Treatment of Twin-Twin Transfusion Syndrome with Amnioreduction and/or Fetoscopic Laser Therapy

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Products:	Medicaid
Application:	All participating hospitals and providers
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Disclaimer

Highmark Health Options medical policy is intended to serve only as a general reference resource regarding coverage for the services described. This policy does not constitute medical advice and is not intended to govern or otherwise influence medical decisions.

POLICY STATEMENT

Highmark Health Options may provide coverage under medical surgical benefits of the Company's Medicaid products for medically necessary.

This policy is designed to address medical necessity guidelines that are appropriate for the majority of individuals with a particular disease, illness or condition. Each person's unique clinical circumstances warrant individual consideration, based upon review of applicable medical records.

The qualifications of the policy will meet the standards of the National Committee for Quality Assurance (NCQA) and the Delaware Department of Health and Social Services (DHSS) and all applicable state and federal regulations.

DEFINITIONS

Highmark Health Options (HHO) – Managed care organization serving vulnerable populations that have complex needs and qualify for Medicaid. Highmark Health Options members include individuals and families with low income, expecting mothers, children, and people with disabilities. Members pay nothing to very little for their health coverage. Highmark Health Options currently services Delaware Medicaid: Delaware Healthy Children Program (DHCP) and Diamond State Health Plan Plus members.

Twin-Twin Transfusion Syndrome (TTTS) – A condition that can occur with identical twins (or higher multiple gestations), who share a common monochorionic placenta. The etiology is secondary to anastomoses in the monochorionic placenta resulting in a redistribution of blood flow. This results in one fetus becoming hypervolemic (recipient) and the other becoming hypovolemic (donor). As a result, one fetus, the recipient twin, gets too much blood, causing overload of the cardiovascular system. This can lead to heart failure. The other fetus, or donor twin, does not receive enough blood, causing growth restriction and anemia. The circulatory abnormality in the placenta can lead to the formation of excess amniotic fluid around the recipient twin, while too little amniotic fluid surrounds the donor twin.

Amnioreduction – A variant of amniocentesis in which amniotic fluid is removed in order to restore normal fluid volume.

Fetoscopic Laser Therapy – Designed to correct the underlying abnormality by separating the two fetal circulations and is the primary treatment for Stage II, III, IV TTTS between 16-26 weeks.

PROCEDURES

Prior authorization is required.

Fetoscopic laser surgery or amnioreduction may be considered medically necessary for TTTS when ALL of the following criteria are met;

- Quintero stage II and above; and
- After 26 weeks of gestation; and
- There is discrepancy of umbilical cord flow by Doppler studies in one or both fetuses; and
- There is evidence of polyhydramnios or oligohydramnios in the recipient fetus and donor fetus.

Amnioreduction may be considered medically necessary prior to 26 weeks gestation if Stage I TTTS or if fetoscopic laser surgery is unsuccessful.

Fetoscopic laser therapy may be considered medically necessary for TTTS when ALL of the following criteria are met:

- Fetal gestational age of less than 26 weeks; and
- There is evidence of polyhydramnios (excessive amniotic fluid) in the recipient fetus; and
- The donor fetus is oligohydramniotic (reduced amniotic fluid); and
- Evidence of abnormal blood flow documented by Doppler studies in one or both fetuses.

Fetoscopic laser therapy may be considered medically necessary for selective fetal reduction.

Fetoscopic Laser therapy may be preceded by either angiography or doppler sonography in order to identify target vessels for laser therapy.

Fetoscopic laser therapy or amnioreduction that does not meet the criteria as indicated in this policy will be considered not medically necessary.

POST-PAYMENT AUDIT STATEMENT

The medical record must include documentation that reflects the medical necessity criteria and is subject to audit by Highmark Health Options at any time pursuant to the terms of your provider agreement.

PLACE OF SERVICE: INPATIENT/OUTPATIENT

Treatment of Twin-Twin Transfusion Syndrome with Amnioreduction and/or Fetoscopic Laser Therapy is typically an outpatient procedure which is only eligible for coverage as an inpatient procedure in special circumstances, including, but not limited to, the presence of a comorbid condition that would require monitoring in a more controlled environment such as the inpatient setting.

CODING REQUIREMENTS

CPT code	Description
59001	Amniocentesis; therapeutic amniotic fluid reduction (includes ultrasound).

COVERED DIAGNOSIS FOR PROCEDURE CODE 59001

Diagnosis Code	Description
P02.3	Newborn affected by placental transfusion syndromes.

REIMBURSEMENT

Participating facilities will be reimbursed per their Highmark Health Options contract.

Reference

Aiello E, Bulfoni A, Ciralli F, et al. Fetal doppler changes 1 week after endoscopic equatorial laser for twin-to-twin transfusion syndrome: A longitudinal study. Prenat Diagn. 2018; 38:344–348.

Kweon S, Lee S, Cho K, et al. Fetal survival immediate after fetoscopic laser ablation in twin to twin transfusion syndrome. J Korean Med Sci. 2019;21;34(3): e20.

Mirzaian C, Vanderbilt D, Mamey M, Chmait R, Schrager S. Duration of breastfeeding is associated with improved neurodevelopmental outcomes in survivors of twin-twin transfusion syndrome. Breastfeed Rev. 2018;26(2):29-35.

Le Lous M, Mediouni I, Chalouhi G, Impact of laser therapy for twin-to-twin transfusion syndrome on subsequent pregnancy. Prenat Diagn. 2018; 38:293–297.

Melhem N, Lederman S, Rees L. Chronic kidney disease following twin-to-twin transfusion syndrome--long-term outcomes. Pediatr Nephrol. 2019; 34:883–888.

Mackie F, Pattison H, Jankovic HJ, Morris R, Kilby M. Parental attachment and depressive symptoms in pregnancies complicated by twin-twin transfusion syndrome: A cohort study. BMC Pregnancy Childbirth. 2020;20(4):1-8.

Perry H, Duffy J, Reed K. Core outcome set for research studies evaluating treatments for twin–twin transfusion syndrome. Ultrasound Obstet Gynecol. 2020;54(2)1-20.

Bidzdan-Bluma I. Twin-to-twin transfusion syndrome donor and recipient and their subsequent cognitive functioning in late childhood as juvenile athletes—A case study. Int J Envirn Res. 2021; 18:2545.

Matsushima S, Ozawa K, Sugibayashi R, et al. Neurodevelopmental impairment at 3 years of age after fetoscopic laser surgery for twin-to-twin transfusion syndrome. Prenat Diagn. 2020;40(8):1013-1019.

Eschbach S, Harkel A, Middeldorp J, et al. Acquired right ventricular outflow tract obstruction in twin-to twin transfusion syndrome: A prospective longitudinal study. Prenat Diagn. 2018; 13:1013-1019.

Loh M, Bhatia A, Tan K, Thia E, Yeo G. Outcomes following selective fetoscopic laser ablation for twin-to-twin transfusion syndrome: A single-centre experience. Singapore Med J. 2020;61(10):523-531.

Zaretsky M, Tong S, Lagueux M, et al. North American Fetal Therapy Network: Timing of and indications for delivery following laser ablation for twin-twin transfusion syndrome. Am J Obstet Gynecol MFM. 2019;1(1):74–81.

Goodnight W, Johnson A, Emery S, Demers S, Ryan G. Contemporary experience of management and outcomes of TTTS at NAFTNet Centers. AJOG. 2021;224(2): S61-S62.

Quintero R, Konopoulos E, Williams M, et al. Neurodevelopmental outcome of monochorionic twins with selective intrauterine growth restriction (SIUGR) type II: Laser versus expectant management. J Matern Fetal Neonatal Med. 2021;34(10):1513-1521.

Sileo F.G., Durado F, D'Antonio F, Benliogly C, Khalis A. Incidence and outcome of prenatal brain abnormality in twin-to-twin transfusion syndrome: Systematic review and meta-analysis. Ultrasound Obstet Gynecol. 2022;60(2):176-184.

Harbison A, Pruetz J, Ma S, et al. Evaluation of cardiac function in the recipient twin in successfully treated twin-to-twin transfusion syndrome using a novel fetal speckle-tracking analysis. Prenat Diagn. 2020;41(1):136-144.

POLICY UPDATE HISTORY

09/20/2021	Approved in Medical Policy Committee
05/02/2022	Annual review; approved in Medical Policy Committee
03/22/2023	Annual review; approved in Medical Policy Committee
03/28/2023	Approved in QI/UM