Selection Criteria and Program Documentation: Knee and Hip Replacement and Spine Surgery

Released October 2015
About This Document

This Selection Criteria and Program Documentation outlines the Selection Criteria and evaluation process used to determine eligibility for the Blue Distinction Centers for Knee and Hip Replacement and Blue Distinction Centers for Spine Surgery programs (the Program[s]).

The document is organized into three sections. The first section describes the overall evaluation process and data sources applicable for both the Knee and Hip Replacement and Spine Surgery programs. The next section describes the Knee and Hip Replacement program’s quality, business, and cost Selection Criteria. The last section describes the quality, business, and cost Selection Criteria for the Spine Surgery program.

About the Blue Distinction Specialty Care Program

Blue Distinction Specialty Care is a national designation program recognizing healthcare facilities that demonstrate expertise in delivering quality specialty care — safely, effectively, and cost efficiently. The goal of the program is to help consumers find both quality and value for their specialty care needs, while encouraging healthcare professionals to improve the overall quality and delivery of healthcare nationwide, and providing a credible foundation for local Blue Cross and/or Blue Shield Plans (Blue Plans) to design benefits tailored to meet employers’ quality and cost objectives. The Blue Distinction Specialty Care Program includes two levels of designation:

- **Blue Distinction Centers (BDC):** Healthcare facilities recognized for their expertise in delivering specialty care.
- **Blue Distinction Centers+ (BDC+):** Healthcare facilities recognized for their expertise and cost-efficiency in delivering specialty care.

**Quality is key:** only those facilities that first meet nationally established, objective quality measures for BDC will be considered for designation as a BDC+.

Facilities are evaluated on objective, transparent Selection Criteria with quality, business, and cost of care components. These Programs focus on total knee replacement, total hip replacement, cervical and lumbar fusion, cervical laminectomy, and lumbar laminectomy/discectomy procedures. Facilities considered for these Programs are defined as comprehensive, acute care, inpatient facilities. Early in 2015, local Blue Plans invited facilities to be considered for the BDC or BDC+ designations. Of the 2,700 facilities invited across the country, over 1,400 facilities applied for the Knee and Hip Replacement and/or the Spine Surgery designation(s).

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1 Benefit design is determined independently by the local Blue Plan and is not a feature of any Blue Distinction program.
Understanding the Evaluation Process

Selection Process

The selection process balances quality, cost, and access considerations to offer consumers meaningful differentiation in value for specialty care facilities that are designated as BDC and BDC+. Guiding principles for the selection process include:

Quality

- Nationally consistent approach to evaluating quality and safety was used, incorporating quality measures with meaningful impact, including delivery system features and specific quality outcomes to which all can aspire.

Cost

- Nationally consistent and objective approach for selecting BDC+ was used to address market and consumer demand for cost savings and affordable healthcare.

Access

- Blue members’ access to Blue Distinction Centers was considered, as needed, to achieve the program’s overall goal of providing differentiated performance on quality and, for the BDC+ designation, cost of care.
Evaluation Components: Data Sources

Objective data from a detailed Provider Survey, publicly available quality data, Blue Plan healthcare claims data, and Plan Survey information were used to evaluate and identify facilities that meet the Program’s Selection Criteria. A facility must meet the Program’s specific Selection Criteria, defined by the following evaluation components (Table 1), to be eligible for the BDC or BDC+ designation:

Table 1: Evaluation Components

<table>
<thead>
<tr>
<th>EVALUATION COMPONENT</th>
<th>DATA SOURCE</th>
<th>BLUE DISTINCTION CENTERS (BDC)</th>
<th>BLUE DISTINCTION CENTERS+ (BDC+)</th>
</tr>
</thead>
</table>
| Quality: Knee and Hip Replacement | 1. Information obtained from a facility in the Provider Survey.  
3. Blue Plan healthcare claims data | | ✓ |
| Quality: Spine Surgery | 1. Information obtained from a facility in the Provider Survey. | ✓ | ✓ |
| Business: Knee and Hip Replacement AND Spine Surgery | 1. Information obtained from the local Blue Plan, for facilities within its Service Area, on:  
   • Facility and Surgeons' Participation Status in the local Blue Plan’s BlueCard® Preferred Provider Organization (PPO) Network.  
   • Local Blue Plan Criteria, if applicable.  
2. Information obtained by BCBSA on whether the facility meets BCBSA criteria for avoiding conflicts with BCBSA logos and trademarks. | | ✓ |
| Cost of Care: Knee and Hip Replacement AND Spine Surgery | 1. Blue Plan healthcare claims data. | | ✓ |
Measurement Framework

The Blue Distinction Centers for Knee and Hip Replacement and Spine Surgery programs established a nationally consistent approach to evaluating quality and safety by incorporating quality measures with meaningful impact, with criteria that will evolve over time through future evaluation cycles, consistent with medical advances and measurement in this specialty area. Measurement framework for this and other Blue Distinction value-based initiatives were developed using the following guiding principles:

1. Utilize a credible process and produce credible results with meaningful differentiated outcomes.
2. Align with other national efforts using established measures, where appropriate and feasible.
3. Simplify and streamline measures and reporting processes.
4. Enhance transparency and ease of explaining program methods.
5. Utilize existing resources effectively to minimize costs and redundancies.
6. Meet existing and future demands from Blue Plans, national accounts, and Blue Members.

Knee and Hip Replacement Quality Selection Criteria

Facilities were evaluated on quality metrics developed through a process that included: input from the medical community and quality measurement experts; review of medical literature, together with national quality and safety initiatives; and a thorough analysis of meaningful quality measures from objective, publicly available sources. The quality evaluation for facilities was based on objective, publicly available quality metrics obtained from Hospital Compare, nationally established metrics calculated from Blue Plan healthcare claims data, and facility responses to the Provider Survey.

The quality Selection Criteria includes general facility structure metrics and knee and hip replacement specific outcome metrics. Additionally, the quality Selection Criteria utilized two outcome measures:

- Hospital-level risk-standardized complication rate (RSCR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA).
- Hospital-level 30-day, all-cause risk-standardized readmission rate (RSRR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA).

These measures were created by the Yale/New Haven Center for Outcomes Research and Evaluation (CORE) under contract by Centers for Medicare and Medicaid Services (CMS). The measures are NQF-endorsed for use in the 65 and older population. More information about these measures can be found at https://www.medicare.gov/hospitalcompare/Data/RCD-Overview.html.
Separate quality Selection Criteria was established for these outcome measures for each data source. The first uses Hospital Compare Data released by CMS in December 2014 using the population of 65 and older covered under Medicare. The second uses Blue Plans healthcare claims data for the 18 to 64 aged population.

For use in Blue Plans healthcare claims data, the measure specifications were modified as follows:

- Calculated the measures for the 18 to 64 aged population with inpatient dates of service from July 1, 2011 through June 30, 2013 for the trigger procedure.
- Required one year of data with continuous Blue Plan enrollment following the trigger procedure.
- Included Members from all commercial products (i.e. PPO, HMO). Medicare and Medicaid claims were excluded.

Measurement results from each of the data sources (Hospital Compare and Blue Plan healthcare claims data) were calculated separately and are included in the quality Selection Criteria.

Table 2 below identifies all of the domains used in the quality evaluation for Knee and Hip Replacement. A facility must meet all requirements in Table 2 to meet the Quality evaluation of the overall eligibility decision for the Blue Distinction Centers for Knee and Hip Replacement designation.
## Table 2: Knee and Hip Replacement Quality Selection Criteria

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>SOURCE</th>
<th>QUALITY SELECTION CRITERIA</th>
</tr>
</thead>
</table>
| National Accreditation* | Provider Survey Q#3     | The facility is fully accredited by **at least one** of the following national accreditation organizations:*  
  - The Joint Commission (TJC) (without provision or condition) in the Hospital Accreditation Program.  
  - Healthcare Facilities Accreditation Program (HFAP) of the American Osteopathic Information Association (AOIA) as an acute care hospital.  
  - National Integrated Accreditation Program (NIAHO℠) — Acute Care of DNV GL Healthcare.  
  - Center for Improvement in Healthcare Quality (CIHQ) in the Hospital Accreditation Program.  
*NOTE: To enhance quality while improving Blue Members’ access to qualified providers, alternate local Accreditations that are at least as stringent as any National Accreditations, above, may be offered under the local Blue Plan Criteria; for details, contact the facility’s local Blue Plan.  

| Comprehensive Facility | Provider Survey Q#4     | The facility is a comprehensive acute care facility that offers all of the following services on site:  
  - Intensive care unit;  
  - Emergency Room or Emergency Services that include plans or systems for onsite emergency admission of post-operative patients with 24/7 availability of onsite medical response teams;  
  - 24/7 availability of in-house emergency physician coverage;  
  - Diagnostic radiology, including MRI and CT;  
  - 24/7 availability of inpatient pharmacy services (may include alternative nighttime access when pharmacy is closed);  
  - Blood bank or 24/7 access to blood bank services; AND  
  - 24/7 availability of Clinical Laboratory Improvement Amendments (CLIA) accredited laboratory services.
### ALL SELECTION CRITERIA MUST BE MET FOR ELIGIBILITY CONSIDERATION

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>SOURCE</th>
<th>QUALITY SELECTION CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Facility Case Volume</td>
<td>Provider Survey Q#13</td>
<td>The total facility case volume, which includes both primary and revision total hip arthroplasty (THA) and/or total knee arthroplasty (TKA), is <strong>greater than zero</strong> for the requested timeframe.</td>
</tr>
<tr>
<td>Complication Rate</td>
<td>Hospital Compare</td>
<td>Hospital-level risk-standardized complication rate (RSCR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA) is reported as <strong>“better than”</strong> or <strong>“no different than”</strong> the U.S. National Rate.</td>
</tr>
<tr>
<td>Complication Rate</td>
<td>Blue Claims</td>
<td>Hospital-level risk-standardized complication rate (RSCR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA) is <strong>“better than”</strong> or <strong>“no different than”</strong> the Blue National Rate.</td>
</tr>
<tr>
<td>Blue Volume for Complication Outcome Analysis</td>
<td>Blue Claims</td>
<td>Analytic volume for complication outcomes is <strong>at least 25</strong> primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA) for Blue Claims data.</td>
</tr>
<tr>
<td>Blue Volume for Readmission Outcome Analysis</td>
<td>Blue Claims</td>
<td>Analytic volume for readmission outcomes is <strong>at least 25</strong> primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA) for Blue Claims data.</td>
</tr>
<tr>
<td>30 Day All-Cause Readmission Rate</td>
<td>Hospital Compare</td>
<td>Hospital-level 30-day, all-cause risk-standardized readmission rate (RSRR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA) is reported as <strong>“better than”</strong> or <strong>“no different than”</strong> the U.S. National Rate.</td>
</tr>
<tr>
<td>30 Day All-Cause Readmission Rate</td>
<td>Blue Claims</td>
<td>Hospital-level 30-day, all-cause risk-standardized readmission rate (RSRR) following elective primary total hip arthroplasty (THA) and/or total knee arthroplasty (TKA) is <strong>“better than”</strong> or <strong>“no different than”</strong> the Blue National Rate.</td>
</tr>
</tbody>
</table>

### THE FOLLOWING CRITERION IS PROVIDED AS INFORMATIONAL FEEDBACK ONLY

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>SOURCE</th>
<th>QUALITY SELECTION CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Functional Assessments</td>
<td>Provider Survey Q#16</td>
<td>Percentage of knee or hip replacement patients that have undergone both pre-and post-operative functional assessment at least 6 months after surgery.</td>
</tr>
</tbody>
</table>
Knee and Hip Replacement Business Selection Criteria

The Business Selection Criteria (Table 3) consists of four components: Facility Participation; Surgeons Participation; Blue Brands Criteria; and Local Blue Plan Criteria (if applicable). A facility must meet all requirements in Table 3 to meet the Business evaluation of the overall eligibility decision for the Blue Distinction Centers for Knee and Hip Replacement designation.

Table 3 – Knee and Hip Replacement Business Selection Criteria

<table>
<thead>
<tr>
<th>BUSINESS SELECTION CRITERIA</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Participation</td>
<td>All facilities are required to participate in the local Blue Plan’s BlueCard Preferred Provider Organization (PPO) Network.</td>
</tr>
<tr>
<td>Surgeons Participation</td>
<td>All surgeons (identified in the Provider Survey as those who perform the Knee and Hip Replacement procedures at that facility) are required to participate in the local Blue Plan’s BlueCard PPO Network.</td>
</tr>
<tr>
<td>Blue Brands Criteria</td>
<td>Facility meets BCBSA criteria for avoiding conflicts with BCBSA logos and trademarks.</td>
</tr>
<tr>
<td>Local Blue Plan Criteria (if applicable)</td>
<td>An individual Blue Plan, at its own independent discretion, may establish and apply local business requirements as additional Selection Criteria for eligibility in a Blue Distinction Centers program, for facilities located within its Service Area.</td>
</tr>
</tbody>
</table>

2 De Minimis Rule may be applied, at the local Blue Plan’s discretion.
Knee and Hip Replacement Cost of Care Selection Criteria

Cost of care measures were designed to address market and consumer demand for cost savings and affordable healthcare. The cost of care Selection Criteria were used to provide a consistent and objective approach to identify BDC+.

**Quality is key:** only those facilities that first meet nationally established, objective quality measures for BDC will be considered for designation as a BDC+.

Cost Data Sources and Defining the Episodes

Cost of Care evaluation was based on a nationally consistent claims analysis of Blue Plan claims data. The scope of this analysis included:

- Claims were evaluated, using adjusted allowed amounts derived from Blue Plan claims data from July 1, 2010 through June 30, 2014, and paid through August 31, 2014 for Knee and Hip Replacement trigger procedures (defined below) occurring between April 1, 2012 and March 31, 2014.

- Knee and Hip Replacement episodes were identified through a trigger procedure (or index event) for each clinical category through the assigned Medicare Severity Diagnosis Related Groups (MS-DRGs) and only those episodes categorized using the following MS-DRGs were included in further analysis:
  - MS-DRG 469 (Major Joint Replacement or Reattachment of Lower Extremity w/ MCC)
  - MS-DRG 470 (Major Joint Replacement or Reattachment of Lower Extremity w/o MCC)

- Episodes with commonly used and clinically comparable primary diagnoses and most typical MS-DRGs were included. The remaining atypical episodes were excluded, as were bilateral or multiple replacements. Episodes were also excluded from analysis if either professional costs or procedure/facility costs were not included in the claims data.

- Adjusted allowed amounts for professional and in-network facility claims were included, using specific Knee Replacement and Hip Replacement clinical categories for actively enrolled commercial Blue members. Members under 18 or over 64 years were excluded from the cost analysis.

- Medicare/Medicaid and secondary claims were excluded.

- The episode window begins 30 days prior to the date of the index admission (look-back period) and ends 90 days following discharge from the index admission (look-forward period) for both Knee and Hip Replacement clinical categories. The episode window includes services from facility, physician, other professional, and ancillary providers.

- The look-back period includes relevant services (a service presumed related to the episode, regardless of diagnosis) and relevant diagnoses (other conditions and symptoms directly relevant to the episode).
The index admission includes all costs during the inpatient admission (i.e., facility, physician/professional, and ancillary costs).

The look-forward period includes relevant services (a service presumed related to the episode, regardless of diagnosis), relevant diagnoses (other conditions and symptoms directly relevant to the episode), and complications (identified based on relevant diagnosis).

Cost methodology took the sum of all costs incurred during the episode (including facility, physician, other professional, and ancillary costs) for each individual member, including the specified days before and after the trigger for the Knee and Hip Replacement episode.

For facilities located in overlapping areas served by more than one local Blue Plan, the same method for cost evaluation was used but the claims data and results were evaluated separately for each of those local Blue Plans.

**Adjusting Episode Costs**

Facility episode costs were analyzed and adjusted separately for each clinical category, as follows:

A geographic adjustment factor was applied to the episode cost, to account for geographic cost variations in delivering care. Episode costs were adjusted using the 2012 CMS Geographic Adjustment Factors (GAF), resulting in a Geographically Adjusted Facility Episode Cost.

Risk adjustment was used to adjust for variation in cost that may relate to differences in patient severity (with or without comorbidity), as well as case mix, using the following steps:

- Identified patient severity levels, using the MS-DRG risk stratification system.
- Created separate risk bands within Knee Replacement and Hip Replacement clinical category episodes, based on patient severity level and gender. Only one age band, 18-64 years, was used for all patients because there was no meaningful variation in cost based on age subgroups.
- Managed outliers through winsorization within risk bands. Outliers were identified in each risk band as those values for which geographically adjusted costs were the top 2 percent and bottom 2 percent of episode costs. Outlying cost values were truncated to these points, to preserve their considerations in calculating the overall episode cost estimate while moderating their influence.
- Calculated a Risk Ratio for each risk band by taking the mean of the episode costs within each risk band and dividing it by the overall mean episode cost for the relevant clinical category.
- The Risk Adjustment Factor (which is the inverse of the Risk Ratio) is multiplied by each facility’s geographically adjusted facility episode costs for each clinical category/risk level combination to normalize for risk, resulting in a final episode cost that is both geographically adjusted and risk adjusted.
Establishing the Cost Measure

Each Knee and Hip Replacement episode was attributed to the facility where the procedure/surgery occurred, based on trigger events that occurred at that facility for each clinical category. Clinical Category Facility Cost (CCFC) was calculated separately for Knee Replacement and Hip Replacement, based on the median value of the adjusted episode costs.

Confidence intervals (90 percent) were calculated around each Clinical Category Facility Cost measure; the Upper Confidence Limit of the measure was divided by the National median episode cost to become the Clinical Category Facility Cost Index (CCFCI).

Using each of the Clinical Category Facility Cost Index values, an overall Composite Facility Cost Index (CFCI) was calculated for the facility. Each Clinical Category Facility Cost Index was weighted by that facility’s own volume and facility costs to calculate a composite measure of cost called the Composite Facility Cost Index. The Composite Facility Cost Index was then rounded down to the nearest 0.025 for each facility and compared to the National Cost Selection Criteria.

A minimum of 5 episodes was required for each Knee Replacement and Hip Replacement clinical category, in order to consider the Clinical Category Facility Cost Index valid. Any facility that did not meet this episode minimum did not meet the cost of care Selection Criteria.

Cost Selection Criteria

In addition to meeting the nationally established, objective quality and business measures for BDC, a facility also must meet all of the following cost of care Selection Criteria (Table 4) requirements to be considered eligible for the BDC+ designation for Knee and Hip Replacement.

Table 4 – Knee and Hip Replacement Cost of Care Selection Criteria

<table>
<thead>
<tr>
<th>COST OF CARE SELECTION CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility must have a <strong>minimum of 5 episodes</strong> of cost data for each of the 2 clinical categories.</td>
</tr>
<tr>
<td>The Composite Facility Cost Index must be <strong>below 1.200</strong>.</td>
</tr>
</tbody>
</table>
Spine Surgery Quality Selection Criteria

Facilities were evaluated on quality metrics developed through a process that included: input from the medical community and quality measurement experts; and review of medical literature, together with national quality and safety initiatives.

The quality evaluation for facilities was based on facility responses to the Provider Survey. Facility results for outcome metrics were analyzed using a confidence interval (90 percent) around the point estimate from the reported numerator and denominator events. “Confidence Interval” is a term used in statistics that measures the probability that a result will fall between two set values. Each facility’s lower confidence limit (LCL) result was compared to the national Selection Criteria. When the LCL is above the threshold, the facility’s result (e.g., complications) is statistically worse than the threshold.

Table 5 below identifies all of the domains used in the Quality evaluation for Spine Surgery. Facilities were evaluated for quality in the following domains for the Blue Distinction Centers for Spine Surgery program. A facility must meet all requirements in Table 5 to meet the Quality evaluation of the overall eligibility decision for the Blue Distinction Centers for Spine Surgery designation.

<table>
<thead>
<tr>
<th>Table 5: Spine Surgery Quality Selection Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL METRICS MUST BE MET FOR ELIGIBILITY CONSIDERATION</td>
</tr>
<tr>
<td>DOMAIN</td>
</tr>
<tr>
<td>National Accreditation*</td>
</tr>
<tr>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
| | | *NOTE: To enhance quality while improving Blue Members’ access to qualified providers, alternate local Accreditations that are at least as stringent as any National Accreditations, above, may be offered under the local Blue Plan Criteria; for details, contact the facility’s local Blue Plan.
**ALL METRICS MUST BE MET FOR ELIGIBILITY CONSIDERATION**

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>SOURCE</th>
<th>METRIC DESCRIPTION</th>
</tr>
</thead>
</table>
| Comprehensive Facility                      | Provider Survey Q#4           | The facility is a comprehensive acute care facility that offers **all** of the following services on site:  
- Intensive care unit;  
- Emergency Room or Emergency Services that include plans or systems for onsite emergency admission of post-operative patients with 24/7 availability of onsite medical response teams;  
- 24/7 availability of in-house emergency physician coverage;  
- Diagnostic radiology, including MRI and CT;  
- 24/7 availability of inpatient pharmacy services (may include alternative night-time access when pharmacy is closed);  
- Blood bank or 24/7 access to blood bank services; AND  
- 24/7 availability of Clinical Laboratory Improvement Amendments (CLIA) accredited laboratory services. |
| Primary Posterior Lumbar Fusion Volume for Outcome Analysis | Provider Survey Q#27         | Analytic volume for outcome measurement is **at least 30** spondylolisthesis patients who had a 1 or 2 level primary posterior lumbar fusion +/- decompression.                                                                                                                                                                                                 |
| Primary Posterior Lumbar Fusion Reoperation  | Provider Survey Q#28          | 1 or 2 level primary posterior lumbar fusion +/- decompression for spondylolisthesis reoperation within 30 days.  
90% lower confidence limit is **at or below 3.2.** |
| Primary Posterior Lumbar Fusion Readmission  | Provider Survey Q#29          | 1 or 2 level primary posterior lumbar fusion +/- decompression for spondylolisthesis unplanned readmission within 30 days.  
90% lower confidence limit is **at or below 6.8.** |
| Primary Posterior Lumbar Fusion Venous Thromboembolism | Provider Survey Q#30         | 1 or 2 level primary posterior lumbar fusion +/- decompression for spondylolisthesis venous thromboembolism within 30 days.  
90% lower confidence limit is **at or below 1.28.** |
| Primary Posterior Lumbar Fusion Surgical Site Infection | Provider Survey Q#31         | 1 or 2 level primary posterior lumbar fusion +/- decompression for spondylolisthesis surgical site infection within 30 days.  
90% lower confidence limit is **at or below 5.4.** |
### ALL METRICS MUST BE MET FOR ELIGIBILITY CONSIDERATION

<table>
<thead>
<tr>
<th>DOMAIN</th>
<th>SOURCE</th>
<th>METRIC DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Anterior Cervical Fusion Volume for</td>
<td>Provider</td>
<td>Analytic volume for outcome measurement is at least 30 patients who had a single level primary anterior cervical fusion.</td>
</tr>
<tr>
<td>Outcome Analysis</td>
<td>Survey Q#32</td>
<td></td>
</tr>
<tr>
<td>Primary Anterior Cervical Fusion Reoperation</td>
<td>Provider</td>
<td>Single level primary anterior cervical fusion reoperation within 30 days. 90% lower confidence limit is at or below 1.6.</td>
</tr>
<tr>
<td></td>
<td>Survey Q#33</td>
<td></td>
</tr>
<tr>
<td>Primary Anterior Cervical Fusion Readmission</td>
<td>Provider</td>
<td>Single level primary anterior cervical fusion unplanned readmission within 30 days. 90% lower confidence limit is at or below 4.0.</td>
</tr>
<tr>
<td></td>
<td>Survey Q#34</td>
<td></td>
</tr>
<tr>
<td>Primary Anterior Cervical Fusion Venous</td>
<td>Provider</td>
<td>Single level primary anterior cervical fusion venous thromboembolism within 30 days. 90% lower confidence limit is at or below 0.67.</td>
</tr>
<tr>
<td>Thromboembolism</td>
<td>Survey Q#35</td>
<td></td>
</tr>
<tr>
<td>Primary Anterior Cervical Fusion Surgical Site</td>
<td>Provider</td>
<td>Single level primary anterior cervical fusion surgical site infection within 30 days. 90% lower confidence limit is at or below 0.87.</td>
</tr>
<tr>
<td>Infection</td>
<td>Survey Q#36</td>
<td></td>
</tr>
<tr>
<td>Surgeon Staffing</td>
<td>Provider</td>
<td>Facility has at least 2 spine surgeons actively performing spine surgeries.</td>
</tr>
<tr>
<td></td>
<td>Survey Q#39</td>
<td></td>
</tr>
<tr>
<td>Surgeon Procedure Volume</td>
<td>Participation</td>
<td>Facility commits to examine spine surgeon procedure volume with consideration for reviewing evidence linking volume and outcomes and establishing a</td>
</tr>
<tr>
<td></td>
<td>Agreement</td>
<td>surgeon level case volume minimum requirement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Spine Surgery Business Selection Criteria

The Business Selection Criteria (Table 6) consists of four components: Facility Participation; Surgeons Participation; Blue Brands Criteria; and Local Blue Plan Criteria (if applicable). A facility must meet all requirements in Table 6 to meet the Business evaluation of the overall eligibility decision for the Blue Distinction Centers for Spine Surgery designation.

Table 6 – Spine Surgery Business Selection Criteria

<table>
<thead>
<tr>
<th>BUSINESS SELECTION CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Participation</td>
</tr>
<tr>
<td>Surgeons Participation</td>
</tr>
<tr>
<td>Blue Brands Criteria</td>
</tr>
<tr>
<td>Local Blue Plan Criteria</td>
</tr>
</tbody>
</table>

³ De Minimis Rule may be applied, at the local Blue Plan’s discretion.
Spine Surgery Cost of Care Selection Criteria

Cost of care measures were designed to address market and consumer demand for cost savings and affordable healthcare. The cost of care Selection Criteria were used to provide a consistent and objective approach to identify BDC+.

**Quality is key:** only those facilities that first meet nationally established, objective quality measures for BDC will be considered for designation as a BDC+.

Cost Data Sources and Defining the Episodes

Cost of Care evaluation was based on a nationally consistent claims analysis of Blue Plan claims data. The scope of this analysis included:

- Claims were evaluated, using adjusted allowed amounts derived from Blue Plan claims data from July 1, 2010 through June 30, 2014, and paid through August 31, 2014 for Spine Surgery trigger procedures (defined below) occurring between January 1, 2011 and December 31, 2013.

- Spine Surgery episodes were identified through a trigger procedure (or index event) for each clinical category by CPT, HCPC, or ICD-9 codes, and were placed in one of the four clinical categories:
  - Lumbar Fusion
  - Lumbar Laminectomy / Discectomy
  - Cervical Fusion
  - Cervical Laminectomy

- A hierarchy was used to place episodes that include multiple trigger procedures into a single clinical category for analysis, based on the level of the surgical procedure (i.e., Cervical Spine > Thoracic Spine > Lumbar Spine [includes sacral] > Spine – site not otherwise specified).

- Episodes with commonly used and clinically comparable primary diagnoses and most typical procedures are included. The remaining atypical episodes were excluded. Thoracic Spine procedures and revision procedures were excluded. Bilateral or multiple replacements were also excluded. Episodes were also excluded from analysis if either professional costs or procedure/facility costs were not included in the claims data.

- Adjusted allowed amounts for professional and in-network facility claims were included, using specific Spine Surgery clinical categories for actively enrolled commercial Blue members. Members under 18 or over 64 years were excluded from the cost analysis.

- Medicare/Medicaid and secondary claims were excluded.

- The episode window for all four Spine Surgery clinical categories begins 30 days prior to the date of the index admission (look-back period). Cervical Laminectomy and Lumbar Laminectomy/Discectomy episodes end 90 days following discharge from the index admission (look-forward period). Cervical Fusion and Lumbar Fusion episodes end 180 days following discharge from the index admission (look-forward period). The episode window includes services from facility, physician, other professional, and ancillary providers.
The look-back period includes relevant services (a service presumed related to the episode, regardless of diagnosis) and relevant diagnoses (other conditions and symptoms directly relevant to the episode).

The index admission includes all costs during the inpatient admission or outpatient stay (i.e., facility, physician, other professional, and ancillary costs).

The look-forward period includes relevant services (a service presumed related to the episode, regardless of diagnosis), relevant diagnoses (other conditions and symptoms directly relevant to the episode), and complications (identified based on relevant diagnosis).

Cost methodology took the sum of all costs incurred during the episode (including facility, physician, other professional, and ancillary costs) for each individual member, including the specified days before and after the trigger for the Spine Surgery episode.

For facilities located in overlapping areas served by more than one local Blue Plan, the same method for cost evaluation was used but the claims data and results were evaluated separately for each of those local Blue Plans.

**Adjusting Episode Costs**

Facility episode costs were analyzed and adjusted separately for each clinical category, as follows:

A geographic adjustment factor was applied to the episode cost, to account for geographic cost variations in delivering care. Episode costs were adjusted using the 2012 CMS Geographic Adjustment Factors (GAF), resulting in a Geographically Adjusted Facility Episode Cost.

Risk adjustment was used to adjust for variation in cost that may relate to differences in patient severity (with or without comorbidity), as well as case mix, using the following steps:

- Identified patient severity levels, using the MS-DRG risk stratification system.
- Created separate risk bands, based on patient severity level, case mix, and gender for each clinical category. Only one age band, 18-64 years, was used for all patients because there was no meaningful variation in cost based on age subgroups. Case mix sub-categorization and categorization due to outpatient surgeries were done following these criteria:
  - Lumbar Fusion and Cervical Fusion procedures were divided into two sub-categories: 1-2 level and 3+ level procedures.
  - Lumbar Laminectomy/Discectomy, Cervical Fusion, and Cervical Laminectomy clinical categories included inpatient and outpatient procedures, stratified separately.
Managed outliers through winsorization within risk bands. Outliers were identified in each risk band as those values for which geographically adjusted costs were the top 2 percent and bottom 2 percent of episode costs. Outlying cost values were truncated to these points, to preserve their considerations in calculating the overall episode cost estimate, while moderating their influence.

- Calculated a Risk Ratio for each risk band by taking the mean of the episode costs within each risk band and dividing it by the overall mean episode cost for the relevant clinical category.

- The Risk Adjustment Factor (which is the inverse of the Risk Ratio) is multiplied by each facility’s geographically adjusted facility episode costs for each clinical category/risk level combination to normalize for risk, resulting in a final episode cost that is both geographically adjusted and risk adjusted.

**Establishing the Cost Measure**

Each Spine Surgery episode was attributed to the facility where the procedure/surgery occurred, based on trigger events that occurred at that facility for each clinical category. Clinical Category Facility Cost (CCFC) was calculated separately for Lumbar Fusion, Lumbar Laminectomy / Discectomy, Cervical Fusion, and Cervical Laminectomy, based on the median value of the adjusted episode costs.

Confidence intervals (90 percent) were calculated around each Clinical Category Facility Cost measure; the Upper Confidence Limit of the measure was divided by the National median episode cost to become the Clinical Category Facility Cost Index (CCFCI).

Using each of the Clinical Category Facility Cost Index values, an overall Composite Facility Cost Index (CFCI) was calculated for the facility. Each Clinical Category Facility Cost Index was weighted by that facility’s own volume and facility costs to calculate a composite measure of cost called the Composite Facility Cost Index. The Composite Facility Cost Index was then rounded down to the nearest 0.025 for each facility and compared to the National Cost Selection Criteria.

A minimum of 5 episodes was required in at least 3 clinical categories, in order to consider the Clinical Category Facility Cost Index valid. Any facility that did not meet this episode minimum did not meet the cost of care Selection Criteria.
Cost Selection Criteria

In addition to meeting the nationally established, objective quality and business measures for BDC, a facility also must meet all of the following cost of care Selection Criteria (Table 7) requirements to be considered eligible for the BDC+ designation for Spine Surgery.

Table 7 – Spine Surgery Cost of Care Selection Criteria

<table>
<thead>
<tr>
<th>COST OF CARE SELECTION CRITERIA</th>
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<tbody>
<tr>
<td>Facility must have a minimum of 5 episodes of cost data for at least 3 clinical categories. ⁴</td>
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<tr>
<td>The Composite Facility Cost Index must be below 1.500.</td>
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</tbody>
</table>

Questions

Contact your local Blue Plan with any questions.

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⁴ If a facility met the episode minimum for only 3 of the 4 clinical categories, then the other clinical category, for which the episode minimum was not met, was not included in the formula numerator and denominator. For example, if a facility had at least 5 episodes for each of 3 clinical categories (Lumbar Laminectomy/Discectomy, Cervical Fusion, and Cervical Laminectomy) but less than 5 episodes for remaining fourth clinical category (Lumbar Fusion), then it would have a three-part formula (as opposed to a complete four-part formula), as Lumbar Fusion would not be included in the Composite Facility Cost Index calculation.