



PhD Course (block course)

## Measuring quality of care based on administrative data

block course: 15+16+18+19+24+25 February, 2027

9:30 – 12:30 hrs

ESP 36, 4030/31

**Course Instructor:** Prof. Dr. Jonas Schreyögg, Prof. Dr. Tom Stargardt

**Course Value:** 2 SWS or 5 LP (in “specialization”)

**Assessment/Student evaluation:** Home assignment and presentation; grading will be pass/fail.

**Course Language:** English

**Software:** N/A

**Prerequisites:** None

**Registration:** Please register via **STiNE**. For all organizational matters please contact e-mail [andrea.buekow@uni-hamburg.de](mailto:andrea.buekow@uni-hamburg.de).

### Course Overview & syllabus:

The course ‘Measuring quality of care based on administrative data’ will lay the foundations for using established measures of quality in health in administrative data. We will elaborate on their applicability to different research settings, address challenges in working with administrative data and discuss their advantages and limitations with respect to validity.

Day 1 & 2 (15Feb2027, 16Feb2027): Introduction to working with administrative data	Length / Lecturer
<b>Aims and overview, application areas</b> <ul style="list-style-type: none"> <li>• What is administrative data?</li> <li>• What can I do with it in research?</li> <li>• Administrative data vs. clinical data vs. registries</li> <li>• Issues of Validity and Reliability</li> </ul>	1.5 h / Jonas Schreyögg

<b>Data generation and data structure</b> <ul style="list-style-type: none"> <li>• Data collection processes &amp; completeness</li> <li>• Coding systems: ICD, ATC, OPS, EBM, (DRG, PZNR), GP coding systems</li> <li>• Coding quality (outpatient vs. inpatient, relevance for reimbursement)</li> <li>• Case study: Structure of the German sickness fund data in detail</li> <li>• Other source of administrative data in Germany and beyond</li> </ul>	2 h / Jonas Schreyögg
<b>Measurement of outcomes in administrative data I</b> <ul style="list-style-type: none"> <li>• Avoided healthcare utilisation, costs, avoided mortality, avoided morbidity</li> </ul>	1.5 h / Jonas Schreyögg
<b>Group work</b> Students are given datasets that they are to present on next morning for a maximum of 10 minutes per group. Presentations are to focus (a) on the structure of the datasets and (b) on how to get access to them.	1 h / Jonas Schreyögg

<b>Day 3 &amp; 4 (18 Feb 2027, 19 Feb 2027): Addressing Challenges</b>	<b>Length / Teacher</b>
<ul style="list-style-type: none"> <li>• Presentation of group work</li> </ul>	1 h / Tom Stargardt
<b>Measurement of outcomes in administrative data II</b> <ul style="list-style-type: none"> <li>• Adherence / Persistence</li> </ul>	0.5 h / Tom Stargardt
<b>Implications for study design</b> <ul style="list-style-type: none"> <li>• Study types</li> <li>• Classical study design: controlled retrospective cohort study</li> <li>• Fit between application area &amp; data at hand</li> <li>• Challenge 1: Identification of cohort</li> <li>• Challenge 2: Measurement of confounders (risk adjustment using instruments such as Elixhauser, Charlson, pharmacy based metrics, etc.)</li> <li>• Challenge 3: Measurement of outcomes</li> </ul>	1.5 h / Tom Stargardt

<b>Day 4 (24 Feb 2027): Addressing Challenges</b>	
<b>Applications on study design &amp; risk-adjustment</b> <ul style="list-style-type: none"> <li>• Example with Propensity score matching</li> <li>• Example with Entropy balancing</li> </ul>	1.5 h / Tom Stargardt
<b>Transforming administrative data into research data</b>	1.5 h / Tom Stargardt

<ul style="list-style-type: none"> <li>• Strategy when organizing complex data sets</li> <li>• Cleaning &amp; plausibility checks</li> <li>• Dealing with missing value</li> <li>• Dealing with extreme values</li> <li>• Making (informed) choices between different specifications</li> </ul>	
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<b>Day 5 &amp; 6 (24 Feb 2027, 25 Feb 2027): Student presentations of home assignment</b>	<b>Length / Teacher</b>
<p>Task: Present (a) the study design (and / or results) of your own study that uses administrative data or, alternatively, (b) present a study design for a potential research topic that uses administrative data</p> <p>Presentations are to include / are to cover</p> <ul style="list-style-type: none"> <li>➔ aim / research gap</li> <li>➔ study setting</li> <li>➔ structure of the data set</li> <li>➔ strategy to identify the cohort / cohorts</li> <li>➔ strategy to control for confounders / identify confounders in the data set</li> <li>➔ strategy for measuring quality of care</li> <li>➔ expected results / results (if available)</li> </ul>	4-8 h JS / TS

The course is designed for PhD students of the Research Training Group 'Managerial and economic dimensions of health care quality' and it will put special emphasis on the subdiscipline of health economics / health care management. But we welcome all PhD students from Business Administration and Economics, who are interested to learn how to use administrative data in health care.