



University
of Exeter

NHS

Royal Devon
University Healthcare
NHS Foundation Trust

The NIHR HealthTech Research Centre in Sustainable Innovation

Technological innovations have the potential to revolutionise healthcare services for everyone. The NIHR HealthTech Research Centre in Sustainable Innovation (HRC) is a partnership between the Royal Devon University Healthcare NHS Foundation Trust and the University of Exeter, designed to streamline the development pipeline from prototype to commercial product.

We use patient and physician feedback to improve usability, effectiveness and adoption leading to better products and an evidence base that aims to speed up the regulatory approval process.



OUR AREAS OF EXPERTISE

Patient and Public Involvement and Engagement (PPIE). By adopting a patient-centred approach, we place patients at the heart of HealthTech Design and Development. We run active patient recruitment projects at our purpose-built research facility in collaboration with the NIHR Patient Recruitment Centre. These measures ensure the safety, well-being and needs of our patients whilst enabling testing, research and data gathering.

Clinical staff. We have access to some of the best clinicians in their fields with specialist interests across all areas of medical research. As well as expert academics, commercial management and patient partners.

Human factors engineering. We apply testing and data gathering on physical and psychological characteristics of patients and clinical staff to the engineering and design of products, processes, and systems, making them safe, comfortable, and effective for clinical use.

Healthcare technical solutions. We co-develop and evaluate data algorithms, AI, Apps and sensor technology (on person and in environments) for use in clinical and community settings.

Infrastructure & facilities. We have systems and partnerships in place to quickly evaluate new technologies including; the NIHR Exeter Biomedical Research Centre, the NIHR Applied Research Collaboration South West Peninsula (PenARC), the Clinical Research Network South West Peninsula, the NIHR Exeter Clinical Research Facility and the VSIM and Gillings centre.

Collaboration and partnership. We work with local, national and international companies as well as regulatory bodies, NHS health and care organisations, charities and development partners.

Navigating the regulatory landscape. We use our combined expertise to support the journey through regulation, reducing the time to target, collect and present evidence. This ensures that new developments progress through the developmental and regulatory processes in a seamless and streamlined way, reducing time to market.

ABOUT THE NIHR HEALTHTECH RESEARCH CENTRE IN SUSTAINABLE INNOVATION

The HRC is one of 14 newly established research centres across England with the objective of driving innovation in health technology. Our purpose is to work with businesses to support the development of medical devices, diagnostics and digital technologies, accelerating the regulatory approvals process and smoothing the adoption pathway into the NHS and other healthcare institutions. The work of the HRC focuses on four core themes, which include projects focused on:



DIAGNOSTICS AND
BIOMARKERS



DATA-LED RESEARCH, AI AND
DIGITAL INNOVATION



REHABILITATION
AND FRAILITY



SUSTAINABLE
INNOVATION

A TRACK RECORD OF INNOVATION

Exeter Hip Stem: This hip replacement project, pioneered by RDUH and UoE, has transformed the lives of more than 2M patients worldwide. The underpinning techniques and scientific approach have paved the way for joint replacement research, advancement and collaboration worldwide and the Exeter Hip Stem is now recognised as the world's leading, most reliable hip implant for delivering successful long-term outcomes.

Type 1 Diabetes Genetic Risk Score (T1D-GRS):

We developed a simple, inexpensive and robust genetic test to predict and classify type 1 diabetes with 97% accuracy. This has since been adopted (England and Scotland) into the NHS diabetes genetics testing referral service. We are further working in partnership with a global healthcare company on the development of a T1D-GRS diagnostic biochip which, having performed internal validation is now awaiting final external validation for submission for UK CA marking as a diagnostic test. Development is underway to extend this technology to other diseases as well.

Capture and Recycling of Waste Volatile Anaesthetic Agents:

In large health organisations, in high income countries, direct emissions of inhaled anaesthetics account for approximately 3% of their climate footprint. Sagetech Medical approached RDUH to supervise and support the validation work required to progress an innovation that would recycle anaesthetic gases. RDUH and STM have collaborated since, working on many pilots to test and improve the device, facilitating progression from technical readiness level 4 to technical readiness 9 with the CE marked product launched this year.

WORKING WITH US

If you are looking for access to the best health technology research infrastructure, clinical and academic expertise and a fast track route through the regulatory approvals process, then get in touch by emailing rduh.sustainableinnovation@nhs.net

Visit www.holdingpageforHRC.nhs.net for more information on the HRC for Sustainable Innovation or click the QR code



Visit www.royaldevon.nhs.uk for information about the Royal Devon



Visit www.exeterinnovation.com for info about the University of Exeter and innovation



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