



## IPV<sup>®</sup>-2C: 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<sup>®</sup>-2C and Phasitron

**Achieved**

### IPV Therapy: Indications, Contraindications, and Benefits

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 three expected clinical benefits of using IPV therapy.....

### IPV 2C Device: Overview

5. Disassemble Phasitron and identify the main components and functions:  
Sliding venturi, Expiratory port, Entrainment port, Nebulizer cup.....
6. Locate Master Switch and describe function.....
7. Locate Operational Pressure knob and describe function.....
8. Locate Demand CPAP/PEEP knob and describe function.....
9. Locate Inspiratory Time knob and describe function.....
10. Locate Inspiratory Flow knob and describe function and its significance on Amplitude.....
11. Locate the Frequency knob and describe function, as well as the difference  
between faster and slower frequencies.....
12. Locate the Nebulizer switch and describe function.....
13. Locate Digital Display and correctly identify values in Active Mode. ....

## Preparing for Patient-Airway Connection

- 14. Describe or demonstrate how to assemble and connect the Phasitron and connect to the IPV®-2C .....
- 15. Identify the approved type and volume of solutions/medications for nebulization.....
- 16. Describe or demonstrate the initial knob settings prior to patient connection .....
- 17. List the clinical assessments to be performed prior to IPV therapy.....

## Delivering Therapy

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

## Troubleshooting

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

**Practitioner Signature** \_\_\_\_\_ **Date** \_\_\_\_\_

**Trainer Signature** \_\_\_\_\_ **Date** \_\_\_\_\_



# IPV®-2C: 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 relieve hyperinflation/air trapping

### 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 therapy 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 2C Device: Overview

### 5. Phasitron parts:

- a. Sliding venturi: Enhances percussive pulses to break up secretions and mucus plugs, enables high-velocity flow to mobilize secretions away from airway walls, and dynamically responds, in real time, to resistance and compliance of the patient lung.
- b. Expiratory port: allows for patient exhalation.
- c. Entrainment port: Allows room air to join flow delivered in response to the movement of the venturi, which adapts to the compliance and resistance of the lung.
- d. Nebulizer cup: Provides aerosolized saline or medication delivery.

### 6. Master Switch

Turns the IPV®-2C controller ON and OFF.

### 7. Operational Pressure

Controls the peak operating pressure of the entire unit.

### 8. Demand CPAP

Provides additional positive pressure, optimizes lung recruitment and reduces the work of breathing.

### 9. Inspiratory Time

Selects independent inspiratory:expiratory ratio control. Optimizes lung recruitment and reduces the work of breathing with the addition of CPAP

### 10. Inspiratory Flow (Amplitude)

Determines the amplitude delivered to the patient during inspiratory time. Rotating Inspiratory Flow to the left increases the amplitude (increase chest wiggle) and rotating Inspiratory Flow to the right will decrease the amplitude (decrease chest wiggle).

### 11. Frequency

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

- a. Turning the knob to the left increases the frequency and lowers pulse strength, which is recommended for secretion mobilization and quickly improving gas exchange.
- b. Turning the knob to the right decreases frequency and

increases pulse strength which is recommended for mobilizing thicker secretions or mucus plugs as well as reinflating and recruiting the lungs.

### 12. Nebulizer Switch

Turns the aerosol delivery ON and OFF.

### 13. Digital Display (US)

- a. Mean Airway Pressure, the largest value, is the average pressure (amplitude + CPAP) in the lung over 5 seconds.
- b. Pulse Frequency Rate is the three-digit value located to the right of the MAP. Represents the number of pulses per minute.
- c. Pulsating Bar Graph displays pulse amplitude (0-50 cmH<sub>2</sub>O), displaying the minimum and peak pressure of each pulse.
- d. Treatment Timer is located beneath the displayed pressure value. Displays total usage time of the current session in minutes and seconds.

## Preparing for Patient-Airway Connection

**NOTE:** It is recommended to perform a pre-use check of device operation before attaching the Phasitron to the patient interface.

### 14. Assembly

Start with the end of the circuit where tubing is equal in length and connect the tubing to the corresponding-colored connectors on the IPV®-2C device. Opposite end of the circuit will connect to the Phasitron. Connect the yellow tubing to the nebulizer bowl. At the back of the Phasitron, connect the red tubing to the pressure port and the clear tubing to the cap.

### 15. 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.

### 16. Initial knob position:

Keep in mind the arrow on the knob dictates its orientation:

- a. Ensure Master Switch is OFF.
- b. Set Inspiratory Time with arrow pointing straight up.
- c. Set Demand CPAP with arrow pointing straight up to give you 2–6 cmH<sub>2</sub>O when the device is turned on.
- d. Turn Inspiratory Flow knob fully to the right (in the OFF position).  
**NOTE:** For patients coming off respiratory support consider starting with inspiratory flow on (i.e. with the knob's arrow straight up) and quickly titrate to target the MAP delivered from previous support.
- e. Turn the Frequency knob fully to the left (fast/easy setting).

### 17. 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

### 18. Delivering IPV Therapy

- a. Ensure the patient is in an upright, comfortable position, or is lying with head and shoulders elevated by pillows.
- b. Turn the Master Switch ON and wait to hear flow.
- c. Turn ON the nebulizer switch.
- d. Start with Operating Pressure according to the patient population.
  - Neonate: 20psi
  - Pediatric: 30 psi
  - Adult: 40 psi
- e. Connect Phasitron to the patient using mouthpiece, mask, or direct connection to patient airway/airway adaptor.
- f. Gradually increase the Inspiratory Flow by rotating the knob to the left. Adjust for an amplitude that provides chest wiggle throughout the entire chest or can be heard with a stethoscope in all lung fields.
- g. Check the Digital Display for the treatment time and measured values for reference. The digital values reflect the knob positioning on the front of the device.
- h. 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.
- i. Continue IPV therapy for 15 to 20 minutes, or per hospital policy. The total treatment time can be visualized on the digital display.
- j. When the treatment is complete, turn the Master Switch to the OFF position. Disconnect the patient from the Phasitron and circuit. If applicable, place the patient back on previous respiratory support.
- k. Clean Phasitron per hospital infection control policy. Note that the Phasitron can be used for multiple treatments but is single patient use only.

### 19. 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 consider monitoring CO<sub>2</sub> continuously to avoid hyperventilation. Assess oxygen saturation to avoid hyperoxygenation.

### 20. Possible Side Effects

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

### 21. 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.

### 22. Therapy via Artificial Airway

IPV therapy can be performed with either an inflated or deflated cuff 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

### 23. Digital Display is off

The display will wake when it senses at least 2.5 cmH<sub>2</sub>O at the Phasitron. Consider occluding the end of the Phasitron, allowing the device to measure at least 2.5 cmH<sub>2</sub>O to wake the digital display.

### 24. Slow or no percussions

Check that the inlet gas source is properly connected. Check the device to ensure the Master Switch is turned to the ON position, make sure Inspiratory Flow knob is NOT in the OFF position, and adjust Frequency knob for higher rate. Finally, check REMOTE connector for blockage. If the issue persists, contact product support.

### 25. Nebulizer not aerosolizing

Make sure nebulizer switch is in the ON position. Ensure there is liquid present in the nebulizer cup and check for flow out of the nebulizer baffle. Disconnect the yellow tubing and verify flow. If flow is present, turn the Master Switch knob to the OFF position and reconnect the yellow tubing to the nebulizer bowl. If the issue persists, contact product support.