP Governance Process enable identification of any outliers and issues within the various centres across Scotland formally addressing these as per the SNAP Governance Policy. (2021-0255-CardiacAudit-8-SNAP Governance Policy).

2021-0302 Dr Annemarie Docherty University of Edinburgh National Burden of Paediatric COVID-19

The success of vaccine roll-out for COVID-19 has highlighted that we may soon be in a position to offer vaccination to those aged under 18. The increased transmissibility of new SARS-CoV-2 variants such as B.1.1.7, together with the apparent reduced effectiveness of vaccines for preventing infection with other strains such as 501Y.V2, suggests that achieving herd immunity may not be possible without vaccination of this age group.

Governments will require a clear understanding of the direct burden of disease in this age group, to be able to accurately assess the risks and benefits of vaccination. The COVID-19 Clinical Information Network (CO-CIN), part of the International Severe Acute Respiratory and Emerging Infection Consortium (ISARIC) is already collecting clinical information on patients admitted to hospitals in the UK with COVID-19. However, gathering comprehensive data on the national burden of COVID-19 in children in Scotland will only be possible if a full list of admissions in this age group (0-19 years) are provided to the ISARIC/CO-CIN investigators.