2024 Measure Set Review (MSR): Final Preliminary Assessment

The following information was sourced in June of 2024 from the Centers for Medicare & Medicaid Services (CMS) Measures Inventory Tool (CMIT), discussions with CMS program leads, and publicly available CMS datasets (see links below).

I. Measure Information

CMIT ID	Title
00021-02-C-HOQR	Admissions and Emergency Department (ED) Visits for Patients Receiving Outpatient Chemotherapy
Measure Steward	**CMS Program**
CMS	Hospital Outpatient Quality Reporting

Measure Overview	
Rationale: The primary purpose of this measure is to assess the extent to which cancer patients receiving outpatient chemotherapy treatment ("chemo") experience complications resulting in a hospital visit (either an inpatient admission or emergency department [ED] visit). Chemo treatment can have severe, predictable side effects, which, if inappropriately managed, can reduce patients' quality of life and increase health care utilization and costs.	
Description: This measure estimates rates of inpatient admissions or ED visits for at least one of the following 10 diagnoses (Dx) within 30 days of hospital-based outpatient chemo: anemia, dehydration, diarrhea, emesis, fever, nausea, neutropenia, pain, pneumonia, or sepsis. Rates of admission and ED visits are calculated and reported separately.	
Numerator: The measure calculates two mutually exclusive outcomes: (1) one or more inpatient admissions for any of the 10 diagnoses listed above within 30 days of chemo; and (2) one or more ED visits or stand-alone observation stays for any of the same 10 diagnoses within 30 days of chemotherapy treatment. **Exclusions:** None	
Denominator: Medicare fee-for-service (FFS) patients ages 18 and up at the start of the performance period with a Dx of any cancer (except leukemia) who received at least one outpatient chemo treatment at the reporting hospital during the performance period. **Exclusions:** Patients with a diagnosis of leukemia at any time during the performance period; who were not enrolled in Medicare FFS Parts A and B in the year before any chemo during performance period; who do not have any outpatient chemo treatment followed by continuous enrollment in Medicare FFS Parts A and B in the 30 days after chemo; received chemo to treat conditions other than cancer.	
Measure type: Outcome	**Measure is a composite:** No **Measure is digital and/or an eCQM:** No
Level(s) of analysis/measured entity: Facility/Hospital/Agency	**Care setting:** • Hospital: Outpatient Department (HOPD)
Risk adjustment and/or stratification: Yes	**Data source(s):** Administrative Data (non-claims); Claims data
Data collection method: Claims data review	**Reporting frequency:** Annually
All required data are collected as part of clinical workflow: Yes	**Reporting overlap with similar/related measures:** No

Does this measure fill a statutorily required category for the program? No	Is this measure included in upcoming rulemaking? No

Measure Status	
Current CBE Endorsement Status: Endorsed	**CBE Endorsement History:** Initial endorsement: June 2016; Most recent endorsement: July 2023.

II. Measure Performance

00021-02-C-HOQR Performance in HOQR 2020-2022

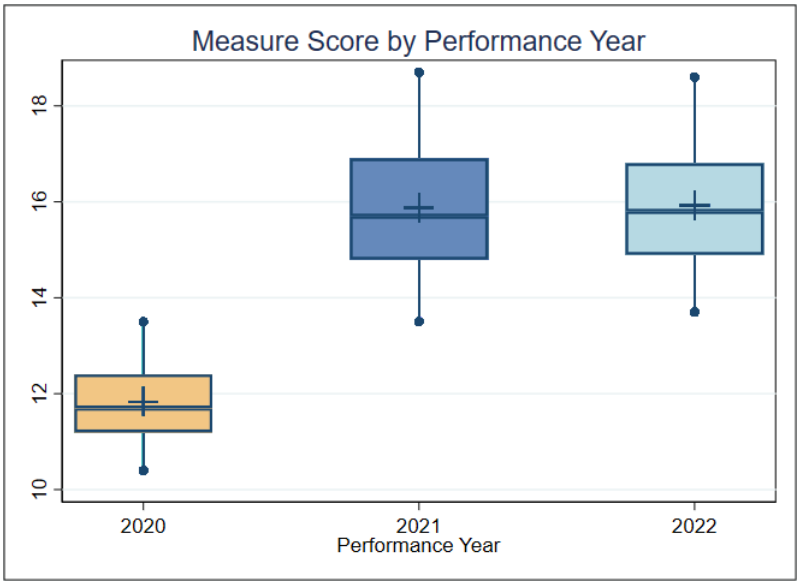
For this measure, the MSR evaluation and analysis team reviewed the publicly available datasets Unplanned Hospital Visits-Hospital and archived Hospital data.

Figure 1 is a boxplot that shows the distribution of the performance over the past 3 years (where available). For each performance year, the dots indicate the lower 5th and upper 95th percentiles, and the vertical line is the range between these values (90% of the measure scores are between the dots). The box spans the lower 25th to the upper 75th percentile (50% of the measure scores are within the box). The horizontal line in the box indicates the median score, and the "+" indicates the mean score. This plot can be used to assess overall trends in the score over time.

Interpretation: In the plot below, the median score increased substantially from less than 12 in 2020 to about 15.5 in 2021 and 2022[1]. This also impacts the 12-month look-back period for risk adjustment at this data. This impacted the rates in that year as compared to other years.

[1] From CMS lead: The measurement period for 2020 performance period was reduced to approximately 6 months (from the typical 12 months) in response to the COVID-19 public health emergency and CMS's decision to exclude claims data for January 1, 2020 - June 30, 2020 (Q1 and Q2 of 2020.

Figure 1. Boxplot of Measure Score by Year



Importance Table

Interpretation of measure scores: The measure score is a complex function of parameter estimates; therefore it uses re-sampling and simulation techniques to derive an interval estimate to determine if a HOPD is performing better than, worse than, or no different than expected. A HOPD is considered as better than expected if their entire confidence interval falls below 1, and considered worse if the entire confidence interval falls above 1. They are considered no different if the confidence interval overlaps 1.

This table shows the relative spread of the scores and how many patients are impacted. Often the lowest or highest deciles (which, by definition, each represent 10% of the entities) may represent a disproportionately higher or lower percentage of patients. If the lowest decile contains only 5% of the patients, for example, it suggests that low patient population may be related to low scores. The table can also be used to evaluate the impact of improving the score. It is common practice to use the performance of the top 20% of the entities as a benchmark.

Here, 20% of the entities perform better than the 3rd decile (14.9), which could be considered the benchmark. The number of adverse events for each decile can be estimated by multiplying the total patients by the corresponding rate. Here the estimated total number of adverse events across all deciles is 47,276. If deciles 4-10 performed at the benchmark of 14.9, there would be an estimated 8% fewer adverse events (about 43,430).

Table 1. Importance (Decile by measure score, 2022)

Data Type	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Score (SD)	15.9 (1.52)	10.2	13.5	14.5	14.9	15.3	15.6	16.0	16.4	16.8	17.5	18.9	22.6
Entities	1,513	1	152	151	151	152	151	151	152	151	151	151	1
Total Patients	295,707	543	37,752	25,539	23,113	28,321	29,087	25,525	27,876	30,825	32,995	34,674	363

Reliability Tables

Table 2 shows the developer-provided reliability values calculated separately for HOPDs in HOQR and HOPDs not in HOQR. Entities are sorted by reliability, and various percentiles of reliability are reported along with the minimum and maximum reliability. This table can be used to see the distribution of the reliability of the entities. A measure score is generally considered reliable when the reliability for at least 70% of the individual entities is above 60%.

Table 2. Reliability Percentiles[2]

Data Type	Entities	Min	Percentile								Max
			1st	5th	10th	25th	50th	75th	90th	95th	99th	
HOPDs in HOQR	1,474	0.351	0.351	0.377	0.401	0.504	0.667	0.808	0.901	0.931	0.966	0.979
HOPDs not in HOQR	1,474	0.367	0.367	0.394	0.419	0.522	0.683	0.818	0.907	0.935	0.968	0.981

Interpretation: For both HOPDs in HOQR and HOPDs not in HOQR, more than 50% but less than 75% of the entities have an estimated reliability above 60% This suggests that this measure may be reasonably effective in differentiating entities by quality of performance.

[2] Elements of this table provided by CMS program from prior CBE submission and reviewed by Battelle analysts.