

Modifications to the Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators (PSI) for Use in this Report

Released in March 2003 and updated through version 3.1 in March 2007, the AHRQ Patient Safety Indicators (PSIs) “are a set of measures that can be used with hospital inpatient discharge data to provide a perspective on patient safety. Specifically, the AHRQ PSIs screen for problems that patients experience as a result of exposure to the healthcare system and that are likely amenable to prevention by changes at the system or provider level.”¹ The AHRQ PSIs were developed using a rigorous evidence-based methodology², and were designed for use with the type of information found in inpatient hospital discharge abstract data; the specific data elements required by the PSIs algorithms are available from most hospital and State-level inpatient administrative data systems.

The PSIs as developed by AHRQ were modified for this report by WebMD Health Services in two ways in order to facilitate the comparison of performance across hospitals and across health plans. First, the sample of patients was restricted to a common set of diagnosis and procedure categories in order to create homogeneous populations for analysis. Second, WebMD Health Services applied an alternative risk-adjustment method that is widely used and understood by health plans in quality reporting. We discuss each of these modifications in greater detail below.

Severity Adjustment Approach

The report uses an adjustment of the refined diagnosis related groups (RDRG) to account for hospital case-mix rather than the approach used for the AHRQ PSIs in the public-use software (which uses a modified CMS DRG and the AHRQ comorbidity classes), in order to apply a consistent methodology across Select Quality Caresm measures. RDRG is a method that classifies cases (based on each patient’s diagnosis and procedure codes, age, sex and length of stay) into levels of severity and complexity based on the impact they are likely to have on use of hospital resources. The WebMD Health Services methodology in this report adjusted the RDRG methodology to exclude certain secondary ICD-9-CM codes related to the measured complications from the grouping of severity levels by RDRG so as not to give a hospital credit for increasing the severity of the patient as the result of potential patient safety issues. These adjusted RDRGs are referred to as ARDRGs and were used in combination with each patient’s age for severity adjustment by WebMD Quality Services.

For each measured complication, a relative weight was calculated for every Age-ARDRG combination. A hospital’s actual complication rate for each measure was then divided by these relative weights to come up with an adjusted complication rate. Thus, each hospital’s actual complication rate was standardized based on its relative mix of patients at every Age-ARDRG level.

Additional modifications from the AHRQ methodology for the BCBSIL Hospital Profile are:

- Admissions that involve a transfer in from another hospital are excluded.
- The Postoperative Respiratory Failure and Postoperative Sepsis indicators are based on elective admissions. Because BCBSIL data does not include the admission type, elective admissions cannot be identified. Therefore, the indicators are run for all admissions, but a final adjustment is made based upon whether or not the admission was through the ER.
- Cut-off points were identified for each indicator. Results are not reported for hospitals with a denominator lower than the cutoff.

¹ *Patient Safety Indicators Download*. AHRQ Quality Indicators. March 2007. Agency for Healthcare Research and Quality, Rockville, MD. http://www.qualityindicators.ahrq.gov/psi_download.htm

Available at: http://www.qualityindicators.ahrq.gov/downloads/psi/psi_guide_v31.pdf.

² AHRQ Quality Indicators – PSI Technical Specifications Version 3.1 (March 12, 2007).

Available at http://www.qualityindicators.ahrq.gov/downloads/psi/psi_technical_specs_v31.pdf.