

# Johns Hopkins Bayview Medical Center

## GENERAL CLINICAL RESEARCH CENTER

Policy: 161

Clinical Guideline and Protocol for Monitoring and Indications for Supplemental Oxygen during Nocturnal Sleep Recordings

Original Date: April 10, 2003

Previous Date: None

Reviewed Date: None

**Purpose:** To provide staff with clinical guidelines and actions to avert acute complications of nocturnal hypoxemia during sleep recordings in the GCRC. This procedure is designed to prevent reductions in baseline SaO<sub>2</sub>s by administering supplemental oxygen.

### Definitions:

Baseline SaO<sub>2</sub> is determined by pulse oximetry and is defined during the period of time when a subject is asleep, prior or in between any sleep disordered breathing episode (apnea or hypopnea). A subject will sleep disordered breathing have multiple baselines during one study night.

In patients with sleep disordered breathing, nocturnal oxyhemoglobin desaturation may be characterized by:

- (1) a sustained fall in SaO<sub>2</sub> and/or
- (2) transient dips in SaO<sub>2</sub> following apneic episodes.

Sustained decreases in baseline SaO<sub>2</sub> are thought to be associated with the greatest risk of cardiac dysrhythmias nocturnally.

### Policy:

1. Supplemental oxygen is a care standard for sleep studies that must be carried out by physician order. Orders may be developed as standing protocol orders. If orders were not obtained in advance, the nurse is to contact the physician for a supplemental oxygen order.
2. The need for supplemental oxygen can be an indicator of a clinical disorder. Therefore, the GCRC Nurse must contact the Principal Investigator within 24 hours of determining that a subject requires supplemental oxygen to report the situation for clinical follow up.
3. A progress note must be written describing the event, the interventions, physician contact and follow up.

### Procedure:

1. Monitor SaO<sub>2</sub> throughout the sleep study.
2. If the SaO<sub>2</sub> falls below 88% for more than 10 minutes continuously, administer supplemental oxygen at 2 L/min via nasal cannula. Document the addition of supplemental oxygen on the protocol sheet and the sleep study scoring request form.
3. If the SaO<sub>2</sub> remains below 88% on 2 L/min for 20 minutes, increase the oxygen flow rate to 4 L/min via nasal cannula and call the Principal Investigator or physician on call for the protocol, and notify them that supplemental oxygen was applied per GCRC

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clinical protocol. Document the increase in supplemental oxygen flow, and the name and time of the physician contact on the protocol sheet and the sleep study scoring request sheet.

4. Please note that the SaO<sub>2</sub> level may fall below 88% during sleep apneic episodes. Oxygen supplementation needs are determined only in instances of sustained hypoxia, as defined in point #3, above. For example, the baseline SaO<sub>2</sub> may be 93% at baseline and fall to 43% transiently during the study. However, if the SaO<sub>2</sub> returns to a level above 88% within 10 minutes, supplemental oxygen is not required.

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