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Norwegian health services in comparative perspective

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1) What are the values and the pitfalls of international comparisons?

- Values
 - Identify variability in performance (access, cost efficiency, mortality, others)
 - “Explain” variation by variables describing the system, after control for relevant confounders
- Pitfalls
 - Heterogeneity along “all” dimensions makes it difficult to do even descriptive analyses

- Which type of analyses?
 - System level analysis (WHO 2000)
 - Challenges in output measurement: How to measure the impact of health services on health?
 - Disease level analysis (OECD aging-related disease (ARD) project, Technological Change in Healthcare (TECH))
 - Possible to relate inputs to outputs
 - Requires nationally representative patient level data that are linkable (patient register, mortality registers, socioeconomic variable registers, others)

The EuroHOPE project

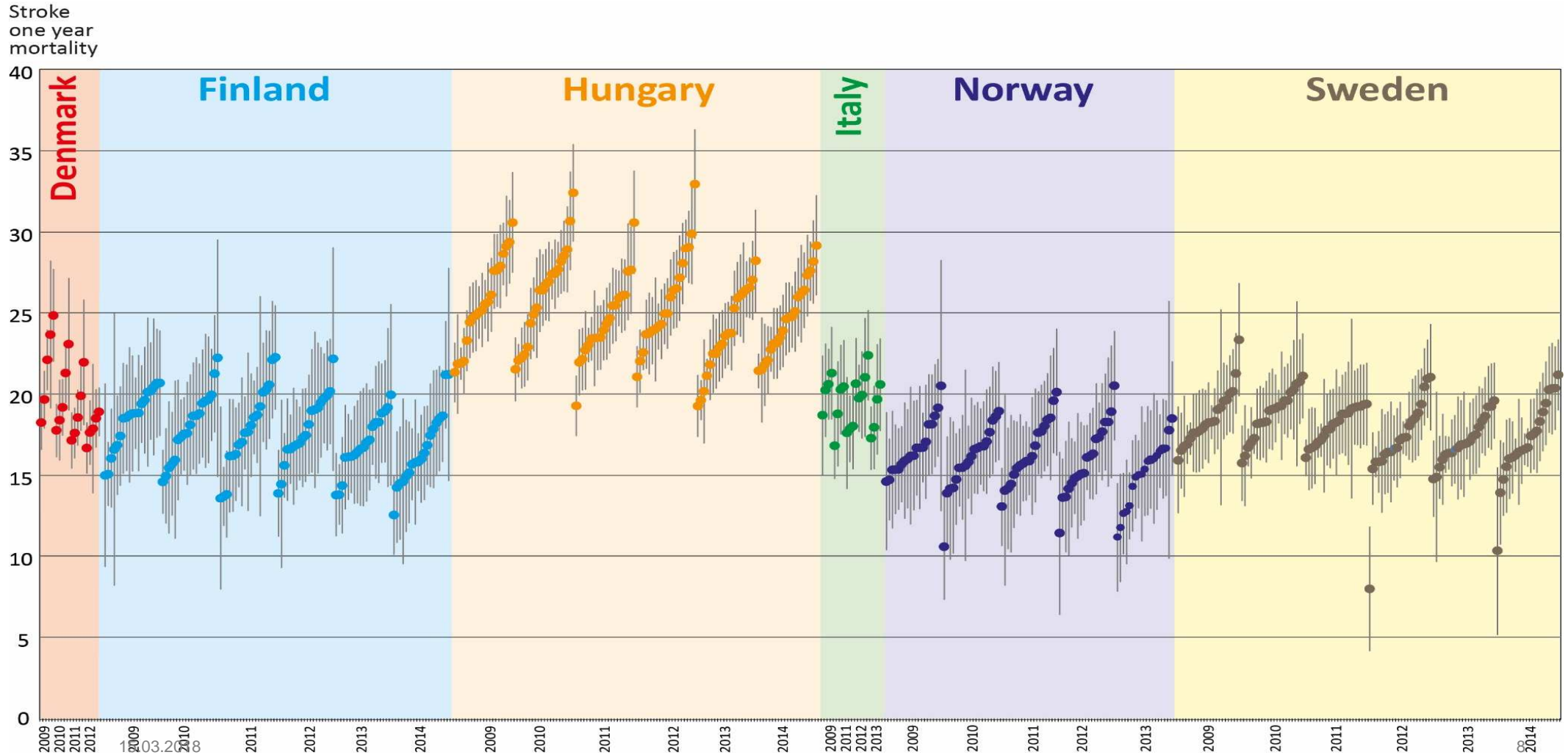
- Disease level analysis, five different diseases
 - acute myocardial infarction (AMI)
 - hip fracture
 - stroke
 - breast cancer
 - children with very low birth weight
- The methodology
 - Links data on inputs and outputs on patient level
 - The data covers among others:
 - Access and utilization
 - Treatment practices (hospitals)
 - Cost and outcomes
 - Common protocol: definitions and rules for risk adjustments
- Seven countries
 - Finland (THL, Unto Häkkinen)
 - Sweden, Norway, Scotland, Netherlands, Italy, Hungary
- Health Economics: December 2015 Volume 24, Issue Supplement S2 Pages 1–177

2) How does the Norwegian health system perform from a European perspective?

- National and regional level indicators (AMI/ACS, stroke and hip fracture) covering the years 2006/2009-2014 were calculated from Finland, Denmark, Hungary, Italy, Norway and Sweden available (<http://www.eurohope.info/>)
- The figures depicts national differences in mortality but also within country between regions

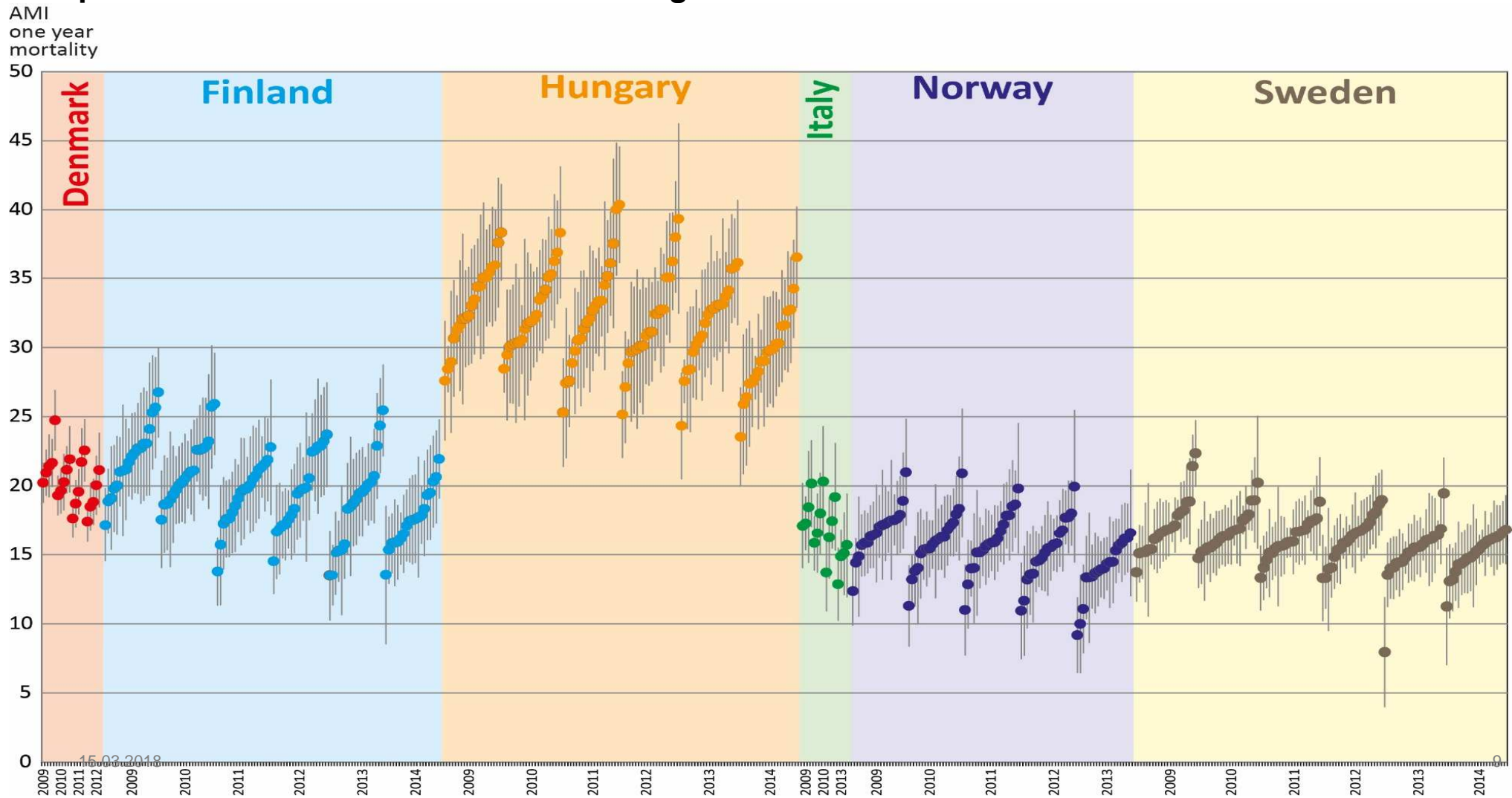
Ischemic stroke: Regional* variation in one-year mortality

Regional age- and sex-standardised one-year mortality and confidence intervals, 2009-2014. Reference population: Finnish stroke patients. *In Italy, differences shown reflect the four provinces of the Friuli-Venezia-Giulia region.



AMI: Regional* differences in one-year mortality

Regional age- and sex-standardised one-year mortality and confidence intervals, 2009-2014 (%). Reference population: Finnish AMI patients. *In Italy, differences shown reflect the four provinces of the Friuli-Venezia-Giulia region.



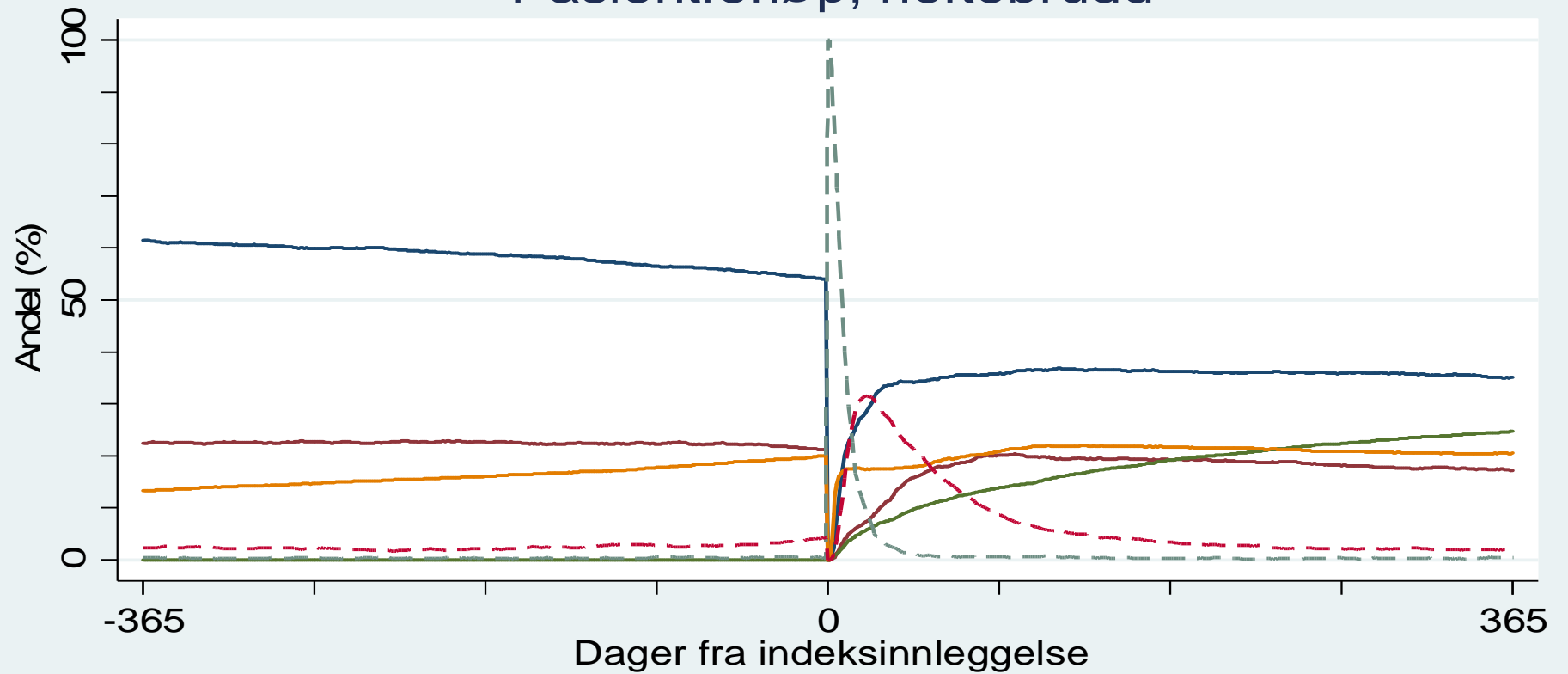
More data on regional variations

<http://www.eurohope.info/map/atlas.html>

3) What are the most important areas in which to increase comparative health systems research?

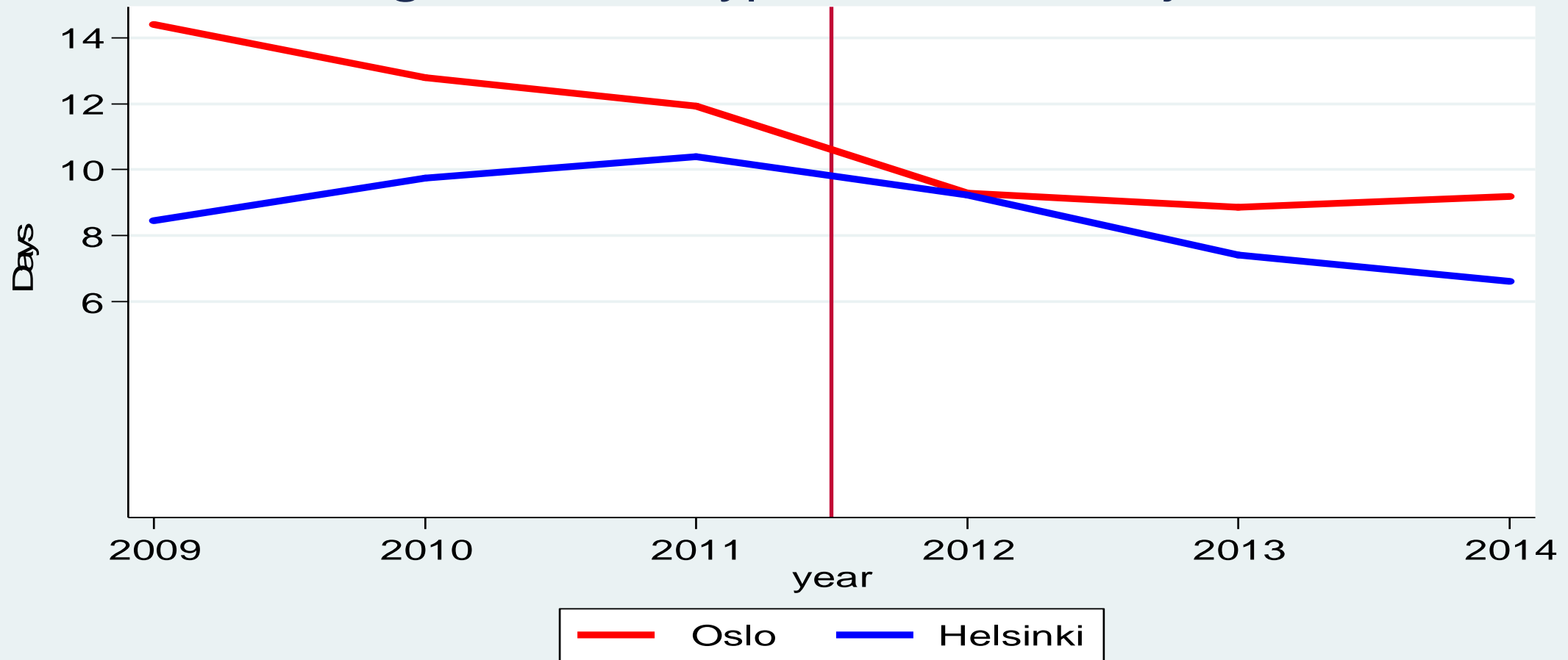
- Linking of hospital, cause-of-death registers, data on prescribed medicines to the registers of primary and long-term care
- Data from capital areas
 - Oslo and Helsinki 2009-2014
 - Copenhagen 2014
 - Stockholm 2009-2014 (only primary care)
- Three diseases
 - Acute myocardial infarction (AMI)/Acute coronary syndrome ACS
 - Ischemic stroke
 - Hip fracture

Pasientforløp, hoftebrudd



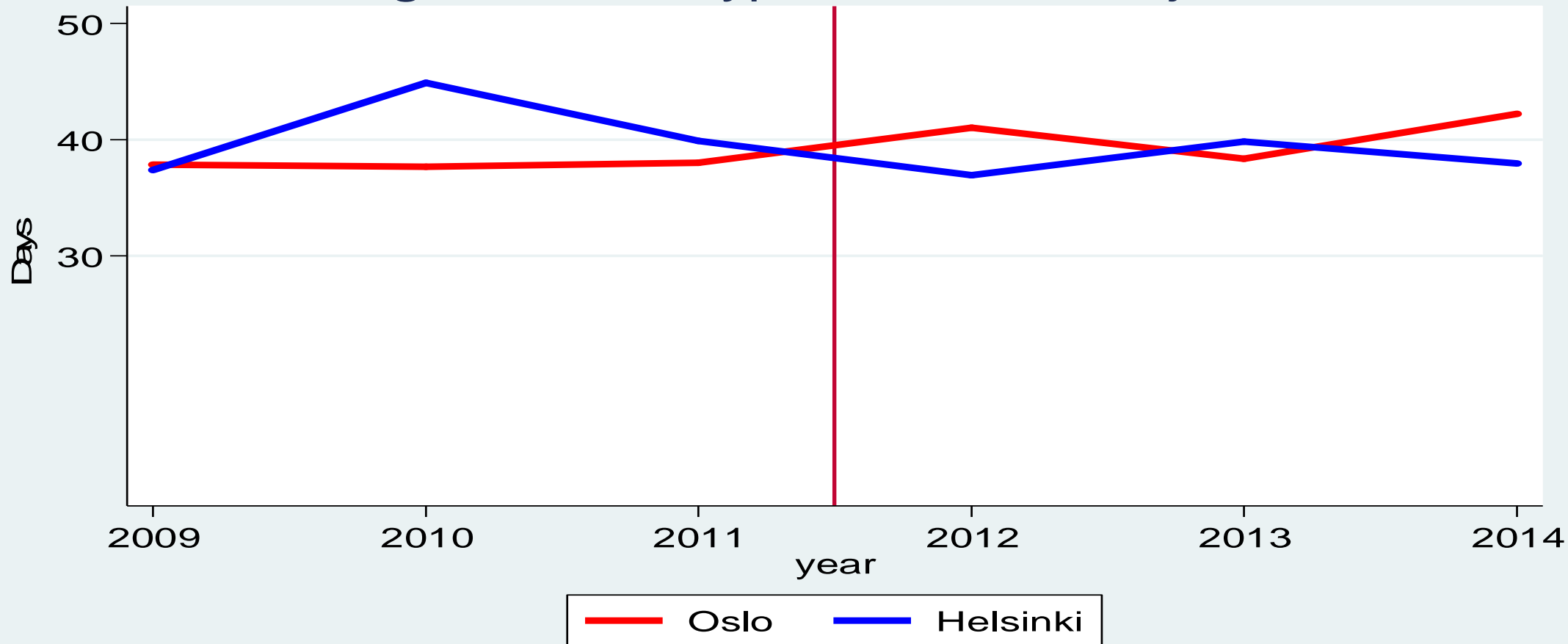
Length of stay of surgery admission decreased in both cities but is still lower in Helsinki

Hip fracture: Length of surgery admission
age, sex and type of fracture adjusted



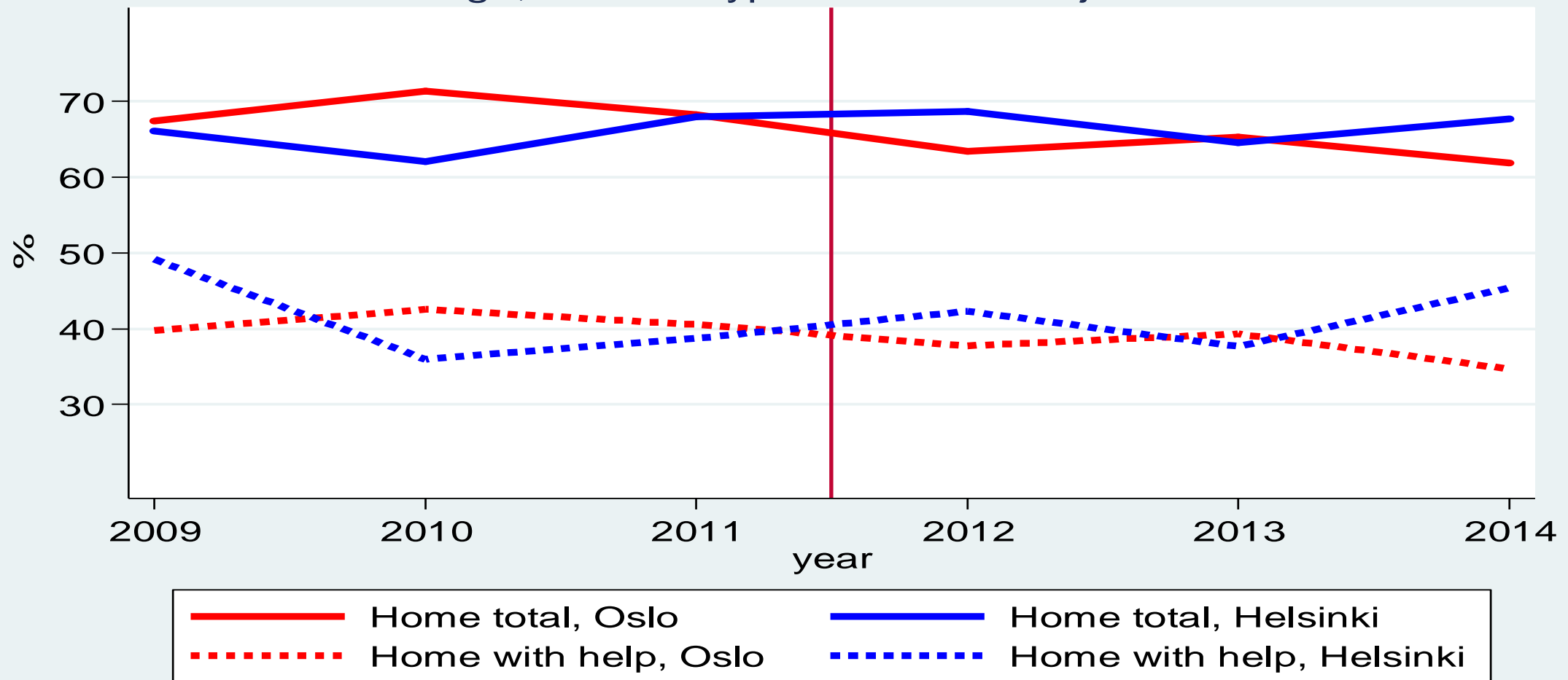
But the length of the first institutional episode

Hip fracture: Length of the first institutional episode
age, sex and type of fracture adjusted



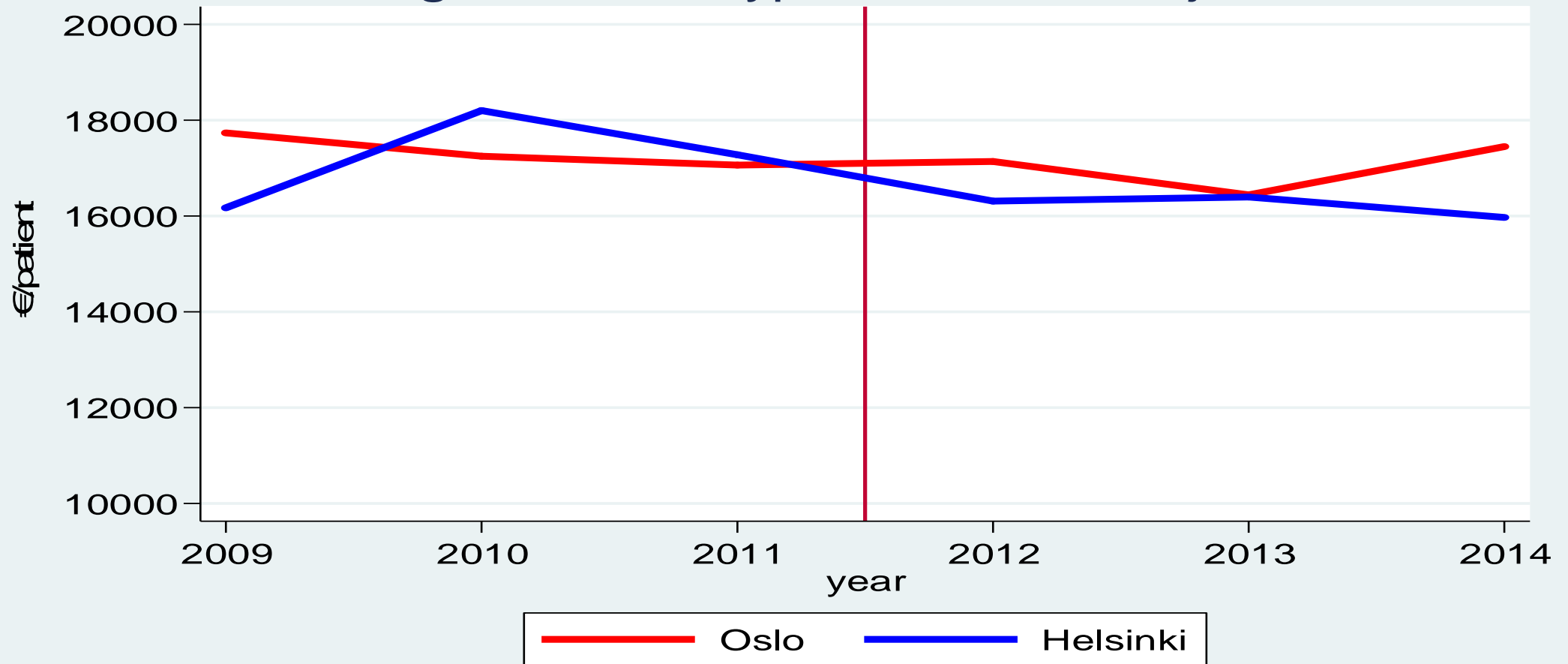
Share of patients discharged to home has somewhat decreased in Oslo

Hip fracture: Share of patients discharged to home within 90 days age, sex and type of fracture adjusted



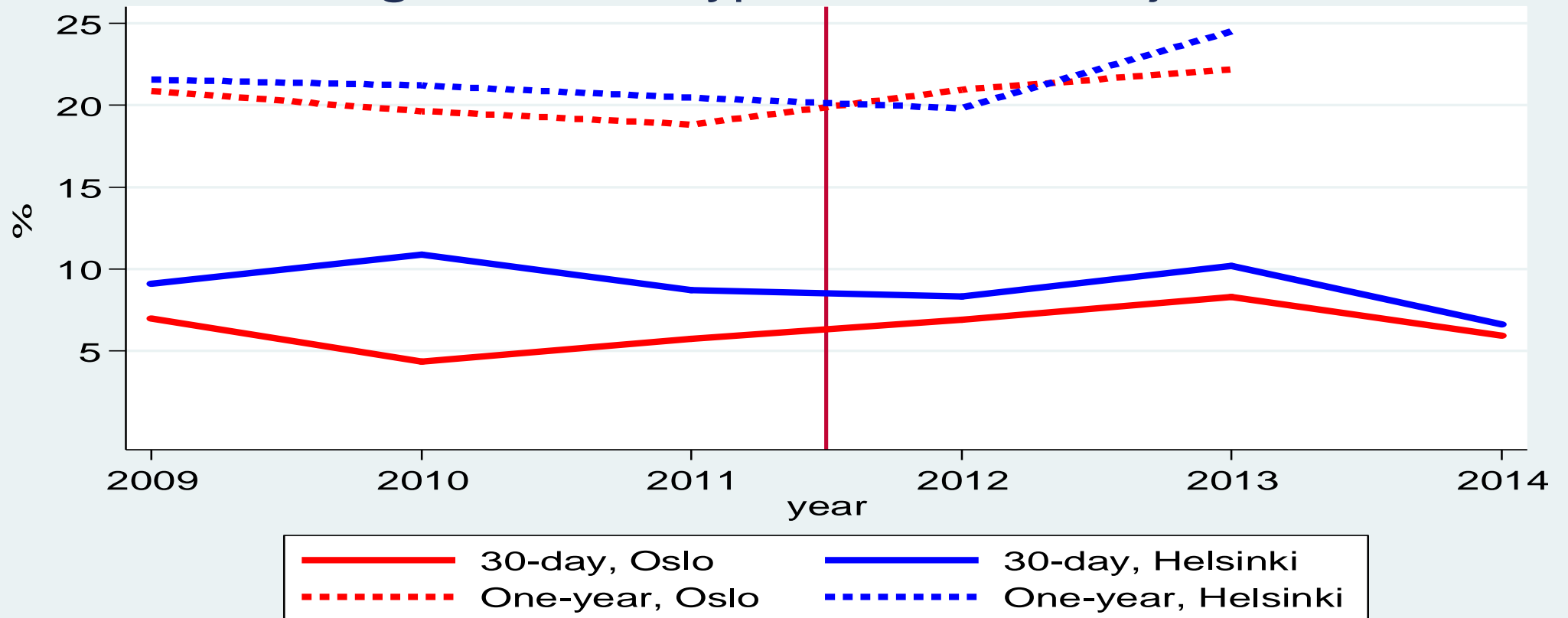
Cost of the first institutional episode has been stable in Oslo but decreased in Helsinki

Hip fracture: cost of the first institutional episode
age, sex and type of fracture adjusted



The difference in 30-day mortality between the cities has decreased

Hip fracture: 30-day and one-year mortality age, sex and type of fracture adjusted



That's all for now ...