



Proof of Concept of Model-based Cardiovascular Prediction

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Abbreviations

DoW	Description of Work
CoA	Aortic Coarctation
AVD	Aortic Valve Disease

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Purposes of the Deliverable 1.2 and explanation of the annexes

The CARDIOPROOF -Paedigree Project Presentation consists of three different elements:

- Annex I) - A Powerpoint presentation.
- Annex II) - A Project Summary in a single slide, in PDF, which is intended for poster printing.
- Annex III) - A Prezi presentation, which is intended for projection, that could be downloaded or viewed at the following web-address:

http://prezi.com/twhk6paei6fv/?utm_campaign=share&utm_medium=copy&rc=ex0share

The contents of these documents are intended for dissemination purposes, and are addressed for a wide audience of non-experts. Therefore, the documents do not delve into the details of the project, but provide only the essential information about CARDIOPROOF (main objectives, consortium, EC contribution, duration, etc.).

In addition to these documents, an ID-Card will be published in the Project website (www.cardioproof.eu) in due course.

CARDIOPROOF's Press Release

Bringing computer modelling to the heart of clinical practice

Previous Virtual Physiological Human (VPH) efforts developed some powerful tools for computer-based modelling of various cardiovascular (CV) diseases, and raised significant expectations that such tools would become available for early diagnosis and disease prediction. As yet, however, the translation from research system into a routine clinical environment has remained some way off. In fact, despite an increasing interest from the medical community to apply VPH concepts to the field of CV diseases, limited results have been achieved so far.

For this reason, the European Commission has funded the Project CARDIOPROOF with €4,107,000. CARDIOPROOF stands for Proof of Concept of Model-based Cardiovascular Prediction. The project, which will run for 3 years, aims to overcome knowledge and technology gaps that have prevented VPH modelling technologies being deployed for clinical use. It will do this by applying advanced VPH modelling methods in clinical trials of patients with Aortic Valve Disease (AVD) and Aortic Coarctation (CoA), while analysing the validity and usability of existing VPH tools, and comparing the effectiveness of VPH-rooted methods against traditional methods.

Both AVD and CoA are cardiovascular diseases which, if left untreated, can result in irreversible heart failure and, as a result, treatment becomes mandatory. However, determining the optimum type of treatment and timing is extremely difficult. The patient-specific disease modelling techniques to be used in Cardioproof offer the promise of applying clinical guidelines to a model of each individual patient's heart.

The two diseases have a huge socio-economic impact: currently, more than 50,000 aortic valve replacements are reported per year in the EU and CoA is one of the most frequent congenital heart diseases, often requiring repeated interventions.

CARDIOPROOF goes beyond the current state of the art by conducting validation trials aimed at covering and comparing the complete spectrum of cardiovascular treatment, predicting the evolution of the disease and the immediate and mid-term outcome of treatment. The project will also take into account user-friendliness as a key component of clinical usability. CARDIOPROOF's goal is to provide first-hand data on comparative cost-effectiveness and clinical efficacy of the most advanced VPH approaches compared to conventional diagnostics and treatment algorithms, thus accelerating the deployment of VPH methods in clinical environments, and bringing to maturity holistic patient-specific computer-based predictive models and simulations.