Clinical Policy: Cardiac Risk Assessment Laboratory Tests
Reference Number: HNCA.CP.MP.203
Effective Date: 10/05
Last Review Date: 10/19

See Important Reminder at the end of this policy for important regulatory and legal information.

Description
This policy describes the medical necessity requirements for cardiac risk assessment laboratory blood tests. They are proposed to help to determine the risk for coronary artery disease (CAD), myocardial infarction (MI), plus other cardiac conditions and guide the individual's treatment.

Policy/Criteria
I. It is the policy of Health Net of California that for following tests are medically necessary when the indications are met:
   A. High-sensitivity C-reactive protein (hs-CRP) testing for the assessment of CAD when the member has undergone previous noninvasive tests for cardiac risk stratification and been found to be at intermediate risk, as evidenced by meeting all of the following:
      i. LDL cholesterol levels between 100 to 130 mg/dL;
      ii. Patient has ≥ 2 coronary heart disease (CHD) major risk factors, such as:
         iii. Hypertension (BP ≥ 140 mmHg or on an antihypertensive medication),
         iv. Low HDL cholesterol (< 40 mg/dL),
         v. Diabetes,
         vi. Family history of premature CHD in male first degree relative < 55 years; CHD in female first degree relative < 65 years;
         vii. Man ≥ 45 years or woman ≥ 55 years,
         viii. Current cigarette smoking;
         ix. Global risk assessment using Framingham point scoring reveals a 10 to 20% risk of CHD per 10 years.
   B. Apolipoprotein B in high risk individuals to assess if additional intense interventions are necessary when LDL cholesterol goals are reached.

II. It is the policy of Health Net of California that any of the following tests are investigational to assess cardiac risk because the medical literature is inconclusive regarding the utility of these tests for screening, diagnosis or management of CHD:
   A. hs-CRP testing for members at high-risk for CAD,
   B. hs-CRP as a screening test for the general population or for monitoring response to therapy,
   C. Complete profiles of cardiac risk,
   D. Apolipoprotein A-I,
   E. Apolipoprotein B for the general population,
   F. Apolipoprotein E,
   G. Lipoprotein remnants: intermediate density lipoproteins and small density lipoproteins (NMR LipoProfile),
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H. High density lipoprotein subclasses (LpAI, LpAII and/or HDL3 and HDL2),
I. Low density lipoprotein subclasses (small and large LDL particles) Lipoprotein(a) enzyme immunoassay,
J. Angiotensin gene (AGT) (CardiaRisk)
K. Fibrinogen,
L. Lipoprotein-associated phospholipase A2 (Lp-PLA2) (PLAC), secretory phospholipase A2 (sPLA2-IIA),
M. Noninvasive measurements of arterial elasticity by means of blood pressure waveforms (e.g., HDI PulseWave, CVProfilor),
N. Post-challenge insulin, high,
O. Iron levels,
P. Serum uric acid,
Q. Vertical auto profile: cholesterol test,
R. Corus CAD gene expression testing (unless otherwise specified)
S. Measurement of B-type natriuretic peptides,
T. Carotid intima-media thickness (CIMT)

Background
CAD develops when the coronary arteries become damaged or diseased with plaque development. Myocardial ischemia occurs when blood flow to the heart is reduced, preventing it from receiving enough oxygen. This reduced blood flow is usually the result of a partial or complete blockage of the coronary arteries. This condition may be chronic, narrowing of the coronary artery over time and limiting of the blood supply to part of the muscle; or it can be acute, resulting from a sudden rupture of a plaque and formation of a thrombus.

CHD is the most common form of heart disease affecting seven million Americans. It could lead to a MI or other cardiac issues and is the result of CAD, which can begin earlier in an individual’s life. Preventive measures are thought to delay the progression of CAD. Therefore, it is imperative to understand not only how to diagnose heart disease but also how to stratify its risk, an important factor in treatment decision making in patients with CAD. Once the initial diagnosis has been made, various cardiac tests can be used to obtain pertinent information about risk level and the appropriateness of medical versus more invasive treatments.

Biomarkers of CVD have been identified and evaluated as potential adjuncts to standard risk assessment strategies. For CHD, biomarkers must reflect the underlying biology of the vessel walls and the atherosclerotic process. Various markers include hs-CRP, homocysteine, and Lp-PLA2, which have been investigated as a tool for determining the risk of CVD in apparently healthy and asymptomatic individuals, thereby presenting the opportunity for targeted preventive efforts based on an individual’s predicted risk profile.4

Hs-CRP is a laboratory test developed to evaluate a patient's risk of MI or other heart conditions. Studies suggest that hs-CRP is useful in detecting the small amounts of CRP in patients with atherosclerosis. Current data suggest that the addition of hs-CRP to standard lipid screening can improve the ability to detect absolute coronary risk. This is a critical issue because one-half of all MIs and strokes occur among individuals without overt hyperlipidemia. In addition, it was
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Theorized that risk assessment based on hs-CRP levels might provide a superior prediction of response to statin therapy.7

Several meta-analyses, reviews and clinical studies have been published assessing the association of lipoprotein with CVD risk and events. Although consistently strong associations have been found between levels of lipoproteins and adverse cardiac health outcomes, evidence presented on the clinical utility of these measures continues to be inconsistent, conflicting and thus inconclusive. Clinical studies are ongoing to further assess and define the role and clinical utility of lipoprotein testing in CVD risk assessment, treatment and management.2511

Guidelines from the ACC and the ADA recommend the use of apoB in persons at elevated cardiometabolic risk to assess whether additional intense interventions are necessary when LDL cholesterol goals are reached (Brunzell et al, 2008). According to these guidelines, high-risk persons are those with known CVD, diabetes, or multiple CVD risk factors (i.e., smoking, hypertension, family history of premature CVD). The American Association of Clinical Chemistry has issued similar recommendations regarding the use of apoB (Contois et al, 2009). Guidelines from the American Association of Clinical Endocrinologists (2012) recommend apoB measurements to assess the success of LDL-C–lowering therapy. The guidelines note that LDL particle number as reflected by apo B is a more potent measure of cardiovascular disease (CVD) risk than LDL-C and LDL particle size (e.g., small, dense LDL).

The clinical evidence is insufficient to show an added benefit of CIMT testing beyond traditional lipid risk assessment. There is inadequate clinical evidence from prospective studies that the use of this technology alters patient management and improves clinical outcomes. Additional research involving larger, well-designed studies is needed to establish the role of arterial compliance in the early identification, prevention and management of CVD.

American Heart Association
High-sensitivity C-reactive protein (hsCRP) and coronary artery calcium (CAC) are the leading novel markers of cardiovascular risk and are most commonly suggested for use in a tailored treatment approach.

American College of Cardiology Foundation (ACCF) and American Heart Association (AHA).
The ACCF and the AHA recommend lipoprotein-associated phospholipase A2 might be reasonable for cardiovascular risk assessment in intermediate-risk asymptomatic adults. (Level of Evidence: B). Class IIb

National Institute of Health Care Excellence (NICE)
NICE has guidelines on ‘Lipid modification: cardiovascular risk assessment and the modification of blood lipids for the primary and secondary prevention of cardiovascular disease’. However, these guidelines do not mention the laboratory testing for cardiac risks.

U.S. Preventive Services Task Force (USPSTF)
- USPSTF recommends against screening for asymptomatic carotid artery stenosis in the general adult population. (D recommendation).
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- The USPSTF also concluded that the evidence is insufficient to assess the balance of benefits and harms of using nontraditional risk factors, such as CIMT to screen asymptomatic men and women with no history of CHD to prevent CHD events.
- The U.S. Preventive Services Task Force (USPSTF) concluded that the evidence is insufficient to assess the balance of benefits and harms of using the nontraditional risk factors, such as lipoprotein(a), to screen asymptomatic men and women with no history of CHD to prevent CHD events.

Coding Implications
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<tbody>
<tr>
<td>82172</td>
<td>Apolipoprotein, each</td>
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<tr>
<td>83695</td>
<td>Lipoprotein (a)</td>
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<tr>
<td>83698</td>
<td>Lipoprotein-associated phospholipase A2 (Lp-PLA2)</td>
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<tr>
<td>83700</td>
<td>Lipoprotein, Blood; Electrophoretic Separation And Quantitation</td>
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<tr>
<td>83701</td>
<td>Lipoprotein, Blood; High Resolution Fractionation And Quantitation Of Lipoproteins Including Lipoprotein Subclasses When Performed (Eg, Electrophoresis, Ultracentrifugation)</td>
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<td>83704</td>
<td>Lipoprotein, Blood; Quantitation Of Lipoprotein Particle Numbers And Lipoprotein Particle Subclasses (Eg, By Nuclear Magnetic Resonance Spectroscopy)</td>
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<td>83718</td>
<td>Lipoprotein, direct measurement; high density cholesterol (HDL cholesterol)</td>
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<td>83721</td>
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<td>Natriuretic peptide</td>
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<td>86141</td>
<td>C-reactive protein; high sensitivity (hsCRP)</td>
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<td>93799</td>
<td>Unlisted cardiovascular service or procedure</td>
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<td>0126T</td>
<td>Common carotid intima-media thickness (IMT) study for evaluation of atherosclerotic burden or coronary heart disease risk factor assessment</td>
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ICD-10-CM Diagnosis Codes that Support Coverage Criteria

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<tr>
<th>ICD-10-CM Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>E10.9</td>
<td>Type I diabetes mellitus without complication</td>
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<tr>
<td>E11.9</td>
<td>Type II diabetes mellitus without complication</td>
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<tr>
<td>E78.0-E78.89</td>
<td>Disorders of lipoprotein metabolism and other lipidemias</td>
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<td>I24.0</td>
<td>Acute coronary thrombosis not resulting in MI</td>
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<td>I24.8</td>
<td>Other forms of acute ischemic heart disease</td>
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<td>I25.10</td>
<td>Atherosclerotic heart disease of native coronary artery without angina pectoris</td>
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<td>I25.110-I25.119</td>
<td>Atherosclerotic heart disease of native coronary artery with angina pectoris</td>
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<td>I25.810-I25.9</td>
<td>Other forms of chronic ischemic heart disease</td>
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<td>Z13.1</td>
<td>Encounter for screening for diabetes mellitus</td>
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<td>Z13.220</td>
<td>Encounter for screening for lipid disorders</td>
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<td>Z13.6</td>
<td>Encounter for screening for cardiovascular disorders</td>
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Reviews, Revisions, and Approvals

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<tr>
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<tr>
<td>Updated references, no changes</td>
<td>10/17</td>
<td>10/17</td>
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<td>Added secretory phospholipase A2 (sPLA2-IIA) and Carotid intima-media thickness (CIMT) to investigational section. Updated references and background information</td>
<td>10/18</td>
<td>10/18</td>
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<td>Added Apolipoprotein B as medically necessary for high risk individuals but not for general population</td>
<td>10/19</td>
<td>10/19</td>
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<td>Removed homocysteine as there is a separate Centene Clinical Policy</td>
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References
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Important Reminder

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. “Health Plan” means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan’s affiliates, as applicable.

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**Note: For Medicaid members**, when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

**Note: For Medicare members**, to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs and LCDs should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at [http://www.cms.gov](http://www.cms.gov) for additional information.

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