MedStar Health, Inc.
POLICY AND PROCEDURE MANUAL

Policy Number: MP.126.MH
Last Review Date: 08/04/2016
Effective Date: 09/01/2016

MP.126.MH – Cell-Free DNA Test

This policy applies to the following lines of business:
- ✓ MedStar Employee (Select)
- ✓ MedStar MA – DSNP – CSNP
- ✓ MedStar CareFirst PPO

Cell-free fetal DNA testing has been validated for testing for Trisomy 21 (T21 or Down Syndrome). It may also detect Trisomy 18 (T18 or Edwards Syndrome) or Trisomy 13 (T13 or Patau Syndrome), but at this time, screening for those conditions is not considered medically necessary or appropriate.

According to the American College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine, the test may be used for the following high-risk women:
- Women aged 35 years or older
- Fetuses with ultrasonographic findings that indicate an increased risk of aneuoploidy
- Women with a history of ac hild affected with a trisomy
- Positive test result for aneuploidy, including first trimester, sequential, or integrated screen, or a quadruple screen
- Parent carrying a balanced robertsonian translocation with increased risk of trisomy 13 or trisomy 21

Limitations
1. Cell-free fetal DNA testing should not be part of routine prenatal laboratory assessment, but should be an informed patient choice after pretest counseling.
2. Cell-free fetal DNA testing should not be offered to low-risk women or women with multiple gestations because it has not been sufficiently evaluated in these groups.

Background
ACOG estimates that 6-11% of stillbirths and neonatal deaths result from aneuploidies (fetus with missing or extra chromosomes). Most aneuploidies involve the presence of an extra chromosome, also referred to as trisomy.

Down syndrome, which is most commonly caused by trisomy 21 (T21), is routinely evaluated as the standard of care for the majority of the 4 million women who give birth each year in the United States. Conventional screening tests typically involve measurement of blood serum markers in conjunction with ultrasound followed by recommendation for diagnostic invasive procedures for abnormal results from screening.

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First trimester combined screening (FTS) and integrated screening (INT) have the best screening performance, yet still only have T21 detection rates of 82-87% and 88-95%, respectively, at false positive rates of 5%. Invasive testing with amniocentesis or CVS is highly accurate but has up to a 3% risk of procedure related miscarriage. The reported complication rates have come down in the last 10 years, but there is still some procedure-related risk. A prenatal test that evaluates cell-free DNA (cfDNA) in maternal blood has recently become available. Testing for cfDNA has been shown to be highly accurate, with T21 detection rates >99% at false positive rates <0.1%, across numerous studies in the high-risk population of pregnant women.

cfDNA testing, when used for high-risk women can detect more T21 cases and at the same time reduce unnecessary invasive procedures and in turn fewer procedure related fetal losses. cfDNA testing, when used as a follow-up test for an abnormal result from the FTS or INT screening test for low risk women can spare the vast majority of the 5% of women with false positive results from undergoing invasive confirmatory testing. Any woman with an abnormal result from cfDNA test should undergo confirmatory testing by amniocentesis or chorionic villus sampling.

Currently, there are five noninvasive prenatal testing (NIPT) assays available in the United States: Harmony Prenatal Test, informaSeq, MateriT21 PLUS, Panorama Prenatal Test, and Verifi Prenatal Test (the assays are listed in order of market entrance date). The assays involve the analysis of cfDNA present in a mother's blood during pregnancy to detect aneuploidies involving specific chromosomes (typically test for chromosomes 21, 18, 13 and the sex chromosomes).

Further validation is being performed to determine whether the tests are as useful in multiple gestations (twins, triplets, etc.), as well as the predictive value for translocations, trisomy 13 and 18, and aneuploidy of sex chromosomes.

The prevalence of aneuploidies is infrequent enough in the low-risk population to make the false positive and false negative rate problematic if the test were to be performed on all pregnant women. In addition, since there is a low false positive rate, a confirmatory invasive procedure (amniocentesis or cvs) should be performed on all abnormal results.

Codes:

CPT Codes / HCPCS Codes / ICD-10 Codes	
Code	Description

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CPT Codes	
81507	Fetal aneuploidy (trisomy 21, 18, and 13) DNA sequence analysis of selected regions using maternal plasma, algorithm reported as a risk score for each trisomy
81599	Unlisted multianalyte assay with algorithmic analysis
ICD-9 codes covered if selection criteria are met:	
655.13	Chromosomal abnormality in fetus
655.83	Known or suspected fetal abnormality such as necrotizing enterocolitis (NEC)
659.53	Advanced maternal age primigravida
659.63	Advanced maternal age multigravida
796.5	Abnormal finding on antenatal screening
v23.81	High risk advanced maternal age- primigravida
v23.82	High risk advanced maternal age- multigravida
ICD-10 codes covered if selection criteria are met:	
O35.1XX0-O35.1XX9	Maternal care for (suspected) chromosomal abnormality in fetus
O35.8XX0-O35.8XX9	Maternal care for other (suspected) fetal abnormality and damage
O35.9XX0-O35.9XX9	Maternal care for (suspected) fetal abnormality and damage, unspecified
O09.511-O09.519	Supervision of elderly primigravida
O09.521-O09.529	Supervision of elderly multigravida
O28.0-O28.9	Abnormal findings on antenatal screening of mother

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