

Contractor's Policy Number

99-05-R3

Contractor Name

CareFirst of Maryland Inc., Medicare Part A

Contractor Number

00190

Contractor Type

Fiscal Intermediary

LMRP Title

Cardiac Catheterization

AMA CPT Copyright Statement

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CMS (HCFA) National Coverage Policy

- Establishment of national policy supercedes all previous contractor policy statements, including Local Medical Policy coverage guidelines.
- Title XVIII of the Social Security Act, section 1862 (a) (7). This section excludes routine physical examinations.
- Title XVIII of the Social Security Act, section 1862 (a) (1) (A). This section allows coverage and payment for only those services that are considered to be medically reasonable and necessary for the diagnosis or treatment of illness or injury or to improve the functioning of a malformed body member.

Primary Geographic Jurisdiction

Maryland

Washington, DC

Secondary Geographic Jurisdiction

Alabama, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Missouri, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Wisconsin, Washington state, and Wyoming

CMS Region

Region III

CMS Consortium

Northeast

Original Policy Effective Date

August 27, 1999

Original Policy Ending Date

Revision Effective Date

10/01/2002

Revision Ending Date

LMRP Description

- Cardiac catheterization is a technique in which a flexible catheter is passed along veins or arteries into the heart and associated vessels for the measurement of physiological data and imaging of the heart and great vessels.
- This technique is utilized when there is a need to confirm the presence of a clinically suspected condition, define its anatomical and physiological severity,

and determine the presence of associated conditions.

- This need most commonly arises when clinical assessment suggests that the patient may benefit from an interventional procedure (i.e., coronary angioplasty, balloon valvuloplasty) or heart surgery.

Indications and Limitations of Coverage and/or Medical Necessity **Left Heart Catheterization**

A left heart catheterization may be considered medically necessary for patients with any of the following conditions:

- There is evidence of high risk on non-invasive testing:
 - § The exercise ECG testing documents an abnormal ST segment depression (magnitude equal to or greater than 1.5 mm depression, persistent post-exercise changes, depression in multiple leads),
 - § There is an abnormal systolic blood pressure response during progressive exercise, with sustained decrease of greater than 10 mmHg or flat blood pressure (less than or equal to 130 mmHg) associated with ECG evidence of ischemia,
 - § There are other potentially important determinants such as exercise induced ST segment elevation in leads other than aVR or exercise induced ventricular tachycardia,
 - § Thallium scintigraphy documents an abnormal thallium distribution in the anterior wall or more than one vascular region at rest or with exercise, or an abnormal distribution (ischemia) associated with increased lung uptake produced by exercise in the absence of severely depressed left ventricular function at rest,
 - § Radionuclide ventriculography documents a fall in ventricular ejection fraction of greater than or equal to 10 percent during exercise, or left ventricular ejection fraction of less than 50 percent at exercise or rest when suspected to be due to coronary artery disease; or,
 - § The stress echocardiography shows contraction abnormalities in the anterior wall or more than one vascular region at rest or with exercise.

- There is successful resuscitation from cardiac arrest that occurred without obvious precipitating cause, when a reasonable suspicion of coronary artery disease exists,
- There is the presence of two or more major risk factors and a positive exercise test in patients without known coronary heart disease,
- There is the presence of prior myocardial infarction with normal left ventricular function at rest, and evidence of ischemia by non-invasive testing,
- There is evidence of ischemia by non-invasive testing after coronary bypass surgery or percutaneous transluminal angioplasty,
- Evaluation before high-risk non-cardiac surgery in patients who have evidence of ischemia by non-invasive testing,
- Evaluation of patients after cardiac transplantation,
- Angina pectoris that has proven inadequately responsive to medical treatment, percutaneous transluminal angioplasty, thrombolytic therapy or coronary bypass surgery,

Note: “Inadequately responsive” is taken to mean that patient and physician agree that angina significantly interferes with a patient’s occupation or ability to perform his/her usual activities.

- Unstable angina pectoris which is defined as:
 - § Increased severity and frequency of chronic angina pectoris within the past two months, despite medical management, including onset of angina at rest,
 - § New onset (within two months) of angina pectoris which is severe or increases despite medical treatment; or,
 - § Acute coronary insufficiency, with pain at rest usually of greater than or equal to 15 minutes duration, associated with ST-T wave changes, within the preceding two weeks.
- Prinzmetal’s or variant angina pectoris (pain experienced at rest),
- Any angina pectoris in association with any of the following:
 - § Evidence of high risk as manifested by exercise ECG testing in addition to failure to complete Stage II of Bruce protocol or equivalent workload (less than or equal to 6.5 METS with other

protocols) due to ischemic cardiac symptoms,

§ Exercise heart rate at onset of limiting ischemia symptoms of less than 120/minutes (without beta blockers),

§ Evidence of high risk as manifested by radionuclide exercise testing (thallium scintigraphy or radionuclide ventriculography); or,

§ Stress echocardiography showing contraction abnormalities in the anterior wall or more than one vascular region at rest or with exercise.

- The coexistence of a history of myocardial infarction, a history of hypertension and ST segment depression on the baseline ECG,
- In disease affecting the aorta when knowledge of the presence or extent of coronary artery involvement is necessary for management (for example, the presence of aortic aneurysm or ascending aortic dissection), arteritis or homozygous type II hypercholesterolemia in which coronary artery involvement is suspected,
- The presence of left ventricular failure without obvious cause and adequate left ventricular systolic function,
- When patients with hypertrophic cardiomyopathy have angina pectoris uncontrolled by medical therapy, or are to undergo surgery for outflow obstruction,
- The presence of dilated cardiomyopathy,
- Recent blunt trauma to the chest and evidence of acute myocardial infarction in patients who have no evidence of preexisting coronary artery disease,
- When patients are to undergo other cardiac surgical procedures, such as pericardiectomy or removal of chronic pulmonary emboli,
- Intolerance to medical therapy because of uncontrollable side effects; or,
- Episodic pulmonary edema or symptoms of ventricular failure without obvious cause.

§ Any angina pectoris associated with a series of progressively more abnormal exercise ECG or other non-invasive stress tests; or,

§ Any angina pectoris in a patient that cannot be risk stratified by

other means as a result of an inability to exercise because of an amputation, arthritis, limb deformity, or severe peripheral vascular disease.

A left heart catheterization may be considered medically necessary for **atypical chest pain of uncertain etiology** with **any** of the following situations/conditions:

Note: Atypical chest pain is defined as single or recurrent episodes of chest pain suggestive, but not typical, of the pain of myocardial ischemia. This discomfort may have some features of ischemic pain together with features of non-cardiac pain. Chest pain that has no features of cardiac pain, as well as typical chest pain of myocardial ischemia or angina as determined by a careful medical history, is excluded from definition.

- Atypical chest pain when ECG or radionuclide stress test indicates that high risk coronary disease may be present;
- When there are associated symptoms or signs of abnormal left ventricular function or failure;
- Atypical chest pain when non-invasive studies are questionable or cannot be adequately performed; or,
- When non-invasive tests are negative but symptoms are severe and management requires that significant coronary artery disease be excluded.

A left heart catheterization may be considered medically necessary **after a myocardial infarction (greater than 10 days and up to eight weeks)** with **any** of the following situations/conditions:

- Angina pectoris occurring at rest or with minimal activity,
- In selected patients, heart failure during the evolving phase, or left ventricular ejection fraction 45 percent, primarily when associated with some manifestation of recurrent myocardial ischemia or with significant ventricular arrhythmias,
- Evidence of myocardial ischemia on laboratory testing, exercise or pharmacologic induced ischemia (with or without exercise induced angina pectoris), manifested by greater than or equal to 1 mm of ischemic ST segment depression or exercise induced reversible thallium perfusion

defect or defects, or exercise induced reduction in the ejection fraction or wall motion abnormalities on radionuclide ventriculographic studies; or,

- Mild angina pectoris.

A left heart catheterization may be considered medically necessary for **valvular heart disease** with **any** of the following situations/conditions:

- When valve surgery is being considered in a patient with chest discomfort or ECG changes, or both, suggesting coronary artery disease,
- When valve surgery is being considered in female patients who are postmenopausal,
- When aortic or mitral valve surgery is being considered,
- When one or more major risk factors for coronary artery disease are present; such as heavy smoking history, diabetes mellitus, hypertension, hyperlipidemia, strong family history of premature coronary artery disease; or,
- In the presence of infective endocarditis when there is evidence of coronary embolism.

Right Heart Catheterization

Right heart catheterization is not routinely part of a left heart catheterization coronary angiography, but is an associated procedure in a significant number of patients. A right heart catheterization may be considered medically necessary for patients with **any** of the following situations/conditions:

- Patients with known history of congestive heart failure;
- Patients with cardiomyopathy documented by non-invasive work-up;
- Patients with known or suspected valvular heart disease;
- Patients with known or suspected intracardiac shunt (i.e., shortness of breath), suspected to have cardiac origin; or,
- Patients in whom pulmonary artery disease is known or suspected (i.e., pulmonary hypertension, status post pulmonary emboli).

Note: It is expected that the medical necessity of the right heart catheterization and the physician's evaluation of a particular patient should be documented on the patient record prior to the procedure being performed.

Combined Heart Catheterization Indications

Combined heart catheterization (right and left) can be useful in providing cardiac output and hemodynamics that may be important therapeutic directives. Medicare expects the specific indications for the individual right and left heart catheterizations to be met prior to performing the combined heart catheterization.

CPT/HCPCS Section & Benefit Category

Medicine

Type(s) of Bill

11X, 13X, 14X, 18X, 21X, 28X, 71X, 83X, 85X

Revenue Code(s)

480, 481

CPT/HCPCS Codes

Refer to the *Current Procedural Terminology, CPT* for a complete description of the following CPT codes:

33967	Insert IA, percut device
93501	Right heart catheterization
93510	Left heart catheterization
93511	Left heart catheterization
93514	Left heart catheterization
93524	Left heart catheterization
93526	Right and left heart catheters
93527	Right and left heart catheters
93528	Right and left heart catheters
93529	Right, left heart catheterization
93530	Right heart cath, congenital
93531	Right and left heart cath, congenital
93532	Right and left heart cath, congenital
93533	Right and left heart cath, congenital

93539 Injection cardiac cath
 93540 Injection cardiac cath
 93541 Injection for lung angiogram
 93542 Injection for heart x-rays
 93543 Injection for heart x-rays
 93544 Injection for aortography
 93545 Inject for coronary x-rays
 93555 Imaging cardiac cath

93556 Imaging cardiac cath

ICD-9-CM Codes That Support Medical Necessity

Medicare is establishing the following limited coverage for codes 93501, 93526, 93527, 93528, 93529, 93530, 93531, 93532, 93533, 93541, and 93542.

Covered for:

394.0-394.2 Diseases of mitral valve*
 395.0-395.2 Diseases of aortic valve*
 396.0-396.3 Diseases of mitral and aortic valves*
 396.8
 398.0 Rheumatic myocarditis
 398.90-398.91 Other and unspecified rheumatic heart diseases
 398.99
 415.11 Iatrogenic pulmonary embolism and infarction
 415.19
 416.0 Primary pulmonary hypertension
 416.8 Other chronic pulmonary heart diseases
 423.2 Constrictive pericarditis
 423.9 Unspecified disease of pericardium. Note: Use this diagnosis code to report cardiac tamponade.
 424.0-424.3 Valve disorders
 425.0-425.5 Cardiomyopathy
 425.7-425.9
 428.0 Congestive heart failure, unspecified
 428.1 Heart failure

428.20	Systolic heart failure, unspecified
428.21	Acute
428.22	Chronic
428.23	Acute or chronic
428.30	Diastolic heart failure, unspecified
428.31	Acute
428.32	Chronic
428.33	Acute of chronic
428.40	Combined systolic and diastolic heart failure, unspecified
428.41	Acute
428.42	Chronic
428.43	Acute or chronic
428.9	Heart failure unspecified
429.71	Acquired cardiac septal defect
745.4	Ventricular septal defect
745.5	Ostium secundum type atrial septal defect
746.6	Congenital mitral insufficiency
V12.50	Unspecified circulatory disease

Medicare is establishing the following limited coverage for codes 93510-93511, 93514, 93524, 93539, 93540, 93544, and 93545.

Covered for:

394.0-394.2	
395.0-395.2	Diseases of aortic valve
396.0-396.3	
396.8	
401.1	Benign essential hypertension
402.10-402.11	Benign hypertensive heart disease
402.90-402.91	Unspecified hypertensive heart disease
410.00-410.02	Acute myocardial infarction of anterolateral wall
410.10-410.12	Acute myocardial infarction of other anterior wall
410.20-410.22	Acute myocardial infarction of inferolateral wall

- 410.30-410.32 Acute myocardial infarction of inferoposterior wall
- 410.40-410.42 Acute myocardial infarction of other inferior wall
- 410.50-410.52 Acute myocardial infarction of other lateral wall
- 410.60-410.62 Acute myocardial infarction, true posterior wall
- 410.70-410.72 Acute myocardial infarction, subendocardial
- 410.80-410.82 Acute myocardial infarction of other specified sites
- 410.90-410.92 Acute myocardial infarction of unspecified site
- 411.0 Postmyocardial infarction syndrome
- 411.1 Intermediate coronary syndrome
- 411.81 Acute coronary occlusion without myocardial infarction
- 411.89
- 412 Old myocardial infarction
- 413.0-413.1 Angina pectoris
- 413.9 Other and unspecified angina pectoris
- 414.00-414.05 Coronary atherosclerosis
- 414.06 Of coronary artery of transplanted heart
- 414.8-414.9
- 424.0-424.1 Mitral valve and aortic valve disorders
- 745.5 Ostium secundum type atrial septal defect
- V12.50 Personal history of unspecified circulatory disease
- V12.51 Personal history of venous thrombosis and embolism
- V42.1 Organ or tissue replaced by transplant, heart
- V42.2 Organ or tissue replaced by transplant, heart valve
- V43.2 Organ or tissue replaced by other means, heart
- V43.3 Organ or tissue replaced by other means, heart valve
- V45.81 Other postsurgical status, aortocoronary bypass
- V45.82 Other postsurgical status, percutaneous transluminal coronary angioplasty

Medicare is establishing expanded coverage for procedure code 93543.

Covered for:

- 394.0-394.2 Diseases of mitral valve
- 395.0-395.2 Diseases of aortic valve

- 396.0-396.3 Diseases of mitral and aortic valves
- 396.8 Multiple involvement of mitral and aortic valves
- 398.0 Rheumatic myocarditis
- 398.90-398.91 Other and unspecified rheumatic heart diseases
- 398.99
- 401.1 Benign essential hypertension
- 402.10 Without heart failure
- 402.11 With heart failure
 - 402.90 Without heart failure
 - 402.91 With heart failure
- 410.00-410.02 Acute myocardial infarction of anterolateral wall
- 410.00-410.12 Acute myocardial infarction of anterior wall
- 410.20-410.22 Acute myocardial infarction of inferolateral wall
- 410.30-410.32 Acute myocardial infarction of inferoposterior wall
- 410.40-410.42 Acute myocardial infarction of inferior wall
- 410.50-410.52 Acute myocardial infarction of lateral wall
- 410.60-410.62 Acute myocardial infarction of true posterior wall
- 410.70-410.72 Acute myocardial infarction, subendocardial
- 410.80-410.82 Acute myocardial infarction, other unspecified sites
- 410.90-410.92 Acute myocardial infarction, unspecified site
- 411.0 Post myocardial infarction syndrome
- 411.1 Intermediate coronary syndrome
- 411.81 Acute coronary occlusion without myocardial infarction
- 411.89
- 412 Old myocardial infarction
- 413.0-413.1 Angina pectoris
- 413.9 Other and unspecified angina pectoris
 - 414.00-414.05 Coronary atherosclerosis
- 414.06 Of coronary artery of transplanted heart
- 414.8-414.9
- 415.11 Iatrogenic pulmonary embolism and infarction
- 415.19
- 416.0 Primary pulmonary hypertension

416.8	Other chronic pulmonary heart diseases
423.2	Constrictive pericarditis
423.9	Unspecified diseases of pericardium
424.0-424.3	Valve disorders
425.0-425.5	Cardiomyopathy
425.7-425.9	
428.0	Congestive heart failure, unspecified
428.1	Heart failure
428.20	Systolic heart failure, unspecified
428.21	Acute
428.22	Chronic
428.23	Acute or chronic
428.30	Diastolic heart failure, unspecified
428.31	Acute
428.32	Chronic
428.33	Acute or chronic
428.40	Combined systolic and diastolic heart failure, unspecified
428.41	Acute
428.42	Chronic
428.43	Acute of chronic
428.9	Heart failure unspecified
429.71	Acquired cardiac septal defect
745.7-745.5	Ventricular septal defect
746.6	Congenital mitral insufficiency
V12.50	Unspecified circulatory disease
V12.51	Personal history of venous thrombosis and embolism
V42.1	Organ or tissue replaced by transplant, heart
V42.2	Organ or tissue replaced by transplant, heart valve
V43.2	Organ or tissue replaced by transplant, other means, heart
V43.3	Organ or tissue replaced by transplant, other means, heart valve
V45.81	Other post surgical status, aortocoronary bypass
V45.82	Other post surgical status, percutaneous transluminal coronary angioplasty

Medicare is establishing the following limited coverage for codes 93555 and 93556.

Covered for:

- 394.0-394.2 Diseases of mitral valve
- 395.0-395.2 Diseases of aortic valve
- 396.0 Mitral valve stenosis and aortic valve stenosis
- 396.1 Mitral valve stenosis and aortic valve insufficiency
- 396.2 Mitral valve insufficiency and aortic valve stenosis
- 396.3 Mitral valve insufficiency and aortic valve insufficiency
- 396.8
- 398.0 Rheumatic myocarditis
- 398.90-398.91 Other and unspecified rheumatic heart diseases
- 398.99
- 401.1 Benign essential hypertension
 - 402.10 Without heart failure
 - 402.11 With heart failure
- 402.90 Without heart failure
- 402.91 With heart failure
- 410.00-410.02 Acute myocardial infarction of anterolateral wall
- 410.10-410.12 Acute myocardial infarction of other anterior wall
- 410.20-410.22 Acute myocardial infarction of inferolateral wall
- 410.30-410.32 Acute myocardial infarction of inferoposterior wall
- 410.40-410.42 Acute myocardial infarction of other inferior wall
- 410.50-410.52 Acute myocardial infarction of other lateral wall
- 410.60-410.62 Acute myocardial infarction, true posterior wall
- 410.70-410.72 Acute myocardial infarction, subendocardial
- 410.80-410.82 Acute myocardial infarction of other specified sites
- 410.90-410.92 Acute myocardial infarction of unspecified site
- 411.0 Post myocardial infarction syndrome
- 411.1 Intermediate coronary syndrome*
- 411.81 Acute coronary occlusion without myocardial infarction
- 411.89

412	Old myocardial infarction
413.0-413.1	Angina pectoris
413.9	Other and unspecified angina pectoris
	414.00-414.05 Coronary atherosclerosis
414.06	Of coronary artery of transplanted heart
414.8-414.9	
415.11	Iatrogenic pulmonary embolism and infarction
415.19	
416.0	Primary pulmonary hypertension
416.8	Other chronic pulmonary heart diseases
423.2	Constrictive pericarditis*
423.9	Unspecified disease of pericardium*
424.0-424.3	Valve disorders
425.0-425.5	Cardiomyopathy
425.7-425.9	
428.0	Congestive heart failure, unspecified
428.1	Heart failure
	428.20 Systolic heart failure, unspecified
	428.21 Acute
	428.22 Chronic
	428.23 Acute or chronic
	428.30 Diastolic heart failure, unspecified
	428.31 Acute
	428.32 Chronic
	428.33 Acute or chronic
	428.40 Combined systolic and diastolic heart failure, unspecified
	428.41 Acute
	428.42 Chronic
	428.43 Acute or chronic
428.9	Heart failure unspecified
429.71	Acquired cardiac septal defect
745.4	Ventricular septal defect

745.5	Ostium secundum type atrial septal defect
V12.50	Personal history of unspecified circulatory disease
V12.51	Personal history of venous thrombosis and embolism
V42.1	Organ or tissue replaced by transplant, heart
V42.2	Organ or tissue replaced by transplant, heart valve
V43.2	Organ or tissue replaced by other means, heart
V43.3	Organ or tissue replaced by other means, heart valve
V45.81	Other postsurgical status, aortocoronary bypass
V45.82	Other postsurgical status, percutaneous transluminal coronary angioplasty

Diagnosis that Support Medical Necessity

N/A

ICD-9 Codes that DO NOT Support Medical Necessity

N/A

Diagnosis that DO NOT Support Medical Necessity

N/A

Reasons for Denial

- The service does not follow the guidelines of this policy,
- The service is for screening purposes,
- The service is not medically necessary, and;
- The medical record does not verify that the service described by the HCPCS code was provided.

Non-covered ICD-9-CM Code(s)

All diagnoses not listed in the “ICD-9-CM Codes That Support Medical Necessity” section of this policy.

Non-covered Diagnosis

N/A

Coding Guidelines

- For each procedure performed, an appropriate HCPCS code should appear on the claim with the revenue code.
- Coverage criteria must be met for these services to be reimbursed by Medicare.
- Diagnosis(es) must be present on any claim submitted, and must be coded to the highest level of specificity.
- The diagnosis code(s) must be representative of the patient's condition.
- If an injection procedure is performed during a cardiac catheterization, the facility should bill the cardiac catheterization code, one or more of the injection codes, and the corresponding Supervision and Interpretation code. Each injection code has only one corresponding Supervision and Interpretation code. Multiple injection procedures may be performed during a cardiac catheterization. When this occurs, hospitals should bill all of the applicable injection codes, but report each of the applicable Supervision and Interpretation codes (93555 and/or 93556) only once on a bill. Both codes, 93555 and 93556, may be reported on the same bill as long as each code is reported only once, regardless of the number of injection procedures performed.

Documentation Requirements

Documentation supporting the medical necessity should be legible, maintained in the patient's medical record, and available to Medicare upon request.

Other Comments

Source of Information and Basis for Decision

TrailBlazer Medicare B Newsletters:

No. 020, October 3, 1997

No. 021, November 30, 1997

No. 029, November 30, 1998

No. 030, February 10, 1999

No. 033, June 15, 1999

No. 02-027, June 28, 2002

Advisory Committee Notes

This policy does not reflect the sole opinion of the contractor or Contractor Medical Director. Although the final decision rests with the contractor, this policy was developed in cooperation with advisory groups, which includes representatives from the appropriate specialty (ies).

Advisory Committee meeting date:

Start Date of Comment Period

03/ 26/1999

End Date of Comment Period

05/10/1999

Start Date of Notice Period

07/28/1999

Revision History

<u>Number</u>	<u>Date</u>	<u>Changes</u>
99-05-R3	10/01/2002	The following codes (402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93) have been added to the limited coverage for HCPCS codes 93501, 93526-93533, and 93541-93542.
99-05-R2	09/12/2001	Expanded coverage for HCPCS codes 93543, 93555

and 93556. See Provider Bulletin, 09/12/2001, for specific changes. Placed in new format and *CPT* descriptors shortened.

99-05-R1 11/17/2000 Limited coverage expanded
to maintain consistency

intermediary and the carrier. in policies between the

See 11/17/2000 Provider Bulletin for specific changes.

THIS BULLETIN SHOULD BE SHARED WITH ALL HEALTH CARE PRACTITIONERS AND MANAGERIAL MEMBERS OF THE PROVIDER/SUPPLIER STAFF. BULLETINS ISSUED AFTER OCTOBER 1, 1999 ARE AVAILABLE AT NO COST FROM OUR WEBSITE AT www.marylandmedicare.com

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