

PERFECT-PROJECT

Unto Häkkinen

EUPHORIC Project

Final Workshop

11.12.2008

PERFECT

PERFormance, Effectiveness and Cost of Treatment episodes

<http://info.stakes.fi/perfect/EN/index.htm>

Research Consortium : Stakes, five university hospitals and the
Social Insurance Institution

Research Programme on Health Services Research - Terttu, Finnish
Academy

FinWELL – Tekes

The Finnish Innovation Fund

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Commission

AIM

To develop methods for register-based measurement of the cost-effectiveness of treatment and to create a comparative database that allows the treatments given and their costs and effectiveness to be compared between hospitals, hospital districts, regions and population groups.

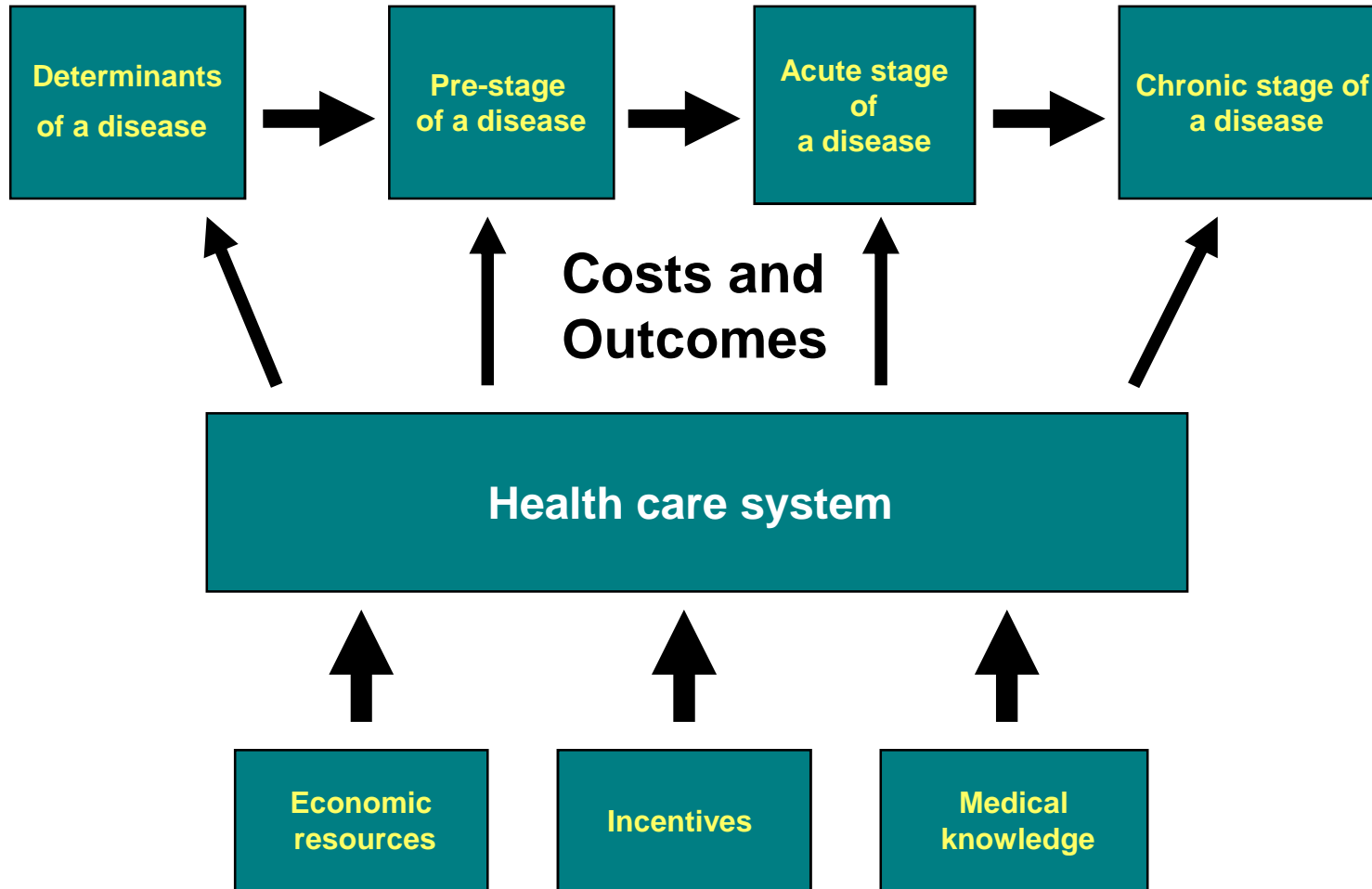
PERFECT

- Produces comparative information on treatments and their costs and effectiveness for treatment monitoring and development.
- Creates indicators and models for monitoring the content, quality and cost-effectiveness of treatment episodes in specialised medical care.
- Assesses factors that influence cost-effectiveness.
- Develops methods for the register-based measurement of cost-effectiveness, and comes up with proposals concerning the data content of national level registers in order to improve the continuous monitoring of cost-effectiveness.
- Develops an approach and methodology that can be subsequently applied to other disease groups as well.
- Compares cost-effectiveness at an international level

Population based cost effectiveness approach (microeconomic disease-based strategy)

Based on modelling the natural progress of a disease, with specific interest in the role of health services as a determinant in the progress.

Uses data from registers on individual patients.



PERFECT - disease groups

The focus will be on selected disease groups with sufficient significance in terms of costs and burden of illness:

- Acute myocardial infarctions, extended later to revascular procedures (CABG, PTCA)
- Hip fracture
- Breast cancer
- Hip and knee replacements
- Very low birth weight infants
- Schizophrenia
- Stroke

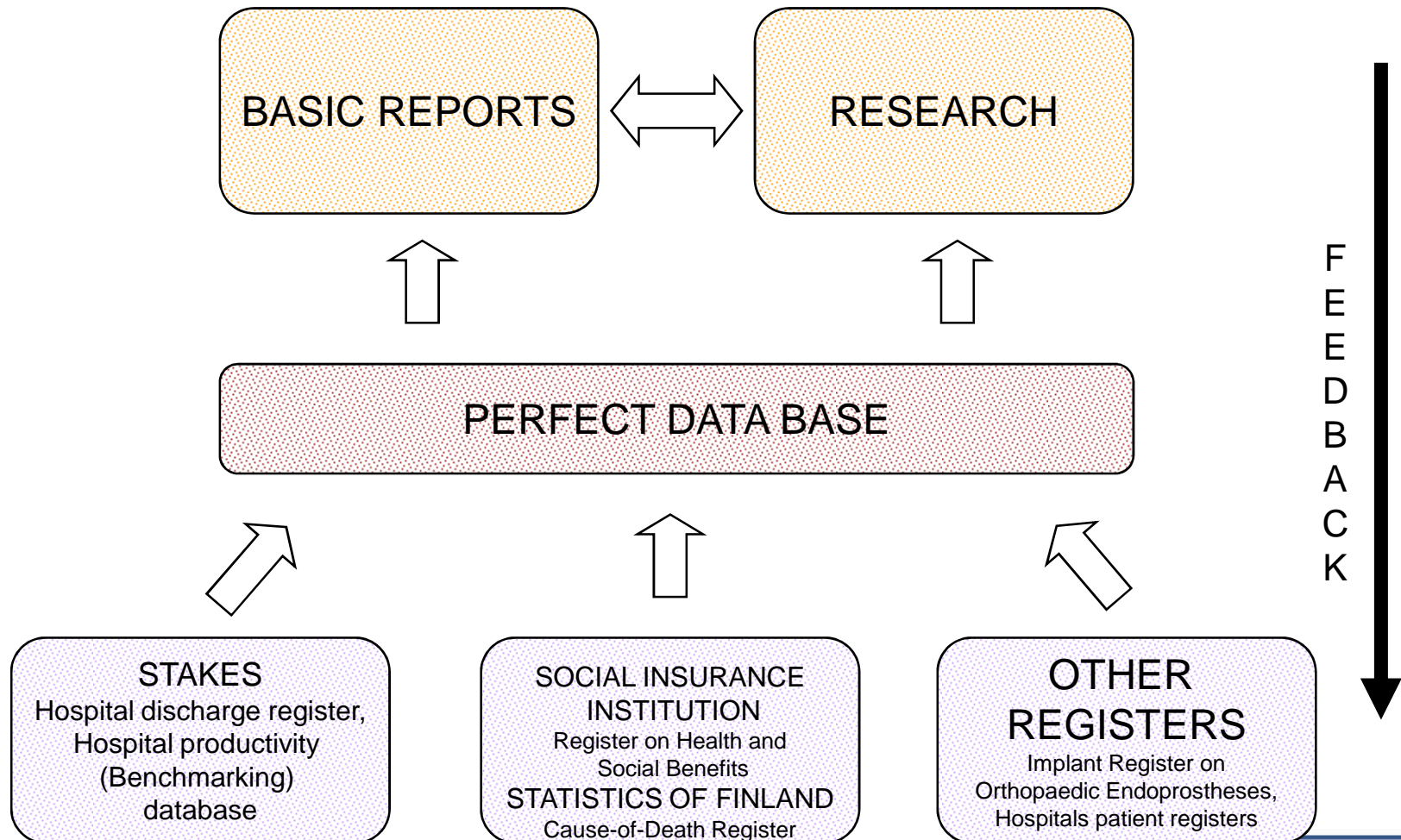
Organisation of the Project

Each subprojects has own expert group, together 50 clinical experts

- Develop the disease/health problem specific protocols
- Define the content of data
- Is responsible for basic reports
- Aims to do international comparison

Stakes / CHESS is responsible for overall coordination of the project, gathering and analysing the data and for health economic, health service research and statistical expertise

Description of PERFECT-Project



Content of basic reports

<http://info.stakes.fi/perfect/FI/tilastotuotteet/index.htm>)

Levels

- **Hospital Districts** (responsible for providing specialist care in Finland)

based on the municipality of the patient)

- **Hospital** (over 50 patients), based on patients treated in a hospital

Indicators

1. Basic information on patients
 - Number of patients, age structure, co-morbidity
2. Indicators describing length of stay, outpatient visits, use of procedures, drugs, cost of care. Process indicators such as per cent of patients treated in specific high quality units.
3. Indicators describing outcome of patients

Current status of Project

- **Acute myocardial infarction** (regional level data available from the years 1998-2005)
- **Bypass surgery and PTCA** (regional and hospital level data from years 1998-2005)
- **Hip Fracture** (regional and hospital level data available from years 1999-2005)
- **Breast cancer** (regional level data patients from years 1998-2001 ,five years follow-up, will be published in the beginning of year 2009, problems in measuring effectiveness and outpatient use of services)
- **Hip and knee replacements** (regional and hospital level data available from years 1998-2005)
- **Very low birth weight infants** (regional and hospital level data available from years 2000-2005)
- **Schizophrenia** (regional and hospital level data available from new patients from years 1995-2001, five years follow-up)
- **Stroke** (regional and hospital level data available from years 1999-2005)

Perfect versus Euphoric indicators

PERFECT goes much deeper in selected health problems:

- includes also long term outcomes (usually 5 -10 outcome indicators)
- access and process indicators
- cost

PERFECT tries to utilize as much as possible the existing register data

All Euphoric indicators (in selected health problems) can be calculated from PERFECT data base

Risk adjustment

1) A definition of patient group so that that they are as comparable as possible

Examples

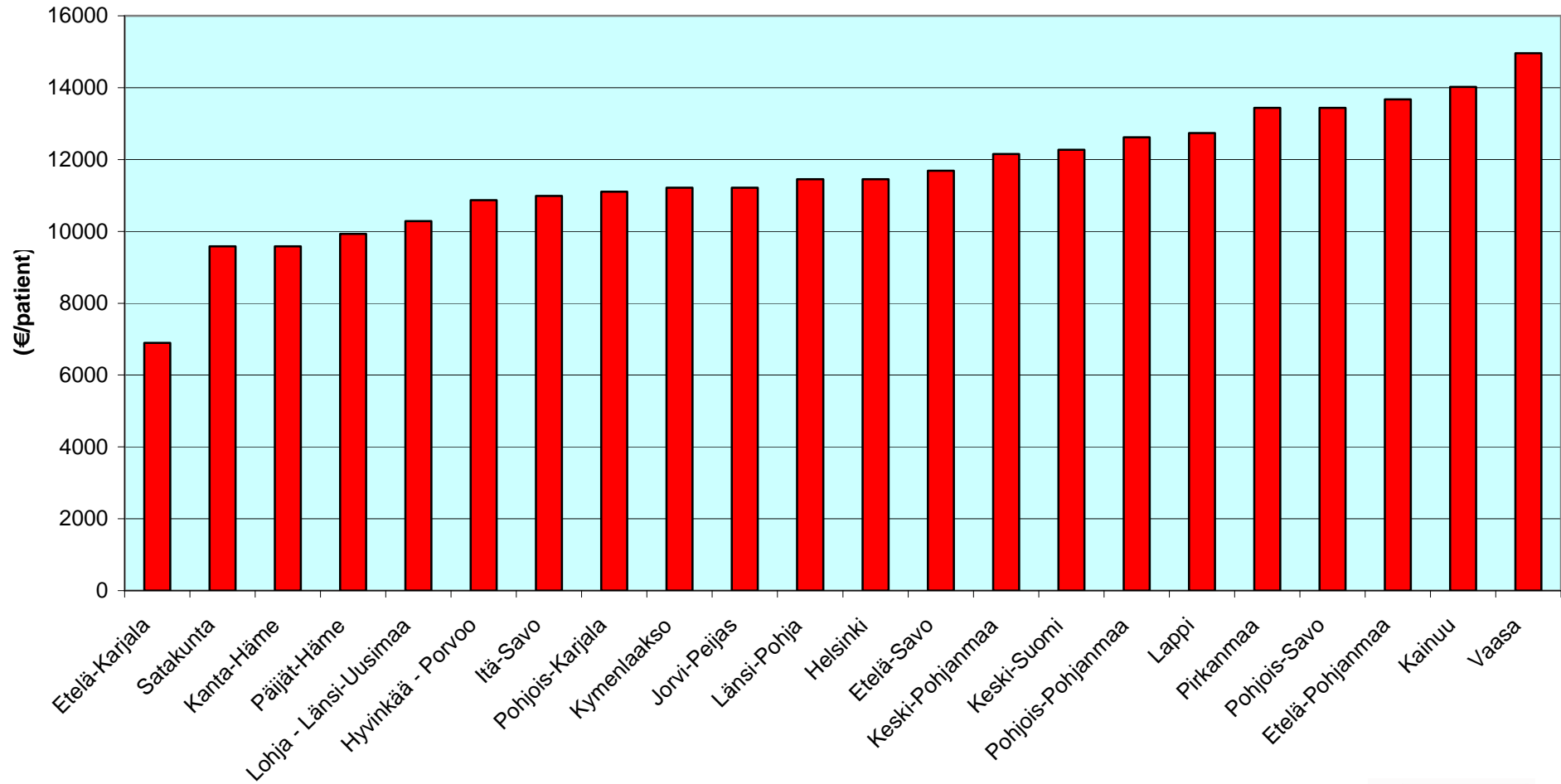
- New hospitalised **AMI** (ICD-10 I21-I22) aged 40-85: Patients were excluded if
 - i) they were discharged alive and had a length of stay, including transfers, of less than 3 days,
 - ii) they had been hospitalised for AMI during the previous year (365 days)
 - iii) if they were institutionalised before hospital admission for AMI
- **Stroke**. First ever stroke and not institutionalised

2) Risk adjustment for co morbidity using information on previous use of hospital inpatient care (since 1987), registered individuals suffering from certain specified chronic conditions (Social insurance institution) and purchases of prescribed medicines

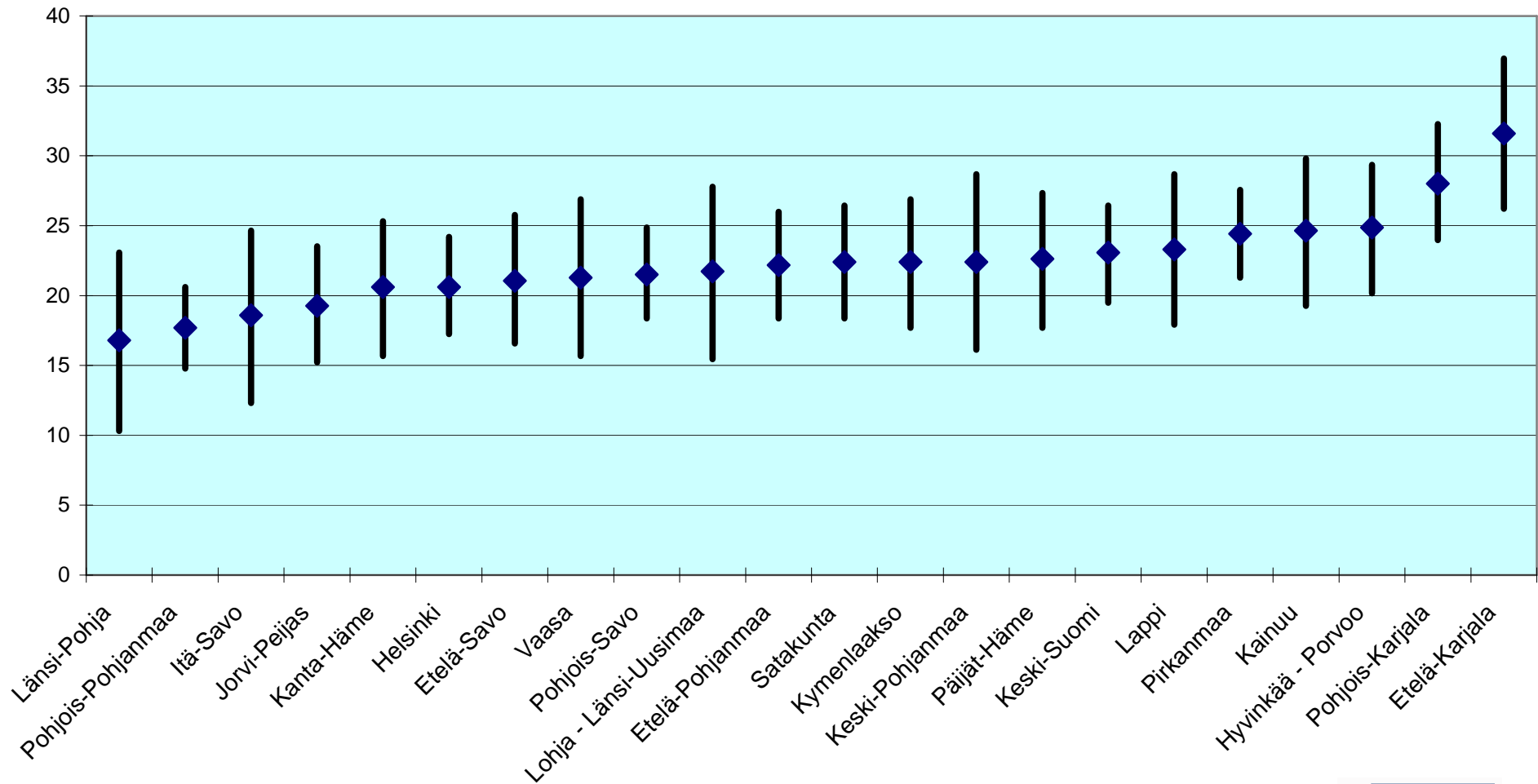
3) Standardising by modelling and calculation of confidence intervals

Co-Morbidity	Previous use of hospital care ICD-9	Previous Use of hospital inpatient care ICD-10	Registered individuals suffering from certain specified conditions, Social insurance institution (code)	Use of Prescribed Drugs ATC-code
Hypertension	40*	I10*-I15*	205	C03*, C07*, C08*, C09*
Coronary heart disease	410*-414*	I20*-I25*	206	
Atrial fibrillation	4273*	I48*	207	
Heart failure	428*	I50*	201	
Diabetes	250*	E10*-E14*	103	A10A*, A10B*
Alcoholism	291*, 304*-305*	F10*-F19*		
Peripheral atherosclerosis	440*	I70*		
Cancer	140*-208*	C00*-C99*, D00*-D09*	115,116,117,128,130,180,184,185,189,311,312,316	L01* except L01BA01 (Trexa)
COPD and Asthma	4912*, 496*, 493*	J44*-J46*	203	R03*
Dementia	290*, 3310*	F00*-F03*, G30*	307	N06D*
Depression	2960*, 2961*, 2069*	F32*-F34*	N/A	N06A*
Parkinson' disease	332*	G20*	110	N04B*
Psychosis	295*-298* except coded for depression	F20*-F31*	112,188	N05A* except (N05AB04 (Stemetil) & N05AB01 (Esucos))
Use of Statin				C10AA*
Use of Varfarin				B01AA03

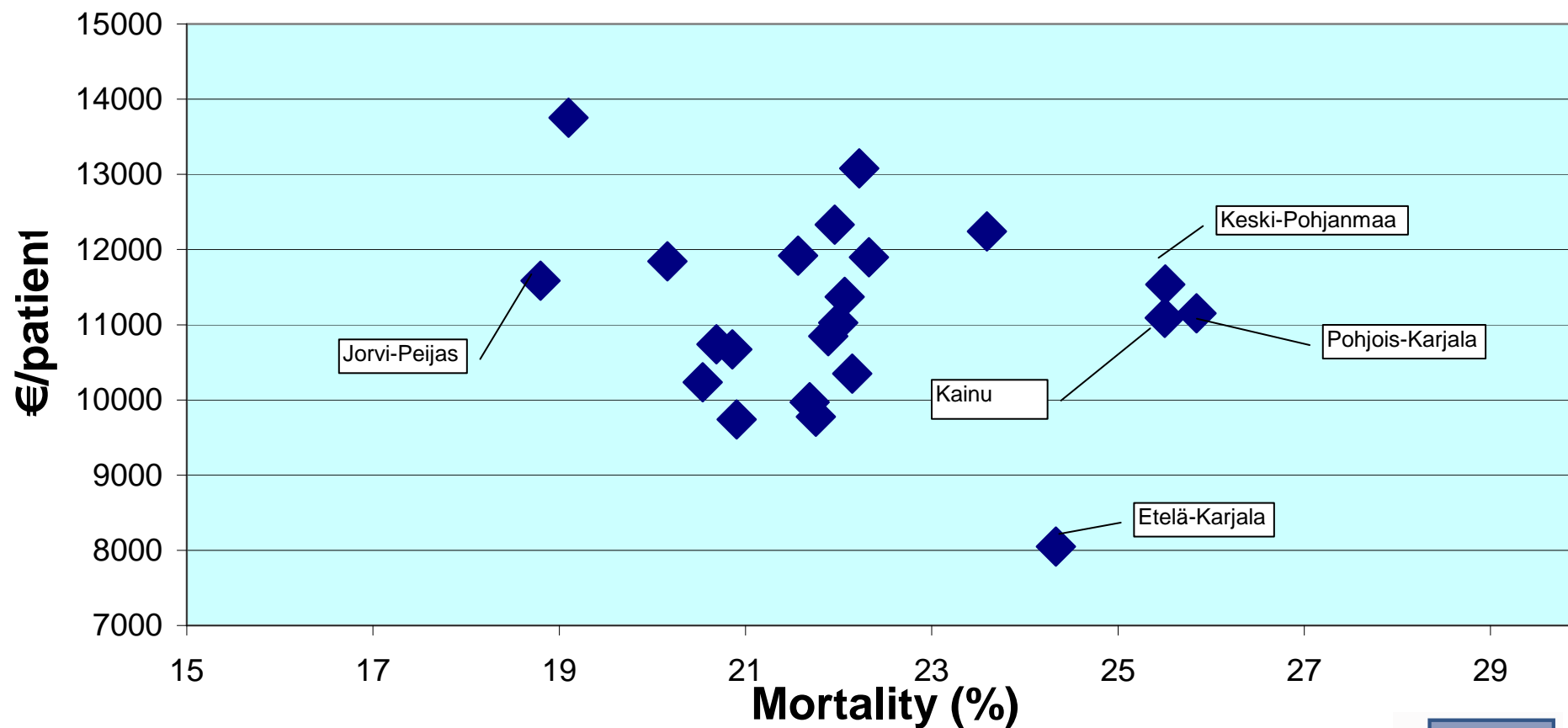
One year cost of hospital care among AMI patients (€/patient) by hospital districts in 2005 (risk adjusted)



One year mortality (%) of AMI patients by hospital districts 2005 (95 % confidence intervals)



Cost of hospital care and one year mortality by hospital district 2003-2005 (risk adjusted)



PEREFECT results: considerable potential to improve efficiency

- Among the AMI and Stroke patients, about 20–30% of costs can be contained if all regions (hospital districts) would have had the same cost as that of the cheapest region in terms of risk-adjusted measures. Similarly, a total of some 500 deaths (amounting to about 7000 additional life years) would have been avoided if all regions would have the same outcome as the best region in the treatment of the two disease groups in a country with a comparatively small population.
- Centralization of care of low weight infants in the Neonatal Intensive Care Units in the five university hospitals will decrease one-year mortality of infants (Rautava et al. 2007).
- Better outcomes for Stroke patients that have treated comprehensive stroke centers.

Practical effects of PERFECT project

- New dimension to benchmarking of care: data that directly helps the local decision-makers. They can compare their own performance not only by using cost or process indicators, but also outcomes and information on the relationship between costs, process and outcomes

Widely used in decision-making, examples

- An implementation of an auditing process in relation to the actions of one University hospital following receipt of data on the relatively high mortality of low birth weight infants.
- Centralisation of care of low birth weight infants into five University hospitals
- Strategic planning (the Ministry of Social Affairs and Health): the indicator developed in the project will be used to evaluate the development of regional differences in the effectiveness of specialised care, in the National Development Project for Social and Health services 2008–2011.