Announcements

• This webinar will be recorded and available on the AHRQ QI website - [http://www.qualityindicators.ahrq.gov/](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 **question 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 Madeline Polese at [mpolese@air.org](mailto:mpolese@air.org).
Agenda

• Overview of the AHRQ QIs

• Retirement of select AHRQ QIs in the v2019 SAS and WinQI software

• Overview of improvements to the v2019 software, including risk-adjustment

• Specification changes for select QIs

• v2019 SAS and WinQI software resources
Today’s Speakers

- **Diane Stollenwerk**, MPP, President, **Stollenwerks**
- **Mia DeSoto**, Ph.D., M.H.A., Health Scientist Administrator, Program Lead AHRQ Quality Indicators (**AHRQ**)
- **Alex Bohl**, Ph.D., Associate Director, Hospital Quality Indicator Project Director **Mathematica**
- **Eric Schone**, Ph.D., Senior Researcher, Area Quality Indicator Project Director, **Mathematica**
- **Vivek Kumar**, Senior Project Manager, **Pantheon Software**
- **Patrick Romano**, M.D., M.P.H., Professor of Medicine and Pediatrics; **University of California, Davis School of Medicine**
<table>
<thead>
<tr>
<th>Prevention (PQIs)</th>
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<tbody>
<tr>
<td>• Potentially preventable hospital admissions rates for ambulatory care conditions</td>
<td>• Quality of care inside the hospital—hospital level indicators</td>
<td>• Potentially avoidable complications and adverse event rates following adult surgeries/procedures performed in the hospital</td>
<td>• Mortality rates for pediatric surgical procedures</td>
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<td>• Area-level indicators</td>
<td>• Mortality rates for adult conditions/surgical procedures</td>
<td>• Hospital-level indicators</td>
<td>• Potentially avoidable complications and adverse event rates in the hospital</td>
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<td>• Risk-adjusted</td>
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About the AHRQ QI Software

• Uses readily available administrative data
  ► Risk-adjusted in the v2019 ICD-10-CM/PCS 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
v2019 Software Release

SAS July 2019

- **Now available**: ICD-10-CM/PCS software
- Separate software package to download for each module

WinQI July 2019

- **Now available**: ICD-10-CM/PCS software
- Download a single ICD-10 installer package for all four modules

Software available at:
RETIREMENT OF SELECT QIs
About AHRQ QIs

- QIs have been a successful program with > 100 measures
- The field of quality measurement is rapidly changing
- Now QIs used for various purposes such as:
  - performance based payment programs
  - public reporting
  - other uses such as needs assessments, planning, research and informing policy
Overview of Process

Step 1
- Conduct Literature Review
- Environmental Scan

Step 2
- Conduct a Request for Information (RFI)

Step 3
- Convene an Expert Workgroup & use a Modified Delphi approach
Timeline for Expert Workgroup

**Kick-off Meeting:**
Discussion on Literature Review, Environmental Scan, User feedback & methodology for Modified Delphi
Jan 2018

**Final Meeting:**
Discuss recommendations on QIs for retirement & refinement
Sept 2018

**5 Meetings to Discuss the 4 QI modules (IQIs, PQIs, PSI, and PDIs)**
Feb – Aug 2018
Methodology: Selection of QIs for Retirement

Are the AHRQ QIs used to support quality improvement initiatives?

Selected for Retirement

Evidence Scans

User Feedback

Expert Workgroup
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<td>PQI 02 Perforated Appendix Admission Rate</td>
<td>IQI 01 Esophageal Resection Volume</td>
<td>PSI 16 Transfusion Reaction Count</td>
<td>NQI 01 Neonatal Iatrogenic Pneumothorax Rate</td>
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<td>PQI 09 Low Birth Weight Rate</td>
<td>IQI 02 Pancreatic Resection Volume</td>
<td></td>
<td>PDI 02 Pressure Ulcer Rate</td>
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<td>PQI 10 Dehydration Admission Rate</td>
<td>IQI 04 Abdominal Aortic Aneurysm (AAA) Repair Volume</td>
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<td>PDI 03 Retained Surgical Item or Unretrieved Device Fragment Count</td>
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<td>IQI 05 Coronary Artery Bypass Graft (CABG)</td>
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<td>PDI 06 RACHS-1 Pediatric Heart Surgery Mortality Rate</td>
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<td>IQI 06 Percutaneous Coronary Intervention (PCI) Volume</td>
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<td>PDI 07 RACHS-1 Pediatric Heart Surgery Volume</td>
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<td>IQI 07 Carotid Endarterectomy Volume</td>
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<td>PDI 11 Postoperative Wound Dehiscence Rate</td>
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<td>IQI 13 Craniotomy Mortality Rate</td>
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<td>PDI 13 Transfusion Reaction Count</td>
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<td>IQI 14 Hip Replacement Mortality Rate</td>
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<td>PDI 17 Perforated Appendix Admission Rate</td>
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<td>PDI 19 Pediatric Safety for Selected Indicators Composite</td>
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Rationale for Retirement

- **Limited evidence** in the literature shows these are not widely used for quality improvement.

- **Rarity of events** – some indicators measured events that are so rare that the measure is no longer reliable or relevant for quality improvement.

- **Advances in medical technology** – there have been practice changes in terms of both where and how care is provided which affects the validity and reliability of these indicators.
Rationale for Retirement (cont.)

- Significant analytical work for refinement required
  – some indicators would require substantial additional validation work or improvement of the specifications for ICD-10 CM/PCS to remain useful for quality improvement

- **Volume as a stand-alone measure** is not useful for quality improvement
OVERVIEW OF V2019 SOFTWARE AND IMPROVEMENTS
v2019 Updates

• **v2019 is risk adjusted** using 2016 HCUP State Inpatient Databases (SID) data

• Implemented **coding updates**
  ► Based on fiscal year 2019 ICD-10-CM/PCS
  ► Compatible with ICD-10-CM/PCS hospital data for FY16 - FY19
  ► Coding changes affect all software modules
v2019 Updates (cont.)

- v2019 software reports
  - Risk-adjusted rates, signal variance, reference population rates, and composite weights for all modules
  - Non-risk adjusted numerators, denominators, and observed rates
Population Files

• Updated QI population file intercensal and postcensal estimates of county-level populations from years 2000 – 2018 for use with area-level QIs

• Population categories:
  ► Single-year age group
  ► Sex
  ► Race
  ► Hispanic origin

• Details about the population methodology at:
Risk Adjustment

• HCUP enables all-payer risk adjustment modeling
  ► Critical for benchmarking and internal evaluation

• Benchmark rates are available:
Risk Adjustment (cont.)

- **PSIs and IQIs**: risk adjustment accounts for age, gender, clinical conditions, major diagnostic category (MDC), and diagnostic groups
  - Diagnostic groups: PSIs use MS-DRGs, IQIs use APR-DRGs
  - Discharge-level risk adjustment

- **PQIs and area-level PDIs**: risk adjustment accounts for age and gender, and an optional adjustment for poverty
  - Poverty is defined using a census poverty definition
  - County-level risk adjustment
Risk Adjustment (cont.)

• **What to do with risk-adjusted rates**
  
  ▶ Compare a hospital’s performance actual (observed) to its expected performance
  
  ▶ Expected performance is based on the experience of patients at all hospitals in the nation, adjusted to the hospital’s case-mix.

• **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
Notable Changes

- **PDIs**: Hospital-level PDIs are not risk-adjusted in v2019

- **PSIs and IQIs**:
  - Updated AGE_SEX risk adjustment coefficients that account for age, gender, MDCs, diagnostic groups, and clinical conditions
    - No longer support NO_AGE, NO_SEX, and NO_AGE_NO_SEX models used for stratification
  - User must assign MDCs on their input file for risk adjustment
Summary of v2019 QI Rates

- Compared to v2018 ICD-10-CM/PCS (non-risk adjusted) using the 2016 HCUP data, expected changes in observed rates:
  - PSI 12: increased <0.15% because of removal of exclusions
  - PSI 13: decreased <0.1% due to increased exclusions
  - PQI 14: reduced substantially after correcting definition of uncontrolled diabetes

- Comparison report:

- Parameter estimates:
USABILITY IMPROVEMENTS
User Suggestions Help Improve the QIs

- User feedback via technical support questions and survey responses guided improvements to QI software usability.
- Users’ technical support questions regarding inclusions and exclusions helped guide some QI refinements.

Send suggestions to: AHRQ QI Support Team (QIsupport@ahrq.hhs.gov)
v2019 SAS Software Changes / Improvements

• **Renamed programs and control file variables** to better align with what the module is measuring
  ▶ Changed “provider” to “hospital”
  ▶ Consistently named, labeled, and added comments on output variables and files across modules
  ▶ Improved labeling and comments around transfer-related variables and exclusions, and removed any unused transfer variables

• **Added technical assistance documentation** on running the MS-DRG grouper for PSI and PDI

• **Streamlined software processing** by setting up all programs to execute within the control file instead of having to run all programs individually

• **Significantly reduced program run times** for the PDI and PSI modules
• Software will **notify users of updates**
  ► Accepting v2019 update will automatically uninstall prior version and install v2019
• With risk adjustment added, **running a large input file** (i.e., ≥3 million rows) can take a few hours to finish
• Option to use **3M’s limited license APR-DRG grouper** in WinQI or provide user’s own APR-DRG code
• Hospital- and area-level reports include **observed**, **expected**, **reference population**, **risk-adjusted**, and **smoothed** rates
• Improved **automation features** based on user feedback
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 module
  ▶ PQI:
  ▶ IQI:
  ▶ PSI:
  ▶ PDI:
### Highlights of Indicator Changes

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AHQ QI Software Resources

- AHRQ QI technical assistance
  - [http://www.qualityindicators.ahrq.gov/FAQs_Support/](http://www.qualityindicators.ahrq.gov/FAQs_Support/)
  - QIsupport@ahrq.hhs.gov

- AHRQ QI v2019 software and documentation
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/