Hospital Expands Use of AHRQ's QI Toolkit To Improve Patient Safety Measures Prioritized by Medicare

Abstract

Harborview Medical Center (HMC) has used the AHRQ QI Toolkit as a cornerstone of its patient safety improvement work for the last 6 years. With the support of the QI Toolkit, HMC raised awareness of patient safety concerns across the hospital, improved collaboration in support of patient safety, and institutionalized a standard set of patient safety protocols that have led to improvements in care. More specifically, the QI Toolkit was used to reduce the rate of DVT/PE among postoperative patients, as measured by AHRQ PSI 12. This effort resulted in a decrease of 21 percent a period of nearly 4 years. HMC's focus on improving performance on the AHRQ PSIs aligns with the Centers for Medicare & Medicaid Services' (CMS) programs to monitor, report, and incentivize improvements in patient safety.

Hospital
Harborview Medical Center (HMC), a large, level I trauma center in Seattle, Washington

Lead staff for improvement project
Ellen Robinson, PT, a clinical quality specialist

Quality measure
Postoperative deep vein thrombosis or pulmonary embolism (DVT/PE)—AHRQ Patient Safety Indicator (PSI) 12

Hospital Context for Quality Improvement Focus

HMC is engaged in a continuous quality improvement effort focused on multiple AHRQ PSIs. HMC is a longstanding user of the AHRQ PSIs and, since mid-2010, the QI Toolkit. Initially, the hospital used the Toolkit to focus on improving performance on PSI 12, postoperative DVT/PE. Over time, they have expanded their efforts to focus on additional PSIs.

The quality improvement leaders at HMC had three related goals when they started this effort:

1. To identify cases of preventable harm to patients.
2. To develop a standardized method for tracking and referring such preventable cases in need of review to teams across the hospital.
3. To better understand and validate the data associated with CMS' applications, which subsequently have expanded to include Hospital Compare, the Hospital Value-Based Purchasing program, and the Hospital-Acquired Condition (HAC) Reduction program.

How the QI Toolkit Was Used

HMC first gauged organizational readiness with the Getting Ready for Change Self-Assessment (Tool A.3). This tool revealed that HMC's leadership and board of trustees were fully "on board" and engaged in supporting a project to improve performance on one of the PSIs. At the same time, the tool highlighted that a key challenge the hospital would face throughout its improvement efforts was disseminating information about specific quality and patient safety initiatives to staff at *all* levels of the organization.

Another key tool for HMC was the Prioritization Worksheet (Tool C.1), which is designed to determine the organization's focus and guide decisions about how to prioritize among the AHRQ QIs. HMC identified PSI 12 as HMC's highest priority target for quality improvement because of the number of DVT events. The project leader and members of the hospital's leadership team then shared information about the PSIs, specifically, the opportunity to improve performance on PSI 12, in presentations to key stakeholder groups: the surgical council, medical executive board, critical care council, hospital board, clinical documentation specialists, and coding department.

One of the next issues the improvement team had to tackle involved coding cases that met the PSI criteria, which depended on the physician's documentation. The coding needed to be done in a way that enabled the team to identify and target *preventable* hospital-acquired DVTs. For example, the team wanted to ensure that a "rule out" diagnosis—for which the patient is being observed or tested for the presence of a DVT or PE— would not be coded as meeting the criteria for PSI 12 unless an actual diagnosis of DVT or PE was established for that patient.

The team also wanted to validate that DVTs/PEs that were present on admission were coded appropriately. The experiences of HMC and other hospitals with coding and documentation issues during the field test and evaluation of the original QI Toolkit led to the development of Tool B.4: Documentation and Coding for Patient Safety Indicators, which provides guidance on these issues.

> **Tools Used by HMC**
>
> - Getting Ready for Change Self-Assessment (Tool A.3)
> - Prioritization Worksheet (Tool C.1)
> - Project Charter (Tool D.2)
> - Best Practices for PSI 12 (Tool D.4b)
> - Gap Analysis (Tool D.5)
> - Implementation Plan (Tool D.6)
> - Specific Tools To Support Change (Tool G.2)

Once HMC resolved various issues with the documentation and coding of DVT/PE events, the team used other tools to organize its specific improvement interventions:

- Project Charter (Tool D.2), which helped the organization define its goals and specify the resources needed to achieve them.
- Best Practices for PSI 12 (Tool D.4b), which the team used to identify models for effective clinical interventions.
- Gap Analysis (Tool D.5), which helped to identify differences between current clinical practices and recommended practices.
- Implementation Plan (Tool D.6), which supported the design of a plan to implement specific best practices by assigning team responsibilities and setting a timeline.

Implementing a Clinical Intervention

To reach consensus on what steps to take to prevent DVT/PE, an HMC committee that included a trauma surgeon and a hospitalist gathered input from every service department. They then developed activities designed to improve DVT/PE prevention, including:

- Providing additional education and resources on existing prophylaxis guidelines, partly through enterprisewide access to information on an externally developed anticoagulation Web site;
- Assisting clinical pharmacists in daily identification of all patients not receiving chemical prophylaxis; and
- Shifting chemical prophylaxis dosing to avoid missed doses due to changes in scheduled surgical procedures.

In addition to these changes, the hospital integrated the information from Tool G.2, Specific Tools To Support Change, into a quality and safety intranet page that centralized resources to support clinical staff involved in quality improvement projects.

Impact

The changes in care processes supported by the QI Toolkit resulted in the following improvements in the rate of DVT/PE among postoperative patients and the rate of hospital-acquired DVT/PE:

Measure	Baseline*	Postintervention	Impact
Rate of DVT/PE among postoperative patients as measured by PSI 12	11.7/1,000 in 2011	9.3/1,000 in first 9 months of 2015**	21% decrease in 3 years and 9 months
Rate of hospital-acquired DVT/PE	7.5/1,000 in 2011	6.4/1,000 for the first 9 months of 2015**	15% decrease in 3 years and 9 months

*While HMC began its work to improve performance on PSI 12 in 2010, documentation and coding improvements were not implemented until 2011. Thus, 2011 is considered the baseline year.
**Data from last quarter of 2015 not yet available.

Ms. Robinson credits the resources in the QI Toolkit for helping the team systematically identify deficiencies in patient care, raise awareness of quality concerns across departments, and collaborate constructively with clinical teams to develop a standard way to prevent negative events.

Ms. Robinson also noted that she no longer has any trouble convincing people to participate in the improvement effort. She attributed this to both her team's efforts with the QI Toolkit to educate clinical leaders and staff about the AHRQ PSIs, as well as the medical director's success in shifting the culture to a greater appreciation for quality improvement. The members of each improvement team vary, but they all include a physician champion, nurse champion, and a quality improvement person. "We bring people onto the team depending on the nature of the clinical issue and what we learn when we review individual cases," Ms. Robinson said. "We take care of data review and problem identification, but they [the teams] are responsible for identifying possible solutions and making operational changes that fit into their workflow."

Next Steps in Using the QI Toolkit

Since initiating these changes in 2011, the hospital has continued to monitor its performance. In addition to using the AHRQ WinQI software to generate their PSI rates, HMC tracks and reviews all DVT/PE events using internal diagnostic systems. The improvement team works with a multidisciplinary clinical task force to assess potential coding and documentation concerns and to review the care that was provided to identify opportunities for clinical improvement. A key question for the team's investigation is whether the DVT was preventable (for example, whether the patient was given the right prophylaxis, such as a sequential compression device). The team then tracks what they learn from reviews with nursing and other clinical staff over time and across divisions to identify issues that can be addressed.

Given HMC's success using the QI Toolkit to reduce DVT rates, Ms. Robinson and her colleagues were encouraged to apply the same approach to several more PSIs starting in 2012 and 2013. In addition to PSI 12, improvement teams are currently focusing on the following five PSIs that have been identified as priorities at HMC based on the volume of cases:

- PSI 03 Pressure Ulcer Rate
- PSI 07 Central Venous Catheter-Related Blood Stream Infection Rate
- PSI 11 Postoperative Respiratory Failure Rate
- PSI 13 Postoperative Sepsis Rate
- PSI 15 Accidental Puncture or Laceration Rate

These measures are also considered priorities because they are part of the composite indicator PSI 90, which is included in the CMS Hospital Value-Based Purchasing program, HAC Reduction program, and Hospital Compare public reporting program. HMC continues to use several of the resources in the QI Toolkit with each improvement team. Ms. Robinson pointed specifically to the project charter (Tool D.2), best practices (Tool D.4), gap analysis (Tool D.5), and implementation plan (Tool D.6) as tools that have proven useful for each project to address the PSIs. These tools have also been valuable to HMC's quality improvement efforts beyond those using the AHRQ QIs because the guidance and templates provided in those resources are generic enough to apply to other quality measures.

Advice for New Users of the AHRQ QI Toolkit

As a long-time user of the QI Toolkit, Ms. Robinson has several key lessons to share with new users to facilitate their quality improvement journey:

- **Determine the starting point that is right for your organization.** When HMC started down this path, the idea of reviewing the PSIs in a systematic way was still new to Ms. Robinson's team and the medical center's leadership. HMC needed to start with the QI Toolkit's resources that are designed to inform hospital leaders and staff about the AHRQ QIs and help them assess their readiness to change (Section A). If the PSIs are familiar to an organization (e.g., because they are included in payment programs), some health care organizations could choose to start instead with the tools for identifying priorities (Section C).
- **Carefully track what you learn when you review individual cases.** Information on different cases often comes from different providers, sometimes in different teams or

clinical areas. Cases of accidental puncture, for example, were attributed to multiple surgical teams. The improvement team had to aggregate what they heard from those providers in order to identify trends and patterns in care.

- **Make the initiative about people, not statistics.** When analyzing data for the PSIs, quality improvement teams tend to use abstract concepts, such as cases per thousand or cases per catheter day. "Each rate is a person," noted Ms. Robinson. "Could we have changed the outcome so whatever happened might not have happened?" Improvement teams can engage frontline providers more effectively by talking about how many people are affected and how many people could avoid harm if practices were improved.