

Improving regional comparative analysis of quality and efficiency using a needs-based population classification system (PopGrouper)

Introduction: As found in other countries, there are regional variation in care provision in the German healthcare system, which can also be traced back to overuse, underuse as well as misuse of healthcare services. To identify unwarranted variations and to improve quality and efficiency, it is crucial to understand the regional distribution of care patterns. However, regional analyses face the challenge of ensuring comparability of regions with regards to their morbidity burden to attribute observed regional variation to differences in quality and efficiency.

The PopGrouper is a needs-based population classification system which classifies persons into mutually exclusive groups with similar care needs (medically and economically homogenous) enabling such regional comparisons. This work aims to show the extent to which the PopGrouper can contribute to adjusting for morbidity-based care needs in regional comparative analyses to draw better conclusions about regional differences in quality and efficiency.

Methods: Five exemplary indications that represented different patient groups with high, medium, or low levels of complexity were selected. Intraclass coefficients were calculated based on multi-level models to show what proportion of the observed regional variation can be explained at the level of the PopGroup, the patient, the hospital, and the region (district). The analyses are based on German sickness-fund data from 2019. For each selected indication, efficiency-related outcomes (e.g., inpatient length of stay) and quality-related outcomes (e.g., 30-day mortality or stroke unit treatment) are analyzed. Finally, results from the best- and worst-performing regions in terms of their healthcare provision patterns are compared.

Results: At the time of abstract submission, results are available for the regional comparative analysis of patients with stroke. At the time of presentation, results of at least four other indications will be available. The preliminary results show that a significant part of the variation (over 25%) can be explained by the PopGroup assignment. Adding the PopGroup variables to common patient-level predictors increases the explained variation by over 10 percentage points. Only a small proportion can be explained by regional characteristics, in particular regional deprivation.

Discussion: Initial results indicate that the PopGrouper can make a significant contribution to mapping morbidity-related care needs in regional comparative analyses and thus better draw conclusions about unwarranted variations in care quality and efficiency.