



Shoulder Arthroplasty - Single Service

Clinical Guidelines for Medical Necessity Review

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Important Notices

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Guideline Information:

Specialty Area: Diseases & Disorders of the Musculoskeletal System (M00-M99)

Guideline Name: Shoulder Arthroplasty (Single Service)

Literature review current through: 3/29/2024

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Type: Adult (18+ yo) | Pediatric (0-17yo)

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Single Service & Medical Necessity Criteria

Service: Shoulder Arthroplasty

General Guidelines

- **Units, Frequency, & Duration:** None.
- **Criteria for Subsequent Requests:** None.
- **Recommended Clinical Approach:** Shoulder arthroplasty is considered the standard of treatment for diffuse glenohumeral joint osteoarthritis (GJO).¹ Total shoulder arthroplasty (TSA) is associated with improved pain and functional outcomes compared to hemiarthroplasty.² Guidelines published by the American Academy of Orthopaedic Surgeons (AAOS) indicate that anatomic TSA or reverse TSA is acceptable for treating GJO in patients with excessive glenoid bone loss, with or without rotator cuff dysfunction.² Indications have recently expanded for reverse shoulder arthroplasty. Revision surgery may be indicated for patients who had a joint arthroplasty and present with pain that is due to loosening, failure of the prosthesis, instability, or infection.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

- **Shoulder Arthroplasty** is considered medically appropriate if **ANY** of the following is **TRUE**¹⁻¹⁷:
- ◆ The procedure is a hemiarthroplasty, and **ANY** of the following is **TRUE**:
 - Rotator cuff tear arthropathy; **OR**
 - Malignancy of the glenohumeral joint; **OR**
 - Humeral head osteonecrosis with preserved glenoid; **OR**
 - Complex proximal humerus fracture¹⁵; **OR**
 - Primary osteoarthritis and **ANY** of the following is **TRUE**:
 - Glenoid bone stock is inadequate; **OR**
 - The risk of glenoid loosening is high (i.e., young patients, heavy laborers)¹⁷; **OR**
 - ◆ The procedure is a **total shoulder arthroplasty** and **ANY** of the following is **TRUE**:

- **ALL** of the following:
 - The patient has pain and loss of motion; **AND**
 - Radiographs are consistent with advanced osteoarthritis²; **AND**
 - Failure of conservative management for greater than 3 months, including **ALL** of the following¹⁶:
 - ◆ Oral steroid or anti-inflammatory medication; **AND**
 - ◆ Physical therapy and/or physician-directed home exercise program; **AND**
 - ◆ **ANY** of the following:
 - Corticosteroid injection if medically appropriate; **OR**
 - Corticosteroid injection is contraindicated; **OR**
 - Humeral head osteonecrosis⁴⁻⁵; **OR**
- ◆ The procedure is a **reverse total shoulder arthroplasty**, and **ANY** of the following is **TRUE**:
 - Complex proximal humerus fractures^{6,15}; **OR**
 - Failed shoulder arthroplasty⁷; **OR**
 - Failed shoulder hemiarthroplasty⁷; **OR**
 - Failed rotator cuff repair, deemed irreparable^{1,8}; **OR**
 - Humeral head osteonecrosis; **OR**
 - Massive rotator cuff tear⁹; **OR**
 - Proximal humerus fracture with **ANY** of the following¹⁰⁻¹¹:
 - Rotator cuff deficiency; **OR**
 - Malunion; **OR**
 - Reconstruction after tumor resection; **OR**
 - Rheumatoid arthritis and **ALL** of the following¹²⁻¹³:
 - Failure of conservative management for greater than 3 months, including **ALL** of the following:
 - ◆ Oral steroid or anti-inflammatory medication; **AND**
 - ◆ Physical therapy or physician-directed home exercise program; **AND**
 - ◆ **ANY** of the following:
 - Corticosteroid injection if medically appropriate; **OR**
 - Corticosteroid injection is contraindicated; **AND**
 - Imaging confirms the presence of advanced rheumatoid arthritis; **AND**

- Replacement is indicated due to **ANY** of the following:
 - ◆ Disabling pain; **OR**
 - ◆ Functional disability; **OR**
- Rotator cuff deficient arthropathy⁹; **OR**
- Rotator cuff tear arthropathy; **OR**
- Arthritis with posterior glenohumeral subluxation; **OR**
- Severe arthritis with glenoid bone loss, with or without glenohumeral instability; **OR**
- ◆ The procedure is a **revision total shoulder arthroplasty**, and **ALL** of the following are **TRUE**:
 - The patient has **ANY** of the following findings:
 - Pain; **OR**
 - Infection; **OR**
 - Instability; **OR**
 - Loosening of the prosthesis; **OR**
 - Failure of the prosthesis; **OR**
 - Periprosthetic fracture; **OR**
 - Glenoid erosion from a humeral prosthetic component of hemiarthroplasty; **OR**
 - Implant fracture; **OR**
 - Implant mechanical failure; **OR**
 - Proximal migration of humeral head; **AND**
 - The patient has **ANY** of the following advanced imaging or radiography findings:
 - Loosening of the prosthesis; **OR**
 - Failure of the prosthesis; **OR**
 - Normal (no findings).

Non-Indications

→ **Shoulder Arthroplasty** is not considered appropriate if **ANY** of the following is **TRUE**¹⁴:

- ◆ Active joint infection; **OR**
- ◆ Systemic infection; **OR**
- ◆ Neuropathic joint.

Level of Care Criteria

Inpatient or Outpatient

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Code	Code Description
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20680	Removal of deep bone implant
23334	Removal of prosthesis from glenoid component of shoulder Removal of prosthesis from glenoid component of shoulder with debridement Removal of prosthesis from glenoid component of shoulder with debridement and synovectomy Removal of prosthesis from glenoid component of shoulder with synovectomy Removal of prosthesis from humeral component of shoulder Removal of prosthesis from humeral component of shoulder with debridement Removal of prosthesis from humeral component of shoulder with debridement and synovectomy Removal of prosthesis from humeral component of shoulder with synovectomy
23335	Removal of humeral and glenoid components of complete shoulder prosthesis Removal of humeral and glenoid components of complete shoulder prosthesis with debridement Removal of humeral and glenoid components of complete shoulder prosthesis with debridement and synovectomy Removal of humeral and glenoid components of complete shoulder prosthesis with synovectomy
23470	Arthroplasty, glenohumeral joint; hemiarthroplasty
23472	Arthroplasty, glenohumeral joint; total shoulder (glenoid and proximal humeral replacement [e.g., total shoulder])
23473	Revision of total shoulder arthroplasty, including allograft when performed; humeral or glenoid component
23474	Revision of total shoulder arthroplasty, including allograft when performed; humeral and glenoid component
23929	Unlisted procedure, shoulder

Medical Evidence

Harrison et al. (2020) explore indications and outcomes of revision reverse total shoulder arthroplasty. Rates of complications and reoperation are high however, revision of failed hemiarthroplasty or total shoulder arthroplasty increases patient outcomes. The authors note that many revision procedures involved a reverse design contributing to higher complications. Factors contributing to higher outcomes include the loosening of an existing component (cemented or uncemented), the presence of prior allograft composites, and deficiencies of bone or soft tissue due to implant wear or a previous procedure.⁷

Kelly and Myeroff (2020) analyze trends, outcomes, and principles of treatment options for proximal humerus fractures in patients over the age of 65. The review focuses on reverse shoulder arthroplasty – rates have increased while rates of hemiarthroplasty have decreased. Older adults had lower revision rates with shoulder arthroplasty compared to hemiarthroplasty.¹⁰

Leroux et al. (2018) note an increase in shoulder arthroplasty for patients with rheumatoid arthritis (RA) and rotator cuff disease. Data show a trend of performing shoulder arthroplasty for rotator cuff disease compared to repair. A total of 332,593 patients from 2002 to 2011 were included in the review; 17,883 patients (5.4%) were diagnosed with RA. Differences between adverse events among patients with RA and non-RA were not significant.¹²

National and Professional Organization

The American Academy of Orthopaedic Surgeons (AAOS) published a clinical practice guideline on the *Management of Glenohumeral Osteoarthritis*. Evidence is strong for anatomic total shoulder arthroplasty²:

- The procedure demonstrates “more favorable function and pain relief in the short- to mid-term follow-up when compared to hemiarthroplasty for the treatment of glenohumeral osteoarthritis.”
- Patients with GJO with comorbidities have a higher rate of complications following arthroplasty.

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Clinical Guideline Revision History/Information

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