

# University of Chicago Medicine

## Background

“The University of Chicago Medicine (UChicago Medicine), with a history dating to 1927, is a not-for-profit academic medical health system based on the campus of the University of Chicago in Hyde Park, and with hospitals, outpatient clinics and physician practices throughout Chicago and its suburbs. UChicago Medicine unites five organizations to fulfill its tripartite mission of medical education, research and patient care: Pritzker School of Medicine, Biological Sciences Division, Medical Center, Community Health and Hospital Division, and UChicago Medicine Physicians.”<sup>1</sup>

## Problem

In July 2015, UChicago Medicine leaders sponsored a quality improvement initiative to reduce overuse of proton pump inhibitors (PPI) infusion among patients with upper gastrointestinal bleeding (UGIB) via the *Choosing Wisely* Challenge.<sup>2</sup> While continuous infusion of PPIs is recommended in these patients for specific situations, such as before endoscopic identification of ulcers with high-risk features, many times PPI infusions may be continued for 72 hours without indication.

## Solution

UChicago Medicine launched a *Choosing Wisely* challenge to crowdsource overuse reduction initiatives, successfully building infrastructure for more than 10 projects. The *Choosing Wisely* Challenge was a “trainee-led, institution-supported, interdisciplinary intervention based on the ‘Culture, Oversight, Systems Change, Training (COST) framework.’”<sup>3</sup> “In 2014, as leaders, we worked on a plan to have front-line clinicians, including nurses and residents, submit ideas to improve value and reduce waste throughout UChicago Medicine. We titled this initiative the ‘*Choosing Wisely* Challenge,’ so that we could provide a tool and guide for people to initiate where to start,” said Vineet Arora, MD, MAPP, Associate Chief Medical Officer-Clinical Learning Environment. Faculty consulted *Choosing Wisely* recommendations for inspiration and submitted ideas utilizing the COST framework. Winners received mentorship, as well as informatics and data analytics support from the institution to implement their proposed change.

“Evaluation of a Trainee-Led Project to Reduce Inappropriate Proton Pump Inhibitor Infusion in Patients with Upper Gastrointestinal Bleeding – Skip the Drips” was the first project, occurring from July 2015 to April 2016. Through partnership with the GI Fellowship Director, leaders collected PPI infusion usage, indication and endoscopic findings. The electronic health record was changed to prompt physicians to select an appropriate indication for PPI infusion orders, and pharmacists tracked monthly usage of PPI infusions.



Vineet Arora, MD, MAPP

## Results<sup>3</sup>

PPI infusion	<ul style="list-style-type: none"><li>• Inappropriate use of PPI infusion reduced by 35%</li></ul>
Cost savings	<ul style="list-style-type: none"><li>• Total cost of a single PPI infusion reduced to “\$277 per patient per day assuming all patients required twice-daily PPI administration”</li><li>• Savings of at least \$121,000 in pharmacy costs across nine months</li></ul>

## Challenges

- **Chart Audits.** “We did not have a way to look at appropriateness in the record, so we had a graduate student help us with chart audits. We reviewed roughly 20 to 30 charts each month. Although this was a big barrier, we were successful in completion,” said Dr. Arora.
- **Implementation of Re-Education.** UChicago Medicine leaders had to recognize if and when project adherence was waning, so that they could implement re-education to ensure sustainability.

## Keys to Success

- **Leadership Adoption.** “Changes like this do not happen quickly unless you have massive systems change, and leadership behind it. We had engaged leaders who specifically addressed culture and framework. Unless people heard that the GI Fellowship Director was 100% behind our initiative, it would have failed,” said Dr. Arora.
- **COST Framework.** This framework, “guides value improvement project design and educational efforts, leverages principles from implementation science to ensure that value improvement projects successfully provide multipronged tactics for overcoming the many barriers to high-value care delivery.”<sup>4</sup> The COST framework was helpful to UChicago Medicine leaders as they focused on de-implementation of clinical practices. “This framework helps to identify hospital culture and system changes that should be made to best de-implement clinical practices. Training is essential because education alone will not result in changing a practice,” said Dr. Arora.
- **EHR & Pharmacy Systems Change.** First, physicians were prompted to select appropriate indication for PPI infusion orders via the EHR. Secondly, pharmacy implementation of accountable justification avoided a hard-stop; physicians could still order a 72-hour PPI drip for patients with GI bleed, but they needed to choose one of four indications when doing so. The first three indications were approved drop-down answers, and the fourth was “other” in an open-ended format; this was included so that UChicago Medicine leaders could learn about the reasoning behind physician decisions.
- **Training.** Clinical faculty, residents and fellows received education. Brochures were placed throughout work rooms and morning report conference centers to increase education in forms other than lectures.
- **Sustainability.** “We had 15 projects submitted, and collectively we picked the one that we thought would sustain. That was important because we have used this as a model to crowdsource other ideas,” said Dr. Arora.

## Core Interventions

- Use of change framework – COST Framework
- Leadership support
- Marketing materials, including brochures
- Change in electronic health record to prompt physicians to select appropriate indication for PPI infusion orders
- PPI infusions tracked monthly by pharmacists



Choosing Wisely® is an initiative of the ABIM Foundation.

## References

1. About the University of Chicago Medicine. <https://www.uchicagomedicine.org/about-us>.
2. Choosing Wisely® Challenge. The University of Chicago Medicine Center for Healthcare Delivery Science and Innovation. <https://hdsi.uchicago.edu/choosing-wisely-challenge/>.
3. Coronei E, Bassi N, Donahue-Rolfe S, Byrne E, Sokol S, Reddy G, Arora VM. Evaluation of a Trainee-Led Project to Reduce Inappropriate Proton Pump Inhibitor Infusion in Patients With Upper Gastrointestinal Bleeding – Skip the Drips. *JAMA Internal Medicine*. November 2017.
4. “COST” Framework for High-Value Care Interventions. Costs of Care Website. <https://costsofcare.org/costframework/>
5. Arora VM Interview. June 2019. ABIM Foundation.