



IPV 1: Competency Checklist

This form is a self-assessment tool. The practitioner should be able to discuss the rationale for each of the actions and demonstrate competency in the practical applications of these skills as applicable.

Practitioner Name:

Date:

Department:

Medical Device: IPV 1 and Phasitron with Unified Connector

Achieved

IPV Therapy: Indications, Contraindications, and Mechanism of Action

1. Describe the three ways IPV therapy can help to restore gas exchange capacity
2. List the patient age groups that are approved for IPV use.....
3. List the two absolute contraindications for IPV therapy usage.....
4. List at least three expected clinical benefits of using IPV.....

IPV 1 Device: Overview

5. Disassemble Phasitron and identify the main components and functions:
Sliding venturi, Exhalation port, Entrainment port, Nebulizer cup.....
6. Locate the Gas Source knob and describe function
7. Locate the Frequency knob and describe the function,
as well as the difference between faster and slower frequencies
8. Locate the Amplitude knob and describe function
9. Locate Digital Display and explain the values visible in Active Mode

Preparing for Patient-Airway Connection

10. Describe or demonstrate how to assemble the Phasitron and connect to the IPV1.....
11. Identify the approved type and volume of solutions/medications for nebulization.....
12. Describe or demonstrate the initial knob settings prior to patient connection
13. List the clinical assessments to be done prior to IPV therapy.....

Delivering Therapy

- 14. List the steps to perform effective IPV therapy
- 15. Describe the clinical assessments needed to determine if the settings are appropriate for the patient.
- 16. List the possible situations or side effects you should be watching for during therapy.
- 17. Describe how to teach patients to effectively receive IPV therapy through a mouthpiece or mask
- 18. Explain the considerations when attaching IPV to an artificial airway.

Troubleshooting

- 19. Describe what to do if the Digital Display does not provide values after turning on the device.
- 20. Explain workflow if the nebulizer is not functioning properly.
- 21. Describe workflow if the device is not delivering percussions or the frequency is too slow.

Practitioner Signature _____ **Date** _____

Trainer Signature _____ **Date** _____



IPV 1: Competency Checklist Key

IPV Therapy

1. IPV restoring gas exchange capacity

IPV therapy can help to restore gas exchange capacity by recruiting atelectatic areas of the lung, breaking up and moving out secretions, and working around obstructions or inflammation to improve hyperinflation.

2. Patient Population

Intended for any patient from neonates to adults where IPV therapy is indicated.

3. Absolute Contraindications

Untreated tension pneumothorax or untrained or unskilled operator.

4. Benefit

IPV is an airway clearance therapy that allows settings to be individualized per patient/disease process to recruit atelectatic lungs, decrease work of breathing (WOB), increase secretion mobilization, improve ability to wean respiratory support, improve gas exchange, and improve overall patient outcomes.

IPV 1 Device: Overview

5. Phasitron parts:

- Sliding venturi: creates percussive pulses and high velocity flow to break up secretions and mucus plugs, and mobilize secretions away from airway walls.
- Expiratory port: allows for patient exhalation.
- Entrainment port: entrains room air that aids in flow delivery to the patient to help recruit the lungs.
- Nebulizer cup: Provides aerosolized saline or medication delivery.

6. Gas Source

The gas source knob allows the user to select air, oxygen, or to turn the IPV off.

7. Frequency

The frequency knob determines the rate of high-frequency percussive pulses delivered to the patient.

- Turning the knob to the left increases the frequency, which is recommended for secretion mobilization and quickly improving gas exchange.
- Turning the knob to the right decreases frequency, which is recommended for mobilizing thicker secretions or mucus plugs as well as reinflating and recruiting the lungs.

8. Amplitude

The amplitude determines the pressure delivered to the patient. Rotating it to the left increases the amplitude (increase chest wiggle) and rotating it to the right will decrease the amplitude (decrease chest wiggle).

9. Digital Display

- Amplitude is the largest value and corresponds with adjustments to the amplitude knob. This measures the difference between the minimum pressure and peak pulse pressure.
- Frequency is the three-digit value located on the right side of the Digital Display and represents the pulses per minute.
- Mean Airway Pressure is the value located above the frequency on the right side of the of the Digital Display. Changes in amplitude and frequency will determine MAP.
- Usage Timer is located beneath the Amplitude and reflects the total usage time of the current session.

Preparing for Patient-Airway Connection

10. Assembly

Connect the yellow tubing to the nebulizer bowl, the red tubing to the conical connector/pressure port at the back of the Phasitron, and the clear tubing to the cap at the back of the Phasitron. Connect the universal connector to the bottom of the IPV 1 device, then hang the Phasitron in the holder.

11. Filtering IPV

A hydrophobic bacterial filter may be used in patients with infectious diseases. To filter, place the filter at the end of the corrugated tubing on the exhalation port. The filter should be changed daily, when wet, or per hospital protocol. Note: Keep in mind a bacterial filter on the expiratory port will increase expiratory resistance. Always monitor the patient throughout therapy.

12. Nebulizing solution

The nebulizer cup should be filled with 15–20 ml (maximum) of saline, sterile water, or medication ordered by the provider. Never run IPV therapy with a dry nebulizer cup.

13. Initial knob position:

- Turn the Gas Source knob to the off position.
- Turn the amplitude knob completely to the right to the off position.
- Turn the frequency knob completely to the left to the fastest frequency.

14. Pre-Therapy Assessments

Before therapy, auscultate for breath sounds, heart and respiratory rate, and any other pre-treatment guidelines recommended by your institution.

Delivering Therapy

15. Delivering IPV Therapy

- Ensure the patient is in an upright, comfortable position, or is lying with head and shoulders elevated by pillows.
- Connect the Phasitron to the patient using the mouthpiece, mask, or direct connection to patient airway/airway adaptor.
- Turn IPV 1 on by rotating gas source knob to relevant gas source.
- Slowly rotate Amplitude control knob to the left until a visible chest wiggle is observed and pulses can be heard throughout the lung fields during auscultation.
- As the patient becomes acclimated to the treatment, rotate the Frequency knob to the right, being sure to assess for patient comfort. The Frequency knob may be rotated between the faster and slower frequencies every 3–5 minutes, or as indicated by the patient's response to therapy.
- Continue IPV therapy for 15 to 20 minutes, or per hospital policy. The total treatment time can be visualized on the digital display.
- When the treatment is complete, turn the Gas Source knob to the off position. Disconnect the patient from the Phasitron and circuit. If applicable, place patient back on previous respiratory support.
- Clean Phasitron per hospital infection control policy. Note that the Phasitron can be used for multiple treatments but is single patient use only.

16. Patient Assessment

During therapy, visually assess the patient for adequate chest wiggle and auscultate the lungs to confirm the presence of percussion in all lung fields. Observe for spontaneous breathing during therapy and avoid hyperoxygenation.

17. Possible Side Effects

Patients should be assessed for hyperventilation, hyperoxygenation, increased air trapping, gastric distension, decreased cardiac output, pneumothorax, pulmonary hemorrhage, increased intracranial pressure and/or pulmonary air leak.

18. Therapy via Mouthpiece or Mask

When using a mouthpiece, instruct the patient to keep their lips and cheeks tight to avoid nasal air venting; if using a mask, cheeks should be splinted. Advise the patient to relax and take normal breaths through the pulses whenever they desire. Observe the patient for signs of distress and consider pauses or breaks if necessary.

19. Therapy via Artificial Airway

IPV therapy can be performed with either inflated or deflated cuffs at the discretion of the institution and care team. The Phasitron can be attached directly to an artificial airway or airway adaptor. Be sure to suction the airway to avoid obstruction as secretions are mobilized.

Troubleshooting

20. Digital Display Malfunction

The display will wake when it senses at least 2.5 cmH₂O at the Phasitron. Consider occluding the end of the Phasitron, allowing the manometer to read 2.5 cmH₂O. Check connections and/or the digital display battery.

21. Nebulizer Malfunction

Ensure there is liquid present in the nebulizer cup and check for flow out of the nebulizer baffle. Disconnect the yellow tubing to verify flow and reconnect. If the issue persists, contact product support.

22. Percussion Malfunction

Check that the inlet gas source is properly connected. Check the device to ensure the Gas Source is turned on to the correct source, make sure Amplitude is not in the OFF position, and adjust Frequency knob for higher rate. If the issue persists, contact service.