



# The EUPHORIC project: Outcome indicators collection in Europe. Results of the second phase (pilot)



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## Background

The EUPHORIC project ([www.euphoric-project.eu](http://www.euphoric-project.eu)), funded by the EC (DG for Health & Consumers - Public Health Programme 2003-2008), is a consortium of 15 institutions from 10 European countries and Israel (Fig. 1) whose aims are to define and test outcome indicators in some relevant areas of pathology as well as to produce protocols to collect, harmonize and analyze data by integrating the ECHI list.

### MAIN BENEFICIARY

 Istituto Superiore di Sanità, Italy

### ASSOCIATED BENEFICIARIES

-  EFORT/EAR Verein zur Unterstützung der Tätigkeit von nationalen Endoprothesenregistern, Austria
-  Sosiaali-ja terveysalan tutkimus-ja kehittämiskeskus, Finland
-  National and Kapodistrian University of Athens, Greece
-  ASL RM E Department of Epidemiology, Italy
-  Institut Municipal d'Assistencia Sanitaria, Spain
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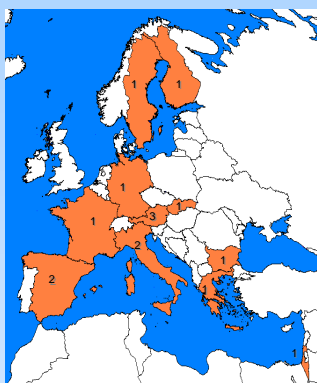


Fig 1. EUPHORIC participating Countries

### COLLABORATING PARTNERS

-  National Center of Public Health Protection, Bulgaria
-  Catalan Agency for Health Technology Assessment and Research, Spain
-  Slovak Arthroplasty Register, Slovak Republic
-  Arthroplasty Register Tyrol, Austria
-  Ludwig Boltzmann Institut für Health Technology Assessment, Austria
-  French Society of Orthopaedic and Trauma Surgery, France
-  BQS Bundesgeschäftsstelle Qualitätssicherung gmbH, Germany
-  Israel Society for the Prevention of Heart Attacks at NCRI, Israel



Fig 2. Browsible web-based database: user-friendly interface

## Methods

Orthopaedic (Ortho) and cardiovascular (CV) areas of pathology were taken into consideration for the pilot because of their high clinical and economic relevance.

Based on the results obtained during the survey phase, it was feasible and more efficient to use existing recent population-based registers and routinely collected hospital discharge data rather than ad hoc active data collection.

A Risk adjustment and statistics work package supports the CV and Ortho pilots in the quest for a definition of the best standardized adjustment methodology to calculate indicators and to safely compare outcomes of the selected pathologies and procedures across the participating countries.

An electronic questionnaire was developed to input and validate the information collected during the survey phase.

### Cardiovascular Pilot

Outcome: in-hospital mortality for the following condition managements and related procedures:

1. Condition managements: a. General MI; b. Unstable angina
2. Procedures:
  - a. Coronary angiography; b. Thrombolysis; c. Percutaneous intervention (angioplasty with or without stenting).

Characteristics taken into account in the analyses:

1. Individual level
  - a. Sex; b. Age; c. Comorbidity (diabetes, hypertension, and previous history of cardiovascular disease).
2. Country level
  - a. Yearly per capita Gross National Income; b. Age standardized CHD mortality rate; c. Life expectancy at birth.
3. Hospital level
  - a. Onsite catheter laboratory; b. Onsite cardiac surgery; c. University hospital.

### Orthopaedic Pilot

Specific aims:

1. To develop outcome indicators for arthroplasty based on the existing national projects according to the requirements of ongoing European Commission projects.
2. To define best practice procedures for the development and operation of arthroplasty registers.
3. To validate the potential contribution of different means used in outcome measurement and quality monitoring of medical devices (i.e. registers, meta-analyses of clinical studies, implant failure monitoring systems by public health institutions, quality control and complaint handling systems by the manufacturers) for a structured outcome measurement and quality control system at the EU level.
4. To present a detailed description of the outcome related registers and similar datasets in two countries (e.g. Sweden, Finland) that have a long established and advanced system in Europe.

### Risk adjustment and statistics

Specific aims:

1. To describe the general quality and verify the possibility of standardizing the categories and the variables of the data collected for EUPHORIC:
  - from population or hospital registers, surveys, clinical trials included in the CV and Ortho pilots
  - from health care information systems (hospital discharge databases).
2. To test a standardized methodology to calculate the chosen indicators in the CV and Ortho pilots. To compare the outcomes of the selected pathologies and procedures in individual hospitals within each European country, using health care systematic information (hospital discharge databases) data.

## Results

The cardiovascular pilot defined a simple set of factors that determine quality of health care outcome in myocardial infarction patients who underwent coronary angiography, percutaneous revascularization or CABG. The orthopaedic pilot findings describe how to develop outcome indicators for arthroplasty based on the existing national projects according to the requirements of ongoing European Commission projects.

A browsible web-based database (Fig. 2) which includes the data from the questionnaire was developed.

### EUPHORIC Working group

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## Conclusions

The indicators for the cardiovascular pilot were analyzed in the context of characteristics at individual, hospital and country levels in order to benchmark hospitals according to their adjusted risk. The orthopaedic pilot resulted in defining best practice procedures so as to develop and operate arthroplasty registers. The web-based database will give an overview of what is currently available in the participating countries regarding the selected 54 outcome indicators.