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2024 Nuclear Cardiology CDPHP

Diagnostic Imaging

CARD-SPECNUC-CDPHP

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Guideline Initiated: 06/30/2019

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Table of Contents

Nuclear Cardiology NCD

NCD 220.12
See also, **NCD 220.12**: Single Photon Emission Computed Tomography (SPECT) at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

NCD 220.6.1
See also, **NCD 220.6.1**: PET for Perfusion of the Heart at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

NCD 220.6.8
See also, **NCD 220.6.8**: FDG PET for Myocardial Viability at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

Preamble: Pediatric Diagnostic Imaging

HealthHelp's clinical guidelines for the Diagnostic Imaging program, are intended to apply to both adults and pediatrics (21 years of age or younger), unless otherwise specified within the criteria.

Multiple Gated Acquisition (MUGA) Scan/Cardiac Blood Pool Imaging Guideline

Preamble: Pediatric Cardiology Preamble

HealthHelp's clinical guidelines for the Cardiology program, are intended to apply to both adults and pediatrics (21 years of age or younger), unless otherwise specified within the criteria.

Multiple gated acquisition (MUGA)/Cardiac blood pool imaging is considered medically appropriate when the documentation demonstrates **ANY** of the following:

1. Cardiomyopathy (acquired or inherited) is suspected or known and **ANY** of the following:
    a. Known in a first degree relative (child, parent, sibling)
    b. Suspected and prior imaging is non-diagnostic or indeterminate.
    c. Signs/symptoms (eg, chest pain, dyspnea, fatigue) are new or progressing and ischemic work-up (eg, cardiac markers [eg, creatinine kinase [CK], troponin], electrocardiogram [ECG]) is completed.

    References: [7] [21]
2. Cardiotoxic medication use, transthoracic echocardiogram (TTE) is non-diagnostic or indeterminate and **ANY** of the following:
    a. Left ventricular (LV) function evaluation, for baseline and treatment monitoring
    b. Long-term surveillance after therapy is completed; follow-up every 6 to 12 months or at the discretion of the provider.
    c. Signs/symptoms (eg, chest pain, dyspnea, fatigue) are new or progressing.

    References: [7] [21]
3. Congenital heart disease is known and prior imaging is non-diagnostic or indeterminate.
    References: [7] [21]
4. Heart failure (HF) is suspected or known, based on signs/symptoms (eg, dyspnea, fatigue, orthopnea) or laboratory results (eg, complete blood count [CBC], ECG, electrolytes), prior imaging is non-diagnostic or indeterminate and **ANY** of the following:
    a. Diastolic or systolic assessment
    b. Etiology assessment
    c. Signs/symptoms are new or progressing with **NO** change in diet or medications.

    References: [7] [21] [23] [22]
5. LV function evaluation, when heart disease (eg, congenital, coronary artery disease [CAD], myocardial disease, valvular heart disease) is known and **ANY** of the following:
    a. Ejection fraction (EF) evaluation when prior imaging is non-diagnostic or indeterminate.
    b. Systolic dysfunction is known (EF less than 50%) from prior TTE, for treatment management.
    c. TTE is non-diagnostic or indeterminate, for treatment management.

    References: [7] [21] [23]
6. Myocardial infarction (MI) is acute, for LV function evaluation when prior imaging is non-diagnostic or indeterminate.

References: [7] [21]

7. Revascularization and/or optimal medical therapy is achieved for implantable cardioverter-defibrillator/cardiac resynchronization therapy (ICD/CRT) **OR** device therapy pre-procedural planning.
   References: [7] [21]
8. Structural heart disease is known, signs/symptoms (eg, chest pain, dyspnea, fatigue) are new or progressing and ischemic work-up (eg, cardiac markers [eg, CK, troponin], ECG) is completed.
   References: [7] [21]
9. Ventricular tachycardia (VT) or ventricular fibrillation is sustained and prior imaging is non-diagnostic or indeterminate.
   References: [7] [21]

LCD 33457
See also , **LCD 33457** : Cardiac Radionuclide Imaging at https://www.cms.gov/medicare-coverage-database/search.aspx *if appropriate to healthplan membership.*

LCD 33960
See also, **LCD 33960**: Cardiovascular Nuclear Medicine at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

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Myocardial Infarct Imaging Guideline

Preamble: Pediatric Cardiology Preamble

HealthHelp's clinical guidelines for the Cardiology program, are intended to apply to both adults and pediatrics (21 years of age or younger), unless otherwise specified within the criteria.

Myocardial infarct imaging (planar or single photon emission computerized tomography [SPECT]) is considered medically appropriate when the documentation demonstrates **ANY** of the following: (*__NOTE:__ *optimally performed 48-72 hours post-event.*)

1. Evaluation for subendocardial (non-Q-wave) infarction versus ischemia
   References: [21] [20] [10]
2. Myocardial infarction, acute, is suspected in the past 7 days and **ANY** of the following:
   a. Cardiac markers (eg, creatinine kinase [CK], troponin) are abnormal.
   b. Electrocardiogram (ECG), baseline, is abnormal.
   c. Left bundle branch block (LBBB)

   References: [21] [20]
3. Post cardioversion
   References: [21] [20]
4. Post-surgical, major cardiac procedure
   References: [21] [20] [12]
5. Significant chest trauma, presenting with chest pain
   References: [21] [20]

LCD 33960
See also, **LCD 33960**: Cardiovascular Nuclear Medicine at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

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Contraindications and Exclusions to Myocardial Perfusion Imaging (MPI)

Contraindications and exclusions to myocardial perfusion imaging (MPI) may include **ANY** of the following:

- Angina is high risk, unstable or complicated acute coronary syndrome or acute myocardial infarction was less than 2 days ago.
- Atrial (pulmonary) hypertension is systemic and severe.
- Body mass index (BMI) is more than 40 (relative contraindication due to suboptimal image quality).
- Pregnant or lactating women
- **Vasodilators are contraindicated**.

Reference: [11]

Myocardial Perfusion Imaging (MPI) Guideline

A myocardial perfusion imaging (MPI) (planar, positron emission tomography [PET], single photon emission computerized tomography [SPECT]) is considered medically appropriate when the documentation demonstrates **ANY** of the following: (*__NOTE__: **STRONG RECOMMENDATION:** *An electrocardiogram [ECG] within 30 days of request for a myocardial perfusion imaging is strongly recommended. The findings on the resting ECG may be important in determining the need for imaging, the selection of appropriate imaging protocol and may show evidence of ischemia at rest or interval myocardial infarction.*)

1. Acute coronary syndrome (ACS) history **WITHOUT** prior coronary evaluation (invasive or non-invasive)
   References: [24] [7] [8]
2. Arrhythmia is known, **NO** prior cardiac evaluation and **ANY** of the following:
   a. Anti-arrhythmic medications evaluation prior to starting regimen and coronary artery disease (CAD) risk is high.
   b. Premature ventricular contractions (PVC) are frequent (30 or more an hour on remote monitoring) and CAD risk is low to intermediate.
   c. Ventricular tachycardia (VT) and **ANY** of the following:
      i. Exercise induced and CAD risk is intermediate.

ii. Non-sustained and CAD risk is intermediate or high.

iii. Sustained, clinically stable and CAD risk is intermediate to high.

References: [24] [7] [8]

3. Asymptomatic and **ANY** of the following:

   a. Atherosclerotic cardiovascular disease (ASCVD) is high risk (more than 20%) **AND** calcium score is 400 Angaston to 1000 Angaston. (*__NOTE__: *Use ASCVD Risk Estimator Plus to determine risk level*: https:// tools.acc.org/ascvd-risk-estimator-plus/#!/calculate/estimate/)

   b. Computed tomography (CT) heart with calcium scoring is more than 1000 Angaston.

   c. Coronary vasculitis history with evidence of structurally abnormal coronary arteries (eg, aneurysm)

   d. Peripheral vascular disease (PVD) is **known**.

   e. Prior testing is abnormal, non-diagnostic or indeterminate and **ANY** of the following:

      i. Left bundle branch block (LBBB) is newly diagnosed.

      ii. Left ventricular (LV) dysfunction is global or regional.

      iii. Prior imaging (eg, coronary computed tomography angiography [CCTA], invasive coronary angiography [ICA]) is abnormal, non-diagnostic or indeterminate.

   References: [24] [7] [8]

4. CAD is suspected or known and **ANY** of the following:

   a. CAD is known (ischemia on stress test or fractional flow reserve [FFR] less than or equal to 0.80 or significant stenosis in a major vessel, greater than or equal to 50% left main coronary artery or greater than or equal to 70% left anterior descending artery [LAD], left circumflex artery [LCX], right coronary artery [RCA]) and **ANY** of the following:

      i. Asymptomatic and stable, **WITHOUT** prior revascularization **AND** prior imaging is completed more than 2 years ago.

      ii. Coronary calcifications are known based on prior coronary computed tomography angiography (CCTA).

      iii. Left main vessel or multi-vessel disease is known, based on previous computed tomography angiography (CTA) or CT heart imaging.

iv. Stable and **NO** prior revascularization.

v. Symptoms (eg, chest pain, diaphoresis, tightening) are new or progressing

b. CAD is suspected and **ANY** of the following:

i. Pretest probability is intermediate or high and **ANY** of the following:

A. **ALL** of the following:

I. Electrocardiogram (ECG) is complete.

II. Symptoms (eg, chest discomfort, dyspnea, fatigue) are new or progressing.

B. CCTA is non-diagnostic or indeterminate.

C. Functional capacity is poor.

ii. Pretest probability is high and **EITHER** of the following:

A. **NO** known ischemic heart disease.

B. Ischemic heart disease is known and **NO** prior definitive treatment.

iii. ECG is abnormal, non-diagnostic or indeterminate.

c. Obesity is advanced (body mass index [BMI] is more than 35 m^2/kg) **OR** women with large or dense breasts.

d. Obstructive CAD is known, GDMT is optimal **AND** chest pain is stable.

References: [24] [7] [8]

5. Cardiac amyloidosis is known to aid in the diagnosis of transthyretin amyloidosis cardiomyopathy (ATTR-CM). (**NOTE**: ***NOT*** *to be used for diagnosis of cardiac light chain amyloidosis*.)
References: [24] [7] [8] [6]

6. Chronic coronary disease is known symptoms are progressing or functional capacity worsens despite guideline directed medical therapy (GDMT) and **ANY** of the following:

a. Myocardial ischemia is suspected or to determine extent of myocardial ischemia.

b. Risk estimation of major adverse cardiovascular events (MACE)

c. Treatment planning

References: [24] [7] [8] [27]

7. Congenital heart disease, in a pediatric individual, is known with poor functional capacity **OR** blood flow may be compromised due to blood flow supply.
References: [24] [7] [8] [13]

8. Coronary artery abnormality is suspected or known and transthoracic echocardiogram (TTE) is non-diagnostic or indeterminate.
References: [24] [7] [8] [13]

9. Heart failure is known, **NO** previous CAD evaluation and **ANY** of the following:
    a. HF is known, **NO** history of CAD and ejection fraction (EF) is reduced (less than 40%).
    b. HF with preserved EF (EF is 50% or more) is new, risk of CAD is intermediate or high **AND NO** history of CAD.
    c. Viability and hibernation assessment is ongoing. [1]

    References: [24] [7] [8] [29]

10. Ischemic cardiomyopathy is known for assessment of myocardial viability.
References: [24] [7] [8] [1]

11. Left ventricular systolic dysfunction is known and **EITHER** of the following:
    a. **NO** angina, to rule out CAD.
    b. **WITHOUT** severe valvular disease

    References: [24] [7] [8] [17]

12. Peri-procedural planning and **ANY** of the following:
    a. Coronary artery bypass graft (CABG) or percutaneous coronary intervention (PCI) is completed, symptomatic and exercise SPECT is non-diagnostic or indeterminate **OR contraindicated or unavailable**.
    b. CAD is known and asymptomatic, prior to revascularization.
    c. Cardiac graft rejection is suspected.
    d. Cardiac transplant is complete, **NO** planned invasive coronary arteriography and surveillance is as follows:
        i. Follow-up annually for 1st 5 years
        ii. Transplant coronary vasculopathy is known, continue annual screening.
    e. Pre-operative for intermediate (eg, carotid endarterectomy, orthopedic surgery, prostate surgery) to high risk (eg, major vascular surgery, peripheral vascular surgery, prolonged surgical procedures) surgery with **NO** prior cardiac stress imaging in the past year and **ANY** of the following:
        i. CAD
        ii. Cerebrovascular disease (CVD) (eg, stroke, transient ischemic attack [TIA])

iii. Diabetes

iv. Functional capacity is limited/poor (eg, unable to climb flight of stairs or walk up a hill, functional capacity measure is less than 4 metabolic equivalent [METs], unable to reach at least 85% of maximum age-sex predicted heart rate on Bruce protocol exercise testing).

v. Heart failure and EF is 35% or less.

vi. Obesity is advanced (body mass index [BMI] is more than 35 m^2/kg) **OR** women with large or dense breasts at high cardivascular risk, prior to non-cardiac surgery.

vii. Renal failure or chronic renal insufficiency

f. Solid organ transplant (eg, kidney, liver, lung) planning

g. Transposition of the great arteries are known, arterial switch is complete **AND** transthoracic echocardiogram (TTE) is non-diagnostic or indeterminate.

References: [24] [7] [8] [13] [33]

13. Prior stress testing is completed and **ANY** of the following:

a. CAD is suspected on prior CCTA or invasive coronary angiography (ICA).

b. CT heart with coronary agatston calcium scoring is abnormal (more than 1000 Agatston) and is asymptomatic.

c. Prior exercise stress testing was abnormal **AND** Duke treadmill test is intermediate risk (-10 to +4) to high risk (-10 or less)

d. Stress test, with **OR WITHOUT** imaging is non-diagnostic or indeterminate.

References: [24] [7] [8]

14. Radiation therapy to anterior or left chest is known, for follow-up 5 years after initiation and every 5 years thereafter.
References: [24] [7] [8]

15. Sarcoidosis, cardiac, is suspected or known.
References: [24] [7] [8] [15] [32]

16. Symptomatic (eg, chest pain, chest tightness, shortness of breath) and **ANY** of the following:

a. Cardiomyopathy is known, when exercise stress test is completed and **ANY** of the following:

i. Prior angiography **EXCLUDES** CAD.

ii. SPECT is normal.

b. Chest pain is known and **ANY** of the following:

i. ACS is suspected.

ii. Chest pain is acute and **ALL** of the following:

A. **NO** known CAD

B. CAD risk is intermediate.

iii. Chest pain is persistent and **ANY** of the following:

A. Hypercholesterolemia family history and **ANY** of the following:

I. Atherosclerosis or non-obstructive CAD is demonstrated on prior angiography.

II. ECG exercise stress test **AND** CT heart are completed.

III. ECG exercise stress test is completed **AND** prior angiogram is normal.

IV. Prior stress-resting images are negative.

B. Ischemic heart disease is known and **NO** prior treatment.

C. Men less than 40 years old or women less than 45 years old and **ANY** of the following:

I. Atherosclerosis or non-obstructive CAD is demonstrated on prior angiography.

II. ECG exercise stress test **AND** prior angiography is completed.

III. Prior stress-resting images with SPECT or ECHO is negative.

IV. SPECT is normal.

D. **WITHOUT** obstructive CAD and/or ischemic heart disease and ECG is completed.

c. Comorbidity (diabetes or obesity) is known, exercise stress test is completed and **ANY** of the following:

i. Stress test is completed and atherosclerosis **AND** non-obstructive CAD is present on previous angiography.

ii. SPECT is normal.

d. Left ventricular (LV) hypertrophy is known, with comorbidity (eg, arterial hypertension, diabetes mellitus, obesity) and **ANY** of the following:

i. ECG exercise stress test is complete.

ii. Stress test is completed and atherosclerosis **AND** non-obstructive CAD is present on previous angiography.

iii. Stress test is completed and **NO** evidence of CAD on prior angiography.

e. Obesity is advanced (body mass index [BMI] is more than 35 m^2/kg) **OR** women with large or dense breasts.

f. Post-menopausal, ECG stress test is completed and **ANY** of the following:

i. Stress test is completed and atherosclerosis **AND** non-obstructive CAD is present on previous angiography.

ii. SPECT is normal.

g. Syncope or pre-syncope is known **AND** CAD risk is high.

h. Syndrome X is known, **NO** obstructive CAD on prior angiography **AND** chest pain is persistent

i. Vasculitis or arteritis is suspected (eg, Kawasaki disease, Takayasu's arteritis) is suspected.

References: [24] [19] [7] [8] [3] [14] [18]

LCD 33457
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LCD 38396
See also, **LCD 38396**: Cardiology Non-Emergent Outpatient Stress Testing at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 35083
See also, **LCD 35083**: Cardiology Non-emergent Outpatient Stress Testing at https://www.cms.gov/medicare-coverage-database/search.aspx *if applicable to individual's healthplan membership*.

LCD 33960
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Nuclear Cardiology LCD

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LCD 38396
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Nuclear Cardiology Procedures MPI, Infarct Imaging, MUGA Summary of Changes

Nuclear Cardiology Procedures MPI, Infarct Imaging, MUGA guidelines had the following version changes from 2023 to 2024:

- Added the following to keep in line with current evidence:
  - MPI
    - "Dyspnea/exertional shortness of breath"
    - Indications under "Arrhythmia is known"
    - Indications under "Asymptomatic"
    - Indications under "Symptomatic"
    - "Syncope or pre-syncope" indication
    - "Myocardial ischemia" indication
  - MUGA
    - "Heart disease" indication
    - Indications under "Cardiomyopathy"
    - Indications under "Cardiotoxic medications"
    - Indications under "Heart failure"
    - "Structural heart disease" indication

        - "Ventricular tachycardia" indication
- Removed the following to keep in line with current evidence:
    - MPI
        - "Electrocardiogram findings are abnormal" indication
        - Indications under "Pre-operative"
        - Indications under "Revascularization"
        - "Interleukin 2 treatment" from under "Symptomatic"
        - "Symptoms are new or progressing" indication
    - MUGA
        - "Acute coronary syndrome" under "Coronary artery disease"
        - Indications under "Congenital heart disease"
        - "Myocarditis is known" indication
        - "Right ventricular dysfunction" indication
        - Under "Left ventricular dysfunction"
            - "CRT treatment"
            - "Electrocardiogram abnormalities"
            - "Pre-operative or post-operative"
            - "Re-evaluation for symptoms "
        - "Valvular heart disease" indication
- 7/31/2024 content changes to MPI from Cardiology Grand Rounds as follows:
    - Added "Prior stress testing" under "Prior stress testing" to keep in line with current evidence
    - Corrected Agatston value to 1000 in "CT hear with calcium scoring" to keep in line with current evidence
    - Removed the following to keep in line with current evidence:
        - "CAD risk is high" indication from under "Prior stress testing"
        - "Prior stress test" indication from under "Prior stress testing"
- Mid-cycle update: added Pediatric Preamble
- 9/13/2024 content change to MPI due to evidence review as follows:

- Added the following to keep in line with current evidence:
  - "CCTA is non-diagnostic or indeterminate" under "CAD is suspected"
  - "Chest pain is stable" under "CAD is suspected"
  - "Chronic coronary disease"
  - "Obstructive CAD is known"
- Removed the following to keep in line with current evidence:
  - "Dyspnea" indication
  - Indications from under "Arrhythmia is known"
  - Indications under "Asymptomatic"
  - Indications under "Symptomatic"
  - "Obstructive CAD"

Nuclear Cardiology Definitions

Acute coronary syndrome (ACS) is a sudden, severe event in which the obstruction of a coronary artery interferes with blood flow to the heart muscle. It encompasses acute ischemic heart disease (eg, angina, myocardial infarction). ACS is diagnosed on the basis of rapidly accelerating symptoms of myocardial ischemia, with objective evidence of acute ischemia from an electrocardiogram and/or elevated circulating markers of myocardial injury.
Angina pectoris is the medical term for chest pain or discomfort due to coronary heart disease. It occurs when the heart muscle does not get as much blood as it needs. This may happen because one or more of the heart's arteries is narrowed or blocked, also called ischemia.

- Atypical chest pain or discomfort that lacks the characteristics of typical angina and is described as burning, sharp or stabbing brought on by deep breathing, coughing or movement of arms or torso, and lasting for seconds. The term non-cardiac should be used if heart disease is not suspected.
- Microvascular angina is a type of angina or chest pain that may be a symptom of coronary microvascular disease (MVD). Coronary MVD is a heart disease that affects the heart's smallest coronary artery blood vessels. Spasms within the walls of these very small arterial blood vessels cause reduced blood flow to the heart muscle leading to a type of chest pain referred to as microvascular angina. Angina that occurs in coronary MVD may differ from the typical angina that occurs in heart disease. The chest pain usually lasts longer than 10 minutes, and it can last longer than 30 minutes.

- Prinzmetal angina may also be referred to as variant angina, Prinzmetal's variant angina or angina inversa. Prinzmetal's angina almost always occurs at rest, usually between midnight and early morning. These attacks can be very painful. The pain from variant angina is caused by a spasm in the coronary arteries (which supply blood to the heart muscle). The coronary arteries can spasm as a result of any of the following: exposure to cold weather, stress, medicines that tighten or narrow blood vessels, smoking or cocaine use.
- Typical angina, also known as stable angina or angina pectoris, is defined as: 1) substernal/ retrosternal chest pain, pressure, tightness or squeezing, described as dull, heavy, or crushing, and/or radiating to the mid-sternal or anterior chest; with possible associated symptoms (eg, dyspnea, nausea, lightheadedness) 2) provoked by exertion or emotional stress and 3) relieved by rest and/or nitroglycerin.
- Unstable angina (USA) is defined as angina that is of new onset and occurs at rest or with minimal exertion. USA can also occur from previously known stable angina in terms of increased frequency or duration of chest pain, resistance to previously effective medications, or provocation with decreasing levels of exertion or stress.

Angiography is a medical procedure that uses X-rays to examine blood vessels. A contrast dye is injected into the patient's blood to highlight the blood vessels, which are then visible on X-rays. The X-ray images are called angiograms.

Arrhythmia is an irregular or abnormal heart rhythm. Arrhythmia refers to any change from the normal sequence of electrical impulses of the heart, causing abnormal heart rhythms. The electrical impulses may happen too fast, too slowly or erratically – causing the heart to beat too fast, too slowly or erratically.

Atherosclerotic cardiovascular disease, otherwise known as ASCVD, is caused by plaque buildup in arterial walls and refers to conditions that include: Coronary Heart Disease (CHD), such as myocardial infarction, angina, and coronary artery stenosis.

ASCVD Risk Estimator Plus

ASCVD (atherosclerotic cardiovascular disease) Risk Estimator Plus by the American College of Cardiology is a tool to estimate an individual's 10 year ASCVD risk. The optimal recommended use is to establish a reference point, evaluate the impact of interventions, monitor risk over time, and engage health care discussions and care planning.

The information required to estimate ASCVD risk includes age, sex, race, total cholesterol, HDL cholesterol, systolic blood pressure, blood pressure lowering medication use, diabetes status and smoking status. The ASCVD Risk Estimator Plus is available online at https://tools.acc.org/ascvd-risk-estimator-plus/#!/calculate/estimate/

The ASCVD measures are:

- Low-risk is less than 5%
- Borderline risk is 5% to 7.4%

- Intermediate risk is 7.5% to 19.9%
- High risk is 20% or more

Atherosclerosis is plaque (fatty deposit) build-up in the arteries. The deposits are made up of cholesterol, fatty substances, cellular waste products, calcium and fibrin (a clotting material in the blood). As plaque builds up, the wall of the blood vessel thickens. This narrows the channel within the artery reducing blood flow and lessening the amount of oxygen and other nutrients reaching the body.

Atrial fibrillation (AF) is a cardiac rhythm disorder characterized by uncontrolled atrial activation without effective atrial contraction. On the electrocardiogram (ECG), P waves are absent. AF is characterized by rapid oscillations or fibrillatory waves that vary in amplitude, shape and timing associated with an irregular ventricular response.

- **Paroxysmal AF** terminates spontaneously or with intervention within 7 days of onset. Episodes typically convert back to sinus rhythm within 48 hours.
- **Persistent AF** is continuous AF sustained beyond 7 days.

Atrial flutter is a rhythm disorder characterized by coordinated electrical activity in the atria, and the electrocardiogram (ECG) shows a saw tooth pattern of the flutter waves.

- Typical atrial flutter is localized to the right atrium.
- Atypical atrial flutter refers to atrial flutter arising in the left atrium.

Body mass index (BMI) is a person's weight in kilograms (or pounds) divided by the square of height in meters (or feet). A high BMI can indicate high body fatness. BMI screens for weight categories that may lead to health problems, but it does not diagnose the body fatness or health of an individual.

Cardiac amyloidosis is a heart condition that occurs when abnormally folded proteins, called amyloid fibrils, build up in the heart muscle. These deposits can make it difficult for the heart to function normally and can lead to heart failure.

Cardiac blood pool imaging, also known as cardiac blood pool scan or ejection fraction study, is a test that measures how well the heart pumps blood. During the test, a small amount of a radioactive substance called a tracer is injected into a vein. A gamma camera detects the radioactive material as it flows through the heart and lungs.

Cardiac transplant, also known as a heart transplant, is a surgical procedure that replaces a patient's damaged or diseased heart with a healthy donor heart. It's usually performed as a last resort for patients with advanced heart failure or severe coronary artery disease when other treatments have failed.

Cardiac/myocardial perfusion single photon emission computed tomography (CSPECT) study, also called cardiac stress-rest test, is used to evaluate the heart's blood supply. Two sets of images showing blood flow are obtained: the first following a period of rest and the second

following a period of stress. Myocardial perfusion SPECT is used to evaluate damage that might have been caused by a myocardial infarction and to assess the presence and extent of myocardial ischemia.

Cardiac sarcoidosis is an inflammatory granulomatous disease that can affect the heart. Up to one-quarter of the population with systemic sarcoidosis may have evidence of cardiac involvement. The clinical manifestations of cardiac sarcoidosis (CS) include heart block, atrial arrhythmias, ventricular arrhythmias and heart failure.

Cardiomyopathy is a disease of the heart muscle that makes it harder for the heart to pump blood to the rest of the body. Cardiomyopathy can lead to heart failure. The main types of cardiomyopathy include dilated, hypertrophic and restrictive cardiomyopathy.

Cardiotoxicity is damage to the heart and/or cardiovascular system (including heart valves and vessels) that can occur during or after cancer treatment or other treatments. It isn't common overall but may be common in people who take certain chemotherapy or targeted therapy drugs.

Cardioversion is a medical procedure that restores a normal heart rhythm. It's used to treat atrial fibrillation (AFib) and other types of irregular heartbeat, or arrhythmia.

Cerebrovascular disease is a group of conditions that affect blood flow and the blood vessels in the brain.

Chronic kidney disease (CKD) is classified into five stages based on glomerular filtration rate (GFR):

- Stage 1: GFR 90 mL/min/1.73 m² or more with evidence of kidney damage.
- Stage 2: GFR 60 to 89 mL/min/1.73 m² with evidence of kidney damage.
- Stage 3a: GFR 45 to 59 mL/min/1.73 m²
- Stage 3b: GFR 30 to 44 mL/min/1.73 m²
- Stage 4: GFR 15 to 29 mL/min/1.73 m²
- Stage 5: GFR less than 15 mL/min/1.73 m², indicating kidney failure.

Comorbidity is a condition of having two or more diseases at the same time.

Computed tomography angiography (CTA) is a medical test that combines a computed tomography (CT) scan with an injection of a special dye to produce pictures of blood vessels and tissues in a part of the body.

Congenital is a condition or trait present from birth.

Coronary artery bypass graft (CABG) is a surgical procedure performed to shunt blood around a narrowing or blockage in the coronary artery of the heart. This procedure involves attaching one end of a segment of blood vessel (eg, a vein of the leg) that was removed from another part of the body into the aorta, and the other end of the segment into the coronary artery beyond the obstructed area, to increase blood flow.

Coronary artery calcification (CAC) is a condition where calcium builds up in the walls of the coronary arteries, which supply blood to the heart.

Coronary artery calcium (CAC) scan is a computed tomography (CT) imaging test. It takes cross-sectional images of the vessels that supply blood to the heart muscle to check for the buildup of calcified plaque. CAC scan measures the calcium in the lining of your coronary arteries, called the **coronary artery calcium score**. The CAC score (sometimes called an Agatston score) is calculated based on the amount of plaque observed in the CT scan. It may be converted to a percentile rank based on age and gender. The score can help identify risk for heart disease.

Coronary artery disease (CAD) is caused by plaque buildup in the walls of the arteries that supply blood to the heart (called coronary arteries) and other parts of the body.

Coronary artery vasculitis (CAV) is a general term for inflammation of the coronary arteries, which can lead to a number of complications: aneurysm, occlusion, rupture, stenosis, pericarditis, myocarditis, and vascular thrombosis.

Coronary Agatston Calcium (CAC) Score is calculated based on the extent of coronary calcification detected by an unenhanced low-dose CT scan (routinely done when a patient has a cardiac CT). It provides risk stratification for a major adverse cardiac event (MACE).

Grading of coronary artery disease (based on total calcium score):

- No evidence of CAD is a calcium score of 0
- Minimal is a calcium score of 1 to 11
- Mild is a calcium score of more than 11 to 100
- Moderate is a calcium score of more than 100 to 400
- Severe is a calcium score more than 400

Assessment of cardiovascular risk:

- Asymptomatic adults with intermediate cardiovascular risk are considered class IIa
- Asymptomatic adults with low-to-intermediate cardiovascular risk are considered class IIb
- Asymptomatic adults that are low cardiovascular risk are considered class III
- Asymptomatic adults with diabetes mellitus and are 40 years of age or older are considered class IIa

Coronary computed tomography angiography (CCTA) uses an injection of iodine-containing contrast material and CT scanning to examine the arteries that supply blood to the heart and determine whether they have been narrowed. The images generated during a CT scan can be reformatted to create three-dimensional (3D) images that may be viewed on a monitor, printed on film or by a 3D printer, or transferred to electronic media.

Creatine kinase, also known as creatine phosphokinase or phosphocreatine kinase, is an enzyme expressed by various tissues and cell types. CK catalyses the conversion of creatine and uses adenosine triphosphate to create phosphocreatine and adenosine diphosphate.
Diaphoresis is a medical term for excessive sweating that's not caused by hot temperatures or physical activity. It's also known as secondary hyperhidrosis.
The Duke treadmill score (DTS) is a weighted index combining treadmill exercise time using standard Bruce protocol, maximum net ST segment deviation (depression or elevation), and exercise-induced angina. It was developed to provide prognostic information for the evaluation of suspected coronary heart disease.

- Duke Treadmill scores (typically range from -25 to +15) and associate risk:
  - Low risk is a score of +5 or more.
  - Moderate risk is a score of -10 to +4
  - High risk is a score of -11 or less

Dyspnea is the sensation of difficult, labored, or unpleasant breathing, often described as breathlessness, chest tightness, or difficulty breathing.
Ejection fraction (EF) is a measurement of how much blood the left ventricle pumps out with each contraction. It is measured in percentages with a normal measurement usually between 50 and 70%.
Electrocardiogram (ECG or EKG) is a test that measures and records the electrical activity of the heart. The ECG electrical activity is divided into the P wave, PR interval, QRS complex, QT interval, ST segment, T wave and U wave. An ECG is useful in establishing many cardiac diagnoses.
Functional Capacity is a measure of exercise tolerance (MET) that can be impacted by uncontrolled variables (familiarity with the exercise equipment, level of training and environmental conditions in the exercise laboratory). MET is a common unit in capacity calculations. Capacity is a strong predictor of mortality and cardiovascular complications across the adult population.
Global Risk of Cardiovascular Disease is a measure of the absolute risk of a coronary heart disease (CHD)-related event over 10 years. The event can be "hard" (eg, myocardial infarction [MI], sudden cardiac death) or "soft" (eg, chest pain). The risk estimate is based on major risk factors and is calculated using an empiric equation.
The risk levels are:

- Low risk if less than 10%
- Moderate risk is between 10% to 20%
- High risk is the 10 year absolute risk of more than 20%

Guideline directed medical therapy (GDMT) for Heart Failure is the cornerstone of pharmacological therapy for patients with heart failure with reduced ejection fraction (HFrEF)

and consists of the four main drug classes: renin-angiotensin system inhibitors, evidence-based β-blockers, mineralocorticoid inhibitors and sodium glucose cotransporter 2 inhibitors.

Heart failure (HF) (also known as **congestive heart failure [CHF]**) is a condition that develops when the heart is unable to pump enough blood for the body's needs. HF occurs when the heart cannot fill with enough blood or is too weak to pump properly. Decompensated heart failure is sudden worsening (exacerbation) of heart failure symptoms (eg, difficulty breathing, lower extremity edema, fatigue) to where the heart can no longer continue to compensate for its full function.

Heart failure with preserved ejection fraction (HFpEF) is a clinical syndrome that occurs when a patient has signs and symptoms of heart failure (HF) but a normal or near-normal left ventricular ejection fraction (LVEF).

Hemodynamic stability refers to the maintenance of adequate blood pressure and perfusion to ensure sufficient oxygen delivery to tissues without the need for excessive pharmacological support.

Table 1. Hemodynamic Assessment

Hemodynamic Parameters	Stable Circulation	Compensated Shock	Hypotensive Shock
Conscious Level	Clear and lucid	Clear and lucid	Restless, combative
Capillary refill	Brisk (less than 2 seconds)	Prolonged (greater than 2 seconds)	Very prolonged, mottled skin
Extremities	Warm and pink	Cool peripheries	Cold, clammy
Peripheral pulse	Good volume	Weak and thready	Feeble or absent
Heart Rate	Normal heart rate for age	Tachycardia for age	Severe tachycardia or bradycardia in late shock
Blood Pressure	Normal blood pressure and pulse pressure for age	Normal systolic pressure but rising diastolic pressure; Narrowing pulse pressure; Postural hypertension	Narrow pulse pressure (greater than or equal to 20 mm/Hg; Hypotension for age; Unrecordable blood pressure
Respiratory Rate	Normal respiratory rate for age	Tachypnea	Hyerpnea or Kussmaul's breathing (metabolic acidosis)
Urine Output	Normal	Reducing trend	Oliguria or anuria

Myocardial viability assessment is a procedure that helps determine if heart muscle is alive and can potentially recover function. Hibernation is a type of myocardial dysfunction that can be assessed as part of a viability assessment. Myocardial viability, a term used to describe heart muscle that is alive and potentially salvageable, even if it is dysfunctional. Viable myocardium can be hibernating or stunned. **Hibernation**, a state of myocardial dysfunction where the heart muscle is viable but has reduced contractility. Hibernation can be partially or completely reversible if blood flow is restored.

Hypercholesterolemia, also known as high cholesterol, is a condition where there are high levels of cholesterol in the blood. It's a type of dyslipidemia, hyperlipoproteinemia, and hyperlipidemia.

Hypoxemia is a medical term that refers to low levels of oxygen in the blood. It's not a condition or illness, but rather a sign of a breathing or blood flow problem.

Implantable cardiac defibrillator (ICD) is a battery-powered device placed under the skin that keeps track of the heart rate. Thin wires connect the ICD to the heart. If an abnormal heart rhythm (heart beating chaotically or much to fast) is detected, the device will deliver a shock to restore a normal heartbeat.

Indeterminate findings are inconclusive or insufficient for treatment planning.

Invasive coronary angiography/arteriography (ICA) is part of a heart (cardiac) catheterization and uses contrast material and X-rays for imaging of the arteries of the heart. It can define the presence and severity of a luminal obstruction of an epicardial coronary artery, including its location, length, diameter, and coronary blood flow.

Ischemia is a deficient supply of blood to a body part (such as the heart or brain) due to obstruction of the inflow of arterial blood.

Ischemic cardiomyopathy is a type of dilated cardiomyopathy. It is a term that is used when the heart muscle is weakened as a result of coronary artery disease or myocardial infarction.

Ischemic Heart Disease is a term given to heart problems caused by narrowed heart arteries. When arteries are narrowed, less blood and oxygen reaches the heart muscle, increasing the risk of myocardial infarction. This is also called coronary artery disease and coronary heart disease.

Left bundle branch block (LBBB) is a delay or obstruction along the electrical pathway to the heart's left ventricle, which can be caused by underlying heart problems. There are often no symptoms involved, however, symptomatic persons can experience syncope or pre-syncope, fatigue and shortness of breath.

Left ventricular dysfunction is the inability of the ventricle to fill to a normal end-diastolic volume, both during exercise as well as at rest, while left atrial pressure does not exceed 12 mm Hg.

Left ventricular ejection fraction (LVEF), also known as ejection fraction (EF), measures the amount of blood the left ventricle of the heart pumps out to the body with each heartbeat.

Left ventricular hypertrophy (LVH) is a term for a heart's left pumping chamber that has thickened and may not be pumping efficiently. In response to this pressure overload, the inner walls of the heart may respond by getting thicker. These thickened walls can cause the left ventricle to weaken, stiffen and lose elasticity, which may prevent healthy blood flow.

Light chain amyloidosis or primary amyloidosis, is the most common type of systemic amyloidosis. It is a protein misfolding and metabolism disorder in which insoluble fibrils are deposited in various tissues, causing organ dysfunction and eventually death; therefore, early detection is crucial.

Major adverse cardiovascular events (MACE) is a metric used to measure adverse cardiovascular outcomes. MACE includes a range of adverse events, such as aortic dissection, arrhythmias, endocarditis, heart failure, myocardial infarction, revascularization (PCI or CABG), stroke, thromboembolic events, total death.

Metabolic equivalents are defined as caloric consumption (by means of breathing) of an active individual compared with their resting basal metabolic rate. It is based on how much oxygen the body consumes during activity compared to how much oxygen the body consumes at rest.

Multigated acquisition (MUGA) scan is a noninvasvie nuclear imaging test also known as radionucleotide ventriculography (RVG) and gated equilibrium radionucleotide angiography (ERNA). that uses a radioactive isotope called technetium tagged to red blood cells (RBC) to evaluate the filling and pumping properties of the heart and physical structures by comparing the illuminated blood pool to the darkened walls on the image. Single or multiple measurements of left and/or right ventricular function are obtained. The method can be used to assess regional and global wall motion; cardiac chamber size and morphology; and ventricular systolic and diastolic function, including left and right ventricular ejection fractions.

Myocardial infarction (MI) is an acute episode of coronary heart disease marked by the death or damage of heart muscle due to insufficient blood supply to the heart, usually as a result of a coronary artery becoming blocked by a blood clot formed in response to a ruptured or torn fatty arterial deposit.

Myocardial ischemia occurs when blood flow to the heart is reduced, preventing the heart muscle from receiving enough oxygen. The reduced blood flow is usually the result of a partial or complete blockage of the heart's arteries (coronary arteries).

Myocardial perfusion imaging (MPI) uses an intravenously administered radio-pharmaceutical to depict the distribution of blood flow in the myocardium. Perfusion imaging identifies areas of relatively reduced myocardial blood flow associated with ischemia or scar. The relative distribution of perfusion can be assessed at rest, during cardiovascular stress or both. This test is often called a nuclear stress test.

Non-diagnostic is a result that does not lead to a confirmed diagnosis.

Obstructive CAD is the most common type of coronary heart disease. It occurs when plaque, a fatty substance, builds up in the coronary arteries, causing them to narrow. This gradual narrowing or closing of arteries that supply blood to the heart is also known as obstructive CAD.

Orthopnea describes shortness of breath that occurs while lying flat and is relieved by sitting or standing. Orthopnea can occur progressively over time or spontaneously, depending on the underlying cause. Individuals may describe needing to use multiple pillows to sleep due to breathlessness.

Pediatric approximate ages are defined by the US Department of Health (USDH), the Food and Drug Administration (FDA), and the American Academy of Pediatrics (AAP) as the following:

- Infancy, between birth and 2 years of age

- Childhood, from 2 to 12 years of age
- Adolescence, from 12 to 21 years of age, further defined by the AAP into:
    1. Early (ages 11–14 years)
    2. Middle (ages 15–17 years),
    3. Late (ages 18–21 years)
    4. Older ages may be appropriate for children with special healthcare needs.

Percutaneous coronary intervention (PCI) is a non-surgical procedure that uses a catheter (a thin flexible tube) to place a small structure called a stent to open up blood vessels in the heart that have been narrowed by plaque buildup, a condition known as atherosclerosis.
Peripheral vascular disease is a blood circulation disorder that causes the blood vessels outside of the heart and brain to narrow, block or spasm.
Premature Ventricular Contraction (PVC) is a too-early heartbeat that originates in the ventricles (lower pumping chambers of the heart) and disrupts the heart's normal rhythm.
Pre-test probability is a validated measure of the probability that an individual with chest pain has coronary artery disease (CAD). The test results are useful for making decisions on the appropriate diagnostic testing and planning based on an individual's characteristics. Characteristics measured include: age, sex, type of chest pain, comorbidities, smoking history and Coronary Calcium Scale (if available). The Diamond and Forrester model and the Duke clinical score are two examples of pre-test probability scoring tools often recommended to estimate the pretest probability of CAD when presenting with stable chest pain. Pretest probability tools may be found at https://qxmd.com/calculate/calculator_287/pre-test-probability-of-cad-cad-consortium
Low is less than 10%
Intermediate is 10% to 90%
High is more than 90%
Pulmonary hypertension is increased pressure in the pulmonary circulation that results in thickening and narrowing of the pulmonary arteries. Pulmonary hypertension can be either primary, the cause being idiopathic (unknown origin) or it can be secondary which occurs as a result of an identified medical condition.
Q wave represents initial depolarization of the interventricular septum and is defined as the first negative deflection following the P wave and occurring before the R wave.
Renal failure, also known as kidney failure, is a condition where the kidneys are no longer able to function properly and remove waste and excess water from the blood.
Renal insufficiency is poor function of the kidneys that may be due to a reduction in blood-flow to the kidneys caused by renal artery disease.
Sarcoidosis is a chronic disease of unknown cause, that is characterized by the formation of nodules, especially in the lymph nodes, lungs, bones and skin.

Single-photon emission computed tomography (SPECT) is a nuclear imaging test that uses a radioactive substance and a special camera to create 3D images of the body's organs, tissue and bones. The images show how blood flows to tissues and organs.

ST segment encompasses the region between the end of ventricular depolarization and beginning of ventricular repolarization on the ECG.

Stenosis is a narrowing or constriction of the diameter of a bodily passage or orifice.

Ischemic stroke occurs when blood flow through an artery that supplies oxygen-rich blood to the brain becomes blocked, causing the sudden death of localized brain cells. The blockage is often the result of a blood clot and less often due to an embolus.

Subendocardial infarct results in necrosis exclusively inolving the innermost aspect of the myocardium. Usually a subendocardial infarct is the result of a partially occluded epicardial coronary artery,

Syncope is loss of consciousness resulting from insufficient blood flow to the brain.

Transesophageal echocardiography (TEE) uses high-frequency sound waves (ultrasound) to make detailed pictures of the heart and the blood vessels that lead to and from it. Unlike a standard echocardiogram, the echo transducer that produces the sound waves for TEE is attached to a thin tube that passes through the mouth and throat, and into the esophagus. The esophagus is close to the upper chambers of the heart and clear images of the heart structures and valves can be obtained.

Transient ischemic attack (TIA) is a brief interruption of the blood supply to the brain that causes a temporary impairment of vision, speech or movement. The episode usually lasts for just a few moments but may be a warning sign of a full scale stroke.

Transplant coronary vasculopathy, also known as cardiac allograft vasculopathy (CAV), is a chronic disease that affects the blood vessels of a transplanted heart. CAV is a long-term complication that occurs when the immune system attacks the transplanted heart, causing the blood vessels to narrow and eventually block.

Transpositon of the Great Arteries is a birth defect of the heart in which the two main arteries carrying blood out of the heart – the main pulmonary artery and the aorta – are switched in position, or "transposed."

Transthyretin amyloid cardiomyopathy (ATTR-CM) is a rare but severe cause of restrictive cardiomyopathy caused by the accumulation of transthyretin fibrils in the myocardium. It can present with new or worsening heart failure or new conduction system disease.

Transthoracic echocardiogram (TTE) involves placing a device called a transducer on the chest. The device sends ultrasound waves through the chest wall to the heart. As the ultrasound waves bounce off the structures of the heart, a computer converts them into pictures on the computer screen. A TTE uses sound waves to create pictures of the heart chambers, valves, walls and the blood vessels attached to your heart. The test is also called echocardiography or diagnostic cardiac ultrasound.

Transthyretin amyloidosis is a type of systemic amyloidosis that causes misfolded transthyretin (TTR) protein to build up in the myocardium. ATTR-CM is caused by a protein called transthyretin, or TTR, that changes its shape and forms into fibrous clumps.
Troponin is a protein that's found in the cells of the heart muscle. Normally, troponin levels in blood are so low that only the most sensitive types of tests can measure them. But if the heart muscle is damaged, troponin leaks into the bloodstream, and the troponin blood levels will rise.
Valvular heart disease is a condition when any valve in the heart has damage or is diseased. When heart valves are diseased, the heart cannot effectively pump blood throughout the body and has to work harder to pump, either while the blood is leaking back into the chamber or against a narrowed opening. This can lead to heart failure, sudden cardiac arrest and death.
Vasculitis involves inflammation of the blood vessels. The inflammation can cause the walls of the blood vessels to thicken, which reduces the width of the passageway through the vessel. If blood flow is restricted, it can result in organ and tissue damage.
Ventricular fibrillation (VF) also called V-fib, is a serious cardiac rhythm disorder in which disordered electrical activity causes the heart's lower chambers (ventricles) to quiver or fibrillate, instead of contracting (beating) normally. This prohibits the heart from pumping blood, causing collapse and cardiac arrest. This type of arrhythmia is a life-threatening medical emergency.
Ventricular tachycardia (VT) is a rhythm disorder caused by abnormal electrical signals in the ventricles of the heart.

- **Monomorphic ventricular tachycardia** is ventricular tachycardia with stable QRS morphology.
- **Non-sustained ventricular tachycardia (NSVT)** is defined as 3 or more consecutive beats originating from the ventricle, lasting less than 30 seconds, at a rate more than 100 beats per minute (bpm).
- **Polymorphic ventricular tachycardia** is a ventricular rhythm, with a rate greater than 100 bpm with a varying QRS pattern that terminates spontaneously (causing syncope if lasting more than a few seconds) or will deteriorate into ventricular fibrillation, causing cardiac arrest.
- **Sustained ventricular tachycardia (SVT)** is defined as a ventricular rhythm more than 100 bpm (widened QRS complex with duration greater than 120 ms) lasting more than 30 seconds or requiring termination due to hemodynamic instability.

Viability assessment is an imaging study used to assess how much heart muscle has been damaged by a heart attack or heart disease. This test is used to determine whether a patient may need angiography, cardiac bypass surgery, heart transplant or other procedures.

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Disclaimer section

Purpose

The purpose of the HealthHelp's clinical guidelines is to assist healthcare professionals in selecting the medical service that may be appropriate and supported by evidence to safely improve outcomes. Medical information is constantly evolving, and HealthHelp reserves the right to review and update these clinical guidelines periodically. HealthHelp reserves the right to include in these guidelines the clinical indications as appropriate for the organization's program objectives. Therefore the guidelines are not a list of all the clinical indications for a stated procedure, and associated Procedure Code Tables may not represent all codes available for that state procedure or that are managed by a specific client-organization.

Clinician Review

These clinical guidelines neither preempt clinical judgment of trained professionals nor advise anyone on how to practice medicine. Healthcare professionals using these clinical guidelines are responsible for all clinical decisions based on their assessment. All Clinical Reviewers are instructed to apply clinical indications based on individual patient assessment and documentation, within the scope of their clinical license.

Payment

The use of these clinical guidelines does not provide authorization, certification, explanation of benefits, or guarantee of payment; nor do the guidelines substitute for, or constitute, medical advice. Federal and State law, as well as member benefit contract language (including definitions and specific contract provisions/exclusions) take precedence over clinical guidelines and must be considered first when determining eligibility for coverage. All final determinations on coverage and payment are the responsibility of the health plan. Nothing contained within this document can be interpreted to mean otherwise.

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National and Local Coverage Determination (NCD and LCD)

NOTICE
To ensure appropriate review occurs to the most current NCD and/or LCD, always defer to https://www.cms.gov/medicare-coverage-database/search.aspx.

Background

National Coverage Determinations (NCD) and Local Coverage Determinations (LCD) are payment policy documents outlined by the Centers for Medicare and Medicaid Services (CMS) and the government's delegated Medicare Audit Contractors (MACs) that operate regionally in jurisdictions.

CMS introduced variation between different jurisdictions/Medicare Audit Contractors (MACs) and their associated covered code lists with the transition to ICD 10. The variation resulted in jurisdictions independently defining how codes are applied for exclusions, limitations, groupings, ranges, etc. for the medical necessity indications outlined in the NCD and LCD. Due to this variation, there is an inconsistent use/application of codes and coverage determinations across the United States between the different MACs.

In addition, **WITHOUT** notice, CMS can change the codes that indicate medical necessity and the format of the coverage determinations/associated documents (eg, Articles). This is an additional challenge for organizations to keep up with ongoing, unplanned changes in covered codes and medical necessity indications.

Medical Necessity Codes

Due to the variation in code application between jurisdictions/MACs and that updates can happen without notification, HealthHelp is not able to guarantee full accuracy of the codes listed for any Coverage Determination, and advises that prior to use, the associated Coverage Determination Articles are reviewed to ensure applicability to HealthHelp's programs and any associated NCDs and LCDs.

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