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Health Applications Society Online Seminar Series



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University of Cambridge

September 23, 2022 (Friday) 1-2 pm Eastern Time 10-11 am Pacific Time

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Some Thoughts on Causal Inference with Observational Data

Abstract: Most papers in empirical healthcare operations are based on observational data. The limitations in terms of making causal inferences are well known and researchers will typically resort to one of a handful of "identification strategies" popularised in the econometrics literature. These methods are based on untestable assumptions and referees will often question their validity. Editors then end up having to make a judgement call whether or not there is reason to believe that the assumptions are valid beyond reasonable doubt. That's an unsatisfactory state of affairs. Is there an alternative to this "single model" evidence production? I will argue that it can be more informative if researchers present a well-documented journey through different model specifications, including some traditional causal models. This allows them to shed light on the data from different angles and enables readers to form a more robust judgement of the validity of the estimated effect directions and sizes. I will use a recent paper to exemplify this approach.

Bio: Stefan Scholtes is Dennis Gillings Professor of Health Management and Professor of Operations and Technology Management at Judge Business School, University of Cambridge. His research and teaching focuses on health system design and management and on service innovation, and is strongly practice-based and embedded in close collaborations with executives and clinicians in health systems, hospitals and primary care practices in the UK and the USA. He is founding director of the Cambridge Centre for Health Leadership & Enterprise, chair of the board of the largest primary care practice in the East of England, and cofounder of the East of England Joint Evidence and Intelligence Cell established in 2020 between the NHS and Cambridge Judge Business School to support COVID planning. He holds honorary appointments with Cambridge University Hospitals and the Royal Papworth Hospital in Cambridge, and a courtesy appointment with the Cambridge University Engineering Department. Stefan is founding Department Editor of the Healthcare Management Department of Management Science and has held editorial positions with Operations Research and Mathematics of **Operations Research**.

This seminar series is supported by INFORMS Healthcare Applications Society and organized by Sanjay Mehrotra (Northwestern University), Sait Tunc (Virginia Tech), and Qiushi Chen (Pennsylvania State University). If you have any questions, please contact us at <u>hasseminarseries@gmail.com</u>!