Understanding CMS’ 5-Star Rating System

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Today’s objectives:

Participants will be able to:

• Compare and contrast the various data sources available for monitoring quality and performance

• Understand what contributes to your 5-Star Rating

• Know which resources to use to understand your data
New England QIN-QIO

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Data: Monitoring for Quality
Monitoring for Quality – Data Sources

Public Sources
- Nursing Home Compare
- 5-Star Program

Private Sources
- SAR Reports/Composite Score
- CASPER Reports
- Internally collected data
Polling Question

How often do you review your CASPER reports?

a. Monthly
b. Quarterly
c. Annually
d. What are CASPER reports?
Nursing Home Compare
Nursing Home Compare

[www.medicare.gov/nursinghomecompare/search.html]

- Search nursing homes across the country
- Compare performance against state and national averages
  - Demographic information
  - Health and fire safety inspections (3yrs)
  - Staffing (snapshot)
  - Quality measures (3 quarters)
  - Penalties
  - Five Star Ratings
Quality Measures: Short Stay

- Pain
- Pressure ulcers
- Influenza vaccination
- Pneumococcal vaccination
- Antipsychotic Medication use
Quality Measures: Long Stay

- Falls
- Urinary Tract Infection
- Pain
- Pressure Ulcers
- Incontinence
- Catheter use
- Physical Restraints

- ADL Assistance
- Weight Loss
- Depression
- Influenza Vaccination
- Pneumococcal Vaccination
- Antipsychotic Medication use
Quality Measure User’s Manual v8.0

What You Need to Know:

• Not all quality measures contribute to your 5-star rating
• Not all quality measures are available on your CASPER report
• Not all quality measures contribute to your composite score
What drives your quality measure data?

MDS 3.0 data!

• RAI Manual

• Quality Measures User’s Manual v8.0
Five Star Quality Rating System
Polling Question

True or False:

My facility’s 5-Star Rating is an average of all the categories’ ratings.
Five Star Quality Rating System

- Featured on Nursing Home Compare
- Multiple star ratings:

  - Health Inspection
  - Staffing
  - Quality Measures
  - Overall
# Nursing Home Results

Your search resulted in 13 nursing homes available within 10 miles from the center of ZIP Code 22031. Choose up to three nursing homes to compare. So far, you have selected:

- **THE VIRGINIAN**
  - Address: 9255 ARLINGTON BLVD FAIRFAX, VA 22031
  - Phone: (703) 335-0585
  - Program Participation: Medicare and Medicaid
  - Distance: 0.5 Miles
  - Overall Rating: Much Above Average
  - Health Inspections Rating: Above Average
  - Staffing Rating: Much Above Average
  - Quality Ratings: Above Average

- **ILLF NURSING HOME AND REHAB C**
  - Address: 8000 ILLF DRIVE DUNN URGING, VA 22027
  - Phone: (703) 550-1000
  - Program Participation: Medicare and Medicaid
  - Distance: 3.4 Miles
  - Overall Rating: Above Average
  - Health Inspections Rating: Above Average
  - Staffing Rating: Above Average
  - Quality Ratings: Above Average

- **FAIRFAX NURSING CENTER INC**
  - Address: 10701 MAIN STREET FAIRFAX, VA 22030
  - Phone: (703) 275-7705
  - Program Participation: Medicare and Medicaid
  - Distance: 4.2 Miles
  - Overall Rating: Above Average
  - Health Inspections Rating: Above Average
  - Staffing Rating: Much Above Average
  - Quality Ratings: Above Average
What the Stars Mean

Much Above Average
Above Average
Average
Below Average
Much Below Average
How the Stars are Distributed

- **5 star: top 10%**
  (lowest in terms of health inspection deficiency score)

- **4 – 2 stars: middle 70%**
  (approximately 23.33% each star)

- **1 star: bottom 20%**
The Five-Star Health Inspection Domain
Health Inspections

- 3 most recent annual inspections – weighted in favor of most recent surveys
  - Most recent survey – $3/6 = 50\%$
  - Survey 2 years ago – $2/6 = 33\%$
  - Survey 3 years ago – $1/6 = 16\%$
- All complaint health inspections and revisits – last 3 years
- The rating considers the number and the Scope & Severity of deficiencies
- Life Safety Surveys and Federal Comparative Surveys are *not* included, but focused surveys are
- Based on relative performance within states
- Data updated monthly
Health Inspections

• Complaint surveys are assigned to a time period based on the calendar year in which the complaint survey occurred.
  – Within the most recent 12 months = 50%
  – From 13-24 months ago = 33%
  – From 25-36 months ago = 16%

• Complaint surveys conducted within 15 days (before or after) an annual health inspection:
  – Deficiencies will only count once (if found on both the complaint and the annual inspection)
  – Highest scope-severity is used
Survey Deficiency Score: Weights for Different Types of Deficiencies

<table>
<thead>
<tr>
<th>Severity</th>
<th>Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate jeopardy to resident health or safety</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Isolated</td>
</tr>
<tr>
<td>Immediate jeopardy to resident health or safety</td>
<td>J 50 points</td>
</tr>
<tr>
<td>Actual harm that is not immediate jeopardy</td>
<td>G 20 points</td>
</tr>
<tr>
<td>No actual harm with potential for more than min. harm that is not IJ</td>
<td>D 4 points</td>
</tr>
<tr>
<td>No actual harm with potential for min. harm</td>
<td>A 0 point</td>
</tr>
</tbody>
</table>
Repeat Visits

Table 2
Weights for Repeat Revisits

<table>
<thead>
<tr>
<th>Revisit Number</th>
<th>Noncompliance Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>0</td>
</tr>
<tr>
<td>Second</td>
<td>50 % of health inspection score</td>
</tr>
<tr>
<td>Third</td>
<td>70 % of health inspection score</td>
</tr>
<tr>
<td>Fourth</td>
<td>85 % of health inspection score*</td>
</tr>
</tbody>
</table>

Note: The health inspection score includes points from deficiencies cited on the standard annual survey or complaint surveys during a given survey cycle.

*If a provider fails to correct deficiencies by the time of the first revisit, then these additional revisit points are assigned up to 85 percent of the health inspection score for the fourth revisit.
Calculating Your Survey Score

Step 1
List deficiencies by survey year

Step 2
Assign score (see graph) to each deficiency

Step 3
Sum each year

Step 4
Multiply most recent survey year by .50

Step 5
Multiply survey score from 2 years ago by .33

Step 6
Multiply survey score from 3 years ago by .16

Step 7
Add “new” scores together

Survey Score

* Don’t forget to include any complaint investigation surveys too!
The Five-Star Staffing Domain
Staffing Data

Number of hours of care on average provided to each resident each day

Includes:
• RNs, DONs and RNs with administrative duties
• FT and PT employees, agency/contract staff

Based on CMS Staffing Study

The Staffing Data Source is your 671 Form!
Staffing Data

- Based on two data points:
  1) Total nursing hours per resident day (RN + LPN + CNA hours)
  2) RN hours per resident day

Table 3.
National average hours per resident day used in calculation of adjusted staffing (as of April 2012)

<table>
<thead>
<tr>
<th>Type of staff</th>
<th>National average hours per resident per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total nursing staff (Aides + LPNs + RNs)</td>
<td>4.0309</td>
</tr>
<tr>
<td>Registered nurses</td>
<td>0.7472</td>
</tr>
</tbody>
</table>

- Case-Mix Adjusted – accounting for differences in the level of need for care of residents in different nursing homes
  - Case-Mix based on Resource Utilization Groupings (RUGS-III)

\[
\text{Hours}_{\text{Adjusted}} = \left( \frac{\text{Hours Reported}}{\text{Hours Expected}} \right) \times \text{Hours}_{\text{National Average}}
\]
Staffing Data

- Two staffing measures are given equal weight.
- 1 to 5 rating is assigned based on percentile-based method.

<table>
<thead>
<tr>
<th>Staff type</th>
<th>1 star</th>
<th>2 stars lower</th>
<th>2 stars upper</th>
<th>3 stars lower</th>
<th>3 stars upper</th>
<th>4 stars lower</th>
<th>4 stars upper</th>
<th>5 stars</th>
</tr>
</thead>
<tbody>
<tr>
<td>RN</td>
<td>&lt; 0.283</td>
<td>&gt;=0.283</td>
<td>&lt; 0.379</td>
<td>&gt;=0.379</td>
<td>&lt; 0.513</td>
<td>&gt;=0.513</td>
<td>&lt; 0.710</td>
<td>&gt;=0.710</td>
</tr>
</tbody>
</table>

Note: Adjusted staffing values are rounded to three decimal places before the cut points are applied.
Staffing Data

- Overall rating is average of the two staffing ratings per table below

<table>
<thead>
<tr>
<th>RN rating and hours</th>
<th>Total staffing rating and hours (RN, LPN and aide)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>&lt;0.283</td>
</tr>
<tr>
<td>2</td>
<td>0.283 – 0.378</td>
</tr>
<tr>
<td>3</td>
<td>0.379 – 0.512</td>
</tr>
<tr>
<td>4</td>
<td>0.513 – 0.709</td>
</tr>
<tr>
<td>5</td>
<td>≥0.710</td>
</tr>
</tbody>
</table>

Note: Adjusted staffing values are rounded to three decimal places before the cut points are applied.
Staffing Data

- Based on two data points:
  1) Total nursing hours per resident day (RN + LPN + CNA hours)
  2) RN hours per resident day

- Case-Mix Adjusted – accounting for differences in the level of need for care of residents in different nursing homes
  - Case-Mix based on Resource Utilization Groupings (RUGS-III)

\[
\text{Hours}_{\text{Adjusted}} = \left( \frac{\text{Hours}_{\text{Reported}}}{\text{Hours}_{\text{Expected}}} \right) \times \text{Hours}_{\text{National Average}}
\]
Staffing Score

To obtain a 4 or 5 star rating in the staffing domain, you must:

Meet or exceed the five-star level for both RN and total staffing

= 5 stars

Receive at least a three-star rating on both RN and total nurse staffing and must receive a rating of four or five stars on one of these domains

= 4 stars
Polling Question

True or False:

I shouldn’t include my Director of Nursing RN hours on my 671 form.
The Five-Star Quality Measure Domain
Quality Measures (QMs)

Selected 11 quality measures (out of 18)

• 3 short-stay measures
• 8 long-stay measures

Why 11? – Core measures with the highest reliability

• February 2015: LS and SS antipsychotic medication measure added

Reported by the nursing home based on their assessment of the residents using MDS Data
Quality Measures

• Long-Stay Measures:
  – ADL change
  – Falls with Major Injury
  – High-risk Pressure Ulcers
  – Catheters*
  – Physical Restraints
  – Urinary Tract Infection (UTIs)
  – Self-report Moderate to Severe Pain*
  – Antipsychotic Medication

• Short-Stay Measures:
  – Self-report Moderate to Severe Pain
  – Pressure Ulcers*
  – Antipsychotic Medication

* Risk-adjusted quality measures
Quality Measures

Based on three most recent quarters of data

- Short stay measures = minimum of 20 denominator
- Long stay measures = minimum of 30 denominator

Points assigned based on facility performance

- Total possible scores between 225 and 1100
- Calculations very by QM
Calculations of the QMs

20-100 points assigned based on facility performance:
- 0% of residents triggering QM = 100 points
- Points assigned on national percentiles

All 11 QMs given equal weight
- ADL QM based on state decile vs national

Points summed across all QMs to create total facility score
Quality Measure Cut Points

- Once QM score is computed (see manual for details), the five-star QM rating is assigned based on the below table:

<table>
<thead>
<tr>
<th>QM Rating</th>
<th>Point Range for MDS Quality Measure Summary Score (updated February 2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td>★</td>
<td>225 – 544</td>
</tr>
<tr>
<td>★★</td>
<td>545 – 629</td>
</tr>
<tr>
<td>★★★</td>
<td>630 – 689</td>
</tr>
<tr>
<td>★★★★</td>
<td>690 – 759</td>
</tr>
<tr>
<td>★★★★★</td>
<td>760 – 1,100</td>
</tr>
</tbody>
</table>
Five Star Quality Rating System

• Recent changes:
  – Antipsychotic medication use (SS and LS)
  – Increased number of points to earn 2+ stars
  – Must meet RN or total staffing by 4+ stars to achieve 4 stars on overall staffing

**Many nursing homes may have seen a lower quality measure rating as a result of these changes, even though their QM data may not have changed.**
Calculating Your Overall Star Rating

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Inspection Rating</td>
<td>Staffing Rating</td>
<td>Quality Measures Rating (QMs)</td>
</tr>
</tbody>
</table>

Overall Rating

Start with Health Inspection Rating

- Add 1 star if 4 or 5-Star Staffing
- Subtract 1 star if 1-Star Staffing

Add 1 star if 5-Star QMs

Subtract 1 star if 1-Star QMs

**note: if Health inspection is 1 star – can gain no more than 1 star based on staffing and QMs; if SFF can not exceed 3 stars**
Polling Question

True or False:

Nursing Home Compare publicly reports Quality Measures that don’t contribute to my 5-Star rating.
### Example

<table>
<thead>
<tr>
<th>Health Inspection Rating</th>
<th>Staffing Rating</th>
<th>Quality Measures</th>
<th>Overall Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>1</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

**Calculation:**

$$5 - 1 + 0 = 3$$
## Example

<table>
<thead>
<tr>
<th>Health Inspection Rating</th>
<th>Staffing Rating</th>
<th>Quality Measures</th>
<th>Overall Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>★★★</td>
<td>★★★</td>
<td>★★★★☆☆☆</td>
<td>★★★★☆☆☆</td>
</tr>
</tbody>
</table>

**Calculation:**

★★★ + 0 + ★★☆ = ★★★★☆☆☆
Example

<table>
<thead>
<tr>
<th>Health Inspection Rating</th>
<th>Staffing Rating</th>
<th>Quality Measures</th>
<th>Overall Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>★</td>
<td>★★★★☆☆☆☆☆☆</td>
<td>★★★★☆☆☆☆☆☆</td>
<td>★★★★☆☆☆☆☆☆☆</td>
</tr>
</tbody>
</table>

Calculation:

★ + ★★ + 0 = ★★★☆☆☆☆☆☆
**Example: SFF**

<table>
<thead>
<tr>
<th>Health Inspection Rating</th>
<th>Staffing Rating</th>
<th>Quality Measures Rating</th>
<th>Overall Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>★★★★★</td>
<td>★★★★★</td>
<td>★★★★</td>
<td></td>
</tr>
</tbody>
</table>

Calculation:

★★★★★ + 0 + 0 = ★★★★★
Data Timeframes & Updates

Health and fire safety inspections

• 3 years of surveys, including complaint and focused surveys
• Updated monthly, 2\textsuperscript{nd} Tuesday

Staffing

• Snapshot of 2 weeks during survey
• Updated monthly, 2\textsuperscript{nd} Tuesday

Quality measures

• 3 quarters (after 6 mo lag)
• Updated quarterly, 3\textsuperscript{rd} Thursday
What drives your Five-Star Ratings?

MDS 3.0 data!

• Five-Star Technical Users’ Guide Feb 2015:
Crosswalk of Data Sources
## Short Stay Measure Crosswalk

<table>
<thead>
<tr>
<th>Short Stay Measure</th>
<th>NH Compare</th>
<th>CASPER Report</th>
<th>Composite Score</th>
<th>5 Star Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mod/Sev Pain (SR)</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>New/Worse PrU</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Influenza Vaccine</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumococcal Vaccine</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antipsychotic Med</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Long Stay Measure</td>
<td>NH Compare</td>
<td>CASPER Report</td>
<td>Composite Score</td>
<td>5 Star Rating</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------------</td>
<td>---------------</td>
<td>-----------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Falls</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>1+ falls with major injury</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>UTI</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Mod/Sev Pain (SR)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>PrU (High risk)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Incontinence (Low risk)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Catheter use</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Physical Restraints</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Incr ADL help</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Excess weight loss</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Depression Sx</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Antipsychotic Med</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Antianxiety/Hypnotic</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behav Sx affect others</td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza vaccine</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Pneumococcal Vaccine</td>
<td>✔</td>
<td></td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
Your data:

• CASPER will give you the most up to date information
  – Use it to validate data:
    • Nursing Home Compare
    • Internal committees and tracking
    • MDS/Care plans

• Composite Score
  – Drive improvement projects with support from the QIN-QIO
  – Benchmark against others
Your data:

- Five Star Quality Rating System & Nursing Home Compare
  - Review it monthly/quarterly (use the preview helpline if necessary)
  - Validate against other data sources
  - Benchmark yourself against state/nation
  - Calculate your own score
  - Educate staff and residents/families about your data and ratings
When should you use data?

• Always!
  – To make decisions, guide changes
  – To measure improvement projects
  – To educate staff, residents and families
  – To budget accordingly
  – To invest in staffing, education, etc.
“Data, I think, is one of the most powerful mechanisms for telling stories. I take a huge pile of data and I try to get it to tell stories.”

- Steven Levitt
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