Medicare Spending Per Beneficiary (MSPB) Measure

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Medicare Spending Per Beneficiary (MSPB) Measure

Rachel Yong, MSPH
Senior Research Analyst
Acumen

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Purpose

This presentation will provide attendees with an overview of the MSPB Measure and the associated Hospital-Specific Reports (HSRs).
Objectives

By the end of the presentation, attendees will recognize the:

- Goals of the MSPB Measure
- MSPB Measure methodology
- MSPB Measure calculation steps
- Hospital-Specific reports and supplemental files
Introduction to the MSPB Measure

The MSPB Measure:

• Evaluates hospitals’ efficiency relative to the efficiency of the national median hospital

• Assesses the cost to Medicare for services performed by hospitals and other healthcare providers during an MSPB episode
  ▪ Comprises periods immediately prior to, during, and following a patient’s hospital stay
MSPB and Hospital VBP Program

• The MSPB Measure:
  ▪ Is an efficiency measure in the Hospital Value-Based Purchasing (VBP) Program
  ▪ Was included starting in Fiscal Year (FY) 2015
  ▪ Was required for inclusion in Hospital VBP by §1886(o)(2)(B)(ii) of the Social Security Act

• Final details of MSPB episode construction and adjustment are in:
  ▪ FY 2012 Inpatient Prospective Payment System (IPPS) Final Rule (76 FR 51618 through 51626)
  ▪ FY 2013 IPPS Final Rule
Agenda

- Goals of MSPB Measure
- Measure Methodology
- Calculation Steps
- Example Calculation
- Overview of Hospital-Specific Reports and Supplemental Files
- Overview of Downloadable MSPB Files Posted on Data.Medicare.Gov
Agenda

• Goals of MSPB Measure
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Goals of MSPB

In conjunction with other Hospital VBP Program quality measures, the MSPB Measure aims to:

- Incentivize hospitals to coordinate care
- Reduce system fragmentation
- Improve efficiency
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Measure Methodology

The MSPB Measure is a claims-based measure that includes price-standardized payments for all Part A and Part B services provided from 3 days prior to a hospital admission (index admission) through 30 days after the hospital discharge.
MSPB Measure Definition
(Slide 1 of 2)

• **MSPB Episode**: Period three days prior to an IPPS hospital admission (also known as the “index admission”) through 30 days post-hospital discharge.

• Hospital admissions that are NOT considered as index admissions include:
  - Admissions which occur within 30 days of discharge from another index admission
  - Acute-to-acute transfers
  - Episodes where the index admission claim has $0 payment
  - Admissions having discharge dates fewer than 30 days prior to the end of the performance period
MSPB Measure Definition

(Slide 2 of 2)

\[
\text{MSPB Measure} = \frac{\text{MSPB Amount}}{\text{National Episode-Weighted Median MSPB Amount}}
\]

- **MSPB Amount**: Sum of a hospital’s standardized, risk-adjusted spending across all of the hospital’s eligible episodes divided by the number of episodes.

- **MSPB Measure**: A hospital’s MSPB Amount divided by the episode-weighted median MSPB Amount across all hospitals.
  - Normalized MSPB Amount so that median MSPB Measure equals 1.0
Measure Interpretation

• An MSPB Measure that is less than one indicates that a given hospital spends less than the national median MSPB Amount across all hospitals during a given performance period.

• Improvement on the MSPB Measure for a hospital would be observed as a lower MSPB Measure value across performance periods.
Measure Specifications: Included and Excluded Populations

- **Beneficiaries Included:**
  - Enrolled in Medicare Parts A and B from 90 days prior to the episode through the end of the episode
  - Admitted to subsection (d) hospitals
  - Covered by the Railroad Retirement Board

- **Beneficiaries Excluded:**
  - Enrolled in Medicare Advantage
  - Have Medicare as the secondary payer
  - Died during episode
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Overview of Calculation Steps

1. Standardize Claims Payments
2. Calculate Standardized Episode Spending
3. Calculate Expected Episode Spending
4. Truncate Expected Values
5. Calculate Residuals
6. Exclude Outliers
7. Calculate MSPB Amount for Each Hospital
8. Calculate MSPB Measure
9. Report MSPB Measure
Step 1: Standardize Claims Payments

• Standardize spending to adjust for geographic differences and payments from special Medicare programs that are not related to resource use
  ▪ e.g., graduate medical education
• Maintain differences that result from healthcare delivery choices such as:
  ▪ setting where the service is provided
  ▪ specialty of healthcare provider who provides the service
  ▪ number of services provided in the same encounter
  ▪ outlier cases
• Refer to QualityNet for full details at:
Step 2: Calculate Standardized Episode Spending

Sum all standardized Medicare Part A and Part B claim payments made during an MSPB episode (i.e., between three days prior to the hospital admission until 30 days after discharge), including:

- Patient deductibles and coinsurance
- Claims based on the from date variable
  - The first day on the billing statement covering services rendered to the beneficiary (or admission date for Inpatient claims)
Step 3: Calculate Expected Episode Spending

• Account for variation in patient case mix across hospitals by using a linear regression to estimate the relationship between risk adjustment variables and standardized episode cost (Step 2).
  - Risk adjustment variables include factors such as age, severity of illness, and comorbidity interactions.

• Use a separate regression model for each major diagnostic category (MDC).
Step 4: Truncate Expected Values

Process of truncating (or Winsorizing) extremely low-cost expected values for each Medicare Severity Diagnosis Related Group (MS-DRG):

1. Identify episodes that fall below the 0.5 percentile of the MS-DRG expected cost distribution

2. Reset the expected cost for these episodes to the expected cost of the episode at this threshold (0.5 percentile)

3. Renormalize expected cost so that the average expected spending within any MS-DRG remains unchanged
Step 5: Calculate Residuals

• Calculate residuals for each episode to identify outliers using this formula:
  • Residual = Standardized Episode Spending (Step 2) – Truncated Expected Episode Spending (Step 4)
Step 6: Exclude Outliers

• Exclude statistical outlier episodes to mitigate effect of high-cost and low-cost outliers on each hospital’s MSPB Measure.

• Statistical outlier episodes defined as:
  • High-Cost Outlier: Residual falls above 99th percentile of the residual cost distribution within any MS-DRG-admission category
  • Low-Cost Outlier: Residual falls below first percentile of the residual cost distribution within any MS-DRG-admission category

• Renormalize expected cost to ensure that average expected cost is the same as average standardized cost after outlier exclusions.
Step 7: Calculate the MSPB Amount for Each Hospital

Calculate the risk-adjusted MSPB Amount for each hospital as the ratio of the average standardized episode spending over the average expected episode spending multiplied by the average episode spending level across all hospitals.
Step 8: Calculate the MSPB Measure

MSPB Measure for each hospital is reported as the ratio of the MSPB Amount for the hospital (Step 7) divided by the episode-weighted median MSPB Amount across all hospitals:
Step 9: Report the MSPB Measure

Report only the MSPB Measures for Hospital VBP-eligible hospitals with more than 25 episodes for payment purposes.
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Example Calculation
(Slide 1 of 3)

• Hospital A has 12 MSPB episodes, ranging from $1,000 to $33,000. After applying steps 1-4, one episode had a residual higher than the 99th percentile residual over all MSPB episodes and was excluded in step 6.
  • Calculate Residuals (Step 5) = Standardized Episode Spending (Step 2) – Truncated Expected Episode Spending (Step 4)
  • Example Episode Residual = $33,000 - $5,500 = $27,500

• The following two slides show how the MSPB Amount and MSPB Measure is calculated for Hospital A.

• Full details of example calculation are available at this QualityNet webpage:
  http://www.qualitynet.org/dcs/ContentServer?c=Page&pagemain=QnetPublic/Page/QnetTier4&cid=1228772057350

6/3/2015
Example Calculation
(Slide 2 of 3)

Step 7: Calculate the MSPB Amount for each hospital as the ratio of the average standardized episode spending over the average expected episode spending multiplied by the average episode spending level across all hospitals.

\[
\text{MSPB Amount} = \frac{\text{Avg. Standardized Spending}_j}{\text{Avg. Truncated Expected Spending}_j} \times \text{Avg. Standardized Spending}_{\text{all hospitals}}
\]

Example Hospital MSPB Amount = \( \frac{\$9,368}{\$9,964} \times \$9,000 = \$8,462 \)
Step 8: Calculate the MSPB Measure

- The hospital's MSPB Amount divided by the episode-weighted median MSPB Amount across all hospitals

\[
\text{MSPB Measure} = \frac{\text{MSPB Amount}}{\text{National Episode-Weighted Median MSPB Amount}}
\]

*Example Hospital MSPB Measure = \frac{\$8,462}{\$9,100} = 0.93*

Step 9: Report the MSPB Measure

- This hospital’s MSPB Measure will not be used for payment purposes
  - The hospital only has 11 episodes
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Overview of Hospital-Specific Reports

• During the Preview Period, individual hospitals can review their MSPB Measure in their HSR.

• Reports include six tables and are accompanied by three supplemental hospital-specific data files.
  ▪ Tables include the MSPB Measure results of the individual hospital and of other hospitals in the state and the nation.
  ▪ Supplemental hospital-specific data files contain information on the admissions that were considered for the individual hospital’s MSPB Measure and data on the Medicare payments (to individual hospital and other providers) that were included in the measure.
Overview of Tables 1 and 2

Table 1: MSPB Measure Performance Rate

• Displays the individual hospital’s MSPB Measure performance rate.

<table>
<thead>
<tr>
<th>Your Hospital’s MSPB Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.08</td>
</tr>
</tbody>
</table>

Table 2: Additional Information About the Individual Hospital’s MSPB Performance

• Provides the number of eligible admissions and MSPB Amount for the individual hospital, the state, and the nation.

<table>
<thead>
<tr>
<th>Number of Eligible Admissions at Your Hospital</th>
<th>Your Hospital’s MSPB Amount</th>
<th>State Average MSPB Amount</th>
<th>U.S. National Average MSPB Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>19,546.53</td>
<td>18,900.02</td>
<td>19,679.19</td>
</tr>
</tbody>
</table>
Table 3 displays the major components (e.g., number of eligible admissions, MSPB Amount, and National Median MSPB Amount) used to calculate the individual hospital’s MSPB Measure performance rate.

<table>
<thead>
<tr>
<th>Components</th>
<th>Your Hospital</th>
<th>State</th>
<th>U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Eligible Admissions</td>
<td>21</td>
<td>64,000</td>
<td>5,446,136</td>
</tr>
<tr>
<td>Average Spending per Episode</td>
<td>16,215.81</td>
<td>15,502.55</td>
<td>20,024.64</td>
</tr>
<tr>
<td>MSPB Amount (Avg. Risk-Adjusted Spending)</td>
<td>19,546.53</td>
<td>18,900.02</td>
<td>19,679.19</td>
</tr>
<tr>
<td>U.S. National Median MSPB Amount</td>
<td>18,017.19</td>
<td>18,017.19</td>
<td>20,017.29</td>
</tr>
<tr>
<td>MSPB Measure</td>
<td>1.08</td>
<td>1.05</td>
<td>0.98</td>
</tr>
</tbody>
</table>
Table 4 displays the national distribution of the MSPB Measure across all hospitals in the nation.

<table>
<thead>
<tr>
<th>Percentile</th>
<th>MSPB Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>0.83</td>
</tr>
<tr>
<td>10</td>
<td>0.87</td>
</tr>
<tr>
<td>25</td>
<td>0.93</td>
</tr>
<tr>
<td>50</td>
<td>0.98</td>
</tr>
<tr>
<td>75</td>
<td>1.03</td>
</tr>
<tr>
<td>90</td>
<td>1.08</td>
</tr>
<tr>
<td>95</td>
<td>1.12</td>
</tr>
</tbody>
</table>
Overview of Table 5: Spending Breakdown by Claim Type

Table 5:

- Provides a detailed breakdown of the individual hospital’s spending for the following time periods:
  - 3 Days Prior to Index Admission
  - During-Index Admission
  - 30 Days After Hospital Discharge
- Breaks down spending levels by claim type within each of the time periods
- Compares the percent of total average episode spending by claim type and time period at the individual hospital to the total average spending at hospitals in the state and the nation
### Table 5: Detailed MSPB Spending Breakdown by Claim Type

**Time Period**
When in the episode the claim occurred

**The Individual Hospital Spending**
Shows the amount and percent of total average episode spending for the individual hospital’s episodes in a given category and claim type

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Claim Type</th>
<th>The Individual Hospital Spending per Episode</th>
<th>The Individual Hospital Percent of Spending</th>
<th>State Percent of Spending</th>
<th>Nation Percent of Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>During-Index</td>
<td>Total During-Index</td>
<td>6,687</td>
<td>41.23%</td>
<td>70.2%</td>
<td>53.2%</td>
</tr>
<tr>
<td></td>
<td>Home Health Agency</td>
<td>47</td>
<td>0.29%</td>
<td>3.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>Hospice</td>
<td>75</td>
<td>0.46%</td>
<td>4.9%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>Inpatient</td>
<td>5,262</td>
<td>32.45%</td>
<td>47%</td>
<td>45.5%</td>
</tr>
<tr>
<td></td>
<td>Outpatient</td>
<td>0</td>
<td>0.00%</td>
<td>0.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>Skilled Nursing</td>
<td>340</td>
<td>2.10%</td>
<td>10%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>Facility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Durable Medical</td>
<td>76</td>
<td>0.47%</td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
<tr>
<td></td>
<td>Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carrier</td>
<td>887</td>
<td>5.47%</td>
<td>5.0%</td>
<td>7.6%</td>
</tr>
</tbody>
</table>

6/3/2015
Table 5: Detailed MSPB Spending Breakdown by Claim Type *(Slide 2 of 2)*

Percent of Total Average Spending in the Individual Hospital, State, and Nation

A lower percent of spending in the individual hospital than the percent of spending in the state or nation means that for the given category and claim type, the individual hospital spends less than other hospitals in the state or the nation respectively.

<table>
<thead>
<tr>
<th>During-Index Admission</th>
<th>Claim Type</th>
<th>The Individual Hospital Spending per Episode</th>
<th>The Individual Hospital Percent of Spending</th>
<th>State Percent of Spending</th>
<th>Nation Percent of Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total During-Index</td>
<td><strong>Total During-Index</strong></td>
<td>6,687</td>
<td><strong>41.23%</strong></td>
<td><strong>70.2%</strong></td>
<td><strong>53.2%</strong></td>
</tr>
<tr>
<td>Home Health Agency</td>
<td>47</td>
<td>0.29%</td>
<td>3.1%</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Hospice</td>
<td>75</td>
<td>0.46%</td>
<td>4.9%</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Inpatient</td>
<td>5,262</td>
<td><strong>32.45%</strong></td>
<td><strong>47%</strong></td>
<td><strong>45.5%</strong></td>
<td></td>
</tr>
<tr>
<td>Outpatient</td>
<td>0</td>
<td>0.00%</td>
<td>0.1%</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Skilled Nursing Facility</td>
<td>340</td>
<td>2.10%</td>
<td>10%</td>
<td>0.0%</td>
<td></td>
</tr>
<tr>
<td>Durable Medical Equipment</td>
<td>76</td>
<td>0.47%</td>
<td>0.1%</td>
<td>0.1%</td>
<td></td>
</tr>
<tr>
<td>Carrier</td>
<td>887</td>
<td>5.47%</td>
<td>5.0%</td>
<td>7.6%</td>
<td></td>
</tr>
</tbody>
</table>

6/3/2015
Overview of Table 6: Spending Breakdown by MDC

Table 6:

- Provides a breakdown of the individual hospitals’ average actual and expected spending for a MSPB episode by MDC
- Compares the individual hospital average actual and expected spending to state and national average actual and expected spending
### Table 6: Detailed MSPB Spending Breakdown by MDC

#### Hospital Spending
The individual hospital’s average and expected spending per episode for a given MDC

<table>
<thead>
<tr>
<th>MDC Number and Description</th>
<th>Hospital Spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDC</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------</td>
</tr>
<tr>
<td>4</td>
<td>Respiratory System</td>
</tr>
<tr>
<td>5</td>
<td>Circulatory System</td>
</tr>
<tr>
<td>6</td>
<td>Digestive System</td>
</tr>
</tbody>
</table>
Table 6: Detailed MSPB Spending Breakdown by MDC *(Slide 2 of 2)*

Spending in the Individual Hospital’s State and Nation reflects average spending values for the state and for the nation. For example, if an individual hospital has a lower value in Column B than in Column F, its patients have a lower expected spending level than the nation for that given MDC.

<table>
<thead>
<tr>
<th>MDC</th>
<th>Description</th>
<th>(A) The Individual Hospital Average Spending per Episode</th>
<th>(B) The Individual Hospital Average Expected Spending per Episode</th>
<th>(C) State Average Spending per Episode</th>
<th>(D) State Average Expected Spending per Episode</th>
<th>(E) National Average Spending per Episode</th>
<th>(F) National Average Expected Spending per Episode</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Respiratory System</td>
<td>14,585</td>
<td>16,444</td>
<td>16,324</td>
<td>15,565</td>
<td>16,641</td>
<td>16,747</td>
</tr>
<tr>
<td>5</td>
<td>Circulatory System</td>
<td>19,053</td>
<td>17,422</td>
<td>16,533</td>
<td>17,200</td>
<td>20,323</td>
<td>20,525</td>
</tr>
<tr>
<td>6</td>
<td>Digestive System</td>
<td>6,605</td>
<td>11,700</td>
<td>8,000</td>
<td>9,200</td>
<td>16,216</td>
<td>16,343</td>
</tr>
</tbody>
</table>
Overview of Supplemental Hospital-Specific Data Files

Each HSR is accompanied by three supplemental hospital-specific data files:

1. Index Admission File
   a. Presents all inpatient admissions for the individual hospital in which a beneficiary was discharged during the period of performance

2. Beneficiary Risk Score File
   b. Identifies beneficiaries and their health status based on the beneficiary’s claims history in the 90 days prior to the start of an episode

3. MSPB Episode File
   c. Shows the type of care, spending amount, and top five billing providers in each care setting for each MSPB episode
**Review and Correction**

- Hospitals **may preview** their MSPB Measure for a month after release.
- Data **will be posted** on *Hospital Compare* in October 2015.
- During the Preview Period, hospitals **may submit** questions or requests for correction to cmsMSPBmeasure@acumenllc.com.
  - Please include your hospital’s CMS Certification Number (CCN).
- As with other claims-based measures, hospitals **may NOT**:
  - Submit additional corrections to underlying claims data or
  - Submit new claims to be added to the calculations.
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Downloadable MSPB files include:

- **MSPB – Hospital, State, and National Level**
  - Presents the hospital, state average, and national average MSPB Measure

- **MSPB – Spending Breakdown by Claim Type**
  - Provides a breakdown of each hospital’s MSPB episode spending into the three time periods and claim type, similar to what is presented in Table 5 of the HSRs. Description of this file can be found on the CMS Hospital VBP page:

- **MSPB – Additional Decimal Places**
  - Provides hospital MSPB Measure up to 6 decimal places
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Continuing Education Approval

• This program has been approved for 1.0 continuing education (CE) unit given by CE Provider #50-747 for the following professional boards:
  ▪ Florida Board of Nursing
  ▪ Florida Board of Clinical Social Work, Marriage and Family Therapy and Mental Health Counseling
  ▪ Florida Board of Nursing Home Administrators
  ▪ Florida Council of Dietetics
  ▪ Florida Board of Pharmacy

• Professionals licensed in other states will receive a Certificate of Completion to submit to their licensing boards.
CE Credit Process

• Complete the ReadyTalk® survey you will receive by email within the next 48 hours or the one that will pop up after the webinar.

• The survey will ask you to log in or register to access your personal account in the Learning Management Center.
  - A one-time registration process is required.
10. What is your overall level of satisfaction with this presentation?
- Very satisfied
- Somewhat satisfied
- Neutral
- Somewhat dissatisfied
- Very dissatisfied

If you answered “very dissatisfied”, please explain:

11. What topics would be of interest to you for future presentations?

12. If you have questions or concerns, please feel free to leave your name and phone number or email address and we will contact you.

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Existing User Link:
https://lmc.hshapps.com/test/adduser.aspx?ID=da0a12bc-db39-408f-b429-d5f6b9c1ae

Note: If you click the 'Done' button below, you will not have the opportunity to receive your certificate without participating in a longer survey.

Done
CE Credit Process: New User


First Name: [Input Field]
Last Name: [Input Field]
Email: [Input Field]
Phone: [Input Field]

Register
CE Credit Process: Existing User