### Use of Imaging Studies for Low Back Pain

**eMeasure Title** | Use of Imaging Studies for Low Back Pain  
**eMeasure Identifier (Measure Authoring Tool)** | 166  
**eMeasure Version number** | 6.0.000  
**NQF Number** | 0052  
**GUID** | b6016b47-b65d-4be0-866f-1d397886ca89  
**Measurement Period** | January 1, 20XX through December 31, 20XX  
**Measure Steward** | National Committee for Quality Assurance  
**Measure Developer** | National Committee for Quality Assurance  
**Endorsed By** | National Quality Forum  
**Description** | Percentage of patients 18-50 years of age with a diagnosis of low back pain who did not have an imaging study (plain X-ray, MRI, CT scan) within 28 days of the diagnosis.  

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**Measure Scoring** | Proportion  
**Measure Type** | Process  
**Stratification** | None  
**Risk Adjustment** | None  
**Rate Aggregation** | None  

**Rationale**  
Low back pain is a pervasive problem that affects three quarters of adults at some time in their lives (Chou et al., 2012). It ranks among the top ten reasons for patient visits to internists and is the most common and expensive reason for work disability in the U.S. Low back pain is second only to upper respiratory problems as a symptom-related reason for visits to a physician (Jarvik and Deyo, 2002).  

Each year in the United States low back pain is experienced by 25 to 50 percent of adults, making it one of the most common reasons for seeking health care services (Haldeman and Dagenais, 2008). Low back pain results in high indirect costs from disability, lost time from work, and decreased productivity while at work, and is the number one cause for activity limitations in younger adults (Chou, 2012). The costs associated with health care services for spine pain (primarily low back pain) in the U.S. increased from $45.9 billion in 1997 to $102.6 billion in 2004 (Martin et al., 2008).  

**Clinical Recommendation Statement**  
American College of Physicians and the American Pain Society (Chou et al., 2007)  
Clinicians should not routinely obtain imaging or other diagnostic tests in patients with nonspecific low back pain (strong recommendation, moderate-quality evidence).  

Institute for Clinical Systems Improvement (2012)  
Clinicians should not recommend imaging (including computed tomography [CT], magnetic resonance imaging [MRI])
and x-ray) for patients with non-specific low back pain (Strong Recommendation, Moderate Quality Evidence).

* Low back pain assessment should include a subjective pain rating, functional status, patient history including notation of presence or absence of "red flags," psychosocial indicators, assessment of prior treatment and response, employment status, and clinician's objective assessment.
* Reduce or eliminate imaging for diagnosis of non-specific low back pain in patients 18 years and older.
* First-line treatment should emphasize patient education and a core treatment plan, that includes encouraging activity, use of heat, no imaging, cautious and responsible use of opioids, anti-inflammatory and analgesic over-the-counter medications and return to work assessment.
* Patients with acute or subacute low back pain should be advised to stay active and continue ordinary daily activity as tolerated.
* Use opioids cautiously and responsibly in the presence of acute or subacute low back pain.

<table>
<thead>
<tr>
<th>Improvement Notation</th>
<th>Higher score indicates better quality</th>
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**Definition**

This measure applies to the first episode of low back pain during the measurement period.

**Guidance**

The outpatient or emergency department visit in the Initial Population needs to occur during the first 337 days of the measurement period (337 days allows 28 days for the numerator event). This visit must be the first visit for low back pain during the measurement period.

**Transmission Format**

TBD

**Initial Population**

Patients 18-50 years of age with a diagnosis of low back pain during an outpatient or emergency department visit

**Denominator**

Equals Initial Population

**Denominator Exclusions**

Exclude patients with a diagnosis of cancer any time in their history or patients with a diagnosis of recent trauma, IV drug abuse, or neurologic impairment during the 12-month period prior to through the 28 days after the outpatient or emergency department visit.

Exclude patients with a diagnosis of low back pain within the 180 days prior to the outpatient or emergency department visit.

**Numerator**

Patients without an imaging study conducted on the date of the outpatient or emergency department visit or in the 28 days following the outpatient or emergency department visit

**Numerator Exclusions**

Not Applicable

**Denominator Exceptions**

None

**Supplemental Data Elements**

For every patient evaluated by this measure also identify payer, race, ethnicity and sex

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**Table of Contents**

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- Risk Adjustment Variables

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**Population Criteria**

- **Initial Population**
  - AND: "Occurrence A of Diagnosis: Low Back Pain" satisfies all:
Use of Imaging Studies for Low Back Pain

First: starts during "Measurement Period"
- starts during Occurrence A of $LBPEncounter
  - AND: Age>= 18 year(s) at: "Measurement Period"
  - AND: Age< 50 year(s) at: "Measurement Period"

**Denominator** =
- AND: Initial Population

**Denominator Exclusions** =
- OR: Union of:
  - "Diagnosis: Low Back Pain" <= 180 day(s) starts before start of "Occurrence A of Diagnosis: Low Back Pain"
  - "Diagnosis: All Cancer" starts before end of "Measurement Period"
  - $DiagnosisTraumaIVDrugNeuroImpairment <= 365 day(s) starts before or concurrent with start of Occurrence A of $LBPEncounter
  - $DiagnosisTraumaIVDrugNeuroImpairment <= 28 day(s) starts after start of Occurrence A of $LBPEncounter

**Numerator** =
- AND NOT: Union of:
  - "Diagnostic Study, Performed: X-Ray of Lower Spine"
  - "Diagnostic Study, Performed: MRI of Lower Spine"
  - "Diagnostic Study, Performed: CT Scan of Lower Spine"
  - <= 28 day(s) starts after start of "Occurrence A of Diagnosis: Low Back Pain"

**Numerator Exclusions** =
- None

**Denominator Exceptions** =
- None

**Stratification** =
- None

**Data Criteria (QDM Variables)**

- $DiagnosisTraumaIVDrugNeuroImpairment =
  - Union of:
    - "Diagnosis: Trauma"
    - "Diagnosis: IV Drug Abuse"
    - "Diagnosis: Neurologic impairment"

- $LBPEncounter =
  - Union of:
    - "Encounter, Performed: Office Visit"
    - "Encounter, Performed: Emergency Department Visit"
    - "Encounter, Performed: Face-to-Face Interaction"
    - <= 337 day(s) starts after start of "Measurement Period"

**Data Criteria (QDM Data Elements)**

- "Diagnosis: All Cancer" using "All Cancer Grouping Value Set (2.16.840.1.113883.3.464.1003.108.12.1011)"
- "Diagnosis: IV Drug Abuse" using "IV Drug Abuse Grouping Value Set (2.16.840.1.113883.3.464.1003.106.12.1003)"
- "Diagnosis: Low Back Pain" using "Low Back Pain Grouping Value Set (2.16.840.1.113883.3.464.1003.113.12.1001)"
- "Diagnosis: Neurologic impairment" using "Neurologic impairment Grouping Value Set (2.16.840.1.113883.3.464.1003.114.12.1012)"
- "Diagnosis: Trauma" using "Trauma Grouping Value Set (2.16.840.1.113883.3.464.1003.113.12.1036)"
- "Diagnostic Study, Performed: CT Scan of Lower Spine" using "CT Scan of Lower Spine Grouping Value Set (2.16.840.1.113883.3.464.1003.113.12.1035)"
- "Encounter, Performed: Emergency Department Visit" using "Emergency Department Visit Grouping Value Set (2.16.840.1.113883.3.464.1003.101.12.1010)"
- "Encounter, Performed: Face-to-Face Interaction" using "Face-to-Face Interaction Grouping Value Set (2.16.840.1.113883.3.464.1003.101.12.1048)"
- "Encounter, Performed: Office Visit" using "Office Visit Grouping Value Set (2.16.840.1.113883.3.464.1003.101.12.1001)"

**Supplemental Data Elements**

- "Patient Characteristic Ethnicity: Ethnicity" using "Ethnicity CDCREC Value Set (2.16.840.1.114222.4.11.837)"
- "Patient Characteristic Payer: Payer" using "Payer SOP Value Set (2.16.840.1.114222.4.11.3591)"
- "Patient Characteristic Race: Race" using "Race CDCREC Value Set (2.16.840.1.114222.4.11.836)"
- "Patient Characteristic Sex: ONC Administrative Sex" using "ONC Administrative Sex AdministrativeGender Value Set (2.16.840.1.113762.1.4.1)"

**Risk Adjustment Variables**
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<th>Measure</th>
<th>Set</th>
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<td>None</td>
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