

**Table 3. Responses to the question, “how would you most commonly perform VHI?”**

	Ventilation	Pressure	Volume	Inspiratory hold	Duration of each cycle	Additional information
1						Patient specific
2	<10kgs SIMV PC set RR, set i time	Set PIP to 20% above delivered PIP			1 minute, return settings to baseline	
2	>10kgs SIMV VC set RR, set i time		Gradually increase Vt by 10mls to target a peak pressure of 40cmH <sub>2</sub> O		1 minute, return settings to baseline	
3		Increase PIP		Yes		Depends on situation
4			Increase Vt by 20%			
5		Increase PS/PC by 2 at a time to obtain 1.5x increase from baseline Vt	Aiming 1.5x increase from baseline Vt	Yes		Add manual techniques and manually assisted cough
6		Increase PC to achieve 20-50% increase in Vt dependent on starting pressures and chest wall compliance	Aiming 20-50% increase of Vt	3-5 seconds depending on age of child, followed by normal ventilator breaths x2		Vibrations on expiration
7						Depends on patient and stability. Use saline and vibrations as well if indicated
8		Increase PIP by 2cmH <sub>2</sub> O until reach desired peak pressure			7-8 breaths with or without vibrations, return pressures and alarms to pre- treatment settings	Monitor minute ventilation and etCO <sub>2</sub> through-out to keep in target range
9	PC or Vt increased (no set amount) Rate decreased			Yes, used to increase frequency of breaths and increase i time		
10						No specific guidance, used with COVID adults
11					3 breaths	

	Ventilation	Pressure	Volume	Inspiratory hold	Duration of each cycle	Additional information
12	Only use pressure ventilation on our unit	Increase PIP to increase Vt by 50%. If PIP is already 38cmH <sub>2</sub> O then preference is to increase inspiratory time to achieve more volume		Yes	10 breaths	Vibrations on expiration after inspiratory holds, inline suction with vibrations
13						Follow guidelines kindly shared by another PICU
14			Increase Vt to 1.25-1.5 times above baseline settings	Yes	Multiple inspiratory holds at higher tidal volume until secretions are felt more centrally	Expiratory vibrations after inspiratory hold if indicated. Suction
15		Alter ventilation to achieve desired Vt, including inspiratory time, respiratory rate and Vt		Yes, 2-3 secs		Return all settings to baseline and ask nursing staff to verify
16		Increase by increments of 2cmH <sub>2</sub> O to achieve 50% increase in Vt from starting volume	If in pressure mode increase volumes by increments of 10% of starting volume to achieve Vt 50% greater than starting volume	Yes, length dependent on patient		Assess stability through-out, utilise flow loops to assess expiratory flow rate generated. Can use expiratory manual techniques in synch with VHI to increase expiratory flow rate
17		Increase PIP		Yes		

**Key:** <-less than, >-greater than, etCO<sub>2</sub>-end tidal carbon dioxide, i time=inspiratory time, PC=pressure control, PIP=peak inspiratory pressure, PS=pressure support, RR=respiratory rate, SIMV=synchronised intermittent mandatory ventilation, VC=volume control, Vt=tidal volume, VHI=ventilator hyperinflation.