I. **KEY PERFORMANCE ELEMENTS**

<table>
<thead>
<tr>
<th>Procedural Element (Step)</th>
<th>Description of Satisfactory Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Attaches stopcock and syringe to pressure manometer</td>
<td>The syringe is generally connected to the side port and the manometer line is connected to the female port.</td>
</tr>
<tr>
<td>9. Pre-pressurizes manometer to previous cuff pressure or a safe level.</td>
<td>If cuff pressure is known, system is pressurized to that level. If cuff pressure is not known, pressure is preset at pressure within appropriate range.</td>
</tr>
<tr>
<td>16. If cuff pressure above safe level leaves minimal leak</td>
<td>Cuff pressures above maximum safe level could occlude capillary circulation around cuff. If cuff pressure is above these levels, a minimal leak should be obtained. The minimal leak should occur at peak inspiration, and not be large enough to cause a significant loss of tidal volume. If cuff pressure is high, the value should be reported to a physician and a recommendation for a larger airway should be made.</td>
</tr>
<tr>
<td>21. Records appropriate data in chart and departmental records</td>
<td>Proper units for cuff pressure are used and notation is made of minimal occlusion pressure (in the case of no leak) or of minimal leak technique (in that case).</td>
</tr>
<tr>
<td>22. Notifies appropriate personnel</td>
<td>If cuff pressure is above maximum safe level, a physician needs to be notified.</td>
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</table>

II. **REQUISITE PERFORMANCE VARIABLES:**

The student is expected to demonstrate proficiency in the performance of airway care and cuff management on all adult patients with tracheostomy or endotracheal tubes. The student is expected to demonstrate the use of both mercury (BP) manometers and aneroid cmH2O manometers.

III. **ADDITIONAL EVALUATION CRITERIA:**

None
IV. ORAL REVIEW QUESTIONS

1. What is really meant by the term "low pressure cuff"? What is the physiological rationale for low lateral tracheal wall pressures with airway cuffs?

2. Differentiate between MOV and MLT techniques of cuff management. What two conditions are desirable goals in adjusting cuff pressure/volume?

3. Describe the method(s) whereby you could determine if there were a leak in a gas-filled cuff.

4. Describe an ideal endotracheal tube.

V. SCENARIO QUESTIONS

1. You are checking for the cause of a significant cuff leak and find the pilot balloon has failed. The patient is scheduled for weaning the next morning, and has been sedated. What are your alternatives?

2. You are in the emergency room with a ventilator patient who was intubated prior to arrival. Upon checking the cuff pressure with the MLT, you find a pressure of 80 torr. What are possible reasons for this, and what do you suggest?
KALAMAZOO VALLEY COMMUNITY COLLEGE
RESPIRATORY THERAPY PROGRAM
PROFICIENCY EVALUATION

PROCEDURE (TASK): AIRWAY CARE - CUFF MANAGEMENT

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<table>
<thead>
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<tbody>
<tr>
<td>THERAPEUTIC PROCEDURE:</td>
<td>NON THERAPEUTIC PROCEDURE</td>
</tr>
<tr>
<td>CLINICAL</td>
<td>COLLEGE LABORATORY</td>
</tr>
<tr>
<td>NEW PATIENT</td>
<td>PEER APPLICATION</td>
</tr>
<tr>
<td>REPEAT PROCEDURE</td>
<td>MANIKIN/ANALOG</td>
</tr>
</tbody>
</table>

EQUIPMENT UTILIZED:

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STEPS IN PROCEDURE OR TASK:

### EQUIPMENT AND PATIENT PREPARATION

1. Selects, gathers and assembles appropriate equipment. Insures asepsis.
2. Verifies, interprets, and evaluates physician's order
3. Identifies patient, self, and department
4. Explains procedure and confirms patient understanding

### IMPLEMENTATION AND ASSESSMENT

5. Attaches stopcock and syringe to pressure manometer.
6. Fills syringe approximately half full with air
7. Turns stopcock off to patient connection
8. Depresses syringe to pre-pressurize manometer
9. Pre-pressurizes manometer to previous cuff pressure or to safe level
10. Attaches stopcock to pilot line
11. Opens stopcock to syringe, patient, and manometer
12. Squeezes pilot balloon and notes pressure swing on manometer
13. Auscultates neck above cuff
14. Listens for leak, if leak present adds air until leak stops; if leak absent, removes air until leak is heard, then adds air until leak stops.
15. Notes cuff pressure
16. If cuff pressure is above safe level, leaves a minimal leak.
17. Turns stopcock off to patient and disconnects pilot line from stopcock
18. Auscultates patient to assure proper leak or seal
19. Reassures patient

### FOLLOW-UP

20. Maintains and processes equipment
21. Records pertinent data on chart and departmental records
22. Notifies departmental personnel

### ADDITIONAL EVALUATION CRITERIA

23. Answers all review questions correctly
Upon completion the student will be able to answer oral review questions and discuss clinical scenarios related to the following cognitive objectives:

1. State the levels of pressure required to occlude blood flow in arteries, veins, lymphatic vessels, and capillaries.
2. State the short term and long term hazards/complications which may be seen with elevated cuff pressures.
3. Describe the MOV and MLT techniques, and state the advantages and disadvantages of each.
4. State alternative methods/solutions for contending with dangerously elevated cuff pressures.
5. List and describe all the different types of cuffs.

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<tr>
<th>Date</th>
<th>Skill Evaluation</th>
<th>Oral Review</th>
<th>Specify Deficiencies:</th>
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<tbody>
<tr>
<td></td>
<td>Ability to perform applicable steps in procedure as listed on the front of form without error or omission.</td>
<td>Knowledge of the cognitive objectives listed above.</td>
<td>Specify applicable skill steps that were omitted or done erroneously. Also note any errors in discussing cognitive objectives. Please give enough detail to allow the student to work on specific remediation.</td>
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<td>Requires additional clinical practice. Repeat skill evaluation. See deficiencies.</td>
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Evaluator Data

Please sign your name and state your affiliate name.

Signature

Affiliate

Date

Satisfactory

Unsatisfactory

Affiliate

Signature

Affiliate

Affiliate

Signature

Affiliate