Fact Sheet on Patient Safety Indicators

What Are the Patient Safety Indicators?

The Patient Safety Indicators (PSIs) are a set of 26 indicators (including 18 provider-level indicators) developed by the Agency for Healthcare Research and Quality (AHRQ) to provide information on safety-related adverse events occurring in hospitals following operations, procedures, and childbirth. The PSIs were developed after a comprehensive literature review, analysis of available ICD-9-CM¹ codes, review by a clinician panel, implementation of risk adjustment, and empirical analyses.

The PSIs use administrative data in the typical hospitalization discharge record to identify potential in-hospital complications. The provider-level indicators can be used to help hospitals identify adverse events worthy of further study and to assess the incidence of such events for comparative purposes. Some of these indicators also have area-level analogs designed to detect patient safety events on a county or regional level.

PSI 90 is a composite measure that is intended to reflect the safety climate of the hospital by providing a marker of patient safety (or "avoidance of harm") during the delivery of health care. As a single and transparent metric, it can be easily used to monitor performance over time or across regions and populations using a methodology that can be applied at the national, regional, State, and provider level. Each PSI in the the PSI 90 composite is amenable to prevention through system-level related structures and processes of care.

The PSI 90 composite indicator is intended to be used primarily to monitor performance in national and regional reporting, and also for comparative reporting and quality improvement at the provider level. It is not intended to reflect any broader construct of quality, beyond what is reflected in the component indicators themselves. Use of a composite can assist consumers in selecting hospitals, assist clinicians in allocating resources, and assist payers in assessing performance; especially in the presence of competing priorities or where than more than one component measure may be important.

A Snapshot of the Indicators

The current provider-level PSIs are listed in Table 1, along with information on their 2012 annual rates and status regarding NQF endorsement.

A detailed list of indicator specifications, software for calculating the measures, and software documentation are available on the AHRQ Quality Indicators Web site: <u>www.qualityindicators.ahrq.gov</u>.

¹ ICD-9 = International Classification of Diseases, 9th Revision.

Table 1. The 2015 AHRQ Provider-Level Patient Safety Indicators (PSIs), With 2012 Rates and National Quality Forum Endorsement Status

			NQF Endorsement	
Patient Safety Indicator	Area-Level Indicator	Observed Rate per 1,000	NQF Nbr	Most Recent Year
PSI 02 Death Rate in Low-Mortality Diagnosis-		0.32	0347	2012
Related Groups (DRGs)				
PSI 03 Pressure Ulcer Rate		0.50		
PSI 04 Death Rate Among Surgical Inpatients with Serious Treatable Complications		118.62	0351	2012
PSI 05 Retained Surgical Item or Unretrieved Device Fragment Count	Х	N/A*	0363	2012
PSI 06 latrogenic Pneumothorax Rate	Х	0.34	0346	2012
PSI 07 Central Venous Catheter-related Bloodstream Infection Rate	Х	0.21		
PSI 08 Postoperative Hip Fracture Rate		0.04		
PSI 09 Perioperative Hemorrhage or Hematoma Rate	Х	5.11		
PSI 10 Postoperative Physiologic and Metabolic Derangement Rate		0.69		
PSI 11 Postoperative Respiratory Failure Rate		10.05	0533	2009
PSI 12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate		4.99	0450	2012
PSI 13 Postoperative Sepsis Rate		9.61		
PSI 14 Postoperative Wound Dehiscence Rate	Х	1.86		
PSI 15 Accidental Puncture or Laceration Rate	Х	1.89	0345	2012
PSI 16 Transfusion Reaction Count	Х	N/A*	0349	2012
PSI 17 Birth Trauma Rate – Injury to Neonate		1.89		
PSI 18 Obstetric Trauma Rate – vaginal delivery with instrument		133.19		
PSI 19 Obstetric Trauma Rate – vaginal delivery without instrument		20.97		
PSI 90 Patient Safety for Selected Indicators		**	0531	2015

*N/A: Not applicable, measure is based on a count of events.

** Composite measure

Based on AHRQ QI software version 5.0 for ICD-9, as of March 2015; 2012 is the most recent version of HCUP available at time of toolkit publication.

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID), 2012; AHRQ Quality Indicators Patient Safety Indicators Benchmark Data Tables. <u>http://www.qualityindicators.ahrq.gov/Modules/psi_resources.aspx</u>.

AHRQ Quality Indicators Software

AHRQ provides free software—in both SAS[®] and Windows—for organizations to apply the PSIs to their own data to assist quality improvement efforts in acute care hospital settings. Both versions of the software include all the AHRQ QI modules, including the PSIs.

Many of the PSIs are calculated using present on admission (POA) codes in the hospital discharge data. In QI software version 5.0, the user had the option of indicating that POA should not be

considered when running the software. In version 6.0, the option to ignore POA was removed. It is now assumed that all data include valid POA information.

In October 2015, the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) used to report medical diagnoses and inpatient procedures was officially replaced by the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM). This transition affected diagnosis and inpatient procedure coding across the United States. As of spring 2016, AHRQ has updated the QI software (v6.0) to account for the change to ICD-10. Because hospitals have just begun coding with ICD-10 codes, there are no available national data that allow hospitals to compare their measures to national benchmarks; however, future versions of the software will calculate risk-adjusted measures.