# Synthesis of the main findings

EuroHOPE seminar 08/04/2014

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# Background

- Search for performance improvement in health systems

- International comparisons provide information on relative performance and lessons for health policy

# The EuroHOPE studies

- New evidence:
  - National linkable patient-level data with follow-up
  - Disease-based approach
  - Standardized selection procedures and analyses

- Focus on:
  - Health care system characteristics
  - Regional variations in outcomes and utilization → 5 disease groups
  - Cost-quality relationship at hospital level
  - Hospital-wide performance (Nordic countries)

# The patient populations

- Characteristics
  - Patient populations rather similar across countries regarding age, sex, comorbidities
  - Specific differences
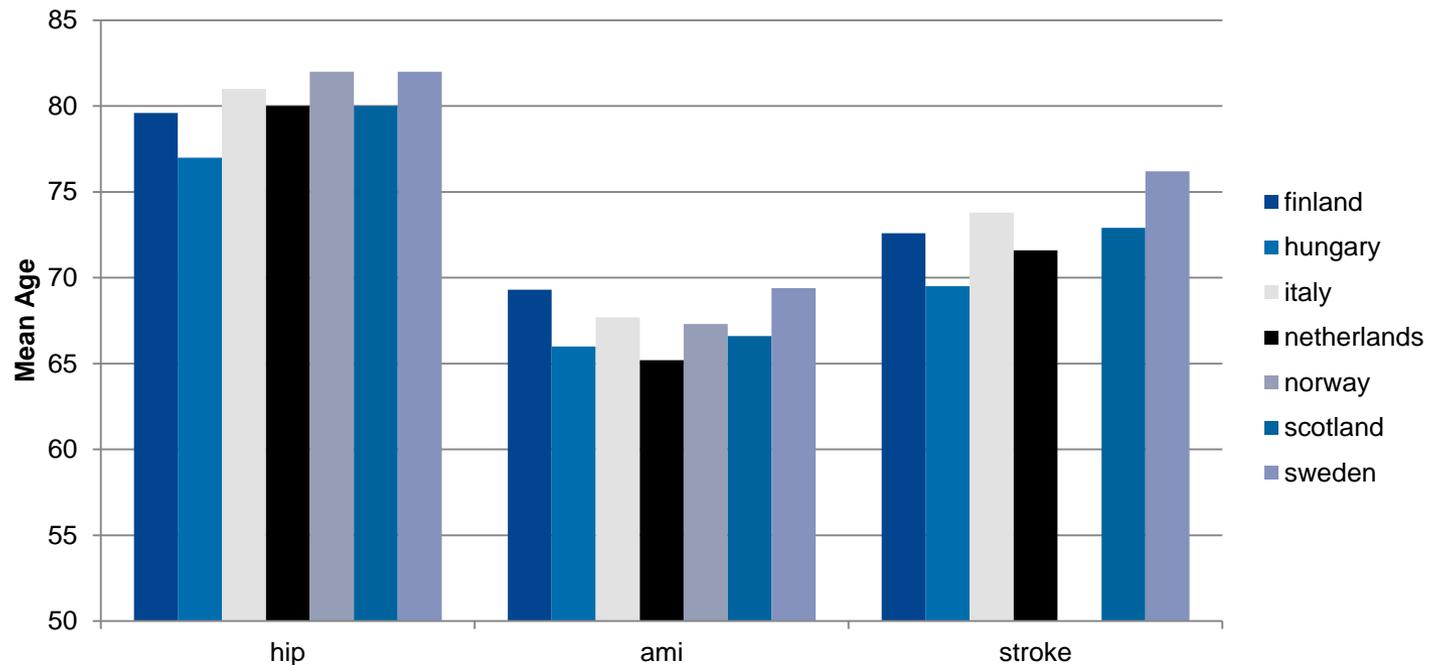
# Mortality

- Mortality in general:
  - Low in Italy, Norway and Sweden
  - High in Hungary
  - Netherlands average
- Variation between countries: 10-15% points
- Variation between disease groups
  - Finland high in AMI
  - Netherlands high in VLBW
  - Scotland high in stroke/AMI, low in VLBW

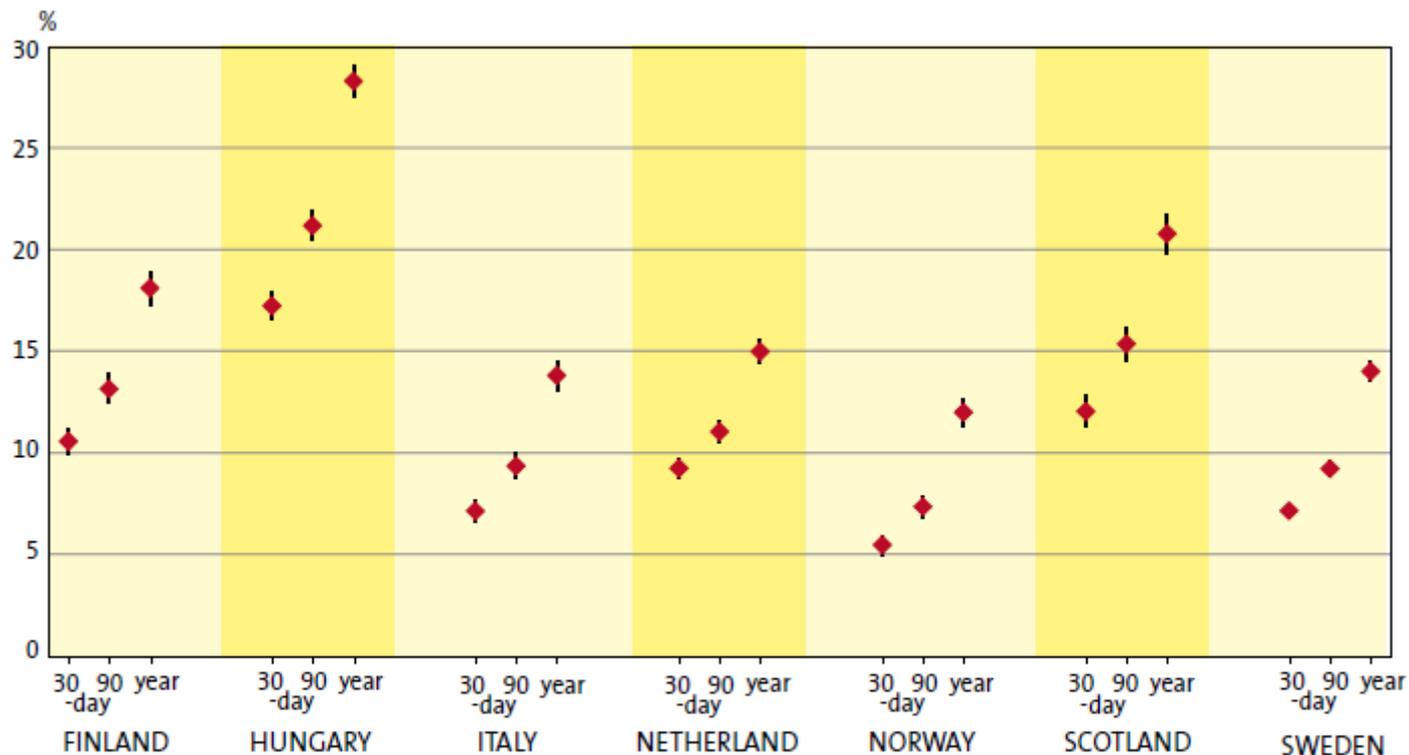- Greater variation between regions and hospitals

# Mortality – AMI



FIGURE 2. Age- and sex-standardised 30-day, 90-day and one-year mortality and their 95% confidence intervals of AMI patients by country in 2008 (2009 Norway)
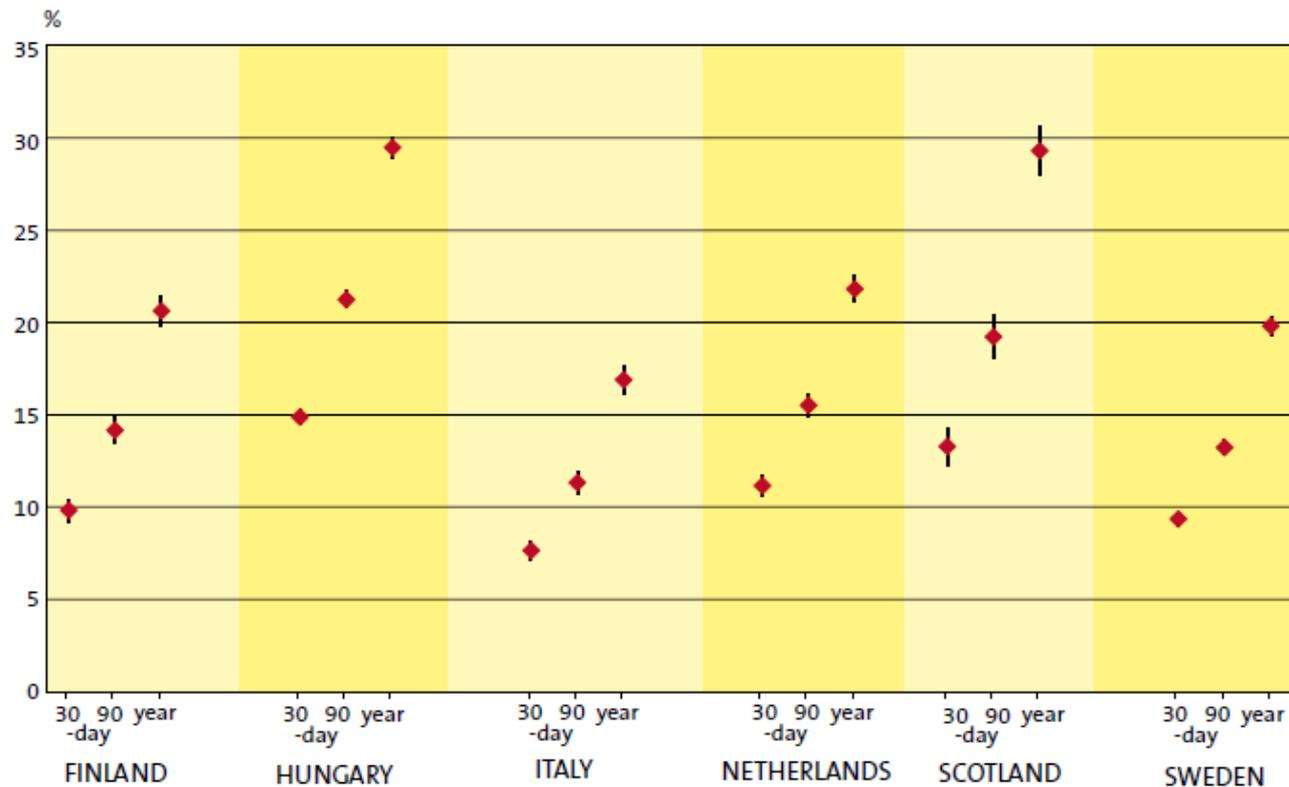
# Mortality – ischemic stroke



FIGURE 3. Age- and sex-standardised 30-day, 90-day and one-year mortality and their 95% confidence intervals of ischaemic stroke patients by country in 2008

# Length of stay

- Variation at country level
  - Differences of 4-5 days at country level, with outliers for stroke (Scotland) and hip fracture (Italy and Scotland)

- 'Inconsistent' patterns
  - Hungary low in hip fracture and ischemic stroke, high in AMI and VLBW and VLGA infants
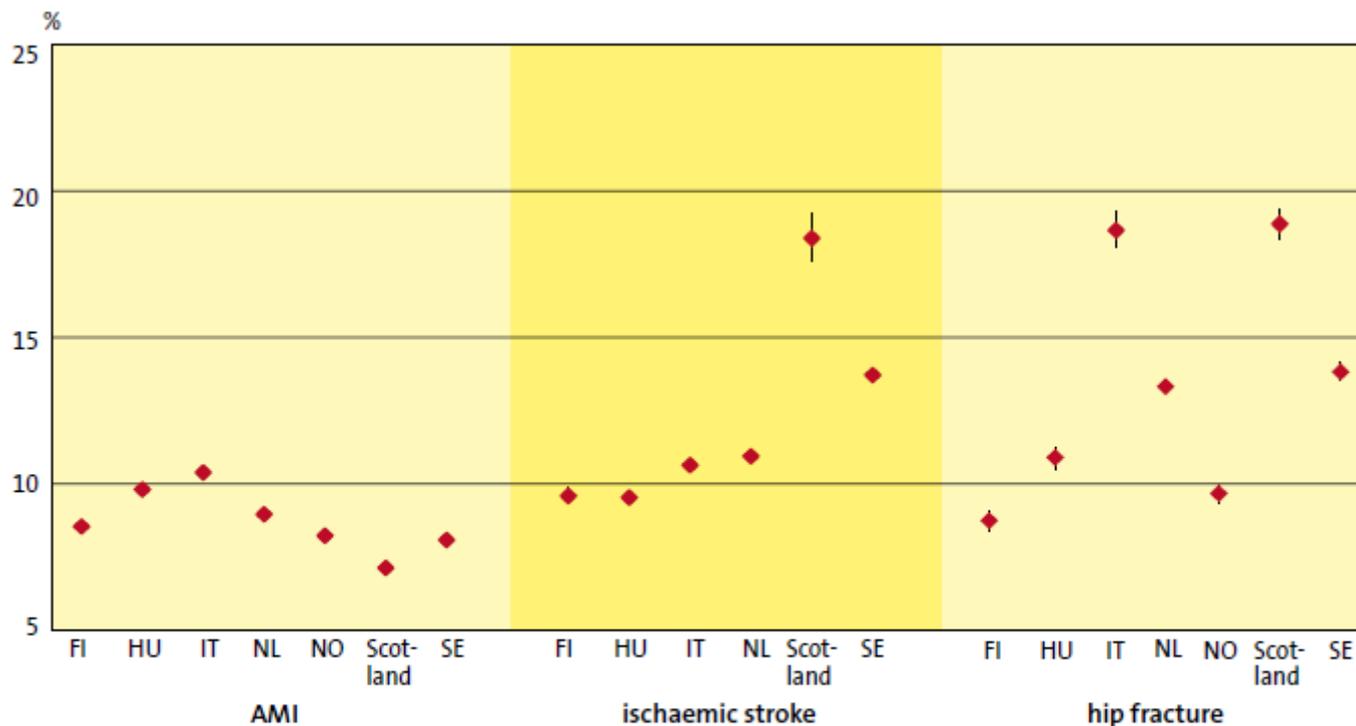  - Scotland high in stroke, low in AMI

# Length of stay



FIGURE 7. Age- and sex-standardised length of first acute hospital episode and their 95% confidence intervals of AMI, ischaemic stroke and hip fracture patients by country in 2008 (Norway 2009)

# Explaining variation

- No clear relationship with health system financing

- Patient level characteristics have limited explanatory power

- Supply and demand factors at regional/hospital level did not systematically explain variations

- Some disease-specific / country-specific results
  - Financing and PCI rate (AMI)
  - GDP and mortality (AMI and stroke)
  - Higher LOS in university hospitals (SWE)

# Room for improvement

- Variation between countries, regions and hospitals indicates room for improvement in all cases

- No apparent relation between quality and cost
  - Except for AMI patients in Finland and Hungary

# Hospital level results

- Disease-specific:
  - No correlation across diseases: good performance in one area not associated with good performance in other areas (mortality)

- Nordic hospital-wide comparison
  - Hospital productivity similar in Finland, Denmark and Norway
  - No association between productivity and quality of care

# Benefits of the project

- Using existing administrative data
- International patient level data with nationwide coverage
  - Multiple disease-level studies, systematic and standardized approach
- Provides information on country, regional, hospital variation
- Methodological development
  - Risk-adjustment
  - Costing
- Basis for routine evaluation

# Future

- **More countries and disease groups**
  - Availability of linkable patient-level data
  - Opportunities with development of patient record systems in several countries
  - Protocols, programming and reporting available from EuroHOPE

- **What information do we miss?**
  - Quality of care variables
  - Information on procedures as determinant of outcomes and resource use
  - Measures of disease severity
  - Information on pre-hospital and post-hospital care

# Data issues

- Substantial effort needed to create datasets

- Restrictions
  - Data sharing in general
  - Hospital specific results
  - Limiting possibilities (risk-adjustment, multilevel modelling)

- Privacy and data sharing issues need to be addressed
  - Possibilities for data sharing vary a lot between countries! (OECD, 2013)

# Conclusion

- International standardised analysis of patient data feasible

- The methodological framework developed provides a solid starting point for further elaborating an international performance assessment toolkit.

- Obstacles to overcome