2024 Measure Set Review (MSR): Final Preliminary Assessment

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

I. Measure Information

CMIT ID	Title
00021-01-C-PCHQR	Admissions and Emergency Department (ED) Visits for Patients Receiving Outpatient Chemotherapy
Measure Steward	**CMS Program**
Centers for Medicare & Medicaid Services (CMS)	Prospective Payment System-Exempt Cancer Hospital Quality Reporting

Measure Overview
Rationale: Cancer patients receiving chemotherapy have much higher rates of admissions and ED use than other patients. Chemotherapy-related admissions and ED visits may be due to outpatient chemotherapy patients having unmet needs and gaps in care, which, if addressed, could reduce admissions and ED visits and increase patients' quality of life.
Description: The measure estimates hospital-level, risk-standardized rates of inpatient admissions or ED visits for cancer patients (excluding leukemia patients) ages 18 years or older for at least one of the following diagnoses—anemia, dehydration, diarrhea, emesis, fever, nausea, neutropenia, pain, pneumonia, or sepsis—within 30 days of outpatient chemotherapy treatment at a short-stay, acute care hospital.
Numerator: The numerator for this measure is a risk-adjusted outcome measure and does not have a traditional numerator like a process measure. We use this field to define the measured outcomes of interest, given that this measure reports the hospital rates of two outcomes separately: admission and ED visits. The outcomes for this measure are one or more inpatient admissions, and one or more ED visits without an admission, for one of the following diagnoses: anemia, dehydration, diarrhea, emesis, fever, nausea, neutropenia, pain, pneumonia, or sepsis (within 30 days of receiving hospital-based outpatient chemotherapy treatment for cancer). The qualifying diagnosis on the admission or ED visit claim must be either the principal diagnosis or a secondary diagnosis accompanied by a principal diagnosis of cancer. **Exclusions:** None.
Denominator: Medicare fee-for-service (FFS) patients, aged 18 years and older at the start of the performance period, with a diagnosis of any cancer (except leukemia), who received at least one outpatient chemotherapy treatment at the reporting hospital during the performance period. **Exclusions:** 1) Patients with a diagnosis of leukemia at any time during the performance period; 2) Patients who were not enrolled in Medicare FFS Parts A and B in the year before their first outpatient chemotherapy treatment during the performance period; and 3) Patients who do not have at least one outpatient chemotherapy treatment followed by continuous enrollment in Medicare FFS Parts A and B in the 30 days after the procedure.
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 (HOD)
Risk adjustment and/or stratification: Yes	**Data source(s):** Claims Data
Data collection method: Review of claims data.	**Reporting frequency:** Once a year based on performance period. Publicly reported annually in July – available PDC only. - FY 2025: July 1, 2022-June 30, 2023 - FY 2026: July 1, 2023-June 30, 2024
All required data are collected as part of clinical workflow: Yes	**Reporting overlap with similar/related measures:** 00021-03-C-PCHQR assesses Potentially Avoidable Admissions and Emergency Department Visits Among Patients Receiving Outpatient Chemotherapy.
Does this measure fill a statutorily required category for the program? No	**Is this measure included in upcoming rulemaking?** No

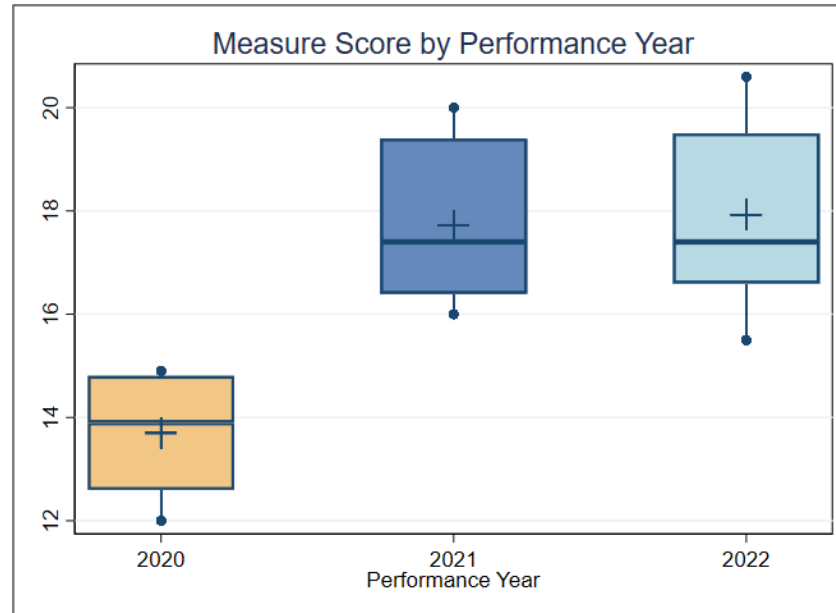| Measure Status	
Current CBE Endorsement Status: Endorsed	**CBE Endorsement History:** Initial Endorsement: June 2019; Most Recent Endorsement: Fall 2022

II. Measure Performance

00021-01-C-PCHQR Performance in 2020-2022

For this measure, the MSR evaluation and analysis team reviewed the publicly available dataset Unplanned Hospital Visits - PPS-Exempt Cancer Hospital – 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 average 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 about 14 in 2020 to over 17 in 2021 and 2022.

Figure 1. Boxplot of Measure Score by Year

Importance Table

Interpretation of measure scores: 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 (16.7), 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 5,816. If Deciles 4-10 performed at the benchmark of 16.7, there would be an estimated 672 (11.5%) fewer adverse events (about 5,144).

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)	17.9 (1.66)	15.5	15.9	16.6	16.7	17.2	17.4	18.4	19.2	19.5	19.8	20.6	20.6
Entities	11	1	2	1	1	1	1	1	1	1	1	1	1
Total Patients	30,977	1,330	3,194	3,222	370	1,458	914	1,942	1,837	8,205	4,312	5,523	5,523

Reliability Tables

Two tables are used to summarize reliability. For Table 2, entities are sorted by patient volume, and the average reliability is reported along with the number of entities and average number and total patients for each decile. These tables can be used to assess the impact of population size on the reliability of an entity's measure score. In cases where reliability has a strong relationship to population size, reliability will be the lowest at Decile 1 and progressively increase up to Decile 10.

For Table 3, entities are sorted by reliability, and the average reliability by decile is reported. Average, standard deviation, minimum and maximum reliability, and inter-quartile range (IQR) are also included. 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 (Decile by denominator – target population size)

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 Target Population Size	2,816	370	642	1,330	1,458	1,837	1,864	1,942	3,222	4,312	5,523	8,205	8,205
Mean Reliability	71.7	35.0	45.7	67.3	67.5	70.6	73.5	72.4	82.5	84.6	87.3	91.4	91.4
Entities	11	1	2	1	1	1	1	1	1	1	1	1	1
Total Patients	30,977	370	1,284	1,330	1,458	1,837	1,864	1,942	3,222	4,312	5,523	8,205	8,205

Table 3. Mean reliability (By reliability decile)

Mean	SD	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max	IQR
71.7	15.9	35.0	45.7	67.3	67.5	70.6	72.4	73.5	82.5	84.6	87.3	91.4	91.4	17.3

Interpretation: Reliability was estimated using Adams[1] signal-to-noise method. Of all entities, 82% have a reliability greater than 60%, indicating that this measure may be effective in differentiating entities by quality of performance.

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[1] Adams, John L., *The Reliability of Provider Profiling: A Tutorial.* Santa Monica, CA: RAND Corporation, 2009.