

## How are new medical devices and technologies adopted by the NHS?

The NHS seeks to adopt treatments and new technologies that are evidence based. There are a number of organisations that are involved in this.

### The National Institute for Health and Care Excellence (NICE)

The National Institute for Health and Care Excellence (NICE) provides national guidance and advice to improve health and social care. <https://www.nice.org.uk/about/what-we-do>

NICE's role is to improve outcomes for people using the NHS and other public health and social care services. We do this by:

- Producing evidence-based guidance and advice for health, public health and social care practitioners.
- Developing quality standards and performance metrics for those providing and commissioning health, public health and social care services.
- Providing a range of information services for commissioners, practitioners and managers across the spectrum of health and social care.

#### Evidence-based guidance and advice

Since 1999, we have provided the NHS, and those who rely on it for their care, with an increasing range of advice on effective, good value healthcare, and have gained a reputation for rigour, independence and objectivity. In April 2013 we gained new responsibilities for providing guidance for those working in social care.

NICE guidelines make evidence-based recommendations on a wide range of topics, from preventing and managing specific conditions, improving health and managing medicines in different settings, to providing social care to adults and children, and planning broader services and interventions to improve the health of communities. These aim to promote integrated care where appropriate, for example, by covering transitions between children's and adult services and between health and social care.

Technology appraisals guidance assess the clinical and cost effectiveness of health technologies, such as new pharmaceutical and biopharmaceutical products, but also include procedures, devices and diagnostic agents. This is to ensure that all NHS patients have equitable access to the most clinically - and cost-effective treatments that are viable. <https://www.nice.org.uk/About/What-we-do/Our-Programmes/NICE-guidance/NICE-technology-appraisal-guidance>

Our medical technologies and diagnostics guidance help to ensure that the NHS is able to adopt clinically and cost effective technologies rapidly and consistently.

<https://www.nice.org.uk/About/What-we-do/Our-Programmes/NICE-guidance/NICE-medical-technologies-guidance> <https://www.nice.org.uk/About/What-we-do/Our-Programmes/NICE-guidance/NICE-diagnostics-guidance>

Interventional procedures guidance recommends whether interventional procedures, such as laser treatments for eye problems or deep brain stimulation for chronic pain are effective and safe enough for use in the NHS. <https://www.nice.org.uk/About/What-we-do/Our-Programmes/NICE-guidance/NICE-interventional-procedures-guidance>

## Academic Health Science Networks

The Academic Health Science Networks were established with funding from NHS England, and more recently, the Office of Life Sciences. There 15 regional networks, their mandate is to support health innovation, adoption and spread of new technologies and ways of delivering services.

<http://www.ahsnnetwork.com/>

As the only bodies that connect NHS and academic organisations, local authorities, the third sector and industry, we are catalysts that create the right conditions to facilitate change across whole health and social care economies, with a clear focus on improving outcomes for patients. This means we are uniquely placed to identify and spread health innovation at pace and scale; driving the adoption and spread of innovative ideas and technologies across large populations. Although small organisations – which ensures we remain flexible and responsive to emerging opportunities and challenges – we lead large regional networks. Hence our impact rests in our ability to bring people, resources and organisations together quickly, delivering benefits that could not be achieved alone. This Innovation Pathway summarises how AHSNs support the entire innovation life cycle.

## National Institute for Health Research (NIHR)

We are funded by the Department of Health and Social Care to improve the health and wealth of the nation through research. <https://www.nihr.ac.uk/about-us/>

The NIHR manages a number of research programmes, the majority of these provide opportunity to develop or evaluate the efficacy of new health technologies:

<https://www.nihr.ac.uk/funding-and-support/funding-opportunities/>

1. Efficacy and Mechanism Evaluation (EME)
2. Health Services and Delivery Research (HS&DR)
3. Health Technology Assessment (HTA)
4. Invention for Innovation (i4i)
5. Programme Grants for Applied Research (PGfAR)
6. Public Health Research (PHR)
7. Research for Patient Benefit (RfPB)

EME Programme:

Applications to the EME Programme may test interventions for the diagnosis, prevention or treatment of frailty and causative conditions. Applications should examine the efficacy of interventions, and may explore the mechanisms underlying possible efficacy.

Applications are welcomed that establish the efficacy of interventions to prevent, reverse or reduce the loss of functional abilities and independence in frail people. Interventions should seek to address the underlying condition or functional difficulty and the inclusion of mechanistic work within the proposed research is welcome.

Of particular interest are studies that evaluate interventions that are simple to deliver and where outcomes may be assessed at relatively short time points, e.g. months rather than years, although provision for simple longer term follow up may be included. Suitably designed studies that evaluate a number of interventions are welcome.

Interventions may include physical, psychological, pharmacological or behavioural elements and may be delivered by clinicians, other professionals or carers, or maintained by individuals themselves.

The assessment of environmental interventions, such as home modifications, is not within the scope of this call. Applications concerning exercise interventions will only be considered where there is clearly a novel scientific basis for the intervention.

#### HS&DR Programme:

The HS&DR Programme funds research to produce evidence on the quality, accessibility and organisation of health and social care services. Robust mixed methods studies are invited with a focus on organisation and delivery of services, costs, quality and patient, service user or carer experience. Although other topics may be proposed within this broad remit, the following are of particular interest; models of service provision combining health and social care services delivering across the pathway for frailty. Proposals may evaluate frailty-focussed services and the impact on health and social care outcomes from prevention, early detection and management, promotion of self-management, urgent care admission avoidance, supported discharge and re-ablement, and end of life care. Proposals for studies encompassing evaluation of whole pathway approaches, and producing evidence for how people with frailty and social care needs can be better supported to use these services are especially welcome.

#### HTA Programme:

The HTA Programme invites applications for research to evaluate the clinical and cost effectiveness of health and social care interventions. The inclusion of social care outcomes in addition to health outcomes is encouraged. In these cases, applications should demonstrate the inclusion of appropriate expertise in social care research and links to appropriate social care organisations, whether statutory, private or third sector organisations.

Proposals may be for primary research or for evidence synthesis and may use any study design, provided it is clearly justified.

Areas of particular interest include, but are not limited to:

- Large randomised trials of multidomain interventions designed to slow the progression of frailty and loss of independence for people with mild or moderate frailty, and promote their wellbeing
- Studies of interventions to help reduce or mitigate the early onset of frailty observed in certain populations and groups.
- Studies that make use of existing electronic databases and health and/or social care record systems to maximise the efficiency and timeliness of research.

#### i4i Programme:

The NIHR i4i programme is a translational funding scheme which advances healthcare technologies and interventions for increased patient benefit in areas of existing or emerging clinical need. It supports research and development of medical devices, active implantable devices and in vitro diagnostic devices. Applications fitting the i4i programme remit are encouraged but not limited to technologies that prevent, reverse or reduce the loss of functional abilities and independence in frail people. Applicants are encouraged to contact the i4i secretariat before submitting an application. The i4i programme will not support basic research activities such as biomarker discovery.

#### PGfAR Programme:

The PGfAR scheme will support programmes of research which involve a number of inter-related and linked components, using a range of methodological approaches, to answer clinically important questions relevant to the prevention and treatment of frailty.

Applications employing novel methodological approaches to demonstrate patient benefit at an individual or population level are encouraged. Examples include development and testing of interventions (including links with industry); using observational data to demonstrate benefit; public health interventions; use of existing data from previous research, or routinely collected health care data. Applications which clearly demonstrate multidisciplinary approaches, and are conducted in

geographical locations of high health care need will be welcomed. Research may be carried out in community, primary or secondary care settings.

**PHR Programme:**

The PHR Programme evaluates non-NHS public health interventions intended to improve the health of the public and reduce inequalities in health. The programme is keen to consider proposals that operate at a population level and which focus on the environmental and social determinants of frailty.

PHR is interested in scalable interventions that operate at a population level and/or across the life-course, to prevent frailty.

PHR is interested in population interventions aimed at reducing the impact of frailty and/or the health inequalities characteristic of it. Where justified proposals may focus on populations that are defined by social determinants, rather than by frailty. Health economic evaluations are of interest and we recognise that interventions may be multi-component and that long term follow-up may be necessary to demonstrate effect.

**RfPB Programme:**

Applications to the RfPB Programme should arise from daily practice in NHS and social care services, and must demonstrate a trajectory to patient, service user, and/or carer benefit. The programme supports applications which are regionally derived and are concerned with studying the provision and use of NHS and social care services, evaluating the effectiveness and cost effectiveness of new innovations and interventions, and developing and refining new interventions, scales or outcome measures. The programme also welcomes applications for feasibility studies, and applications exploring the potential for improving health and wellbeing through needs assessments, methods development, evidence.

## **Clinical Research Networks**

<https://www.nihr.ac.uk/nihr-in-your-area/local-clinical-research-networks.htm>

The Clinical Research Network is made up of 15 Local Clinical Research Networks that cover the length and breadth of England. These local networks coordinate and support the delivery of research across the NHS in England.

The Local Clinical Research Networks are overseen by the National Coordinating Centre which has offices in Leeds, London, Liverpool, Newcastle and Preston.

We support clinical research infrastructure throughout England, which is working towards increased access for patients to new and better treatments in the NHS. If you are interested in what is happening for a particular specialty, or if you'd like to know what's we're doing in your local area visit the NIHR in your area homepage.

The NIHR Clinical Research Network Coordinating Centre manages the Clinical Research Network (CRN) on behalf of the Department of Health and Social Care. The CRN makes it possible for patients and health professionals across England to participate in clinical research studies, in both the NHS and in the wider health and social care environment.

The CRN provides the infrastructure that allows high-quality clinical research funded by charities, research funders and life-sciences industry to be undertaken in both the NHS and in the wider health and social care environment. We work with patients and the public to make sure their needs are placed at the heart of all research, and providing opportunities for patients to gain earlier access to new and better treatments through research participation.

## **NIHR Collaborations for Leadership in Applied Health Research and Care (CLAHRCs)**

IHR Collaborations for Leadership in Applied Health Research and Care (CLAHRCs) are collaborations between local providers of NHS services and NHS commissioners, universities, other relevant local organisations and the relevant Academic Health Science Network. <https://www.nihr.ac.uk/about-us/how-we-are-managed/our-structure/infrastructure/collaborations-for-leadership-in-applied-health-research-and-care.htm>

There are 13 NIHR CLAHRCs and their primary focus is on research targeted at chronic disease and public health interventions.

The NIHR CLAHRCs:

- develop and conduct applied health research relevant across the NHS and translate research findings into improved outcomes for patients
- create a distributed model for the conduct and application of applied health research that links those who conduct applied health research with all those who use it in practice across the health community
- create and embed approaches to research and its dissemination that are specifically designed to take account of the way that healthcare is delivered across the local Academic Health Science Network
- increase the country's capacity to conduct high quality applied health research focused on the needs of patients
- improve patient outcomes locally and across the wider NHS
- contribute to the country's growth by working with the life sciences industry.

£144.8 million has been allocated to the 13 NIHR CLAHRCs from 1 January 2014 - 30 September 2019.

## **NHS Supply Chain**

Many medical devices and technologies are purchased directly by NHS Trusts. However, the NHS supply chain is the principle source of products that are used to provide patient care. These range from disposable towels through to imaging systems.

<https://www.supplychain.nhs.uk/>

The NHS has a challenge to deliver £22 billion in savings by the end of the financial year 2020/2021 including £700 million from improving procurement. NHS Supply Chain is uniquely positioned as the national provider to work alongside trusts to respond to this challenge and support its achievement.

We are working closely with the NHS Business Services Authority (NHSBSA) to deliver the £300 million of procurement efficiencies that were highlighted in Lord Carter's interim report: Review of operational efficiency in NHS providers.

We are also working to meet recommendations to increase price transparency to lower costs and to reduce the number of products and suppliers used across the NHS to deliver economies of scale.