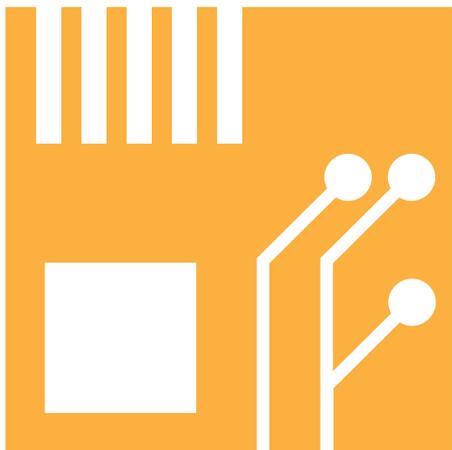




Life Science Sector Opportunities Northern Ireland

Connected Health



Introduction

The terms **Connected Health**, **Digital Health**, **eHealth**, **mHealth**, **telecare**, **telehealth** and **telemedicine** have no universal accepted definition or description. The terms include the provision of health and care services by way of hardware and/or software devices, remote monitoring devices, devices that assist independent living, remote communications by healthcare professionals and mobile and IT solutions that are designed to improve an individual's healthcare or monitor it.

Increasingly they involve educating and empowering people to manage their health (wellness) and long-term conditions. Additional benefits for health systems are greater efficiency and improvements in quality. The terms are flexible and often used inter-changeably. The services also involve **Business to Business (B2B)** and **Business to Consumers (B2C)** models and contracts¹.

Key facts for the UK

The UK's digital ambitions for the health service are:

- To integrate local solutions to ensure care is focused around the person and their needs
- To ensure that a widespread use of modern technology becomes the norm
- For electronic health records to become the source for people's core information
- Have a system supported by a framework of national standards to ensure data can move freely, safely, and securely throughout the health and care sector

Areas of strength in NI

Northern Ireland is unique within the UK in that health and social services are integrated, so providing a unified patient engagement approach. This along with its 1.8 million population, comprehensive medical notes and five Health Trusts, Northern Ireland offers a “manageable” region where the main actors developed close working relationships, combined with a pro-business attitude.

In 2011 a review of the provision of health and social care services was undertaken under the banner of ‘Transforming Your Care’. This review outlined a range of proposals on how improvements can be made to health and social care services so that they are structured around the needs of patients, with a greater emphasis on delivery in the primary and community care settings. Within this, connected health provision was identified as a key strand for the future.

This digital focus is reflected in unique aspects for Northern Ireland which places it at the forefront of medical care within the UK. It already has an Electronic Care Record which pulls together key details about patient care from existing systems and makes them available to authorised staff wherever the patient is located, ensuring that their information is available, as needed, by those looking after them.

Northern Ireland has also adopted the **largest mainstreamed telehealth service procurement in the UK**, involving an £18 million remote tele-monitoring contract awarded in 2011 to TF3 (a consortium of Tunstall, FoldHousing and S3). This scheme will support over 8,000 patients with heart and respiratory conditions, diabetes and those who have suffered a stroke.

With patient information, Northern Ireland already has an **Honest Broker Service** which can provide anonymised, aggregated, and in some cases pseudonymised, health and social care data to health care organisations; and anonymised data for ethically approved health and social care related research.

Finally the Northern Ireland Government is also seeking to procure and implement **innovative connected health solutions** for care provision. Medicines adherence is a critical dimension of modern therapeutic care and so a multi-million procurement is being launched (March 2014) to seek new technological solutions which could improve medicines adherence by helping people to take their medicines on time and as prescribed.

Business

There are numerous organisations working across the connected health spectrum within Northern Ireland and includes amongst others:

Company	Area
Anaeko	Cloud computing services
121 Dietitian	Nutritional advice and services to clients
ARC Devices	Digital non-contact thermometers
ARC Enterprise Solutions	Security platform
Aridhia Informatics	Biomedical informatics and analytics
Aura Healthcare	Healthcare software developer
Aventura	Management consultancy
Blue Zinc IT	Practice and clinical management software
Bluechip Technologies	Guardian24 mobile worker safety
Care Direct 24/7	Range of TeleCare, TeleHealth and associated services
Care Innovations	Patient support solutions
CareCall (NI)	Care provision to business and private patients
Cerner	Broad range of systems and solutions
C-Tric	Incubator facility
Domestic Care	Community care company
EMC Computer Systems	Storage, cloud big data
EMC Greenplum	Data warehousing and analytics
EpiQuestLive	Infection control system
Ergo Viewing	Medical displays and theatre systems for image representation
Evolution Healthcare	Specialist wheelchairs
Exploristics	Data analysis
Future Healthcare (N.I.)	Software suite to improve communication between doctor/doctor and doctor/nurse
Greenway Healthcare (NI)	Manufacturer of shower trays and bespoke door systems
Heartsine	Manufacturer of portable defibrillators
Homecare (Northern Ireland)	Domiciliary and private health provider
Intelesens	Wireless monitoring device provider
IoT Tech	Healthcare software developer
Ithaca Health	Life science consultancy
Kainos	Developer of electronic patient record/electronic health care systems

Company	Area
McLernon Computers	Pharmacy software developer
Met Healthcare	Specialist subcontractors in healthcare construction.
Northern Ireland Science Park	Incubation space and services
Novosco	Cloud computing data centres
Ostia Solutions	Data analysis
Redburn Solutions	Portals, mobile and Business Intelligence for health
Resmed	Non-contact respiration, movement and sleep monitoring
S3 Group	Telehealth system developer
Sectra Medical Imaging	Medical system provider
Stredia	Collaboration, strategy and change organisation
Synapse Teleneurology	Neurology practice
TASK	Telecare provider
Telehealth Solutions	Doctors waiting room solution
TF3 Consortium	Telehealth provider
TotalMobile Solutions	Workflow management solution
Whisple Cloud Services	Cloud computing services
Yarra Software	Software developer including medicines management and infection control

Academic

C-Tric, University of Ulster/ Western Health & Social Care Trust/Derry City Council

The Clinical Translational Research and Innovation Centre (C-TRIC) is a unique facility promoting and facilitating translational and clinical research, the primary objective of which is to reduce both the time to market and the costs associated with research and development of innovative health technologies, medical devices and therapeutics. This is a partnership between Derry City Council, the Western Health & Social Care Trust and University of Ulster.

One example of its work is the TUDA study which was an all Ireland research project to collect detailed clinical, lifestyle, dietary, genetic and biochemical data to investigate gene-nutrient interactions in the development of osteoporosis, Alzheimer's and cardiovascular disease by studying older adults showing the early stages of these common diseases.

Stratified Medicine, University of Ulster/ Western Health & Social Care Trust

The Stratified Medicine Research Group at the University of Ulster is based in the Northern Ireland Centre for Stratified Medicine at C-TRIC on the Altnagelvin Hospital site. The group established in autumn 2013, aims to identify how patterns in levels and state of molecules within our bodies, or subtle differences in medical images could be used to create robust clinical decision making tests and has received £11.5m of support for its work.

Connected Health Innovation Centre

The Connected Health Innovation Centre (CHIC) is focused on business led research in the area of connected health. CHIC seeks to lead transformational research which aligns care needs with technology providers, researchers and clinical experience. CHIC targets research in areas such as e-Health, digital health, tele-health, tele-monitoring, disease management, and home based care. Key focuses for the research are Vital Signs Sensing Development, Integrated Care, Assisted Living and Point of Care Diagnostics.

Current members include EMC², Accenture, Exploristics, Health and Social Care Northern Ireland, University of Ulster and Mindray amongst others.

CSIT - Centre for Cyber Security Research

Is the UK's leading university centre for cyber security research and it is based in Queen's University Belfast. CSIT's starting point is larger "mission-driven" projects involving sizeable teams for which ambitious and challenging end goals have been identified.

Multinational partners include Altera, BAE Systems, Cisco, Infosys, IBM, Intel/McAfee, Roke and Thales, whilst recent spin outs such as Titan IC Systems and MicroSense will seek to emulate the success of earlier spin-out companies including Amphion Semiconductor Ltd. and Audio Processing Technology Ltd. CSIT's vision is to be a global innovation hub for cyber security, accelerating new value creation, driving new venture creation and building capacity for the cyber security industry.

Intelligent Systems Research Centre, University of Ulster

The first functional brain mapping facility on the island of Ireland has been established at the University of Ulster's Magee campus and reflects a £5.3m investment.

UK Administrative Data Research Network

Queen's University Belfast is one of four locations within the UK which will be working on the UK Administrative Data Research Network and which has received £64m of funding from the UK Government for Big Data work. The centre will seek to develop a safe, secure and efficient system for linking, managing and analysing administrative data and will provide a sound evidence base to inform research, and policy development, implementation and evaluation.

Clinical



Northern Ireland has a unique healthcare delivery system with five HSC Trusts providing integrated services through hospitals, health centres, residential homes and community-based services. This includes the largest health trust within the UK which has an annual budget of £2 billion.

It has the overall responsibility for implementing Connected Health solutions within the Northern Ireland health service.

Other Interest Groups



DHSS&PS is a Government department with the responsibility to promote an integrated system which is designed to provide health care and social wellbeing of the people in Northern Ireland.



The Public Health Agency works in partnership with local government, key organisations and other sectors to improve health and wellbeing, health protection and to reduce health inequalities.



European Connected Health Alliance brings together commercial, academic and healthcare stakeholders within a collaborative environment to work together on new innovative connected health solutions.



Connected Health Innovation Centre (CHIC) is an industry-led competence centre, focused on collaborative R&D. Members include health providers, medical device companies, system integrators, health record specialists, clinical test experts and digital media developers.



Clinical Translational Research & Innovation Centre (C-TRIC) facilitates clinical research and innovation, helping to streamline developments from laboratory to marketplace. Their primary objective is to reduce both the time to market and the costs associated with research and development of innovative health technologies.



The Northern Ireland Clinical Trial Network provides single-point access to the local National Health Service and encompasses the hospital, community and primary care sectors.



The Wellcome Trust-Wolfson Northern Ireland Clinical Research Facility focuses on nutrition and metabolism, cancer, respiratory and vision science.



The Northern Ireland Cancer Trials Network promotes high quality cancer care in Northern Ireland by inclusion of patients into cancer clinical trials, translational research and other cancer research studies.



The Northern Ireland Biobank is a collaborative project between Queen's University Belfast and the Belfast Health & Social Care Trust, which hosts and distributes collections of well defined, quality assured biological samples to support translational research programmes in Northern Ireland and beyond.

Case Studies

Connected Health Innovation Centre (CHIC)

CHIC is the result of a £6.8 million investment by a consortium of leading technology companies, with £5 million R&D support from Invest Northern Ireland. The centre is the first of its kind in Northern Ireland and represents a new approach to funding R&D, focusing on business led research in the area of connected health. CHIC seeks to lead transforming research which aligns care needs with technology providers, researchers and clinical experience.

Northern Ireland Administrative Data Research Centre (ADRC)

ADRC is a 'Big Data' joint partnership between Queen's University and the University of Ulster, funded by the Economic and Social Research Council (ESRC) and the Health and Social Care Research and Development Division of the Public Health Agency (HSC R&D Division) and represents a £7 million investment. It will help researchers and policy-makers understand and capitalise on the full potential of the vast amounts of anonymised administrative data that is generated by everyone in Northern Ireland every day.

Northern Ireland Centre for Stratified Medicine

The Centre will focus on personalised medicine approaches to managing chronic diseases. Funding of £11.5 million has been provided for this specialised facility, which is a collaborative project between the University of Ulster's Biomedical Sciences Research Institute, C-TRIC (the Clinical Translational Research and Innovation Centre) and the Western Health and Social Care Trust.

Telehealth scheme

Patients with chronic diseases in Northern Ireland can monitor their health at home with the implementation of a telehealth scheme. The £18 million service will be rolled out to 3,500 patients each year for six years across Northern Ireland. The Centre for Connected Health and Social Care (CCHSC), part of the Public Health Agency (PHA), has partnered with healthcare solutions provider TF3 to develop the service.

The Wellcome Trust-Wolfson Foundation Northern Ireland Clinical Research Facility (NICRF).

This is a new £4m medical research centre in Belfast which will allow more people than ever before to take part in clinical trials in Northern Ireland, and is an important element of Northern Ireland's health research infrastructure. It will concentrate on four main areas; cancer, nutrition and metabolism, vision science and respiratory research. The facility is a joint venture between Queen's University Belfast, the Belfast Health and Social Care Trust, the University of Ulster, and Health and Social Care Research and Development (HSC R&D), a division of the Public Health Agency (PHA).

Integrated Medicines Management (IMM) in Northern Ireland

The Northern Health and Social Care Trust's Integrated Medicines Management (IMM) model is a solution which considers all aspects of medicines use and is seen as a world leader. It has been developed, enhanced and extended over the last ten years and adopted in other Trusts not only in the UK, but also in the South of Ireland, Sweden and the Netherlands. It has been shown to deliver reductions in the length of hospital stays by an average of two days and a reduction in re-admission rates of 20% amongst other benefits.

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