

Study finds length of stay key in hospital readmission rates

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The study by researchers at the Naveen Jindal School of Management indicates that the cost savings from early discharge is outweighed by the extra costs incurred from future readmission. Credit: University of Texas at Dallas

An adequate length of stay during hospitalization is a critical factor in quality of care and a predictor of future readmission risk, according to a new study from The University of Texas at Dallas.

University researchers recently examined the deviation between hospital length of stay and guidelines mandated by the Centers for Medicare and Medicaid Services. Length of stay is a key component of [health care costs](#) that resonates across the [health](#) care system, affecting patients, health care providers and payers, such as Medicare and insurers. The United States leads developed nations in shorter hospital stays.

Dr. Zhiqiang "Eric" Zheng and Dr. Indranil R. Bardhan, professors of information systems in the Naveen Jindal School of Management, co-authored the paper, which was published in *Production and Operations Management*.

Using data from congestive heart failure patient records in North Texas from January 2006 to December 2009, they studied the relationship between length of stay and readmission risk, the role of health information technology (IT) in reducing the deviation of length of stay, and the cost trade-offs between early discharge and readmission.

Their results suggest that patients with hospital stays shorter than the guidelines by two or more days are likely to exhibit greater readmission risk, while patients whose length of stay exceeds the guidelines are likely to have a lower readmission risk.

"We show that if [health care providers](#) deviate from the mandated guidelines substantially, it results in significantly higher readmission risk, which is associated with higher dollars in terms of overall management of the patient," Bardhan said.

He noted that [congestive heart failure](#) is a chronic and very expensive

disease.

"It needs long-term management," Bardhan said. "If you are able to keep patients away from the hospital and manage their care, you can bring down the [costs](#) dramatically."

The study indicates that the cost savings from early discharge is outweighed by the extra costs incurred from future readmission.

"There's a trade-off between saving now versus having higher costs later," Zheng said. "If you save a certain amount of money today by discharging a patient one day earlier, one month later the patient will have a 7.7 percent higher chance of coming back."

The study is one of the first to examine the relationship between the implementation of health IT and deviation from the guidelines of length of stay. The researchers found that the implementation of various health IT applications—including electronic medical records—helps reduce deviation.

They also found an association between patients who stick to the same hospital and a reduction in [readmission](#) risk.

The researchers said the study's results have significant implications for hospital executives, case managers and policymakers in terms of decision-making related to patient discharge planning and capacity utilization, and their effects on [hospital](#) quality.

"Hospitals are too focused on reducing length of stay," Zheng said. "They should be more forward-looking. Our paper tells a message that saving money by discharging [patients](#) now may not help hospitals save later. If you have to keep a patient a little longer this time, hospitals should not be penalized for doing that."

More information: Jeong-ha Cath Oh et al. Sooner or Later? Health Information Technology, Length of Stay, and Readmission Risk, *Production and Operations Management* (2017). [DOI: 10.1111/poms.12748](https://doi.org/10.1111/poms.12748)

Provided by University of Texas at Dallas

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