



NATIONAL INSTITUTE FOR HEALTH AND WELFARE

Work package 7: Cost analysis of procedures

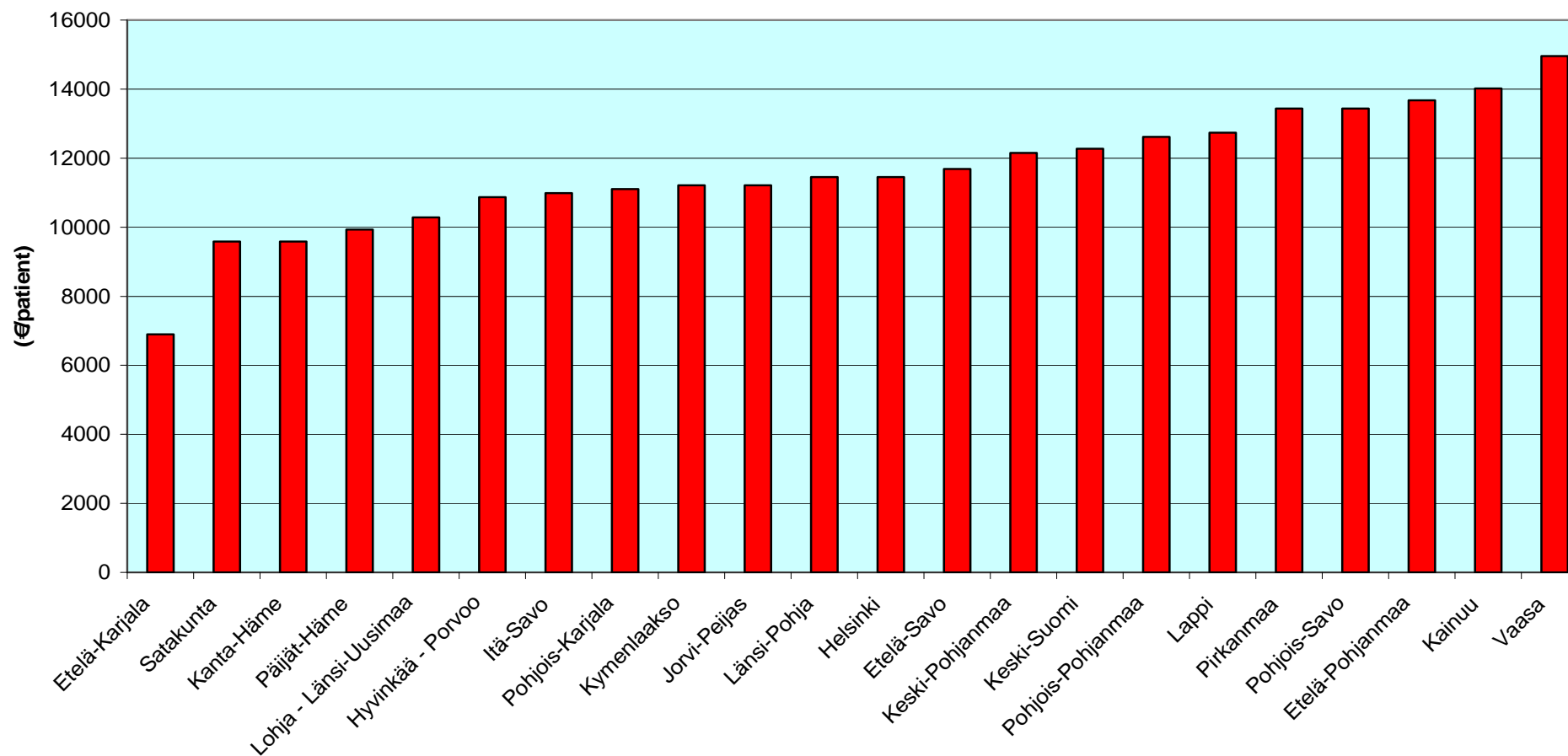
Unto Häkkinen, Antti Malmivaara, Mikko Peltola, Timo Seppälä
CHESS (Centre for Health and Social Economics)

Objectives as stated in proposal

- Generally: To analyze the cost of managing myocardial infarction (MI) and unstable angina pectoris (UA)
- More precisely: to compare procedure cost by hospital complexity level, by country and by performance in terms of outcome achieved. In addition, to take into account the patients' severity characteristics.
- The aim is to calculate the cost of hospital care for selected coronary patients and procedures and relate them to short term outcome (in hospital mortality)



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

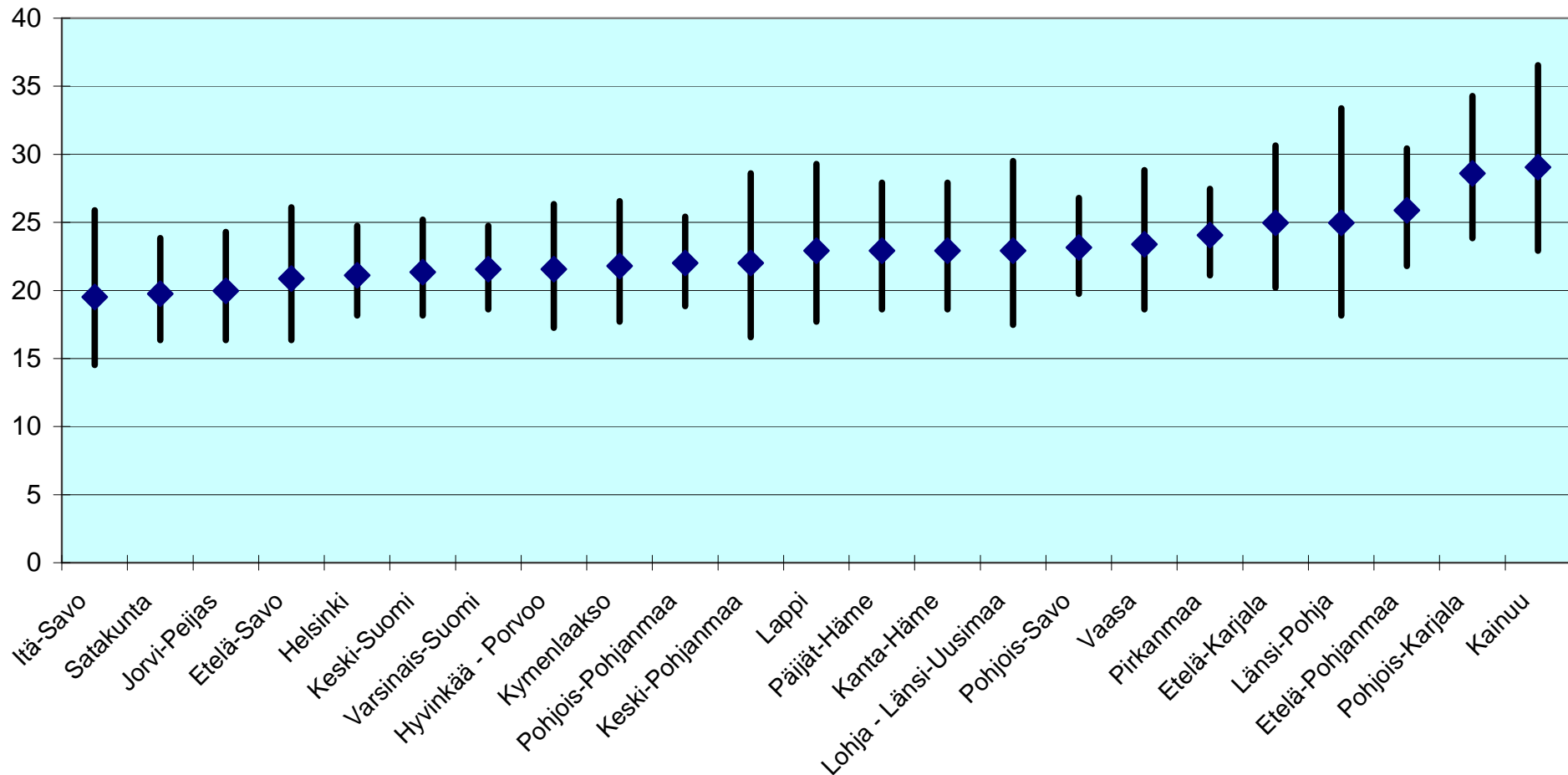


PERFECT = PERFORMANCE, Effectiveness and Cost of Treatment episodes) Finland

NATIONAL INSTITUTE FOR HEALTH AND WELFARE



One year mortality (%) of AMI patients by hospital districts, males 2002-2003 (risk adjusted, 95 % confidence intervals)

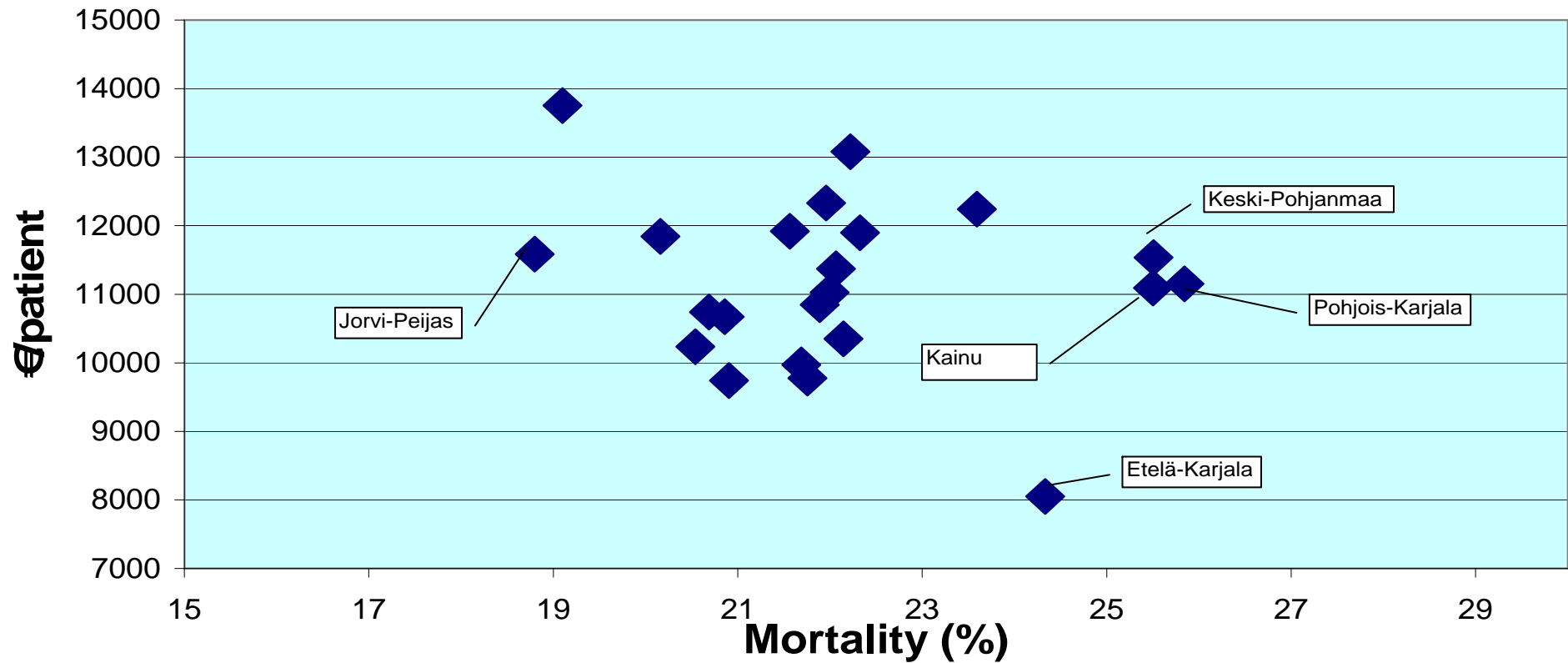


PERFECT = PERFORMANCE, Effectiveness and Cost of Treatment episodes) Finland

NATIONAL INSTITUTE FOR HEALTH AND WELFARE



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



PERFECT = PERFormance, Effectiveness and Cost of Treatment episodes) Finland

NATIONAL INSTITUTE FOR HEALTH AND WELFARE



Challenges in cost comparisons. Main steps modified from Mogyorosy and Smith 2005

1. Decision problem and objectives for costing

To compare the cost of hospital care of MI and UA patients and relate them to outcomes. → We need to collect **background characteristics, outcome data and cost of care from the same patients.**

2. Detailed description of cost comparison

We will compare the cost of hospital episodes using mainly bottom-up approach. Definition of a hospital episode: when it starts and when it ends, what kind of services (inpatient care, outpatient care, hospital transfers etc) it includes?



Challenges in cost comparisons (continues)

3. Identification of resource items used and selection of unit for measurement (hospital days, specific procedures, use of drugs etc.)
4. Placing monetary value for the resource items and calculating cost of hospital episodes. Alternatives: standard costs, reimbursements (DRGs), available cost information from hospitals accounts.
5. Expressing the costs using a single currency and taking into account the price differences between the countries.
6. Risk adjustment i.e. taking into account the case-mix differences between the patients. Estimation of cost function (how costs are related to patient characteristics).



The main phases of the study

1. Clarifying the objectives and definitions for the cost study and requirements for patient level data collection (steps 1-4 above). Spring 2010.
2. Evaluation of cost information available in participating hospitals. By summer 2010.
3. Developing protocol for measuring costs. Autumn 2010.
4. Collecting cost and data from those hospitals from where it is available. Spring 2011.
5. Analysis of cost with respect to patient characteristic. Autumn 2011.
6. The relationship between cost and outcome at hospital level. By August 2012.



Hospital cost and performance data available in Finland

National level (all hospitals)

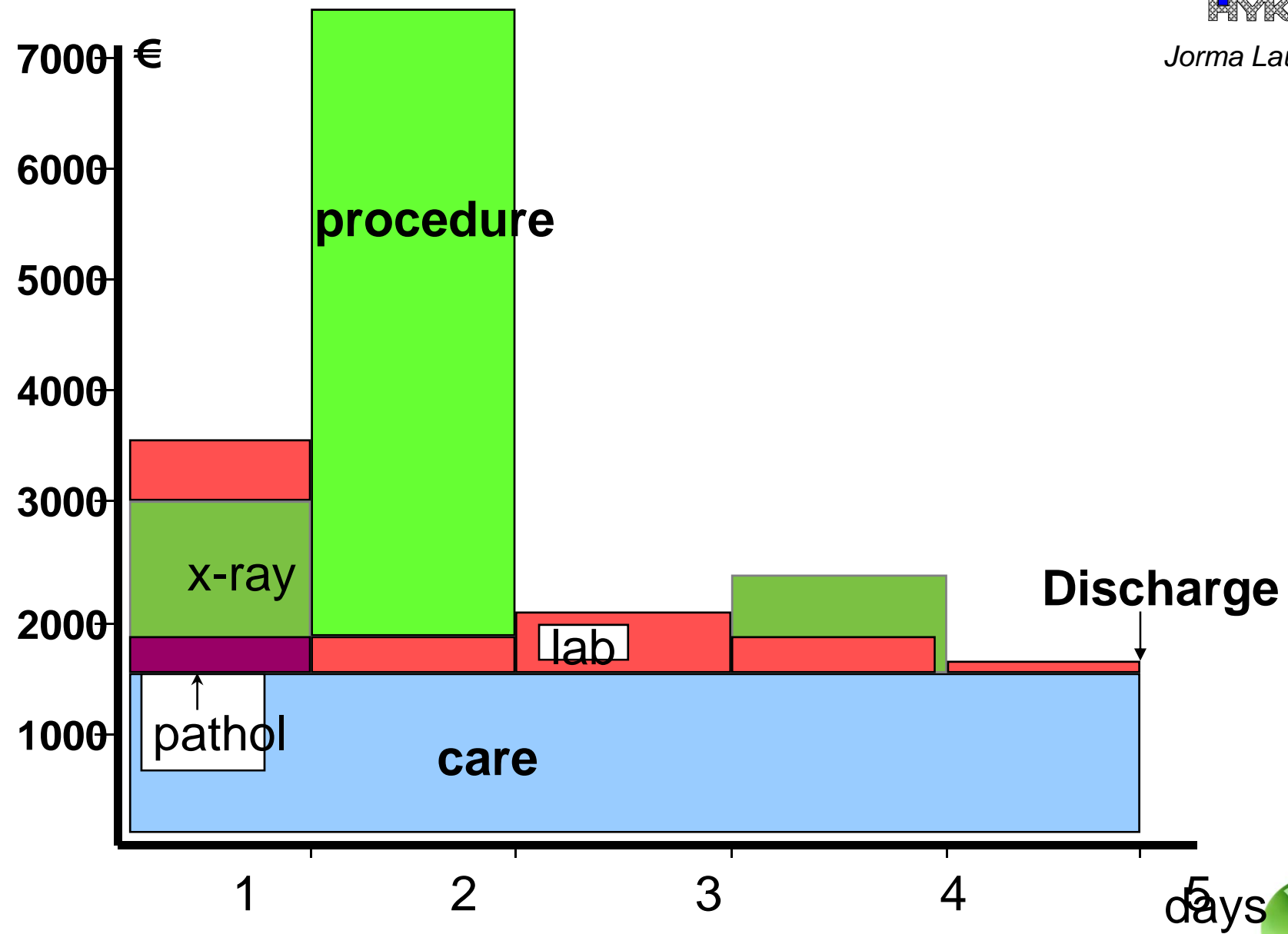
- All discharges and outpatient visits(at patient level and can be linked with other registers)=> enables us to follow patients and create outcome measures
- Cost at department/ specialty level
- Productivity measures at hospital and specialty level (output/cost, where output is measured by cost weighted DRGs and visits or episodes (including all patients hospital use because of the same problem)
- Standardized cost estimates for all discharges and outpatient s (estimates based on patient level cost data from the Hospital District of Helsinki and Uusimaa)
- Hospital discharge data available since 1987 and cost and outpatient visit data since 1998



Available patient level cost data

Possibility to get patient level cost data from 7 hospitals which produce about 40 % the services in Finland (includes 3 hospitals performing CABG). This data can be linked with other registers (mortality, health insurance) i.e. enables outcome measurement





Accumulation of cost data during treatment



Patient level data

Based on unit costs updated annually, such as:

- Basic care
- Procedures
- Intensive unit care
- Expensive drugs
- Laboratory
- X-rays
- Blood products
- Pathology services



Relation/co-operation with other projects: EuroDRG (2009-2011)

EuroDRG – Diagnosis-Related Groups in Europe: towards Efficiency and Quality

Type of funding scheme: Collaborative Project: Small or medium-scale focused research project
 Work programme topics addressed: Health-2007-3.2.8: European system of Diagnosis-related groups (DRG)
 Coordinator: Prof. Reinhard Busse

Participant number	Abbreviation	Participant organisation name	Country
P1	TUB	Department of Health Care Management, Technische Universität Berlin	Germany
P2	CHE	Centre for Health Economics, University of York	England (UK)
P3	CPK	The Centre for Patient Classification, National Board of Health and Welfare	Sweden
P4	ENSP	Ecole Nationale de la Santé Publique	France
P5	iBMG	Institute for Health Policy & Management, Erasmus University Rotterdam	The Netherlands
P6	IMAS	Institut Municipal d'Assistència Sanitària	Spain
P7	IRDES	Institut de recherche et documentation en économie de la santé	France
P8	MSIG	Department für Medizinische Statistik, Informatik und Gesundheitsökonomie, Innsbruck Medical University	Austria
P9	NHF	National Health Fund	Poland
P10	PRAXIS	PRAXIS Center for Policy Studies	Estonia
P11	STAKES	National Research and Development Centre for Welfare and Health	Finland
P12	EHMA	European Health Management Association	Ireland



EuroDRG, some aims of the project

- To calculate costs per case for each selected episode per country
- To estimate cost functions for each care episode, joint cost functions including all care episodes utilization? the full set of explanatory variables
- To explore which baseline adjustment factors explain variation in hospital cost per country
- To empirically explore the relationship between quality of care and costs/utilization (Responsibility of THL)

Altogether 17 episodes were preliminary selected for consideration of which three were related to cardiovascular diseases.



Relation to other projects: EuroHOPE (European Health Care Outcomes, Performance and Efficiency), 2010-2013

Beneficiary Number *	Beneficiary name	Beneficiary short name	Country
P1	National Institute for Health and Welfare	THL	Finland
P2	Centre for Research on Health and Social Care Management, Università Commerciale Luigi Bocconi, Milan	BOCCONI	Italy
P3	Semmelweis University, Health Services Management Training Centre	SU	Hungary
P4	National Institute of Public Health and the Environment	RIVM	Netherlands
P5	University of Oslo, Institute of Health Management and Health Economics	UIO	Norway
P6	Ragnar Frisch Centre for Economic Research	FCO	Norway
P7	University of Edinburgh	EDIN	Scotland, UK
P8	Medical Management Centre, LIME, Karolinska Institutet	KI	Sweden

NATIONAL INSTITUTE FOR HEALTH AND WELFARE



EuroHOPE, 7 main aims (I)

1. Develop methods to measure outcomes and costs of care of specific diseases that can be used for routine evaluation of **care given in the whole cycle of care (not only for specific procedures or short episodes)**
2. Develop methods to measure quality, access, outcomes and cost of (care) that can be used for routine evaluation and monitoring of the performance. We will give a recommendation of a list of indicators to be routinely collected and published by the EU (as a part European community Health Indicators)
3. Develop methods for international comparative health service research using register data
4. Investigate the relationship between outcomes (or quality) with costs (or other measures of use of resources) between European countries, regions and providers applying a multilevel approach



EuroHOPE, 7 main aims (II)

5. Explore reasons behind difference in outcomes and costs. In particular, the interest will be on policy driven factors (such as treatment practices, use of medicines and modern technology, waiting times, financing, organisation of delivery, and reforms).
6. Give proposals concerning the data content of national level registers and outcome measurements in order to improve the continuous monitoring of performance on an intra- and international level.
7. Implement European-wide benchmarking of outcomes, quality and costs, which will enable decision-makers as well as health professionals at different levels to learn from the best practices

NOTEWORTHY: AMI is one of the five diseases included in the study



Muchas gracias!

