



PREVENTION QUALITY INDICATORS (PQI) LOG OF ICD-9-CM, ICD-10-CM/PC, AND DRG CODING UPDATES AND REVISIONS TO PQI DOCUMENTATION AND SOFTWARE Through Version 6.0

Prepared for:

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1.0 Log of ICD-9-CM, ICD-10-CM/PCS, and MS-DRG Coding Updates and Revisions to PQI Specifications Documentation and Software

The following table summarizes the revisions made to the Prevention Quality Indicator (PQI) software, software documentation and the technical specification documents in v6.0 ICD-9-CM and ICD-10 CM/PCS version. It also reflects changes to indicator specifications based on updates to ICD-9-CM and ICD-10-CM/PCS codes through Fiscal Year 2016 (effective October 1, 2015) and incorporates coding updates that were implemented in both versions of the PQI software (both SAS and Windows).

The table lists the version and revision number, the date the revision was made, the component(s) affected by the change and a short summary of the changes that were made. The nature of the change is categorized as:

1. **Fiscal year (FY) coding change:** occurs because of changes to the most recent fiscal year codes dictated by the Centers for Disease Control and Prevention (CDC) National Center for Health Statistics (NCHS) and Centers for Medicare & Medicaid Services (CMS)
2. **Specification/calculation change:** may impact the measure result that is something other than the most recent fiscal year coding change
3. **Software/documentation change:** alteration to the software code to calculate the measure as specified, or to the documentation to clarify the measure intent or functionality.

For convenience and ease of use, the changes are listed in reverse chronological order with the most recent changes appearing first in the table. Please note that changes prior to version 4.4 are not classified according to the currently defined types of changes. In addition, each type of change has varied shading to enhance readability.

All changes noted below have been incorporated into the software programming code, software documentation and the PQI technical specifications. With this software update, the PQI software now incorporates ICD-9-CM, ICD-10 CM/PC, and DRG/MS-DRG codes valid from October 1, 1994 through September 30, 2016.

The transition from ICD-9-CM to ICD-10-CM/PCS represents substantial differences across the two code sets. Specifications have been carefully reviewed to achieve as much consistency as possible; however, differences are expected to exist between the ICD-9 v5.0, the previous version of the AHRQ QI measures, and the ICD-10-CM/PCS release of v6.0. A detailed explanation of the process of conversion is detailed in

http://www.qualityindicators.ahrq.gov/Downloads/Resources/Publications/2013/C.14.10.D001_REVISED.pdf

Note: the change log for v6.0 (ICD-10) reflects the changes from v5.0 alpha version of ICD-10 software and not the changes from v5.0 ICD-9-CM version.

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VERSION/ REVISION NUMBER	DATE	COMPONENT	NATURE OF CHANGE	CHANGES
v6.0 (ICD-9)	October 2016	PQI 93	Specification/Calculation	<p>Description: Diabetes composite (PQI 93) was added.</p> <p>Rational for the change: Desire to capture all types of diabetes related admissions in one measure</p>
v6.0 (ICD-9)	October 2016	All PQI; including PQI 90; PQI 92	Specification/Calculation	<p>Description: PQI 13 was retired and removed from PQI composites. See statement on AHRQ QI website regarding retirement.</p> <p>Rational for the change: PQI recommended for retirement due to evidence suggesting lack of validity</p>
v6.0 (ICD-9)	October 2016	PQI 08	Specification/Calculation	<p>Description: The definition of heart failure used to define heart failure admissions was aligned with the definition of heart failure used to define the denominator for the IQI Heart Failure Mortality Rate.</p> <p>Rational for the change: There is not a clear rationale to maintain different heart failure definitions between the IQI and PQI</p>
v6.0 (ICD-9)	October 2016	PQI 16	Specification/Calculation	<p>Description: The exclusion for patients with a toe amputation was removed, because toe amputations are no longer included in the numerator event and patients with an additional higher level amputation on the alternate limb should be included.</p> <p>Rational for the change: Toe amputations are no longer included in the numerator event and patients with an additional higher level amputation on the alternate limb should be included.</p>

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v6.0 (ICD-10)	July 2016	PQI module	Specification/Calculation	<p>Description: Diabetes composite (PQI 93) was added.</p> <p>Rational for the change: Desire to capture all types of diabetes related admissions in one measure</p>
v6.0 (ICD-10)	July 2016	All PQI; including PQI 90; PQI 92	Specification/Calculation	<p>Description: PQI 13 was retired and removed from PQI composites. See statement on AHRQ QI website regarding retirement.</p> <p>Rational for the change: PQI recommended for retirement due to evidence suggesting lack of validity.</p>
v6.0 (ICD-10)	July 2016	PQI module	Software /Documentation	<p>Description: Corrected omission in software to add DRG 265 to MDC 05 format.</p> <p>Rational for the change: Correct unintentional omission in software.</p>
v6.0 (ICD-10)	July 2016	PQI 05	Specification/Calculation	<p>Description: Removed inclusion criterion of a principal ICD-10-CM diagnosis code for acute bronchitis and any secondary ICD-10-CM diagnosis codes for COPD (excluding acute bronchitis). This inclusion criteria is no longer necessary due to coding guidelines.</p> <p>Rational for the change: Following a review of coding guidelines the potential elimination of the following inclusion criterion is recommended: include a principal diagnosis of “acute bronchitis” (466.0 and 490) when accompanied by a secondary code for COPD. However, coding guidelines for 466.0 specifically excludes “acute bronchitis with COPD”. This should be coded to 491.22, “obstructive chronic bronchitis with acute bronchitis”. 491.22 was introduced in 2004. 490 does not have a specified exclusion, but is not specific to chronic or acute bronchitis.</p>

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v6.0 (ICD-10)	July 2016	PQI 08	Specification/Calculation	<p>Description: The definition of heart failure used to define heart failure admissions was aligned with the definition of heart failure used to define the denominator for the IQI Heart Failure Mortality Rate.</p> <p>Rational for the change: There is not a clear rationale to maintain different heart failure definitions between the IQI and PQI</p>
v6.0 (ICD-10)	July 2016	PQI 11 and PQI 12	Specification/Calculation	<p>Description: Removed codes for autologous pancreatic cell transplant (3E030U0, 3E033U0) Added codes for non-autologous pancreatic cell transplant (3E0J3U1, 3E0J7U1, 3E0J8U1)</p> <p>Rational for the change: Autologous islet cell transplants are unlikely to result in immunosuppression</p>
v6.0 (ICD-10)	July 2016	PQI 16	Specification/Calculation	<p>Description: The exclusion for patients with a toe amputation was removed, because toe amputations are no longer included in the numerator event and patients with an additional higher level amputation on the alternate limb should be included.</p> <p>Rational for the change: Toe amputations are no longer included in the numerator event and patients with an additional higher level amputation on the alternate limb should be included.</p>
v6.0 (ICD-10)	July 2016	PQI 16	Specification/Calculation	<p>Description: Codes for toe amputation were removed from the definition of lower extremity amputation.</p> <p>Rational for the change: Toe amputations are procedures which may be performed in an outpatient setting or may be traumatic in nature.</p>

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V5.0	March 2015	COPD or Asthma in Older Adults Admission Rate (PQI 05)	Specification/Calculation	Obstructive chronic bronchitis with acute bronchitis (491.22) was added to the numerator specification for COPD.
V5.0	March 2015	Dehydration Admission Rate (PQI 10)	Specification/Calculation	The chronic kidney failure POA denominator exclusion was restricted to stage V or end stage renal disease (403.x1, 404.x2, 404.x3, 585.5, 585.6).
V5.0	March 2015	PQSASA3	Specification/Calculation	Age/Sex risk-adjustment models were updated with the 2012 reference population file; the code was revised to use new regression coefficients.
V5.0	March 2015	All PQI	Specification/Calculation	The reference population was updated based on 2012 HCUP SIDS data.
V5.0	March 2015	All PQI	Specification/Calculation	The population file was updated with US Census County estimates for 2014.

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V4.5a	July 2014	PQI 08	Specification/Calculation	<p>Removed October 1, 2002 distinction for numerator exclusion based on heart failure. Beginning with version 4.6, the following ICD-9-CM codes constitute a numerator exclusion for heart failure for all discharges, regardless whether the discharge is dated before or after October 1, 2002:</p> <p>39891 RHEUMATIC HEART FAILURE 40201 MAL HYPERT HRT DIS W HF 40211 BENIGN HYP HT DIS W HF 40291 HYP HT DIS NOS W HT FAIL 40401 MAL HYP HT/KD I-IV W HF 40403 MAL HYP HT/KD STG V W HF 40411 BEN HYP HT/KD I-IV W HF 40413 BEN HYP HT/KD STG V W HF 40491 HYP HT/KD NOS I-IV W HF 40493 HYP HT/KD NOS ST V W HF 4280 CHF NOS 4281 LEFT HEART FAILURE 42820 SYSTOLIC HRT FAILURE NOS 42821 AC SYSTOLIC HRT FAILURE 42822 CHR SYSTOLIC HRT FAILURE 42823 AC ON CHR SYST HRT FAIL 42830 DIASTOLC HRT FAILURE NOS 42831 AC DIASTOLIC HRT FAILURE 42832 CHR DIASTOLIC HRT FAIL 42833 AC ON CHR DIAST HRT FAIL 42840 SYST/DIAST HRT FAIL NOS 42841 AC SYST/DIASTOL HRT FAIL 42842 CHR SYST/DIASTL HRT FAIL 42843 AC/CHR SYST/DIA HRT FAIL 4289 HEART FAILURE NOS</p>
V4.5a	July 2014	PQI 16	Specification/Calculation	<p>Removed numerator code 8411 TOE AMPUTATION Commented out exclusion macro for toe amputation</p>

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V4.5a	July 2014	PQI 05	Specification/Calculation	Added numerator exclusion code 49122 OBS CHR BRONC W(AC) BRONC
V4.5a	July 2014	All PQIs	Software (SAS, V4.5a)	To better reflect that SAS QI software does not currently support weighted QI estimates, DISCWTS was removed from the program.
V4.5a	July 2014	All PQIs	Software (SAS, V4.5a)	To improve the output of results in a better format, PROC MEANS statement was modified.
V4.5a	July 2014	All PQIs	Software (WinQI, V4.6)	A denominator adjustment added to SAS for Version 4.4 has been added to WinQI. This applies to the population counts when certain combinations of strata are zero.
V4.5a	July 2014	All PQIs	Software (SAS, V4.5a)	An error in PQSASA2.SAS caused PQI 15 to be miss-labeled in the detailed report created when PRINT is selected. PQI 15 is now labeled as "PQI #15 Asthma in Younger Adults Admission Rate (Numerator)" in this printed report.
V4.5	May 2013	All PQI	Specification/Calculation	Updated data are used for population estimates (i.e., through 2013). The population data are used to calculate the denominator for the area-level QI.
V4.5	May 2013	All PQI	Specification/Calculation	Updated reference population rates were calculated using 44 state files from the 2010 State Inpatient Databases (SID). New risk adjustment coefficients were calculated using the updated reference population.

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V4.5	May 2013	Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate (PQI 05)	Specification/Calculation	Added numerator exclusion codes of any diagnosis of cystic fibrosis and anomalies of the respiratory system: 27700 CYSTIC FIBROS W/O ILEUS 27701 CYSTIC FIBROS W ILEUS 27702 CYSTIC FIBROS W PUL MAN 27703 CYSTIC FIBROSIS W GI MAN 27709 CYSTIC FIBROSIS NEC 51661 NEUROENDOCRINE CELL HYPERPLASIA OF INFANCY 51662 PULMONARY INTERSTITIAL GLYCOGENESIS 51663 SURFACTANT MUTATIONS OF THE LUNG 51664 ALVEOLAR CAPILLARY DYSPLASIA WITH VEIN MISALIGNMENT 51669 OTHER INTERSTITIAL LUNG DISEASES OF THE CHILDHOOD 74721 ANOMALIES OF AORTIC ARCH 7483 LARYNGOTRACH ANOMALY NEC 7484 CONGENITAL CYSTIC LUNG 7485 AGENESIS OF LUNG 74860 LUNG ANOMALY NOS 74861 CONGEN BRONCHIECTASIS 74869 LUNG ANOMALY NEC 7488 RESPIRATORY ANOMALY NEC 7489 RESPIRATORY ANOMALY NOS 7503 CONG ESOPH FISTULA/ATRES 7593 SITUS INVERSUS 7707 PERINATAL CHR RESP DIS
V4.5	May 2013	All PQI	Software/Documentation	Respiratory complications diagnosis codes – Corrections were made to assure that three specific diagnosis codes were present in both the SAS and WinQI software. This change only affected the software.
V4.5	May 2013	All PQI	Software/Documentation	In WinQI there was an error in the smoothed rate calculation involving the noise variance and signal variance. This error was not previously observed because it only became significant in particular cases with relatively unusual variances. This issue was fixed in WinQI Version 4.5.

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V4.5	May 2013	All PQI	Software/Documentation	The variable DISCWT in SAS QI v4.5 was set equal to 1 and the variable DISCWT was removed from the KEEP statement associated with the input file. This change ensures that the SAS programs do not account for complex sampling design when calculating QI estimates and standard errors. The SAS QI software, beginning with Version 4.1, does not support weighted QI estimates or standard errors for weighted estimates. The WinQI software has never supported weighted QI estimates or standard errors for weighted estimates.
V4.5	May 2013	All PQI	Software/Documentation	The installation packages have been improved for Version 4.5 of the SAS and WinQI software, including the Prediction Module and 3M™ APR DRG software. Both the SAS and WinQI software are available in Version 4.5 as either 32-bit or 64-bit applications. The 32-bit applications are targeted for Windows XP operating systems, and the 64-bit applications are targeted for Windows 7 operating systems.

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V4.5	May 2013	All PQI	Software/Documentation	<p>The WinQI software was corrected to address the following issues:</p> <ol style="list-style-type: none"> 1. On Step 2 of the Sampling Wizard dialog, the Sample Data File text box was not working correctly. Users were not able to save the file specified using the Browse explorer function. This issue has been fixed in WinQI Version 4.5. 2. Denominators were not being adjusted (i.e., dividing by the number of discharge quarters) when the calculations were being stratified by quarter. This issue has been fixed in WinQI Version 4.5. 3. On the WinQI Additional Options for Data Analysis screen of the Report Wizard, if the “<i>Ref. Pop. Rate</i>” is deselected, and then the expected rate and O/E ratio are reported incorrectly. These rates should be disabled on this screen if “<i>Ref. Pop. Rate</i>” is not selected. This issue has been included in the software documentation. 4. The compiled C# program was named AHRQ.exe, and this was the same name used for the compiled Prediction Module C++ program. This potential conflict has been fixed in WinQI Version 4.5. 5. Excel files with an .xlsx extension were not recognized. MS Access file types also needed to be updated. These issues were fixed in WinQI Version 4.5.
V4.5	May 2013	Low Birth Weight Rate (PQI 09)	Software/Documentation	<ol style="list-style-type: none"> 1. A standalone SAS module was introduced that allows PQI #9 to be calculated without the need to run the entire PDI module. The PQI #9 Standalone Module for SAS is available for download from the AHRQ PQI website. 2. The definitions of Newborn and Outborn were revised in WinQI to better align them with SAS. The differences affected cases where discharge records have some combinations of missing values for one or more of the required data fields (e.g., Age, Age in Days).

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V4.4	March 2012	All PQI	Specification/Calculation	Updated data are used for population estimates (i.e., through 2012). The population data are used to calculate the denominator for the area-level QI. The comparative data tables have been updated using Version 4.4 of the software. Because the risk adjustment models and reference population have not changed for Version 4.4, the Risk Adjustment Coefficients remain as they were in Version 4.3.
V4.4	March 2012	Hypertension Admission Rate (PQI 07)	Fiscal Year Coding	Add the following codes to existing numerator exclusions for cardiac procedures (PQI Appendix B) Add code: 1755 TRANSLUM COR ATHERECTOMY 3505 ENDOVAS REPL AORTC VALVE 3506 TRANSPCL REP AORTC VALVE 3507 ENDOVAS REPL PULM VALVE 3508 TRANSAPCL REPL PULM VALVE 3509 ENDOVAS REPL UNS HRT VLV 3826 INSRT PRSR SNSR W/O LEAD
V4.4	March 2012	Heart Failure Admission Rate (PQI 08)		Add the following codes to existing numerator exclusions for cardiac procedures (PQI Appendix B) Add code: 1755 TRANSLUM COR ATHERECTOMY 3505 ENDOVAS REPL AORTC VALVE 3506 TRANSPCL REP AORTC VALVE 3507 ENDOVAS REPL PULM VALVE 3508 TRANSAPCL REPL PULM VALVE 3509 ENDOVAS REPL UNS HRT VLV 3826 INSRT PRSR SNSR W/O LEAD

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V4.4	March 2012	Bacterial Pneumonia Admission Rate (PQI 11)	Fiscal Year Coding	Add exclusions for immunocompromised state diagnosis or procedures (PQI Appendix C) Add code: 28411 ANTIN CHEMO INDCD PANCYT 28412 OTH DRG INDCD PANCYTOPNA 28419 OTHER PANCYTOPENIA 99688 COMP TP ORGAN-STEM CELL
V4.4	March 2012	Urinary Tract Infection Admission Rate (PQI 12)	Fiscal Year Coding	Add exclusions for immunocompromised state diagnosis or procedures (PQI Appendix C) Add code: 28411 ANTIN CHEMO INDCD PANCYT 28412 OTH DRG INDCD PANCYTOPNA 28419 OTHER PANCYTOPENIA 99688 COMP TP ORGAN-STEM CELL
V4.4	March 2012	Angina without Procedure Admission Rate (PQI 13)	Fiscal Year Coding	Add exclusions for cardiac procedures (PQI Appendix B) Add code: 1755 TRANSLUM COR ATHERECTOMY 3505 ENDOVAS REPL AORTC VALVE 3506 TRANSPCL REP AORTC VALVE 3507 ENDOVAS REPL PULM VALVE 3508 TRANSAPCL REPL PULM VALVE 3509 ENDOVAS REPL UNS HRT VLV 3826 INSRT PRSR SNSR W/O LEAD

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V4.4	March 2012	Asthma in Younger Adults Admission Rate (PQI 15)	Fiscal Year Coding	Add exclusions for cystic fibrosis and anomalies of respiratory system Add code: 51661 NEUROEND CELL HYPRPL INF 51662 PULM INTERSTITL GLYCOGEN 51663 SURFACTANT MUTATION LUNG 51664 ALV CAP DYSP W VN MISALN 51669 OTH INTRST LUNG DIS CHLD
V4.4	March 2012	Heart Failure Admission Rate (PQI 08)	Software/Documentation	Rename indicator to Heart Failure Admission Rate Rationale: Many patients with heart failure do not experience congestion of the lungs.
V4.4	March 2012	Software	Software/ Documentation	Revised the data step of creating permanent data set containing all records which are deleted from the analysis because key variable values having missing data
V4.4	March 2012	Software	Software/ Documentation	Both SAS and WinQI v4.3 were improperly truncating the (Observed rate)/ (Expected rate) ratio and associated upper confidence bound (95%) to be <= 1.0 in cases where a stratification of the rates was being implemented. This issue was fixed in both SAS and WinQI so that this truncation only applies in cases where no stratification is being performed.
V4.4	March 2012	Software	Software/ Documentation	Sort routine (PROC SORT) was introduced to PQSASA3 programs before merging all the indicators together to sorting problems in SAS whenever user selects multiple stata (e.g. stratifies by age, gender, and age by gender)
V4.4	March 2012	Software	Software/ Documentation	PQSASA2.SAS program was revised to include denominator adjustment when the population count for certain combination of strata was zero.
V4.4	March 2012	Software	Software/ Documentation	WinQI v4.3 did not properly implement a user selection of year 2010 during report generation. This issue was fixed in v4.4 of WinQI.

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V4.4	March 2012	Software	Software/ Documentation	WinQI v4.3 was not properly calculating quarterly rates when requested by the user. This issue was fixed in v4.4 of WinQI.
V4.4	March 2012	Software	Software/ Documentation	SAS v4.3 did not properly handle stratifications where the user requested a two-way stratification that overlapped with a one-way stratification (e.g., Age-by-Gender at the same time as Age by itself). This issue was fixed in v4.4 of SAS.
V4.4	March 2012	Software	Software/ Documentation	WinQI v4.3 and v4.4 do not check for a possible issue with user-defined composite weighting – users must set weights for all possible individual indicators, including zero weights for indicators that are not to be included in the composite. This requirement has been included in the software documentation.
V4.4	March 2012	Software	Software/ Documentation	SAS and WinQI v4.4 remain 32-bit applications developed on a Windows XP operating system. Some limited testing has been performed to ensure that these applications will run successfully under a 64-bit, Windows 7 environment. One additional installation requirement related to administrator rights has been included in the software documentation.
V4.4	March 2012	Software	Software/ Documentation	The software now incorporates state level estimates of diabetes prevalence by age from the CDC National Diabetes Surveillance System, which impacts PDI 15 and PQI 1, 3, 14, and 16.
V4.3	April 29, 2011	Hypertension Admission Rate (PQI 07) Numerator (Exclusion, cardiac procedure)	Coding	Add to numerator exclusion for cardiac procedure 3597 PERC MTRL VLV REPR W IMP 3737 EXC/DEST HRT LES, THRSPC

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V4.3	April 29, 2011	Congestive Heart Failure Admission Rate (PQI 08) Numerator (Exclusion, cardiac procedure)	Coding	Add to numerator exclusion for cardiac procedure 3597 PERC MTRL VLV REPR W IMP 3737 EXC/DEST HRT LES, THRSPC
V4.3	April 29, 2011	Angina Admission Rate (PQI 13) Numerator (Exclusion, cardiac procedure)	Coding	Add to numerator exclusion for cardiac procedure 3597 PERC MTRL VLV REPR W IMP 3737 EXC/DEST HRT LES, THRSPC
V4.3	April 29, 2011	Software (SAS and WinQI) and Documentation	Software/ Documents	PQI #5: Added numerator inclusion for principal diagnosis of asthma, modified numerator and denominator inclusion age to ≥ 40 , and modified title to “Chronic Obstructive Pulmonary Disease or Asthma in Older Adults”
V4.3	April 29, 2011	Software (SAS and WinQI) and Documentation	Software/ Documents	PQI #10: Add numerator inclusion for secondary diagnosis of dehydration and principal diagnosis of hyperosmolality/hyponatremia, gastroenteritis, or acute renal failure. Added code for hyperosmolality/hyponatremia (276.0). Added numerator exclusion for chronic renal failure.
V4.3	April 29, 2011	Software (SAS and WinQI) and Documentation	Software/ Documents	PQI #15: Modified numerator and denominator inclusion to ≤ 40 , modified title to “Asthma in Younger Adults”
V4.3	April 29, 2011	Software (SAS and WinQI) and Documentation	Software/ Documents	PQI #16: Added numerator exclusion for toe amputation (841.1)
V4.3	June 30, 2011	Software (SAS and WinQI) and Documentation	Software/ Documents	Surgical DRG: Added numerator inclusion codes 014 and 015 which were previously assigned to 009.

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V4.3	June 30, 2011	Guide	Software/ Documents	Revised and updated all sections of the guide document to reflect current state of indicators, software and body of evidence.
V4.2	September 30, 2010	Hypertension Admission Rate (PQI 07) Denominator (Exclusion)	Coding	Add procedure codes to denominator exclusion for Cardiac Procedures 17.51 Implantation of rechargeable cardiac contractility modulation (CCM), total system 17.52 Implantation or replacement of cardiac contractility modulation (CCM) rechargeable pulse generator only
V4.2	September 30, 2010	Bacterial Pneumonia Admission Rate (PQI 11) Denominator (Exclusion)	Coding	Add diagnosis codes to denominator exclusion for immunocompromised 279.41 Autoimmune lymphoproliferative syndrome ALPS 279.49 Autoimmune disease, not elsewhere classified
V4.1	December 2, 2009	SAS Software and Documentation	Software/ Documents	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	Software/ Documents	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	Software/ Documents	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	Software/ Documents	PQI #11 – Bacterial pneumonia – added numerator exclusion for diagnosis code of immunocompromised state
V4.0	June 30, 2009	Software and Documentation	Software/ Documents	Cardiac procedure – added procedure codes to the numerator exclusion for cardiac procedures

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V4.0	June 30, 2009	SAS Software and Documentation	Software/ Documents	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	Software/ Documents	Update Benchmarking Data to 2007 – used data from the 2007 SID for computation of benchmarks
V4.0	February 20, 2009	Bacterial Pneumonia Admission Rate (PQI 11) Numerator (Inclusion	Coding	Add diagnosis code to numerator inclusion for bacterial pneumonia (\$ACSBACD) Modify code: 482.41 Methicillin susceptible pneumonia due to Staphylococcus aureus Add code: 482.42 Methicillin resistant pneumonia due to Staphylococcus aureus
V4.0	February 20, 2009	Cardiac procedures	Coding	Add procedure codes to numerator exclusion for cardiac procedures (\$ACSCARP) Add codes: 37.36 Excision or destruction of left atrial appendage (LAA) 37.55 Removal of internal biventricular heart replacement system 37.60 Implantation or insertion of biventricular external heart assist system
V4.0	February 20, 2009	Immunocompromi s ed	Coding	Add diagnosis codes to numerator exclusion for immunocompromised (\$IMMUNID) 199.2 Malignant neoplasm associated with transplanted organ 238.77 Neoplasm of uncertain behavior, post-transplant lymphoproliferative disorder (PTLD) 238.79 Neoplasm of uncertain behavior, other lymphatic and hematopoietic tissues 279.50 Graft-versus-host disease unspecified 279.51 Acute graft-versus-host disease 279.52 Chronic graft-versus-host disease 279.53 Acute on chronic graft-versus-host disease V45.11 Renal dialysis status

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V4.0	February 20, 2009	Hypertension Admission Rate (PQI 07) Numerator (Exclusion)	Indicator Specification	<p>Add numerator exclusion for diagnosis of Stage I-IV kidney disease (\$ACSHY2D) only if accompanied by procedures for preparation for hemodialysis (dialysis access procedures) (\$ACSHYPP).</p> <p>Add codes:</p> <p>403.00 Hypertensive chronic kidney disease, malignant, with chronic kidney disease stage I through stage IV, or unspecified 403.10 Hypertensive chronic kidney disease, benign, with chronic kidney disease stage I through stage IV, or unspecified 403.90 Hypertensive chronic kidney disease, unspecified, with chronic kidney disease stage I through stage IV, or unspecified 404.00 Hypertensive heart and chronic kidney disease, malignant, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified 404.10 Hypertensive heart and chronic kidney disease, benign, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified 404.90 Hypertensive heart and chronic kidney disease, unspecified, without heart failure and with chronic kidney disease stage I through stage IV, or unspecified</p> <p>ONLY if codes:</p> <p>38.95 Venous catheterization for renal dialysis 39.27 Arteriovenostomy for renal dialysis 39.29 Other (peripheral) vascular shunt or bypass 39.42 Revision of arteriovenous shunt for renal dialysis 39.43 Removal of arteriovenous shunt for renal dialysis 39.93 Insertion of vessel-to-vessel cannula 39.94 Replacement of vessel-to-vessel cannula</p>

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V4.0	February 20, 2009	Congestive Heart Failure Admission Rate (PQI 08) Numerator (Inclusion)	Indicator Specification	Drop diagnosis codes from numerator inclusion for hypertension with heart disease and/or renal failure (\$ACSCH2D) ONLY for discharges after 2002Q3 (effective Oct 1, 2002) Delete codes: 402.01 Hypertensive heart disease, malignant, with heart failure 402.11 Hypertensive heart disease, benign, with heart failure 402.91 Hypertensive heart disease, unspecified, with heart failure 404.01 Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified 404.03 Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease 404.11 Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified 404.13 Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease 404.91 Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified 404.93 Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease
V4.0	February 20, 2009	Bacterial Pneumonia Admission Rate (PQI 11) Numerator (Exclusion)	Indicator Specification	Add numerator exclusion for diagnosis code of immunocompromised state (\$IMMUNIP)

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V4.0	February 20, 2009	Cardiac Procedure	Indicator Specification	Add procedure codes to the numerator exclusion for cardiac procedures (\$ACSCARP) Add codes: 37.61 Implant of pulsation balloon 37.62 Insertion of non-implantable heart assist system 37.63 Repair of heart assist system 37.64 Removal of heart assist system 37.65 Implant of external heart assist system 37.66 Insertion of implantable heart assist system
V3.2	March 10, 2008		Coding	There were no changes to ICD-9-CM or DRG codes
V3.2	March 10, 2008	None	Software/ Documents	No change to software or documents
V3.1a	March 16, 2007	SAS Software (PQSASA2)	Software/ Documents	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	Software/ Documents	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. 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)	Software/ Documents	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.

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V3.1	March 12, 2007	Software (SAS and Windows), Software Documentation and Covariates document	Software/ Documents	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	Software/ Documents	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	Software/ Documents	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)	Software/ Documents	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. 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) 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.
V3.0b	May 1, 2006	Technical Specifications	Software/ Documents	Revised denominator description for PQI #9. Deleted codes 59000 and 59001 from numerator of PQI #10. Corrected code numbers in denominator of PQI #13.
V3.0b	May 1, 2006	All documents	Software/ Documents	Edited PDF files to make URLs in header or footnotes clickable links.
V3.0a	February 20, 2006	Hypertension Admission Rate (PQI 07) (Exclusion)	Coding	Added new (FY2006) codes 00.66 "Percutaneous Transluminal Coronary Angioplasty" and 37.41 "Implantation of prosthetic cardiac support device around the heart" to the cardiac procedure exclusion.

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V3.0a	February 20, 2006	Congestive Heart Failure Admission Rate (PQI 08) (Exclusion)	Coding	Added new (FY2006) codes 00.66 "Percutaneous Transluminal Coronary Angioplasty" and 37.41 "Implantation of prosthetic cardiac support device around the heart" to the cardiac procedure exclusion.
V3.0a	February 20, 2006	Dehydration (PQI 10) Numerator	Coding	Added new (FY2006) codes 276.50 "Volume depletion, unspecified", 276.51 "Dehydration", and 276.52 "Hypovolemia" to the inclusion criteria.
V3.0a	February 20, 2006	Urinary Tract Infection (PQI 12) Numerator (Exclusion)	Coding	Added exclusion for any diagnosis code of kidney/urinary tract disorder and for any diagnosis code of immunocompromised state.
V3.0a	February 20, 2006	Angina without Procedure Admission Rate (PQI 13) (Exclusion)	Coding	Added new (FY2006) codes 00.66 "Percutaneous Transluminal Coronary Angioplasty" and 37.41 "Implantation of prosthetic cardiac support device around the heart" to the cardiac procedure exclusion.
V3.0a	February 20, 2006	Asthma (PQI 15) Numerator (Exclusion)	Coding	Added exclusion for any diagnosis code of cystic fibrosis and anomalies of the respiratory system.
V3.0a	February 20, 2006	Guide, SAS and SPSS Software Documentation	Software/ Documents	Removed Appendices that were copies of Change Log and Indicator Changes documents. Added Appendix of Links to all PQI documents and additional resources.
V3.0a	February 20, 2006	Guide	Software/ Documents	Added explanation of changes to area definitions and new stratification options. Changed "MSA" to "Metro Area" throughout the document. Added section "Using Different Types of QI rates."

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V3.0a	February 20, 2006	Software, Guide, and Technical Specifications	Software/ Documents	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. 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. 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	Software/ Documents	Changed name of data element HOSPSTCO to PSTCO. Added parameter POPYEAR to specify year for Census data. 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)	Software/ Documents	Changed the computation of the risk-adjusted rate to use a proportional formula for indirect standardization.
V3.0a	February 20, 2006	Software (SAS)	Software/ Documents	Added a computation of confidence limits.
V3.0a	February 20, 2006	Software (SAS and SPSS), Software Documentation and Covariates document	Software/ Documents	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	Software/ Documents	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.

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V3.0	November 30, 2005	Guide	Software/ Documents	Moved Appendix A into new document <i>Prevention Quality Indicators Technical Specifications</i> . Removed Appendix B.
V3.0	November 30, 2005	Software (SAS and SPSS), Software Documentation, Guide, Technical Specifications, and Analysis & Interpretation	Software/ Documents	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. 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. Dropped PQI #4 and PQI #6, which are being moved into the new Pediatric Quality Indicators module. Revised PQI #2, PQI #10, PQI #11, and PQI #12 to exclude pediatric populations. Added exclusion for cystic fibrosis and anomalies of the respiratory system to PQI #15 (Asthma). 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)	Software/ Documents	Removed section "Interpreting the Results." 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)	Software/ Documents	Added the 2004-06 census data and condition-specific module file (e.g., QICTYCy.TXT)
V2.1 R4	November 24, 2004		Coding	There were no ICD-9-CM or DRG coding changes that affected indicator definitions.
V2.1 R4	November 24, 2004	Software (SAS and SPSS), Software Documentation, and Guide	Software/ Documents	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. Added new module that calculates condition-specific rates for the diabetes PQIs across stratifiers.

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V2.1 R4	November 24, 2004	Software Documentation (SAS and SPSS)	Software/ Documents	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)	Software/ Documents	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	Software/ Documents	Rearranged the sequence of PQIs to place in numerical order.
V2.1 R4	November 24, 2004	Software (SAS)	Software/ Documents	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	Bacterial Pneumonia Admission Rate (PQI 11) Numerator (Exclusion, sickle cell anemia and HB-S disease)	Coding	New codes (FY 2004) 282.41, 282.42, 282.64, 282.68 were added to the numerator exclusion definition of HB-S and sickle cell anemia. This change may result in a comparability issue with previous years since 282.4 was not previously included in the sickle cell definition.
V2.1 R3	January 9, 2004	Adult Asthma Admission Rate (PQI 15) Numerator	Coding	New codes (FY 2004), 493.81 “Exercised Induced Bronchospasm” and 493.82 “Cough Variant Asthma” were added to the numerator definition of asthma
V2.1 R3	January 9, 2004	Pediatric Asthma Admission Rate (PQI 04) Numerator	Coding	New codes (FY 2004), 493.81 “Exercised Induced Bronchospasm” and 493.82 “Cough Variant Asthma” were added to the numerator definition of asthma
V2.1 R3	January 9, 2004	Congestive Heart Failure Admission Rate (PQI 08) Numerator	Coding	The new codes (FY 2003), 428.20-3, “Systolic heart failure,” 428.30-3, “Diastolic heart failure,” and 428.40-3, “Combined systolic and diastolic heart failure” were added to the including definition of congestive heart failure.

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V2.1 R3	January 9, 2004	Congestive Heart Failure Admission Rate (PQI 08) Numerator (Exclusion, cardiac procedures)	Coding	<p>The new code (FY 2003), 36.07, “Insertion of drug-eluting coronary artery stent(s) Endograft(s), Endovascular graft(s), Stent graft(s)” was added to the exclusion definition of cardiac procedures.</p> <p>The new codes (FY 2003), 00.50-00.54, “implantation or replacement of transvenous lead” were added to the exclusion definition of cardiac procedures.</p> <p>All new codes (FY 2004) in the new category heart replacement procedures (37.5), including 37.51, “heart transplantation,” 37.52 “implantation of total replacement heart system,” 37.53 “replacement or repair of thoracic unit of total replacement heart system,” and 37.54 “replacement or repair of other implantable component of total replacement heart system” were added to the numerator exclusion definition of cardiac procedure. Note that 37.5, previously used for heart transplantation procedure is invalid as of October 2003. This code was retained in the software for backward comparability.</p>
V2.1 R3	January 9, 2004	Hypertension Admission Rate (PQI 07) Numerator (Exclusion, cardiac procedures)	Coding	<p>The new code (FY 2003), 36.07, “Insertion of drug-eluting coronary artery stent(s) Endograft(s), Endovascular graft(s), Stent graft(s)” was added to the exclusion definition of cardiac procedures.</p> <p>The new codes (FY 2003), 00.50-00.54, “implantation or replacement of transvenous lead” were added to the exclusion definition of cardiac procedures.</p> <p>All new codes (FY 2004) in the new category heart replacement procedures (37.5), including 37.51, “heart transplantation,” 37.52 “implantation of total replacement heart system,” 37.53 “replacement or repair of thoracic unit of total replacement heart system,” and 37.54 “replacement or repair of other implantable component of total replacement heart system” were added to the numerator exclusion definition of cardiac procedure. Note that 37.5, previously used for heart transplantation procedure is invalid as of October 2003. This code was retained in the software for backward comparability.</p>

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V2.1 R3	January 9, 2004	Angina Admission Rate (PQI 13) Numerator (Exclusion, cardiac procedures)	Coding	<p>The new code (FY 2003), 36.07, “Insertion of drug-eluting coronary artery stent(s) Endograft(s), Endovascular graft(s), Stent graft(s)” was added to the exclusion definition of cardiac procedures.</p> <p>The new codes (FY 2003), 00.50-00.54, “implantation or replacement of transvenous lead” were added to the exclusion definition of cardiac procedures.</p> <p>All new codes (FY 2004) in the new category heart replacement procedures (37.5), including 37.51, “heart transplantation,” 37.52 “implantation of total replacement heart system,” 37.53 “replacement or repair of thoracic unit of total replacement heart system,” and 37.54 “replacement or repair of other implantable component of total replacement heart system” were added to the numerator exclusion definition of cardiac procedure. Note that 37.5, previously used for heart transplantation procedure is invalid as of October 2003. This code was retained in the software for backward comparability.</p>
V2.1 R3	January 9, 2004	Software (SAS and SPSS) and Guide	Software/ Documents	<p>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.</p>

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V2.1 R3	January 9, 2004	Software (SAS and SPSS)	Software/ Documents	<p>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.</p> <p>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 indicators.</p>
V2.1 R3	January 9, 2004	Software (SAS and SPSS)	Software/ Documents	<p>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.</p> <p>All parameter files were rerun using the updated software and Year 2000 HCUP SID data.</p> <p>Population files for 2000, 2001 and 2002 were re-estimated using the latest available census files</p>
V2.1 R3	January 9, 2004	Software – SPSS	Software/ Documents	<p>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.</p>

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V2.1 R2	January 10, 2003	Software Documentation (SAS and SPSS)	Software/ Documents	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. 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.
V2.1 R2	January 10, 2003	Software (SAS and SPSS)	Software/ Documents	The county-to-MSA mapping for Waller County in Texas was corrected by assigning the value of 3362 for the Houston-Galveston MSA. The default number of ICD-9-CM diagnoses was changed from 5 to 30. The default number of ICD-9-CM procedures was changed from 4 to 30. The ICD-9 coding was updated to reflect changes through FY 2002 (September 30, 2002). 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). Additional ASCII text files with Census residential population numbers for 2000 and 2001 were included in the module. 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. The formulation of smoothed rates was corrected so that missing values would be generated when appropriate, rather than zeros. 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	Software/ Documents	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. 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	Software/ Documents	<p>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.</p> <p>For the definition of Lower-Extremity Amputation among Patients with Diabetes, under Outcomes of Interest, "Discharges with ICD-9-CM <i>principal diagnosis</i> codes" was changed to "Discharges with ICD-9-CM <i>procedure</i> codes".</p>
V2.1 R1	April 17, 2002	Software documentation	Software/ Documents	<p>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.</p>