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Default setting in EM records 'nudged' emergency department physicians to limit opioid prescriptions to 10 tablets

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For patients who have never been prescribed opioids, larger numbers of tablets given with the initial prescription is associated with long-term use and more tablets leftover that could be diverted for misuse or abuse. Patients may receive 30 or more opioid tablets in an initial prescription, for example, when a much lesser quantity, such as 10-12 tablets as recommended by current emergency department prescribing guidelines, would suffice. Implementing a default option for a lower quantity of tablets in the electronic medical records (EMR) discharge orders may help combat the issue by "nudging" physicians to prescribe smaller quantities consistent with prescribing guidelines Penn Medicine researchers show in a new study published this week in the *Journal of General Internal Medicine*.

The research team found that physicians from two Penn Medicine emergency departments prescribed a fewer number of opioid pills to their patients when the EMR default setting was set to 10 tablets. Initial prescriptions for that amount shot up by 22 percent, from a pre-default rate of 21 percent to 43 percent after the default option had been introduced. Conversely, the number of prescriptions written for 20 tablets decreased by almost 7 percent, and prescriptions for 11 to 19 tablets decreased by over 13 percent.

"Our results represent a promising and much-needed scalable approach that could successfully nudge physicians managing acute pain to

prescribe smaller doses of opioid medications for those who need them," said lead author M. Kit Delgado, MD, MS, an assistant professor of Emergency Medicine and Epidemiology at the Perelman School of Medicine at the University of Pennsylvania. "We know that prescribing too many opioid tablets for acute pain increases a patient's risk for long-term use or the potential to be abused if left in the medicine cabinet, so making it easier to prescribe quantities consistent with current guidelines while still keeping physician autonomy is an important part of addressing the opioid crisis we're facing in this country."

The number of people in the U.S. who die from prescription opioid overdoses has continued to rise in 2016 according to the U.S. Centers for Disease Control and Prevention (CDC). Recent research by the CDC has shown that even small increases in the number of tablets prescribed is associated with long-term use among those who had never been prescribed opioids before.

In the new study, researchers analyzed prescription data from the emergency departments of the Hospital of the University of Pennsylvania (HUP) and Penn Presbyterian Medical Center (PPMC) between late 2014 and mid-2015, before and after the default was in place.

In 2015, both departments replaced an EMR that required clinicians to enter the number of tablets for opioid prescriptions with an EMR that now includes a default quantity of 10 tablets. The clinician could also "opt-out" by selecting a quantity of 20 tablets, which was displayed second, or they could modify their orders. The researchers compared weekly prescribing patterns for oxycodone 5mg/acetaminophen (325 mg) for 41 weeks. In all, physicians wrote over 3,200 prescriptions.

After the default implementation, the median number of opioid tablets supplied per prescription decreased by a small amount from an already

low baseline of 11.3 to 10 at HUP and 12.6 to 10.9 at PPMC. However, across the two emergency departments there was a marked increase in the proportion of prescriptions written for 10 tablets, from 20.6 percent to 43.3 percent, whereas prescriptions for larger quantities dropped.

With implementation of the default of 10 tablets, there was a small unintended decrease in prescriptions written for less than 10 tablets. "This suggests that future efforts to set default quantities should provide a default option for the lowest baseline prescription," the authors wrote.

Many studies have shown how default options can positively influence physician behavior and prescriptions. Last year, Penn researchers found that a change to default options increased generic drug prescribing rates from 75 percent to 98 percent. Using generic instead of brand name medications saves money for both patients and health system. That default has now been implemented across the University of Pennsylvania Health System.

In a new perspective published today in the New England Journal of Medicine, Mitesh S. Patel, MD, MBA, MS, an assistant professor of Medicine and Health Care Management and director of the Penn Medicine Nudge Unit, and co-authors argue that "opportunities for effective nudges abound in health care because choice architectures guide our behavior whether we know it or not ... Though there is some common sense involved in creating effective nudges, expertise is also required—for identifying promising targets, designing both the conceptual approach and the technical implementation, managing the politics and process of obtaining stakeholder buy-in, and evaluating impact." Given the value of its applications, the authors argue that nudges are a small investment and say most health systems would be "well served" by supporting the development of internal nudge units, which have improved government policies around the world.

The new data informs a larger study known as REDUCE, an acronym for "Randomized trial of EHR Defaults and Using social Comparison Feedback to Effectively decrease opioid prescription pill burden."

That trial led by Amol Navathe, MD, PhD, an assistant professor of Health Policy and Medicine in the Perelman School of Medicine, and associate director of Penn's Center for Heath Incentives & Behavioral Economics, and Patel in collaboration with Delgado will expand on these findings by involving 50 emergency departments and urgent care centers affiliated with 24 hospitals. The three-year project will not only study the default option for opioids in emergency rooms, but monthly reports comparing each physician's prescribing patterns will also be shared with peers to see if that may nudge them to prescribe smaller amounts. The research team received a $600,000 grant from the Donaghue Foundation to help support the trial.

Provided by Perelman School of Medicine at the University of Pennsylvania

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