



SPECIAL EU PROGRAMMES BODY

Project Case Study: Centre for Personalised Medicine Clinical Decision Making and Patient Safety - Project update



THEME:

Research and Innovation

FUNDING (ERDF+MATCH):

€8,628,985.36

MATCH FUNDERS:

Department for the Economy and the Department of Business, Enterprise and Innovation, NHS Highland and University of Highlands and Islands

LEAD PARTNER:

Ulster University

PROJECT PARTNERS

Voscuris, Healthcare Analytics Limited, Letterkenny Institute of Technology, NHS Highland, NI Clinical Research Services, NUI Galway, Randox, Randox Teoranta, United Health Group (Optum), University of Highlands and Islands, Western Health and Social Care Trust, Letterkenny General Hospital, C-TRIC, Donegal Clinical and Research Academy.

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Start Date: 01/04/2017

End Date: 31/12/2021



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The aim of the CPM project is to enhance the regional research capability, while serving as a magnet for regional and FDI industry, to create innovative products and new optimised care pathway tools in priority disease areas for patients and commercial benefit.

The five Research Clusters use the methods and technologies from personalised medicine and apply them to heart disease, emergency surgery, acute kidney injury, diabetes and dementia. These are areas associated with significant clinical need and commercial potential and will benefit significantly from the interdisciplinary academic and commercial cross-border expertise and collaboration. This case study outlines the projects work on heart disease.

Primary Coronary Intervention in Myocardial Infarction

The Electrocardiogram (ECG) has been a crucial diagnostic tool for around 70 years particularly in the recognition of patients with heart attacks. Despite its long established role, there is a growing body of research to show that both the medical profession and allied healthcare professionals have difficulty in accurately interpreting the ECG such that crucial diagnoses such as heart attacks are missed.

This problem with ECG interpretation has been recognised as an issue for a considerable period of time such that computer based algorithms have been developed by several companies to assist humans with ECG interpretation. In spite of significant advancements in the computer based algorithms, the machine interpretation as well as the human interpretation remains sub-optimal.

The main aims of this project is to improve the diagnostic accuracy of both the human and the machine in the ECG interpretation of acute heart attacks and to explore ways to improve clinical decision making. To achieve this, we are evaluating the various factors that influence clinical decision-making in the Primary Percutaneous Coronary Intervention pathway (PPCI – a treatment pathway for cardiac patients).

Through a number of specific projects we are examining the human and machine approach to ECG interpretation. It is envisaged that the results of this project will optimise the clinical decision making pathway associated with ECG interpretation and develop new commercially attractive solutions to this ongoing area of need.