



Insight commercial case studies

Sector: Health

# Insight

Centre for Data Analytics

## Cardiovascular rehabilitation programmes



Acquis BI and Insight use mobile and sensor technology to deliver and monitor exercise-based rehabilitation for Cardiovascular Disease

### Executive Summary

#### Challenges

Cardiovascular disease (CVD) is the leading cause of premature death (30% of all deaths) and disability in Europe and worldwide. This costs the EU economy almost €196 billion a year. Cardiac Rehabilitation (CR) can significantly improve mortality and morbidity rates, however the uptake and adherence is low with issues around:

- Accessibility
- Affordability
- Uptake and adherence rates as low as 5%

#### What Insight Delivered

Insight conducted formative research to include development, piloting, evaluation and implementation of a Mobile Health exercise-based rehabilitation programme to include:

- Android mobile app with interface to a wrist-worn sensor
- Exercise programmes and videos
- User feedback & behavioural change notifications
- Community based social network connection

#### Measurable Impacts

The impact of a community based exercise programme and the use of behaviour change notifications include the following benefits:

- Makes it easier to join in remotely
- Increases uptake and adherence through tailored programmes and feedback
- Makes healthcare more accessible, affordable and available to the public



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## Background

Cardiovascular disease is the most common cause of mortality in Ireland, accounting for one third of all deaths and one in five premature deaths. With the prevalence of CVD so high, not only in Ireland but across the world, cardiac rehabilitation has never been so important as a continuous process of care. The main purpose of cardiac rehabilitation is to prevent a further cardiac event and improve the person's quality of life. However, uptake of such programmes remains low.

Mobile Health technologies may tackle some of the issues relating to poor uptake and low adherence, such as accessibility, affordability, low self-confidence, low motivation and access to relevant information.

## Solution and Outcome

Insight delivered a cardiac rehabilitation programme, focused on safe and effective exercise and physical activity, via a smartphone APP (MedFit). It was tailored specifically to each users needs taking into account their level of exercise skill and ability, level of chronic disease, level of motivation and targeted goals. The programme was designed to change regularly and allow users to socially connect with others to maximise adherence.

Whilst exercising and being physically active, the user will wear a wrist worn sensor to measure heart rate and activity levels, allowing them to monitor their physiological response in relation to their own goals. During exercise sessions, MedFit will automatically record their repetitions.

The application of health behaviour change theory is a core component within the inclusive design and the content development. MedFit uses a multi-faceted approach, whereby behaviour change theory and techniques are inherently in-built. This is demonstrated by an adaptable decision support system (DSS), which delivers behaviour change notifications underpinned by health behaviour change theory to motivate the participants to adhere to their physical activity and exercise goals.

### Acquis BI

For further details on Acquis BI's products and services see [www.acquisbi.com](http://www.acquisbi.com)

### Insight

peter.fitzpatrick@insight-centre.org  
Ph +353 (0)1 7162522

"Acquis Bi is honoured to partner with Insight in this important research. Since commencement, Insight has demonstrated a high level of technical expertise in multiple disciplines, including health behavioural change theory which is central to the design of the exercise program and user interfaces."  
Liam McGeown, CEO

