

Tuesday, April 14, 2009

SBA takes business approach to researching health care

The health care industry is the largest employer in Michigan and the U.S., producing almost 17 percent of the nation's gross domestic product. In short, it is a growth industry, and is expected to continue to grow well into the 21st century. At the same time, concerns over raising medical costs, increased malpractice insurance and the rapid reduction in related employee benefits has thrust the industry into a national crisis. Little wonder that concerned Oakland University faculty members at the School of Business Administration (SBA) are spotlighting this prominent field within their research through the **Center for Integrated Business Research and Education (CIBRE)**.

Miron Stano, professor of economics, and fellow colleagues across the country are on the hunt for discriminatory practices within the health care field. "The Institute of Medicine identified discrimination and disparities within health care as serious problems and labeled their elimination a national priority," Stano says. "Discrimination can be found in all sectors but it has a dramatic impact within this field because of the effects of health care on an individual's health, productivity, and overall well-being."

Stano's biggest challenge is distinguishing between the effects of discrimination and other factors, such as patient preferences, severity of disease and insurance coverage, on health care utilization. "Our goal is to find a short cut by developing methods to identify and detect discrimination that do require extensive controls for those other factors," Stano says.

The study's first phase, published in the Rand Journal of Economics, examines how hospitals' admission and discharge behavior is affected by fluctuations in demand. Results show that patients are discharged earlier than expected when hospitals face high demand.

"Although we found no evidence of discriminatory admission or discharge behavior, we showed it was possible to detect discriminatory behavior by using widely available administrative data," says Stano. "Discrimination in this field is unacceptable. The business community has a strong interest because we want all employees to have equal access to health care."

Software development has become an increasingly open and free domain. This is good news for the health care field. Balaji Rajagopalan, associate professor of MIS, along with Ashutosh Deshmukh of Penn State University and Hemangini Deshmukh of Mercyhurst College, Erie, PA, want to help spread the good news by analyzing how open source software is shared within the industry.

Open source software, such as MySQL, Apache and Linux, provides access to source code, and allows free redistribution and licensing for modifications of original software. According to Rajagopalan, it contributes to software innovations in the marketplace. By learning how open source software is shared, he hopes to increase opportunities for innovation.

"We expect lead adopters to be firms with strong technical talent and a culture for innovation, and to play a significant role in the diffusion of open source software," Rajagopalan says. "This suggests that word-of-mouth interactions drives diffusion. The lead adopters serve as evangelists for good open source software products."

Timing is everything, and in a hospital environment, that means good scheduling. Mark Isken, associate professor, MIS, has several research projects underway to help the health care industry optimize scheduling practices.

He recently received funding to develop models and software to explore the relationship between scheduling policies and hospital occupancy variability, as well as scheduling tools to address nurse staffing challenges in hospital obstetrical units. Both of these scheduling models are available as free and open source software and are currently being tested.

In addition, for the past several years Isken has been working on a Java-based framework for simulating patient flow in hospitals. This framework was successfully used to develop a large scale simulation model for hospital-based pneumatic tube systems.

Rajagopalan and Graduate Research Assistant Dean J Przymusinski are using theories in social psychology to determine which system design features add value to Health Care Virtual Communities (HVCs). HVCs are online forums related to specific illnesses or health care issues, such as cancer forums.

"We're hypothesizing the types of behaviors that may result from HVC design choices," Przymusinski says. "For example, providing profiles on individual members might cultivate attachment among users which, in turn, may facilitate more robust commitment to the HVC. For the medical field, increased participation in HVCs may translate into a more informed patient population better equipped to work proactively with medical professionals to fight illness. From a business perspective, more robust participation may encourage increased advertising or subscription fees within an HVC."

SUMMARY

Oakland University SBA faculty are spotlighting concerns in the growing health care industry through research with the Center for Integrated Business Research and Education.

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Modified by David Groves (groves@oakland.edu) on Wednesday, April 15, 2009

Article Start Date: Tuesday, April 14, 2009