

**SUBJECT: A Decade of Progress APRV vs PCIRV
Airway Pressure Release Ventilation vs Pressure Controlled Inverse
Ratio Ventilation**

Both APRV and PCIRV are acronyms used to describe pressure targeted ventilatory support that is adjusted to raise patient airway pressure to a higher level for a longer time than is spent at a lower level*. This style of ventilatory support can maximize oxygenation and ventilation while keeping peak alveolar pressures low enough to minimize ventilator induced lung damage.

APRV

The term APRV may be used when the ventilatory support device allows the patient to breathe both in and out at both levels of pressure during pressure targeted ventilation. Advocates believe that allowing the patient this freedom reduces the necessity for heavy sedation.

Few ventilatory support devices are equipped with a "mode" labeled APRV. You can deliver APRV with the Newport Breeze E150. When the mode selector is set for SIMV[1], Pressure Control, the patient may breathe in from either mandatory or spontaneous gas flow at any time and may breathe out through the exhalation valve at any time.

Use the Newport Breeze E150 to deliver the APRV-style of pressure targeted ventilatory support for neonate, pediatric and adult patients.

PCIRV

The term PCIRV does *not* imply that the ventilatory support device allows the patient to breathe both in and out at both levels of pressure during pressure targeted ventilation. It simply implies that the device supplying pressure targeted ventilatory support is set to raise patient airway pressure to a higher level for a longer time than is spent at a lower level.

Many devices designed for use on adults employ variable flow control with a closed exhalation valve to raise airway pressure to a higher level during the "inspiratory" phase of pressure targeted ventilation. Using this method, the patient may always be able to breathe in but will not be able to breathe out during the "inspiratory" phase. A device with this design may be used for pressure targeted ventilation on patients who are not breathing [2] or on actively breathing patients if the period of time pressure is raised to the higher pressure is compatible with the patient's own "inspiratory" time. The device can only be employed to deliver PCIRV if for either physiologic or pharmaceutical reasons the patient is not actively breathing.

Use the Newport Breeze E150 or Wave E200 to deliver the PCIRV-style of pressure targeted ventilatory support for neonate, pediatric and adult patients.

(I:E ratios of 4:1 are available on the Newport Breeze E150 and I:E ratios of 3:1 are available on the Newport Wave E200.)



* By definition, APRV does not require that pressure remain at a higher level for longer than it is at a lower level.