CPA Research Speaker Series (OIS)

Alberta School of Business
Department of Accounting, Operations, and Information Systems

Presents:

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Topic:

The Effects of Occupancy Information Hurdles and Physician Admission Decision Noise on Hospital Unit Utilization

Friday, April 12, 2019
2:00 pm – 3:30 pm
BUS Room 4-04 (CA Conference Room)

ABSTRACT

Providing patients timely care from the appropriate unit not only involves correct clinical evaluation of patient needs, but also requires making admission decisions to effectively manage a unit with limited capacity in the face of stochastic patient arrivals and length-of-stays. We study human decision behavior in this latter operations management task. Using behavioral models and controlled experiments in which physicians and MTurk workers manage a simulated hospital unit, we identify cognitive and environmental factors that drive systematic admission decision bias. We report on two main findings. First, seemingly innocuous "occupancy information hurdles" (operationalized by requiring typing a 10-character password to view current occupancy), causes a chain of events that leads physicians to maintain systematically lower utilization. Specifically, these hurdles cause physicians to make most admission decisions without checking the current unit occupancy. Then – between the times they check – physicians tend to believe there are fewer beds available than there are in reality because occupancy increases from admissions are more salient than occupancy decreases from discharges. Second, decision random error or "noise" leads to higher- or lower-than-optimal utilization of hospital units in a predictable pattern depending on the system parameters. We provide evidence that

these patterns are due to some settings providing more “opportunities” for physicians to mistakenly admit too many patients, while other settings provide more opportunity to mistakenly reject too many patients. These two findings enhance our understanding of physician admission control decisions when capacity is limited and generate mitigation strategies for helping clinicians manage hospital unit capacity more efficiently.

(Copies of the paper are available in the AOIS Department offices)