July 2014 (Updated September 2014) – Release of AHRQ Quality Indicators[TM] Software for Windows Version 4.6 and SAS Version 4.5a

The Agency for Healthcare Research and Quality (AHRQ) announces the release of the AHRQ Quality Indicators[TM] (QI) software for Windows (WinQI) Version 4.6 and SAS Version 4.5a for the Prevention Quality Indicators (PQI), Inpatient Quality Indicators (IQI), Patient Safety Indicators (PSI) and Pediatric Quality Indicators (PDI) modules. Please note that despite the variation in version numbers, WinQI Version 4.6 and SAS Version 4.5a implement the technical specifications of the AHRQ QIs Version 4.5a.

All of the relevant AHRQ QI[TM] software, and documentation regarding Version 4.6 (WinQI) and Version 4.5a (SAS) can be found on the AHRQ QI website at: http://www.qualityindicators.ahrq.gov.

The following sections summarize the major changes from Version 4.5 of the Technical Specifications and QI software to Version 4.5a of the Technical Specfications and QI Software (i.e., Version 4.5a (SAS) and Version 4.6 (WinQI)).

1.0 FY 2014 Coding Updates

There were no coding changes implemented in Version 4.5a of the AHRQ QI software based solely on FY 2014 coding updates to the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM), Medicare severity-Diagnostic Related Groups (MS-DRG) or Major Diagnostic Categories (MDC).

2.0 Specification Changes

Version 4.5a of the QI software does implement some specification and programming changes that were developed through a detailed deliberation and assessment process at AHRQ and with other AHRQ stakeholders. These specification changes are detailed in the Log of Coding Updates and Revisions for each AHRQ QI module. See the specific changes at: http://www.qualityindicators.ahrq.gov/modules/Default.aspx.

3.0 Limited License Edition of the 3M™ APR DRG Grouper

The Limited License edition of the 3M™ APR DRG Grouper was updated from Version 30 to Version 31. The APR DRG Grouper software embedded in Version 4.6 (WinQI) and Version 4.5a (SAS) of the AHRQ QI software is compatible with AHRQ QI software designed for both 32-bit and 64-bit environments.

4.0 Population Files, and Risk Adjustment Coefficient Tables

Version 4.6 (WinQI) and Version 4.5a (SAS) of the AHRQ QI software uses the same census population data (i.e., through 2013) that were derived for Version 4.5 of the QI software. The

population data, which are based on the 2010 Census, are used to calculate the denominators for the area-level QI. For additional information on the population file, see *2013 Population File for Use with AHRQ Quality Indicators^{TM}*. New risk adjustment models were derived for only selected indicators (i.e., IQI 09, IQI 11 and IQI 17; PSI 04; and PQI 05 and PQI 08) in Version 4.6 (WinQI) and Version 4.5a (SAS) 4.5a of the QI software, based on the universe of discharges from 44 state files from the 2010 State Inpatient Databases (SID). These coefficients are embedded in the Prediction Module, and the user does not need to manipulate them.

5.0 No new Version 4.5a Technical Specification Benchmark Data Tables

No new benchmark data tables have been created for Version 4.5a Technical Specifications Previous Version 4.5 Benchmark Data Tables, are available based on the universe of discharges from an aggregation of state files from the 2010 SID. Users can refer to these tables to determine if their rates approximate the population rate and how their case-mix compares to the population rate. The population rate refers to the overall rate for the reference population. If the population rate is higher than the expected rate, then the provider's case-mix is less severe than the overall population. If the population rate is lower than the expected rate, then the provider's case-mix is more severe than the overall population. Version 4.5 Benchmark Data Tables can be found at the following websites:

- For PQIs, http://www.qualityindicators.ahrq.gov/modules/pqi_resources.aspx
- For PSIs, http://www.qualityindicators.ahrq.gov/modules/psi_resources.aspx
- For PDIs, http://www.qualityindicators.ahrq.gov/modules/pdi_resources.aspx
- For IQIs, http://www.qualityindicators.ahrq.gov/modules/iqi_resources.aspx

6.0 Reporting of Rates for Specific Measures

The AHRQ QI SAS and WinQI software only report expected rates, risk-adjusted rates and smoothed rates for measures that are risk adjusted. For measures are not risk-adjusted, only the numerators, denominators and observed rates are reported.

7.0 Improved Installation Packages for SAS and WinQI

Continuing the convention that was started with Version 4.5 of the QI software, Version 4.6 (WinQI) and Version 4.5a (SAS) QI software are available as either 32-bit or 64-bit applications.

8.0 Improved Implementation of Stratified Indicators

During development and testing of Version 4.5 of the AHRQ QI software, it was noted that implementation of the strata for several indicators (i.e., IQI 02, IQI 04, IQI 09, IQI 11, IQI 17 and PSI 04) did not necessarily ensure mutually exclusive strata. This in turn introduced issues to the comparison of overall QI rates with the stratified rates. That is, the overall rate did not necessarily equal the sum of the stratified rates. In Version 4.6 (WinQI) and Version 4.5a (SAS), the strata were redefined to be mutually exclusive.

9.0 Enhancements and Fixes to Software Bugs Found in Version 4.5

Version 4.6 (WinQI) and Version 4.5a (SAS) make improvements and corrects the following issues found in Version 4.5 of the software:

- *Fix SAS to accept data beyond Quarter 3 of 2013 in the PSI Modules.* Software user feedback indicated that 2013 Quarter 4 data was resulting in missing information. Both SAS software were corrected.
- *PDI 06 in WinQI.* Version 4.5 of the WinQI software suppressed reporting of the expected rate, risk-adjusted rate and smoothed rate for PDI #6 RACHS-1 Pediatric Heart Surgery Mortality Rate due to an unresolved issue in WinQI that introduced an error in the calculations. In Version 4.6, this issue was fixed and all PDI #6 rates are once again reported.
- *Experimental QI dropped from WinQI.* The EXP 01 and EXP 02 QI were experimental measures that AHRQ believes were ultimately not useful to the software user community. And so these measures have been removed from WinQI.
- *Technical specification clarifications for PDI 06 and PDI 07.* Feedback from the user community led to clarifications of the technical specifications for these two measures regarding PDA closure (3D). The technical specifications and software were revised to reflect this clarification.
- *Missing codes for PQI 05.* During ICD-10 mapping work, AHRQ identified a few ICD-9 codes that were missing from the code sets for this indicator. These code sets have been corrected.
- *City/County ambiguity in WinQI reporting.* Software user feedback indicated that when creating a WinQI report by County Name (rather than FIPS code), data could sometimes be erroneously combined. For example, St. Louis County and St. Louis City data might be combined. This issue was fixed in WinQI.
- *Harmonize with CMS on PQI 08.* In order to harmonize PQI 08 with conventions at CMS, the congestive heart failure code set was restored from before ICD-9 Version 20.
- *Extend discharge record KEY to 15 characters.* SAS Version 4.5a was changed to accommodate longer KEY variables.
- *Fix SAS label typos for PQI 15.* Software user feedback indicated a couple of typos in the SAS labeling for PQI 15 which were fixed in Version 4.5a.
- *Improved SAS PROC MEANS output.* The output for several PROC MEANS procedures in SAS were improved to provide more useful results in a better format.
- *WinQI Excel/Access imports.* Software user feedback indicated a bug with the way that WinQI imports data from newer versions of Excel or Access data sets. This bug was fixed to allow data imports from Excel .xls and .xlsx files, and from Access .mdb and .accdb files.
- *Improved WinQI patient-level reporting.* User feedback has indicated some confusion with the WinQI patient-level reports in some situations (e.g., POA data and missing data). Version 4.6 of WinQI has made improvements in the patient-level reports and associated documentation.

- *Issue with WinQI sorting for some reports*. User feedback indicated a bug with record sorting for the patient-level report in some situations. This issue was fixed in Version 4.6 of WinQI.

- *Sampling wizard was dropped from WinQI*. This sampling functionality was removed from WinQI because AHRQ believes it was no longer useful to the software user community.

- *WinQI area denominator adjustment implemented*. Previous versions of SAS, including Version 4.5, include an adjustment to area-level QI denominators in some cases. Specifically, for a given combination of county, age, gender and race, if the census population value (obtained from the U.S. Census Bureau) is less than the number of numerator cases for a given QI (obtained from the user's discharge data base), then the census population value in SAS is replaced by the numerator count for the calculation of the QI denominator. This adjusted denominator is then used for subsequent calculations of the observed rate and other QI rates. In Version 4.6, WinQI implements this same area denominator adjustment.

- *Redundant lines of SAS code for PSI 12*. User feedback indicated two lines of redundant code in the SAS syntax for this indicator. These lines did not affect the QI calculations, but they were removed from SAS Version 4.5a. The technical specifications were updated to remove the unnecessary denominator exclusion for discharges in which interruption of vena cava was the only operating room procedure .

- *Error in PDFMT.SAS related to craniofacial anomalies*. Software user feedback indicated a typo in the PDFMT.SAS program that affected the code set for craniofacial anomalies. This bug was fixed in SAS Version 4.5a.

- *Fix SAS code to exclude toe amputation - PQI 16*. User feedback indicated inconsistencies between the technical specifications and SAS code for toe amputations exclusions in PQI 16 - Rate of Lower Extremity Amputation among Patients with Diabetes. The format statement $ACSLEAP was updated in PQFMTS.SAS to exclude *ICD9CM* procedure code 84.11 – TOE AMPUTATION. The macro exclusion for toe amputation was commented out of PSSAS1.SAS.

- *SAS labeling and syntax comments for IQI 04 and IQI 11*. User feedback identified inconsistencies between the SAS labeling for these two indicators versus the way these labels are documented in the SAS syntax and the SAS instruction manual. This labeling and documentation have been made consistent in SAS Version 4.5a.

- *SAS labeling for PSI software*. User feedback identified misunderstanding with the SAS PSI palliative care and Present-on-Admission flags. This labeling was updated to better reflect that the QPPS data elements are flags.

- *Documentation of PSI 12*. User feedback identified inconsistencies between the technical specifications and the QI software. The technical specifications were updated to correct the error of italizing *ICD9CM* diagnosis code 451.2 – PHLEBITIS AND THROMBOPHLEBITIS OF LOWER EXTREMITIES UNSPECIFIED, as it is retained in the algorithm.

- *DISCWT data element has been removed from the SAS programs*. To better reflect that AHRQ QI SAS software does not currently support weighted QI estimates, DISCWT has been removed from the program.

For questions, please contact qisupport@ahrq.hhs.gov or (301) 427-1949.