Name of Policy:
Fetal Echocardiography

Policy #: 231      Latest Review Date: June 2009
Category: Obstetrics/Radiology   Policy Grade: A

Background:
As a general rule, benefits are payable under Blue Cross and Blue Shield of Alabama health plans only in cases of medical necessity and only if services or supplies are not investigational, provided the customer group contracts have such coverage.

The following Association Technology Evaluation Criteria must be met for a service/supply to be considered for coverage:
1. The technology must have final approval from the appropriate government regulatory bodies;
2. The scientific evidence must permit conclusions concerning the effect of the technology on health outcomes;
3. The technology must improve the net health outcome;
4. The technology must be as beneficial as any established alternatives;
5. The improvement must be attainable outside the investigational setting.

Description of Procedure or Service:
Fetal echocardiography is a non-invasive technique for diagnosing and assessing cardiac abnormalities in the fetus. General antepartum obstetrical ultrasound has become a standard part of gestational care and is commonly used for the determination of fetal age, size, gender or well-being and for the detection of congenital anomalies. A variety of maternal or fetal disorders may result in abnormality of the fetal cardiovascular system to a degree which requires evaluation at a level above and beyond that attainable with standard antepartum obstetrical ultrasound. In these circumstances, a fetal echocardiogram should be performed.

Fetal echocardiography is performed using a two-dimensional (2-D) high-resolution ultrasound system, which usually also has other capabilities, including M-mode. Pulsed Doppler and color Doppler mapping are newer developments.

These techniques are used to define the structural and functional aspects of the cardiac abnormality. While 2-D echocardiography can detect structural changes, Doppler
Echocardiography is used to measure flow velocity, direction of flow, pressure differences, and cardiac output.

In general, the standard 2-D echocardiogram is performed, and if a structural abnormality is found, color Doppler flow mapping may be used to quickly localize the abnormal area of altered flow. Measurements by pulsed wave Doppler may be made to reduce the duration of fetal exposure to high-intensity ultrasound. Pulsed Doppler alone may be used after 2-D echocardiography to complete a diagnosis.

Diagnosis of fetal arrhythmia requires M-mode echocardiography; pulsed Doppler echocardiography is also used.

**Policy:**
*Effective for dates of service on or after July 1, 2009:*

**Fetal echocardiography meets** Blue Cross and Blue Shield of Alabama’s medical criteria for coverage for use in cases where the following **indications for high risk of congenital heart disease** are present:

**Fetal Risk Factors:**
- Extracardiac abnormality (e.g., congenital lung lesions, diaphragmatic hernia);
- Chromosomal abnormality;
- Fetal cardiac arrhythmia;
- Non-immune hydrops;
- Question of cardiac anomaly on prior sonogram;
- Intrauterine growth retardation
- Suspicion of twin-twin transfusion syndromes;

**Maternal Risk Factors:**
- Family history of CHD (parent or sibling);
- Metabolic disorders (e.g., diabetes mellitus, phenylketonuria [PKU])
- Teratogenic exposure (e.g. alcohol, amphetamines, anticonvulsives, lithium paroxetine (Paxil);
- Exposure to prostaglandin synthetase inhibitors (e.g., ibuprofen, salicylic acid, indomethacin);
- Maternal seizure disorder and not currently taking anti-seizure medication;
- Maternal autoimmune disorders (e.g., collagen vascular disease, systemic lupus erythemiae [SLE], Sjögren’s);
- Maternal infection (e.g. rubella);
- Familial inherited disorders (Ellisvan, Creveld, Marfan, Noonan’s, etc).

**Fetal echocardiography does not meet** Blue Cross and Blue Shield of Alabama’s medical criteria when there are no **indications of a cardiac abnormality found on a routine antepartum ultrasound or the mother or fetus does not have one of the indications listed above.**
Repeat fetal echocardiography meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage for:
- Structural heart disease with potential hemodynamic compromise;
- Tachycardia other than sinus tachycardia;
- A ductus arteriosus dependent lesion.

Repeat fetal echocardiography does not meet Blue Cross and Blue Shield of Alabama’s medical criteria for coverage when done for an indication not listed above.

Effective for dates of service on or after June 1, 2008:
Fetal echocardiography meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage for use in cases where the following indications for high risk of congenital heart disease are present:

Fetal Risk Factors:
- Extracardiac abnormality;
- Chromosomal abnormality;
- Fetal cardiac arrhythmia;
- Non-immune hydrops;
- Question of cardiac anomaly on prior sonogram;
- Intrauterine growth retardation.

Maternal Risk Factors:
- Family history of CHD (parent or sibling);
- Teratogenic exposure (e.g. alcohol, amphetamines, anticonvulsives, lithium paroxetine (Paxil);
- Maternal disorders (e.g. diabetes mellitus, collagen vascular disease, phenylketonuria, seizure disorder and not currently taking anti-seizure medication);
- Maternal infection (e.g. rubella);
- Familial syndromes.

Effective for dates of service on or after July 28, 2005 through May 30, 2008:
Fetal echocardiography meets Blue Cross and Blue Shield of Alabama’s medical criteria for coverage for use in cases where the following indications for high risk of congenital heart disease are present:

Fetal Risk Factors:
- Extracardiac abnormality;
- Chromosomal abnormality;
- Fetal cardiac arrhythmia;
- Non-immune hydrops;
- Question of cardiac anomaly on prior sonogram;
- Intrauterine growth retardation.
Maternal Risk Factors:
- Family history of CHD (parent or sibling);
- Teratogenic exposure (e.g. alcohol, amphetamines, anticonvulsives, lithium);
- Maternal disorders (e.g. diabetes mellitus, collagen vascular disease, phenylketonuria);
- Maternal infection (e.g. rubella);
- Familial syndromes.

Blue Cross and Blue Shield of Alabama does not approve or deny procedures, services, testing, or equipment for our members. Our decisions concern coverage only. The decision of whether or not to have a certain test, treatment or procedure is one made between the physician and his/her patient. Blue Cross and Blue Shield of Alabama administers benefits based on the members' contract and corporate medical policies. Physicians should always exercise their best medical judgment in providing the care they feel is most appropriate for their patients. Needed care should not be delayed or refused because of a coverage determination.

Key Points:
Fetal echocardiography (FE) has been shown to be medically important in several ways. First, the early diagnosis of CHD with FE has been shown to lead to the detection of associated extracardiac fetal anomalies. Second, the prenatal diagnosis of major CHD may have implications for the optimal route, location, or timing of delivery, and may bring critically ill infants to medical attention quicker than they would have been without a prenatal diagnosis. Many studies have suggested improved outcome in infants diagnosed prenatally with CHD in comparison with those not diagnosed until after birth. These studies suggest that early diagnosis can lead to improved preoperative hemodynamic status, less end-organ dysfunction, less preoperative morbidity and mortality, and less long-term morbidity. Finally, in some cases, FE allows women the opportunity to terminate severely affected pregnancies, which ultimately may affect the postnatal prevalence of major CHD.

FE may have important psychological implications, some beneficial and others potentially deleterious. Normal FE in a high-risk pregnancy can offer reassurance; provide emotional comfort, and lower maternal anxiety. Bjorkhem et al studied the psychological effect of normal FE in 65 families, each with a previous child with CHD, and Barton et al studied the effect of normal FE in 72 pregnant women at risk for fetal heart disease. Both groups found that normal FE resulted in decreased maternal anxiety.

The standard fetal echocardiographic examination utilizes all modalities of diagnostic ultrasound including 2-dimensional (B-mode) imaging, Doppler, and Doppler color flow mapping. Ultrasound energy expenditures increase with each modality used and are most intense when Doppler color flow mapping is applied to a small region of interest, as is commonly the case when examining the structures of the fetal heart. Hence special consideration should be given to the use of ultrasound energy in the developing fetus. While theoretical concerns exist, to date there have been no confirmed harmful effects detected. Those performing fetal echocardiography should be aware of these effects and should limit power output and time of exposure to no more than that which is absolutely necessary to complete the examination.
The optimal timing for performance of a transabdominal fetal echocardiogram is 18 to 22 weeks gestation. Images can be more difficult to obtain after 30 weeks gestation, as the ratio of fetal body mass-to-amniotic fluid increases. Acquiring images of the fetal heart at 15 to 18 weeks is possible; however performing a comprehensive cardiac evaluation study at this age can be difficult. Transvaginal fetal echocardiography can be performed as early as 12 weeks gestation.

**Key Words:**
Fetal echocardiography

**Approved by Governing Bodies:**
FDA approved

**Benefit Application:**
Coverage is subject to member’s specific benefits. Group specific policy will supersede this policy when applicable.

ITS: Home Policy provisions apply
BellSouth/AT&T contracts: No special consideration
FEP contracts: No special consideration
Wal-Mart: Special benefit consideration may apply. Refer to member’s benefit plan.
Pre-certification requirements: Not applicable
Pre-determination requirements: Not applicable

**Coding:**
CPT codes: 76825 Echocardiography, fetal, cardiovascular system, real time with image documentation (2-D) with or without M-mode recording; 76826; follow-up or repeat study 76827 Doppler echocardiography, fetal, pulsed wave and/or continuous wave with spectral display; complete 76828; follow-up or repeat study 93325 Doppler color flow velocity, mapping (list separately in additions to codes for echocardiography 76825, 76826, 76827, 76828)

**References:**

**Policy History:**
Medical Policy Group, June 2005 (2)
Medical Policy Administration Committee, July 2005
Available for comment July 28-September 10, 2005
Medical Policy Group, June 2008 (1)
Medical Policy Administration Committee, July 2008
Available for comment July 15-August 28, 2008
Medical Policy Group, June 2009 (2)
Medical Policy Administration Committee, July 2009
Available for comment July 2-August 15, 2009

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This medical policy is not an authorization, certification, explanation of benefits, or a contract. Eligibility and benefits are determined on a case-by-case basis according to the terms of the member’s plan in effect as of the date services are rendered. All medical policies are based on (i) research of current medical literature and (ii) review of common medical practices in the treatment and diagnosis of disease as of the date hereof. Physicians and other providers are solely responsible for all aspects of medical care and treatment, including the type, quality, and levels of care and treatment.

This policy is intended to be used for adjudication of claims (including pre-admission certification, pre-determinations, and pre-procedure review) in Blue Cross and Blue Shield’s administration of plans contracts.