Spatial Clustering of Austrian Health Care Supply using Hospitals as Point Sources

Barbieri V.[1], Pfeiffer K.P.[1]

[1] Department of medical statistics, informatics and health economics
Medical University Innsbruck

Age and gender standardized hospitalisation ratios (SHRs) for diseases and clinical interventions, based on routine hospital data (Minimum Basic Data Set), show significant spatial variability between Austrian districts. The detection of spatial clusters leads to the hypothesis that the availability of medical health care supply has an impact on a district's SHR.
We present a new modelling approach focusing on the detection of spatio-temporal clusters using hospitals as point sources. Dependencies are modelled using Bayesian methods.
The model is applied to two different data sets containing patients with a common and a rare disease, respectively. Results are discussed in the context of the model's robustness and its sensitivity to detect clusters. The model is designed to be used for further health care planning.

Corresponding Author:
Verena Barbieri
verena.barbieri@uibk.ac.at