

Oncology Care Model Measure Specifications

OCM-2: Risk-adjusted proportion of patients with all-cause emergency department visits or observation stays that did not result in a hospital admission within the 6-month episode

Note: This specification will be used by CMS for calculating claims-based measures.

Description

Risk-adjusted proportion of episodes with emergency department (ED) visits or observation stays that did not result in a hospitalization within the 6-month episode.

Measure Scoring

Proportion

Measure Type

Outcome

Improvement Notation

Lower scores indicate better quality.

Definitions

An *episode* is a 6-month period of care triggered by the receipt of chemotherapy.

Guidance

N/A

Denominator

All patients with an episode ending in the performance period.

Denominator Exclusions

None

Denominator Exceptions

None

Numerator

All patients with at least one ED visit or observation stay not resulting in a hospitalization during the 6-month episode.

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ED visits are identified in the Outpatient claims by:

1. The claim contains an outpatient revenue center code in the range 0450-0459 or equal to 0981, AND
2. The revenue center date on which an applicable revenue center code was found occurs during the episode, inclusive of end dates, AND
3. The revenue center on which an applicable revenue center code was found has an allowed charge that is greater than zero, AND
4. The revenue center on which an applicable revenue center code was found does NOT have a procedure code in the ranges 70000-89999 or (G0106, G0120, G0122, G0130, G0202, G0204, G0206, G0219, G0235, G0252, G0255, G0288, G0389, S8035, S8037, S8040, S8042, S8080, S8085, S8092, S9024). This criterion excludes claims where only radiological or pathology/lab services were provided.

Observation stays are identified in the Outpatient claims by:

1. One of the following:
 - a. The claim contains an outpatient revenue center code of 0762 OR
 - b. The claim contains an outpatient revenue center line with a revenue center code of 0760, a procedure code of G0378, and a revenue center unit count greater than or equal to eight, AND
2. The revenue center date occurs during the episode, inclusive of end dates, AND
3. The revenue center on which the 0762 or 0760 code was found has an allowed charge that is greater than zero.

ED visits and observation stays that resulted in a hospital admission are identified by linking the beneficiary ID and claim through dates on the ED visit/observation stay records to the beneficiary ID and claim admission date on inpatient hospital records. If any such matches are found, the ED visit/observation stay is not counted toward the numerator.

Numerator Exclusions

None

Stratification

None

Risk Adjustment

Risk adjustment ensures that the differences observed in rates of ED visits or observation stays not resulting in hospitalization are not due to the differences in the health status of the enrolled beneficiaries but reflect differences in the management of outpatient care.

This measure will be risk-adjusted using a hierarchical logistic regression model. The model will incorporate many of the variables appearing in the OCM financial benchmarking model, including cancer type, demographics, institutional status, geographic location, and comorbidities

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as described in Appendix I of the [OCM PBP Methodology](#) (effective 7/2/2017), which is available on the CMS OCM website.

A description of the risk adjustment methodology is contained in Appendix A of this document.

Rationale

ED visits are costly. Because some visits are potentially avoidable, they may be indicative of poor care management, inadequate access to care, or poor choices on the part of beneficiaries (Dowd, 2014). ED visits for conditions that are preventable or treatable with appropriate primary care lower health system efficiency and raise costs (Enard & Ganelin, 2013). An estimated 13% to 27% of ED visits in the United States could be managed in physician offices, clinics, and urgent care centers, saving \$4.4 billion annually (Weinick, et al., 2010).

The Oncology Care Model is designed to improve the coordination and appropriateness of care, and reduce avoidable emergency room visits and hospitalizations. Oncology Care Model participating practices may achieve the goal of improved care at the same or lower cost by reducing unnecessary ED visits for their cancer patients. This may be achieved by improving care coordination, arranging for timely and appropriate care and follow-up of patients after they are discharged or during treatment, and transmitting key information about the patient to receiving providers.

Benefits of this measure include opportunities for identification of inappropriately high ED use and encouragement of Oncology Care Model participating providers to implement interventions that reduce inappropriate ED use, leading to improvement in the health of Medicare beneficiaries and lowering total Medicare costs.

Clinical Recommendation Statements

N/A

References

Dowd B, Karmarker M, Swenson T, et al. Emergency department utilization as a measure of physician performance. *Am J Med Qual* 2014;29(2):135-43. <http://ajm.sagepub.com/content/29/2/135.long>

Enard KR, Ganelin DM. Reducing preventable emergency department utilization and costs by using community health workers as patient navigators. *J Healthc Manag* 2013;58(6):412-28. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4142498/>

National Quality Forum (NQF). Emergency department use without hospitalization. Washington (DC): National Quality Forum (NQF); 2012 Mar 30.

Weinick RM, Burns RM, Mehrotra A. How many emergency department visits could be managed at urgent care centers and retail clinics? *Health Aff* 2010;29(9):1630-6. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3412873/>

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Appendix A: Risk Adjustment Methodology

The following describes the approach to risk adjusting the ED visit/observation stay measure OCM-2. First, outpatient and inpatient claims were used to determine whether an ED visit or observation stay not resulting in a hospital admission occurred during each episode in a 3-year baseline period. The baseline period is defined in the [OCM PBP Methodology](#) (effective 7/2/2017) which is available on the CMS OCM website. To be consistent with the quality measure calculation used in each OCM performance period, in which measure performance is calculated over two consecutive performance periods to avoid cases of low denominators, the six performance periods in the baseline data were aggregated into three 12-month periods. Each practice (as defined by a Tax Identification Number [TIN]) could contribute up to three performance rates in the baseline period, one for each 12-month period. Each practice-year must have had at least 100 episodes attributed to it to be included in the benchmark calculations. Note that under implementation participating practices will need only 20 episodes attributed to them to receive a quality score. OCM participating practices with 20 or more episodes will receive a quality score regardless of whether or not they contributed to the quality benchmarks during the baseline period.

After determining whether an ED visit or observation stay occurred during each episode, a two-level hierarchical logistic regression model was estimated, with each episode as a level one unit of observation and each practice as a level two unit of observation. The dependent variable was the log odds of incurring an ED visit or observation stay. Hierarchical models are frequently used to analyze datasets with clustering of observations within well-defined units – in this case oncology episodes clustered within practices. The model estimates a “practice-year effect” for each individual practice-year, controlling for beneficiary and episode characteristics such as demographics and type of cancer. The covariates in the model are listed below. They are defined in the same way as the covariates incorporated in the OCM expenditure prediction model, except as noted.

OCM Quality Risk-Adjustment Model Covariates:

1. Age
2. Sex
3. Cancer type
4. Chemotherapy drugs taken/administered during the episode (breast, prostate, and bladder cancers only)
5. Receipt of cancer-related surgery
6. Low income – this is defined as full dual (Medicare and Medicaid) eligibles plus other beneficiaries who have a low income subsidy through Part D.
7. Receipt of radiation therapy
8. Receipt of bone marrow transplant (allogeneic and autologous combined into a single variable)
9. Clinical trial participation
10. Number of comorbidities (CMS Hierarchical Condition Category [HCC] flags)
11. History of prior chemotherapy use
12. Institutional status

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13. Geographic location/Hospital Referral Region (HRR) – this variable shows the relative propensity for ED/observation stay use during an episode at the HRR level, rather than relative episode costs at the HRR level, as was used in the financial benchmarking model

More information on these covariates is contained in Appendix I of the [OCM PBP Methodology](#) (effective 7/2/2017), which is available on the CMS OCM website.

Model output was used to obtain two quantities for each practice-year: a “predicted” probability of having an ED visit/observation stay and an “expected” probability of having an ED visit/observation stay for every episode attributed to the practice-year in the baseline period. The predicted probability of having an ED visit/observation stay is based on beneficiary and episode characteristics and incorporates a random intercept term generated by the model for the practice-year, thereby reflecting the performance of the practice in that year. The expected probability of having an ED visit/observation stay is based on beneficiary and episode characteristics but does not incorporate any random intercept terms. This probability reflects nationwide performance averaged over all practice-years included in the model. For each practice-year the average predicted and average expected probabilities of ED/observation stay use were calculated over all episodes attributed to that practice during the year. The ratio of average predicted-to-expected probabilities for each practice-year represents the relative performance of the practice in that year compared to national norms. This is similar to “observed” to “expected” ratios used in other contexts. Each practice-year’s predicted-to-expected ratio was multiplied by the national rate of ED/observation stay use in the baseline period, producing a risk-adjusted rate of having an ED visit/observation stay. These risk-adjusted rates of ED/observation stay use were arrayed and divided into quintiles. The quintile values represent the benchmark thresholds for determining quality points assigned during the performance period. This approach is similar to other CMMI quality measure risk adjustment strategies currently in use.

Following the end of each OCM performance period, episodes will be identified and attributed and the characteristics of each episode will be documented. Episodes from the performance period will be pooled with those from the preceding performance period. The same hierarchical logistic regression model will be re-estimated on the episodes in the two performance periods combined. As before, average predicted and expected probabilities of having an ED visit/observation stay will be calculated for each practice. The ratio of average predicted-to-expected probabilities will be multiplied by the overall ED/observation stay utilization rate in the two performance periods. Each practice’s risk-adjusted rate of having an ED visit/observation stay will then be compared to the benchmark quintiles developed from the national baseline data, for purposes of assigning quality points. Benchmarks and the assignment of quality points for this measure are described in the [OCM Claims-Based Quality Measure Benchmarks](#) document, available on OCM Connect to OCM Participants.