

Data Science to inform NHS compound winter pressure policy response. A funding opportunity to rapidly mobilise skills and the UK health data infrastructure

Background

The NHS and social care are expected to face more severe pressures than normal this winter due to interacting (compound) risks. Professor Sir Chris Whitty, Chief Medical Officer for England, summarised the principal compounding risks for winter 22/23 to be:

1. COVID
2. Influenza
3. The interaction of any influenza and COVID wave will depend on whether they are concurrent (leading to a higher, but shorter peak) or in series (smaller peak but more prolonged 'winter' season)
4. Other viruses and respiratory bacterial disease, particularly RSV in children, and norovirus which may affect health and social care settings resulting in increased attendances and nosocomial spread
5. Absenteeism of key staff due to sickness or caring responsibilities will put additional pressure on health and social care services
6. The impact of fuel price inflation and other cost of living pressures. This is a potentially underappreciated risk for health, and the NHS and social care.

Through recent communications with policy makers, system representatives, UK health data infrastructure and research leads, a set of research questions that can rapidly inform policy and operational response to acute care winter pressures for 2023/2024 have been prioritized. **Applications are invited from groups across the UK health data research infrastructure that can generate rapid insights to address these research questions via a rapid, competitive funding call funded by the National Institute for Health and Care Research (NIHR) and managed by Health Data Research UK (HDR UK).**

Given the limited duration of funding (to 31st March 2023) all submissions must be able to demonstrate that they can safely and securely conduct and complete analysis by end of March. Evidence that teams have all of the required capability in place at the point of submission (including relevant data sharing agreement/s, data sets, linkages, infrastructure and people) and that patient and public involvement and engagement (PPIE) is integral to existing and proposed work.

Purpose of Funding Call

The aims of this call are to:

- Support research teams across the UK health data infrastructure (e.g. data assets and infrastructure that have been established via the [COVID-19 National Core Studies](#)) that can rapidly mobilise to produce analytical insights which address current prioritised research questions and rapidly inform the NHS and social care operational and policy response
- Enable research which benefits patients and the public
- Enhance the UK data assets and infrastructure by making available datasets, linkages, codes, tools openly available via the [HDR UK Innovation Gateway](#)

Prioritised Research Questions:

The scope of this call has been developed collaboratively with Department of Health and Social Care (DHSC), NHS England (NHSE) and Office for National Statistics (ONS) to reflect urgent policy questions required to inform NHS and social care winter planning to deliver improved public, patient and service outcomes including:

Public and patient outcomes:

- Improved population health
- Reduction in severe disease/death for key winter illness (such as flu)
- Improved patient outcomes from effective treatment and appropriate and timely discharge
- Improved patient experience of health services.

Service outcomes:

- Reduction in need for GP services and social care
- Reduction in avoidable admissions
- Reduction in severe disease and therefore length of stay in hospital
- Increase in smart discharge (increase in patients discharged at the right time and to the most appropriate setting for their needs)
- Reduction in NHS costs per patient treated.

The following research questions are indicative and are listed to provide examples of the kind of research questions DHSC and NHS policy makers are interested in. Research proposals which answer different questions are also welcome, if they could contribute to the improved public,

patient and/or service outcomes listed above. Not all the research questions listed will be most appropriately answered using existing data sources, but they are listed to demonstrate the breadth of research questions policy makers are interested in and to give scope for researchers to respond broadly to this call for proposals. **Funding can be distributed across all four UK nations as long as the analyses are relevant for improving health in England.**

1. Who is most at risk of poor health/hospitalisation due to the risks that may arise this winter?

- a. Do specific combinations of risk factors place individuals more at risk of poor health outcomes?
- b. What are the consequences of compound risks (for e.g., pre-existing health conditions and the cost-of living crisis) faced by individuals this winter on morbidity and mortality outcomes? Can we predict what these consequences could be?
- c. Can at risk groups of individuals be identified for targeted interventions?
- d. Are risk factors for Flu, RSV and COVID, and other winter infections the same?

2. Can we predict what the pressures will be on primary care, hospitals, and social care?

- a. Identify how the system is working and where the pressures are across primary, secondary and social care-(for e.g., using regional or Integrated Care System level data).
- b. What key indicators could be tracked to indicate the system is at risk of becoming overwhelmed and to allow actionable intervention?

3. What is causing the pressures on the health and social care system, so interventions can be developed and targeted more effectively?

- a. What are the local drivers of pressures on the health and social care system such as GP appointment waiting times, ambulance waiting times, waiting lists for elective surgery, delayed discharge, re-admissions and capacity in social care?
- b. What factors are associated with higher performing health systems (for e.g., ICSs where delayed discharge is not a significant issue)?

4. What works to reduce poor health outcomes and healthcare needs arising because of compound risks this winter?

- a. What is the impact of preventative interventions (such as extending free school meals, insulating homes, modelling the impact of energy price cap set at

- different levels or targeted vs untargeted support for energy bills, increasing groups eligible for COVID vaccines, use of community warm spaces)?
- b. What treatment interventions could reduce the secondary burden caused by winter illness (such as preventing CVD events in people who have recently had COVID, or the impact of long COVID)?
 - c. What health system interventions are effectively help staff and organisations work together to address these pressures (such as: workforce interventions to improve wellbeing, morale, recruitment, and retention; reducing avoidable admissions; improving patient flows; enabling smart discharge; and support for social care)?

Public and Patient Involvement and Engagement (PPIE)

- Effective PPIE is critical to successful health data research
- The funding call requires proposals for funding to demonstrate that PPIE is an integral part of existing and proposed work
- Applicants are to specify in their application PPIE will be embedded in the project plan and activities. HDR UK is able to offer advice and support to research teams to develop their PPIE plans, as well as provide connections to patient and public networks for recruitment
- Successful applicants will also agree to their project outputs being included within a public data use register in line with the [recommendations and standards](#) developed by [UK Health Data Research Alliance](#)
- The assessment Panel will include lay assessors

Funding available

To address these urgent questions, DHSC will provide **£425,000** to HDR UK to manage and distribute via a rapid open funding opportunity in December 2022, that builds on existing health data infrastructure. Funding can be distributed across all four UK nations as long as the analyses are relevant for improving health in England.

Our expectation is that approximately **~5-8 projects** will be funded for 3 months from January to March 2023 with a Final Report provided directly to DHSC and HDR UK on or before 30th April 2023. In addition, all teams will be expected to present initial insights at a meeting with policy makers at the end of March 2023. While there is an expectation that peer reviewed and

published outputs will also arise beyond April, the primary goal is to provide rapid insights to inform the policy response as soon as possible.

Teams should also expect to be introduced, and to work openly and collaboratively, with existing policy analysts to ensure work is complementary and to aid a longer-term partnership approach.

Selection will be based on the scoring criteria, until the maximum funding is allocated, and a balanced spread across the prioritised questions has been achieved. **The maximum duration of projects is 3 months, and as such, applicants must be able to demonstrate that capability required is currently in place (data sharing agreement/s, people, data sets, linkages and infrastructure) to be able to safely and securely conduct the work.**

Funding is available for resources associated with data curation and analysis, and funding can also be requested to support PPIE, dissemination, publication, communications, and study management. **Data access costs for COVID-19 related research** is currently funded to 31st March 2023 by the [Data and Connectivity National Core Study](#) across the national Trusted Research Environment (TRE) Network ([SAIL Databank](#), [CVD-COVID-UK/COVID IMPACT Consortium](#) led by the [BHF Data Science Centre](#) for NHS Digital data, [Northern Ireland Honest Broker Service](#), [Scottish National Data Safe Haven](#)). [ONS SRS](#) data access costs are currently free at point of use to accredited researchers for approved projects. **All applicants who may need to include costs for additional data access/amendment to current data sharing agreements across all UK national TREs and wider linked data assets should contact each directly prior to submission** to confirm whether scope of research is covered by existing funding or needs to be costed into application.

Awards will be made at 80% fEC for Higher Education Institutions (HEIs) and 100% fEC for other eligible organisations including NHS partners.

Eligibility

The lead applicant should be based at an **eligible research organisation**. These include:

- Higher education institutions
- Approved independent research organisations or NHS bodies
- Government-funded organisations
- Institutes and units funded by research councils

Number of applications

Principal investigators may only submit one application to this initiative as a principal investigator, but may be involved in more applications if listed as a co-investigator.

Selection Criteria

Teams must be able to provide evidence that their projects can:

1. Produce a report containing rapid insights (by 30th April 2023) that can inform policy and operational response to acute winter pressures for one or more of the prioritised research questions, relevant for improving health in England
2. Commence early January 2023 and complete all analysis by 31st March 2023 – evidencing that all resources and capability required to deliver project are currently in place (including existing partnerships with relevant data custodians and that any proposed analysis can be feasibly delivered based on existing data access/IG and ethical approvals)
3. Demonstrate that the team has the requisite scientific expertise, capability and track record to deliver
4. Demonstrate that PPIE is an integral part of the proposed work
5. Commitment to collaborative open and team science approaches, including engaging throughout with the wider research and policy community

A Final Report will be due by 30 April 2023. It is expected that peer reviewed publications will be completed and published beyond April 2023. Successful grantees will be expected to present findings at an insight sharing meeting with researchers and policy makers at the end of March 2023.

Applicants are required to complete a one stage application and submit a 4-page (maximum) proposal form.

Please submit all enquiries, clarifications, and completed applications to dataconnectivity@hdruk.ac.uk

Timing

- 21st November 2022 – call for submissions open
- 5th December 2022- applications submitted by 17:00hrs
- w/b 12th December 2022 – successful applications announced
- 5th January 2023 – projects commence
- January 2023- project initiation meeting (date tbc)

- 15th February 2023- financial reporting of high level spend
- 15th March 2023- financial reporting of high level spend
- 31st March 2023 – projects complete, present findings at insights meeting
- 15th April 2023- high level spend for whole project confirmed
- 30th April 2023- invoicing and final project report due

Terms and conditions of funding

Awards will be subject to the UKRI Standard Terms and Conditions of Grant ([UKRI-021122-fECGrantTermsAndConditions.pdf](#)) as well as the additional HDR UK requirements, including but not limited to compliance with the HDR UK Policies ([Our Policies - HDR UK](#))