

<b>Client</b>	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM <i>Implemented for Blue Cross Blue Shield of Texas</i>		
<b>Measure Title</b>	CONSERVATIVE USE OF IMAGING FOR LOW BACK PAIN		
<b>Disease State</b>	Musculoskeletal	<b>Indicator Classification</b>	Utilization
<b>Strength of Recommendation</b>	A		
<b>Organizations Providing Recommendation</b>	American Academy of Family Physicians American College of Physicians American College of Radiology American Pain Society Institute for Clinical Systems Improvement		
<b>Clinical Intent</b>	To ensure that all members diagnosed with lower back pain did not receive a clinically inappropriate imaging study.		
<b>Physician Specialties</b>	Emergency Medicine, Family Practice, Geriatric Medicine, Internal Medicine, Neurological Surgery, Neurology, Orthopedic-Spine, Orthopedic-Surgery, Physician Medicine and Rehabilitation, Urgent Care		
<b>Background</b>	<p><b>Disease Burden</b></p> <ul style="list-style-type: none"> <li>• 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]</li> <li>• 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]</li> <li>• 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]</li> </ul> <p><b>Reason for Indicated Intervention or Treatment</b></p> <ul style="list-style-type: none"> <li>• 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]</li> <li>• Imaging studies are often misleading or have low sensitivity, and are</li> </ul>		

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]

#### **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)”.[23]
- 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.[24, 25]

- 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.[26]

<b>Source</b>	Healthcare Effectiveness Data and Information Set (HEDIS®) 2008 Technical Specification for Physician Measurement
<b>Denominator Definition</b>	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.
<b>Denominator Codes</b>	<u>Low back pain</u> 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 <u>Outpatient/ED setting</u> 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, 99499 UB revenue code(s): 045x, 051x, 0520-0523, 0526-0529, 057x-059x, 077x, 0981, 0982, 0983
<b>Denominator Exclusion Definition</b>	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 end of the measurement year, or a diagnosis of recent trauma, intravenous drug use, or neurologic impairment in the 365 days prior through 28 days after the index date (inclusive of the index date).
<b>Denominator Exclusion Codes</b>	<u>Low Back Pain</u> 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 <u>Cancer</u> ICD-9 diagnosis code(s): 140.xx-208.xx, 230.xx-239.xx <u>Trauma</u> ICD-9 diagnosis code(s): 800.xx-839.xx, 850.xx-854.xx, 860.xx-869.xx, 905.x-909.x, 926.11, 926.12, 929.x, 952.xx, 958.xx-959.xx <u>IV drug use</u> ICD-9 diagnosis code(s): 304.0x, 304.1x, 304.2x, 304.4x, 305.4x, 305.5x, 305.6x, 305.7x <u>Neurologic impairment</u>

ICD-9 diagnosis code(s): 344.60, 729.2

**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 Codes** Low back pain  
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  
Imaging studies  
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 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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