



Release of AHRQ Quality Indicators™ Software for WinQI, v2022.0.1

Prepared for:

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Table of Contents

- 1.0 Introduction to Release Notes for v2022.0.1..... 1**
- 1.1 Fixes Issue with Stratified Hospital-Level Risk-Adjusted Rates..... 1**
- 1.2 Fixes Issue with APR-DRG Variables removed in v2022..... 1**
- 1.3 Fixes Issue with Date Filter Functions in Hospital Reports 1**
- 1.4 Fixes Issue with Record and Play Automation Functions 1**
- 2.0 Previous Release Notes for v2022 2**
- 3.0 Fiscal Year 2022 Coding Updates..... 2**
- 4.0 Specification Changes..... 2**
- 5.0 Population Files..... 2**
- 6.0 Reporting Rates for Specific Measures..... 3**
- 6.1 Risk Adjustment..... 3**
- 6.2 Use of APR-DRG for Risk Adjustment of Procedure-Based IQIs 3**
- 6.3 Major Diagnostic Category (MDC) Requirements 3**
- 6.4 Calibration Options 4**
- 6.5 COVID-19 Options..... 4**
- 6.6 Stratification Options 5**
- 7.0 Retired Area-Level Indicators..... 5**
- 8.0 Retired Hospital-Level Indicators 5**
- 9.0 Enhancements and Improvements 5**

1.0 Introduction to Release Notes for v2022.0.1

The Agency for Healthcare Research and Quality (AHRQ) announces a minor release of the AHRQ Quality Indicators™ (QI) software for WinQI Version 2022 (v2022.0.1, September 2022). This is an update to the v2022 WinQI software that applies to the Inpatient Quality Indicators (IQI), Patient Safety Indicators (PSI), and Pediatric Quality Indicators (PDI) modules.

The following item summarizes the changes in v2022.0.1 from v2022.

1.1 Fixes Issue with Stratified Hospital-Level Risk-Adjusted Rates

Starting with version 2020 (v2020), stratified observed-to-expected (risk-adjusted) ratios were inadvertently capped at 1.0 when IQI, PSI, or PDI results were stratified by variables such as payer, year, quarter, race, etc. This was an unintentional consequence of capping risk-adjusted rates at 1.0 for results stratified by hospitals only. Users who specified stratified results for payer, year, quarter, or race groups would not observe risk-adjusted ratios above 1.0 as a result of this capping. With the v2022.0.1 re-release, this unintentional capping is removed, and risk-adjusted ratios greater than 1.0 may now be observed. As a safeguard, the software will also limit the lower-bound confidence interval estimates for both risk-adjusted rates and ratios at 0.0 for all QI modules.

Users Impacted: Users of the PSI, PDI, and IQI modules who generate hospital-level risk-adjusted ratios with stratifiers including payer, year, quarter, or race.

For more information, see the document “Stratification of Inpatient Quality Indicators (IQI), Patient Safety Indicators (PSI), and Pediatric Quality Indicators (PDI)”, available here: https://qualityindicators.ahrq.gov/Downloads/Resources/AHRQ_QI_v2022_Stratification_User_Note.pdf.

1.2 Fixes Issue with APR-DRG Variables removed in v2022

Since APR-DRGs are no longer used for the risk adjustment of procedure-based IQIs in WinQI v2022, removal of APR-DRG variable in v2022 caused issues for some users in mapping their fields during the import of input data. This is now fixed in v2022.0.1.

Users Impacted: Users who have the legacy variable, Risk of Mortality variable (APR-DRG), in their input file.

1.3 Fixes Issue with Date Filter Functions in Hospital Reports

In WinQI, v2022, the date filters in hospital reports did not filter the report by dates selected through this filter. This is now fixed in v2022.0.1.

Users Impacted: Users who are looking to produce hospital reports for specific years when analyzing multiple years of input data.

1.4 Fixes Issue with “Record and Play” Automation Functions

In WinQI v2022, automation features were improved to allow users call automation batch script files with parameters that would overwrite the initial values included in the automation batch file. Because of an issue, in WinQI, v2022, the “Record and Play” automation script ignored the location parameter if called from command line. This issue is now fixed in v2022.0.1.

Users Impacted: Users looking to run record and play automation batch script to export their results to a specific location provided as a parameter on the command line.

Previous Release Notes for v2022 below also apply to v2022.0.1.

2.0 Previous Release Notes for v2022

The Agency for Healthcare Research and Quality (AHRQ) announces the release of the AHRQ Quality Indicators (QI) software for WinQI version v2022. This software applies to all four modules: Prevention Quality Indicators (PQI), Inpatient Quality Indicators (IQI), Patient Safety Indicators (PSI), and Pediatric Quality Indicators (PDI).

All of the relevant AHRQ QI™ software and documentation regarding v2022 can be found on the AHRQ QI Web site at <https://qualityindicators.ahrq.gov/>.

The following sections summarize the major changes from Technical Specifications and QI Software v2019 to v2021.

3.0 Fiscal Year 2022 Coding Updates

The AHRQ QI software v2022 reflects coding changes based on fiscal year 2022 coding updates to the *International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM/PCS)*. These coding changes impact all software modules.

4.0 Specification Changes

The WinQI v2022 software implements specification and programming changes that were developed through a detailed deliberation and assessment process with AHRQ personnel and other AHRQ stakeholders.

The fiscal year coding updates were implemented across all modules and are detailed in the Log of Coding Updates and Revisions for each AHRQ QI module. These are available at the following web address:

- PQI: https://qualityindicators.ahrq.gov/Downloads/Modules/PQI/V2022/ChangeLog_PQI_v2022.pdf
- IQI: https://qualityindicators.ahrq.gov/Downloads/Modules/IQI/V2022/ChangeLog_IQI_v2022.pdf
- PSI: https://qualityindicators.ahrq.gov/Downloads/Modules/PSI/V2022/ChangeLog_PSI_v2022.pdf
- PDI: https://qualityindicators.ahrq.gov/Downloads/Modules/PDI/V2022/ChangeLog_PDI_v2022.pdf

5.0 Population Files

The updated QI population file contains intercensal and postcensal estimates of county-level population by single-year age group, sex, race, and Hispanic origin covering the years 2000 through 2021 from the US Census Bureau. The population file uses Census estimates for single year age population to create AHRQ

age bands. Please see the details around the population methodology at:

https://qualityindicators.ahrq.gov/Downloads/Software/SAS/V2022/AHRQ_QI_v2022_ICD10_Population_File.pdf.

6.0 Reporting Rates for Specific Measures

The AHRQ WinQI v2022 software includes risk-adjustment, signal variance, reference population rates, and composite weights for PSI, IQI, PDI, and PQI modules using the 2019 Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID). The non-risk-adjusted numerators, denominators, and observed rates are also reported.

6.1 Risk Adjustment

AHRQ WinQI v2021 includes new and updated risk factors in the risk-adjustment models across modules.

In the IQI module,

- *New in v2022.* Added the Clinical Classifications Software Refined (CCSR) for ICD-10-PCS Procedures categories to risk adjust for the procedure-based IQIs for all procedures occurring on or prior to the day of the IQI denominator procedures.
- *New in v2022.* Removed the All-Patient Refined Diagnosis Related Groups (APR-DRGs) for the risk adjustment of procedure-based IQIs
- *New in v2022.* Added a flag for Do Not Resuscitate (DNR) to the condition based IQIs for potential feature selection.
- *New in v2022.* Added a risk category for non-ST-elevation myocardial infarction (non-STEMI) for potential feature selection to IQI 15 – Acute Myocardial Infarction (AMI) Mortality Rate.
- *New in v2022.* Added a risk category for cardiac arrest, cardiogenic shock, or anoxic brain injury that is present on admission (POA) for potential feature selection to IQI 12 – Coronary Artery Bypass Graft Mortality Rate and IQI 30 – Percutaneous Coronary Intervention Mortality Rate.

For hospital-level indicators in the PSI module,

- *New in v2022.* Added risk categories based on the counts of minor and major diagnostic procedures and minor and major therapeutic procedures for PSI 15 – Abdominopelvic Accidental Puncture or Laceration Rate.
- *New in v2022.* Added risk categories based on high-risk and intermediate-risk immune compromising conditions for PSI 13 – Postoperative Sepsis Rate.

6.2 Use of APR-DRG for Risk Adjustment of Procedure-Based IQIs

WinQI v2022 removed the All-Patient Refined Diagnosis Related Groups (APR-DRGs) used for the risk adjustment of procedure-based IQIs. The IQI module in WinQI v2022 utilizes the Clinical Classification Software Refined (CCSR) for ICD-10-CM Procedures.

6.3 Major Diagnostic Category (MDC) Requirements

The software will suppress expected rates, risk-adjusted rates, smoothed rates, and composites for hospital-level indicators for PSI and IQI modules when major diagnostic categories (MDC) are missing or incomplete. During the import process, in the first step, users should select the option “Data does not have MDC” when MDC is missing or incomplete on the input data. If MDC is

available and fully coded, users should select the option, “Data has MDC from MS-DRG Grouper”. If users select “Data has MDC from MS-DRG Grouper”, but a few MDC values are missing on input data, the software will exclude those discharges with missing MDCs. Additionally, if users select “Data has MDC from MS-DRG Grouper”, but all MDC values are missing on input data, the software will output an error message informing users of missing MDC on input data”. In this scenario, users should select “Data does not have MDC” in the import wizard.

Users interested in calculating expected, risk-adjusted, smoothed, or composite values for hospital-level indicators must have MDCs assigned for each discharge on their input file. MDCs are used in measure specifications and risk adjustment. The AHRQ v2022 software no longer imputes MDC as in v2021 since the calculation was error-prone when the correct classification software is not applied to the input data. Different versions of the Medicare Severity-Diagnostic Related Group (MS-DRG) grouper produce slightly different results with respect to certain high resource intensity MS-DRGs. Specifically, MS-DRGs 001-019 and 981-989 are classified as “pre-MDC” MS-DRGs, which means that they are associated with such high length of stay and/or cost that they supersede the usual assignment of MS-DRGs within body system or MDC categories. For records assigned to these MS-DRGs, some versions of the grouper software retain the MDC that would be assigned based on the principal diagnosis and procedure codes, whereas other versions of the grouper software overwrite the MDC assignment with a blank, missing, or nonnumeric value such as “PRE.” Thus, users **MUST PROVIDE** the MDC generated by the Centers for Medicare & Medicaid Services (CMS) MS-DRG grouper software, without imputing or mapping from MS-DRGs. For accurate results, all eligible records should have an MDC between 01 and 25. For those users who need to construct MDC, please view the documentation and software available here: <https://www.cms.gov/files/zip/icd-10-ms-drgs-v391-effective-april-1-2022.zip>.

6.4 Calibration Options

In the AHRQ WinQI v2022, users continue to have two options to calibrate smoothed rates and composite values using observed to expected (O-E) ratio when generating the hospital- and area-level reports:

- Option 1: Check the “Reference population based O-E ratio” checkbox on the report configuration screen, which calibrates the system to use the 2019 HCUP reference population O-E ratio. This is recommended and is therefore the default choice.
- Option 2: Uncheck the “Reference population based O-E ratio” checkbox on the report configuration screen, which calibrates the system to use the O-E ratio of the user’s input data. This option is provided for large health care systems or states who want to calibrate the predicted QI rates within the system. Starting with AHRQ WinQI v2022, there is a new step in the software to rescale the predicted probabilities if the O/E calibration pushes them above 1.0. The caveat is that the interpretation of the rates may be different since the software would still use 2019 HCUP reference population rate as the multiplier for risk adjustment rates.

For more details about the O-E ratio adjustment, please refer to the Empirical Methods document available here:

https://qualityindicators.ahrq.gov/Downloads/Resources/Publications/2022/Empirical_Methods_2022.pdf.

6.5 COVID-19 Options

The AHRQ WinQI v2022 continues to include methodology to account for COVID-19 discharges for hospital-level indicators. Starting with AHRQ WinQI v2022 in modules that include hospital-level indicators (IQI, PDI, PSI), the user has the following options to specify how to handle COVID discharges before generating the rates. The following options are available to the user:

- Option 1: The user can exclude COVID discharges. This is recommended and is therefore the default choice. The software will calculate risk-adjusted rates, smoothed rates, and composites.
- Option 2: The user can include all discharges, both with and without COVID. The software will only calculate numerators, denominators, and observed rates.
- Option 3: The user can include only COVID discharges. The software will only calculate numerators, denominators, and observed rates.

Because the 2019 HCUP reference population pre-dates the public health emergency, the software will suppress expected rates, risk-adjusted rates, smoothed rates, and composites for hospital indicators when a user includes COVID-19 discharges. In other words, users can only calculate expected, risk-adjusted, smoothed rates, or composites when they select the default to exclude COVID-19 discharges. This approach is consistent with the previously published user guidance. We will continue to monitor the published evidence on COVID and update user guidance as necessary.

COVID-19 User Guidance is available here:

https://qualityindicators.ahrq.gov/Downloads/Resources/User_note_COVID.pdf.

6.6 Stratification Options

AHRQ WinQI software users continue to have the option to produce stratified hospital-level rates. Starting with AHRQ WinQI v2021 and in v2022, expected rates, risk-adjusted rates, smoothed rates, and composites will be suppressed in certain situations for hospital-level indicators, including all PSIs, IQIs, and hospital-level PDIs. Users will see warning messages on the report screens providing the reason why the risk adjustment rates are suppressed. Because age, gender, age in days, and birth weight are used in risk adjustment models, it is inappropriate to produce risk-adjusted rates for any stratum that includes these variables.

7.0 Retired Area-Level Indicators

No area-level indicators were retired in the AHRQ WinQI v2022 software.

8.0 Retired Hospital-Level Indicators

No hospital-level indicators were retired in the AHRQ SAS QI v2022 software.

9.0 Enhancements and Improvements

The WinQI v2022 software includes enhancements and improvements from the v2021 ICD-10-CM software.

WinQI v2022 Redesign - WinQI's user interface (UI) has been redesigned in v2022 to improve the screen layout and look & feel. Common UI elements are used to make screens look modern and consistent across

the entire application. On the home screen, the layout has been significantly changed to represent the process workflow explicitly and intuitively for users.

Functional Improvements - The input data files can now be uploaded by dragging and dropping the input files. On the input data import process wizard, the “Data Field Mapping” screen is re-organized such that the “required variables” and “missing recommended & other variables” blocks are now separated out for distinction and easy recognition. Additionally, on the input data import process wizard, separate cards are added for “Excluded QI values”, “Missing QI values”, and “Matched QI values” on top of the screen to help users identify and fix any data crosswalk mismatch issue easily and quickly.

Reports: Users can now view additional reports, “Advanced Composite Reports” for IQI 90, 91, and PSI 90. This allows users to better understand the components used in the composite calculation. Additionally, a new section has been added on the home screen to show the last run reports for users to quickly and easily re-run the reports if needed.

Automation Improvements – Automation features have been improved to allow users to call the automation batch script files with parameters that would overwrite the initial values included in the automation batch file. These parameters include – 1) input data files, 2) mapping files, and 3) export location for your output. This will help users make their automation much more dynamic. Users can also now initiate the command line automation batch calls from within the application via the user interface (UI). The UI now also supports running WinQI as service so WinQI can run in the background as a service when automating your process.

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