

NYU Stern School of Business
Department of Information, Operations & Management Sciences
OPERATIONS MANAGEMENT RESEARCH SEMINAR

TOPIC: Patient Portals in Primary Care: Impacts on Patient Health and Physician Productivity

SPEAKER: Christian Terwiesch (UPenn)

DATE: Friday, December 13, 2013

TIME: 2:00 PM-3:00PM

PLACE: KMC 5-75

ABSTRACT

Interest in innovative health care delivery models has increased due to measures such as the Affordable Care Act, which is designed to expand insurance coverage and contain health care costs. The goal of these innovations is to increase physician productivity without sacrificing quality of care. One innovation that has been forwarded as a low-cost alternative to physician office visits is “e-visits,” or secure messaging between patients and physicians via patient portals. We evaluate the effect of e-visit adoption on patient health and physician productivity using a six-year panel dataset from a large primary care provider in the United States. The main challenge in evaluating e-visits is that there could be unobservable selection: in particular, a native analysis regressing the number office visits (our measure of physician productivity) on patient e-visit adoption is biased downward if patients adopt e-visits because they are already on a trajectory toward improved health. We address this selection problem by implementing an instrumental variable analysis that leverages the differential propensities of physicians to adopt e-visits over time, since this variation affects patient e-visit adoption arguably independent of their health conditions. We find large selection effects: our instrumental variable estimates show that e-visit adoption doubles the number of annual office visits from 3 to 6, whereas a native analysis predicts an effect of the opposite sign. Meanwhile, we find no evidence that e-visits affect patient health as measured by emergency room visit frequency, blood cholesterol (LDL), or blood glucose (HbA1c) levels. We supplement our analysis with an event study design, and also conduct robustness checks using data on telephone visits.

Bio

Christian Terwiesch is the Andrew M. Heller Professor at the Wharton School of the University of Pennsylvania. He also is a Professor in Wharton’s Operations and Information Management department as well as a Senior Fellow at the Leonard Davis Institute for Health Economics. His research on Operations Management and on R&D and Innovation Management appears in many of the leading academic journals, including Management Science, Operations Research, Marketing Science, and Organization Science.

Professor Terwiesch is the co-author of *Matching Supply with Demand*, a widely used text-book in *Operations Management* that is now in its third edition. His latest book, *Innovation Tournaments*, was published by Harvard Business School Press last year. The novel, process-based approach to innovation outlined in the book was featured by *BusinessWeek*, the *Financial Times*, and the *Sloan Management Review*.

Professor Terwiesch has researched with and consulted for various organizations. From small start-ups to Fortune 500 companies, he has helped companies become more innovative, often by implementing innovation tournament events and by helping to restructure their innovation portfolio.

Most of his current work relates to healthcare and innovation management. In the healthcare space, some of Professor Terwiesch recent projects include the design of patient centered care processes in the VA hospital system, the impact of emergency room crowding on hospital revenues at Penn Medicine, and the usage of ICU beds in the Children's Hospital of Philadelphia. In the innovation space, recent projects include the management of the clinical development portfolio at Merck, the development of open innovation systems, and innovation tournaments for large healthcare organizations.

In the Fall of 2012, Professor Terwiesch with the help of Coursera launched the first Massive Open Online Course (MOOC) in *Operations Management*. By now, well over 100,000 students enrolled in the course, most of them working professionals from around the world.