☰ GOV.UK

Home > Health and social care
 > Research and innovation in health and social care
 > DHSC's areas of research interest

Department
of Health &
Social Care

Research and analysis

DHSC's areas of research interest

Updated 25 January 2023

Contents

Introduction

Areas of research interest - an overview

Cross-cutting themes

Outcomes

Priority cross-cutting methodologies

Delivery

ARI 1: early action to prevent poor health outcomes

ARI 2: reduction of compound pressures on the NHS and social care

ARI 3: shaping and supporting the health and social care workforce of the future

OGL

This document sets out the Department of Health and Social Care's (DHSC's) areas of research interest (ARIs) - the most important questions facing a department where we need to align scientific and research evidence from academia and industry with policy development and decision-making.

Introduction

The remarkable advances in health in the last 40 years were based on fundamental, translational and applied science from multiple disciplines. Future advances in health, and the long-term future of the NHS and social care, depend on science and technology advancing further.

The need for research within the health and care system is extensive. There is a constant requirement for underpinning science including fundamental, translational, clinical, epidemiological, public health, social and economic research. DHSC funds a substantial amount of research directly through the National Institute for Heath and Care Research (https://www.nihr.ac.uk) (NIHR), which invests over £1 billion a year to improve the health and wealth of the nation.

We have updated our areas of research interest (ARIs) to focus on areas of strategic policy importance to DHSC where research and innovation could facilitate a step change in how we deal with complex issues. ARIs highlight to the patient, academic, clinical and life sciences community the areas where we want to expand our efforts and work together to systematically understand, intervene and improve public, patient and service outcomes.

We will continue to fund research as laid out in the NIHR document: Best Research for Best Health: The Next Chapter (https://www.nihr.ac.uk/documents/best-research-for-best-health-the-next-chapter/27778).

DHSC has responsibility for the health of England but works with the devolved administrations on many UK-wide priorities, including research funding. DHSC and NIHR also work closely with other funders such as UK Research and Innovation (UKRI), medical research charities, the life sciences sector and other stakeholders. We will work with these partners to deliver the new ARIs.

Areas of research interest - an overview

We have developed these ARIs through wide consultation with policy teams across DHSC, NHS England and other stakeholders, and they have been

approved by ministers. The choice of ARIs is driven by a combination of current policy challenges where research and innovation have the power to transform the way we deliver health and care, together with ministerial and NIHR strategic priorities.

DHSC has 3 ARIs which we set out below - along with a summary of our vision for each one. You'll find more detail for each ARI further down this page.

ARI 1: early action to prevent poor health outcomes

Prevention, early diagnosis and appropriate intervention for people at increased risk of poor health (in particular obesity, cardiovascular disease, type 2 diabetes, mental health and cancer) to prevent excess deaths, improve population health (including the health of the working age population), reduce disparities and decrease reliance on health and social care.

ARI 2: reduction of compound pressures on the NHS and social care

Improved patient outcomes and reduced pressure across the health and care system through preventing avoidable admissions, utilising innovations to make routine care more efficient and resilient, enabling smart discharge, and through effective pandemic preparedness and new treatments to tackle a range of infectious diseases.

ARI 3: shaping and supporting the health and social care workforce of the future

A public health, NHS, social care and wider health workforce that is effectively structured, trained, deployed and supported to deliver future effective and efficient models of healthcare which meet the needs of the UK's changing population.

Cross-cutting themes

Across all 3 ARIs we want to deliver research and innovation which:

- reduces health disparities and improves health and economic outcomes for the most deprived 20% of the population so that we raise the floor and not just the ceiling for the whole population
- promotes economic growth by delivering a healthier workforce, a more efficient NHS, a higher skilled health and social care workforce, and through investment in the life sciences sector
- accelerates the adoption and scale of innovation in the health and care system

Outcomes

Across all ARIs, we seek research which improves both public, patient and service outcomes, such as the examples set out below.

Outcomes for the public and patients

These might include:

- improved access to and experience of health services
- improved physical health and mental health
- improved quality of life and ability to work
- reduced mortality
- reduced health disparities

Outcomes for services

Improvements might include increased efficiency and reduced burden and costs across all parts of the care system from public health to GPs, ambulances, surgery and social care.

Priority cross-cutting methodologies

To deliver research and innovation which enable a step change in policy and practice, we need to expand capability and capacity and encourage interdisciplinary collaborations in specific research disciplines.

1. Systems thinking

Each ARI is a complex systems problem. Changing the status quo will only be possible by looking at all parts of the system, understanding how they connect, where they are amenable to intervention, and expanding the range of options available for solving the problem.

2. Data science

Analysis of large-scale data from across the health and care system is critical for a range of research priorities, including:

- identifying risk factors
- improving diagnosis
- predicting outcomes
- increasing the effectiveness of treatments
- understanding and mitigating pressures on the health and care system

3. Economics of health

Economic expertise is required to understand and improve the cost effectiveness of innovations and services to ensure that they deliver economic and health benefits.

4. Behavioural science

Social, behavioural and anthropological expertise are needed to ensure that innovations and services are designed to be acceptable, feasible and scalable, as well as effective.

5. Implementation science and use of real-world evidence

Understanding how to make interventions work effectively in practice, at scale and in different contexts is critical to converting what we know works (for example from randomised controlled trials) into changes in policy and practice.

This kind of 'adoption' research evidence is frequently overlooked and its absence is a key contributor to the slow pace of adoption of innovation in the NHS.

6. Evidence synthesis

Timely, policy-facing synthesis of bodies of evidence are needed to inform policy making, including realist reviews synthesising effects of interventions within complex systems.

Delivery

We will deliver the ARIs using existing NIHR and DHSC funding routes and by working in partnership with other funders.

Read about current funding opportunities (https://www.nihr.ac.uk/documents/dhsc-areas-of-research-interest/32536).

We will work systematically to generate and synthesise evidence across each ARI in a form that is useful for policy makers and service providers, to increase the impact that the body of research and innovation has on improving public, patient and service outcomes.

ARI 1: early action to prevent poor health outcomes

Background

Suboptimal management of risk factors for common diseases (including hypertension, poor metabolic control, late detection of cancers and poor mental health):

- drives morbidity and mortality
- reduces the proportion of the population able to work and impacts healthcare delivery within the NHS and social care systems

Cardiovascular diseases, type 2 diabetes and many cancers are increasing in prevalence in the UK. For example, there were 5.8% more cancer diagnoses in [2019 compared to 2017 (https://www.wcrf-uk.org/preventing-cancer/uk-cancer-statistics/#:~:text=Cancer%20incidence%20in%20the%20UK%2A%20In%20the%20UK%2C,in%20men%2C%20and%20187%2C434%20were%20in%20women%201.)](https://www.wcrf-uk.org/preventing-cancer/uk-cancer-statistics/) and diagnosed diabetes has increased from [2% of the population in 1994 to 7% in 2019 (http://healthsurvey.hscic.gov.uk/data-visualisation/data-visualisation/explore-the-trends/diabetes.aspx)](http://healthsurvey.hscic.gov.uk/data-visualisation/data-visualisation/explore-the-trends/diabetes.aspx), including sharp increases in those aged under 40 years. Mental health problems spiked during the pandemic, and in children and young people remain above pre-pandemic levels. Among 17 to 19 year olds, the proportion with a probable mental disorder increased from [17.4% in 2021 to 25.7% in 2022 (https://digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2021-follow-up-to-the-2017-survey)](https://digital.nhs.uk/data-and-information/publications/statistical/mental-health-of-children-and-young-people-in-england/2021-follow-up-to-the-2017-survey).

The costs to the individual, the health and care system and the economy is large. In 2022, around 2.5 million people in the UK were economically inactive due to ill health, an [increase of 688,000 since 2019 (https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/economicinactivity/articles/halfamillionmorepeopleareoutofthelabourforcebecauseoflongtermsickness/2022-11-10#:~:text=Source%3A%20Office%20for%20National%20Statistics%20%E2%80%93%20Labour%20Force%20Survey&text=Long%2Dterm%20sickness%20is%20an,of%20the%20COVID%2D19%20pandemic.)](https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/economicinactivity/articles/halfamillionmorepeopleareoutofthelabourforcebecauseoflongtermsickness/2022-11-10). Cardiovascular disease costs the UK economy £15.8 billion a year and the NHS [£7.4 billion (https://www.gov.uk/government/publications/health-matters-preventing-cardiovascular-disease)](https://www.gov.uk/government/publications/health-matters-preventing-cardiovascular-disease), while the NHS spent over £10 billion on diabetes care in 2019, with one in 6 hospital beds [occupied by someone with diabetes (https://pubmed.ncbi.nlm.nih.gov/31901175/)](https://pubmed.ncbi.nlm.nih.gov/31901175/).

Research is needed into how best to prevent disease, ensure timely diagnosis and develop appropriate interventions to prevent acute events and chronic disease. This could significantly improve health and economic outcomes for individuals, support a healthy workforce and reduce pressure on the NHS and social care. For example, preventative interventions and early diagnosis are estimated to reduce strokes, heart attacks and dementia cases by 150,000 over 10 years, [saving £2.3 for every £1 spent (https://www.gov.uk/government/publications/health-matters-preventing-cardiovascular-disease)](https://www.gov.uk/government/publications/health-matters-preventing-cardiovascular-disease). In England, more than 90% of people survive bowel, breast and ovarian cancer for at least 5 years if [diagnosed at the earliest stage (https://www.cancerdata.nhs.uk/survival/cancersurvivalengland)](https://www.cancerdata.nhs.uk/survival/cancersurvivalengland), and Cancer Research UK estimates the cost of treating late-stage colon, rectal, lung and ovarian cancer is nearly [two and a half times the amount for early-stage treatment (PDF, 1.35MB) (https://www.cancerresearchuk.org/sites/default/files/saving_lives_averting_costs.pdf?_gl=1*1t39gew*_ga*OTY2MTk2MTIwLjE2Njk4MTE3MzE.*_ga_58736Z2GNN*MTY2OTgxMTczMC4xLjAuMTY2OTgxMTczMC42MC4wLjA.&_ga=2.145126324.1470917761.1669811731-966196120.1669811731)](https://www.cancerresearchuk.org/sites/default/files/saving_lives_averting_costs.pdf). In England, early interventions for mental

health problems can reduce hospital admissions, shorten hospital stays and require fewer high-cost intensive interventions potentially [saving up to £38 million per year (PDF, 61KB) (https://www.networks.nhs.uk/nhs-networks/regional-mental-health-workshop-mids-east/documents/supporting-materials/nmhdu-factfile-3.pdf)](https://www.networks.nhs.uk/nhs-networks/regional-mental-health-workshop-mids-east/documents/supporting-materials/nmhdu-factfile-3.pdf).

Research objective

Research to understand and deliver prevention, timely diagnosis and appropriate intervention for people at increased risk of poor health (in particular obesity, cardiovascular disease, type 2 diabetes, mental health and cancer) to prevent excess deaths, improve population health (including the health of the working age population), reduce disparities and reduce reliance on health and social care.

Priority research topics

Developing, evaluating and understanding how to implement interventions which prevent health problems developing, accurately identify those at risk, effectively manage risk factors and treat conditions early, and manage health problems to prevent severe disease in the 4 areas set out below.

Prevent

Interventions to prevent health problems, developing effective routes to reach those who are most at risk or marginalised, and understanding how to effectively implement proven interventions at scale (for example, antihypertensives, mental health programmes for children and young people, vaccines for cancer or workplace preventative interventions).

Identify

New ways of identifying those most at risk (for example, predictive analysis of GP records to identify those who would benefit from early intervention, new methods of cancer screening and new approaches to diagnosing the causes of chest pains).

Treat

Interventions early in the course of disease progression (for example, social prescribing, early intervention for cancer or interventions to enable people to remain in or return to work).

Manage

Interventions to improve the management of multiple long-term conditions (for example, how to manage side effects in polypharmacy), prevent acute events (such as heart attacks, strokes and mental health crises) and ensure effective rehabilitation after these events to reduce long-term illness and disability.

ARI 2: reduction of compound pressures on the NHS and social care

Background

Compound pressures on the health and care system include additional health care needs in winter, during extreme heat events and during epidemics or pandemics. These interact with other pressures including increases in the cost of living, disease levels post-COVID and the operational pressures that the NHS and social care face. The UK's ageing population and NHS workforce pressures mean that demand will continue to increase.

On average over 32,000 [excess deaths occur every winter in England and Wales (https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/excesswintermortalityinenglandandwales/2020to2021provisionaland2019to2020final)](https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/excesswintermortalityinenglandandwales/2020to2021provisionaland2019to2020final) with approximately 40% of excess winter deaths attributable to cardiovascular diseases and around 33% to respiratory diseases, including respiratory syncytial virus and influenza [which peak in winter (https://www.instituteofhealthequity.org/resources-reports/the-health-impacts-of-cold-homes-and-fuel-poverty)](https://www.instituteofhealthequity.org/resources-reports/the-health-impacts-of-cold-homes-and-fuel-poverty). Excess heat events are projected to increase with climate change, with negative health impacts particularly for [elderly and vulnerable people (https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(17)30156-0/fulltext)](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(17)30156-0/fulltext), while the health, social and economic impacts of the COVID-19 pandemic were huge.

Research is needed to identify those most at risk and to develop and evaluate interventions to prevent them from becoming unwell and intervening early if they do. For example, 26% of acute hospital admissions would be potentially avoidable [if medical interventions were provided prior to admission (PDF, 344KB) (https://www.local.gov.uk/sites/default/files/documents/25.194%20HICM%20Reducing%20preventable%20admissions_09%20accessible.pdf)](https://www.local.gov.uk/sites/default/files/documents/25.194%20HICM%20Reducing%20preventable%20admissions_09%20accessible.pdf). Research is also needed on how best all parts of the health and care system can better prepare for and respond to these pressures, including pandemic preparedness. This research

could improve public and patient outcomes, reduce costs to the NHS and social care, improve services and support economic growth.

Research objective

Research to evaluate interventions to improve patient outcomes and reduce pressure across the health and care system through preventing avoidable admissions, innovations to make routine care more efficient and resilient, smart discharge, and through effective pandemic preparedness and new treatments to tackle a range of infectious diseases.

Priority research topics

Identifying factors across the system that drive admission, delayed discharge and readmission and using this information to design more effective and targeted interventions including systems approaches such as developing, evaluating and understanding:

- the role that all parts of the health system, from community and primary care through to hospital-based and social care, play in delivering better outcomes for people, and how the system can work effectively together to plan for and respond to compound pressures including infections with pandemic potential
- how to implement effective interventions to prevent avoidable admissions among vulnerable people (for example, warm homes, cool spaces, vaccination, hospital at home)
- how to implement effective preventive and treatment interventions for illnesses that cause excess burden in winter (such as influenza), during extreme heat and infections with pandemic potential
- how to implement interventions which enable routine health services to continue during times of increased pressure (for example, modern, minimally invasive procedures, online booking systems, care at home)
- how to implement interventions that can reduce hospital stay, promote smart discharge and reduce staff burden

ARI 3: shaping and supporting the health and social care workforce of the future

Background

4.3% of the UK population is expected to be [aged 85 or over by 2045 (https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2020basedinterim)](https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/nationalpopulationprojections/2020basedinterim). As healthy life expectancy has not increased at the same rate, more years are now being [spent in poor health (https://www.gov.uk/government/publications/health-profile-for-england)](https://www.gov.uk/government/publications/health-profile-for-england), driving demand for health and social care services.

The health and social care workforce are struggling to meet this increased demand. For example, the overall vacancy rate in adult social care was [10.7% in 2021 to 2022 (https://www.skillsforcare.org.uk/adult-social-care-workforce-data/Workforce-intelligence/publications/Topics/COVID-19/Vacancy-information-monthly-tracking.aspx)](https://www.skillsforcare.org.uk/adult-social-care-workforce-data/Workforce-intelligence/publications/Topics/COVID-19/Vacancy-information-monthly-tracking.aspx), while NHS vacancy rates were [11.9% in September 2021 (https://digital.nhs.uk/data-and-information/publications/statistical/nhs-vacancies-survey/april-2015---september-2022-experimental-statistics)](https://digital.nhs.uk/data-and-information/publications/statistical/nhs-vacancies-survey/april-2015---september-2022-experimental-statistics) compared to the labour market average of 4.2%. Staff turnover in adult social care was 29% in 2021 to 2022 with [fewer people joining the workforce each year (https://www.skillsforcare.org.uk/adult-social-care-workforce-data/Workforce-intelligence/publications/Topics/COVID-19/Vacancy-information-monthly-tracking.aspx)](https://www.skillsforcare.org.uk/adult-social-care-workforce-data/Workforce-intelligence/publications/Topics/COVID-19/Vacancy-information-monthly-tracking.aspx). The Health Foundation recently identified an overall workforce supply-demand gap of around 103,000 full-time equivalent (FTE) posts across the NHS and general practice in 2021 to 2022 (around 7% of estimated FTE workforce demand) and a 1 in 4 shortfall in GP and general practice nurse posts [by 2030 to 2031 (https://www.health.org.uk/publications/nhs-workforce-projections-2022)](https://www.health.org.uk/publications/nhs-workforce-projections-2022).

Research into new and more efficient models of care with a focus on prevention, combined with understanding how the health and social care workforce can be trained and supported to deliver them, are required to deliver high quality care more efficiently.

Research objective

Research to optimise a public health, NHS, social care and wider health workforce that is effectively structured, trained, deployed and supported to deliver future effective and efficient models of healthcare which meet the needs of the UK's ageing population.

Priority research topics

Developing future models of healthcare which effectively and efficiently meet the changing needs of the UK population. Developing, evaluating and

understanding how to implement interventions to enable a diverse health and care workforce to deliver world-class care while addressing the current recruitment, retention and wellbeing issues such as:

- understanding the barriers to recruiting and retaining staff in the NHS and social care and identifying solutions including supporting wellbeing
- identifying how to structure the workforce to meet future health needs and how to drive cultural and behavioural change within organisations
- developing and evaluating interventions to increase the efficiency and effectiveness of staff (for example, skills-mix, task-shifting and service integration)
- developing and evaluating technology-assisted workforce solutions to reduce burden on staff while maintaining patient outcomes (for example, diagnoses assisted by artificial intelligence, robotics to support surgery and care, remote monitoring of patients including hospital at home and virtual wards)

↑ Back to top