



# **MLN Connects**<sup>TM</sup>

*National Provider Call*

## Dialysis Facility Compare Star Ratings System

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# Agenda

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- Introduction and Roles
- Background on Star Rating Systems
- Star Rating on DFC
- Star Rating Methodology
- Rating Results
- Maintenance and Updates of Star Ratings
- Q&A Session

# Introduction and Roles

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- Centers for Medicare & Medicaid Services (CMS)
  - Instituted Dialysis Facility Compare (DFC) site for public reporting of Quality Measures for ESRD in 2001
  - Instituting Star Rating System on DFC in October 2014 Release
  - DFC Star Ratings available for preview July 15-August 15
- University of Michigan Kidney Epidemiology and Cost Center (UM-KECC)
  - ESRD Quality Measures Development and Maintenance Contractor for CMS

# Background on the Star Rating Systems

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# Background on Star Ratings

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- 2014-2015: Star ratings will be introduced on Dialysis Facility Compare, Home Health Compare, and Hospital Compare
- 2014: Star ratings introduced early in the year on Physician Compare for certain physician groups
- 2008: Star ratings introduced on Nursing Home Compare

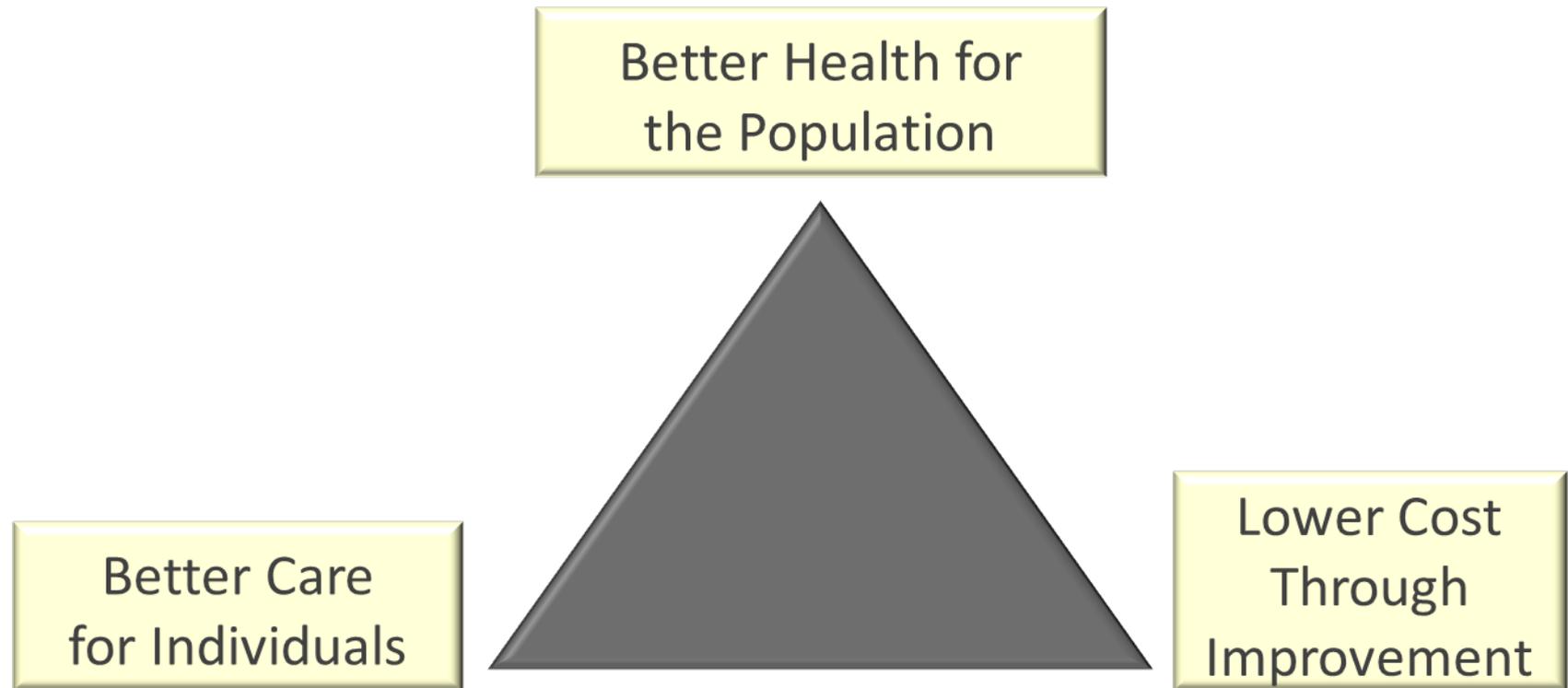
# The CMS Vision

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- *TO OPTIMIZE HEALTH OUTCOMES BY IMPROVING CLINICAL QUALITY AND TRANSFORMING THE HEALTH SYSTEM.*

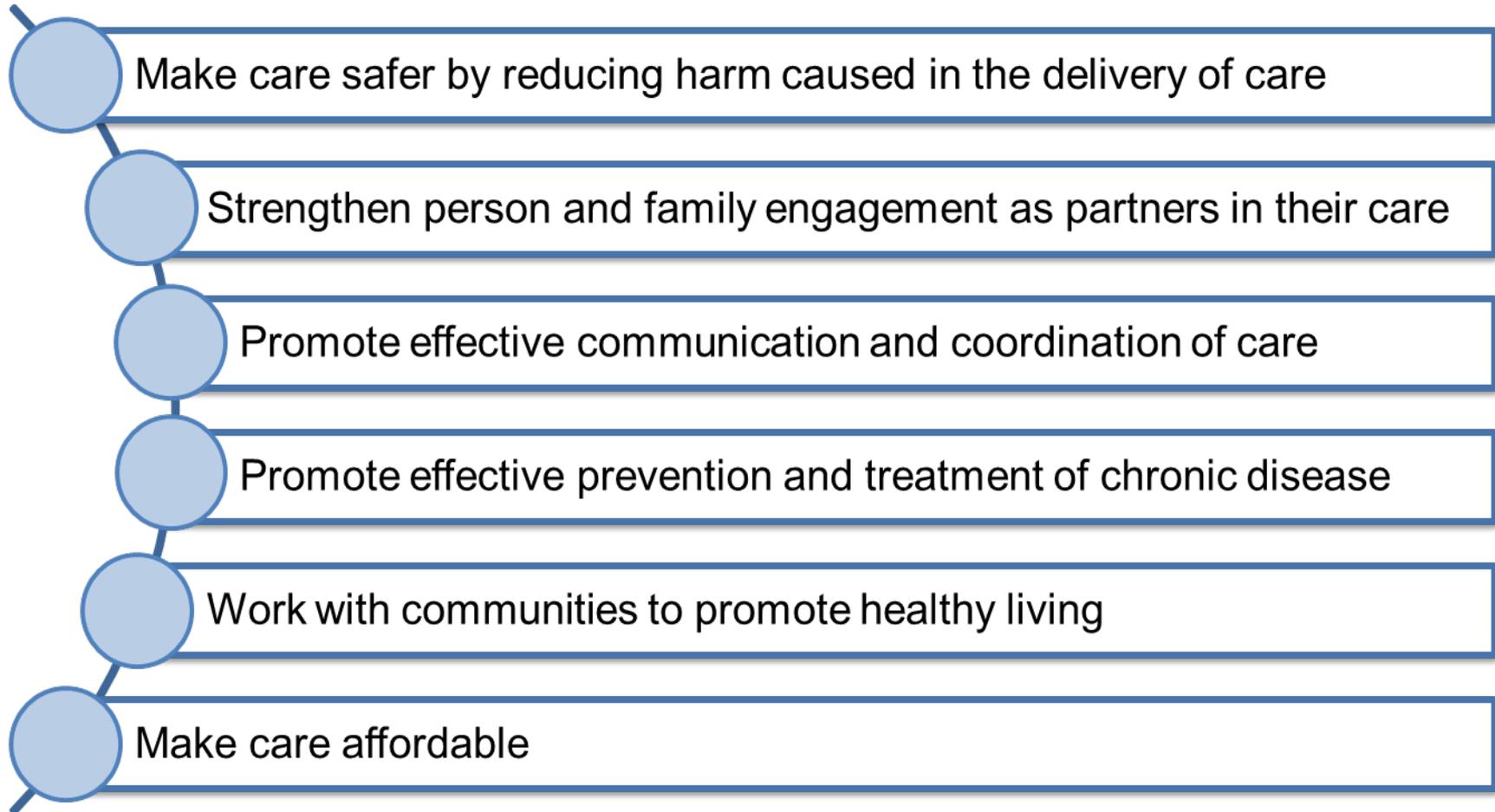
# The Three AIMs

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# The Six Goals of the CMS Quality Strategy

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- Make care safer by reducing harm caused in the delivery of care
  - Strengthen person and family engagement as partners in their care
  - Promote effective communication and coordination of care
  - Promote effective prevention and treatment of chronic disease
  - Work with communities to promote healthy living
  - Make care affordable

# Foundational Principles of the CMS Quality Strategy



**Eliminate disparities**



**Strengthen infrastructure and data systems**



**Enable local innovations**



**Foster learning organizations**

# The Affordable Care Act (ACA) and Public Reporting

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## The ACA:

- Expanded quality measure development
- Expanded public reporting initiatives to ensure ready access
- Called for use of easily understood formats

# ACA: Major Expansion of Compare Websites

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- Provided for creation of Physician Compare
- New reporting requirements, including:
  - Hospital Compare (e.g., value-based purchasing measures, measures on hospital-acquired conditions)
  - Nursing Home Compare (e.g., staffing data, complaints, links to state survey and certification websites)

# ACA: Expansion of Online Public Reporting

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New requirements for reporting on care settings, including:

- Long-term care hospitals
- Inpatient rehabilitation facilities
- Hospices
- Ambulatory surgical centers
- Certain cancer hospitals
- Inpatient psychiatric facilities

# Digital Government Strategy (Executive Office of the President)

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- Issued by Obama Administration in 2012
- Lays out milestone actions for enabling American people to access high-quality digital government information and services

# CMS Support for the Digital Government Strategy

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Support includes:

- Data contributions to Data.gov and Medicare.Data.gov
- Mobile optimization of Compare websites
- Use of Web analytics data to improve sites
- Use of visitor surveys to improve sites

# Why Star Ratings for Compare Websites

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- Consumers are the primary audience for Compare websites, along with other important stakeholders
- The National Quality Strategy envisions effective public reporting as a key driver for improving the health care system as a whole:
  - Consumers consult ratings
  - Consumers choose the care that is best for them and their families
  - Providers are incentivized to improve quality to retain existing patients and to attract new ones.

# Principles for Star Ratings

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- Report what is most important to patients in a way they can understand
- Leverage knowledge and lessons learned from existing sites
- Report only valid data!
- Not all measures are appropriate for star ratings
- Transparency of methodology and display with stakeholders
- Coordinate across all Compare sites

# Star Rating on DFC

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# Timeline

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- Star Rating will be displayed for each facility on DFC, and updated annually
- Star Rating will be included in preview reports beginning July 15, 2014
- Star Rating will be publicly reported on DFC starting with the October 2014 release

# Star Rating on DFC

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- Star Rating is based on Quality Measures (QMs) currently reported on DFC that assess patient health outcomes and processes of care
- Each facility is given a rating between one and five stars

	Much Above Average
	Above Average
	Average
	Below Average
	Much Below Average

# Star Rating Methodology

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# DFC Quality Measures Used

## DFC Quality Measures used in calculation of Star Rating:

- Standardized Transfusion Ratio (STrR)
- Standardized Mortality Ratio (SMR)
- Standardized Hospitalization Ratio (SHR)
- Percentage of adult hemodialysis (HD) patients who had enough wastes removed from their blood during dialysis
- Percentage of pediatric hemodialysis (HD) patients who had enough wastes removed from their blood during dialysis
- Percentage of adult peritoneal dialysis (PD) patients who had enough wastes removed from their blood during dialysis
- Percentage of adult dialysis patients who had hypercalcemia
- Percentage of adult dialysis patients who received treatment through arteriovenous fistula
- Percentage of adult patients who had a catheter left in vein longer than 90 days for their regular hemodialysis treatment

NOTE: URR and Hemoglobin measures currently reported on DFC were not included in the star rating calculation because they are topped out (national averages are 99% and < 1% respectively).

# Description of Rating Methodology

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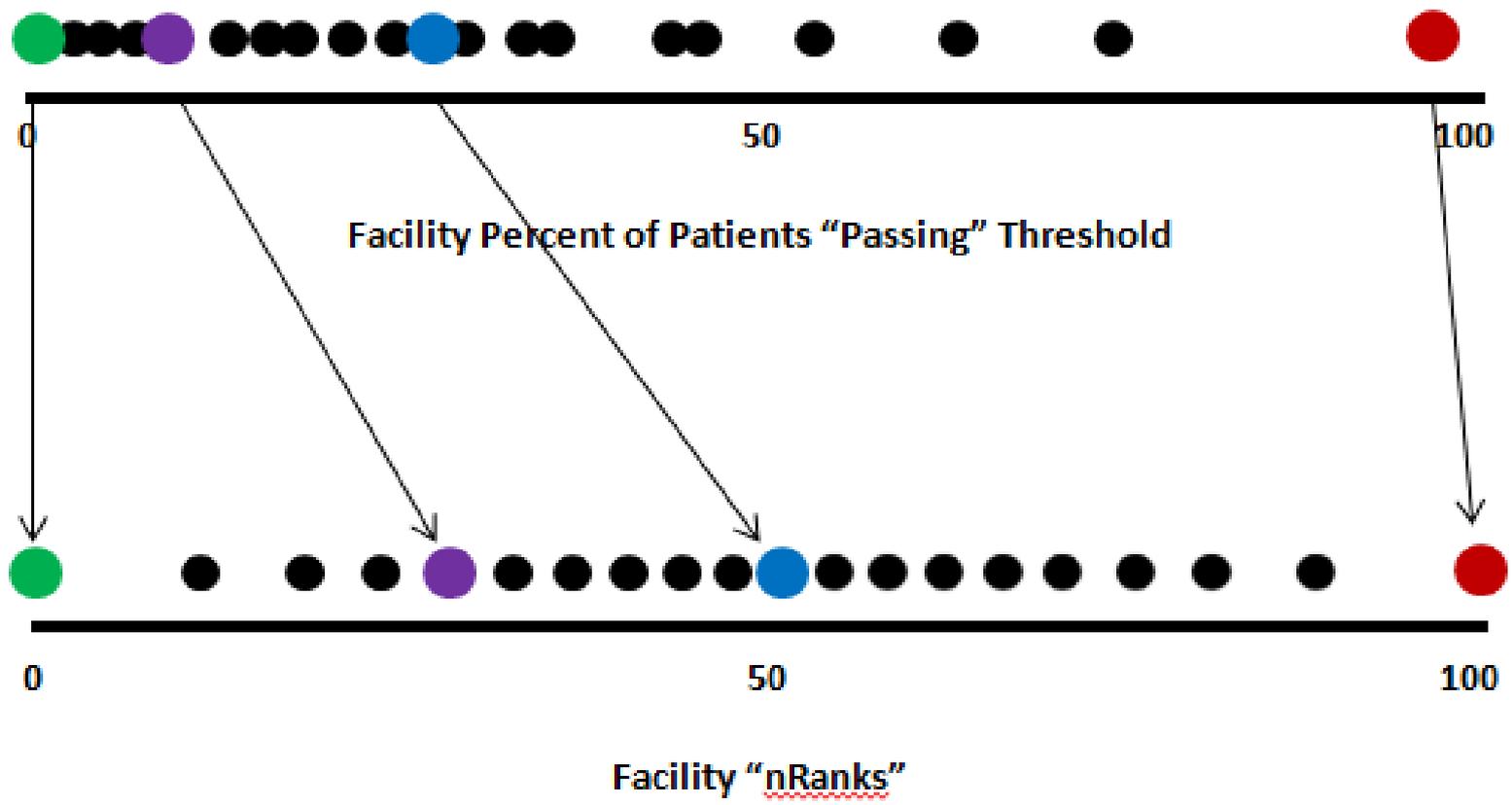
- Star Rating based on the average of the QMs, with some measures weighted more heavily than others
- Weights come from an analytic method called factor analysis that identifies groups of correlated QMs
- Different weights are used in order to avoid counting some measures too heavily
  - For instance, if 4 related QMs measure a certain aspect of care and only 1 QM measures a second aspect of care, a simple average of the 5 QMs would count the first aspect of care much more heavily than the second.

# Description of Rating Methodology

Before grouping the QMs using factor analysis, they were transformed as follows:

- Combined the 3 dialysis adequacy QMs into a single value
  - Adequacy as measured by Kt/V is reported on DFC separately for three groups of patients (children on HD, adults on HD, adults on PD)
  - A single adequacy measure for all patients in the facility was calculated as the weighted average of the measures for the 3 groups
- Standardized the combined Kt/V measure and each of the other 6 QMs
  - Ranking of facility according to the measure calculated as a value from 0 to 100 (e.g., percentile), with better performance on the measure corresponding to higher values
  - Resulting standardized values are directly comparable in scale (0-100), distribution (normal), and directionality (higher values indicate better performance)

# Example of Standardizing a Measure



# Description of Rating Methodology

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- Systematic empirical methods (factor analysis) were used to identify groups or domains of correlated QMs based on January 2014 DFC data
- The resulting groups or domains were labeled
  - Standardized Outcomes (SHR, SMR, STrR)
  - Other Outcomes 1 (AV fistula, tunneled catheter)
  - Other Outcomes 2 (Kt/V, hypercalcemia)

# Scoring

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# Calculating Scores

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- Domain Score: Average of the standardized values for the measures in that domain
  - If a facility is missing any measure in the domain, use a value of 50 for that measure in calculating the domain score
  - If a facility is missing values for all measures in the domain, the domain score is not calculated
- Final Score: Average of domain scores
  - PD-only facilities: Average of two domain scores
    - Other Outcomes 1 (AV fistula, tunneled catheter) domain not relevant for PD only facilities
  - Other facilities: Average of three domain scores
  - If facility is missing a needed domain score, the final score is not calculated and the facility does not receive a Star Rating

# Assignment of Star Ratings

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- Star Ratings are assigned according to the Final Scores as follows:
  - Facilities with top 10% final scores are given a rating of 5 stars.
  - Facilities with the next 20% highest final scores are given a rating of 4 stars.
  - Facilities within the middle 40% of final scores are given a rating of 3 stars.
  - Facilities with the next 20% lowest final scores are given a rating of 2 stars.
  - Facilities with bottom 10% final scores are given a rating of 1 star.

# Rating Results

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# Results

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- Star Ratings calculated according to this algorithm based on the January 2014 DFC data
- Included 6,033 facilities
- Carried out analyses to examine
  - Amount of missing data
  - Correlations between measures
  - Relationship between Star Ratings and original values of QMs

# Results: Missing Data

- 81% of all facilities (4,903) had all measures available
- 9% of all facilities (542) were unrated

Measures Missing	Number of Facilities (%)	Number Unrated (%)
0	4,903 (81)	0 (0)
1	400 (7)	0 (0)
2	180 (3)	42 (23)
3	144 (2)	109 (76)
4	79 (1)	69 (87)
5	50 (1)	45 (90)
6	47 (1)	47 (100)
7	230 (4)	230 (100)
<b>Total</b>	<b>6,033 (100)</b>	<b>542 (9)</b>

# Results: Correlations

- Domains identified by factor analysis group measures with highest correlations

Measures	STrR	SHR	SMR	All Kt/V	Hyper-calcemia	AVF	Catheter >90
STrR	1.0	0.40	0.22	0.09	-0.002	0.11	0.15
SHR		1.00	0.26	0.11	0.005	0.13	0.19
SMR			1.00	0.08	0.05	0.17	0.11
All Kt/V				1.00	0.19	0.06	0.13
Hypercalcemia					1.00	0.09	0.05
AVF						1.00	0.45
Catheter >90							1.00

# Results: Relationship between Star Ratings and QMs

- Facilities with higher Star Ratings have better average values for original QMs

Average Measure Values Within Overall Star Rating

Measure	Overall Star Rating				
	★	★★	★★★	★★★★	★★★★★
STrR	1.50	1.20	1.00	0.81	0.63
SHR	1.28	1.12	0.99	0.86	0.75
SMR	1.34	1.11	1.02	0.93	0.84
All Kt/V	75.5%	81.8%	86.8%	89.5%	92.3%
Hypercalcemia	5.7%	4.6%	3.4%	2.3%	1.8%
AVF	48.6%	56.0%	62.1%	67.3%	73.2%
Catheter > 90	20.3%	14.7%	10.6%	7.6%	5.2%

# Summary of Star Rating Algorithm

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## 1. Calculate Domain Scores

- Average of standardized values for measures within the domain
- Use a score of 50 for missing measures in a domain

## 2. Calculate Final Score

- Average of domain scores
- 1 measure per domain required except for PD-only facilities

## 3. Assign Star Ratings according to Final Scores

- 10% achieve 1 Star
- 20% achieve 2 Stars
- 40% achieve 3 Stars
- 20% achieve 4 Stars
- 10% achieve 5 Stars

# Maintenance and Updates

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# Maintenance and Updates of Star Ratings

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- Systematic empirical method described here will be used to update QM groupings and maintain ratings annually and incorporate new or revised DFC QMs
- Ratings will be analyzed over time to assess stability of the overall rating
- CMS will consider factors other than quality measures for inclusion in the Star Ratings System in the future
- CMS welcomes input on methods from stakeholders

# Next Steps

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# Next Steps

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- The Facility Star Rating will be available on the Dialysis Facility Compare Preview Report
- DFC Preview Reports as well as Technical Documentation will be available on [www.DialysisReports.org](http://www.DialysisReports.org) beginning July 15, 2014
- DFC Comment Period: July 15 – August 15, 2014
- If you have general comments on the Star Rating System methodology please contact UM-KECC directly at [DialysisData@umich.edu](mailto:DialysisData@umich.edu)

# Question and Answer Session

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