

Center for Healthcare Organizational Transformation  
Department of Mechanical and Industrial Engineering  
Northeastern University, Boston MA

Seminar title:

**“How Should We Design Primary Care Physician Panels?”**



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340 Egan Research Center

**Abstract**

As the United States faces an acute shortage of primary care physicians (PCPs), practices are struggling to deliver on two key metrics: 1) *Timely Access* i.e. ensuring patients get access to care as quickly as possible, and 2) *Patient-Physician Continuity* i.e. ensuring patients see their own PCPs as much as possible. Timeliness is crucial to avoiding emergency room visits which increase healthcare costs and further the chances of medication errors and health complications, while continuity is one of the foundational ideas of primary care and results in faster, more efficient handling of the patient due to the familiarity with his/her history and a closer physician-patient relationship.

Both timeliness and continuity are closely linked to the concept of a physician's *panel*, i.e. all patients a physician is responsible for. The size and composition of a panel is a major determinant of a physician's ability to provide timely access and continuity. We propose a stochastic optimization framework for a primary care group practice to improve timeliness and continuity. We test the model using data from an internal medicine practice at the Mayo Clinic, Rochester Minnesota, and show that the optimal solution can significantly improve both access and continuity metrics. Finally, we discuss some policy issues in primary care relevant to the broader healthcare reform debate.

**Bio**

Hari Balasubramanian is an assistant professor of Industrial Engineering at the University of Massachusetts, Amherst (for more information see: <http://people.umass.edu/hbalasub>). He has a PhD in Industrial Engineering from Arizona State University. His post-doctoral training (from August 2006 - August 2008) was at the Department of Health Sciences Research at the Mayo Clinic in Rochester Minnesota. His research interests are broadly in healthcare operations research. He has worked on the planning and scheduling of surgical suites, models to improve primary care delivery, improving patient flow in emergency departments, and the design of screening strategies for prostate cancer.

Pizza and soda will be served