Kolloquium „Statistische Methoden in der empirischen Forschung“

Wann: 19. November 2019, **17:30 – 19:00 Uhr (Achtung, andere Zeit!)**

Wo: Robert Koch-Institut | Nordufer 20 | 13353 Berlin (Wedding),
S41, S42, U9 Westhafen | U9, Bus 142 Amrumer Str

Michael Höhle (IQTIG Berlin)

Statistical Challenges in the Quality Assurance of Healthcare

The Federal Institute for Quality Assurance and Transparency in Healthcare (IQTIG) is the central institution in Germany for the statutory quality assurance in health care. In accordance with its statutes, it is scientifically independent and works for, in particular, The Federal Joint Committee as well as the Federal Ministry of Health providing its expertise in various tasks of quality assurance of medical care. As of the winter semester 2019/2020, the IQTIG has joined the list of institutions and organisations co-organising the Colloquium.

In this talk, I will give a short introduction to the IQTIG and how quality assurance is performed through the definition of quality indicators and their corresponding data collection and analysis. The focus of the talk will then be on one particular statistical methodological aspect of the work: Given a binomial time series representing a provider’s annual results in a given indicator, how can we identify providers, which do not meet requirements? The challenge can - from a statistical viewpoint - be seen as a binary classification problem, where each year the observed result of the provider is compared with a pre-defined reference value. One non-trivial question is how to take possible uncertainty in the observed result into account as part of the classification, and, what consequences this has for the subsequent expert validation of the quantitative results. In its simplest form the statistical problem can be stated as a one-sided binomial hypothesis testing problem. This view is then extended using a Bayesian decision theoretic approach based on loss functions in the Beta-Binomial model. If time permits, various extensions of this setup are then discussed, e.g., case-mix adjustments of the provider’s results in order to account for that providers treat patients with different risks, or, taking into account the sequential nature of the above decision problem.