



## Ringseminar

# „Statistische Methoden der Epidemiologie, Medizinischen Biometrie und Versorgungsforschung“

## Einladung

Sehr geehrte Kolleginnen und Kollegen,

hiermit möchten wir Sie ganz herzlich einladen zu unserem Ringseminar, das sich der Vorstellung und Diskussion statistischer Methoden und Prinzipien in verschiedenen Bereichen der medizinischen Forschung widmet.

Am **24. April 2017** werden **Tobias Bluhmki und Regina Stegherr** (Institut für Statistik, Universität Ulm) sprechen über

### **Methodological challenges in diabetes register-based health services research with focus on analysing baseline covariates in studies with delayed entry**

Das Ringseminar findet statt von **16.00 – 17.00 Uhr in N25/2103**. Alle Interessierten sind herzlich willkommen, eine Anmeldung ist nicht erforderlich.

#### **Abstract:**

Patient registers provide rich data sources for diabetes health services research, but its complex longitudinal sampling and observational structure are associated with methodological challenges. Important examples are an adequate choice of the timescale, time-dependent outcomes and exposures, different follow-up times, competing risks, missing mortality information, and delayed study entry. Based on a recent study employing data of the prospective, observational German Diabetes Versorgungs-Evaluation (DIVE) register, we show that time-to-event methodology improves statistical evaluation and should be preferred over simple case-control approaches. The study aim was to explore predictors for the initiation of a basal insulin supported therapy in patients with type-2 diabetes initially prescribed to oral glucose-lowering drugs alone. Another challenge in this study are unmeasured baseline values of relevant longitudinal markers such as glycated hemoglobin (HbA1c) level due to delayed study entry. To be specific, some patients enter the register upon antidiabetic treatment initiation, i.e., the baseline HbA1c level is recorded, whereas others have initiated antidiabetic therapy before the start of data collection; thus, covariate information is measured at first at study entry, but not at baseline. This problem has been summarized in a letter by N. Keiding and M. Knuiman. We propose a joint model approach to investigate the impact of potentially unmeasured baseline values of longitudinal markers on the hazard of interest. This conceptually improves standard Cox regression.

Mit freundlichen Grüßen

Prof. Dr. med. Dietrich Rothenbacher und PD Dr. Benjamin Mayer  
Institut für Epidemiologie und Medizinische Biometrie

Prof. Dr. Jan Beyersmann  
Institut für Statistik