

Illustrative Example of NQF's Attribution Model Selection Guide

A CASE STUDY FOR JAN. 17, 2017 NQF ALL-MEMBER CALL

Medicare Spending Per Beneficiary, Hospital Value-Based Purchasing

The following example looks at the attribution model used in the Medicare Spending Per Beneficiary (MSPB) measure ([NQF#2158](#)) in the Centers for Medicare & Medicaid Services Hospital Value-Based Purchasing program, applying the questions in the National Quality Forum's Attribution Model Selection Guide.

What is the context and goal of the accountability program?

What are the desired outcomes/results of the program?

Starting on October 1, 2012, Medicare began basing a portion of hospital reimbursement on performance through the Hospital Value-Based Purchasing Program (VBP). The VBP program aims to improve quality and lower costs by aligning financial incentives.

Is the attribution model aspirational?

The VBP program and MSPB measure aims to incentivize hospitals financially to improve care coordination, deliver efficient, effective care, and reduce delivery system fragmentation. Hospitals could do this by reducing readmissions through improved care coordination, ensuring they are working with high-value post-acute care partners, and by discharging patients to lower cost post-acute services when appropriate (e.g., using home health services rather than a skilled nursing facility when appropriate).

Is the attribution model evidence-based?

The MSPB measure advances VBP's goals to improve care coordination and efficiency by measuring the period between 3 days prior to an acute inpatient hospital admission through the period 30 days after discharge.

What is accountability mechanism of the program?

CMS withholds 2 percent of its regular hospital reimbursements from all hospitals paid under its inpatient prospective payment system (IPPS) to fund a pool of VBP incentive payments. Hospitals are scored based on their performance on each measure within the program relative to other hospitals as well as on how their performance on each measure has improved over time. The higher of these scores on each measure is used in determining incentive payments. CMS bases performance on a set of cost and quality measures grouped into specific domains. For FY 2018 these domains are Patient and Caregiver-Centered Experience of Care/Care Coordination (25 percent), Safety (25 percent), Clinical Care (25 percent), Efficiency and Cost Reduction (25 percent).

An MSPB episode includes all Medicare Part A and Part B claims paid during the period from 3 days prior to a hospital admission (i.e., index admission) through 30 days after discharge from the hospital. A hospital's MSPB measure is calculated as the hospital's average MSPB amount divided by the median MSPB amount across all hospitals, where a hospital's MSPB amount is the hospital's average price-standardized, risk-adjusted spending for an MSPB episode. Medicare payment amounts are price-standardized to remove the effect of geographic payment differences and add-on payments for indirect medical education (IME) and disproportionate share hospitals (DSH). In addition, the MSPB measure is risk-adjusted to account for beneficiary age and severity of illness.

Which entities will participate and act under the accountability program?

This program applies to hospitals paid under the IPPS system.

What are the potential consequences?

Potential positive consequences could include improved quality and care coordination and lower costs; however, hospitals that have worse scores (higher costs) will be penalized financially, and that could create disincentives to admit more costly patients leading to barriers to access. Negative consequences could include taking resources away from underserved populations or a focus on the metrics in the program at cost to other outcomes. Additionally, there are concerns that the majority of variation on this measure is driven by post-acute spending that may be outside of the direct control of the hospital.

How do the measures relate to the context in which they are being used?

What are the patient inclusion/exclusion criteria?

Beneficiary populations eligible for the MSPB calculation include Medicare beneficiaries enrolled in Medicare Parts A and B who were discharged from short-term acute care hospitals during the period of performance.

Does the model attribute enough individuals to draw fair conclusions?

All IPPS hospitals are required to participate in the VBP program. However, the model should be tested to ensure appropriate performance in the program.

Which units will be affected by the attribution model?

Which units are eligible for the attribution model?

Hospitals paid under the Inpatient Prospective Payment System are included in the attribution model.

To what degree can the accountable unit influence the outcomes?

As noted above, hospitals could influence the outcome by reviewing spending by their post-acute partners.

Do the units have sufficient sample size to meaningfully aggregate measure results?

Issues of sample size may affect the reliability and validity of these measures. The attribution model should be carefully reviewed to ensure that hospitals who are working to improve their results will benefit from the VBP program. Improper attribution could result in hospitals being mistakenly penalized.

Are there multiple units to which the attribution model will be applied?

The VBP program applies only to hospitals paid under the IPPS and the MSPB measure attributes spending to the hospital.

How is the attribution performed?

What data are used? Do all parties have access to the data?

The measure is calculated using claims data submitted by hospitals to CMS; hence, the attribution of the patient to the hospital is straightforward. Spending outside of the hospital per episode is calculated by linking patient claims across care settings using the patient Medicare ID number (HIC number), which is unique and has a high level of accuracy. Beneficiary populations eligible for the MSPB calculation include Medicare beneficiaries enrolled in Medicare Parts A and B who were discharged from short-term acute care hospitals during the period of performance.

What are the qualifying events, and do these events accurately assign care to the right accountable unit?

The measure includes the following resource use categories:

- Inpatient services: Evaluation and management
- Inpatient services: Procedures and surgeries
- Inpatient services: Imaging and diagnostic
- Inpatient services: Lab services
- Inpatient services: Admissions/discharges
- Ambulatory services: Outpatient facility services
- Ambulatory services: Emergency department
- Ambulatory services: Evaluation and management
- Ambulatory services: Procedures and surgeries
- Ambulatory services: Imaging and diagnostic
- Ambulatory services: Lab services
- Durable medical equipment (DME)

What are the details of the algorithm used to assign responsibility?

Spending for the included events is attributed to the hospital. The MSPB episode spans the period 3 days prior to the index hospital admission through 30 days post-discharge. All events that occur during this time period are included in the MSPB episode. However, the majority of the variation in this measure is driven by post-acute spending. This may cause concerns as all spending is attributed to the hospital. There are also concerns that patients present with varying degrees of complexity that may influence spending needed for care.

Have multiple attribution methodologies been considered for reliability?

The measure's reliability was assessed during its NQF endorsement. However, additional testing may be necessary to ensure that the measure performs as expected in the program.

What is the timing of attribution computation?

Spending 3 days prior to an acute inpatient hospital admission through the period 30 days after discharge is attributed to the hospital.

CASE STUDY

Hemoglobin A1c (HbA1c) Measure in the Merit-Based Incentive Payment System (MIPS)

What is the context and goal of the accountability program?

What are the desired outcomes and results of the program?

Incentivize Eligible Clinicians in the Merit-Based Incentive Payment System (MIPS) to better manage their diabetic patients' HbA1c.

Is the attribution model aspirational?

Individual clinicians or group practices could choose to report this measure. The MIPS program and this measure aim to better incentivize further uptake of evidence-based practices, with the understanding not all patients will prioritize achieving the desired control over other considerations or be able to achieve the desired control.

Is the attribution model evidenced-based?

Yes, lower HbA1C levels can be achieved through optimizing care and lead to better health for patients (fewer short- and long-term complications).

What is the accountability mechanism of the program?

MIPS consolidates Medicare's existing incentive and quality reporting programs for clinicians. MIPS makes positive and negative payment adjustments for Eligible Clinicians (ECs) of many types (including primary care physicians, nurses, and physician assistants; physician subspecialists; and hospital-based physicians) based on performance in four categories:

- Quality—replaces current Physician Quality Reporting System (PQRS) program
- Cost—replaces current value-based modifier (VBM) program
- Advancing Care Information—replaces Meaningful Use program
- Improvement activities (new component)

Which entities will participate and act?

To meet the quality component, individual ECs or ECs in groups choose six measures to report to CMS. One of these measures must be an outcome measure or other high-priority measure. Clinicians also can choose to report a specialty measure set. One measure clinicians can report is NQF #0059: Diabetes: Hemoglobin A1c Poor Control. This measure assesses the percentage of patients 18-75 years of age with diabetes (type 1 or type 2) whose most recent HbA1c level during the measurement year was greater than 9.0 percent (poor control) or was missing a result, or if an HbA1c test was not done during the measurement year. Poor control puts the individual at risk for complications including renal failure, blindness, and neurologic damage.

What are the potential consequences?

Potential negative consequences are that clinicians may avoid caring for high-risk or complex patients.

How do the measures relate to the context in which they are being used?

What are the patient inclusion/exclusion criteria?

The numerator of the measure is patients whose most recent HbA1c level is greater than 9.0 percent or is missing a result, or for whom an HbA1c test was not done during the measurement year. The outcome is an out-of-range result of an HbA1c test, indicating poor control of diabetes. The denominator is patients 18-75 years of age by the end of the measurement year who had a diagnosis of diabetes (type 1 or type 2) during the measurement year or the year prior to the measurement year. The measure excludes patients who did not have a diagnosis of diabetes, in any setting, during the measurement year or the year prior to the measurement year and who had a diagnosis of gestational diabetes or steroid-induced diabetes in any setting, during the measurement year or the year prior to the measurement year. The measure is not risk-adjusted.

Does the model attribute enough individuals to draw fair conclusions?

Clinicians must meet a Medicare patient volume threshold to be eligible for MIPS. Clinicians who bill less than \$30,000 dollars in Medicare Part B allowed charges or who are attributed less than 100 Medicare beneficiaries are excluded from the program. However, this measure could potentially address a subset of the patients that a clinician sees, that is, those with diabetes. It is important to test the measure within the context of the MIPS program to ensure that the model attributes enough individuals to ensure fair assessments of performance.

Which units will be affected by the attribution model?

Which units are eligible for the attribution model?

As noted above, individual clinicians or group practices can report this measure. This measure addresses an intermediate clinical outcome. Clinicians can work with patients to determine treatment to lower HbA1c to a desirable level.

To what degree can the accountable unit influence the outcomes?

The ability of ECs to influence their diabetic patients' HbA1C will vary across providers. Primary care doctors and endocrinologists can affect this measure through active management, patient engagement, and efforts at care coordination. However, patient preference, adherence to medications, engagement, adverse side effects, or competing clinical concerns, and social support, among other factors, may limit providers' control. Other types of providers will have less influence, but presumably will not select the measure for reporting.

Do the units have sufficient sample size to meaningfully aggregate measure results?

This measure should be tested in the MIPS context to determine a minimum sample size for a reliable measure score.

Are there multiple units to which the attribution model will be applied?

A diabetic Medicare patient is likely cared for by multiple providers. Under MIPS, however, patients are assigned to only one provider based on where they get their primary care (see below). In cases where patient management is shared, and the providers seeing the patient are not all in the same group for the purposes of MIPS reporting, the patient outcome will be assigned to a single provider even though multiple providers potentially influence the outcome.

How is the attribution performed?

What data are used? Do all parties have access to the data?

The data source can be claims, web interface, registry, or electronic health record.

What are the qualifying events, and do these events accurately assign care to the right accountable unit?

It is estimated that over 600,000 clinicians will be subject to the MIPS program. As noted above, clinicians can choose which measures to report.

What are the details of the algorithm used to assign responsibility?

This measure assesses patients 18-75 years of age by the end of the measurement year who had a diagnosis of diabetes (type 1 or type 2) during the measurement year or the year prior to the measurement year.

Have multiple attribution methodologies been considered for reliability?

Reliability of the measure was assessed during the measure's NQF endorsement review. Additional considerations of the reliability of the measure within the context of the MIPS program should be assessed.

What is the timing of attribution computation?

The measurement period is one year.

SNF Readmissions Measure in the Skilled Nursing Facility Value-Based Purchasing (SNF VBP) Program

What is the context and goal of the accountability program?

What are the desired outcomes/results of the program?

Section 215 of the Protecting Access to Medicare Act of 2014 (PAMA) authorizes establishing a SNF VBP Program beginning with FY 2019 under which value-based incentive payments are made to SNFs in a fiscal year based on performance. CMS states that the goal of this program is to transform Medicare from a passive payer of SNF claims to an active purchaser of quality healthcare for beneficiaries by linking payments to performance on identified quality measures. This program attempts to address potentially preventable hospital readmissions by establishing an incentive pool for high performers.

Is the attribution model aspirational?

The program aims to reduce hospital readmissions from skilled nursing facilities by promoting shared accountability. As noted below, there is evidence to support the idea that SNFs can improve their processes or structures to reduce hospital readmissions. However, there have been concerns that a patient's risk of readmission is influenced by the quality of the hospital care they received and other factors outside the control of the SNF.

Is the attribution model evidence-based?

There is evidence that hospital readmissions can be reduced by improved care coordination and improvements in patient safety and care by SNFs.

What is the accountability mechanism of the program?

Based on the SNF readmission measure, the Secretary of HHS must establish a performance standard for SNFs, along with levels of achievement and improvement. The Secretary will then develop a scoring methodology for each SNF in order to create a ranking system to rate SNFs annually. The Secretary must ensure that SNFs with the highest rankings receive the highest incentive payments and SNFs with the lowest rankings receive the lowest (or zero) incentive payments. The lowest 40 percent of SNFs (by ranking) will be reimbursed less than they otherwise would be reimbursed without the SNF VBP.

Which entities will participate and act?

The program includes skilled nursing facilities.

What are the potential consequences?

Potential negative consequences are that the program may reduce patient access to care if SNFs do not accept higher risk patients from hospitals.

How do the measures relate to the context in which they are being used?

What are the patient inclusion/exclusion criteria?

The following are excluded from the denominator:

1. SNF stays where the patient had one or more intervening post-acute care (PAC) admissions (inpatient rehabilitation facility [IRF] or long-term care hospital [LTCH]) which occurred either between the prior proximal hospital discharge and SNF admission or after the SNF discharge, within the 30-day risk window. Also excluded are SNF admissions where the patient had multiple SNF admissions after the prior proximal hospitalization, within the 30-day risk window.
2. SNF stays with a gap of greater than 1 day between discharge from the prior proximal hospitalization and the SNF admission.
3. SNF stays where the patient did not have at least 12 months of FFS Medicare enrollment prior to the proximal hospital discharge (measured as enrollment during the month of proximal hospital discharge and the for 11 months prior to that discharge).
4. SNF stays in which the patient did not have FFS Medicare enrollment for the entire risk period (measured as enrollment during the month of proximal hospital discharge and the month following the month of discharge).
5. SNF stays in which the principal diagnosis for the prior proximal hospitalization was for the medical treatment of cancer. Patients with cancer whose principal diagnosis from the prior proximal hospitalization was for other diagnoses or for surgical treatment of their cancer remain in the measure.
6. SNF stays where the patient was discharged from the SNF against medical advice.
7. SNF stays in which the principal primary diagnosis for the prior proximal hospitalization was for “rehabilitation care; fitting of prostheses and for the adjustment of devices.”

Does the model attribute enough individuals to draw fair conclusions?

This measure assesses unplanned all-cause hospital readmissions of SNF patients occurring within 30 days of discharge from the patient’s prior proximal acute hospitalization. The measure was found to be reliable and valid during its NQF endorsement, but additional testing may be needed to monitor the results of this measure in this program.

Which units will be affected by the attribution model?

Which units are eligible for the attribution model?

This program uses NQF #2510 All-Cause Risk-Standardized Readmission Measure. This measure estimates the risk-standardized rate of all-cause, unplanned, hospital readmissions for patients who have been admitted to a Skilled Nursing Facility (SNF) (Medicare fee-for-service [FFS] beneficiaries) within 30 days of discharge from their prior proximal hospitalization. The prior proximal hospitalization is defined as an admission to an IPPS, CAH, or a psychiatric hospital.

To what degree can the accountable unit influence the outcomes?

As noted above, there is evidence that SNFs can influence the outcome by improving care coordination, patient care, and safety. However, there have been concerns about the influence of factors outside the SNFs control on the outcome of the measure.

Do the units have sufficient sample size to meaningfully aggregate measure results?

The measure is NQF-endorsed, but additional testing may be necessary to ensure that it is reliable and valid in the context of the program.

Are there multiple units to which the attribution model will be applied?

No, the program only applies to SNFs.

How is the attribution performed?**What data are used? Do all parties have access to the data?**

This measure uses claims data.

What are the qualifying events, and do these events accurately assign care to the right accountable unit?

This measure captures 30 hospital readmissions and attributes responsibility to the SNF. Evidence has shown that there are interventions that SNFs can undertake to reduce hospital readmissions, but concerns have been raised that some readmissions may be out of the SNF's control.

What are the details of the algorithm used to assign responsibility?

A risk-adjusted readmission rate for each facility is calculated as follows: Step 1: Calculate the standardized risk ratio of the predicted number of readmissions at the facility divided by the expected number of readmissions for the same patients if treated at the average facility. The magnitude of the risk-standardized ratio is the indicator of a facility's effects on readmission rates. Step 2: The standardized risk ratio is then multiplied by the mean rate of readmission in the population (i.e., all Medicare FFS patients included in the measure) to generate the facility-level standardized readmission rate.

Have multiple attribution methodologies been considered for reliability?

The reliability of the measure was assessed during its NQF endorsement. However, additional testing for reliability may be needed to ensure that the measure appropriately performs in this program.

What is the timing of attribution computation?

The measure is based on data for 12 months of SNF admissions.