Local Coverage Determination (LCD): Troponin (L33974)

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Contractor Information

<table>
<thead>
<tr>
<th>CONTRACTOR NAME</th>
<th>CONTRACT TYPE</th>
<th>CONTRACT NUMBER</th>
<th>JURISDICTION</th>
<th>STATE(S)</th>
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<tr>
<td>First Coast Service Options, Inc.</td>
<td>A and B MAC</td>
<td>09101 - MAC A</td>
<td>J - N</td>
<td>Florida</td>
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<tr>
<td>First Coast Service Options, Inc.</td>
<td>A and B MAC</td>
<td>09201 - MAC A</td>
<td>J - N</td>
<td>Puerto Rico</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>Virgin Islands</td>
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</table>

LCD Information

Document Information

- **LCD ID**: L33974
- **Original ICD-9 LCD ID**: L29000
- **LCD Title**: Troponin
- **Proposed LCD in Comment Period**: N/A
- **Source Proposed LCD**: N/A

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Unless otherwise specified, italicized text represents quotation from one or more of the following CMS sources:

N/A

Coverage Guidance
Coverage Indications, Limitations, and/or Medical Necessity

Troponin is a muscle protein that attaches to both actin and tropomyosin. It is concerned with calcium binding and inhibiting cross-bridge formation. Troponin is a complex of three proteins: troponin C, troponin I, and troponin T. The distribution of these isoforms varies between cardiac muscle and slow- and fast-twitch skeletal muscle. Their importance lies in the fact that the isoforms troponin I and troponin T show a high degree of cardiac specificity, and therefore, have an important role in the diagnostic evaluation of a patient presenting with symptoms suggestive of a cardiac origin.

Cardiac Troponin I (cTnI) is highly specific for myocardial tissue, is thirteen times more abundant in the myocardium than CK-MB on a weight basis, is not detectable in the blood of healthy persons, shows a greater proportional increase above the upper limit of the reference interval in patients with myocardial infarction and remains elevated for seven to ten days after an episode of myocardial necrosis. In addition, measurements of cTnI is useful to clarify which increases in CK-MB are due to myocardial injury and which ones reflect acute or chronic skeletal muscle abnormalities.

Troponin T, the tropomyosin-binding protein of the regulatory complex located on the contractile apparatus of cardiac myocytes, is also a sensitive and specific marker for myocardial necrosis. Damaged heart muscle releases the protein, troponin T, which increases in the bloodstream as early as 3 hours after the onset of chest pain and remains at an elevated level for 2 to 7 days.

Troponin levels are considered medically reasonable and necessary to rule out myocardial injury only under the following conditions:

- patient presents with signs and symptoms of an acute myocardial infarction (prolonged chest pain often described as squeezing, choking, stabbing, etc., usually spreading across chest to the left arm; dyspnea, diaphoresis) which is confirmed by an electrocardiogram (EKG, ECG);
- patient presents with vague or atypical symptoms suggestive of a cardiac origin, which is not confirmed by an electrocardiogram;
- patient evaluation reveals a normal creatine kinase MB isoenzyme (CK-MB), however, the EKG demonstrates new changes consistent with ischemia (e.g., flipped T waves, ST-segment depression); or
- to distinguish patients with unstable angina from those with a non-Q wave myocardial infarction.

Initially, it is expected that a qualitative Troponin level (procedure code 84512) is performed on a patient with suspected myocardial injury. If the results of the qualitative Troponin level is positive, then the quantitative level of Troponin I or Troponin T (procedure code 84484) is performed, usually with the same blood specimen, to determine if the symptoms are cardiac in nature. The Troponin C isoform is not useful in the management of myocardial infarction and it is not necessary to monitor both the T and I isoform.

The quantitative test is normally performed every 8-12 hours the first 24 hours. Once the determination is made whether myocardial injury has occurred, it is expected that a Troponin level will be performed only when the results are to be used in the active treatment of the patient.

Also, it is not necessary to use Troponin in addition to Creatine Kinase (procedure codes 82550-82554) in the management of patients with myocardial infarction.

Summary of Evidence

N/A

Analysis of Evidence
(Rationale for Determination)

N/A

Coding Information

Bill Type Codes:
Contractors may specify Bill Types to help providers identify those Bill Types typically used to report this service. Absence of a Bill Type does not guarantee that the policy does not apply to that Bill Type. Complete absence of all Bill Types indicates that coverage is not influenced by Bill Type and the policy should be assumed to apply equally to all claims.

<table>
<thead>
<tr>
<th>Bill Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>012x Hospital Inpatient (Medicare Part B only)</td>
</tr>
<tr>
<td>013x Hospital Outpatient</td>
</tr>
<tr>
<td>022x Skilled Nursing - Inpatient (Medicare Part B only)</td>
</tr>
<tr>
<td>023x Skilled Nursing - Outpatient</td>
</tr>
<tr>
<td>071x Clinic - Rural Health</td>
</tr>
<tr>
<td>085x Critical Access Hospital</td>
</tr>
</tbody>
</table>

**Revenue Codes:**

Contractors may specify Revenue Codes to help providers identify those Revenue Codes typically used to report this service. In most instances Revenue Codes are purely advisory. Unless specified in the policy, services reported under other Revenue Codes are equally subject to this coverage determination. Complete absence of all Revenue Codes indicates that coverage is not influenced by Revenue Code and the policy should be assumed to apply equally to all Revenue Codes.

<table>
<thead>
<tr>
<th>Revenue Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>0301</td>
<td>Laboratory - Chemistry</td>
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**CPT/HCPCS Codes**

**Group 1 Paragraph:** N/A

**Group 1 Codes:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>84484</td>
<td>TROPONIN, QUANTITATIVE</td>
</tr>
<tr>
<td>84512</td>
<td>TROPONIN, QUALITATIVE</td>
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</table>

**ICD-10 Codes that Support Medical Necessity**

**Group 1 Paragraph:** N/A

**Group 1 Codes**

<table>
<thead>
<tr>
<th>ICD-10 Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>I20.0</td>
<td>Unstable angina</td>
</tr>
<tr>
<td>I21.01 - I22.9</td>
<td>ST elevation (STEMI) myocardial infarction involving left main coronary artery - Subsequent ST elevation (STEMI) myocardial infarction of unspecified site</td>
</tr>
<tr>
<td>I25.110 - I25.119</td>
<td>Atherosclerotic heart disease of native coronary artery with unstable angina pectoris - Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris</td>
</tr>
<tr>
<td>I25.700 - I25.799</td>
<td>Atherosclerosis of coronary artery bypass graft(s), unspecified, with unstable angina pectoris - Atherosclerosis of other coronary artery bypass graft(s) with unspecified angina pectoris</td>
</tr>
<tr>
<td>I46.2 - I49.9</td>
<td>Cardiac arrest due to underlying cardiac condition - Cardiac arrhythmia, unspecified</td>
</tr>
<tr>
<td>I50.21</td>
<td>Acute systolic (congestive) heart failure</td>
</tr>
<tr>
<td>I50.23</td>
<td>Acute on chronic systolic (congestive) heart failure</td>
</tr>
<tr>
<td>I50.41</td>
<td>Acute combined systolic (congestive) and diastolic (congestive) heart failure</td>
</tr>
<tr>
<td>I50.43</td>
<td>Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure</td>
</tr>
<tr>
<td>I50.810 - I50.89</td>
<td>Right heart failure, unspecified - Other heart failure</td>
</tr>
<tr>
<td>M79.601 - M79.676</td>
<td>Pain in right arm - Pain in unspecified toe(s)</td>
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</tbody>
</table>
R00.0 Tachycardia, unspecified
R00.1 Bradycardia, unspecified
R06.00 Dyspnea, unspecified
R06.02 Shortness of breath
R06.03 Acute respiratory distress
R06.09 Other forms of dyspnea
R06.2 Wheezing
R06.3 Periodic breathing
R06.81 - R06.89 Apnea, not elsewhere classified - Other abnormalities of breathing
R07.1 - R07.9 Chest pain on breathing - Chest pain, unspecified
R10.13 Epigastric pain
R55 Syncope and collapse
R61 Generalized hyperhidrosis
R94.31 Abnormal electrocardiogram [ECG] [EKG]

ICD-10 Codes that DO NOT Support Medical Necessity

Additional ICD-10 Information
N/A

General Information

Associated Information

Documentation Requirements

The medical records must document the medical necessity of the test including the test results. This information is usually found in the office/progress notes, emergency/hospital notes, and/or laboratory results.

If the provider of the service is other than the ordering/referring physician, that provider must maintain hard copy documentation of test results and interpretation, along with copies of the ordering/referring physician’s order for the studies. The physician must state the clinical indication/medical necessity for the study in his order for the test. If the test is performed for the patient with vague or atypical symptoms, e.g., epigastric pain, syncope, the rationale for why this symptom may be cardiac related should be documented.

Utilization Guidelines

N/A

Sources of Information

First Coast Service Options, Inc. reference LCD number – L29032


Lai, C.S., et al (2004). Prevalence of troponin-t elevation during out-of-hospital cardiac arrest. American Journal of Cardiology, 93:754-756. This source used to help define the medical necessity of using troponin levels as a diagnostic tool and to determine if there is a limited timeframe when it may be useful in treating the patient.


**Bibliography**

N/A

**Revision History Information**

<table>
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<th>REVISION HISTORY DATE</th>
<th>REVISION HISTORY NUMBER</th>
<th>REVISION HISTORY EXPLANATION</th>
<th>REASON(S) FOR CHANGE</th>
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<tr>
<td>10/01/2017</td>
<td>R4</td>
<td>10/02/2018: This LCD version is approved to allow local coverage documents to be related to the LCD.</td>
<td>Other</td>
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| 10/01/2017            | R3                      | **Revision Number: 2**
Publication: September 2017 Connection LCR A2017-004

**Explanation of Revision:** Based on CR 10153 (Annual 2018 ICD-10-CM Update) the LCD was revised. Added ICD-10-CM diagnosis code range I50.810-I50.89 and diagnosis code R06.03. The effective date of this revision is based on date of service.

10/01/2017: At this time 21st Century Cures Act will apply to new and revised LCDs that restrict coverage which requires comment and notice. This revision is not a restriction to the coverage determination and therefore not all the fields included on the LCD are applicable as noted in this policy.

<table>
<thead>
<tr>
<th>05/12/2017</th>
<th>R2</th>
<th>Revision Number: 1 Publication: June 2017 Connection LCR A2017-002</th>
<th>Provider Education/Guidance</th>
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<tr>
<td></td>
<td></td>
<td><strong>Explanation of Revision:</strong> Based on CR 8776, the following verbiage was removed from the “CPT/HCPCS Codes” section of the LCD: “Per CR 8572, beginning in CY 2014, payment for most laboratory tests (except for molecular pathology tests) will be packaged</td>
<td></td>
</tr>
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</table>
under the OPPS, therefore the clinical laboratory tests listed below, for TOB 13X (outpatient hospital), are packaged in this setting.” The effective date of this revision is for claims processed on or after 05/12/2017, for dates of service on or after 01/01/2014.

<table>
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<th>Date</th>
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<tr>
<td>10/01/2015</td>
<td>R1</td>
<td>03/04/15 - The language and/or ICD-10-CM diagnoses were updated to be consistent with the current ICD-9-CM LCD’s language and coding. Provider Education/Guidance</td>
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**Associated Documents**

**Attachments**

N/A

**Related Local Coverage Documents Article(s)**

A56135 - Troponin Coding Guidelines

**Related National Coverage Documents**

N/A

**Public Version(s)**

Updated on 10/02/2018 with effective dates 10/01/2017 - N/A
Updated on 09/19/2017 with effective dates 10/01/2017 - N/A

Some older versions have been archived. Please visit the MCD Archive Site to retrieve them.

**Keywords**

N/A

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