Star Ratings Cohort

For Nebraska Hospital Association

February 28, 2023

Agenda

Star Ratings & How to Use Them

- Scoring methodology

- Data sources, timing, and other details

- Interpreting feedback reports
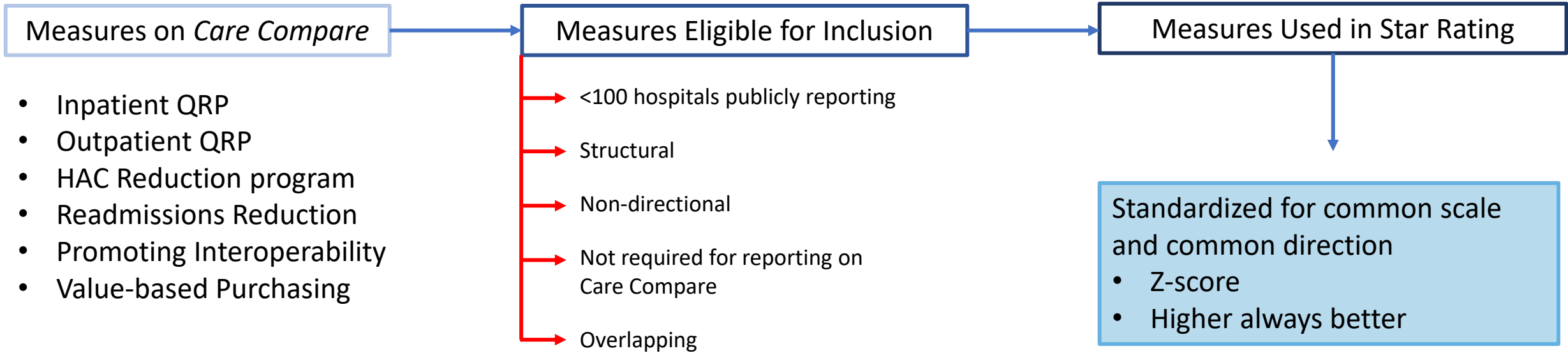
- Putting your Rating in context

Methodology Overview

From Raw Data to Stars in 7 Simple Steps

1. Select measures, standardize scores

2. Assign measures to groups

3. Calculate measure group scores

4. Sum group scores to get summary score

5. Cut hospitals with <3 measures in <3 groups

6. Assign to peer groups

7. Match summary score to star rating within peer groups

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1. Select Measures

Candidate measures come from several programs

| Measures on *Care Compare* | | Measures Eligible for Inclusion | | Measures Used in Star Rating |

- Inpatient QRP
- Outpatient QRP
- HAC Reduction program
- Readmissions Reduction
- Promoting Interoperability
- Value-based Purchasing

→ <100 hospitals publicly reporting

→ Structural

→ Non-directional

→ Not required for reporting on Care Compare

→ Overlapping

Standardized for common scale and common direction
- Z-score
- Higher always better

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2. Assign measures to groups

Mortality (7)	Safety (8)	Readmissions (11)	Timely & Effective Care (12)	Patient Experience (8)
• AMI • CABG • COPD • HF • Pneumonia • Stroke • Serious treatable complications after surgery	• CLABSI • CAUTI • SSI: Colon • SSI: Hysterectomy • MRSA Bloodstream infections • C. Diff • TKA/THA complications • Serious complications	• AMI • CABG • COPD • HF • THA/TKA • Pneumonia • Hospital-wide • Unplanned visits after OP colonoscopy • Unplanned visits after OP chemo • ED visits for OP chemo • Unplanned visits after OP surgery	• HCP flu vaccine • Left ED without being seen • ED stroke brain scan within 45 minutes • Rec for FU screening colonoscopy • Early elective delivery • Sepsis & septic shock • Radiation therapy for bone cancer • Time to transfer AMI • Time from ED arrival to departure • MRI for low-back pain • Double abdomen CT scans • OP imaging stress test before OP surgery	• Nurse communication • Doctor communication • Received help timely • Explained medications • Room clean/quiet • Information about recovery • Understood care when left • Willingness to Recommend

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3. Calculate Measure Group Scores

Average Performance on All Measures Reported

Example: Morality Measure Group

Hospital A: Reported all 7 Mortality measures

Weight per measure: 100%/7 = **14.3% each**

$$
\begin{array}{l}
(14.3)(\text{AMI Score}) \\
+\ (14.3)(\text{CABG Score}) \\
+\ (14.3)(\text{COPD Score}) \\
+\ (14.3)(\text{HF Score}) \\
+\ (14.3)(\text{Pneumonia Score}) \\
+\ (14.3)(\text{Stroke Score}) \\
+\ (14.3)(\text{Complications Score})
\end{array}
$$

Morality Group Score

Hospital B: Reported 3/7 Mortality measures

Weight per measure: 100%/3 = **33.3% each**

$$
\begin{array}{l}
(33.3)(\text{AMI Score}) \\
+\ (33.3)(\text{HF Score}) \\
+\ (33.3)(\text{Pneumonia Score})
\end{array}
$$

Morality Group Score

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4. Calculate Summary Score

Weighted Average of Groups Reported

Hospital A: Reported all 5 Groups

- Mortality 22%
- Safety 22%
- Timely/Effective 12%
- Patient Experience 22%
- Readmissions 22%
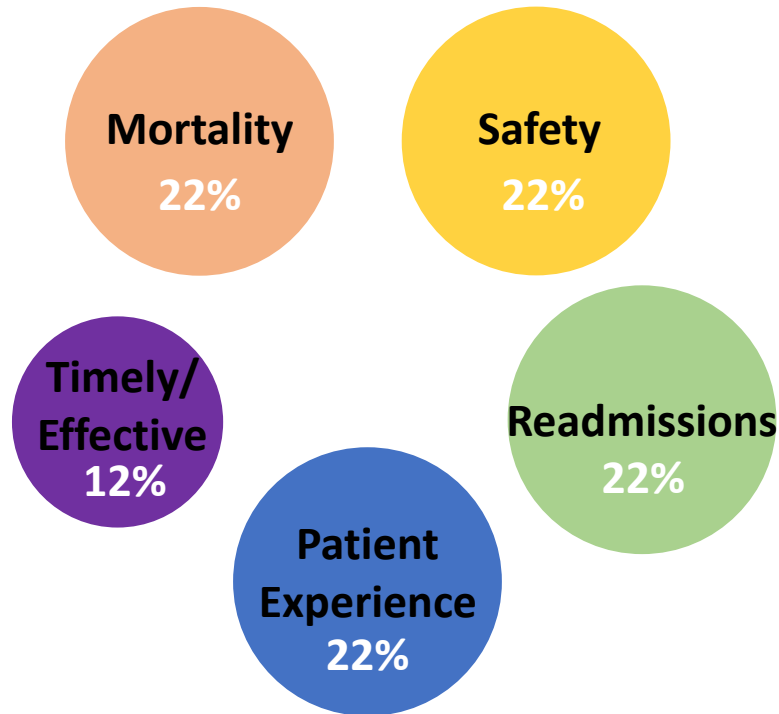
Hospital B: Reported 4/5 Groups

- Mortality 27.5%
- Safety 27.5%
- Timely/Effective 17.5%
- Readmissions 27.5%

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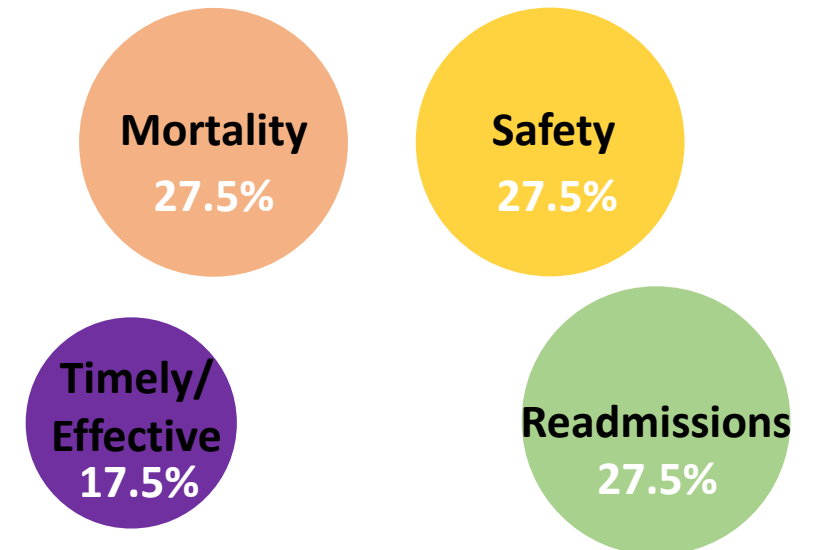
5. Cut Hospitals w/ Insufficient Data

Program Only Includes Hospitals Meeting Reporting Thresholds

- Hospitals only get a Star Rating if:

  - ➤ They report sufficient data to calculate at least **three measures** in at least **three groups**

  - ➤ One of those groups must be **Mortality** or **Safety**

6. Assign to Peer Group

## Three Categories Based on Number of Groups Reported

- Rating comparisons for hospitals that report:

  - ➤ All five measure groups

  - ➤ Four out of five measure groups

  - ➤ Three measure groups

- Peer group is **not** publicly reported

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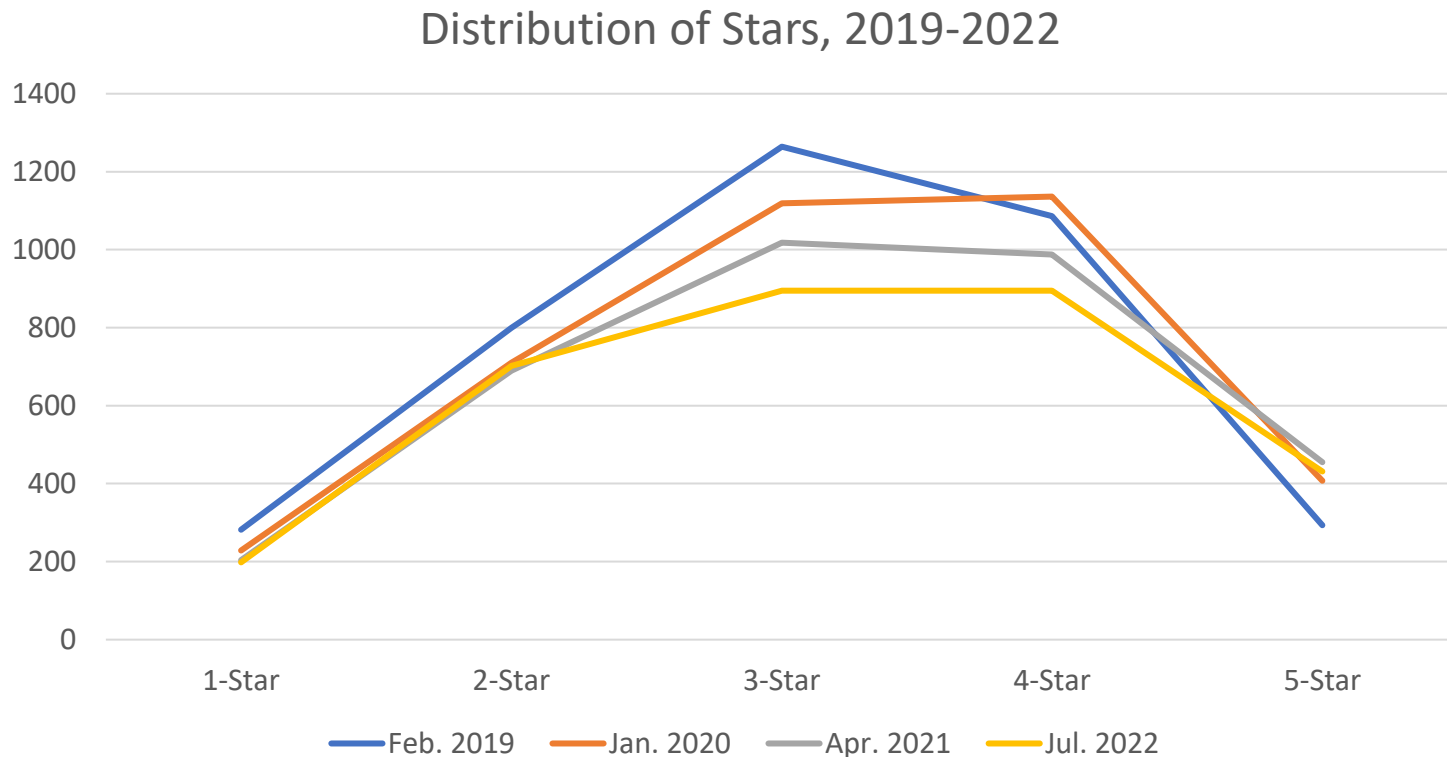Advancing Health in America

7. Calculate Overall Star Rating

Use k-means Clustering to Turn Scores into Stars within Peer Group

Example: Four-Group Category
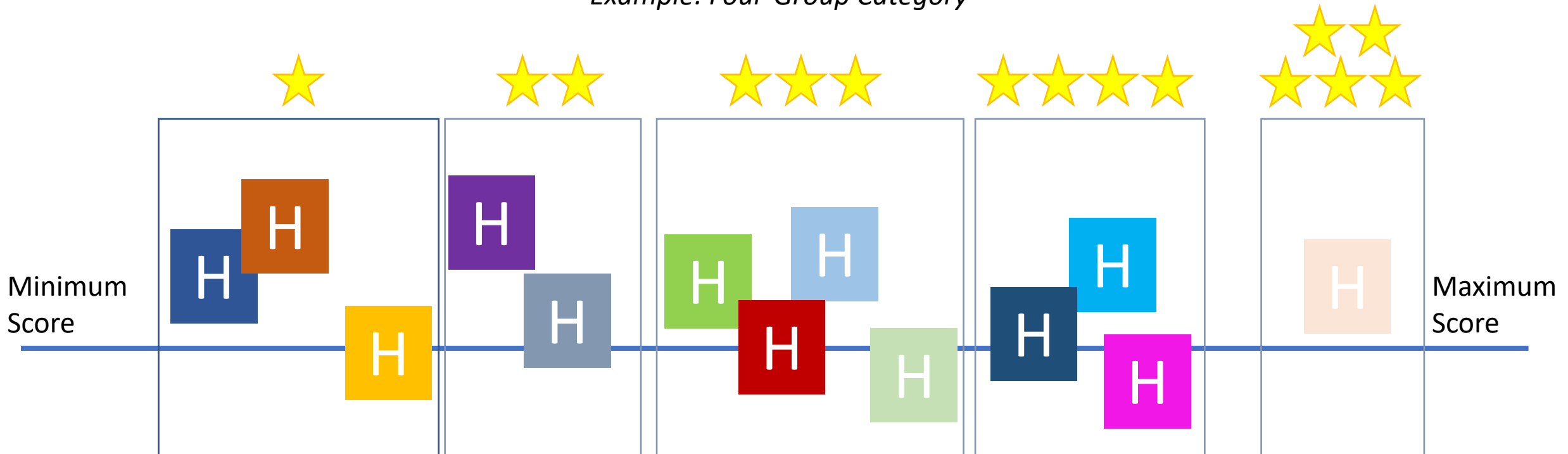
Distribution of Stars since 2019

Major Methodology Change in 2021, Exceptions in 2022

Distribution of Stars, 2019-2022

Legend: Feb. 2019 — Jan. 2020 — Apr. 2021 — Jul. 2022

X-axis: 1-Star, 2-Star, 3-Star, 4-Star, 5-Star
Y-axis: 0, 200, 400, 600, 800, 1000, 1200, 1400

- Five-Group Category largest by far
- As much as 80.3% of hospitals have received a rating, but 2022 update only included 69.5%
- Measures and number of measures change year-to-year
- CMS granted reporting exceptions for first six months of 2020 due to PHE
- Generally, >1/2 hospitals receive same rating as last refresh

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Data Reporting: *Various Deadlines*

- Annual and quarterly mandatory requirements

- Time (4.5 months) to add new data, resubmit, change, delete until submission deadline

- NHSN measures: data can be modified ay any time

- eCQM data have their own submission processes/deadlines

Timing of Data Used and Refreshes

- Generally updated ("refreshed") annually with more data
  - Based on data reported from a quarter within the prior year
  - Delays can occur due to CMS calculation errors
- Reporting periods are same as for individual measures reported on Care Compare
  - Reporting period differ for each measure group, some individual measures
  - CMS may "except" quarters of data (e.g. for COVID PHE)

Example: Select Data Collection Periods for Measures in July 2022 Refresh

Measure	Reporting Period
AMI Mortality	July 1, 2017-December 1, 2019
PSI-90	July 1, 2018-December 31, 2019
Flu immunizations among HCP	October 1, 2019-March 31, 2020
Hospital Visits after OP Surgery	January 1, 2019-December 24, 2019

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Other Reporting Details

- Review & Corrections period: separate from Star Ratings updates
  - ➤Providers must verify accuracy of data prior to submission deadline
  - ➤Preview period is just that: no recalculations
- Suppressing Data: Only under extenuating circumstances, including CMS error
  - ➤Not allowed for submission of inaccurate data
- CAH opt-out: CAHs can withhold public reporting
  - ➤Make request by midnight of final day of Preview Period

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Feedback Reports: Types & Timing

- Preview Reports

  ➢Available during 30-day window prior to initial public display of data

- Overall Star Rating Hospital-specific Report (HSR)

  ➢Receive after beginning of preview period

  ➢Include updated Star Rating results, summary scores, standardized individual measure scores, and peer groups

  ➢30 days to review and ask questions– not to submit corrections to underlying data

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Preview Reports: *How to Read One*

Table 1: Star Rating Results

How many stars you got

How many stars the average hospital got

	Your Hospital's Results	National Average
Overall Star Rating	****	***
Hospital Summary Score	0.32	-0.06
Peer Grouping	4 Measure Groups	n/a

The average summed performance score across all hospitals

The sum of performance scores across all measure groups (higher is better)

The category of hospitals against which your performance was compared, based on the number of measure groups the hospitals in the category reported

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Preview Reports: *How to Read One*

Standardized Measure Group Score= $\dfrac{\text{(Measure Group Score-National Mean)}}{\text{Measure Group Std. Deviation}}$

Measure Group	Number of measures in Group	Number of Measures for Your Hospital	Your Hospital's Measure Group Weight	Standard Measure Group Weight	Measure Group Score	Measure Group National Mean of Scores	Measure Group Std. Dev. Across Hospitals	Your Hospitals Standardized Measure Group Score	National Group Score
Mortality	7	7	27.5%	22.0%	0.31	0.001	0.64	0.49	-0.02
Readmission	11	10	27.5%	22.0%	-0.02	0.03	0.53	-0.09	-0.02
Safety of Care	8	8	27.5%	22.0%	0.32	0.003	0.65	0.49	0.005
Patient Experience	8	2	0	22.0%	n/a	0.00	0.85	n/a	0.00
Timely & Effective Care	12	12	17.5%	12.0%	0.40	0.04	0.82	0.44	-0.03

Summary score:

0.32 = (0.275*0.49)+(0.275*-0.09)+(0.275*0.49)+(0.175*0.44)

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Preview Reports: *How to Read One*

Measure ID	Measure Name	Your Hospital's Measure Result	Measure Performance Category	Measure's National Mean of Scores	Measures Std. Dev. Across Hospitals	Your Hospital's Standardized Measure Score	Measure Weight
MORT-30-AMI	AMI 30-Day Mortality Rate	11.6%	Same	12.3%	0.01	0.70	14%
READM-30-COPD	COPD 30-Day Readmission Rate	N/A	Too Few	19.7%	0.01	-1.57	0.0%
PSI-90-Safety	Patient Safety and Adverse Events Composite	0.79	Lower	0.99	0.18	0.42	12.5%
OP-10	Abdomen CY Use of Contrast Material	2.5%	--	6.1%	0.06	0.65	8.3%

Performance compared to national-level results

Weight toward group score based on number of measures within group reported

Putting your Ratings in Context

- Quality measurement and transparency are vital

- Patients should use **all** available tools to make health care decisions

- My organization is committed to quality and safety

- We have been working hard to improve

- CMS has made changes to improve Star Ratings

- **However**, there are a lot of report cards– and they don't all agree

- Quality ratings can be improved

  ➢ More equitable, realistic comparisons

  ➢ Need to take social risk factors into account

  ➢ We want to help improve quality measurement!