Patient Safety Indicators (PSI) Log of Revisions to PSI Documentation and Software

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Version 4.3a is a maintenance release of Version 4.3. The differences between the two versions are:

- Version 4.3a includes Version 29 of the Limited License edition of the 3M^{TM} APR-DRG Grouper. This grouper corrects an issue found in Version 28 of the Limited License edition of the 3M^{TM} APR-DRG Grouper. The grouper is only used with the Inpatient Quality Indicator (IQI) mortality measures. Version 4.3 includes Version 28 of the Limited License edition of the 3M^{TM} APR-DRG Grouper, which was incorrectly assigning a Risk of Mortality (ROM) subclass for cases dated on or after 10/1/10.
- Version 4.3a allows users to calculate area-level indicators for years 2010 and 2011, correcting an issue previously identified in Version 4.3.

All other aspects of the software, including measure specifications, remain the same. Thus this document (related to Version 4.3) remains unchanged.

AHRQ QI, Patient Safety Indicators (PSI),
Log of Revisions to PSI Documentation and Software
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The following table summarizes all of the revisions made to the Patient Safety Indicators (PSI) documentation and software since the original release of the Version 2.1 software and documents in March 2003. The table lists the 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
V4.3	April 29, 2010	Software (SAS and WinQI) and Documentation	Updated ICD-9-CM codes for FY2011 and made specification code changes (see FY2011 Coding and Specification Changes)
V4.3	April 29, 2010	Software (SAS and WinQI) and Documentation	PSI #2: Removed numerator inclusion for Low Mortality Diagnosis Related Group (DRG121 & 122, MS-DRG 280, 281, 282). Added denominator exclusiosn for missing discharge disposition or transfer to acute care facility.
V4.3	April 29, 2010	Software (SAS and WinQI) and Documentation	PSI #3: Modified denominator exclusion for diagnosis of stage I and II pressure ulcers to capture potential diagnosis of stage III or IV ulcers.
V4.3	April 29, 2010	Software (SAS and WinQI) and Documentation	PSI #4: Removed numerator inclusion for diagnosis of deep vein thrombosis (451.9, 453.8, 453.9). Added denominator exclusiosn for lung cancer procedures (32.39, 32.49, 32.59).
V4.3	April 29, 2010	Software (SAS and WinQI) and Documentation	PSI #6 and 22: Added denominator exclusiosn for thoracic procedures (43.5, 43.99, 44.67). Removed denominator exclusion for thoracic procedures (33.26, 33.28, 34.24, 77.81, 77.91)
V4.3	April 29, 2010	Software (SAS and WinQI) and Documentation	PSI #11: Added denominator exclusion for esophageal resection procedures (MDC 4), lung cancer procedure (32.39, 32.49, 32.59), ENT/neck procedures (CCS 33), degenerative neurological disorder (CCS 653)
V4.3	April 29, 2010	Software (SAS and WinQI) and Documentation	PSI #12: Removed numerator inclusion for diagnosis of deep vein thrombosis (451.9, 453.8, 453.9)
V4.3	June 30, 2011	Software (SAS and WinQI) and Documentation	Surgical DRG: Added numerator inclusion codes 014 and 015 which were previously assigned to 009.

Patient Safety Indicators (PSI)
Log of Revisions to PSI Documentation and Software

Version/ Revision number	Date	Component	Changes
V4.3	June 30, 2011	Guide	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	Software (SAS and WinQI) and Documentation	Updated ICD-9-CM and DRG codes for FY2010 (see FY2010 Coding updates document).
V4.1a	July 2, 2010	Software (SAS only) and Documentation	PSI #08 – Removed the following diagnosis codes from the POISONING exclusion set: 96561-POIS-PROPRIONIC ACID DERV and 96569-POISON-ANTHREUMATIC NEC.
V4.1	December 2, 2009	Documentation	PSI #17 – 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 (SAS and Windows) and Documentation	PSI #1 – Complications of Anesthesia – removed this indicator from the Patient Safety Indicators (see the AHRQ QI Comparative Reporting Guide for more information). Results for this indicator (based on V 3.2 specifications) can be viewed in Windows application under the Experimental tab.
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	PSI #3 – Pressure Ulcer (formerly Decubitus Ulcer) – added diagnosis code to denominator exclusion for hemi- and paraplegia (334.1 hereditary spastic paraplegia)
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	PSI #6 and #22 – Iatrogenic Pneumothorax – 1) replaced the DRG denominator exclusion for cardiac surgery with procedure code denominator exclusion for cardiac procedures; 2) added procedure codes to denominator exclusion for thoracic procedures
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	PSI #7 and #21 – Central Venous Catheter-Related Bloodstream Infection – 1) renamed the indicator from "Selected infections due to medical care"; 2) applied ICD-9-CM codes 996.62 and 999.3 Version 24 or before and 999.31 Version 25 and after

Version/ Revision number	Date	Component	Changes
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	PSI #8 – Postoperative hip fracture – 1) added procedure codes to the denominator exclusion for hip fracture repair; 2) added diagnosis codes to denominator exclusion for stroke; 3) added diagnosis codes to denominator exclusion for coma; 4) removed diagnosis codes from denominator exclusion for poisonings 5) removed diagnosis codes from denominator exclusion for delirium and other psychoses
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	PSI #10 – Postoperative Physiologic and Metabolic Derangements – replaced the DRG denominator exclusion for cardiac arrhythmia with diagnosis code denominator exclusion for cardiac arrhythmia; 2) added diagnosis codes to denominator exclusion for chronic kidney disease; 3) added diagnosis codes to denominator exclusion for hemorrhage
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	PSI #11 – Postoperative respiratory failure – 1) added denominator exclusion for craniofacial anomalies with 1) a procedure code for laryngeal or pharyngeal surgery or 2) a procedure on face and a diagnosis code of craniofacial abnormalities
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	PSI #13 – Postoperative sepsis – 1) remove diagnosis code (785.59 Shock without mention of trauma, other) from numerator inclusion for sepsis for discharges after 2004Q4 (effective October 1, 2004)
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	Multiple – Infection – 1) removed diagnosis codes for non-bacterial infections from denominator exclusion for infection; 2) added diagnosis code to denominator exclusion for infection (078.3 CAT-SCRATCH DISEASE)
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	PSI #17 – Birth Trauma – 1) added code to numerator (7675 FACIAL NERVE INJ-BIRTH); 2) dropped code from numerator (7679 BIRTH TRAUMA NOS); 3) Added exclusion for any diagnosis of birth weight less than 2000g; 4) Added exclusion for any diagnosis of Injury to Brachial Plexus (7676 BRACH PLEXUS INJ-BIRTH); 5) Added exclusion for any diagnosis of Osteogenesis Imperfecta (75651 OSTEOGENESIS IMPERFECTA)

Version/ Revision number	Date	Component	Changes
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	PSI #18 – OB Trauma – with Instrumentation – 1) removed procedure code inclusion criteria; 2) Included both CMS-DRG and MS-DRG inclusion criteria
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	PSI #19 – OB Trauma – without Instrumentation – 1) removed procedure code inclusion criteria; 2) Included both CMS-DRG and MS-DRG inclusion criteria
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	PSI #20 – OB Trauma – removed this indicator from the Patient Safety Indicators (See the AHRQ QI Comparative Reporting Guide for more information) Results for this indicator (based on V 3.2 specifications) can be viewed in Windows application under the Experimental tab.
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	Multiple – Major Operating Room Procedures – removed selected procedure codes from the denominator inclusion for major operating room procedures
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	Medical DRGs – For discharges after 2007Q4 (effective October 1, 2007), replaced the DRG denominator inclusion for medical discharges with the MS-DRG denominator inclusion for medical discharges.
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	Surgical DRGs – For discharges after 2007Q4 (effective October 1, 2007).replaced the DRG denominator inclusion for surgical discharges with the MS-DRG denominator inclusion for surgical discharges
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	Multiple Indicators – removed DRG denominator exclusions for cancer, trauma, infection and immunocompromised state
V4.0	June 30, 2009	Software (SAS and Windows) and Documentation	Multiple Indicators – Present on Admission methodology change. POA data element is required. For users without POA data, the model will incorporate the likelihood that the numerator event or the co-morbidity was present on admission. For users with POA data, the model will be based on that data element.

Version/ Revision number	Date	Component	Changes
V4.0	June 30,2009	Software (SAS and Windows) 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	Software (SAS and Windows) and Documentation	Update Benchmarking Data to 2007 – used data from the 2007 SID for computation of benchmarks
V 3.2	March 10, 2008	Software (SAS and Windows) and Documentation	1. PSI #15 (Accidental puncture or laceration) – Added an exclusion for discharges with an ICD-9-CM procedure code for spine surgery 2. PSI #4 (Death among Surgical Inpatients with Serious Treatable Complications) – Revised the denominator to surgical patients, removed Acute Renal Failure from the definition and revised the inclusion and exclusion criteria 3. PSI #16 (Transfusion Reaction) – Revised the indicator from a rate to a count 4. PSI #5 (Foreign Body left in During Procedure) – Revised the indicator from a rate to a count and to require the POA flag
V 3.1a	March 16, 2007	SAS Software and Documentation	Added program to calculate the PSI composite measure. The new files are PSI_COMPOSITE.SAS and MSXPSC31.TXT.
V 3.1a	March 16, 2007	SAS Software	1. Amended the aggregation algorithm to correctly sum the numerator and denominator counts across stratifiers. (PSSASA2). 2. Amended the expected rate calculation to correctly assign the modified DRG to the intercept term. (PSFMTS, PSSASP3)
V 3.1	March 12, 2007	Software, Software Documentation, Guide, and Technical Specifications	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.[1] 2. The years for which the ICD-9-CM and DRG codes defining PSIs 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.

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[1] *Fiscal year 2007 coding changes, February 2007*, available at
http://www.qualityindicators.ahrq.gov/psi_download.htm

Version/ Revision number	Date	Component	Changes
V 3.1	March 12, 2007	Software (SAS and Windows) and Documentation	1. The FY2007 release of the PSI includes an option to incorporate the Present on Admission indicator into the specifications. 2. Added Data Elements DXATADMIT1 – DXATADMIT30 to indicate whether the corresponding diagnosis (i.e., DX1 – DX30) was Present on Admission. 3. Added an option for using weighted data (i.e., discharge weights like those used in the National Inpatient Sample). 4. Added data element DISCWT to hold weight to assign to discharge.
V 3.1	March 12, 2007	Software (SAS and Windows), Software Documentation and Covariates document	1. Updated the coefficients used in the calculation of expected and risk-adjusted rates to the 2002-2004 reference population. 2. Based on recommendations of the Risk Adjustment and Hierarchical Modeling (RAHM) Workgroup, computed covariates using logistic regression model with a hospital 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. 3. Updated Covariates document to include the POA coefficients.
V 3.1	March 12, 2007	Software (SAS and Windows)	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. The AHRQ co-morbidity software was incorporated unchanged, except for minor syntax changes to conform to our variable names. Also, one obsolete ICD-9-CM code, "347 ", was added to insure backwards compatibility to 2002 for the NEURO co-morbidity. 3. The syntax will compute risk-adjusted rates and observed-to-expected ratios for the pre-defined set of stratification variables (e.g., age, gender, payer, race). When stratifications other than hospital or area are selected, the RPPSxx variables and their confidence intervals are observed/expected ratios to avoid confounding with risk adjustment variables

Version/ Revision number	Date	Component	Changes
V 3.1	March 12, 2007	Software (SAS and Windows) and Technical Specifications	1. Revised inclusion criteria for Death in Low Mortality DRGs (PSI #2) based on analysis of 2002-2004 data. Deleted DRG 061 and added codes 353, 375, 425, 497, 498, and 518. 2. Revised numerator inclusion criteria for Postoperative Hemorrhage and Hematoma (PSI #9) to require a diagnosis of hemorrhage or hematoma and a procedure for control of hemorrhage or drainage of hematoma. Impact: The rate increases by about 25%.
V 3.1	March 12, 2007	SAS Software and Documentation	1. Added flag &POAFG to CONTROL_PSI.SAS to indicate whether Present on Admission data is available. 2. Added alternative POA parameter files of risk-adjustment covariates and population rates using 2002-2004 SID data from California and New York. 3. Co-morbidity software that was developed and is maintained by AHRQ has been integrated into PSI syntax, relieving users of the need to run this software prior to PSSAS1.SAS and then to match the results to their input discharge data.
V 3.0a	May 1, 2006	Technical Specifications	1. Edited denominator specification of PSI #2 to reflect SAS software (Windows and SPSS updated). 2. Corrected denominator specification of PSI #4 (Sepsis). 3. Edited denominator specification of PSI #6, PSI #15, and PSI #17 for clarity. 4. Edited exclusion specification of PSI #10 to reflect SAS software (Windows and SPSS updated). 5. Edited immunocompromised state specification (multiple indicators) to reflect SAS software (Windows and SPSS updated).

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V 3.0a	May 1, 2006	SAS Software and Documentation	1. CONTROL_PSI.SAS – Renamed %COMOB to %COMOBFG. 2. PSSAS1.SAS – SAS – Renamed %COMOB to %COMOBFG. 3. PSASA2.SAS – Fixed CSV column header for OAPS27. 4. PSSASP3.SAS – Changed age parameter for PSI #17 from 2 to 7 to prevent run error when age is invalid (note: users should verify cases in denominator have age = 0). 5. Added SAS syntax file to merge user data file with file created using updated AHRQ comorbidities software.
V 3.0a	May 1, 2006	Guide	Edited denominator specification of PSIs #6, 13-15, and 17 for clarity.
V 3.0a	May 1, 2006	All documents	Edited PDF files to make URLs in header or footer clickable links.
V 3.0	February 20, 2006	Software, Software Documentation, Guide, and Technical Specifications	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 PSIs 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 PSIs #27-29 and revised PSIs #18-20 to limit OB Trauma numerator definitions to 3rd and 4th degree lacerations. 4. Added area-level version of Postoperative Hemorrhage or Hematoma as PSI #27.
V 3.0	February 20, 2006	Software, Guide, and Technical Specifications	1. Revised multiple indicators to exclude pediatric populations (age less than 18). Specifically, PSIs #3-4, 6, 8-15, 22, 25, and 27. 2. Revised multiple indicators to exclude pediatric populations (age less than 18) unless MDC 14. Specifically, PSIs #1-2, 5, 7, 16, 21, and 23-24.

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V 3.0	February 20, 2006	Software, Guide, and Technical Specifications	3. Modified denominator for PSI #3 (decubitus ulcer) to exclude transfers from acute care facility, spina bifida or anoxic brain damage diagnosis, and debridement or pedicle graft procedures.
			4. Modified criteria for PSI #6 and PSI #22 (iatrogenic pneumothorax) to drop exclusion for trauma and add exclusions for chest trauma, diaphragmatic surgery repair, and pleural effusion.
			5. Modified criteria for PSI #7 (selected infections due to medical care) and PSI #14 (postop wound dehiscence) to exclude length of stay less than 2 days.
			6. Modified criteria for PSI #8 (postop hip fracture) to exclude hip fracture repair that occurs before or on the same day as the major operating room procedure code.
			7. Modified criteria for PSI #10 (postop physiological and metabolic derangement) to exclude principal diagnosis of chronic renal failure in cases of acute renal failure.
			8. Modified specification for PSI #11 (postop respiratory failure) to add procedure codes for postoperative reintubation procedures based on number of days after major operating room procedure to numerator and exclude neuromuscular disorder diagnosis from denominator.
			9. Modified denominator of PSI #14 and PSI #24 (postop wound dehiscence) to exclude immunocompromised state.
			10. Modified denominator of PSI #17 (birth trauma) to limit to in-hospital live births admitted between 0 and 28 days of age.
			11. Modified criteria for PSI #18 – PSI #20 (birth trauma) to limit numerator to 3rd and 4th degree lacerations.

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V 3.0	February 20, 2006	Software, and Technical Specifications	1. Added diagnosis codes 785.52 (Septic shock), 785.59 (Other shock without mention of trauma), and 998.0 (Postoperative shock) to list of diagnosis codes for Sepsis (PSI #4 and PSI #13.) 2. Added code 586 (Renal failure, unspecified) and 997.5 (Urinary complications) to numerator specification for acute renal failure in PSI #10 (postop physiological and metabolic derangement.) 3. Revised list of diagnosis codes included in diagnosis of immunocompromised states (PSI #2, 4, 7, 13-14, 23-24). 4. Added diagnosis codes to definition of infection used as denominator exclusion for PSI #4 (FTR) and PSI #13 (postop sepsis).
V 3.0	February 20, 2006	Guide	1. Moved Appendix A into new document *Patient Safety Indicators Technical Specifications*. 2. Removed Appendix B. 3. Added new section "Using Different Types of QI Rates." 4. Added explanation of changes to area definitions and new stratification options. 5. Changed "MSA" to "Metro Area" throughout the document.
V3.0	February 20, 2006	Guide, Software Documentation, Guide, and Technical Specifications	1. Removed Appendices that were copies of Change Log and Indicator Changes documents. 2. Added Appendix of Links to all IQI documents and additional resources.
V 3.0	February 20, 2006	Software Documentation (SAS and SPSS)	1. Amended Table 2 to add variables for expected, lower and upper CI levels, and standard error of smoothed rate. 2. Amended Table 3 to include the new 1995-2006 census data (POP95TO06.TXT). 3. Removed section "Interpreting the Results". 4. Replaced example printouts with tables explaining contents of columns in printouts.

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V 3.0	February 20, 2006	Software and Software Documentation (SAS only)	1. Removed outdated HCUP comorbidity program. 2. Advised users to run HCUP Comorbidity Software, Version 3.0 as a separate program before running PSIs if risk-adjusted rates are desired. 3. Amended Table 4 to specify that AHRQ Comorbidity Variables are required to generate risk-adjusted rates.
V 3.0	February 20, 2006	Software	1. Added the 1995-2006 Census data (e.g., POP95TO06.TXT). 2. Updated the covariates to 3M APR-DRG Version 20.0 (i.e., COVIQP30.TXT) 3. Changed the computation of the risk-adjusted rate to use a proportional formula for indirect standardization. 4. Added a computation of confidence limits. 5. Changed name of data element HOSPSTCO to PSTCO. 6. Added parameter POPYEAR to specify year for Census data.
V 3.0	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.
V 2.1 R3a	February 15, 2005	Software (SAS and SPSS), Software Documentation and Covariates document	Updated the coefficients used in the calculation of expected and risk-adjusted rates to the 2002 reference population. NOTE: The Guide to Patient Safety Indicators, Operating Room Procedure Codes, and Fiscal Year 2005 Coding Changes documents were not updated and Revision 3 remains the current version.
V 2.1 R 3	January 17, 2005	Software (SAS and SPSS) and Guide	Modified documentation to reflect changes in indicators associated with ICD-9-CM coding updates for FY 2005 (effective 10-1-2004). See separate documentation on ICD-9 coding updates for specific details.

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V 2.1 R 3	January 17, 2005	Guide	1. Updated the provider, area and population rates in Table 1 and Table 2 and the detailed evidence section using data from the 2002 HCUP SID files. 2. In the detailed evidence section, added a cross reference from each indicator description to the indicator's detailed definition in Appendix A. 3. Included Appendix A titles of detailed definitions in the Table of Contents. 4. Removed the Operating Room Procedure Codes from Appendix C and reorganized the Appendices. The Operating Room Procedure Codes are now provided as a separate downloadable document.
V 2.1 R 3	January 17, 2005	Software (SAS and SPSS)	1. Added the 2003 census data (i.e., QICTY03.TXT) 2. Added optional data elements YEAR (year of patient discharge) and DQTR (calendar quarter of patient discharge) to the specifications of the input file. 3. Added new user control parameter YEARQTR to CONTROL_PSI.SAS and PSSPS1.SPS. The default setting for this parameter in the syntax is 0. If the data elements YEAR and DQTR are available in the input data file the parameter would be set to 1. Note: If available, these data elements are used to implement a coding change to Postoperative Wound Dehiscence (PSI #14) that adds ICD-9-CM code 44.99 to the denominator for discharges occurring on or after 10/1/2004. However, ICD-9 code 44.99 will not be retained in the denominator if the data elements year and quarter of discharge are not available or if the user selects the option not to retain code 44.99 for purposes of trending over time.
V 2.1 R 3	January 17, 2005	Software Documentation (SAS and SPSS)	1. Table 3 was amended to include the 2003 census data (i.e., QICTY03.TXT). 2. Added instructions for setting new user control parameter YEARQTR to CONTROL_PSI.SAS and PSSPS1.SPS. 3. Added descriptions of optional data elements YEAR (year of patient discharge) and DQTR (calendar quarter of patient discharge) to Table 4.

Version/ Revision number	Date	Component	Changes
V 2.1 R 2a	November 19, 2004	Software (SAS)	Corrected syntax for the option to export program output of PSSASP2.SAS and PSSASP3.SAS to comma-delimited files that can then be read by Excel. NOTE: The changes do not affect the SPSS syntax.
V 2.1 R 2a	November 19, 2004	Software (SAS and SPSS)	Updated zip files to exclude the QICTYAxx.TXT census files, which are not required for risk adjustment for the PSI module.
V 2.1 R 2a	November 19, 2004	Covariates	Revised to include additional columns (i.e. the number of covariates and the odds ratio) and to correct the covariate labels. NOTE: The changes do not affect the covariate values or the calculation of risk-adjusted rates.

Version/ Revision number	Date	Component	Changes
V 2.1 R 2	October 22, 2004	Guide	1. Modified documentation to reflect changes in indicators associated with ICD-9-CM coding updates for FY 2004 (effective 10-1-2003). See separate documentation for specific details. 2. Changed syntax of "hospital-level" to "provider-level" throughout the documentation. 3. Added PSI number to each Indicator name. 4. Updated empirical results for Table 1, and limited contents to Provider-level PSIs. 5. Added Table 2, listing Area-level PSIs. 6. Added caption for Table 3, Indicators and Use of External Cause-of-Injury Codes. 7. Modified PSI #2 (death in low mortality DRGs). The indicator is reported as a single measure, but also stratified by type of DRG: adult medical, pediatric medical, adult surgical (with OR procedure), adult surgical (without OR procedure), pediatric surgical (with OR procedure), pediatric surgical (without OR procedure), obstetric and psychiatric. A list of low mortality DRGs by type is included PSI Guide. Impact: Among the low mortality DRGs, about 25% of the discharges and 60% of the deaths are "adult medical" DRGs. Psychiatric DRGs also have a higher share of deaths (10%) than discharges (6%). Death among the other DRG types is very rare (0.1% or less). Few low mortality surgical DRGs do not have an operating room procedure, so the adult or pediatric surgical DRG (without OR procedure) will generally be missing or zero for most hospitals. 8. Modified PSI #14, Postoperative Wound Dehiscence, to include only OR procedures in the definition of abdominopelvic surgery. Impact: Small (less than 1%) decrease in the denominator and resulting small increase in the rate due to exclusion of a low-risk procedure.

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			9. Modified PSI #17, Birth Trauma, to exclude preterm infants with subdural or cerebral hemorrhage or osteogenesis imperfecta infants with injury to skeleton from the numerator only. NOTE: The infants remain in the population at risk for other types of birth trauma.
			Impact: Small (less than 1%) increase in the denominator and resulting small decrease or no impact in the rate (i.e. the risk of other types of birth trauma for these two populations is less than or no different than for other births).
			10. Added three new Indicators #27-29, to include third-degree lacerations for each of three types of delivery: Vaginal with and without instruments, and Cesarean.
			Impact: The rate for OB Trauma is generally 5-10% higher when including 3rd degree lacerations
			11. Limited the surgical DRG inclusion criteria to major OR procedures for PSI #1, 8-13, all of which deal with postoperative illness or injury.
			Impact: Medium (1-4%) decrease in the denominator. The impact on the rate varies by indicator. PSIs 1, 8 and 9 have a medium (1-3%) increase in the rate. PSIs 10 and 12 have a small (less than 1%) decrease in the rate. PSIs 11 and 13 have a medium (3-4%) decrease in the rate.
			12. Modified PSIs #1, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15. 16 to exclude discharges with a PSI-defining secondary diagnosis and a different PSI-defining principal diagnosis (but within the same PSI definition).
			Impact: Small (less than 1%) decrease in the denominator. The impact on the rate varies by indicator. PSIs 1, 3, 6, 7, 8, 10, 11, 13 and 16 have a small (less than 1%) increase in the rate. PSI 9 has a small (less than 1%) decrease in the rate. PSI 15 has a medium (2-3%) decrease in the rate. PSIs 5 and 12 have a large (5-9%) decrease in the rate.

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			13. Modified PSIs #8, 9, 11, 12 to exclude discharges where the only OR procedure is a PSI-related procedure. Impact: Small (less than 1%) decrease in the denominator. The impact on the rate varies by indicator. PSI 11 has a small (less than 1%) decrease in the rate. PSI 9 has a medium (1-2%) decrease in the rate. PSIs 8 and 12 have a large (15-65%) decrease in the rate. 14. Modified PSIs #8, 9, 11, 12, 14 to exclude discharges where a PSI-related procedure precedes the denominator-defining OR procedure. Impact: Small (less than 1%) decrease in the denominator. The impact on the rate varies by indicator. PSI 9 has a large (65-70%) increase in the rate. PSIs 11 and 12 have a small (less than 1%) decrease in the rate. PSI 8 has a medium (3-4%) decrease in the rate. PSI 14 has a large (8-9%) decrease in the rate. 15. Modified Area level PSI #24, Postoperative Wound Dehiscence, to drop the requirement that the wound reclosure occurs in a discharge with a procedure code of abdominopelvic surgery. Impact: Numerator increases by about 40%. 16. Added code 72.79 to the definition of instrument-assisted delivery in PSI #18, 19. Impact: Transfers about 33% of the denominator from PSI 19 to PSI 18. Because the OB Trauma rate for these cases is higher than average for PSI 19 and lower than average for PSI 18, and because the OB Trauma rate for PSI 19 is lower than PSI 18, the rate for both indicators decreases by 3-10%.

Version/ Revision number	Date	Component	Changes
V 2.1 R 2	October 22, 2004	Software (SAS and SPSS)	1. Implemented syntax changes associated with ICD-9-CM coding updates from FY 2004 (effective 10-1-2003). See separate documentation on ICD-9 coding updates for specific details. 2. Implemented all syntax changes required to implement the indicator modifications (noted above under Guide) and incorporated the related documentation in the Software manuals. 3. Modified the age, DRG and co morbidity aggregations used in the risk-adjustment to reflect the new rates and to group the DRGs by MDC (including an MDC-specific other category) 4. Added the calculation and reporting of the expected rate at the stratification level selected by the user. The SAS (PSSASP3.SAS) and SPSS (PSSPSP3.SPS) software now calculates the risk-adjusted rate, the expected rate and the smoothed rate. The rates are saved in the output file. The user also has the option to print the rates or save the rates in a comma-delimited ASCII file.
V 2.1 R 2	October 22, 2004	Software (SAS)	Inserted "PS" in format names for age, sex, DRG and co morbidity aggregations in SAS programs to distinguish these formats from similarly named formats used by other indicator software.
V 2.1 R 1	May 28, 2003	Guide	1. Updated empirical results for Table 1. 2. Corrected error in Failure to Rescue Sepsis (denominator, exclusion criteria). Corrected syntax excludes patients with a length of stay less than 4 days.
V 2.1 R 1	May 28, 2003	Software (SAS)	1. Corrected error in Failure to Rescue Sepsis (denominator, exclusion criteria). Corrected syntax excludes patients with a length of stay less than 4 days. 2. Made minor syntax change to pathname syntax to ease use.
V 2.1 R 1	May 28, 2003	Software Documentation (SAS)	Added instructions for obtaining confidence interval module.
V 2.1 R 1	May 28,2003	Software reference files (SAS)	Parameter files: Updated the parameter reference files.

Version/ Revision number	Date	Component	Changes
V 2.1 R 1	May 28,2003	Software and Documentation (SPSS)	Released SPSS software which incorporates all changes noted for SAS.