

Life Science Sector Opportunities Northern Ireland

Cardiovascular



Introduction

- **Cardiovascular diseases (CVDs) are a group of disorders of the heart and blood vessels.**
- **It is the number one cause of death globally.**
- **An estimated 17.3 million people died from CVDs in 2008, representing 30% of all global deaths.¹**
- **84% of Sudden Cardiac Arrest events occur away from the healthcare setting.**

Key facts for the UK

- **Coronary heart disease (CHD) is the UK's biggest killer, causing around 82,000 deaths each year.**
- **About one in five men and one in eight women die from the disease.²**
- **There are an estimated 2.7 million people living with the condition and 2 million people affected by angina (the most common symptom of coronary heart disease).**
- **Each year in Northern Ireland more than 7,000 people die from chest disease, heart disease and stroke, which is 50% of all adult deaths.**

Areas of Strength in NI

- **Monitoring heart arrhythmia (heartbeat) and other vital signs.**
- **Diagnostics of cardiac events – used in A&E settings as well as cardiac and medical wards.**
- **Cardiovascular clinical trials.**

1. <http://www.who.int/mediacentre/factsheets/fs317/en/index.html>

2. <http://www.nhs.uk/Conditions/Coronary-heart-disease/Pages/Introduction.aspx>

Business

RANDOX

Manufacturer of cardiac arrays and diagnostic equipment capable of simultaneously testing a single patient sample for multiple cardiac markers. It allows heart attacks, angina etc to be identified early so allowing early treatment.



HeartSine®

Inventor. Innovator. Lifesaver.

Producer of Automated External Defibrillators for the lay, minimally trained rescuer who is often first at the scene. Deployed in NATO, The White House, Bayern Munich Stadium.



Innovator in targeted non-invasive vital signs monitoring. Expertise includes wireless telemetry, low power consumption electronics, embedded software, cardiology, wearable sensors and low level signal processing.

PHILIPS

Through the acquisition of TOMCAT, Philips can address both the clinical and operational needs of a cardiovascular service line. It connects with different clinical information systems like cath lab workflow management systems, picture archiving and communications systems.



Producer of diagnostic equipment which measures a patient's hydration allowing for improved management of congestive heart failure patients.

Academic



Centre for Vision and Vascular Science - Grieve Laboratory Research interests which are focused on the effects of cardiovascular disease on normal physiology. Has over 60 basic and clinical scientists. Centre will relocate to a brand new, purpose-built institute (~7400m²) on the Health Sciences Campus, Belfast City Hospital Site, in early 2015



Nanotechnology and Integrated BioEngineering Centre (NIBEC) Research groups, investigation advanced material types used in medical devices, electronics, photonics, tissue engineering, nanotechnology, microfluidics, sensors, MEMS, optical and environmental devices. Centre for Advanced Cardiovascular Research (CACR)

Supports the development of leading edge research in the field of medical devices, nanotechnology and bio-molecular science applied to critical cardiac care. Research is managed by a team from the University of Ulster and the Royal Victoria Hospital, Belfast, so providing clinical direction.

Intelligent Systems Research Centre (IRSC) A facility for functional brain mapping with the aim to research a number of neurological disorders including depression and Alzheimer's disease by using specialist advanced imaging equipment to measure brain activity.

Clinical

Craigavon Area Hospital, Southern Health and Social Care Trust

Craigavon's state of the art facility offers a range of diagnostic and treatment procedures including the insertion of stents and pacemakers along with a Catheterisation Laboratory.

There is an active cardiovascular clinical trial programme including novel therapeutic agents, stents and implantable devices, and research collaborations exist with both academic as well as commercial companies.

Royal Victoria Hospital, Belfast Health and Social Care Trust

The Cardiac Surgery Unit in the Belfast Trust provides a wide range of heart surgery procedures for both adults and children.

Based at the Royal Victoria Hospital, this is a regional service for patients throughout Northern Ireland.

Over the course of the year, cardiothoracic surgeons perform approximately 1,000 operations.

Other Interest Groups



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.



The Multidisciplinary Assessment of Technology Centre for Healthcare (MATCH) is a well-established research collaboration between four leading UK universities including University of Ulster; industrial partners; and is supported by stakeholders from the NHS and other public sector organisations.

MATCH delivers methods and tools to assess the value of medical devices from concept through to mature product.



The network incorporates the clinical advisory and professional groups which are involved in the care of patient with cardiac disease within the hospital trust network.

Northern Ireland Chest Heart and Stroke (NICHS) supports and promotes research carried out in Northern Ireland into the areas of chest, heart and stroke illness.

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 transformational research which aligns care needs with technology providers, researchers and clinical experience.

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.

Cardiac CT imaging

Cardiologists from both the Royal Victoria Hospital and Ulster Hospital can assess patients for their suitability for a pioneering new technique. If a patient is considered suitable a valve can be passed through blood vessels into the heart without the need for major surgery and subsequent recovery in cardiac intensive care. A patient can go home in just a few days.

The technique uses specialised CT imaging which allows arteries to be seen and determined for their suitability for this new procedure.

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