

WellCare Health Plans, Inc.
The WellCare Group of Companies

Clinical Coverage Guideline



WellCare Prescription Insurance, Inc.

*'Ohana Health Plan, a plan offered by
WellCare Health Insurance of Arizona, Inc.*



WellCare Health Insurance of Illinois, Inc.

WellCare Health Insurance of New York, Inc.

Harmony Behavioral Health, Inc.

Harmony Behavioral Health of Florida, Inc.

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WellCare of Georgia, Inc.

Harmony Health Plan of Illinois, Inc.

WellCare of Ohio, Inc.

Adenosine Stress Test

Guideline Number: HS-146

Original Effective Date: 12/3/2009

Revision Date: 12/28/2010

The Clinical Coverage Guideline is intended to supplement certain standard WellCare benefit plans. The terms of a member's particular Benefit Plan, Evidence of Coverage, Certificate of Coverage, etc., may differ significantly from this Coverage Position. For example, a member's benefit plan may contain specific exclusions related to the topic addressed in this Clinical Coverage Guideline. When a conflict exists between the two documents, the Member's Benefit Plan always supersedes the information contained in the Clinical Coverage Guideline. Additionally, Clinical Coverage Guidelines relate exclusively to the administration of health benefit plans and are NOT recommendations for treatment, nor should they be used as treatment guidelines. The application of the Clinical Coverage Guideline is subject to the benefit determinations set forth by the Centers for Medicare and Medicaid Services (CMS) National and Local Coverage Determinations and state-specific Medicaid mandates, if any.

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DISCLAIMER

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APPLICATION STATEMENT

The application of the Clinical Coverage Guideline is subject to the benefit determinations set forth by the Centers for Medicare and Medicaid Services (CMS) National and Local Coverage Determinations and state-specific Medicaid mandates, if any.

CLINICAL COVERAGE GUIDELINE

Performance of an adenosine stress test in lieu of a standard exercise stress test is considered medically necessary if ANY of the following criteria are met:

- Inability to perform adequate exercise due to non-cardiac physical limitations or lack of motivation; **OR**,
- Baseline electrocardiographic (ECG) abnormalities such as:
 - 426.3 left bundle branch block (LBBB)
 - 426.7 ventricular pre-excitation (Wolff-Parkinson-White Syndrome)
 - V45.1 permanent ventricular pacing; **OR**,
- Risk stratification of clinically stable members after acute myocardial infarction (greater than or equal to a day) or following presentation to the emergency department with a presumptive acute coronary syndrome
 - 410.00 – 410.92 acute myocardial infarction
 - 411.1 presumptive acute coronary syndrome

Qualifying indications for the use of the adenosine stress test are as follows:

- Detection of coronary artery disease (CAD) in members with an intermediate pretest probability of CAD based on age, gender, and symptoms, or in members with high-risk factors for CAD (i.e., diabetes mellitus, peripheral or cerebrovascular disease); **OR**,
- Risk stratification of post-myocardial infarction member before discharge (submaximal test, often defined as 70% of the age-adjusted MPHR) at 4-6 days*, or soon after discharge (symptom-limited at 14-21 days), and again 6-8 weeks after uncomplicated MI); **OR**,
- To assess for the presence or absence of coronary disease, appropriate heart rate and/or blood pressure response for cardiac transplant members; **OR**,
- Risk stratification of members with chronic stable CAD into a low-risk category that can be managed medically or a high-risk category that should be considered for coronary revascularization; **OR**,
- Evaluation of members after coronary revascularization if there is evidence of perioperative complications; **OR**,

- Risk stratification of low-risk coronary syndrome members (without active ischemia and/or heart failure) 6-12 hours after presentation or intermediate-risk acute coronary syndrome members 1-3 days after presentation; **OR**,
- Risk stratification before non-cardiac surgery in members with known CAD, diabetes mellitus, peripheral or cerebrovascular disease; **OR**,
- Initial diagnosis workup for a member that presents with abnormal signs and symptoms such as chest pain, palpitations, dyspnea, etc, which may suggest a cardiac origin (including those with RBBB or less than 1 mm ST depression, with an intermediate pretest probability of CAD); **OR**,
- Initial evaluation of members with new onset of arrhythmias; **OR**,
- Initial evaluation of a member with an old MI in which a workup has not been previously performed; **OR**,
- Evaluation of member presenting with recent changes in an ECG; **OR**,
- Evaluation of a member with known CAD that presents with new symptoms such as increasing shortness of breath, palpitations, change in EKG, etc; **OR**,
- Evaluation of other symptomatology which may indicate a cardiac origin especially in those members who have a history of a MI, coronary artery bypass grafting (CABG) or percutaneous coronary intervention (PCI), or members who are being treated medically after a positive stress test or cardiac catheterization; **OR**,
- To evaluate the efficacy of therapeutic interventions (anti-ischemic drug therapy or coronary revascularization) and in tracking subsequent risk based on serial changes in myocardial perfusion in members with known CAD

Adenosine stress tests are contraindicated for members with the following conditions:

- Asthmatic members with ongoing wheezing; OR,
- Second- or third- degree AV block without pacemaker or sick sinus syndrome; OR,
- Systolic blood pressure less than 90mm Hg; OR,
- Recent use of dipyridamole or dipyridamole-containing medications; OR,
- Methyl xanthenes such as aminophylline caffeine or theobromine block the effect of adenosine and should be held for at least 12 hours prior to the test; OR,
- Known hypersensitivity to adenosine; OR,
- Unstable acute myocardial infarction or acute coronary syndrome; OR,
- Profound sinus bradycardia (heart rates < 40 beats/minute)

BACKGROUND

Adenosine induces direct coronary arteriolar vasodilation through specific activation of the A2A receptor. This results in a 3.5- to 4-fold increase in myocardial blood flow. Myocardial regions supplied by stenotic coronary arteries have an attenuated hyperemic response. Depending upon the severity of coronary stenosis and coronary flow reserve limitation, a relative flow heterogeneity is induced.

Adenosine generally does not cause myocardial ischemia. However, in a small percentage of patients with severe coronary artery disease (CAD), true ischemia may be induced because of a coronary steal phenomenon. Since the myocardial tracer uptake is proportional to the regional myocardial blood flow, a heterogeneous distribution of radiotracer occurs in the myocardium.

Testing Procedure (from American Society of Nuclear Cardiology, 2009)

1. Adenosine infusion should be given at a rate of 140 mcg/kg/min.

NOTE: For members deemed to be at a higher risk for complications (borderline hypotension, controlled asthma), adenosine infusion may be started at a lower dose (70 to 100 mcg/kg/min). If this dose is tolerated well for 1 minute, the infusion rate should be increased to 140 mcg/kg/min. The radiotracer should be injected halfway through the protocol (e.g., at 2 minutes for a 4-minute protocol, and at 3 minutes for a 6-minute protocol)

2. Obtain a 12-lead ECG every minute during the adenosine infusion
3. Blood pressure should be monitored every minute during infusion

4. Blood pressure should be monitored for 3-5 minutes into recovery or until stable
5. Monitor the ECG continuously during the adenosine test until the resting heart rate is less than 100 beats/minute or dynamic exercise-induced ST-segment changes have resolved

Indications for Reversal of Adenosine Infusion

1. Severe hypotension (systemic blood pressure < 80mm Hg)
2. Development of symptomatic, persistent second-degree or complete heart block
3. Wheezing
4. Severe chest pain associated with ST depression of 2 mm or greater
5. Signs of poor perfusion (pallor, cyanosis, cold skin)
6. technical problems with the monitoring equipment
7. Member’s request to stop

Pretest Probability of Coronary Artery Disease by Age, Gender, and Symptoms

Table B1. Pre-Test Probability of CAD by Age, Gender, and Symptoms*

Age (yrs)	Gender	Typical/Definite Angina Pectoris	Atypical/Probable Angina Pectoris	Nonanginal Chest Pain	Asymptomatic
30–39	Men	Intermediate	Intermediate	Low	Very low
	Women	Intermediate	Very low	Very low	Very low
40–49	Men	High	Intermediate	Intermediate	Low
	Women	Intermediate	Low	Very low	Very low
50–59	Men	High	Intermediate	Intermediate	Low
	Women	Intermediate	Intermediate	Low	Very low
60–69	Men	High	Intermediate	Intermediate	Low
	Women	High	Intermediate	Intermediate	Low

High: Greater than 90% pre-test probability; Intermediate: Between 10% and 90% pre-test probability; Low: Between 5% and 10% pre-test probability; Very Low: Less than 5% pre-test probability. *No data exist for patients less than 30 years or greater than 69 years, but it can be assumed that prevalence of CAD increases with age. In a few cases, patients with ages at the extremes of the decades listed may have probabilities slightly outside the high or low range.

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CODING

CPT®* Codes

Myocardial perfusion and cardiac blood pool imaging studies may be performed at rest and /or during stress. When performed during exercise and or pharmacologic stress, the appropriate stress testing code from 93015 – 93018 should be reported in addition to 78451-78454 or 78472-78492.

78451 Myocardial perfusion imaging, tomographic (SPECT) (including attenuation correction, qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); single study, at rest or stress (exercise or pharmacologic)

78452 Myocardial perfusion imaging, tomographic (SPECT) (including attenuation correction, qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); multiple studies, at rest and/or stress (exercise or pharmacologic) and/or redistribution and/or rest reinjection

78453 Myocardial perfusion imaging, planar (including qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); single study, at rest or stress (exercise or pharmacologic)

- 78454** Myocardial perfusion imaging, planar (including qualitative or quantitative wall motion, ejection fraction by first pass or gated technique, additional quantification, when performed); multiple studies, at rest and/or stress (exercise or pharmacologic) and/or redistribution and/or rest reinjection
- 78472** Cardiac blood pool imaging, gated equilibrium; planar, single study at rest or stress (exercise and/or pharmacologic), wall motion study plus ejection fraction, with or without additional quantitative processing
- 78473** Cardiac blood pool imaging, gated equilibrium; multiple studies, wall motion study plus ejection fraction, at rest and stress (exercise and/or pharmacologic), with or without additional quantification
- 78478+** Myocardial perfusion study with wall motion, qualitative or quantitative study
+(List separately in addition to code for primary procedure)
- 78480+** Myocardial perfusion study with ejection fraction
+(List separately in addition to code for primary procedure)
- 78481** Cardiac blood pool imaging, (planar), first pass technique; single study, at rest or with stress (exercise and/or pharmacologic), wall motion study plus ejection fraction, with or without quantification
- 78483** Cardiac blood pool imaging, (planar), first pass technique; multiple studies, at rest and with stress (exercise and/or pharmacologic), wall motion study plus ejection fraction, with or without quantification
- 78494** Cardiac blood pool imaging, gated equilibrium, SPECT, at rest, wall motion study plus ejection fraction, with or without quantitative processing
- 78496+** Cardiac blood pool imaging, gated equilibrium, single study, at rest, with right ventricular ejection fraction by first pass technique (+List separately in addition to code for primary procedure)
- 93015** Cardiovascular stress test using maximal or sub maximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; with physician supervision only, with Interpretation and report
- 93016** Cardiovascular stress test using maximal or sub maximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; with physician supervision only, without interpretation and report
- 93017** Cardiovascular stress test using maximal or sub maximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; tracing only, without interpretation and report
- 93018** cardiovascular stress test using maximal or sub maximal treadmill or bicycle exercise, continuous electrocardiographic monitoring, and/or pharmacological stress; interpretation and report only

ICD-9-CM Procedure Codes

- 89.44** Other cardiovascular stress test
- 99.29** Injection or infusion of other therapeutic or prophylactic substance

HCPCS Code

- J0152** Injection, Adenosine for diagnostic use, 30 mg (not to be used to report any adenosine phosphate compounds)

ICD-9-CM Diagnosis Codes

250.00 – 250.93	Diabetes mellitus
391.0 – 391.9	Rheumatic fever with heart involvement
393 – 398.99	Chronic rheumatic heart disease
410.00 – 410.92	Acute myocardial infarction
411.0 – 411.89	Other acute/subacute ischemic heart disease
412	Old myocardial infarction
413.0 – 413.9	Angina pectoris
414.00 – 414.07	Coronary atherosclerosis
414.2	Chronic total occlusion of coronary artery
414.8	Other chronic ischemic heart disease
414.9	Chronic ischemic heart disease, unspecified
424.0 – 424.3	Other diseases of endocardium
425.0 – 425.9	Cardiomyopathy
426.10 – 426.3	Other diseases of endocardium
426.4	Right bundle branch block
417.0 – 427.9	Cardiac dysrhythmias
428.0 – 428.9	Heart failure
429.2	Cardiovascular disease, unspecified
429.4	Functional disturbances, cardiac surgery
440.0 – 440.9	Atherosclerosis
746.9	Unspecified congenital anomaly of heart
785.1	Palpitations
786.50 – 786.59	Chest pain
794.30	Abnormal cardiovascular function study

*Current Procedural Terminology (CPT) 2011 American Medical Association: Chicago, IL.®©

REFERENCES

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5. Institute for Clinical Systems Improvement (ICSI). Health Care Guideline. Cardiac Stress Test Supplement. February, 2007.