



AGENCY FOR HEALTHCARE RESEARCH AND QUALITY



AHRQ Quality indicators Software: v2020 ICD-10-CM/PCS

August 2020

Announcements



- This webinar will be recorded and available on the AHRQ QI website - <http://www.qualityindicators.ahrq.gov/>.
- Due to the large number of attendees, all participant lines will remain in listen-only mode.
- If multiple people from your organization are dialing in from the same location, please use only one line.
- You may submit questions via the **chat feature** at any time; however, questions will be answered only during the Q&A sessions. Your questions will only be visible to the moderators.
- For **technical difficulties**, please contact **Megan Lee** at mlee@panth.com.

Agenda



- Overview of the AHRQ QIs
- Overview of the v2020 software (including risk-adjustment) and improvements
- Usability Improvements
- Specification changes for select QIs
- v2020 SAS and WinQI software resources

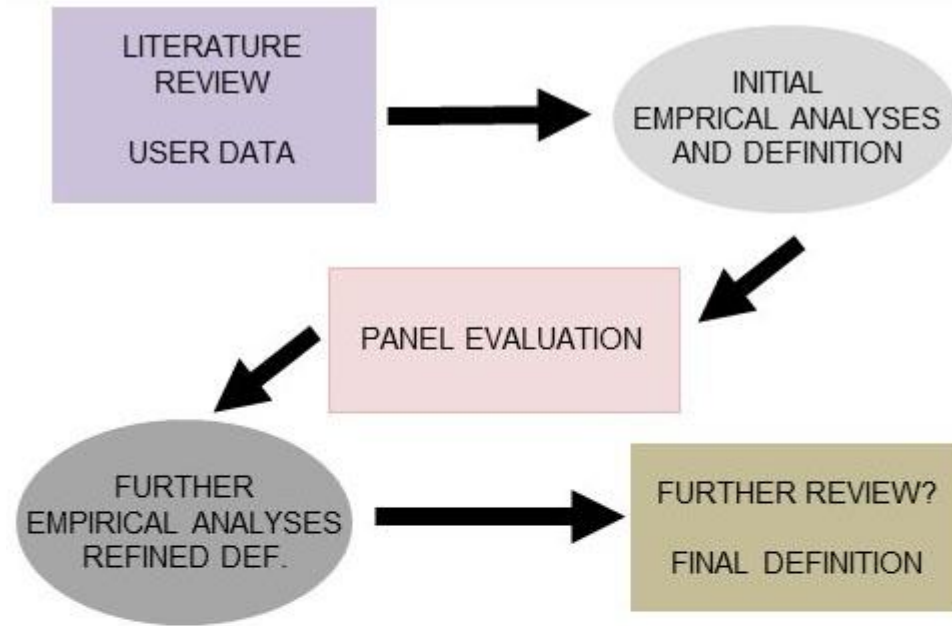
Today's Speakers



- Jennifer Newburg, Project Manger, Pantheon Software
- Mia DeSoto, Ph.D., M.H.A., Health Scientist Administrator, Program Lead AHRQ Quality Indicators (AHRQ)
- Alex Bohl, Associate Director, Hospital Quality Indicator Project Director Mathematica
- Heidi Cohen, Senior Data Scientist, IBM
- Vivek Kumar, Project Director, AHRQ QI Project, Pantheon

Origins of AHRQ Quality Indicators

- Developed initially at the request of State organizations and hospital associations as a quality improvement tool
- Using evaluation methodologies developed in the AHRQ Evidence-based Practice Centers (EPC)
- Developed and tested using all-payer Healthcare Cost and Utilization Project (HCUP) data in 47 States



Use of AHRQ QIs



- **Use of QIs for**
 - ▶ Quality monitoring and improvement
 - ▶ Public reporting,
 - ▶ Needs assessments, planning, research and informing policy
 - ▶ Some used for performance based payment programs
- **Broad Applicability**
 - ▶ 65+ measures cover broad range of conditions, procedures and populations
- **Ready-to-use**
 - ▶ Readily-available administrative data
- **Actionable**
 - ▶ Provide real-time information
 - ▶ National rates available for comparison

Hallmarks of AHRQ QIs: Ensuring Quality



- Continuous Quality Improvement
 - ▶ Reviews of research evidence
 - ▶ Rigorous empirical testing
 - ▶ Annual updates to align coding changes
 - ▶ Expert panels and standing workgroups
 - ▶ User feedback

- Transparency
 - ▶ Technical specifications, documentation, and software (WinQI, SAS) are free to the public,
 - ▶ Open source, and
 - ▶ Improved over time based on public and private input

AHRQ QI Modules

Prevention (PQIs)

- Potentially preventable hospital admissions rates for ambulatory care conditions
- Area-level indicators
- Risk-adjusted

Inpatient (IQIs)

- Quality of care inside the hospital—hospital level indicators
- Mortality rates for adult conditions / surgical procedures
- Risk-adjusted

Patient Safety (PSIs)

- Potentially avoidable complications and adverse event rates following adult surgeries / procedures performed in the hospital
- Hospital-level indicators
- Risk-adjusted

Pediatric (PDIs)

- Mortality rates for pediatric surgical procedures
- Potentially avoidable complications and adverse event rates in the hospital
- Potentially preventable hospitalization rates
- Hospital-level and area-level indicators
- Risk-adjusted

About the AHRQ QI Software



- Uses readily available administrative data
 - ▶ Risk-adjusted in the v2020 QI software
- Compatible with two commonly used platforms - SAS and Windows
 - ▶ Updated on an annual basis
- Available from AHRQ at no cost to the user

Learn more about software features:
[WinQI Software Instructions Document](#)
[SAS QI software Instructions Document](#)

v2020 Software Release

SAS

July 2020

- **Now available:** v2020 software
- Separate software package to download for each module

WinQI

July 2020

- **Now available:** v2020 software
- Download a single installer package for all four modules

Software available at:

<http://www.qualityindicators.ahrq.gov/Software/Default.aspx>

Overview of V2020 Software and Improvements

Fiscal Year 2020 Updates

- Software implements specification and programming changes across all modules
 - ▶ Developed through a detailed deliberation and assessment process with clinicians and expert coders
- v2020 is risk adjusted using the 2017 HCUP State Inpatient Databases (SID)
- v2020 QI software will not include COVID-19 codes in either the QI technical specifications or in the risk adjustment.
- Implemented coding updates
 - ▶ Based on fiscal year 2020 ICD-10-CM/PCS
 - ▶ Compatible with ICD-10-CM/PCS hospital data for FY16 – FY20
 - ▶ Coding changes impact all software modules

Fiscal Year 2020 Updates (cont.)



- V2020 software reports
 - ▶ Risk-adjusted rates, signal variance, reference population rates, and composite weights for all modules
 - ▶ Non-risk adjusted numerators, denominators, and observed rates
 - ▶ All PSI and PDI exclusions are now denominator exclusions (Q-flags)
- Changes will be detailed in the forthcoming Release Notes for each AHRQ QI module
 - ▶ Will be available at:
<https://www.qualityindicators.ahrq.gov/Software/SAS.aspx>

v2020 Indicator Logic Changes



- **Changes by module**

- ▶ **Overall**

- Records where DRG is assigned the value of 999 are not used for measure calculation in any module. These are records that are ungroupable based on information in the discharge record.

- ▶ **IQI**

- All Patient Refined Diagnosis Related Groups (APR-DRGs) in the risk-adjustment models are based on the patient's admission diagnoses and using present on admission (POA) information.

- ▶ **PSI and PDI**

- The small number of numerator-based exclusions in previous versions of the software are now denominator exclusions.

- ▶ **PQI**

- There are no significant changes to report.

Population Files

- Updated **QI population file** intercensal and postcensal estimates of county-level populations from years 2000 – 2019 for use with area-level QIs
- Population categories:
 - ▶ Single-year age group
 - ▶ Sex
 - ▶ Race
 - ▶ Hispanic origin
- Details about the population methodology at:
 - ▶ http://www.qualityindicators.ahrq.gov/Downloads/Software/SAS/V2020/AHRQ_QI_v2020_ICD10_Population_File.pdf

Risk Adjustment

- HCUP enables all-payer risk adjustment modeling
 - ▶ Critical for benchmarking and internal evaluation
- To calculate expected, risk-adjusted, smoothed, or composite values, users must have major diagnostic categories (MDCs) assigned for each discharge on their input file

Risk Adjustment (cont.)

- What to do with risk-adjusted rates
 - ▶ Compare a hospital's performance to a national average hospital if treating patients with the same case-mix in the hospital
- What NOT to do with risk-adjusted rates
 - ▶ Conclude Hospital A's performance is better/worse than Hospital B's performance based on their risk-adjusted rates
 - ▶ Rank a group of hospitals based on their risk-adjusted rates

Risk Adjustment (cont.)

- Notable changes:
 - ▶ The hospital-level PDIs are risk-adjusted now in v2020
 - ▶ Formats for comorbidity program – uses 2019 release
 - The 2020 release was unavailable during development
 - ▶ Admission APR-DRG is used in AHRQ QI instead of discharge APR-DRG
 - ▶ Optional calibration of smoothed rates and composite values to user data
 - Not recommended for users with hospital- or system-specific data
 - ▶ Clinical Classifications Software Refined (CCSR) HCUP Tool
 - Added to software for PDI risk-adjustment

Summary of v2020 QI Rates (cont.)



- **Compared to v2019 expected changes in observed rates:**
 - ▶ Corrected mismatch between states in numerator & denominator
 - PQIs: increased 4-5%
 - Area-level PDIs: increased 2-4%
 - ▶ PSI 02: increased >200% due to denominator specification updates

Usability Improvements

Usability

- QI software is compatible from FY16-FY20
 - ▶ Only covers ICD-10-CM/PCS coding
- Notable changes:
 - ▶ Option to calibrate smoothed rates and composite values
 - Default to calibrate using the 2017 HCUP SID reference population
 - Alternative is to calibrate to the user's input data

User Suggestions Help Improve the QIs

- Reviewed and expanded list of operating room procedure codes (ORPROC)
 - ▶ Indicators Impacted:
 - PDI: NQI 03, PDI 08, PDI 09, PDI 10
 - PSI: PSI 04, PSI 08, PSI 09, PSI 10, PSI 11, PSI 12, PSI 13
- Setname codes reviewed, added, and removed for consistency with clinical intent and exploit clarity provided by ICD-10-PCS. For example,
 - ▶ ACSCARP: Cardiac Procedure Codes
 - PQI 07: Hypertension Admission Rate
 - PQI 08: Heart Failure Admission Rate
 - ▶ PRESOPP: Esophageal Resection Procedure Codes
 - IQI 08: Esophageal Resection Mortality Rate
 - PSI 11 and PDI 09: Postoperative Respiratory Failure Rate
 - ▶ THORAIP: Thoracic Surgery Procedure Codes
 - PSI 06 and PDI 05: Iatrogenic Pneumothorax Rate

User Suggestions, cont.



- Updated name of QIs
 - ▶ For example, PSI 15 ~~Unrecognized Abdominopelvic Accidental Puncture or Laceration Rate~~
- Revised, added, and removed inclusion/exclusion criteria. For example,
 - ▶ DECUBEXD: Pressure ulcer stage diagnosis codes (new distinct denominator exclusion from related numerator setname)
 - PSI 03: Pressure Ulcer Rate
 - ▶ MALHYPD: Malignant Hyperthermia diagnosis codes (denominator exclusion)
 - PSI 11 and PDI 09: Postoperative Respiratory Failure Rate
 - ▶ PROSFXID: Exclusion for periprosthetic fractures
 - PSI 08: In Hospital Fall with Hip Fracture Rate

User Suggestions, cont.



- Refinements tested but not implemented, for example,
 - ▶ PSI 12 Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate exclusion for procedures occurring 7- to 14-days from admission
 - ▶ Do Not Resuscitate Setname (DNR) exclusion for PSI 04 Death Rate among Surgical Inpatients with Serious Treatable Complications

Send suggestions to: AHRQ QI Support Team
(QIsupport@ahrq.hhs.gov)

v2020 WinQI Software Changes / Improvements



- V2020 Software will notify users of updates
 - ▶ Accepting v2020 update will automatically uninstall prior version and install v2020
- With risk adjustment added for hospital PDI indicators, running a large input file (i.e., ≥ 3 million rows) can take a few hours to finish
- Options to calibrate smoothed rates and composite values using observed to expected ratio
- Labels updated in WinQI – provider level to hospital level
- Hospital and Area level reports include observed, expected, reference population, risk-adjusted, and smoothed rates
- Use automation features to run WinQI using command line utilities
- On-screen visual cues to notify users about the software updates
- No changes to the input data structure

Highlights of Indicator Changes

Specification Changes

- Software implements specification and programming changes across all modules
 - ▶ Developed through a detailed deliberation and assessment process with clinicians and expert coders
- Changes are detailed in the Change Log Document for each AHRQ QI module
 - ▶ Available at:
 - PQI:
https://www.qualityindicators.ahrq.gov/Downloads/Modules/PQI/V2020/ChangeLog_PQI_v2020.pdf
 - IQI:
https://www.qualityindicators.ahrq.gov/Downloads/Modules/IQI/V2020/ChangeLog_IQI_v2020.pdf
 - PQI:
https://www.qualityindicators.ahrq.gov/Downloads/Modules/PQI/V2020/ChangeLog_PQI_v2020.pdf
 - PDI:
https://www.qualityindicators.ahrq.gov/Downloads/Modules/PDI/V2020/ChangeLog_PDI_v2020.pdf

Highlights of Indicator Changes

Prevention (PQIs)

Annual coding updates:
05, 07, 08, 11, 12, and
16

Inpatient (IQIs)

- Annual coding updates: 08, 21, and 33
- Other updates: 13, 14, 21, and 33

Patient Safety (PSIs)

- Annual coding updates: 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, and 15
- Other updates: 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 15, and 16

Pediatric (PDIs)

- Annual coding updates: NQI 03 and PDI 01, 05, 08, 09, 10, 12, and 18
- Other updates: NQI 02 and 03, PDI 01, 02, 05, 08, 09, 10, 12, 13, and 17

AHQ QI Software Resources



- **AHRQ QI technical assistance**

- ▶ http://www.qualityindicators.ahrq.gov/FAQs_Support/
- ▶ QIsupport@ahrq.hhs.gov

- **AHRQ QI v2020 software and documentation**

- ▶ <http://www.qualityindicators.ahrq.gov/Software/Default.aspx>

Q&A/Discussion

Thank You



Thank you to our speakers and participants!

General Questions and Comments:

AHRQ QI Support Team

QIsupport@ahrq.hhs.gov

AHRQ QI Website

<http://www.qualityindicators.ahrq.gov/>