

LOW BACK PAIN; MECHANICAL

Background

This case definition was developed by the Armed Forces Health Surveillance Center (AFHSC) for the purpose of epidemiological surveillance of a condition important to military-associated populations. In the U.S. Armed Forces, low back pain is among the most frequent causes of medical visits and lost-duty time. Back problems have also been the leading causes of medical evacuations from Iraq and Afghanistan.¹ This case definition is used to identify cases of *mechanical* low back problems defined as local or radicular pain associated with conditions of the sacrum or lumbar spine and unrelated to major trauma, neoplasms, pregnancy, infectious or inflammatory causes.²

Clinical Description

Low back pain is a common musculoskeletal condition affecting up to two-thirds of the population at some time in their lives.³ The condition can be acute or chronic with pain localized to the spine and paraspinal regions or radiating into the leg suggesting nerve root compression. Low back pain accompanied by spinal nerve root damage is usually associated with neurological signs and symptoms.⁴ Risk factors for developing back pain include smoking, obesity, older age, being female, physically strenuous work, sedentary lifestyle, anxiety, and depression. The diagnosis is generally made by clinical history and, if needed, radiographic imaging. Treatment includes pain relievers, muscle relaxants, physical therapy, cortisone injections, and, rarely, surgery. The vast majority of low back pain episodes resolve within two to four weeks of onset. However, 25% of patients have recurrent episodes within one year.^{5,6}

Case Definition and Incidence Rules

For surveillance purposes, a case of low back pain is defined as:

- *One hospitalization or outpatient medical encounter* with any of the defining diagnoses of low back pain (see ICD9 code list below) in *any* diagnostic position.

Incidence rules:

For individuals who meet the case definition:

- The incidence date is considered the date of the first hospitalization or outpatient medical encounter that includes a diagnosis of low back pain.

(continued on next page)

¹ Armed Forces Health Surveillance Center. Low Back Pain, Active Component, U.S. Armed Forces, 2000-2009. *Medical Surveillance Monthly Report (MSMR)*. 2010 July; Vol 17(7): pp. 2-7.

² Cherkin D, Deyo R, Volinn E, et al. Use of the International Classification of Diseases (ICD-9-CM) to identify hospitalizations for mechanical low back problems in administrative databases. *Spine*. 1992; 17(17):817-25.

³ Andersson GBJ. Epidemiologic features of chronic low-back pain. *Lancet*. 354: 1999; 581.

⁴ Last A, et al. Chronic low back pain: Evaluation and management. *American Family Physician*. 2009;79:1067.

⁵ Devereaux M. Low back pain. *Medical Clinics of North America*. 2009;93:477.

⁶ Stanton TR, Henschke N, Maher CG, et al. After an episode of acute low back pain, recurrence is unpredictable and not as common as previously thought. *Spine*. 2008;33:2923-8.



Case Definition and Incidence Rules (continued)

- An individual can be considered an incident case *once per surveillance period*.
- For individuals with more than one low back pain diagnosis reported during a single medical encounter, the diagnosis reported in the highest (primary > secondary, etc.) diagnostic position is used.
- *If analysis requires recurrent case counts*, an individual is considered a recurrent case if he or she meets the criteria of an incident case ≥ 30 days after the initial defining encounter.

Exclusions:

- Hospitalizations and outpatient medical encounters for back pain during which there is also recorded, in *any* diagnostic position, a diagnosis associated with major trauma, pregnancy, neoplasms, infections, or other inflammatory causes of back pain are excluded. Specific ICD9 codes that result in exclusion are :
 - Neoplasms (140-239.9)
 - Intraspinal abscess (324.1)
 - Pregnancy (630-676, V22.0-V23.9, V27.0-V27.9)
 - Inflammatory spondyloarthropathies (720.0-720.9)
 - Osteomyelitis (730-730.99)
 - Vertebral fractures (733.13, 805-806.99)
 - Vertebral dislocations (839-839.59)

Codes

The following ICD9 codes are included in the case definition:

Condition	ICD-9-CM Codes ²	CPT Codes
Nonspecific back pain	724.2 (lumbago)	NA
	724.5 (backache, unspecified)	
	846.xx (sprains and strains of sacroiliac region)	
	847.2 (sprains and strains, lumbar)	
	847.3 (sprains and strains, sacrum)	
	847.9 (sprains and strains, unspecified site of back)	(continued on next page)



Miscellaneous back problems	<p>722.30 (Schmorl's nodes, unspecified region)</p> <p>722.32 (Schmorl's nodes, lumbar region)</p> <p>724.3 (sciatica)</p> <p>724.4 (thoracic or lumbosacral neuritis or radiculitis, unspecified)</p> <p>724.8 (other symptoms referable to back)</p> <p>724.9 (other unspecified back disorders)</p> <p>737.1x (curvature of spine; kyphosis, acquired)</p> <p>737.2x (curvature of spine; lordosis, acquired)</p> <p>737.3x (curvature of spine; kyphoscoliosis and scoliosis)</p> <p>738.5 (other acquired deformity of back or spine)</p> <p>739.3 (nonallopathic lesions, not elsewhere classified, lumbar region)</p> <p>739.4 (nonallopathic lesions, not elsewhere classified, sacral region)</p> <p>756.10 (anomaly of spine, unspecified)</p> <p>756.13-756.19 (various congenital anomalies of spine)</p>	
Degenerative changes	<p>721.3 (lumbosacral spondylosis without myelopathy)</p> <p>721.5 (spondylosis, kissing spine)</p> <p>721.6 (spondylosis, ankylosing vertebral hyperostosis)</p> <p>721.7 (spondylosis, traumatic spondylopathy)</p> <p>721.8 (spondylosis, other allied disorders of spine)</p> <p>721.90 (spondylosis of unspecified site, without mention of myelopathy)</p> <p>722.52 (degeneration of lumbar or lumbosacral intervertebral disc)</p> <p>722.6 (degeneration of intervertebral disc, site unspecified)</p> <p>722.90 (other and unspecified disc disorder, unspecified region)</p> <p>722.93 (other and unspecified disc disorder, lumbar region)</p>	
Possible instability	<p>724.6 (other and unspecified disorders of back, sacrum)</p> <p>738.4 (other acquired deformity, spondylolisthesis)</p> <p>756.11 (other congenital musculoskeletal anomalies; spondylolysis, lumbosacral region)</p> <p>756.12 (other congenital musculoskeletal anomalies; spondylolisthesis)</p>	<i>(continued on next page)</i>



Herniated disc	722.1 (displacement of thoracic or lumbar intervertebral disc without myelopathy) 722.10 (displacement of lumbar intervertebral disc without myelopathy) 722.2 (displacement of intervertebral disc, site unspecified, without myelopathy) 722.70 (intervertebral disc disorder with myelopathy, unspecified region) 722.73 (intervertebral disc disorder with myelopathy, lumbar region)	
Spinal stenosis	721.42 (lumbar spondylosis with myelopathy) 721.91 (spondylosis of unspecified site, with myelopathy) 724.00 (spinal stenosis, other than cervical, unspecified region) 724.02 (spinal stenosis, other than cervical, lumbar region, without neurogenic claudication) 724.09 (spinal stenosis, other than cervical, other)	
Sequelae of previous back surgery	722.80 (postlaminectomy syndrome, unspecified region) 722.83 (postlaminectomy syndrome, lumbar region)	

Development and Revisions

- This case definition was developed in July of 2011 by the Medical Surveillance Monthly Report (MSMR) staff for use in a MSMR article on incident and recurrent cases of mechanical low back pain.¹ The definition was developed based on reviews of the ICD9 codes, the scientific literature, and previous AFHSC analyses.

Case Definition and Incidence Rule Rationale

- Recurrent cases:* To identify recurrent cases, the case definition requires an interval of 30 days or more between episodes of back pain in order to exclude encounters associated with continuing care of the preceding incident event. Given the favorable natural history for acute and subacute LBP, with up to 90% of patients regaining function within 6-12 weeks with or without physician intervention,^{7,8} the 30 day interval may be too short and may prematurely classify some incident cases as recurrent cases.

⁷ South-Paul, JE, Matheny, SC, Lewis EL. *Current Diagnosis and Treatment in Family Medicine*, 3e, Chapter 24 Low Back Pain in Primary Care: An Evidence-Based Approach. McGraw Hill Companies, Inc. 2011.

⁸ Carey TS, Garrett J, Jackman A, McLaughlin C, Fryer J, Smucker DR. The outcomes and costs of care for acute low back pain among patients seen by primary care practitioners, chiropractors, and orthopedic surgeons: the North Carolina Back Pain Project. *N Engl J Med*. 1995; 333(14):913-917.



Code Set Determination and Rationale

- This case definition uses a code set developed in 1992 by Cherkin et al ² designed to identify patients with mechanical low back pain from administrative databases. The code set was selected after a review of the scientific literature and of the relevant codes in the International Classification of Diseases, 9th Revision.

Reports

None

Review

May 2012	Case definition reviewed and adopted by the AFHSC Surveillance Methods and Standards (SMS) working group.
Jul 2010	Case definition developed by AFHSC MSMR staff.

Comments

None

