

ACEP 52

Title: Appropriate Emergency Department Utilization of Lumbar Spine Imaging for Atraumatic Low Back Pain

Description: Percentage of emergency department visits during which patients aged 18 years and older had a CT or MRI of the Lumbar Spine ordered by an emergency care provider, regardless of discharge disposition, presenting with acute, non-complex low back pain.

Measurement Period: January 1, 2024, through December 31, 2024

Measure Steward: American College of Emergency Physicians (ACEP)

Measure Developer: American College of Emergency Physicians (ACEP)

Measure Scoring: Proportion

Measure Type: Process

Initial Population	All emergency department visits for patients aged 18 years and older who presented with acute, non-complex low back pain for whom a lumbar spine CT or MRI was ordered by an emergency care provider
Denominator	All emergency department visits for patients aged 18 years and older who presented with acute, non-complex low back pain for whom a lumbar spine CT or MRI was ordered by an emergency care provider
Denominator Exclusions	None
Numerator	Emergency department visits for patients who have an indication for a lumbar spine CT or MRI
Numerator Exclusions	Not Applicable
Denominator Exceptions	None

Stratification: None

Risk Adjustment: None

Improvement Notation: Higher score indicates better quality

Rationale

Atraumatic low back pain is among the top 5 reasons for ED visits with estimated annual direct costs exceeding \$20 billion. Approximately 50-80% of adults will experience low back pain at some time in their lives and in any three-month period, approximately 25% of Americans will experience at least one day of back pain. In the absence symptoms or physical findings suggestive of a traumatic injury, serious progressive neurological condition or another serious underlying condition, there is consensus that imaging has little diagnostic value. ACEP identified the avoidance of lumbar spine imaging in the ED for adults with non-traumatic back pain as a priority area in the Choosing Wisely Campaign consistent with guidelines on the topic from the American College of Radiology. Diagnostic imaging does not reliably identify the cause of most back pain and does not improve clinical outcome or time to recovery. Unnecessary or routine imaging (X-ray, MRI, CT scans) for low back pain exposes patients to unnecessary harms such as radiation and referral for unnecessary treatment and increases healthcare costs. The

intent of this measure is to decrease ED-based imaging for acute, non-complex low back pain. The measure aligns with ACEP Choosing Wisely recommendation and quality improvement measures developed as part of ACEP EQUAL SAN project. It is notable, however, that this measure is ED-specific and relates to any imaging modality. The Healthcare Effectiveness Data and Information Set (HEDIS) measure focuses on imaging for 28 days following a diagnosis of low back pain, which is a separate decision step and outside of the scope of an acute care encounter in the ED. The Medicare OP-8 measure relates specifically to MRI of the lumbar spine.

Clinical Recommendation Statement

ACEP identified the avoidance of lumbar spine imaging in the ED for adults with non-traumatic back pain as a priority area in the Choosing Wisely Campaign consistent with guidelines on the topic from the American College of Radiology. Diagnostic imaging does not reliably identify the cause of most back pain and does not improve clinical outcome or time to recovery. Unnecessary or routine imaging (X-ray, MRI, CT scans) for low back pain exposes patients to unnecessary harms such as radiation and referral for unnecessary treatment and increases healthcare costs. Each of routine non-contrast CT is potentially harmful for given that the high dose of radiation exposure increases long-term risk of cancer.

Definition

Although there is great variability in the definition of acute and subacute LBP, for the purposes of this guideline, we will use the Institute for Clinical Systems Improvement definitions of 0–6 weeks to define acute LBP, 6–12 weeks for subacute LBP, and >12 weeks to define chronic LBP.

Table 1. Red Flags: Indications of a more complicated status include back pain/radiculopathy in the following settings (adapted from [7]).

Red Flag	Potential Underlying Condition as Cause of LBP
<ul style="list-style-type: none"> • History of cancer • Unexplained weight loss • Immunosuppression • Urinary infection • Intravenous drug use • Prolonged use of corticosteroids • Back pain not improved with conservative management 	<ul style="list-style-type: none"> • Cancer or infection
<ul style="list-style-type: none"> • History of significant trauma • Minor fall or heavy lift in a potentially osteoporotic or elderly individual • Prolonged use of steroids 	<ul style="list-style-type: none"> • Spinal fracture
<ul style="list-style-type: none"> • Acute onset of urinary retention or overflow incontinence • Loss of anal sphincter tone or fecal incontinence • Saddle anesthesia • Global or progressive motor weakness in the lower limbs 	<ul style="list-style-type: none"> • Cauda equina syndrome or severe neurologic compromise

Guidance

None

References

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2. Goertz M, Thorson D, Bonsell J, et al. Institute for Clinical Systems Improvement. Adult Acute and Subacute Low Back Pain. Updated November 2012.
3. Jarvik JG, Hollingworth W, Martin B, et al. Rapid magnetic resonance imaging vs radiographs for patients with low back pain: a randomized controlled trial. *Jama.* 2003;289(21):2810-2818.
4. Carragee E, Alamin T, Cheng I, Franklin T, van den Haak E, Hurwitz E. Are first-time episodes of serious LBP associated with new MRI findings? *Spine J.* 2006;6(6):624-635.
5. Jung HS, Jee WH, McCauley TR, Ha KY, Choi KH. Discrimination of metastatic from acute osteoporotic compression spinal fractures with MR imaging. *Radiographics.* 2003;23(1):179-187.
6. Jarvik JG. Imaging of adults with low back pain in the primary care setting. *Neuroimaging Clin N Am.* 2003;13(2):293-305.

Disclaimer

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