Name of Policy:	**Helium-Oxygen Therapy (Heliox)**
Policy Number:	3364-136-04-08
Department:	Pulmonary Services
Approving Officer:	Senior Hospital Administrator
Responsible Agent:	Director, Pulmonary Services
Scope:	The University of Toledo Medical Center Pulmonary Services Department

THE UNIVERSITY OF TOLEDO MEDICAL CENTER

Effective Date: 08/14/2023

Initial Effective Date: July 1, 1979

_____ New policy proposal
_____ Major revision of existing policy
__x__ Minor/technical revision of existing policy
_____ Reaffirmation of existing policy

(A) Policy Statement

The Respiratory Care Department will use helium mixed with oxygen (with a FiO2 of no less than .20) for therapeutic purposes as ordered by a physician.

(B) Purpose of Policy

To insure proper and safe set-up and delivery of oxygen via helium therapy to patients with airway obstruction or edema.

Indications: for Heliox therapy include management of airway obstruction.

Goal: of Heliox therapy is to decrease the work of breathing in patients experiencing airway obstruction. Flow rate from the He/O2 mixture will be approximately 1.7 times the oxygen flow.

Contraindications:

1. Using a helium oxygen mixture of less than 20% oxygen.
2. Entraining Heliox into a machine not approved by the FDA (ex. 840 ventilator)

Adverse Reactions: Heliox therapy for patients with COPD may include a decrease in ventilation, carbon dioxide production, and oxygen consumption. Generally, the only hazard of Heliox in the non-intubated patient includes the change in one's voice (a temporarily high-pitched voice).

(C) Procedure

1. After verification of a written physician order for administration of Heliox therapy, the practitioner should assemble the appropriate equipment (see the equipment assembly section of this manual, policy #3364-136-01-18).

2. The practitioner should then identify the patient in accordance with departmental policy #3364-136-01-11 and explain the treatment purpose and procedure to the patient.

3. As with all patient oriented or equipment procedures performed by respiratory personnel, special attention should be given to maintaining asepsis.

4. Prior to initiation of, and during Heliox therapy, a respiratory assessment should be completed. Assessment includes: noting heart rate, respiratory rate, breath sounds and general overall appearance and tolerance of treatment. Patient response to therapy should also be noted, as described in policy #3364-136-03-07 of this manual.

5. Obtain the cylinder, regulator, non-rebreather mask, helium flow meter, and nasal cannula (if needed to titrate additional oxygen).

6. Assemble the Heliox mask delivery system.

7. Provide explanation to the patient as to the purpose of Heliox therapy.

8. Open the gas cylinder valve and begin by setting the Heliox flow meter to 6-8 liters per minute.

9. Be prepared to initiate supplemental oxygen using the nasal cannula if the pulse oximeter readings are not satisfactory.

10. Place the mask on the patient snugly and observe that the reservoir bag is not deflating by more than one-third upon inspiration.

11. Titrate supplemental oxygen at 1-3 liters per minute if needed to maintain adequate oxygen saturation.

12. The patient must be closely monitored for any changes in cardio-respiratory status. They must be on a cardiac monitor and a pulse oximeter.

13. The practitioner should chart the procedure in the EMR: Note the flow rate of the Heliox as well as any supplemental oxygen along with helium cylinder pressure and pulse oximeter reading.

14. Assess the patient every two to four hours and prn to assure therapy effectiveness.

Adverse reactions to therapy:

A. The patient should be closely monitored for the occurrence of any increased shortness of breath, drowsiness, nausea/vomiting, dizziness, bronchospasms, cyanosis, chest pain, tachycardia, agitation, or any other undesirable side effects.

B. If the patient's response to therapy is adverse, it may be necessary to modify or terminate therapy, monitor the patient for further change in symptoms, contact the patient's nurse and/or physician, and document appropriately (according to policy 3364-136-03-06 of this manual).

Note: The benefit of Heliox should be immediate. If no benefit occurs within 30 minutes of the initiation of therapy, Heliox therapy should be discontinued.

Approved by:		**Review/Revision Date:**
/s/ Michael Taylor Director, Pulmonary Services	8/11/2023 Date	03/26/1988 03/18/1990 05/27/1992 05/06/1993 09/03/1996 08/31/1999 07/16/2001 11/30/2004 08/29/2007 09/22/2010 08/17/2012 12/01/2015 04/08/2019 08/14/2023
/s/ Shahnaz Rehman, M.D. Medical Director	8/25/2023 Date	
/s/ Russell Smith Senior Hospital Administrator	8/14/2023 Date	
Review/Revision Completed By: *Director, Pulmonary Services*		**Next Review Date: 08/14/2026**
Policies Superseded by This Policy:		

It is the responsibility of the reader to verify with the responsible agent that this is the most current version of the policy.