APPENDIX

Table of Figures (Appendix)

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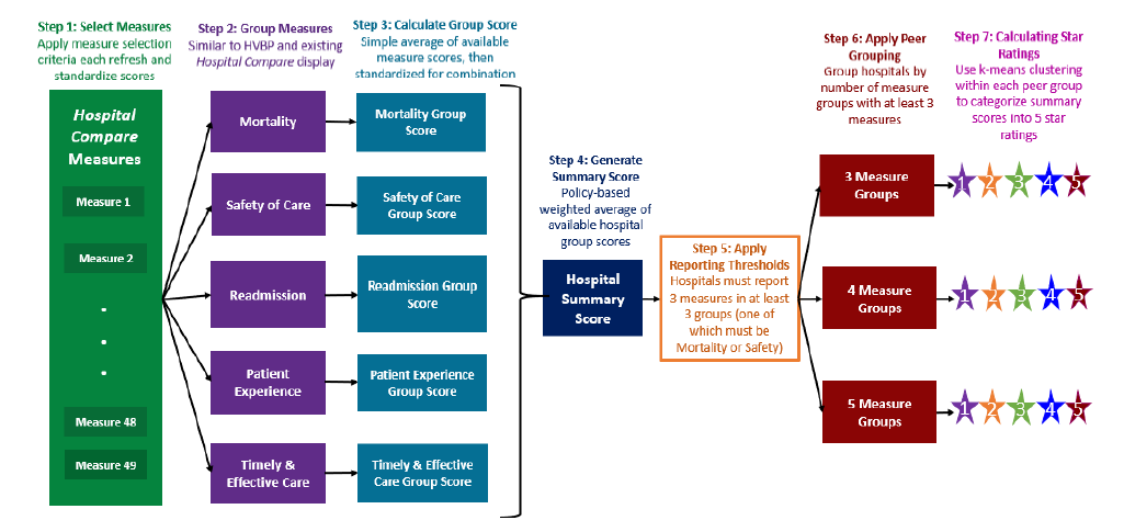**Figure 1A. CMS Overall Hospital Star Rating Methodology**

Table 1 A. Dates of data for measures in Overall Hospital Quality Star Rating on Care Compare for the April 2021 update

Mortality

Measure	Dates
MORT-30-AMI: 30-day death rate for heart attack patients	July 1, 2016 - June 30, 2019
MORT-30-CABG: Death rate for coronary artery bypass graft surgery patients	July 1, 2016 - June 30, 2019
MORT-30-COPD: Death rate for chronic obstructive pulmonary disease (COPD) patients	July 1, 2016 - June 30, 2019
MORT-30-HF: 30-day death rate for heart failure patients	July 1, 2016 - June 30, 2019
MORT-30-PN: 30-day death rate for pneumonia patients	July 1, 2016 - June 30, 2019
MORT-30-STK: Death rate for stroke patients	July 1, 2016 - June 30, 2019
PSI-4-SURG-COMP: Death rate among surgical inpatients with serious treatable complications	July 1, 2017 - June 30, 2019

Safety of Care

Measure	Dates
HAI-1: Central-line associated bloodstream infection (CLABSI)	January 1, 2019 - December 31, 2019
HAI-2: Catheter-associated urinary tract infection (CAUTI)	January 1, 2019 - December 31, 2019
HAI-3: Surgical site infection from colon surgery (SSI: Colon)	January 1, 2019 - December 31, 2019

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Measure	Dates
HAI-4: Surgical site infection from abdominal hysterectomy (SSI-abdominal hysterectomy)	January 1, 2019 - December 31, 2019
HAI-5: Methicillin-resistant staphylococcus aureus (or MRSA) blood infections (Antibiotic-resistant blood infections)	January 1, 2019 - December 31, 2019
HAI-6: Clostridium difficile (or C. diff.) infections (Intestinal infections)	January 1, 2019 - December 31, 2019
COMP-HIP-KNEE: Rate of complications for hip and knee replacement patients	April 1, 2016 - March 31, 2019
PSI-90: Patient Safety and Adverse Events Composite	July 1, 2017 - June 30, 2019

Readmission

Measure	Dates
READM-30-CABG: Rate of unplanned readmission after coronary artery bypass graft (CABG) surgery	July 1, 2016 - June 30, 2019
READM-30-COPD: Rate of unplanned readmission for chronic obstructive pulmonary disease patients	July 1, 2016 - June 30, 2019
READM-30-Hip-Knee: 30-day rate of readmission for hip and knee replacement patients	July 1, 2016 - June 30, 2019
READM-30-HOSP-WIDE: Rate of readmission after discharge from hospital	July 1, 2018 - June 30, 2019
EDAC-30-AMI: Acute myocardial infarction excess days in acute care (EDAC)	July 1, 2016 - June 30, 2019
EDAC-30-HF: Heart failure excess day sin acute care (EDAC)	July 1, 2016 - June 30, 2019
EDAC-30-PN: Pneumonia excess day sin acute care (EDAC)	July 1, 2016 - June 30, 2019
OP-32: Facility 7-day risk standardized hospital visit rate after outpatient colonoscopy	January 1, 2017 - December 31, 2019
OP-35 ADM: Admissions visits for patients receiving outpatient chemotherapy	January 1, 2019 - December 31, 2019
OP-35 ED: Emergency department (ED) visits for patients receiving outpatient chemotherapy	January 1, 2019 - December 31, 2019
OP-36: Hospital visits after hospital outpatient surgery	January 1, 2019 - December 31, 2019

Patient Experience

Measure	Dates
H-COMP-1: Communication with nurses	January 1, 2019 - December 31, 2019
H-COMP-2: Communication with doctors	January 1, 2019 - December 31, 2019
H-COMP-3: Responsiveness of hospital staff	January 1, 2019 - December 31, 2019
H-COMP-5: Communication about medicines	January 1, 2019 - December 31, 2019
H-COMP-6: Discharge information	January 1, 2019 - December 31, 2019
H-COMP-7: Care transition	January 1, 2019 - December 31, 2019
H-CLEAN-HSP Cleanliness of hospital environment (Q8) + H-QUIET-HSP Quietness of hospital environment (Q9) / 2	January 1, 2019 - December 31, 2019
H-HSP-RATING Hospital rating (Q21) + H-RECMND: Willingness to recommend hospital (Q22) / 2	January 1, 2019 - December 31, 2019

Timely and Effective Care

Measure	Dates
IMM-3: Percent of healthcare workers vaccinated against Influenza	October 1, 2019 - March 31, 2020
OP-10: Outpatient PA scans of the abdomen that were "combination" (double) scans	July 1, 2018 - June 30, 2019
OP-13: Medicare patients who got cardiac imaging stress tests to screen for surgical risk before low-risk outpatient surgery	July 1, 2018 - June 30, 2019

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Measure	Dates
OP-18b: Average time patients spent in the emergency department before being sent home	January 1, 2019 - December 31, 2019
OP-22: Percentage of patients who left the emergency department before being seen	January 1, 2019 - December 31, 2019
OP-23: Percentage of patients who came to the emergency department with stroke symptoms who received brain scan results within 45 minutes of arrival	January 1, 2019 - December 31, 2019
OP-29: Appropriate follow-up interval for normal colonoscopy in average risk patients	January 1, 2019 - December 31, 2019
OP-33: External beam radiotherapy for bone metastases	January 1, 2019 - December 31, 2019
OP-3b: Average number of minutes before outpatients with chest pain or possible heart attack who needed specialized care were transferred to another hospital	January 1, 2019 - December 31, 2019
OP-8: Outpatients with low back pain who had an MRI without trying recommended treatments first, such as physical therapy	July 1, 2018 - June 30, 2019
PC-01: Percent of newborns whose deliveries were scheduled too early (1-3 weeks early), when a scheduled delivery was not medically necessary	January 1, 2019 - December 31, 2019
SEP-1: Percentage of patients who received appropriate care for severe sepsis and septic shock	January 1, 2019 - December 31, 2019

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Table 2 A. Components of the Charlson Risk Adjustment methodology[1]

Description
All
Age
Unknown: #, %
Mean, Standard Deviation
Minimum, Maximum
1st Percentile, 99th Percentile
1st Quartile, 3rd Quartile
Median, Quartile Range
Myocardial Infarction (Yes/No)
Congestive Heart Failure (Yes/No)
Peripheral Vascular Disease (Yes/No)
Cerebrovascular Disease (Yes/No)
Dementia (Yes/No)
Chronic Pulmonary Disease (Yes/No)
Connective Tissue Disease-Rheumatic Disease (Yes/No)
Peptic Ulcer Disease (Yes/No)
Mild Liver Disease (Yes/No)
Diabetes without complications (Yes/No)
Diabetes with complications (Yes/No)
Paraplegia and Hemiplegia (Yes/No)
Renal Disease (Yes/No)
Cancer (Yes/No)

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| Moderate or Severe Liver Disease (Yes/No) |
| Metastatic Carcinoma (Yes/No) |
| AIDS/HIV (Yes/No) |

Table 3A: Associations between star rating group scores for hospitals reporting 3, 4, or 5 groups, and in-hospital and 30-day risk-standardized mortality in patients hospitalized with COVID-19.

Hospital Characteristic	Correlation Coefficient (number of hospitals) All p values <0.05 unless noted with an *					
	Hospital Summary Score	Mortality Group Score	Readmission Group Score	Safety of Care Group Score	Patient Experience Group Score	Timely and Effective Care Group Score
Peer Group 3: In-hospital RSMR	-0.29 (318)	-0.14 (292)	-0.28 (318)	-0.04* (186)	-0.35 (65)	-0.06* (312)
Peer Group 3: 30-day RSMR	-0.23 (318)	-0.25 (292)	-0.14 (218)	-0.03* (186)	-0.11* (65)	-0.10* (312)
Peer Group 4: In-hospital RSMR	-0.31 (540)	-0.07* (528)	-0.28 (540)	0.07* (487)	-0.39 (531)	-0.24 (539)
Peer Group 4: 30-day RSMR	-0.28 (540)	-0.18 (528)	-0.15 (540)	0.06* (487)	-0.36 (531)	-0.16 (539)
Peer Group 5: In-hospital RSMR	-0.40 (2,458)	-0.15 (2,458)	-0.22 (2,458)	-0.16 (2,458)	-0.38 (2,458)	-0.30 (2,458)
Peer Group 5: 30-day RSMR	-0.40 (2,458)	-0.33 (2,458)	-0.17 (2,458)	-0.04* (2,458)	-0.35 (2,458)	-0.10 (2,458)

*p-value not significant

References (Appendix)

1. Charlson ME, Pompei P, Ales KL, MacKenzie CR. A new method of classifying prognostic comorbidity in longitudinal studies: development and validation. J Chronic Dis 1987;40:373-383.