NRP 74 “Smarter Health Care”

Geographic variation in the utilisation of health care interventions: what is the role of recommendations and other influences?

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Background

- Chronic diseases are major contributors to the burden of disease
- Geographic variation in the utilization of healthcare services for chronic diseases may indicate over and under use
- Clinical recommendations and others possibly affect the degree of variation, see Figure 1.
- Clinical recommendations are currently heterogeneous and changing rapidly in Switzerland.

Objectives

Elucidate the use of health care interventions and related geographic variation
Assess the influence of clinical recommendations and additional predictors at the patient, healthcare, and geographic unit levels
Contribute to related health services research methods especially in spatial analysis
Define and disseminate suggestions for health care improvements

Methodology and approach

The project consists of three closely interlinked parts:

Part 1: Selection of interventions for chronic diseases and assessment of recommendation status in Switzerland
- Focus on chronic diseases areas defined by the Swiss Federal Office of Public Health
- Systematic literature search to select eligible healthcare interventions
- Assess quality, status and management of related recommendations

Part 2: Study of geographic variation in the use of healthcare interventions for chronic diseases
- Small area variation analysis
- Geographic visualization (e.g. Figure 2)
- Multilevel regression models
- Geospatial modeling
- Assess overarching patterns across interventions

Part 3: Study of economic and clinical implications of variation
- Primarily focus on consequences for healthcare expenditure
- Construct personalized expenditure trajectories by polynomial linear regression
- Analyse expenditures by counterfactual distribution decomposition

Expected outcomes / Questions to be addressed

1. Medical professional societies
   - To what degree are clinical recommendations followed?
   - Which types of recommendations or approaches to implementation have most impact?
   - How to achieve high quality more efficiently?
2. Health insurance companies, cantonal health authorities, Federal Office of Public Health
   - Which disease areas and interventions require closer scrutiny
   - Implications for planning / development of healthcare services
3. The general public
   - A publicly available website devoted to the availability and quality of recommendations

References

1. DALYs GBD et al. Global, regional, and national disability-adjusted life years (DALY’s) for 306 diseases and injuries and healthy life expectancy (HALE) for 188 countries, 1990-2013: quantifying the epidemiological transition. Lancet 2015