

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	<p>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</p> <p>See definition of periprosthetic joint infection below*</p>
Denominator Statement	All patients undergoing an elective primary total hip arthroplasty
Denominator Exceptions	Patient does not keep postoperative visit
Supporting Guideline & Other References	<p>The following evidence statements are quoted <u>verbatim</u> from the referenced clinical guidelines:</p> <p>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)⁸</p>

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

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|----------------|--|
| 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

Criterion	Acute PJI (< 90 days)
Erythrocyte Sedimentation Rate (mm/hr)	Not helpful. No threshold was determined
C-Reactive Protein (mg/L)	100
Synovial White Blood Cell Count (cells/ μ l)	10,000
Synovial Polymorphonuclear (%)	90
Leukocyte Esterase	+ Or ++
Histological Analysis of Tissue	> 5 neutrophils per high power field in 5 high power fields (\times 400)

International Consensus Group on Periprosthetic Joint Infection 2014⁹

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%.¹⁰

A study of Medicare data by Katz showed a dislocation rate of 3.1% and an infection rate of 0.20% within 90 days.¹¹

Deep infection represents approximately 15% of the reasons for hip revisions in the US.¹²

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.¹³

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

- 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