(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 helium therapy to patient's with airway obstruction or edema.

*Indications:* for helium therapy include management of airway obstruction.

*The Goal:* of helium 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:* include using a helium oxygen mixture of less than 20% oxygen.

*Adverse Reactions:* Helium therapy for patients with COPD may include a decrease in ventilation, carbon dioxide production, and oxygen consumption.

Generally the only hazard of helium 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 helium 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 helium therapy, a respiratory assessment should be completed. This 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.

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<tr>
<th>Approved by:</th>
<th>Review/Revision Date:</th>
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<tbody>
<tr>
<td>/s/ Michael J. Taylor Date</td>
<td>3/26/1988</td>
</tr>
<tr>
<td>/s/ Director, Respiratory Care</td>
<td>3/18/1990</td>
</tr>
<tr>
<td>/s/ Chief Nursing Officer</td>
<td>5/6/1993</td>
</tr>
<tr>
<td>/s/ 9/3/1996 Date</td>
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<td>/s/ 12/1/2015</td>
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**Review/Revision Completed By:**

Director, Respiratory Care

**Next Review Date:** April 8, 2022

**Policies Superseded by This Policy:**