

HEARTFAID

A Knowledge Based Platform of Services for Supporting Medical-Clinical Management of Heart Failure within the Elderly Population

HEARTFAID is a Research and Development project aimed at devising, developing and validating an innovative knowledge based platform of services, able to improve early diagnosis and to make more effective the medical-clinical management of heart diseases within the elderly population.

Objectives of the project

Chronic Heart Failure is one of the most remarkable health problems for prevalence and morbidity, especially in the developed western countries, with a strong impact in terms of social and economic effects.

All these aspects are typically emphasized within the elderly population, with very frequent hospital admissions and a significant increase of medical costs.

HEARTFAID aims to make more effective and efficient all the processes related to the diagnosis, prognosis and treatment of Heart Failure within the elderly population.

This general goal will be achieved by developing and providing an innovative technological platform that:

- integrate biomedical data within electronic health record systems, for easy and ubiquitous access to heterogeneous patient data;
- provide services for healthcare professionals, including patient telemonitoring, signal and image processing, alert and alarm system;
- support clinical decision in the heart failure domain, based on pattern recognition in historical data, knowledge discovery analysis and inferences on patients' clinical data.

“to make more effective and efficient all the processes related to the diagnosis, prognosis and treatment of Heart Failure within the elderly population”

Project Description

An international consortium, involving academic researchers, health care organizations and companies will develop and implement the knowledge-based platform of services proposed in the **HEARTFAID** project.

The core of **HEARTFAID** platform will be the Knowledge Level, formalizing all the pre-existing clinical knowledge about Heart Failure.

Novel, useful and non-trivial knowledge will be extracted from the Knowledge Base and the data collected during the project, by using innovative knowledge discovery processes.

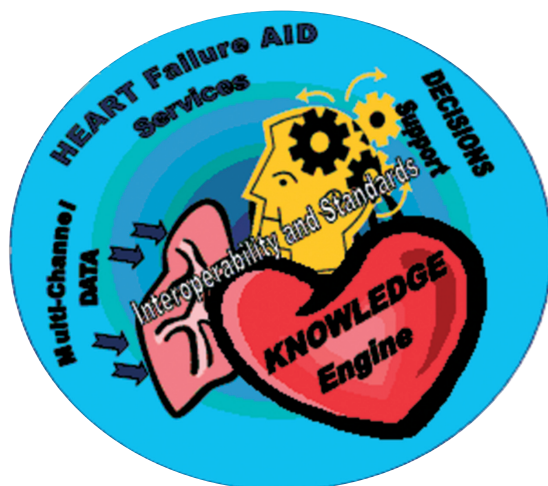
If the Knowledge Base represents the heart of **HEARTFAID** platform, the “brain” of the platform will be the Decision Support Systems (DSS).

The DSS will have the main goal to provide a valid support to the health care operators and the decision makers operating in the field of heart diseases.

To ensure the reliability and the correctness of the whole system, the clinical partners will carry out an intensive validation of the platform functionalities.

Scenario

With the aid of **HEARTFAID** platform, all the health care operators will be able to collect and visualize present and historical data of heart failure patients. No waiting for the transfer of paper clinical notes among different institutes, no uncertainty about the reliability of past data. Physicians will have only to click on their notebook (or PDA, or Desktop PC) to access to the complete profile of the patient, and to ask the decision support services about the best treatment policy for the specified patient.



Expected Results & Impacts

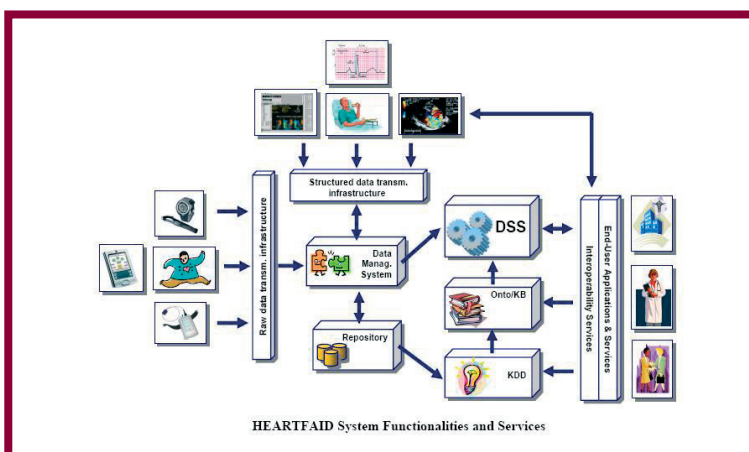
HEARTFAID is strategic impact mainly regards the improvement of the quality of life of Heart Failure patients and the decreasing of the social and economic costs.

HEARTFAID applications will bring an important increase of the treatment quality of the individual patient, by ensuring the possibility to personalize the therapy and have a real-time monitoring and assistance of the patient;

On the other hand, the optimization of the therapy processes will assure the control and reduction of the overall economic and social costs of medical care, by decreasing the frequency of hospital admissions.

Moreover, the results of **HEARTFAID** and the technical solutions created inside the project will be used in order to:

- innovate biomedical data communication standards;
- improve the Heart Failure clinical guidelines and protocols;
- develop new models and procedures on the basis of which to organize the health care delivery;
- suggest new directives and research policies to policy makers;



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Project co-ordinator:
University of Calabria, (IT)

Contact person:
prof. Domenico Conforti
Tel: +39 0984/494732
Fax: +39 0984/494038
Email: mimmo.conforti@unical.it
Website: www.heartfaid.org

Partners:

- Universita della Calabria (IT)
- Universita degli studi d Siena (IT)
- Universita degli studi di Milano-BICOCCA (IT)
- Jagiellonian University - Medical College (PL)
- VMW Solutions LTD (UK)
- Hellenic Communications and Telematic Applications Company S.A.- FORTHNET (GR)
- SYNAPSIS- SL (IT)
- Consiglio Nazionale delle Ricerche (IT)
- Foundation for Research and Technology- Hellas (GR)
- Rudjer Boskovic Institute (HR)
- Istituto Auxologico Italiano (IT)

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