

## University of California QPLE - Shoulder Pain AUC 2021-07-30

### Priority Clinical Area Coverage

This AUC reasonably addresses common and important clinical scenarios within the "Shoulder pain (to include suspected rotator cuff injury)" Priority Clinical Area (PCA) and thus meets the minimum requirement for qCDISM to cover that PCA. However, by CMS definition of relevancy, it is not considered relevant to that PCA, as further described here <https://qple.ucop.edu/auc>

#### Condition and Scores

Appropriate - preferred (4)

Appropriate (3)

Radiology consultation recommended (2)

Inappropriate (1)

No AUC applicable (0)

|  | Priors | XR Sh | US Sh | MR Sh wo | MR Sh wwo | MR Arth Sh | CT Sh wo | CT Sh w | CT Sh wwo | CT Arth Sh | OCEBM Evidence Grade* | References       |
|--|--------|-------|-------|----------|-----------|------------|----------|---------|-----------|------------|-----------------------|------------------|
| No shoulder pain   |        | 0     | 0     | 0        | 0         | 0          | 0        | 0       | 0         | 0          |                       |                  |
| Shoulder pain, XR shoulder not done  |        | 4     | 1     | 1        | 1         | 1          | 1        | 1       | 1         | 1          | B                     | 1, 13            |
| Shoulder pain with traumatic injury within 6 weeks with instability and/or dislocation   | XR     | 0     | 1     | 4        | 1         | 1          | 4        | 1       | 1         | 1          | B                     | 1, 7             |
| Shoulder pain (with or without traumatic injury) 6 weeks or more with instability and/or dislocation, patient is a surgical candidate            | XR     | 0     | 1     | 1        | 1         | 4          | 1        | 1       | 1         | 3          | B                     | 4, 15, 19, 24    |
| Shoulder pain with traumatic injury 6 weeks or more, age less than 40  | XR     | 0     | 1     | 4        | 1         | 3          | 1        | 1       | 1         | 3          | C                     | 2, Consensus     |
| Shoulder pain with traumatic injury 6 weeks or more, age 40 or greater, patient is a surgical candidate and no instability                       | XR     | 0     | 1     | 4        | 1         | 1          | 1        | 1       | 1         | 1          | B                     | 2, 9, 19         |
| Shoulder pain with metastatic neoplasm (known or suspected)  | XR     | 0     | 1     | 4        | 1         | 1          | 1        | 1       | 1         | 1          | B                     | 1, 23            |
| Shoulder pain, XR suggests bone neoplasm   | XR     | 0     | 1     | 4        | 3         | 1          | 3        | 1       | 1         | 1          | C                     | 2, 23            |
| Shoulder pain, XR suggests rotator cuff tendinopathy, preserved rotator cuff strength, no preceding physical therapy                             | XR     | 0     | 1     | 1        | 1         | 1          | 1        | 1       | 1         | 1          | C                     | 5, 9, 20         |
| Shoulder pain, XR suggests rotator cuff tendinopathy, preserved rotator cuff strength, no improvement after an 8-week course of physical therapy | XR     | 0     | 4     | 4        | 1         | 1          | 1        | 1       | 1         | 1          | C                     | 5, 9, 20         |
| Shoulder pain, XR suggests rotator cuff tendinopathy, significant rotator cuff loss of strength  | XR     | 0     | 4     | 4        | 1         | 1          | 1        | 1       | 1         | 1          | C                     | 5, 9, 20         |
| Shoulder pain, XR shows AC sprain grade 3 or more, patient is a surgical candidate   | XR     | 0     | 1     | 4        | 1         | 1          | 4        | 1       | 1         | 1          | B                     | 6, 16, Consensus |
| Shoulder pain without trauma, age less than 40   | XR     | 0     | 3     | 4        | 1         | 3          | 1        | 1       | 1         | 1          | B                     | 2, 14, 17, 18    |
| Shoulder pain without trauma, age 40 or greater, patient is a surgical candidate   | XR     | 0     | 3     | 4        | 1         | 1          | 1        | 1       | 1         | 1          | B                     | 10, 14           |
| Shoulder pain without trauma, age 40 or greater, patient is not a surgical candidate   | XR     | 0     | 1     | 1        | 1         | 1          | 1        | 1       | 1         | 1          |                       | Consensus        |
| Shoulder pain with traumatic injury 6 weeks or more, age 40 or greater, patient is not a surgical candidate and no instability                   | XR     | 0     | 1     | 1        | 1         | 1          | 1        | 1       | 1         | 1          |                       | Consensus        |
| Shoulder pain, XR shows calcific tendinitis  | XR     | 0     | 1     | 1        | 1         | 1          | 1        | 1       | 1         | 1          |                       | Consensus        |
| Shoulder pain, XR shows AC sprain grade 2 or less  | XR     | 0     | 1     | 1        | 1         | 1          | 1        | 1       | 1         | 1          |                       | Consensus        |
| Shoulder pain, XR shows AC sprain, patient is not a surgical candidate   | XR     | 0     | 1     | 1        | 1         | 1          | 1        | 1       | 1         | 1          |                       | Consensus        |
| Shoulder pain, XR shows moderate-to-severe osteoarthritis, patient is not a surgical candidate   | XR     | 0     | 1     | 1        | 1         | 1          | 1        | 1       | 1         | 1          | B                     | 3, 22            |
| Shoulder pain, suspect septic or inflammatory arthritis  | XR     | 0     | 3     | 3        | 4         | 1          | 3        | 3       | 1         | 1          | B                     | 8, 10, 11, 25    |
| Shoulder pain, prior arthroplasty and no suspected infection   | XR     | 0     | 1     | 3        | 4         | 1          | 3        | 3       | 1         | 1          | B                     | 21, Consensus    |
| Shoulder pain, prior arthroplasty, suspect joint infection   | XR     | 0     | 3     | 3        | 4         | 1          | 3        | 3       | 1         | 1          | B                     | 21, Consensus    |
| Shoulder Pain, Infection or abscess of soft tissues of shoulder (excluding joint) (known or suspected)   |        | 0     | 4     | 4        | 4         | 1          | 3        | 4       | 1         | 1          |                       | Consensus        |
| Shoulder pain, osteoarthritis and preoperative planning  | XR     | 0     | 1     | 4        | 1         | 1          | 4        | 1       | 1         | 1          | C                     | 12, Consensus    |

#### \*AUC Evidence Grading

The Oxford Centre for Evidence Based Medicine is used for assigning AUC grades. The grades are based on the level of evidence of the references according to the following:

Grade A = Level 1

Grade B = Level 2

Grade C = Level 3 or less

## Shoulder Pain AUC References and OCEBM Evidence Level

1. Amini, B., et al., *ACR Appropriateness Criteria(R) Shoulder Pain-Traumatic*. J Am Coll Radiol, 2018. **15**(5s): p. S171-s188. Level 3
2. Anderson, S.E., et al., *Magnetic resonance imaging of bone tumors and joints*. Top Magn Reson Imaging, 2007. **18**(6): p. 457-65. Level 5
3. Bradley, M.P., G. Tung, and A. Green, *Overutilization of shoulder magnetic resonance imaging as a diagnostic screening tool in patients with chronic shoulder pain*. J Shoulder Elbow Surg, 2005. **14**(3): p. 233-7. Level 4
4. Charouset, C., et al., *Accuracy of CT arthrography in the assessment of tears of the rotator cuff*. J Bone Joint Surg Br, 2005. **87**(6): p. 824-8. Level 4
5. Cortes, A, et al., *A value-based care analysis of magnetic resonance imaging in patients with suspected rotator cuff tendinopathy and the implicated role of conservative management*. J Shoulder Elbow Surg, 2019. **28**, 2153-2160. Level 4.
6. de Abreu, M.R., et al., *Acromioclavicular joint osteoarthritis: comparison of findings derived from MR imaging and conventional radiography*. Clin Imaging, 2005. **29**(4): p. 273-7. Level 3
7. Demehri, S., N. Hafezi-Nejad, and E.K. Fishman, *Advanced imaging of glenohumeral instability: the role of MRI and MDCT in providing what clinicians need to know*. Emerg Radiol, 2017. **24**(1): p. 95-103. Level 5
8. Filippucci, E., et al., *Ultrasound imaging for the rheumatologist. XLVII. Ultrasound of the shoulder in patients with gout and calcium pyrophosphate deposition disease*. Clin Exp Rheumatol, 2013. **31**(5): p. 659-64. Level 2
9. Frei, R., et al., *Arthroscopic evaluation of ultrasonography and magnetic resonance imaging for diagnosis of rotator cuff tear*. Ortop Traumatol Rehabil, 2008. **10**(2): p. 111-4. Level 4
10. Friedman, M.V., et al., *Impact of Shoulder Sonography on Clinical Decision Making*. J Ultrasound Med, 2017. **36**(7): p. 1365-1371. Level 4
11. Gaigneux, E., et al., *Ultrasound abnormalities in septic arthritis are associated with functional outcomes*. Joint Bone Spine, 2017. **84**(5): p. 599-604. Level 3
12. Hayashi, D., et al., *Imaging in Osteoarthritis*. Radiol Clin North Am, 2017. **55**(5): p. 1085-1102. Level 5
13. Hussain, A., et al., *Effectiveness Of Plain Shoulder Radiograph In Detecting Degenerate Rotator Cuff Tears*. J Ayub Med Coll Abbottabad, 2018. **30**(1): p. 8-11. Level 4
14. Iagnocco, A., et al., *Sonographic study of painful shoulder*. Clin Exp Rheumatol, 2003. **21**(3): p. 355-8. Level 2
15. Iqbal, H.J., et al., *Diagnostic value of MR arthrogram in SLAP lesions of the shoulder*. Surgeon, 2010. **8**(6): p. 303-9. Level 4
16. Kim, A.C., et al., *Acromioclavicular joint injuries and reconstructions: a review of expected imaging findings and potential complications*. Emerg Radiol, 2012. **19**(5): p. 399-413. Level 4
17. Kim, J.Y., J.S. Park, and Y.G. Rhee, *Can Preoperative Magnetic Resonance Imaging Predict the Reparability of Massive Rotator Cuff Tears?* Am J Sports Med, 2017. **45**(7): p. 1654-1663. Level 4
18. Lenza, M., et al., *Magnetic resonance imaging, magnetic resonance arthrography and ultrasonography for assessing rotator cuff tears in people with shoulder pain for whom surgery is being considered*. Cochrane Database Syst Rev, 2013(9): p. Cd009020. Level 3
19. Mohtadi, N.G., et al., *A prospective, double-blind comparison of magnetic resonance imaging and arthroscopy in the evaluation of patients presenting with shoulder pain*. J Shoulder Elbow Surg, 2004. **13**(3): p. 258-65. Level 1
20. Okoroha, K.R., et al., *Characterization of Rotator Cuff Tears: Ultrasound Versus Magnetic Resonance Imaging*. Orthopedics, 2017. **40**(1): p. e124-e130. Level 4
21. Potter, H.G., et al., *Magnetic resonance imaging after total hip arthroplasty: evaluation of periprosthetic soft tissue*. J Bone Joint Surg Am, 2004. **86**(9): p. 1947-54. Level 2
22. Sherman, S.L., et al., *Overuse of Magnetic Resonance Imaging in the Diagnosis and Treatment of Moderate to Severe Osteoarthritis*. Iowa Orthop J, 2018. **38**: p. 33-37.
23. Tang, H., S. Ahlawat, and L.M. Fayad, *Multiparametric MR Imaging of Benign and Malignant Bone Lesions*. Magn Reson Imaging Clin N Am, 2018. **26**(4): p. 559-569. Level 5
24. van Kampen, D.A., et al., *Diagnostic value of patient characteristics, history, and six clinical tests for traumatic anterior shoulder instability*. J Shoulder Elbow Surg, 2013. **22**(10): p. 1310-9. Level 3
25. Weishaupt, D. and M.E. Schweitzer, *MR imaging of septic arthritis and rheumatoid arthritis of the shoulder*. Magn Reson Imaging Clin N Am, 2004. **12**(1): p. 111-24, vii. Level 3

Contact Peter.Vigil@ucsf.edu to submit comments and request changes to AUC.