

**Agency for Healthcare Research and Quality
Prevention Quality Indicators (PQIs)**

Log of Revisions to PQI Documentation and Software

Updated September, 2010

The following table summarizes all of the revisions made to the PQI software, software documentation, and the Guide to Prevention Quality Indicators (Guide) document since the original release of these documents in November 2001. The table lists the version and revision number, the date the revision was made, the component affected by the change and a short summary of the changes that were made. For convenience and ease of use, the changes are listed in reverse chronological order with the most recent changes appearing first in the table. This log of revisions is current as of the date noted above.

Version /Revision number	Date	Component	Changes
V4.2	September 30, 2010	Software (SAS and WinQI) and Documentation	Updated ICD-9-CM and DRG codes for FY2010 (see FY2010 Coding updates document).
V4.1	December 2, 2009	SAS Software and Documentation	PQI #9 – Low Birth Weight – Added NOTE to documentation advising that this indicator is calculated by the PDI SAS module because it is based on pediatric discharges.
V4.0	June 30, 2009	Software and Documentation	PQI #7 – Hypertension - added numerator exclusion for diagnosis of Stage I-IV kidney disease only if accompanied by procedures for preparation for hemodialysis (dialysis access procedures)
V4.0	June 30, 2009	Software and Documentation	PQI #8 – CHF - dropped diagnosis codes from numerator inclusion for hypertension with heart disease and/or renal failure ONLY for discharges after 2002Q3 (effective Oct 1, 2002)
V4.0	June 30, 2009	Software and Documentation	PQI #11 - Bacterial pneumonia - added numerator exclusion for diagnosis code of immuno-compromised state
V4.0	June 30, 2009	Software and Documentation	Cardiac procedure - added procedure codes to the numerator exclusion for cardiac procedures
V4.0	June 30, 2009	SAS Software and Documentation	Implement UB-04 - The UB-04 (effective October 1, 2007) changes were implemented including new data elements for point-of-origin and present on admission
V4.0	June 30, 2009	SAS Software and Documentation	Update Benchmarking Data to 2007 - used data from the 2007 SID for computation of benchmarks
V3.2	March 10, 2008	None	None

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V3.1a	March 16, 2007	SAS Software (PQSASA2)	Amended the aggregation algorithm to correctly sum the numerator and denominator counts across stratifiers.
V3.1	March 12, 2007	Software (SAS and Windows), Software Documentation, Guide, and Technical Specifications	<ol style="list-style-type: none"> 1. Implemented changes associated with ICD-9-CM coding updates for Fiscal Year (FY) 2007 (effective 10-1-2006). See separate documentation on ICD-9 coding updates for specific details. 2. The years for which the ICD-9-CM and DRG codes defining PQIs are valid was amended to be through FY 2007 instead of FY 2006, that is, the codes in the software are effective through September 30, 2007.
V3.1	March 12, 2007	Covariates. Software (SAS and Windows)	Based on recommendations of the Risk Adjustment and Hierarchical Modeling (RAHM) Workgroup, computed covariates using a logistic regression model with an area random-effect instead of the existing simple logistic model. Because the AHRQ QI use a "large sample", the impact on the covariates of using the hierarchical model (and hence the impact on the risk-adjusted rates) is minor..
V3.1	March 12, 2007	Software (SAS and Windows), Software Documentation and Covariates document	Updated the coefficients used in the calculation of expected and risk-adjusted rates to the 2002-2004 reference population.
V3.1	March 12, 2007	Technical Specifications	Moved list of ICD-9-CM codes for cardiac procedure into an Appendix, with links to and from the PQIs that use the codes as a numerator exclusion.
V3.1	March 12, 2007	Guide	Moved average volume, provider rates, and population rates into separate document, <i>Prevention Quality Indicators Comparative Data</i>
V3.1	March 12, 2007	Software (SAS and Windows)	<ol style="list-style-type: none"> 1. Age-, race-, gender- and county-specific population estimates used for AHRQ QI area rates were updated to use revised post-censal estimates for years 2001 through 2005 and projections for the years 2006 and 2007. 2. Modified the A3 syntax to compute risk-adjusted rates and observed-to-expected ratios for the pre-defined set of stratification variables (e.g., age, gender, payer, race) 3. Added option to select whether or not to apply county-level adjustment for Socioeconomic Status (SES) and/or disease prevalence in addition to age and gender.

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V3.0b	May 1, 2006	Technical Specifications	<ol style="list-style-type: none"> 1. Revised denominator description for PQI #9. 2. Deleted codes 59000 and 59001 from numerator of PQI #10. 3. Corrected code numbers in denominator of PQI #13.
V3.0b	May 1, 2006	All documents	Edited PDF files to make URLs in header or footnotes clickable links.
V3.0a	February 20, 2006	Guide, SAS and SPSS Software Documentation	<ol style="list-style-type: none"> 1. Removed Appendices that were copies of Change Log and Indicator Changes documents. 2. Added Appendix of Links to all PQI documents and additional resources.
V3.0a	February 20, 2006	Guide	<ol style="list-style-type: none"> 1. Added explanation of changes to area definitions and new stratification options. 2. Changed "MSA" to "Metro Area" throughout the document. 3. Added section "Using Different Types of QI rates."
V3.0a	February 20, 2006	Software, Guide, and Technical Specifications	<ol style="list-style-type: none"> 1. Revised denominator of PQI #9 (Low Birth Weight) to define newborn as neonate with age at admission of 0 to 28 days, with ICD-9-CM diagnosis code for in-hospital live birth. 2. Revised numerator of PQI #12 (Urinary Tract Infection) to Add exclusion for any diagnosis code of kidney/urinary tract disorder and for any diagnosis code of immunocompromised state. 3. Revised numerator of PQI #15 (Asthma) to Add exclusion for any diagnosis code of cystic fibrosis and anomalies of the respiratory system.
V3.0a	February 20, 2006	Software (SAS and SPSS) Software Documentation	<ol style="list-style-type: none"> 1. Changed name of data element HOSPSTCO to PSTCO. 2. Added parameter POPYEAR to specify year for Census data. 3. Changed name of MSALEVL parameter to MALEVL to reflect the change in OMB definitions for areas, and added options to allow users to specify stratification by county level with U.S. Census FIPS or modified FIPS, or Metro Area with OMB 1999 or OMB 2003 definition.
V3.0a	February 20, 2006	Software (SAS and SPSS)	Changed the computation of the risk-adjusted rate to use a proportional formula for indirect standardization.

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V3.0a	February 20, 2006	Software (SAS)	Added a computation of confidence limits.
V3.0a	February 20, 2006	Software (SAS and SPSS), Software Documentation and Covariates document	Updated the coefficients used in the calculation of expected and risk-adjusted rates to the 2003 reference population.
V3.0a	February 20, 2006	Indicator Changes	Revised to limit entries to indicator changes made because of changes to ICD-9-CM code updates for FY2006 and moved entries for specification changes into PQI Change Log.
V3.0	November 30,2005	Guide	<ol style="list-style-type: none"> 1. Moved Appendix A into new document <i>Prevention Quality Indicators Technical Specifications</i>. 2. Removed Appendix B.
V3.0	November 30,2005	Software (SAS and SPSS), Software Documentation, Guide, Technical Specifications, and Analysis & Interpretation	<ol style="list-style-type: none"> 1. Implemented changes associated with ICD-9-CM coding updates for Fiscal Year (FY) 2006 (effective 10-1-2005). See separate documentation on ICD-9 coding updates for specific details. 2. The years for which the ICD-9-CM and DRG codes defining PQIs are valid was amended to be through FY 2006 instead of FY 2005, that is, the codes in the software are effective through September 30, 2006. 3. Dropped PQI #4 and PQI #6, which are being moved into the new Pediatric Quality Indicators module. 4. Revised PQI #2, PQI #10, PQI #11, and PQI #12 to exclude pediatric populations. 5. Added exclusion for cystic fibrosis and anomalies of the respiratory system to PQI #15 (Asthma). 6. Added exclusion for kidney/urinary tract disorder and immunocompromised state to PQI #12 (Urinary Tract Infection).
V3.0	November 30,2005	Software Documentation (SAS and SPSS)	<ol style="list-style-type: none"> 1. Removed section "Interpreting the Results." 2. Table 3 was amended to include the 2004-06 census data and condition-specific module file (i.e., QICTYCy.TXT).
V3.0	November 30,2005	Software (SAS and SPSS)	Added the 2004-06 census data and condition-specific module file (e.g., QICTYCy.TXT)

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V2.1 R4	November 24, 2004	Software (SAS and SPSS), Software Documentation, and Guide	<ol style="list-style-type: none"> 1. The years for which the ICD-9-CM and DRG codes defining PQIs are valid was amended to be through FY 2005 instead of FY 2004, that is, the codes in the software are effective through September 30, 2005. 2. Added new module that calculates condition-specific rates for the diabetes PQIs across stratifiers.
V2.1 R4	November 24, 2004	Software Documentation (SAS and SPSS)	Table 3 was amended to include the 2003 census data (i.e., QICTY03.TXT and QICTYA03.TXT) and condition-specific module files (PQSASC2 and QICTYC03.TXT).
V2.1 R4	November 24, 2004	Software (SAS and SPSS)	Added the 2003 census data (i.e., QICTY03.TXT and QICTYA03.TXT) and condition-specific module files (PQSASC2 and QICTYC03.TXT)
V2.1 R4	November 24, 2004	Guide	Rearranged the sequence of PQIs to place in numerical order.
V2.1 R4	November 24, 2004	Software (SAS)	Inserted "PQ" in format names for age aggregations in SAS programs to distinguish these formats from similarly named formats used by other indicator software.
V2.1 R3	January 9, 2004	Software (SAS and SPSS) and Guide	Implemented changes associated with ICD-9-CM coding updates from Fiscal Year (FY) 2003 (effective 10-1-2002) and FY 2004 (effective 10-1-2003). See separate documentation on ICD-9 coding updates for specific details.
V2.1 R3	January 9, 2004	Software (SAS and SPSS)	<ol style="list-style-type: none"> 1. Angina Admission Rate. The numerator exclusion for patients undergoing any surgical procedure was removed and replaced with a more restrictive exclusion of cardiac procedures, identical to the exclusion list for cardiac procedures included in the CHF Admission Rate and Hypertension Admission Rate Indicators (see below). The rate for the Angina Admission Rate indicator is expected to decrease significantly with this change. 2. CHF Admission Rate, Hypertension Admission rate and Angina Admission Rate. The numerator exclusion of major cardiac surgery was redefined to include only surgeries that would typically be done on an elective or semi-elective basis and therefore represent the indication for admission. This would include valve repair (35.xx), angioplasty and stent placement (36.0x), coronary bypass and other revascularization surgery (36.1x-36.9x), and heart transplantation (37.5). In addition, the list was expanded to include procedures associated with angina, in conjunction with the use of this inclusion in the Angina Admission Rate Indicator. The resulting exclusion is now identical for the three

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			indicators.
V2.1 R3	January 9, 2004	Software (SAS and SPSS)	<ol style="list-style-type: none"> 1. All parameter text files were renamed to refer specifically to the PQI module (e.g., use of PQ in file name). These changes are also reflected in the software documentation. 2. All parameter files were rerun using the updated software and Year 2000 HCUP SID data. 3. Population files for 2000, 2001 and 2002 were re-estimated using the latest available census files
V2.1 R3	January 9, 2004	Software - SPSS	The treatment of missing data by SPSS was changed to mirror the treatment of missing data by SAS, specifically the software requires confirmation for the assignment of a poor outcome or negative event. For instance, in order to be assigned as a death, each case must actually be coded as a death. Missing data is considered neutral. Missing data for some elements results in the exclusion of that case from the denominator. For a few other elements, the case is retained. Table 5 of the Software Documentation lists the impact of missing data for each data element.
V2.1 R2	January 10, 2003	Software Documentation (SAS and SPSS)	<ol style="list-style-type: none"> 1. Updated documentation to reference the changes made to the software programs such as the change in the default number of ICD-9 diagnosis and procedure codes, the option to stratify area by MSA or county, and instructions for using the patient FIPS code. 2. Modified the data file input specifications to standardize across software programs (SAS and SPSS) so the user would be able to run the same input data file with either statistical package.

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V2.1 R2	January 10, 2003	Software (SAS and SPSS)	<ol style="list-style-type: none"> 1. The county-to-MSA mapping for Waller County in Texas was corrected by assigning the value of 3362 for the Houston-Galveston MSA. 2. The default number of ICD-9-CM diagnoses was changed from 5 to 30. 3. The default number of ICD-9-CM procedures was changed from 4 to 30. 4. The ICD-9 coding was updated to reflect changes through FY 2002 (September 30, 2002). 5. Added the option for the user to select rates calculated by MSA or by county for urban areas (rates for rural areas will always be by county). 6. Additional ASCII text files with Census residential population numbers for 2000 and 2001 were included in the module. 7. Risk-adjustment inputs that were based on nineteen SID state data files from the year 1997 were replaced with numbers that were based on twenty-nine SID state data files from the year 2000. 8. The formulation of smoothed rates was corrected so that missing values would be generated when appropriate, rather than zeros. 9. Hardcopy printouts were modified to be easier to understand (intermediate means were removed, the final means were restricted to just area-level records, prints of the final results were reformatted and labeled).
V2.1 R2	October 9, 2002	Guide	<ol style="list-style-type: none"> 1. The definition for the Perforated appendix admission rate was clarified in appendix A, by moving the ICD-9-CM codes for the population at risk to a separate section that defined the denominator for the rate. 2. The definition of the Low Birthweight indicator was corrected in Appendix A, by removing references to DRG's 370-375.

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V2.1 R1	April 17, 2002	Guide	<ol style="list-style-type: none"> 1. The age inclusions for the populations at risk were corrected for the following indicators: bacteria pneumonia, dehydration, urinary tract infection, angina without procedure, CHF, hypertension, adult asthma, COPD, uncontrolled diabetes, diabetes short-term complications, diabetes long-term complications, and lower-extremity amputation among patients with diabetes. In all cases, the descriptions of the indicators in the Guide suggested that the indicator be applied to a specific age group, but suggested that it could be applied to other age groups as well. The software applies the indicator to all relevant age groups; therefore, the Guide was amended to reflect this. 2. For the definition of Lower-Extremity Amputation among Patients with Diabetes, under Outcomes of Interest, "Discharges with ICD-9-CM principal diagnosis codes" was changed to "Discharges with ICD-9-CM procedure codes".
V2.1 R1	April 17, 2002	Software documentation	The years for which the ICD-9-CM codes defining PQIs are valid was amended to be through FY 2001 instead of FY 2000, that is, the codes in the software are effective through September 30, 2001.