

## 'Real-Time' Feedback and 'Pay for Performance' Improve Physician Practice and Hospital Safety

Study shows hospitals also benefit from programs that help doctors practice better medicine

**Release Date: April 17, 2015**

Research at Johns Hopkins suggests hospitals may reach higher safety and quality levels with programs that give physicians real-time feedback about evidence-based care and financial incentives for providing it.

In a new study, hospitalists at Johns Hopkins significantly improved their compliance with practice guidelines for preventing venous thromboembolism (VTE), or blood clots, when they could get feedback on their compliance rates and a direct financial incentive for improving their performance. Hospitalists are physicians whose primary focus is the general medical care and oversight of hospitalized patients.

An [estimated](#) 600,000 Americans develop VTE each year, leading to more than 100,000 deaths. At least [half of VTEs](#) develop during hospitalization or within 30 days of discharge, and their prevention has become a key measure of hospital and physician safety practices by Medicare, Medicaid and other insurers.

In addition to preventing the life-threatening conditions caused by VTE — including often deadly lung clots — higher compliance with prevention guidelines has been shown to improve a hospital's score in so-called value-based programs that adjust insurers' payments to reward higher quality of care. "Our study confirms there is a real return on investment in such programs not only for patient safety but also for hospitals," says [Henry Michtalik, M.D., M.P.H., M.H.S.](#), lead author of the study described recently in the *Journal of Hospital Medicine*.

For [example](#), he says, a hypothetical 327-bed hospital risked \$1.7 million in Medicare payments based on value-based reimbursement in 2013. Under terms of the Affordable Care Act, by 2017 this hospital would risk more than \$5 million in Medicare payments.

"Metrics such as the use of preventive drugs for DVT are already being monitored," Michtalik says, "but only really improve a hospital's quality of care when programs get data back to the people who are treating patients to directly improve care." Michtalik and his team found by providing such information to physicians through Web-based, real-time displays, monthly VTE prophylaxis compliance rates improved from 86 percent to 90 percent in six months. Adding pay for performance to the real-time feedback for the following 18 months boosted compliance rates to 94 percent.

Michtalik emphasized that "no one got wealthy off of the pay-for-performance program." Payments ranged from \$53 to \$1,244, with all but two of the incentive payments totaling under \$1,000. "Instead, we believe the money served more as a method to engage the providers," noting that it was during the six-month feedback-only period that compliance rose the fastest.

The study involved 38 part- and full-time academic hospitalists and analysis of 3,144 inpatients with a median stay of three days. The most common diagnoses were heart failure, acute kidney failure, temporary loss of consciousness (syncope), pneumonia and chest pain. Following the evidence-based guidelines of the American College of Chest Physicians for VTE prevention,

physicians in the study were required to complete a VTE-risk assessment for each patient by using the hospital's computerized provider order entry (CPOE) system.

"It sort of walks you through the thinking process" for making the VTE-risk assessment, says Michtalik. The system then prompted physicians with a risk-appropriate recommendation, but it was up to physicians to order the treatment itself. That allowed for physician discretion among types of prevention (including drugs) as well as for both patient and physician preference.

Before implementing the feedback system, researchers established a two-year baseline and found that physicians in the study prescribed inappropriate prophylaxis 7.9 percent of the time and did not prescribe prophylaxis when indicated 6.1 percent of the time.

Without real-time feedback, says Michtalik, "it's like grading a test and giving physicians an overall letter grade, but not telling them which questions they got wrong and why." Overall, the choice of inappropriate preventive treatment dropped to 6.2 percent with real-time feedback and to 2.6 percent with the addition of pay for performance. Lack of prophylaxis when indicated fell to 3.2 percent with feedback and to 3.1 percent with pay for performance. Studies show that internationally, compliance rates for VTE prophylaxis often fall [below 50 percent](#). The highest-performing hospitals have quality metrics [above 95 percent](#), and dashboards and feedback helps you get there, Michtalik says.

Michtalik says continuous improvements depend not only on the right kind of feedback, but also on efforts to avoid "information overload" especially now that an increasing amount of health and medical records are electronic. "So you specifically target a few things that need to be improved," he adds, "and really incorporate them into the hospital's culture."

Henry Michtalik, Elliott Haut, Brandyn Lau, Michael Streiff, Joseph Finkelstein, Peter Pronovost, Nowella Durkin and Daniel Brotman of Johns Hopkins contributed to the research, as well as Howard Carolan from the Armstrong Institute for Patient Safety and Quality. The study was supported by grants from the National Institutes of Health, Johns Hopkins Institute for Clinical and Translational Research, the Agency for Healthcare Research and Quality Mentored Clinical Scientist Development, and the Johns Hopkins Hospitalist Scholars Fund.