

PCL/17/07 - Identifying Novel Opportunities for Translational Research, Precision Medicine and Drug Repurposing in Cardiovascular Disease Using Pharmacoepidemiology, Genetic Epidemiology and Bioinformatics

Cardiovascular disease (CVD) remains the main cause of death in Scotland. Despite the development of a number of new treatments which have improved survival and quality of life, there are still a number of areas which we do not fully understand, including the link between CVD and other associated conditions such as diabetes. In particular, we do not understand why certain patients respond better to certain treatments than others. One of the reasons for this is that the traditional approach to developing new treatments is to identify potential treatment targets in the laboratory and then use these treatments over the whole population. This method does not however take into account individual patient differences, therefore a new novel approach is needed.

The approach of identifying which patients will respond to certain treatments and tailoring management to them is known as personalise or “precision” medicine. This approach has the potential to further benefit patients by identifying new diagnostic tools and treatment targets, particularly for patients in whom current treatments are not optimal. The addition of genetic data has further potential novel uses.

The aim of this Lectureship is to utilise the expertise that Dundee has in precision medicine, combining use of genetic data and electronic health records to identify novel treatments and markers of illness in CVD. Using this available data will also potentially allow doctors to use current treatments in a more targeted manner, and perhaps identify new uses for medications that are currently used for other conditions.

Dundee has access to a number of genetic and patient record databases, and has an outstanding track record of genetic studies in other fields such as diabetes. In this Lectureship, I aim to utilise the experience available in Dundee to conduct this technique in cardiovascular research, which has huge potential.