Changing default prescription settings in EMRs increased rates of generic drugs, study finds

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Using generic instead of brand name medications can save money for both patients and health systems. Some studies have even shown that prescribing generic medications leads to higher adherence and better outcomes, yet many physicians still prescribe brand name drugs when they could be prescribing equivalent generics. A new study from researchers at the Perelman School of Medicine at the University of Pennsylvania, found that a simple change to prescription default options in electronic medical records immediately increased generic prescribing rates from 75 percent to 98 percent.

The change, which was implemented across the University of Pennsylvania Health System, defaulted all prescriptions to an equivalent generic, if available. To order the brand name, physicians had to opt out by checking a box labelled "dispense as written." The study, which builds upon previous research, indicates that the manner in which default options are designed and implemented has an important influence on changing physician behavior. The results are published online in *JAMA Internal Medicine*.

"Many of the decisions physicians make are shifting from pen and paper to digital platforms, like the electronic health record. Yet, there lacks sufficient evidence on how to design choice architecture within these environments to improve health care value and outcomes," said lead author Mitesh S. Patel, MD, MBA, MS, an assistant professor of

Medicine and Health Care Management in Penn's Perelman School of Medicine and The Wharton School, and a staff physician at the Crescenz VA Medical Center. "Our results demonstrate that default options are a powerful tool for influencing physician behaviors but that they have to be well-designed to achieve the intended goals."

In the study, researchers tracked prescribing rates for oral medications given for 10 common medical conditions. Rather than changing prescription default settings to display generic names instead of brand names - a study which previously resulted in a five percent change in prescribing habits - in the new study, an opt-out checkbox was used. When a physician prescribed a drug for a patient, the EMR would default to an equivalent generic. However, the physician could still prescribe the brand name when warranted by selecting the "dispense as written" checkbox. Prescribing rates were compared between the pre-intervention and post-intervention periods.

Results showed that during the pre-intervention period, generic drugs were prescribed 75 percent of the time, compared to over 98 percent of the time during the post-intervention period, indicating that for most drugs, physicians specified the brand name should be prescribed only two percent of the time. The exception to the trend was when physicians prescribed Synthroid for patients with thyroid conditions - which is known to have different hormone levels than its generic version, Levothyroxine. In this case, physicians opted out and selected the brand name 22 percent of the time.

"Studies examining these seemingly minute details point to the importance of design when implementing defaults, which is something that could in result in a significant savings for patients and health systems, and hasn't previously been examined closely in a health care setting," said C. William Hanson, MD, chief medical information officer at Penn Medicine and a co-author on the study. "If a simple, low-cost

change like adding an opt-out check box to prescription settings can make such a significant impact, there are likely other refinements that can be made just as easily that will also result in cost savings for patients and health systems. It's a valuable area of research to continue exploring."

The study is one of the first research studies from the Penn Medicine Nudge Unit. A first-of-its-kind program to be implemented within a health system, the Nudge Unit will focus on testing ways in which "nudges" can be used to optimize medical decisions and improve the value of care delivered to patients. To push this effort forward, the Nudge Unit, directed by Patel, is launching an innovation tournament to crowdsource new ideas for nudges aimed at improving health care delivery.

"There are a growing number of 'nudge units' within governments around the world that work to harness insights from behavioral and decision sciences and design interventions that change behavior to better align with long-term goals, but to date, no unit has focused specifically on health care, particularly from within the health care setting," said Kevin Volpp, MD, PhD, a professor of Medicine and Health Care Management, and director of the Penn Center for Health Incentives and Behavioral Economics. "Given Penn Medicine's expertise in health incentives and behavioral economics, we are well positioned to lead this effort."

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