

# EVOLENT CLINICAL GUIDELINE 027 FOR MULTIPLE GATED ACQUISITION SCAN

<b>Guideline or Policy Number:</b> Evolent_CG_027	<b><u>Applicable Codes</u></b>	
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## **STATEMENT**

### **General Information**

*It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.*

*Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.*

### **Purpose (1,2,3,4)**

Multiple-gated acquisition (MUGA) scanning uses radiolabeled red blood cells to scan right and left ventricular images in a cine loop format that is synchronized with the electrocardiogram.

A prior MUGA scan is not an indication for repeat MUGA (if another modality would be suitable, i.e., TTE).

### **Special Note**

See [Legislative Requirements](#) for specific mandates in Washington State

### **Clinical Reasoning**

All criteria are substantiated by the latest evidence-based medical literature. To enhance transparency and reference, Appropriate Use (AUC) scores, when available, are diligently listed alongside the criteria.

This guideline first defaults to AUC scores established by published, evidence-based guidance endorsed by professional medical organizations. In the absence of those scores, we adhere to a standardized practice of assigning an AUC score of 6. This score is determined by considering variables that ensure the delivery of patient-centered care in line with current guidelines, with a focus on achieving benefits that outweigh associated risks. This approach aims to maintain a robust foundation for decision-making and underscores our commitment to upholding the highest standards of care.<sup>(5,6,7,8,9)</sup>

## INDICATIONS FOR MULTIPLE GATED ACQUISITION (MUGA) SCAN <sup>(10)</sup>

- To evaluate left ventricular function in a patient with coronary artery disease, valvular heart disease, myocardial disease, or congenital heart disease, in any of the following scenarios:
  - When ventricular function is required for management, and transthoracic echocardiography (TTE) or other imaging has proven inadequate<sup>(1,11)</sup>
    - ~~When there are conflicting results between other testing (i.e., Myocardial Perfusion Imaging and TTE) in the measurement of ejection fraction (EF), and the results of the MUGA will help in the management of the patient~~
    - ~~Prior TTE has demonstrated systolic dysfunction (EF < 50%) and management will change based on the results of the MUGA scan~~
  - Radionuclide ventriculography is being performed for assessment of RV function with no prior MUGA done within the last 3 months
- In the course of treatment with cardiotoxic medication when TTE images are inadequate to evaluate left ventricular systolic function:<sup>(1,11,12,13,14)</sup>
  - Baseline assessment prior to initiation of therapy
  - Monitoring during therapy. The frequency of testing should be left to the discretion of the ordering provider but in the absence of new abnormal findings, generally no more often than every 6 weeks while on active therapy
  - Long term surveillance after completion of therapy may be required, especially for those who have been exposed to anthracycline medication. The frequency of testing is generally every 6-12 months, or at the discretion of the provider

## LEGISLATIVE REQUIREMENTS

### State of Washington <sup>(15)</sup>

#### Health Technology Clinical Committee 20211105A

##### Number and coverage topic:

20211105A – Noninvasive Cardiac Imaging for Coronary Artery Disease

##### HTCC coverage determination:

Noninvasive cardiac imaging is a **covered benefit with conditions.**

##### HTCC reimbursement determination:

**Limitations of coverage:** The following noninvasive cardiac imaging technologies are covered with conditions:

- Stress echocardiography for:

- Symptomatic adult patients (≥18 years of age) at intermediate or high risk of Coronary Artery Disease (CAD), or
- Adult patients with known CAD who have new or worsening symptoms.
- Single Positron Emission Tomography (SPECT) for:
  - Patients under the same conditions as stress echocardiography when stress echocardiography is not technically feasible or clinically appropriate.
- Positron Emission Tomography (PET) for:
  - Patients under the same conditions as SPECT, when SPECT is not technically feasible or clinically appropriate.
- Coronary Computed Tomographic Angiography (CCTA) for:
  - Symptomatic adult patients (≥18 years of age) at intermediate or high risk of CAD, or
  - Adult patients with known CAD who have new or worsening symptoms.
- CCTA with Fractional Flow Reserve (FFR) for:
  - Patients under the same conditions as CCTA, when further investigation of functional significance of stenoses is clinically indicated.

**Non-covered indicators:**

N/A

**Notes:**

- Out of scope/data not reviewed for this decision:
  - Asymptomatic individuals, follow up of prior abnormal cardiac imaging studies, myocardial viability, preoperative evaluation
  - Patients presenting for evaluation of cardiac pathologies other than CAD
- This determination supersedes the following previous determinations:
  - Coronary Computed Tomographic Angiography for detection of Coronary Artery Disease (20081114A)
  - Cardiac Nuclear Imaging (20130920A)

## **CODING AND STANDARDS**

### **Coding**

#### **CPT Codes**

78472, 78473, 78494, +78496

## Applicable Lines of Business

<input checked="" type="checkbox"/>	CHIP (Children's Health Insurance Program)
<input checked="" type="checkbox"/>	Commercial
<input checked="" type="checkbox"/>	Exchange/Marketplace
<input checked="" type="checkbox"/>	Medicaid
<input checked="" type="checkbox"/>	Medicare Advantage

## BACKGROUND

The two types of radionuclide studies commonly used for cardiac evaluation are myocardial perfusion imaging and ventriculography. Myocardial perfusion imaging is used primarily for the evaluation of coronary artery disease. Ventriculography is sometimes referred to as multiple gated acquisition scanning (MUGA) and is primarily used to evaluate valvular disease and cardiomyopathies. Either type of study may be obtained at rest or stress.

Radionuclide Ventriculography is a medical imaging test used to determine a patient's cardiac function in the right, or more typically, left ventricle. Cardiac ventriculography involves injecting a radioisotope into the heart's ventricle(s) through a peripheral vein to measure the volume of blood pumped. Both regional and global left ventricular function (ejection fraction) as well as left ventricular size is measured.

## AUC Score

A reasonable diagnostic or therapeutic procedure care can be defined as that for which the expected clinical benefits outweigh the associated risks, enhancing patient care and health outcomes in a cost effective manner.<sup>(8)</sup>

**Appropriate Care - Median Score 7-9**

**May be Appropriate Care - Median Score 4-6**

**Rarely Appropriate Care - Median Score 1-3**

## **Acronyms / Abbreviations**

EF: Ejection fraction

MUGA: Multiple gated acquisition (nuclear scan of ventricular function)

TTE: Transthoracic echocardiography

## **POLICY HISTORY**

### **Summary**

<b>Date</b>	<b>Summary</b>
July 2024	<ul style="list-style-type: none"> <li>Added AUC Scoring to Cardiac Guidelines from published Societies. When an AUC score was not published by a Society, we assigned an AUC score of 6 based upon AUC scoring standards – this has been explained in Clinical Reasoning</li> <li>No other substantive changes</li> <li>Added WA legislative requirement</li> </ul>
April 2023	<ul style="list-style-type: none"> <li>Added statement on clinical indications not addressed in this guideline</li> </ul>

## **LEGAL AND COMPLIANCE**

### **Guideline Approval**

#### **Committee**

Reviewed / Approved by **NIA Evolent Specialty Clinical Guideline Review Committee**

### **Disclaimer: ~~National Imaging Associates, Inc. (NIA) authorization policies~~**

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