AHRQ Quality Indicators (QIs) Case Study: California Office of Statewide Health Planning and Development (OSHPD)

Key Findings

- The California (CA) Office of Statewide Health Planning and Development (OSHPD) collects data and publishes information about CA's health care infrastructure, with the goal of improving access to quality health care for Californians.
- For the past 12 years, OSHPD has used the full range of AHRQ QIs to meet State mandated requirements for reporting on risk-adjusted quality measurement and hospital outcomes.
- Stakeholders use the OSHPD data and reports for quality improvement, policy decisions and research. For example, local health officers throughout California use OSHPD's reports on some of the AHRQ Prevention Quality Indicators (PQIs) to help assess population health at the regional level.

California's Office of Statewide Health Planning and Development prepares and publishes a suite of reports based on health care utilization data to support higher quality, more efficient, and cost-effective patient care. These reports include:

- AHRQ Quality Indicators Reports
- Coronary Artery Bypass Graft Outcomes
- Elective Percutaneous Coronary Intervention Reports
- Ischemic Stroke Outcomes Report

This case study focuses on OSHPD's use of the AHRQ Quality Indicators, specifically, Inpatient Quality Indicators, Patient Safety Indicators, and Prevention Quality Indicators calculated from hospital inpatient discharge data using the methodology developed by AHRQ.

In the early 1990s, the California Legislature mandated the publication of risk-adjusted hospital outcome reports. For many years, OSHPD used "home grown" measures to meet this requirement; however, in 2008, OSHPD began to use the standardized AHRQ QIs instead. By using the AHRQ QIs, OSHPD was able to produce the required reports in a more cost effective and timely manner.

California's Office of Statewide Health Planning and Development (OSHPD): At a Glance

- Serves as the hub for collecting and disseminating information about California's health care infrastructure.
- OSHPD includes the AHRQ QI results in a suite of reports which are routinely used by the state legislature, sister agencies, researchers and other state stakeholders.
- A unique organization with wide ranging responsibilities, OSHPD monitors the construction, renovation, and seismic safety of hospitals and skilled nursing facilities, in addition to providing loan insurance to assist the capital needs of California's not-for-profit healthcare facilities.
- OSHPD also collects, analyzes, and publishes data about California's healthcare workforce and health professional training, and identifies health professional and service capacity shortages.
- To expand access, OSHPD offers scholarships, grants and loan repayment to students, graduates and institutions that provide patient care in areas of unmet need.

Using Area-Level AHRQ QIs to Improve Public Health and Outpatient Care

OSHPD publishes results for 12 Prevention Quality Indicators (PQIs) that address ambulatory care sensitive conditions, in addition to four composite measures based on the PQIs, at both the statewide and county level. Hospitalizations due to these specific medical conditions are potentially preventable through access to high-quality outpatient care. OSHPD publishes this data to provide a solid starting point for assessing quality of health services in the community. "Our local health officers are especially interested in the AHRQ Prevention Quality Indicators for examining population health at the community level," says Merry Holliday-Hanson, PhD, Manager, Administrative Data Group, Healthcare Analytics Branch.

The PQI results are published on the California Health and Human Services Open Data portal, addressing the following conditions:

- Diabetes Short-term Complications (PQI 1)
- Perforated Appendix (ruptured appendix) (PQI 2)
- Diabetes Long-term Complications (PQI 3)
- Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults (PQI 5)
- Hypertension (high blood pressure) (PQI 7)
- Heart Failure (PQI 8)
- Dehydration (PQI 10)
- Community-Acquired Pneumonia (PQI 11)
- Urinary Tract Infection (UTI) (PQI 12)
- Uncontrolled Diabetes (PQI 14)
- Asthma in Younger Adults (ages 18-39) (PQI 15)
- Lower-Extremity Amputation among Patients with Diabetes (removal of leg or foot due to diabetes complications) (PQI 16)
- Prevention Quality Overall Composite (PQI 90) (includes PQIs #1, 3, 5, 7, 8, 10, 11, 12, 14, 15, and 16) – PQI 13 has been removed from the composite, effective with 2016 data
- Prevention Quality Acute Composite (PQI 91) (includes PQIs #10, 11, and 12)
- Prevention Quality Chronic Composite (PQI 92) (includes PQIs #1, 3, 5, 7, 8, 14, 15, and 16) – PQI #13 has been removed from the composite, effective with 2016 data
- Prevention Quality Diabetes Composite (PQI 93) (includes PQIs #1, 3, 14, 16) – new, effective with 2016 data

Hospital-Level AHRQ Quality Indicators Focused on Inpatient Mortality

Several of the AHRQ Inpatient Quality Indicators (IQIs) measure inpatient hospital mortality for medical conditions and procedures for which mortality rates may vary significantly across institutions. Evidence suggests that high mortality may be associated with deficiencies in the quality of hospital care. OSHPD calculates results for 12 of the 15 AHRQ IQIs that address inpatient mortality, including five sub-measures (beginning with 2012 data). Results for the following IQIs are then publicly reported by OSHPD for use by hospitals, healthcare providers, California consumers, and healthcare purchasers:

- Esophageal Resection Mortality Rate (IQI 08)

- Pancreatic Resection Mortality Rate (IQI 09)
    - Pancreatic Resection, Cancer; and, Pancreatic Resection, Other
- Abdominal Aortic Aneurysm (AAA) Repair Mortality Rate (IQI 11)
    - OSHPD excludes AAA ruptured cases and combines unruptured open and unruptured endovascular AAA using a weighted average
- Craniotomy Mortality Rate (IQI 13)
- Acute Myocardial Infarction (AMI) Mortality Rate (IQI 15)
- Heart Failure Mortality Rate (IQI 16)
- Acute Stroke Mortality Rate (IQI 17)
    - Hemorrhagic Stroke; Ischemic Stroke; and, Subarachnoid Stroke
- Gastrointestinal Hemorrhage Mortality Rate (IQI 18)
- Hip Fracture Mortality Rate (IQI 19)
- Pneumonia Mortality Rate (IQI 20)
- Percutaneous Coronary Intervention (PCI) Mortality Rate (IQI 30)
- Carotid Endarterectomy Mortality Rate (IQI 31)

For the indicators above, OSHPD benchmarks the hospital-specific mortality results against statewide data, rather than national benchmarks. For more information, see the Technical Notes linked to this web page: https://data.chhs.ca.gov/dataset/california-hospital-inpatient-mortality-rates-and-quality-ratings

Pediatric Quality Indicators

OSHPD uses the Pediatric Quality Indicators (PDIs) to produce statewide and county-level hospitalization rates for the following conditions:

- Asthma (Age 2 – 17) (PDI 14)
- Diabetes Short-Term Complications (Age 6 – 17) (PDI 15)
- Gastroenteritis (Age 3 months – 17 years) (PDI 16)
- Perforated Appendix (ruptured appendix; Age 1-17) (PDI 17)
- Urinary Tract Infection (Age 3 months – 17 years) (PDI 18)
- Low Birth Weight (< 2500 grams) (PQI 9)
- Pediatric Quality Overall Composite (includes PDIs #14, 15, 16 and 18; Age 6-17) (PDI 90)
- Pediatric Quality Acute Composite (includes PDIs #16 and 18; Age 6-17) (PDI 91)
- Pediatric Quality Chronic Composite (includes PDIs #14 and 15; Age 6-17) (PDI 92)

While OSHPD does not regard these area-level PDIs as definitive measures of quality, they are seen as a useful starting point for examining, and ultimately improving, quality. “OSHPD’s aim is always to present data and information that informs programs and fosters dialogue,” says Krawczyk.

Patient Safety Indicators Help Inform Ways to Reduce Adverse Events

Through 2015, OSHPD produced results for Patient Safety Indicators (PSIs) that include hospitalization counts and rates, both statewide and by county, for seven potentially-preventable adverse events that

occur during a hospital stay (PSI 21- PSI 27, now retired). This PSI dataset provided a perspective on complications and iatrogenic events, and helps hospitals and community stakeholders, as well as researchers assess total incidence of these adverse events within a region. Moving forward, OSHPD intends to combine PQI and PSI results with other community-level data to paint a more comprehensive picture of population health at the regional level, and to better understand the social determinants that impact population health. "Hospitals are a key partner – and also stakeholder – in this effort," says Christopher Krawczyk, PhD, Chief analytics Officer, Health Care Analytics Branch, Information Services Division.

Interview Participants

California Office of Statewide Planning and Development: Christopher Krawczyk, PhD, Chief Analytics Officer, Healthcare Analytics Branch, Information Services Division; Ying Yang, MS, Manager, Administrative Data Research Unit, Healthcare Analytics Branch; and Merry Holliday-Hanson, PhD, Manager, Administrative Data Group, Healthcare Analytics Branch, all with the Office of Statewide Health Planning and Development

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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/.