

Inhaled Nitric Oxide

Policy ID:	HHO-DE-MP-1085
Approved By:	Highmark Health Options – Market Leadership
Provider Notice Date:	
Original Effective Date:	N/A
Annual Approval Date:	10/2022
Last Revision Date:	10/08/2021
Products:	Medicaid
Application:	
Page Number(s):	1-3

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

Inhaled nitric oxide is a natural vasodilator and has been studied for the treatment of a variety of types of respiratory failure. Most commonly, it is used as an adjunct treatment for neonates with hypoxic respiratory failure to improve oxygenation and reduce the need for invasive extracorporeal membrane oxygenation (ECMO). It is also proposed as a treatment for premature infants, critically ill children and adults with respiratory failure, as well as in the postoperative management of children undergoing repair of congenital heart disease and individuals after lung transplantation to prevent or reduce reperfusion injury.

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 serves Delaware Medicaid: Delaware Healthy Children Program (DHCP) and Diamond State Health Plan and Health Plan Plus members.

Nitric Oxide – An inhaled gas that works by relaxing smooth muscle to widen (dilate) blood vessels, especially in the lungs.

POLICY POSITION

Inhaled nitric oxide may be considered medically necessary as a component of treatment of hypoxic respiratory failure in neonates born at more than 34 weeks of gestation.

Inhaled nitric oxide may be considered medically necessary for post-operative management of pulmonary hypertensive crisis in infants and children with congenital heart disease.

Inhaled nitric oxide not meeting the criteria as indicated in this policy is considered experimental/investigational, and therefore noncovered, because the safety and/or effectiveness cannot

be established by available published peer-reviewed literature, including, but not limited to ANY ONE of the following indications:

- Treatment of premature neonates born at less than or equal to 34 weeks of gestation with hypoxic respiratory failure; or
- Treatment of adults and children with acute hypoxemic respiratory failure; or
- In lung transplantation, during and/or after graft reperfusion.

PROCEDURE CODES

Code	Description
93463	Pharmacologic Agent Administration (e.g., Inhaled Nitric Oxide, Intravenous Infusion Of Nitroprusside, Dobutamine, Milrinone, Or Other Agent) Including Assessing Hemodynamic Measurements Before, During, After And Repeat Pharmacologic Agent Administration, When Performed (list Separately In Addition to Code For Primary Procedure).

ELIGIBLE DIAGNOSIS CODES

I16.9	P22.0	P28.5		
-------	-------	-------	--	--

NONCOVERED SERVICES

Experimental/investigational (E/I) services are not covered regardless of place of service.

References

Hayes, Inc. Hayes Medical Technology Directory Report. Inhaled nitric oxide for the treatment of bronchopulmonary dysplasia in neonates. Lansdale, PA: Hayes, Inc; 06/2016.

Barrington K, Finer N, Pennaforte T, Altit G. Nitric oxide for respiratory failure in infants born at or near term. Cochrane Libr. 2017.

Barrington K, Finer N, Pennaforte T. Inhaled nitric oxide for respiratory failure in preterm infants. Cochrane Database Syst. Rev. 2017.

Peliowski A, et al. Inhaled nitric oxide use in newborns. Paediatr Child Health. 2017;17(2):95-7.

Hayes Inc. Review of Reviews. Inhaled nitric oxide for the treatment of respiratory failure in preterm newborns. Lansdale, PA: Hayes, Inc. November, 2018.

Ellsworth K, Ellsworth M, Weaver A, Mara K, Clark R, Carey W. Association of early inhaled nitric oxide with the survival of preterm neonates with pulmonary hypoplasia. JAMA Pediatr. 2018;172(7).

Nelin L, Potenziano J. Inhaled nitric oxide for neonates with persistent pulmonary hypertension of the newborn in the CINRGI study: Time to treatment response. BMC Pediatr. 2019;19(17):1-7.

Bearl D, Dodd D, Thurm C, Hall M, Soslow J, et al. Practice variation, costs and outcomes associated with the use of inhaled nitric oxide in pediatric heart transplant recipients. Pediatr Cardiol. 2019;40:650–657.

Pediatric Acute Lung Injury Consensus Conference Group. Pediatric acute respiratory distress syndrome: Consensus recommendations from the Pediatric Acute Lung Injury Consensus Conference. *Pediatr Crit Care Med.* 2015;16(5):428-439.

Kinsella J, Steinhorn R, Krishnan U, Feinstein J, Adatia I, et al. Recommendations for the use of inhaled nitric oxide therapy in premature newborns with severe pulmonary hypertension. *JPeds.*

WA, Weaver A, Mara K. Inhaled Nitric Oxide in extremely premature neonates with respiratory distress syndrome. *Pediatrics.* 2018;141(3).

Chandrasekharan P, Lackshminrusimha S, Abham S. When to say no to inhaled nitric oxide in neonates? *Sci Dir.* 2021.

POLICY UPDATE HISTORY

<Date>	<Event>
--------	---------