

Doctors more likely to prescribe preventive therapy if prompted by EMR

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Purely educating doctors about the importance of prescribing certain therapies may not be enough to make a meaningful impact, according to a new Penn Medicine study. Using acid suppression therapy—an effective method of reducing the risk of gastrointestinal bleeding in vulnerable cardiac patients—Penn researchers tested interventions that

utilized both education and an electronic "dashboard" system linked to patients' electronic medical records (EMRs) which gave doctors up-to-date information on which patients would likely benefit from the therapy. Researchers found that the education on acid suppression therapy alone did not have a noticeable effect on prescribing rates, but adding use of the dashboard resulted in an 18 percent increase in needed medication orders. The study was published this month in the *Joint Commission Journal on Quality and Patient Safety*.

"This study shows that education alone is typically not a sufficient method for changing the behavior of providers and care teams," said the study's senior author, Shivan Mehta, MD, MBA, associate chief innovation officer and an assistant professor of Medicine. "We demonstrated that although clinical leaders should collaborate to identify best practices, care redesign, technology, and behavior change strategies are also needed."

Acid suppression therapy involves prescribing patients with medications to reduce the level of acid in their stomach, which helps reduce heartburn symptoms and treat ulcers. It can also decrease some patients' risk of even developing ulcers, such as cardiac patients who are on certain medications that may increase their chance of bleeding.

"The main reason the patients are at risk is because they're placed on medications—or combinations of medications—such as anti-platelet agents or anticoagulation," said the study's lead author, Carolyn Newberry, MD, a Penn Medicine Gastroenterology fellow at the time the research was conducted who is currently an assistant professor of Medicine in the division of Gastroenterology and Hepatology at Weill Cornell Medicine in New York. "These medications are important for treating or preventing cardiovascular disease but they also have side effects such as increased bleeding in the G.I. tract."

Before the study's EMR-linked dashboard was developed and implemented, through help from Penn Medicine's Center for Health Care Innovation, prescription rates for cardiac patients who could benefit from acid suppression therapy was just shy of 73 percent, according to the health system's data of inpatients in the Cardiac Intensive Care Unit (CICU) from September 2016 and January 2017. Afterward, from January until September 2017 when the "dashboard" was implemented, rates quickly jumped to 86 percent for [patients](#) in the CICU.

Great gains were made using this type of technology-assisted nudge, which the study team notes could improve desired outcomes in other clinical areas. Software developers at the Center for Health Care Innovation are working on similar dashboards or alerts in many other clinical areas where there is an opportunity to increase adoption of evidence-based practices. However, the researchers emphasized that this "nudge" approach is not one size fits all.

"No one dashboard or technology will work in every area, so it is important to partner with clinicians and identify workflows and processes where it can complement care," Newberry said. "Our experience highlights this individualized nature and the importance of continued collaboration, along with process redesigns, to achieve sustainable success."

More information: Carolyn Newberry et al, A Novel Clinical Decision Support System for Gastrointestinal Bleeding Risk Stratification in the Critically Ill, *The Joint Commission Journal on Quality and Patient Safety* (2019). [DOI: 10.1016/j.jcjq.2019.01.001](https://doi.org/10.1016/j.jcjq.2019.01.001)

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