



AHRQ QIs Fact Sheet: FAQs on the SAS QI and WinQI v2021 Software

Prepared for:

Agency for Healthcare Research and Quality
U.S. Department of Health and Human Services
5600 Fishers Lane
Rockville, MD 20857
<http://www.qualityindicators.ahrq.gov>

Contract No. HHS A290201800003G

July 2021

Table of Contents

AHRQ Quality Indicators (QIs) Software Product Information.....	2
Risk-Adjusted Software Information	3
Specific Coding and Indicator Updates in v2021	3
Interpreting AHRQ QI Results.....	7
Using AHRQ Quality Indicators	9

AHRQ Quality Indicators (QIs) Software Product Information

1. What year of data do the SAS QI and WinQI v2021 software support?

The v2021 software supports Fiscal Year (FY) 2021 (October 2020 to September 2021) data.

2. Is the v2021 software backwards compatible?

Yes, the software is backwards compatible, meaning that it supports discharges classified under International Classification of Diseases, 10th Revision, Clinical Modification/Procedure Coding System (ICD-10-CM/PCS) retroactively through October 2015.

3. Does the v2021 software address the 2019 Novel Coronavirus (COVID-19)?

The AHRQ QI v2021 Software now includes methodology to account for COVID-19 discharges for hospital-level indicators. Starting with AHRQ QI v2021 in modules that include hospital-level indicators (IQI, PDI, PSI), the user has the following options to specify how to handle COVID-19 discharges in the CONTROL program for each module:

- Option 1: The user can exclude COVID-19 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, with and without COVID-19. The software will only calculate numerators, denominators, and observed rates.
- Option 3: The user can include only COVID-19 discharges. The software will only calculate numerators, denominators, and observed rates.

Because the 2018 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-19 and update user guidance as necessary.

COVID-19 User Guidance is available here:

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

4. What processes does AHRQ follow when determining what changes and refinements to make when the QI software is updated?

Potential refinements to the QI software are based on user feedback, literature review and environmental scans, and diagnosis and procedure coding changes. AHRQ evaluates these potential changes for their feasibility and priority, and those selected for implementation are tested and reviewed before being incorporated into new releases of the AHRQ QI software.

Risk-Adjusted Software Information

5. Is the AHRQ QI v2021 software (SAS QI and WinQI) risk adjusted?

Yes, risk adjustment is supported in the SAS QI and WinQI v2021 ICD-10-CM/PCS software. Risk adjustment is available for the following indicator groups by module:

- Prevention Quality Indicator (PQI) area-level indicators
- Inpatient Quality Indicator (IQI) hospital-level indicators
- Patient Safety Indicator (PSI) hospital-level indicators
- Pediatric Quality Indicator (PDI) area-level and hospital-level indicators

AHRQ QI software users continue to have the option to produce stratified rates. Starting in v2021, 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. 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. Additionally, 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. 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. The AHRQ QI v2021 PSI and PDI modules will also suppress expected rates, risk-adjusted rates, smoothed rates, and composites for measures that use PRDAYn information (PSI 04, 09, 10, 11, 12, 14, 15, and PDI 08 and 09) when PRDAYn is missing or incomplete.

Specific Coding and Indicator Updates in v2021

6. What coding updates are included in the SAS QI and WinQI v2021 software?

The v2021 software release includes coding updates to align with the latest ICD-10-CM/PCS coding guidance. For a complete list of the indicator level changes, refer to the Change Logs for each module which are available at:

- Prevention Quality Indicators (PQIs):_
https://www.qualityindicators.ahrq.gov/Downloads/Modules/PQI/V2021/ChangeLog_PQI_v2021.pdf
- Inpatient Quality Indicators (IQIs):_
https://www.qualityindicators.ahrq.gov/Downloads/Modules/IQI/V2021/ChangeLog_IQI_v2021.pdf
- Patient Safety Indicators (PSIs):_
https://www.qualityindicators.ahrq.gov/Downloads/Modules/PSI/V2021/ChangeLog_PSI_v2021.pdf
- Pediatric Quality Indicators (PDIs):_
https://www.qualityindicators.ahrq.gov/Downloads/Modules/PDI/V2021/ChangeLog_PDI_v2021.pdf

7. Is there a log of code-specific changes for each indicator?

To address questions around identifying codes that changed, AHRQ developed a listing of code changes as a supplement to the change log beginning with v2021.

For a complete list of code set changes, please refer to Code Set Change Log for each module:

- Prevention Quality Indicators (PQIs):_
https://www.qualityindicators.ahrq.gov/Downloads/Modules/IQI/V2021/AHRQ_PQI_v2021_Code_Set_Changes.xlsx
- Inpatient Quality Indicators (IQIs):_
https://www.qualityindicators.ahrq.gov/Downloads/Modules/IQI/V2021/AHRQ_IQI_v2021_Code_Set_Changes.xlsx
- Patient Safety Indicators (PSIs):_
https://www.qualityindicators.ahrq.gov/Downloads/Modules/IQI/V2021/AHRQ_PSI_v2021_Code_Set_Changes.xlsx
- Pediatric Quality Indicators (PDIs):_
https://www.qualityindicators.ahrq.gov/Downloads/Modules/IQI/V2021/AHRQ_PDI_v2021_Code_Set_Changes.xlsx

Additionally, AHRQ has developed the Impact of Fiscal Year Coding Updates memo detailing code sets changed as a result of annual fiscal year coding updates rather than indicator refinements. The memo is available at:

https://www.qualityindicators.ahrq.gov/Downloads/Modules/V2021/v2021_FY_Coding_Updates.pdf.

8. What are some of the major updates in the SAS QI and WinQI v2021 software?

Some major updates that are included in the v2021 QI software include:

- The v2021 SAS QI and WinQI software is risk adjusted using 2018 HCUP State Inpatient Databases (SID) data.
 - The PDI module utilizes counts from the Elixhauser Comorbidity Software Refined for ICD-10-CM diagnoses to define risk-adjustment variables.
 - The IQI module utilizes the Clinical Classification Software Refined (CCSR) for ICD-10-CM diagnosis.
- Implemented coding updates: (1) are based on fiscal year 2021 ICD-10-CM/PCS, (2) are compatible with ICD-10-CM/PCS hospital data for F16-FY21, and (3) coding changes impact all software modules.
- PQIs and area-level PDIs risk adjustment accounts for age and gender and includes an optional adjustment for poverty.
 - Poverty is defined using the 2018 U.S. Census Small Area Income and Poverty Estimates (<https://www.census.gov/library/publications/2020/demo/p30-06.html>).
 - Computes county-level risk adjustment

9. What are some of the improvements made to the v2021 SAS QI software?

- Improved labeling, comments, and consistency in names for variables, parameters, and files.
- Instructions for using the v2021 SAS QI software is available at: https://www.qualityindicators.ahrq.gov/Downloads/Software/SAS/V2021/Software_Inst_SASQI_v2021_July_2021.pdf.
- Options to exclude COVID-19 discharges for hospital-level indicators
- Risk adjustment suppression based on PRDAY and MDC information
- Option in the CONTROL program for users to specify the length and data type of the hospital identifier (HOSPID) found on the input discharge data. The default for HOSPID_TYP is numeric length 5. This change allows users to specify the attributes of the hospital identifier provides flexibility for users to calculate hospital-level risk-adjusted rates when SAS QI is run with a limited set of discharge records.

New documentation for automating scheduled SAS QI runs is available at:

https://www.qualityindicators.ahrq.gov/Downloads/Software/SAS/V2021/Automate_SAS_QI_Software_Runs_in_Windows.pdf.

10. What are some of the improvements made to the v2021 WinQI software?

- The software will notify users of all software updates. By accepting the v2021 update, it will automatically uninstall the prior version and install v2021.
- Rolling updates to the input date – the software allows users to append their input file data to the existing data in WinQI when importing instead of replacing their data.
- Run WinQI as a Windows Service in the background for your automation needs
- Significant performance improvements in the rates calculation time
- Provides options to exclude COVID-19 discharges for hospital-level indicators
- Risk adjustment suppression based on PRDAY and MDC information
- Instructions for using the v2021 WinQI software is available at:
https://www.qualityindicators.ahrq.gov/Downloads/Software/WinQI/V2021/Software_Inst_WINQI_V2021_July_2021.pdf.

11. Were any indicators retired in the v2021 software?

The following indicators were removed beginning with v2021:

- IQI 32 Acute Myocardial Infarction (AMI) Mortality Rate, Without Transfer Cases
- IQI 34 Vaginal Birth After Cesarean (VBAC) Rate
- NQI 02 Neonatal Mortality Rate

AHRQ’s rationale to retire of these indicators is described in the Announcement Retirement of Select AHRQ Quality Indicators (QIs) in Upcoming v2021 QI Software available at: https://www.qualityindicators.ahrq.gov/News/AHRQ_QI_v2021_Retirement_Announcement.pdf.

12. What version of Comorbidity Software is used for the AHRQ QI v2021 software?

The v2021 AHRQ QI software uses v2021 Elixhauser Comorbidity Software Refined for ICD-10-CM (https://www.hcup-us.ahrq.gov/toolssoftware/comorbidityicd10/comorbidity_icd10.jsp).

13. Why was the hierarchy of Patient Safety Indicator 04 (PSI 04) Death Rate among Surgical Inpatients with Serious Treatable Complications stratum assignment changed?

In v2021, AHRQ revised the order of the PSI 04 strata hierarchy to shock/cardiac arrest, sepsis, pneumonia, gastrointestinal (GI) hemorrhage/acute ulcer, and deep vein thrombosis/ pulmonary embolism (DVT/PE). If a patient meets the denominator criteria for more than one stratum, this change prioritizes the patient into the higher risk stratum observed in the 2017 HCUP reference population. This resulted in the GI hemorrhage stratum moving up in priority compared with the DVT/PE stratum starting in v2021.

14. Are Do Not Resuscitate (DNR) orders used as an exclusion in v2021?

DNR (ICD-10-CM diagnosis code Z66) with a present on admission status is now used in risk-adjustment of Patient Safety Indicator 04 (PSI 04) Death Rate among Surgical Inpatients with Serious Treatable Complications strata and Patient Safety Indicator 02 (PSI 02) Death Rate in Low-Mortality Diagnosis Related Groups (DRGs). DNR is not used as an exclusion due to concerns over coding quality, but it was used as a risk factor as it may influence the course of treatment delivered in the inpatient setting.

15. Is MDC still a required data element in v2021?

The Major diagnostic categories (MDC) continue to be a required data element on the input data file for SAS QI and WinQI. MDC values are an expected part of the discharge records, the AHRQ QI software uses MDCs to calculate risk adjustment for several indicators.

If a user cannot supply data for the MDC field (for example, if the MDC data element in their dataset contains only missing values) AHRQ QI software will generate MDCs from the DRG code to calculate the numerator, denominator and observed rates. Users who cannot supply data for the MDC field should take the following steps:

- SAS QI users: set %LET MDC_PROVIDED = 0 in the CONTROL program
- For WinQI users: indicate that MDC is not provided when generating the Hospital level report.

Upon taking these steps, the software will suppress expected rates, risk-adjusted rates, smoothed rates, and composites for hospital-level indicators for PSI and IQI modules given MDC is missing or incomplete.

Interpreting AHRQ QI Results

16. How does AHRQ recommend that users interpret QI rates calculated with the v2021 software?

All measures that use the ICD-10 CM/PCS coding standards may see some variation in rates resulting from the transition in coding systems. AHRQ recommends using v2021 rates as a starting point for internal assessment and not for comparison across providers. Users may review discharge-level results to determine if evidence in the administrative record indicates occurrence of an adverse event. Further information about the ICD-10-CM/PCS transition and use of administrative data is available at:

https://www.hcup-us.ahrq.gov/datainnovations/icd10_resources.jsp.

17. What do I need to know about the v2021 QI population file?

The updated QI population file contains intercensal and postcensal estimates of county-level populations from years 2000 – 2020 for use with area-level QIs. Population categories include single-year age group, sex, race, and Hispanic origin.

Details about the population methodology is available at:

http://www.qualityindicators.ahrq.gov/Downloads/Software/SAS/V2021/AHRQ_QI_v2021_ICD10_Population_File.pdf.

18. Can I use the v2021 QI population file with prior versions of SAS QI software?

The v2021 QI population file has the same structure as the previous population files. Therefore, it can be seamlessly used with all previous versions of SAS QI software.

19. Which indicators are endorsed by the National Quality Forum (NQF)?

AHRQ will not seek re-endorsement of its portfolio of measures in the QI Program starting in fiscal year 2022. Moving forward, the AHRQ QI Program will continue to focus its measurement efforts on quality improvement at local, state and national levels, and support of the science of rigorous measurement development and use of quality measures for improving the quality of healthcare.

To ensure that the measures meet the national standards for measure development, we will continue to engage with a wide variety of stakeholders, including national, state, and regional policymakers (Federal and state agencies), private decision-makers (hospitals, clinicians, purchasers), and researchers in various ways. We intend to focus on developing and maintaining measures and tools that facilitate system and area-level quality improvement. The program shall continue to disseminate unbiased scientific evidence and analyses related to the risk-adjustment methodology and the use of quality measures for improving the quality of healthcare.

Details on the rationale is available at:

https://www.qualityindicators.ahrq.gov/Downloads/News/AHRQ_Rationale4notseekingNQFendorsement-May2021.pdf.

Using AHRQ Quality Indicators

20. Is technical assistance available for use of the AHRQ QIs?

Yes. Users may submit questions or comments to QISupport@ahrq.hhs.gov.