Health Benchmarks® Clinical Quality Indicator Specification 2006

Measure Title	CONSERVATIVE USE OF IMAGING FOR LOW BACK PAIN
Disease State	Musculoskeletal — **Indicator Classification**[1] Utilization
Strength of Recommendation[2]	A
Physician Specialties	Family Practice, Gerontology, Internal Medicine, Neurological Surgery, Neurology, Orthopedic Surgery, Physical Medicine and Rehabilitation, Rheumatology

Clinical Rationale

Disease Burden

- Each year, approximately 25% of the working population develops low back pain, giving rise to a lifetime risk of developing low back pain of approximately 80%.[1]
- Low back pain patients compose 10% of the average caseload for many primary care providers and specialists. Fifty-six percent of patients with low back pain see family physicians and internists, 25% see orthopedic surgeons, 7% see neurosurgeons, and 4% see neurologists.[2]
- In 1998, patients with any form of back pain were responsible for $90.7 billion in health care expenditures of which $26.3 billion was incurred specifically treating the back pain. Additionally, individuals with back pain (including low back pain) incurred 60% higher health care costs per capita.[3]

Reason for Indicated Intervention or Treatment

- Approximately 70% of low back pain is caused by a muscular sprain or strain [4], and over 90% of patients suffering from low back pain recover spontaneously within 4 weeks, while only 5% remain disabled for more than 3 months.[5, 6]
- Imaging studies are often misleading or have low sensitivity, and are considered to be of less value than performing a detailed history and physical examination.[7-14] Plain radiographs do not reveal herniated disks or spinal stenosis, and findings often do not correlate with clinical symptoms. In fact, plain radiographs show spondylolisthesis in up to 5% of normal subjects.[13] Similarly, many asymptomatic individuals have disk abnormalities on magnetic resonance imaging (MRI).[12]
- A cost-effectiveness analysis has shown that routine plain radiographs obtained at the initial office visit for back pain is associated with high cost and excess radiation exposure for little benefit.[15] Another study suggested similar results for MRI [16].

Evidence supporting Intervention or Treatment

- A randomized controlled trial of 659 patients demonstrated that patients referred for x-rays at their first presentation for back pain did not differ from the control group in terms of physical functioning, pain or disability at 6 months and 1 year. However, they had a small improvement in psychological well-being, which should be balanced against the high radiation dose involved when undergoing radiography.[17]
- Another randomized controlled trial of 421 patients with low back pain for at least six weeks (median duration of 10 weeks) showed that radiography of the lumbar spine in patients without signs suggestive of serious abnormalities or disease ("red flags") was not associated with

CONFIDENTIAL

improved patient functioning, severity of pain, or overall health status at 3 and 9 months.[18]
- A multicenter randomized controlled study of 782 patients showed that early use of MRI or computed tomography (CT) in patients without red flags did not lead to significant differences between the two groups in overall clinical treatment, functional status or health-related quality of life.[19]

Clinical Recommendations

- The Agency for Healthcare Research and Quality (AHRQ) has not issued new guidelines for the treatment of low back pain since its transition from the name AHCPR, but nonetheless posts the following guidelines: Radiography is recommended only when a patient has no improvement in back pain after 4 to 6 weeks, or when there are signs suggestive of serious abnormalities or disease.[7]
- The Institute for Clinical Systems Improvement (ICSI) guidelines for acute low back pain state that “Lumbar spine x-rays should be limited to red flag indications”[20]
- The American Academy of Family Physicians suggests using a conservative course of management for low back pain, citing evidence that radiographs and laboratory tests are generally unnecessary, except in cases where a serious cause is suspected (infection, malignancy, rheumatologic diseases and neurologic disorders). The current recommendation is two or three days bed rest for patients with acute radiculopathy. The treatment should be reassessed in patients who do not return to normal activity within four to six weeks.[21]
- The British Royal College of General Practitioners concludes that there is no indication for routine X-rays in acute LBP of less than 6 weeks in the absence of clinical red flags. Unnecessary or repeated X-rays should be avoided.[22]

Source

The Health Plan Employer Data and Information Set (HEDIS®) 2006 Technical Specification.

Denominator

Continuously enrolled members ages 18 - 50 years by the end of the measurement year, who received an outpatient diagnosis of lower back pain within the first 337 days of the measurement year.

Denominator Exclusion

Members with a diagnosis of low back pain within 0-180 days prior to the index date, a diagnosis of cancer at any time prior to the end of the measurement year, or a diagnosis of recent trauma, intravenous drug use, or neurologic impairment in the 365 days prior to 28 days after the index date.

Numerator

Members who DID NOT receive an imaging study for low back pain 0-28 days after the index date.

Interpretation of Score

High score implies better performance.

Physician Attribution

Score all physicians who saw the member in the period beginning with the index diagnosis data through 28 days after and who diagnosed the member with low back pain as defined in the denominator.

CONFIDENTIAL

External Files Required for Analysis

None

References

1. Deyo, R.A. and Y.J. Tsui-Wu, *Descriptive epidemiology of low-back pain and its related medical care in the United States.* Spine, 1987. **12**(3): p. 264-8.
2. Hart, L.G., R.A. Deyo, and D.C. Cherkin, *Physician office visits for low back pain. Frequency, clinical evaluation, and treatment patterns from a U.S. national survey.* Spine, 1995. **20**(1): p. 11-9.
3. Luo, X., et al., *Estimates and patterns of direct health care expenditures among individuals with back pain in the United States.* Spine, 2004. **29**(1): p. 79-86.
4. Deyo, R.A. and J.N. Weinstein, *Primary care - Low back pain.* New England Journal Of Medicine, 2001. **344**(5): p. 363-370.
5. Papageorgiou, A.C. and A.S. Rigby, *Review of UK data on the rheumatic diseases--7. Low back pain.* Br J Rheumatol, 1991. **30**(3): p. 208-10.
6. Yelin, E.H., C.J. Henke, and W.V. Epstein, *Work disability among persons with musculoskeletal conditions.* Arthritis Rheum, 1986. **29**(11): p. 1322-33.
7. *Acute low back problems in adults: assessment and treatment. Agency for Health Care Policy and Research.* Clin Pract Guidel Quick Ref Guide Clin, 1994(14): p. iii-iv, 1-25.
8. Jarvik, J.G. and R.A. Deyo, *Diagnostic evaluation of low back pain with emphasis on imaging.* Annals Of Internal Medicine, 2002. **137**(7): p. 586-597.
9. Koes, B.W., et al., *Clinical guidelines for the management of low back pain in primary care: an international comparison.* Spine, 2001. **26**(22): p. 2504-13; discussion 2513-4.
10. Deyo, R.A., S.J. Bigos, and K.R. Maravilla, *Diagnostic imaging procedures for the lumbar spine.* Ann Intern Med, 1989. **111**(11): p. 865-7.
11. Borenstein, D.G., et al., *The Value of Magnetic Resonance Imaging of the Lumbar Spine to Predict Low-Back Pain in Asymptomatic Subjects : A Seven-Year Follow-up Study.* J Bone Joint Surg Am, 2001. **83**(9): p. 1306-1311.
12. Jensen, M.C., et al., *Magnetic resonance imaging of the lumbar spine in people without back pain.* N Engl J Med, 1994. **331**(2): p. 69-73.
13. Osterman, K., et al., *Isthmic spondylolisthesis in symptomatic and asymptomatic subjects, epidemiology, and natural history with special reference to disk abnormality and mode of treatment.* Clin Orthop Relat Res, 1993(297): p. 65-70.
14. Nachemson, A., *The lumbar spine: an orthopaedic challenge.* Spine, 1976. **1**: p. 59-71.
15. Liang, M. and A.L. Komaroff, *Roentgenograms in primary care patients with acute low back pain: a cost-effectiveness analysis.* Arch Intern Med, 1982. **142**(6): p. 1108-12.
16. Modic, M.T., et al., *Acute low back pain and radiculopathy: MR imaging findings and their prognostic role and effect on outcome.* Radiology, 2005. **237**(2): p. 597-604.
17. Kerry, S., et al., *Radiography for low back pain: a randomised controlled trial and observational study in primary care.* Br J Gen Pract, 2002. **52**(479): p. 469-74.
18. Kendrick, D., et al., *Radiography of the lumbar spine in primary care patients with low back pain: randomised controlled trial.* Bmj, 2001. **322**(7283): p. 400-5.
19. Gilbert, F.J., et al., *Low back pain: Influence of early MR imaging or CT on treatment and outcome - Multicenter randomized trial.* Radiology, 2004. **231**(2): p. 343-351.
20. ICSI, *Acute Low Back Pain.* 2005.
21. Patel, A.T. and A.A. Ogle, *Diagnosis and management of acute low back pain.* Am Fam Physician, 2000. **61**(6): p. 1779-86, 1789-90.
22. RCGP, *Clinical Guidelines for the management of Acute Low Back Pain*. 2001,

CONFIDENTIAL

© 2006 Health Benchmarks®
Confidential and Proprietary
All Rights Reserved

British Royal College of General Practitioners.

---

[1] **Indicator Classification** (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

Diagnosis	Measures applicable to patients receiving diagnostic workups for a symptom or condition that delineate appropriate laboratory or radiological testing to be performed (e.g. evaluation of thyroid nodule; pregnancy test in patients with vaginal bleeding or abdominal pain)
Effectiveness of Care	
Prevention	Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g. immunizations).
Screening	Measures applicable to asymptomatic patients who have risk factors or pre-clinical disease, but in whom the condition has not become clinically apparent (e.g. pap smears; screening for elevated blood pressure).
Disease Management	Measures applicable to individuals diagnosed with a condition that are part of the treatment or management of the condition (e.g. cholesterol reduction in patients with diabetes; radiation therapy following breast conserving surgery; appropriate follow-up after acute event).
Medication Monitoring	Measures applicable to patients taking medications with narrow therapeutic windows and / or potential preventable significant side effects or adverse reactions (e.g. thyroid stimulating hormone (TSH) testing after levothyroxine dose change; hepatic enzyme monitoring for patients using antimycotic pharmacotherapy)
Medication Adherence	Measures applicable to patients taking medications for chronic conditions that are designed to assess patient adherence to medication (e.g. adherence to lipid lowering medication).
Utilization	Measures applicable to patients receiving treatment for a symptom or condition that advocate appropriate utilization of laboratory and pharmaceutical resources (e.g. conservative use of imaging for low back pain; inappropriate use of antibiotics for viral upper respiratory infection).

CONFIDENTIAL

© 2006 Health Benchmarks®
Confidential and Proprietary
All Rights Reserved

[2] **Strength of Recommendation**

Strength of Recommendation Based on a Body of Evidence

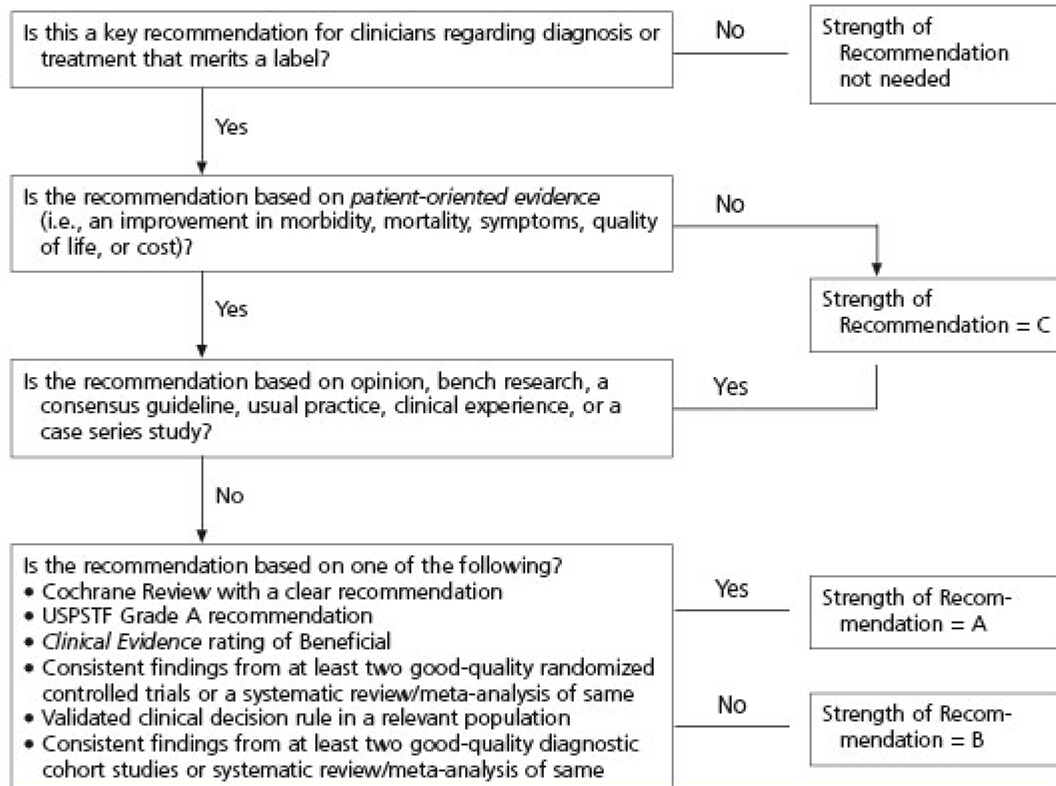

FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)

© 2006 Health Benchmarks®
Confidential and Proprietary
All Rights Reserved