

**HACKETTSTOWN REGIONAL MEDICAL CENTER
CARDIO PULMONARY POLICY MANUAL
ECHOCARDIOGRAM**

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Effective Date: March 2010
Cross Referenced:
Reviewed Date: 02/16
Revised Date: 08/14

Policy No: 6.004
Origin: Cardio Pulmonary
Authority: Cardio/Pulmonary Manager
Page: 1 of 3

Purpose: Echocardiograms are performed by the technologists during the hours of operation and are then interpreted by the assigned cardiologist.

Definition: Echocardiography is a diagnostic test that uses ultrasound waves to produce an image of the heart muscle and the heart's valves. The echo can show the size, shape, and movement of the heart's valves and chambers as well as the flow of blood through the heart. Echocardiography may show such abnormalities as poorly functioning heart valves or damage to the heart tissue from a past heart attack. It not only allows doctors to evaluate the heart valves, but it can detect abnormalities in the pattern of blood flow, such as the backward flow of blood through partly closed heart valves, known as regurgitation. By assessing the motion of the heart wall, echocardiography can help detect the presence and assess the severity of coronary artery disease, as well as help determine whether any chest pain is related to heart disease. Echocardiography can also help detect hypertrophy cardiomyopathy, in which the walls of the heart thicken in an attempt to compensate for heart muscle weakness. The biggest advantage to echocardiography is that it is noninvasive (does not involve breaking the skin or entering body cavities) and has no known risks or side effects.

Procedure:

- 1 .Before the patient arrives; make sure the exam room is prepared with sheets, gowns, electrodes and warm gel.
2. When the patient arrives, greet him/her in a friendly and professional manner and introduce yourself, check patients' ID band, check for 2 patient identifiers- ask for patients' name and date of birth. Explain the procedure to the patient and tell them who is going to read the test, how long test results take, and how the pictures are obtained. Have the patient change only from waist up and provide a hospital gown. Ask the patient if he/she has a cardiologist or see if one has been appointed to read the exam (located on the script or in Cerner). If there is no cardiologist on consult or if there is, no cardiologist specified on the prescription, then one is assigned by the reading panel schedule.
3. Input patient information into the Epic C7 (Echo machine). Attach ECG electrodes to patient and attach ECG cable. If possible have patient turn into a left lateral position. Apply ultrasound gel to the transducer and position transducer on patient's chest. Select optimal setting for exam.
4. Images are as follows:

PARASTERNAL LONG AXIS VIEW

1. Acquire long axis view – 3 clips
2. Acquire M-mode/measure tracings through aortic valve, mitral valve, and left ventricle
3. M mode measurements can also be obtained from short axis views if unobtainable in the PLAX
4. Obtain 2-D measurements in the PLAX
 - a. LV septal thickness at end diastole
 - b. LV internal dimension at end diastole
 - c. LV posterior wall thickness at end diastole
 - d. AO root dimension at end diastole
 - e. LV internal dimension at end systole
 - f. LA dimension end systole

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5. Color flow Doppler across PLAX (aortic and mitral valve)
6. Zoom on Aortic and Mitral Valve clip/clip with color

RV INFLOW AND OUT FLOW VIEW

1. RV inflow clip/color clip (Doppler if needed)
2. RV outflow clip/color clip/Doppler PW clip

SHORT AXIS VIEW

1. Acquire aortic valve level
2. Color Flow Doppler into pulmonary artery utilize PW/CW Doppler
3. Color Flow across Aortic valve/zoom AV/add color clip
4. Color Flow across tricuspid valve and intra-arterial septum/TR Doppler
5. Acquire Mitral Valve Short Axis (ant/post leaflet view)
6. Acquire LV level at papillary
7. Acquire LV level at papillary level and into apex

APICAL 4 CHAMBER VIEW

1. Acquire apical 4 chamber
2. Acquire apical 5 chamber
3. Color and Doppler MV (PW/CW)
4. Tissue Doppler (clip live image, pulse Doppler on either side of the MV Annulus)
5. Simpson Measurement/LA Volume when needed
6. Color and Doppler Aortic valve and LVOT (caliper peak flows)
7. Color across Intra-atrial septum
8. Color and Doppler tricuspid valve/TR doppler

APICAL 2/3 CHAMBER VIEW

1. Acquire apical 2 chamber view/color flow/Doppler if needed
2. Simpsons 2 Chamber/LA if needed
3. Acquire Apical 3/color/Doppler when needed

SUB COASTAL VIEW

1. Acquire sub costal view
2. Color on valves and Atrial septum
3. Acquire IVC/measure
4. Have patient do "sniff test" for collapse
5. Determine RA pressure 3,8 or 15 (add measurement to TR package)

SUPRASTERNAL NOTCH VIEW

1. Acquire Aortic Arch
2. Color and Doppler throughout arch (ascending transverse and descending)

5. At the exam's completion, both electrodes and gel is removed and cleaned off the patient.

6. Universal precautions are always maintained.

7. The interpreting cardiologist will review echocardiograms that were performed during the course of the day. A full echocardiogram report will be generated within a twenty-four hour period. In- patient reports will be available within the Heartlab system and Cerner. Out- patient reports will be faxed to the referring or non-staff physician and will be available in Heartlab and Cerner. All reports are available in Medical Records.

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8. Tasks for performing all Echo procedures will be placed in Cerner and will be finalized by the technician for all out-patients. For in-patients, the physician will place the task in Cerner and the technician will finalize the task which then places a charge.