Prior Authorization Review Panel
MCO Policy Submission

A separate copy of this form must accompany each policy submitted for review. Policies submitted without this form will not be considered for review.

<table>
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<tr>
<th>Plan: Aetna Better Health of Pennsylvania</th>
<th>Submission Date: 04/01/2017</th>
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<tbody>
<tr>
<td>Policy Number: 0853</td>
<td>Effective Date:</td>
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<tr>
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<td>Revision Date: 12/14/2016</td>
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<tr>
<td>Policy Name: Wrist Arthroplasty</td>
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Type of Submission – Check all that apply:
- ☐ New Policy
- ☑ Revised Policy*
- ☐ Annual Review – No Revisions

*All revisions to the policy must be highlighted using track changes throughout the document.

Please provide any clarifying information for the policy below:

CPB 0853 Wrist Arthroplasty

This CPB has been revised to state that total wrist arthroplasty is considered experimental and investigational for comminuted distal radius fracture.

Name of Authorized Individual (Please type or print):
Chandra A. Kee, MD

Signature of Authorized Individual:

Revised February 2015
Wrist Arthroplasty

**Policy**

*Please see amendment for Pennsylvania Medicaid at the end of this CPB.*

Aetna considers total wrist arthroplasty medically necessary for rheumatoid arthritis affecting the wrist in persons who have radiographic evidence of wrist joint destruction with demonstrated resistance or failure to conservative medical treatment (3 or more months of non-steroidal antiinflammatory drugs (NSAIDS), disease modifying anti-rheumatic drugs (DMARDs), and/or glucocorticoids, as appropriate).

Aetna considers total wrist arthroplasty experimental and investigational for all other diagnoses including the following (not an all inclusive list) because there is inadequate evidence in the peer-reviewed published clinical literature regarding its effectiveness for these indications:

- Comminuted distal radius fracture
- Kienbock's disease
- Osteoarthritis (includng osteoarthritis following distal radius fracture)
- Osteoarthritis following distal radius fracture
- Post-traumatic arthritis
- Scaphoid non-union

**Policy History**

- Last Review: 10/13/2016
- Effective: 08/27/2013
- Next Review: 10/12/2017

**Definitions**

**Additional Information**

**Clinical Policy Bulletin Notes**
Scapholunate dissociation

Background
Total wrist arthroplasty (TWA) involves the implantation of a prosthetic joint, with the goals of reducing pain and preserving or increasing wrist mobility. The procedure is almost always performed to relieve the symptoms of severe arthritis. These components come in extra-small, small, medium, and large sizes to match patient anatomy. To enable movement and prevent dislocation, the polyethylene spacer has a convex end that slides on the surface of a concave plate on the radial component.

Several wrist implants have been developed since the early 1970s. First-generation were silicone implants, such as those designed by Swanson in the 1980s. Second-generation implants typically included 2 metal components that articulated by means of a ball-and-socket or a hemispheric design. Many of these early implants were taken off the market because of problems with joint imbalance and dislocation. The third generation of wrist prostheses were developed in an effort to better approximate the center of motion to prevent imbalance and dislocation. Examples include the revised Meuli design (MWP III), as well as the Trispherical, the Universal, and the Biaxial designs, the latter of which has been discontinued.

Other Indications:

Wollstein and Carlson (2013) stated that the most common forms of salvage surgery for wrist arthritis of any stage are four corner fusion and proximal row carpectomy. Younger, high demand patients with early arthritis may not be candidates for this type of salvage surgery. These investigators described a technique and preliminary case series of a minimal radio-carpal arthroplasty aimed at patients with initial and isolated wrist arthritis (stage 1). This procedure does not preclude any procedure that may become necessary in the future. A series of 19 male heavy laborers with scapho-lunate advanced collapse (SLAC grade 1 to 2) wrist osteoarthritis that felt the
wrist arthritis was prohibiting their function enough to warrant surgery, but were unwilling to undergo a salvage procedure, were treated with the technique. The average age was 57.2 (±7.7) years. The average follow-up period was 40.3 months (9 to 63 months). All patients returned to heavy labor. No revision surgery was needed within the follow-up period. Range of motion (ROM) and grip strength did not significantly improve. Patient satisfaction was high despite imperfect results. The authors concluded that minimal arthroplasty as described may provide a temporary solution for active patients with symptomatic early wrist arthritis who are not candidates for salvage wrist surgery. Moreover, they stated that longer-term follow-up as well as investigation of additional stabilization procedures is needed.

Boeckstyns et al (2013) noted that severely destroyed post-traumatic wrists are usually treated by partial or total wrist fusion or proximal row carpectomy. The indications for and longevity of TWA are still unclear. These researchers analyzed a series in which one last-generation TWA was used as a salvage procedure for wrists with severe arthritis due to traumatic causes. The data were prospectively recorded in a web-based registry. A total of 7 centers participated; 35 cases had a minimum follow-up time of 2 years. Average follow-up was 39 (24 to 96) months. Pain had improved significantly at follow-up, mobility remained unchanged. The total revision rate was 3.7%, and the implant survival was 92% at 4 to 8 years. Very few studies have described specific results after TWA in post-traumatic cases and almost none using classical "third-generation" implants. The number of cases and the follow-up in the published series were small. The authors concluded that although painful post-traumatic wrists with severe joint destruction can be salvaged by partial or total fusion; evaluated at short- to midterm, TWA can be an alternative procedure and gave results that were comparable to those obtained in rheumatoid cases.

Yeoh and Tourret (2015) reviewed the evidence on total wrist replacement from the last 5 years; 8 articles met a minimum
Wrist Arthroplasty

The results of 405 prostheses were available, including 7 different manufacturers. The mean follow-up was 2.3 to 7.3 years with an average age of 52 to 63 years. Rheumatoid arthritis was the indication in 42% of patients. Motec demonstrated the best post-operative DASH scores. Only Maestro achieved a defined functional ROM post-operatively. Universal 2 displayed the highest survival rates (100% at 3 to 5 years), while Elos had the lowest (57% at 5 years). Bi-axial had the highest complication rates (68.7%), while Remotion had the lowest (11%). Wrist arthroplasty preserves some ROM; functional scores improved and were maintained over the mid- to long-term. Complication rates were higher than wrist fusion, with reports of radiological loosening and osteolysis. The authors stated that the evidence does not support the widespread use of arthroplasty over arthrodesis, and careful patient selection is essential.

Adams (2015) stated that newer implant designs and expanding experience have led to a gradual increase in the use of TWA for the treatment of post-traumatic arthritis. New challenges, however, may be encountered with this application, including bony deformities, previous or existing hard-ware, osteonecrosis, soft tissue injuries, and severe joint stiffness. Because the goals -- to relieve pain and provide a functional ROM -- are the same as for more common TWA indications, these technical challenges, along with often higher patient expectations, are important considerations. The author presented possible solutions to these unique surgical challenges, including important pre-operative planning to mitigate risks, and the expected outcomes in these patients.

Nicoloff et al (2015) noted that for decades design and development of TWA has been accompanied by quite a few failures, so that it has been rejected by most surgeons until today. The difficult and complex anatomy of the wrist led to different ways of development and often ended in an impasse. Compared to knee and hip arthroplasties, which could be conceived and developed further, a consistent method could not be applied. But in the last years some new concepts have
established themselves, so that TWA is now not only applied in individual cases. The indications could be expanded and standardized. At the Hand-Center Lingen more than 400 TWAs have been performed since 2005. These researchers described the mid-term results (5 years since operation) of TWA in 162 patients; 41% suffered from rheumatoid arthritis, the remaining diseases consisted of Kienbock's disease, osteoarthritis, osteoarthritis following distal radius fracture, post-traumatic arthritis, scaphoid non-union, and scapholunate dissociation. Three different types of TWA have been applied and their benefits and disadvantages were examined. In the follow-up these investigators found an improvement in the Quick-Dash of 34 points and 5.8 points on the VAS. The ROM decreased in patients with RA, but it increased in patients with other diseases. In both groups of patients these researchers found an increase of force. On the whole there was a rate of complications in an average rate of holding time of 3.7%. There was no necessity for TWA removal and secondary wrist arthrodesis. The authors concluded that their own very positive experience corresponded with the international comparison and it further encourages a standardized indication in TWA as an equivalent treatment.

Laulan et al (2015) stated that painful wrist osteoarthritis can result in major functional impairment. Most cases are related to post-traumatic sequel, metabolic arthropathies, or inflammatory joint disease, although wrist osteoarthritis occurs as an idiopathic condition in a small minority of cases. Surgery is indicated only when conservative treatment fails. The main objective is to ensure pain relief while restoring strength. Motion-preserving procedures are usually preferred, although residual wrist mobility is not crucial to good function. The vast array of available surgical techniques includes excisional arthroplasty, limited and total fusion, total wrist denervation, partial and total arthroplasty, as well as rib-cartilage graft implantation. Surgical decisions rest on the cause and extent of the degenerative wrist lesions, degree of residual mobility, and patient's wishes and functional demand. Proximal row carpectomy and 4-corner fusion with scaphoid bone excision
are the most widely used surgical procedures for stage II wrist osteoarthritis secondary to scapho-lunate advanced collapse (SLAC) or scaphoid non-union advanced collapse (SNAC) wrist. Proximal row carpectomy is not indicated in patients with stage III disease. Total wrist denervation is a satisfactory treatment option in patients of any age; who have good ROM and low functional demands; furthermore, the low morbidity associated with this procedure makes it a good option for elderly patients regardless of their ROM. Total wrist fusion can be used not only as a revision procedure, but also as the primary surgical treatment in heavy manual laborers with wrist stiffness or generalized wrist-joint involvement. The authors concluded that the role for pyrocarbon implants, rib-cartilage graft implantation, and TWA remains to be determined, given the short follow-ups in available studies.

Comminuted Distal Radius Fracture:

Schmidt (2015) presented 2 case reports of successful primary shortening of the forearm and TWA using the new angle-stable Maestro Wrist Reconstructive System (WRS) for treatment of highly comminuted distal radius fracture in selected autonomous patients. In a 56-year old male patient with adequate bone stock, insertion of the non-cemented Maestro WRS was combined with ulnar shortening osteotomy. In an 84-year old female patient with poor osteoporotic bone stock, insertion of the radial cemented Maestro WRS was combined with ulnar head resection. Both patients resumed their work without additional surgery after TWA. At the 1-year follow-up, there were no changes in position of either implant without signs of loosening, no impingement, and no instability of the distal radioulnar joint or the distal ulna stump. All clinical parameters (DASH score, pain through VAS, and grip strength) were satisfactory. Both patients reported that they would have the same procedure again. The authors stated that further experience is needed to validate this concept.

Furthermore, the American Academy of Orthopaedic Surgeons’ guideline and evidence report on “The treatment of distal
“radius fractures” (AAOS, 2009) did not mention wrist arthroplasty as a therapeutic option.

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<th>CPT Codes / HCPCS Codes / ICD-10 Codes</th>
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<td><strong>Information in the [brackets] below has been added for clarification purposes. Codes requiring a 7th character are represented by &quot;+&quot;:</strong></td>
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<td><strong>ICD-10 codes will become effective as of October 1, 2015:</strong></td>
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<td><strong>CPT codes covered if selection criteria are met:</strong></td>
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<td>25446</td>
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<td><strong>ICD-10 codes covered if selection criteria are met:</strong></td>
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The above policy is based on the following references:

AETNA BETTER HEALTH® OF PENNSYLVANIA

Amendment to
Aetna Clinical Policy Bulletin Number: 0853
Wrist Arthroplasty

There are no amendments for Medicaid

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