Impact of Workload on Health Status of Patients Discharged from an ICU

Song-Hee (Hailey) Kim

Abstract

We study the impact of Intensive Care Unit (ICU) workload on the care provided to patients, and ultimately on the health status of discharged patients. We leverage a relatively new measure of patient acuity called the Rothman Index (RI) and data collected from the surgical ICU of a teaching hospital. The RI is typically updated every hour while in the ICU, which enables us to track the health status of patients very close to the time of their ICU discharge. Furthermore, using the RI, we measure ICU workload in a novel way that takes into account not only the census but also patient acuity. We find that when ICU workload is high, the acuity of patients departing the ICU is higher. We also find that our new measure of ICU workload has added benefits.

This is joint work with Edieal Pinker (Yale School of Management), Elizabeth Bradley (Yale School of Public Health), and Joan Rimar (Yale New Haven Health System).

Refreshments will be served in Daniels Hall room 428 from 11:00 a.m. to 11:30 a.m.
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Biography

Song-Hee (Hailey) Kim is a postdoctoral associate in Operations Management at Yale School of Management. Her primary research interest is making data-driven decisions within service systems, with an emphasis on problems related to healthcare delivery. She received several academic awards including the MSOM Student Paper Award (first place), the INFORMS Health Applications Society Student Paper Award (finalist) and the INFORMS Pierskalla Award (finalist). She received a Ph.D. and a M.S. in Operations Research from Columbia University in 2014 and 2009 and a B.S. in Operations Research and Industrial Engineering from Cornell University in 2008. Further information can be found at sites.google.com/site/songheehaileykim/.