

AHRQ Quality Indicators Case Study: Keck Medical Center of the University of Southern California (USC)

Key Findings

- Keck Medical Center increased patient safety by using the AHRQ Patient Safety Indicators for tracking the death rate among surgical patients, the sepsis rate, and the respiratory failure rate – amongst others. For seven PSIs, the Medical Center cut its rate in half or more from 2014 to 2016 (see Table 1).
- Keck Medical Center achieved an 88% reduction in PSI 11 Postoperative Respiratory Failure Rate and a 50% reduction in the incidence of PSI 06 Iatrogenic Pneumothorax (lung collapse due to a medical procedure).

Following a focus on patient safety as part of a new strategic plan, quality improvement and clinical documentation staff at Keck Medical Center worked together to improve performance on the Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators (PSIs). The team started by reviewing documentation of safety events, and then focused on finding opportunities for increasing safety for patients.

Keck Medical Center of USC: At a Glance

- Fully owned by the University of Southern California (USC).
- Keck Medicine of USC includes Keck Hospital and USC Norris Cancer Center, as well as Verdugo Hills Hospital – with more than 1,100 medical staff across the three facilities.
- Located near downtown Los Angeles, California.

Examination of Lung Collapse Events (PSI 06) Leads to Improved Outcomes for Patients

Keck Medical Center focused first on improving its performance for Iatrogenic Pneumothorax (PSI 06), which measures the incidence of patients who have a lung collapse due to a medical procedure. Dr. Stephanie Hall, MD, Chief Medical Officer said “We looked closely at our PSI 06 results, and we were surprised to learn that our highest rate of iatrogenic pneumothorax events occurred with a robotic procedure. We decided to tackle one Patient Safety Indicator at a time.”

Quality improvement staff reached out to other health systems and learned that placing the trocar (a surgical instrument used for withdrawing fluids from body cavities) in a slightly different location significantly decreased the potential for patients to develop post-operative pneumothorax. Following an initiative to educate surgeons about this modified approach to placement of the surgical trocar, Keck Medical Center was able to reduce the incidence of iatrogenic pneumothorax events. In addition to modifying placement of trocar, Keck Medical Center staff identified an opportunity to improve the descriptions dictated in the surgeons’



operative notes to indicate when lung collapse events were inherent to the procedure and therefore not clinically significant. Through both of these efforts, from 2014 to 2016, Keck Medical Center reduced its incidence of PSI 06 by 50 percent.

The dramatic improvement in Keck Medical Center’s PSI 06 rate showed the Quality Improvement team members that they could have a significant impact on Keck’s overall patient safety performance – and most importantly, on patient outcomes. They were eager to make further improvements. “We felt we had the bandwidth and expertise to tackle all of the AHRQ PSIs by assigning each indicator to an individual or group to identify opportunities for improvement,” explained Kathleen Sullivan, Clinical Quality Informatics Manager. This effort included reviewing 100 percent of the patient medical records that had triggered PSI events. Staff then undertook an educational program designed to communicate to surgeons and physicians the documentation requirements for each indicator, and the need for specificity in their diagnoses and descriptions of outcomes. Improved data quality bolstered clinicians’ confidence in the data and laid the groundwork for subsequent quality improvement initiatives. “Up until then, our physicians had little confidence in what we were presenting to them. Once we demonstrated that our data had improved, we had their attention and they were willing to listen,” said Dr. Hall. Kathleen Sullivan added, “We are now able to drive clinical improvement because we have good data.”

“The AHRQ QI specifications help us a lot. They tell us which codes will trigger a PSI.”

-Jeyson Flores, Senior Clinical Documentation Specialist

Focus on Post-Operative Respiratory Failure Rate (PSI 11) Reduces Mechanical Ventilation Time

Keck Medical Center also closely examined its post-operative respiratory failure rate (PSI 11). “There is a lot of confusion around this particular measure, and when we first delved into it, I was concerned that we appeared to have a high rate of post-operative respiratory failure,” said Dr. Hall. Quality Improvement staff determined, however, that imprecise documentation about the nature of postoperative respiratory support provided did not clearly distinguish between expected and unexpected additional need for support. The clinical team instituted a standardized approach to post-operative evaluation, and reduced the time that patients are on mechanical ventilation. As a result, between 2014 and 2016, Keck Medical Center achieved an 88 percent reduction in the occurrence of PSI 11 events. “My hope is that with this effort and education of our physicians, we will reduce this respiratory failure outcome even more,” said Dr. Hall.



PSI 04: Death Rate among Surgical Inpatients with Serious Treatable Complications	15%
PSI 06: Iatrogenic Pneumothorax Rate	50%
PSI 09: Perioperative Hemorrhage or Hematoma Rate	85%
PSI 11: Postoperative Respiratory Failure Rate	88%
PSI 12: Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate	67%
PSI 13: Postoperative Sepsis Rate	67%
PSI 14: Postoperative Wound Dehiscence Rate	100%
PSI 15: Accidental Puncture or Laceration Rate	50%

Interview Participants

Keck Medical Center: Stephanie Hall, MD, Chief Medical Officer, Kathleen Sullivan, Clinical Quality Informatics Manager, Jeyson Flores, Senior Clinical Documentation 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/>.

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