AHRQ Quality Indicators Case Study: University of Pittsburgh Medical Center (UPMC)

Key Findings

- Beginning in 2010, UPMC bolstered its commitment to patient safety by using the AHRQ Patient Safety Indicators (PSIs) for tracking its performance on a range of safety issues.

- UPMC's rate of Unrecognized Abdominopelvic Accidental Puncture/Laceration Rate (PSI 15) fell from **8.26** per 1,000 patient discharges in FY 2010 to **1.56** per 1,000 patients in FY 2016.

UPMC began an effort to improve patient safety in 2010, using the Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators (PSIs). UPMC initially focused on reducing Unrecognized Abdominopelvic Accidental Puncture/Lacerations (PSI 15) and improving its performance on PSI 15 because CMS included PSI 15 and PSI 90 (a composite patient safety measure in its quality performance reporting programs). Within two years of beginning to use PSI 15, UPMC's Wolff Center for Quality, Safety and Innovation implemented 12 more PSIs and established an extensive quality improvement process across 14 of the system's hospitals.

UPMC: At a Glance
➢ UPMC operates more than 25 academic, community, and specialty hospitals, with 600 doctors' offices and outpatient sites, and employs 3,600 physicians, and offers an array of rehabilitation, retirement, and long-term care facilities.
➢ UPMC's two largest hospitals are Presbyterian and Shadyside – with more than 1,000 beds across these two facilities.
➢ UPMC is the largest non-governmental employer in Pennsylvania, with 65,000 employees.
➢ UPMC had $12.8 million operating revenues for fiscal year 2016.

Focus on Unrecognized Abdominopelvic Accidental Puncture/Laceration Rate (PSI 15) Leads to Improved Outcomes for Patients

UPMC focused first on improving its performance for Unrecognized Abdominopelvic Accidental Puncture/Lacerations (PSI 15), which measures a physician's rate of inadvertent cuts, perforations, and lacerations during a surgical procedure. "We looked at where opportunities lay and we knew we had an opportunity to improve our performance for PSI 15," said Todd Pollock, Quality Director, UPMC Shadyside Presbyterian. UPMC examined both clinical care related to its PSI 15 rate and how UPMC coded for accidental punctures and lacerations at its two largest hospitals – UPMC Presbyterian and UPMC Shadyside. UPMC focused its efforts on improving clinical review of medical records and informing the system's largest facilities and individual physicians of their PSI 15 rates to motivate attention to improve their individual and collective performance.

In addition, quality improvement staff identified PSI 15 as an area of concern specifically for the otolaryngology group. As a result, the clinical review team identified the need to make changes in how their robotics tools are used during surgeries. "Without the review triggered by our tracking of PSI 15

performance, we would not have identified this need to modify how we were using the robotics to improve the safety of our patients," said Pollock.

As a result of UPMC's efforts, there was a dramatic reduction in the number of patients being affected by accidental punctures and lacerations. Their performance on PSI 15 improved significantly over time, from 8.26 per 1,000 patient discharges in FY 2010 to 1.56 per 1,000 patient discharges in FY 2016 (see Figure 1 below).

Figure 1: UPMC Rate of Unrecognized Abdominopelvic Accidental Puncture/Lacerations (PSI 15)	
FY 2010	8.26
FY 2011	7.37
FY 2012	7.21
FY 2013	5.58
FY 2014	3.65
FY 2015	2.62
FY 2016	1.56

Implementation of PSI 12 Leads to Pre and Post-Operative Improvements

Upon examination of its rates for Postoperative Pulmonary Embolism or Deep Vein Thrombosis (PSI 12) over time, UPMC identified an opportunity to improve the clinical care of patients, particularly those who were transferred to UPMC for neurosurgery. As a result of implementation of PSI 12, UPMC made changes to pre-operative screening procedures for neurosurgery patients, as well as improved screening of patients transferred to UPMC for surgery. UPMC has also begun to encourage neurosurgery patients to begin walking sooner after surgery to reduce rates of post-operative embolisms or thrombosis.

PSI Implementation Leads to Broader Quality Oversight

Following initial implementation of PSIs in 2010, UPMC made staff changes that signaled a deepened, system-wide commitment to quality improvement. In addition to a quality improvement team assigned to the PSI review process – comprising five clinical nurse reviewers situated within UPMCs Wolff Center for Quality, Safety and Innovation – the system added a vice chair of quality within each medical division. Each vice chair has oversight responsibility for examining and reporting data on PSI performance, as well as clinical improvements stemming from PSI implementation. Reports are generated monthly and shared with physicians and each medical division; these reports are also shared with the overall UPMC system board. Division vice chairs of quality meet with relevant team members on a quarterly basis. The clinical review team is also responsible for communicating in a time-sensitive

> "We are really trying to pinpoint clinical issues…the AHRQ PSIs are helping us accomplish that." Todd Pollock, Quality Director, UPMC Shadyside Presbyterian

manner with individual physicians regarding their PSI performance. Individual service lines set incentives specific to areas of opportunity identified by the service line. The clinical review team takes great care in establishing individual physician attribution related to PSI performance, to foster productive dialogue and improved performance.

Interview Participants

UPMC: Todd Pollock, Quality Director, Amy Sofranko, Improvement Specialist, Colleen Tanner, Senior Quality Manager, Faith Colen, Improvement Specialist.

StollenWerks, Inc.: Margaret Trinity, Suzanne Sherif

About the AHRQ Quality Indicators (QIs)

The AHRQ QIs include four sets of measures—Patient Safety Indicators, Inpatient Quality Indicators, Prevention Quality Indicators, and Pediatric Quality Indicators—which address quality of care for patients hospitalized for a broad range of procedures or conditions that are high risk, problem prone, and/or high volume. The AHRQ QIs represent a national standard and are publicly available at no cost to the user. Many of the indicators are endorsed by the National Quality Forum (NQF), suggesting that stakeholders across the healthcare enterprise view the measures as "best in class." They can be used to support quality improvement efforts, public reporting, and accountability programs, and ultimately to help provide safe, effective care to patients. Many of the AHRQ QIs are used by the Centers for Medicare and Medicaid Services (CMS) and other payers for quality monitoring, pay-for-performance, and value-based purchasing initiatives. Hospitals and health systems can use AHRQ QIs as part of an overall performance initiative to improve the quality of care. For more information about the AHRQ QIs visit http://www.qualityindicators.ahrq.gov/.