



**National Institute for
Health Research**

BEST RESEARCH FOR BEST HEALTH

IMPLEMENTATION PLAN 6.4

NIHR INVENTION FOR INNOVATION PROGRAMME

*Best Research for Best Health*¹ set out a 5-year Research and Development Strategy for the NHS in England. This Implementation Plan provides more details on one of the key components of that strategy: The NIHR Invention For Innovation Programme. This document will be regularly updated. The latest version should be used.

Version: 9

Issue date: January 2010

Planned revision & re-issue date: July 2010

Aim

- The National Institute for Health Research Invention for Innovation (NIHR i4i) programme, has brought together two of our previous programmes, the New and Emerging Applications of Technology (NEAT) and the Health Technology Devices (HTD) programmes, together with additional new investment to improve identification of promising healthcare technologies.
- Appointed in October 2009 as the i4i Director, Mr Martin Hunt will oversee the continued development of the programme.

Purpose

- The NIHR i4i programme is speeding up the rate at which bright ideas for new high-tech products are turned into methods of prevention, diagnosis and treatment.
- The NIHR i4i programme comprises of:
 - Four main funding streams
 - Pilot Healthcare Technology Co-operatives (HTCs)
 - Challenge Fund for Innovation (CFI)
 - Small Business Research Initiative (SBRI).

¹ *Best Research for Best Health: A New National Health Research Strategy*. The NHS contribution to health research in England. Department of Health. 2006

i4i Funding Streams

i4i was formally launched to healthcare product innovators in July 2008. The NEAT and HTD Programmes have now been migrated into i4i to form the four response-mode funding streams as follows:

1) Stream 1 – *i4i feasibility study*

Up to 1 year investigation led by a clinician or an academic research group, to determine first if prior basic research or an innovative use of an existing technology can be used to meet an existing or emerging healthcare need, and then to identify the barriers that would need to be overcome before implementation. There must be a potential for any device based on the technology investigated to be developed through further applied R&D. The study must also identify the barriers that would need to be overcome before implementation. Funding to a total of £100K is available.

2) Stream 2 – *i4i initial product development*

A detailed investigation of up to 3 years led by a clinician or an academic research group that builds on the results of a completed assessment of the feasibility to produce a medical device or product through technological improvements or developments and that provides further evidence of its capacity to deliver improved healthcare outcomes and commercial opportunities. Funding of the order of £150K - £250K per year is available.

3) Stream 3 – *i4i commercial viability study*

Investigations lasting up to one year involving collaboration between at least one industry and one research (academic or clinical) partner aimed at determining whether an innovative use of an existing or emerging product or technology can be used to meet a healthcare need and identifying the barriers that would be need to be overcome. Funded projects serve primarily as the first stage of a full collaborative applied research project.

Deliverables are expected to include: analysis of the clinical need, proof of concept, identification of the technical risks, robust plan for commercialisation, formation of a strong consortium to take the commercialisation plan forward.

Project costs can be no more than £100K in total, and 75% funding is available.

4) Stream 4 – *i4i collaborative product development*

A detailed investigation of up to 3 years involving collaboration between at least one industry and one research partner (academic or clinical) that builds on the results of a completed assessment of feasibility. This will provide further evidence of the capability to deliver improved healthcare outcomes and commercial opportunity, delivering an advanced prototype along with plans for commercial and intellectual property exploitation. Funding to a maximum of 50% of the total project costs, and £100K - £300K per year is available.

Further details can be obtained from the NIHR CCF website at:

www.nihr-ccf.org.uk/site/programmes/i4i/

Pilot Healthcare Technology Cooperatives

Aim

To pilot the concept of Healthcare Technology Co-operatives (HTCs) as proposed in the HITF Report (www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4094982), and assess whether support for this model of multi-disciplinary collaboration can be used to promote “technology pull” into the NHS in areas of unmet clinical need.

Purpose

- To provide funding to support the development of clinician-led formal, but responsive, collaborations between clinicians, academics, patients/users and industry (the HTC) in clinical areas which have not attracted significant research funding or high profile in academia in the past, but which are associated with high levels of patient morbidity.
- To assess whether the establishment of HTCs contributes to the development of innovations in treatments and technology which have a high impact on reducing morbidity, increasing quality of life and opportunities for independent living in patient/users; benefits for the NHS and wealth creation.

Process

- The Calls for Proposals were handled via the NIHR CCF. Two pilot HTCs to create new medical technologies to help patients suffering from debilitating conditions were established on 1 January 2008.
- The **Bowel Function Healthcare Technology Co-operative** is hosted within the Centre for Academic Surgery at Barts and the London NHS Trust and School of Medicine and Dentistry with associated nodes in academic clinical units in Bristol, Edinburgh, Durham and Hull. Working together with industry and charities, it is committed to identifying and developing new devices and procedures to improve the healthcare outcomes for those affected by disorders of bowel function. Bowel Function website: www.bowelfunctionhtc.org.uk/
- The **Devices for Dignity Healthcare Technology Co-operative (D4D-HTC)** is based at the Sheffield Teaching Hospitals Foundation Trust (STHFT), with collaborators selected from Trusts and Universities across England, with a key aim of accelerating the development of innovative medical devices to the market. With strong industrial input, it aims to be a national resource focussed on the design, development and evaluation of medical devices to improve healthcare quality and well-being for patients/clients with long-term conditions. Its chosen themes for initial emphasis are assistive technology, urinary incontinence and renal dialysis. D4D-HTC website: www.devicesfordignity.org.uk/

Funding

- The pilot HTC Programme has been funded initially for two years by the NIHR, the Technology Strategy Board, MRC and the EPSRC. Each pilot will receive £275K per annum in total from these sources, with a contribution of up to £150K from NIHR per annum.

- Pilot HTCs are expected to obtain funds from other sources including industry for specific projects.

Challenge Fund for Innovation

Aims

- The main aim of the Challenge Fund for Innovation is to promote and accelerate the transfer of knowledge and innovation between the NIHR and the NHS.
- This involves a range of initiatives including:
 - the development of informal networks via workshops and seminars of researchers and service users;
 - the use of mentors and other mechanisms to encourage links between academic and NHS researchers and commercial partners;
 - partnerships with other funders;
 - the increased use of directed calls in defined areas where a priority societal challenge has been identified; and
 - exploring the role of new technology in disseminating research findings.

Purpose

- The purpose of this new scheme is to ensure that research sponsored by the NIHR and others is fully exploited to the benefit of the NHS.
- The fund is not only intended to support the commercial exploitation of research, but is also aimed at effective ideas that have no commercial end-point.

Process

- The main criteria for assessment will be the potential to make a difference to the NHS, both regionally and nationally.
- Applicants will be expected to set out clear objectives, implementation plans with milestones, likely success criteria, and resource requirements etc.
- Where appropriate, applications will be reviewed by external experts who will be asked to certify that the proposed innovations have been proven to be effective.
- Closer links will be established with a range of 'ideas generators' including the Research Councils, Biomedical Research Centres, the National Innovation Centre, the Technology Strategy Board, and NESTA. Joint activity between the invention for innovation programme, the Technology Strategy Board, the EPSRC and the ESRC resulted in the launch in November 2007 of a joint initiative to develop an 'Assisted Living Innovation Platform (ALIP)'. Following on from this successful model for joint activity, the i4i programme has led the NIHR input into the development of a further innovation platform in the area of the rapid detection and identification of infectious disease. This new innovation platform was announced in October 2008 and the first call for proposals will be advertised in

mid-2009. Further areas for health related innovation platforms are now being explored.

- Mechanisms will be explored in order to improve the transfer of promising developments into successful products and services for the NHS. For example, support will be provided for appropriate Knowledge Transfer Partnerships (KTPs), use of mentors will be considered, and closer links with Venture Capital Groups will be explored.
- As part of the revised Cross-Government Small Business Research Initiative (SBRI), the i4i programme has led on the development of a pilot programme in the area of Health Care Associated Infections. Two topics (hand hygiene and pathogen detection in the healthcare environment) formed the basis of this pilot, which was launched in October 2008

www.nihr-ccf.org.uk/site/programmes/i4i/SBRI/default.cfm.

Thirteen phase 1 SBRI projects were selected for funding. Four projects have subsequently been recommended to receive phase 2 funding. A further three projects which received phase 1 funding are yet to complete and will be assessed for possible phase 2 funding early in 2010.

Overall i4i programme funding

- Funding has increased gradually from £4.0 million in 2006/07 to £13 million in 2009/10.

Further information

Information about the NIHR i4i programme is available at:

www.nihr-ccf.org.uk/site/programmes/i4i/

Department of Health Lead:

Dr Glenn Wells

Head of Research Finance and Programmes

Email: R&D@dh.gsi.gov.uk