**Hip Arthroplasty**

**Measure #1: Postoperative Complications within 90 Days Following the Procedure**

**Measure Description**

Percentage of patients undergoing an elective primary total hip arthroplasty who did not have a secondary procedure on the operative hip for any of the following reasons: periprosthetic fracture, dislocation, mechanical failure of the implant, irrigation/debridement of deep infection or a debridement of a superficial infection or hematoma within 90 days following the procedure.

**Measure Components**

| Numerator Statement | Patients who did not have a secondary procedure on the operative hip for any of the following reasons: periprosthetic fracture, dislocation, mechanical failure of the implant, irrigation/debridement of deep infection or a debridement of a superficial infection or hematoma within 90 days following the procedure. See definition of periprosthetic joint infection below* |
| Denominator Statement | All patients undergoing an elective primary total hip arthroplasty |
| Denominator Exceptions | Patient does not keep postoperative visit |
| Supporting Guideline & Other References | The following evidence statements are quoted verbatim from the referenced clinical guidelines: Patients with hip or knee OA who are not obtaining adequate pain relief and functional improvement from a combination of non-pharmacological and pharmacological treatment should be considered for joint replacement therapy. Replacement arthroplasties are effective and cost-effective for patients with significant symptoms, and/or functional limitations associated with a reduced health-related quality of life, despite conservative therapy. (OARSI 2008)* |

* PJI Is Present When One of the Major Criteria Exists or Three Out of Five Minor Criteria Exists:

**Major Criteria**

- Two positive periprosthetic cultures with phenotypically identical organisms, OR
- A sinus tract communicating with the joint, OR

**Minor Criteria**

1. Elevated serum C-reactive protein (CRP) AND erythrocyte sedimentation rate (ESR)
2. Elevated synovial fluid white blood cell (WBC) count OR ++change on leukocyte esterase test strip
3. Elevated synovial fluid polymorphonuclear neutrophil percentage (PMN%)
4. Positive histological analysis of periprosthetic tissue
5. A single positive culture
The Threshold for the Minor Diagnostic Criteria

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Acute PJI (&lt; 90 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erythrocyte Sedimentation Rate (mm/hr)</td>
<td>Not helpful. No threshold was determined</td>
</tr>
<tr>
<td>C-Reactive Protein (mg/L)</td>
<td>100</td>
</tr>
<tr>
<td>Synovial White Blood Cell Count (cells/μl)</td>
<td>10,000</td>
</tr>
<tr>
<td>Synovial Polymorphonuclear (%)</td>
<td>90</td>
</tr>
<tr>
<td>Leukocyte Esterase</td>
<td>+ Or ++</td>
</tr>
<tr>
<td>Histological Analysis of Tissue</td>
<td>&gt; 5 neutrophils per high power field in 5 high power fields (× 400)</td>
</tr>
</tbody>
</table>

International Consensus Group on Periprosthetic Joint Infection 2014

**Measure Importance**

**Rationale**

- A study based on data from the California Joint Registry performed by SooHoo and colleagues found a 90-day complication rate of 3.81% including dislocations of 1.39%, infection of 0.90% and perioperative fracture of 0.01%.\(^9\)

- A study of Medicare data by Katz showed a dislocation rate of 3.1% and an infection rate of 0.20% within 90 days.\(^10\)

- Deep infection represents approximately 15% of the reasons for hip revisions in the US.\(^11\)

- In a 2012 study conducted by Katz et al, it was identified that the risk of revision for total hip replacements was approximately 2% per year for the first 18 months following the primary surgery.\(^12\)

**National Quality Strategy Domain**

- Patient Safety

**Exception Justification**

- This measure has a denominator exception.

**Harmonization with Existing Measures**

- Harmonization with existing measures under development was attempted.

**Measure Designation**

- **Measure purpose**: Quality improvement, Accountability
- **Type of measure**: Outcome
- **Level of Measurement**: Individual practitioner
- **Care setting**: Ambulatory care, Hospital care
American Association of Hip and Knee Surgeons
Primary Total Hip Arthroplasty

Data source
- Electronic health record (EHR) data
- Paper medical record
- Registry data

Technical Specifications
The specifications listed below are those needed for the performance calculation.

**Denominator (Eligible Population)**
All patients undergoing an elective primary total hip arthroplasty
CPT Service Code: 27130 *(Excludes hip fractures - see addendum for exclusion codes)*

**Denominator Exception**
Patient does not keep postoperative visit

**Numerator**
Patients who **did not** have a secondary procedure on the operative hip for any of the following reasons: periprosthetic fracture, dislocation, mechanical failure of the implant, irrigation/debridement of deep infection or a debridement of a superficial infection or hematoma within 90 days following the procedure