

Client	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM		
Measure Title	USE OF IMAGING FOR LOW BACK PAIN		
Disease State	Musculoskeletal	Indicator Classification¹	Utilization
Strength of Recommendation²	A		
Organizations Providing Recommendation	American Academy of Family Physicians American College of Physicians American College of Radiology American Pain Society Institute for Clinical Systems Improvement		
Clinical Intent	To ensure that all members diagnosed with lower back pain did not receive a clinically inappropriate imaging study.		
Background	<p>Disease Burden</p> <ul style="list-style-type: none"> • According to the 2002 National Ambulatory Medical Care Survey, low back pain was the most frequent cause of pain reported by patients seeking outpatient medical care. Approximately 26% of patients surveyed reported experiencing low back pain within the last 3 months, and 2% of primary diagnoses for office visits during that year were for low back pain.[1] • Total costs of low-back pain exceed \$100 billion per year, [2] of which greater than \$20 billion is from direct costs.[3] Individuals with back pain incurred 60% higher health care costs per capita than those without back pain.[3] • 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.[4] <p>Reason for Indicated Intervention or Treatment</p> <ul style="list-style-type: none"> • Approximately 70% of low back pain is caused by a muscular sprain or strain,[5] 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.[6, 7] • 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.[8-15] 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.[14] Similarly, many asymptomatic individuals have 		

- disk abnormalities on magnetic resonance imaging (MRI).[13]
- Plain film radiography is rarely useful in the initial evaluation of patients with an acute onset of low back pain. Two large retrospective studies have demonstrated low sensitivity of lumbar spine x-rays. In one, x-rays were normal or showed changes of equivocal significance in more than three quarters of patients with low back pain.[16] Another study using oblique views of the spine found clinically significant information in less than 3% of patients.[17]
- 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.[18] Another study suggested similar results for MRI [19].

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.[20]
- 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 improved patient functioning, severity of pain, or overall health status at 3 and 9 months.[21]
- 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.[22]
- A recent meta-analysis which compared immediate lumbar imaging (radiography, MRI or CT) versus usual clinical care without immediate imaging, found that among patients with low back pain in the absence of “red-flag conditions,” there was no effect of immediate lumbar imaging on patient outcomes including reported pain, functioning, overall patient-reported improvement, and patient satisfaction.[23]

Clinical Recommendations

- The American College of Physicians recommended that “Clinicians should not routinely obtain imaging or other diagnostic tests in patients with nonspecific low back pain (strong recommendation, moderate-quality evidence)”.[24]
- The American College of Radiology also agrees that there is good evidence that uncomplicated low back pain is a benign and self-limiting condition that does not need any imaging studies. However, ACR recommends x-ray in the presence of red-flag indications, and states

that X-ray alone may be sufficient in the case of the following red-flag conditions: recent trauma, osteoporosis, age >70.[25, 26]

- 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.[27]

Source Healthcare Effectiveness Data and Information Set (HEDIS®) 2009 Technical Specification for Physician Measurement

Denominator

Denominator Definition Continuously enrolled members ages 18-50 years old who received a primary diagnosis of lower back pain on an outpatient or emergency department (ED) encounter record within the first 337 days of the measurement year.

Denominator Index Date First instance of Members who had an outpatient or emergency department (ED) encounter with a primary diagnosis of low back pain during the first 337 days of the measurement year.

Denominator Encounters/Claims Criteria ICD-9 diagnosis code(s): 721.3x, 722.10, 722.32, 722.52, 722.93, 724.02, 724.2x-724.3x, 724.5x-724.6x, 724.70, 724.71, 724.79, 738.5x, 739.3-739.4, 846.0-846.3, 846.8-846.9, 847.2
 CPT-4 code(s): 98925-98929, 98940-98942, 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99281-99285, 99341-99345, 99347-99350, 99385, 99386, 99395, 99396, , 99401-99404, 99411, 99412, 99420, 99429, 99455, 99456,
 UB revenue code(s): 045x, 051x, 0520-0523, 0526-0529, 057x-059x, 077x, 0981, 0982, 0983

Denominator Exclusion

Denominator Exclusion Definition Members with a diagnosis of low back pain within 1-180 days prior to the index date (exclusive of the index date), a diagnosis of cancer at any time in the member’s history prior to the index date through 28 days after the index date, or a diagnosis of recent trauma, intravenous drug use, or neurologic impairment in the 12 months prior through 28 days after the index date (inclusive of the index date).

Denominator Exclusion Claims Criteria ICD-9 diagnosis code(s): 140.xx-208.xx, 230.xx-239.xx, 304.0x, 304.1x, 304.2x, 304.4x, 305.4x, 305.5x, 305.6x, 305.7x, 344.60, 721.3x, 722.10, 722.32, 722.52, 722.93, 724.02, 724.2x-724.3x, 724.5x-724.6x, 724.70, 724.71, 724.79, 729.2 738.5x, 739.3-739.4, 800.xx-839.xx, 846.0-846.3, 846.8-846.9, 847.2, 850.xx-854.xx, 860.xx-869.xx, 905.x-909.x, 926.11, 926.12, 929.x, 952.xx, 958.xx-959.xx V10.xx

Numerator

Numerator Definition	Members who DID NOT receive an imaging study for low back pain 0-28 days after the index date (inclusive of the index date). (Note that this definition allows the measure to be reported as an inverted rate to facilitate a meaningful score interpretation across measures that are scored on the same scale.)
Numerator Claims Criteria	ICD-9 diagnosis code(s): 721.3x, 722.10, 722.32, 722.52, 722.93, 724.02, 724.2x-724.3x, 724.5x-724.6x, 724.70, 724.71, 724.79, 738.5x, 739.3-739.4, 846.0-846.3, 846.8-846.9, 847.2 CPT-4 code(s): 72010, 72020, 72052, 72100, 72110, 72114, 72120, 72131-72133, 72141, 72142, 72146-72149, 72156, 72158, 72200, 72202, 72220 UB revenue code(s): 0320, 0329, 0350, 0352, 0359, 0610, 0612, 0614, 0619, 0972

Physician Attribution

Physician Attribution Description	Score all physicians (in the selected specialties) who diagnosed the member with low back pain (in any diagnosis field) during the 0-28 days after the index date.
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¹ **Indicator Classification** (Adapted from 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).

² Strength of Recommendation

Strength of Recommendation Based on a Body of Evidence

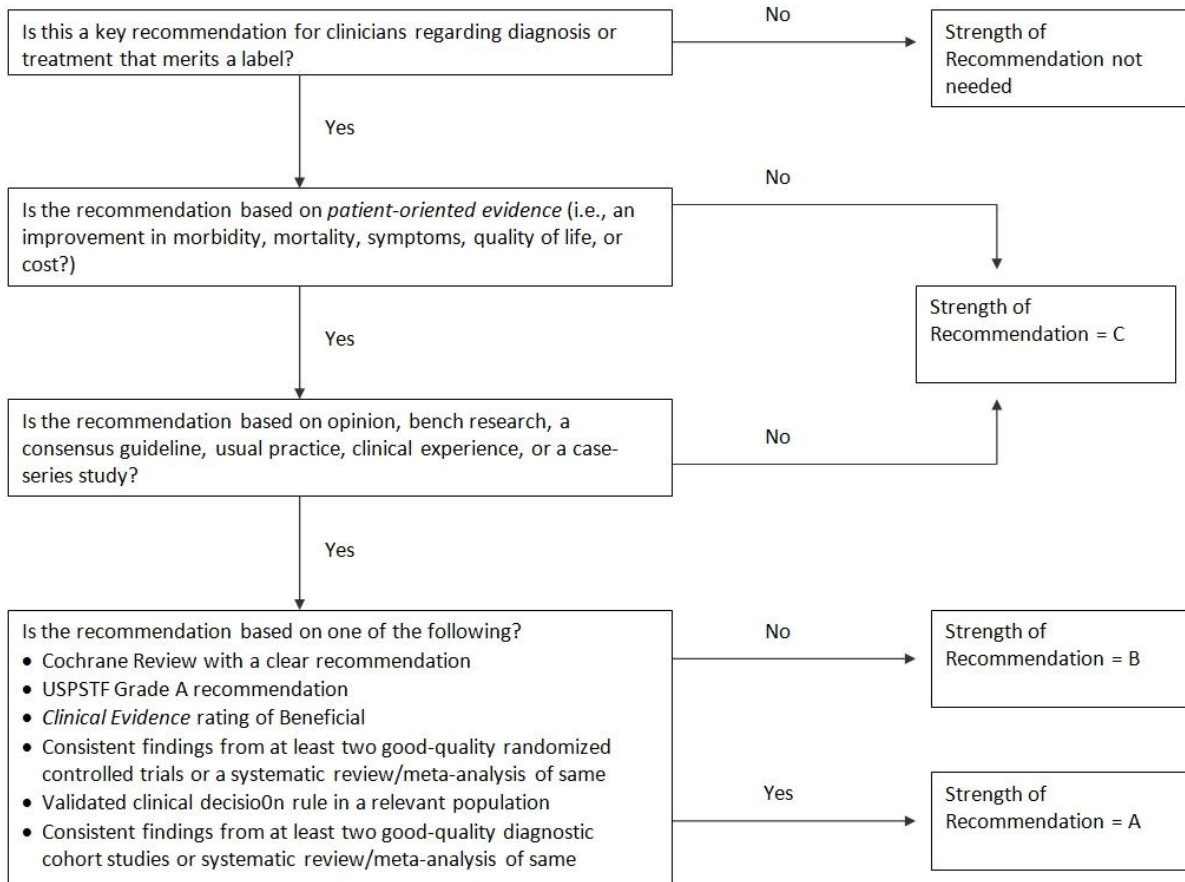


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation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