Subject: CPAP TITRATION

POLICY:
- The Sleep Lab Technologist shall titrate CPAP, as ordered, to ensure that the patient has optimal ventilation and sleep.
- Nasal Mask or nasal pillow shall be used whenever possible
- CPAP titration shall be started at lights out when an all night titration is scheduled.
- CPAP titrating for split night study shall be started by 2:00 AM so as to have at least 3.5 hours of recording time and time to titrate CPAP to optimal level.
- CPAP titrations shall be started on patients scheduled for a diagnostic PSG when $\text{SpO}_2$ is less than 75% with periods of apneas and hypopneas or when the patient is experiencing obstructive sleep apnea with one or more of the following:
  - Bradycardia (40 beats per minute or less)
  - Bigeminy
  - Sinus bradycardia greater than 2.5 seconds
- Ensure desaturations are not artifact.

CONTRAINDICATIONS:
- Acute skill fracture
- Pheumothorax
- Complete bilateral nasal obstruction
- Other

PROCEDURE:
- The Sleep Lab Technologist shall:
  - Review patient’s chart.
  - Review physician’s orders.
  - Phone patient’s physician for clarification of orders as needed.
  - If the patient’s physician cannot be reached, consult the Sleep Lab Medical Director.
  - Explain the mask to the patient.
  - Have the patient hold the mask to his/her face with CPAP on.
  - After the patient is comfortable with the mask, apply the mask with the harness.
  - Check the estimated leak (EST).
  - Document EST leak on Observation Form.
  - If the leak is great, check the patient for a mouth, mask or circuit leak. The CPAP will automatically compensate for Leak values up to 60 l/m. Ideally the leak should be kept under 20 l/m. In the event of high Leak values, the mask may
need to be reset on the patient’s face. Occasionally, the mask or spacer size may need to be changed during the night in order to keep the Leak at acceptable values. If the patient attempts to breath with their mouth open while on CPAP you will need to place the chin strap or a full face mask on them. Some patients will continue to exhale through their mouth, even with a chin strap in place. Be sure and note this on the log sheets in the Post Rest Technical report.

- Correct the cause of the leak.
- Check the EST leak periodically throughout the titration.

**CPAP TITRATION:**
- Start titration at the initial pressure of 3-5 cm H₂O.
- Lower or raise the initial pressure according to the patient’s comfort level.
- Increase pressure by 2-3 cm H₂O until apneas are sufficiently suppressed.
- Introduce each increase over a minute to ensure patient’s comfort and willingness to use CPAP.
- Increase CPAP pressure by 1-2 cm H₂O to suppress hypopneas, snoring, arousals (possibly due to increased ventilatory effort) and reoccurring desaturations greater than 2% from baseline due to changes in ventilation.
- Once CPAP has been titrated to optimal pressures, allow the patient to sleep long enough to record all stages.
- Maximum CPAP pressure to be used is 16 cm H₂O.
- If respiratory obstructions have been eliminated but the patient’s SpO₂ is below 90%, administer oxygen with the CPAP. Begin with one (1) liter per minute. Increase oxygen until patient’s SpO₂ is 90% or greater. (See Oxygen Administration policy and procedure).
- If the patient requires moderate to high CPAP pressure levels to stabilize respirations but is having frequent arousals because of the high pressure levels, switch from CPAP to BiPAP.
- The protocol for BiPAP titration can be found in Policy #26.
- Patient complaints and possible solutions:
  - Claustrophobia, anxiety:
    - Nasal pillows
    - Smaller masks; Monarch, Phantom
    - If patient has history of claustrophobia, patient’s physician can order an anxiolytic medication to be self-administered by the patient before CPAP begins.
  - Dry nose/mouth, cold nose:
    - Heated humidifier
    - Regular humidifier with increase in room temperature
    - If a patient’s mouth remain open because of CPAP, try chinstrap or a full face mask.
  - Pressure from mask:
    - Try different brands of masks
    - Use a spacer
    - Check for leaks
DOCUMENTATION:
- The Sleep Lab Technologist shall document all steps of the CPAP titration, including time of each step and patient’s tolerance of CPAP.

- All communications with referring physician and/or medical director shall be documented.

Originated by: Yvonne Waddle, RRT, RCP
Effective date: 10/12/03

Authorized by: Marcia Decker, RRT, RCP
Last revision: 10/08
Review Date: 5/2007