

Leonie Sundmacher

## Health care and amenable cancer mortality in Germany

Leonie Sundmacher

Department of Health Care Management, Berlin University of Technology, H80, Strasse des 17. Juni 135, Berlin, Email: leonie.sundmacher@tu-berlin.de

### Abstract

**Aim:** To identify areas in Germany burdened by exceptionally high rates of amenable cancer mortality (ACM) and to investigate how much the supply of health care contributes to a reduction in ACM using districts as the unit of analysis.

**Methods:** Average ACM rates in Germany for 2000-2004 are calculated using unit-record mortality data, and show the geographic patterns of the six most common cancer types in men and women on country maps. The data is age-standardized. Then a Negative Binomial regression with random effects is used to investigate the impact of health care on ACM over time, within the framework of a health production function. In all models, controls for socio-economic status, environmental conditions, a comprehensive set of demographic variables and approximate differences in lifestyle on district level are included. Potential endogeneity of physician supply is investigated using an instrumental variable approach.

**Data:** The data is taken from the causes of death statistics (provided by Destatis), the German Socioeconomic Panel (GSOEP) and other statistics provided by the Federal Office for Building and Regional Planning (INKAR), the German Hospital Foundation, Federal Agency for Environment and the Federal Office for Civilian Services.

**Results:** The spatial distribution of all amenable cancer deaths in Germany shows a north-south rather than the often discussed east-west gradient in men, less so in women. Earlier findings on excess mortality in East Germany were driven by cardiovascular deaths. The regression results show that supply of physicians is significantly associated with lower ACM. Comparably strong effects can be found in cancer types for which effective secondary prevention exist (cervix and extended parts of the uterus, prostate and colon and rectum cancer).