Name of Policy:	**EZ-PAP™ Therapy**
Policy Number:	3364-136-04-10
Department:	Respiratory Care
Approving Officer:	Associate VP Patient Care Services / CNO
Responsible Agent:	Director, Respiratory Care
Scope:	The University of Toledo Medical Center Respiratory Care Department

THE UNIVERSITY OF TOLEDO MEDICAL CENTER

Effective Date: 9/1/2020
Initial Effective Date: 8/14/2017

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

(A) Policy Statement

The EZ-PAP™ therapy device consists of a pressure port cap, pressure monitoring port, gas inlet port, and ambient air inlet with a 22mm connection. Its use is in conjunction with a medical need for lung expansion therapy to prevent atelectasis.

(B) Purpose of Policy

To provide lung expansion therapy in the prevention or reversal of atelectasis, reduce air trapping in asthma and/or COPD, aid in the mobilization of retained secretions, and/or optimize delivery of topical bronchodilator medications. EZ-PAP™ therapy will be considered in any patients at risk for the above, especially when they are unable to attain at least 10ml/kg predicted inspiratory capacity via incentive spirometry.

(C) Procedure

After checking physician order, or as indicated based on Respiratory Assessor findings following the "Respiratory Therapy to Evaluate and Treat" per protocol order, the RCP will assemble the unit in accordance with directions included with the device.

1. Assembly of Circuit:
    a. Connect one end of the gas supply tubing to the gas inlet port on the device, and the other end to a 0-15 lpm air or oxygen flow meter.
    b. Connect enclosed pressure manometer tube to proximal port on patient end. This is recommended for the initial setup to become aware of the pressures transmitted to the patient. If pressure is not being monitored, seal the port with attached cap.
    c. Attach mouthpiece or facemask to patient (rounded) end.
    d. Assess patient for appropriate drive gas and set initial flow to air or oxygen at 5 lpm (make sure not to exceed the clinically prescribed oxygen flowrate). Source gas should not exceed 60 psi.

2. Instruct patient:
    a. Sit patient up in high Fowler's position, or dangling at bedside.
    b. Place mouthpiece in patient's mouth and instruct patient to keep lips tight around mouthpiece, or place mask comfortably over nose and mouth, creating an adequate seal. If using mouth piece, assess patient for need for nose clip.
    c. Encourage patient to breathe deeply, slowly, and easily against the pressure from the device.

d. Have patient perform 15 to 20 breaths, allow for a 1-2 minute rest period. (If giving bronchodilator, attach nebulizer at this point to complete the session).
e. Repeat for a total of 3 cycles (or 30 to 45 breaths) with a 1-2 minute rest period in between cycles.

3. Maximize therapy by performing the following:
   a. Monitor airway pressure, and slowly adjust flowmeter upwards until desired expiratory pressure is reached (10 cmH2O maximum). Flow should not exceed 15 lpm.
   b. Remind patient to breathe slowly throughout both inspiration and expiration to maintain adequate airway pressure.

4. When adding a bronchodilator inline:
   a. Check order for medication and frequency.
   b. Remove EZ-PAP™ device mouthpiece and connect T-piece from nebulizer between the mouthpiece and body of the EZ-PAP™ using a large bore adapter.
   c. Keep in mind that the flow needed to drive the nebulizer will create additional expiratory pressure. Watch manometer and titrate flows to maintain total pressure below 10 cmH20.

5. Monitor patient for tolerance. If patient is intolerant to therapy, report to RN and MD. Patients failing EZ-PAP™ therapy may demonstrate the following:
   a. Increased Work of Breathing.
   b. Fatigue
   c. Oxygen desaturation.
   d. Changes in HR and/or BP of >20%.

6. Monitor patient for signs of achievement of clinical goals:
   a. Decreased work of breathing.
   b. Improved breath sounds.
   c. Improved ability to mobilize secretions.
   d. Consider transition or return to incentive spirometer when patient demonstrates movement towards achievement of clinical goals.
   e. If patient has a preexisting incentive spirometer at bedside, assess for ability to achieve 10-15ml/kg of their predicted inspiratory capacity.
   f. EZ-PAP™ therapy may be used in addition to incentive spirometry, especially when patient is showing continued improvement in previous symptomology, but may not be ready for incentive spirometry alone.
   g. Patient may be considered ready to self-administer incentive spirometer without close monitoring or positive pressure adjuncts, when they are able to achieve 15ml/kg of predicted inspiratory capacity.

7. EZ-PAP™ therapy should not be used with any contraindications listed in the American Association for Respiratory Care Clinical Practice Guideline for Positive Pressure Breathing. Examples include:
   a. Inability to tolerate increased Work of Breathing
   b. Intracranial pressure (ICP) > 20 mmHg
   c. Hemodynamic instability
   d. Acute sinusitis
   e. Recent facial, oral, or skull surgery or trauma
   f. Epistaxis

g. Esophageal surgery
h. Active hemoptysis
i. Untreated pneumothorax
j. Nausea
k. Known or suspected tympanic membrane rupture or other middle ear pathology

NOTE: For flowmeter setting:
The *greater the expiratory flow* through the device = the *higher* the airway pressure.
The *greater the inspiratory flow* through the device = the *lower* the airway pressure.

WARNINGS:

- Use of this device at excessive pressures may have adverse effects especially when used with an artificial airway. Caution should be used with these types of patients in using minimal pressures.
- If using compressed oxygen as the gas supply, do not exceed the clinically prescribed oxygen flowrate.
- Do not occlude *ambient air inlet*.
- Do not exceed 15 lpm gas inlet or 60 psi compressed gas input.

REFERENCE:

AARC Clinical Practice Guideline: Use of PAP Adjuncts to Bronchial Hygiene Therapy. *Respir Care 1993:38:516-520*.

Ez-PAP™ package insert on Suggested Instructions for Use, DHD Healthcare Corporation.

Approved by: /s/ Michael Taylor Director, Respiratory Care — Date /s/ Monecca Smith Associate VP Patient Care Services / CNO — Date *Review/Revision Completed By:* *Director, Respiratory Care*	**Review/Revision Date:** 09/01/2020 **Next Review Date:** September 2023
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.