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Balancing Timely Access and Patient-Physician Continuity in Primary Care

Monday, October 8, 2012, 4:10-6PM, in Dow 1005

The two key and often conflicting operational measures for a primary care practice are: 1) *Timely Access* and 2) *Continuity of Care.* Timely access focuses on the ability of a patient to get access to a primary care physician (PCP) as soon as possible. Patient-physician continuity refers to building a strong relationship between a patient and her physician by maximizing patient visits to that physician. To facilitate continuity, each PCP has *panel* of patients for whose long term and holistic care she is responsible. With the nationwide shortage of primary care physicians and growing prevalence of chronic conditions, practices are struggling to provide timely access and continuity to their patients.

This talk will focus on two capacity management themes. The first involves determining optimal panel size and case-mix compositions in a group practice to promote access and continuity. Using a simple newsvendor approximation, we quantify the impact of panel size and case-mix on access, capture the price of continuity in a group practice, and suggest long-term strategies to redesign panels. We demonstrate the benefits of the approach using patient comorbidity and visit data from a large primary care practice.

The second theme revolves around capacity allocation under two different demand streams, prescheduled (non-urgent) and same-day (urgent). Prescheduled requests include all non-urgent patient demand such as physical exams, monitoring and follow-up for chronic conditions. This demand is realized in advance of the workday and typically requires continuity. Same requests are typically for acute conditions, and arrive during the course of a workday. For such patients, quick access to a physician often takes precedence over continuity. We model the resulting capacity allocation problem for a group practice, under dedicated and flexibly shared demand streams, using an aggregate level 2-stage stochastic integer program. We demonstrate insights both from an analytical treatment of the problem and from our computational experiments.

Hari Balasubramanian is an assistant professor of Industrial Engineering at the University of Massachusetts (UMass), Amherst. Prior to joining UMass in 2008, Dr. Balasubramanian was a research associate (2006-2008) at the Division of Health Care Policy and Research at Mayo Clinic, in Rochester, Minnesota. He obtained his PhD in Industrial Engineering from Arizona State University. His interests are broadly in healthcare operations management. His work has appeared in operations research as well as clinical journals, and has been funded by the National Science Foundation, the Agency of Healthcare Research and Quality, and the Life Sciences Moment Fund of the UMass Medical School.

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