HeliOx Through the AVEA Ventilator

There are several "unofficial" ways to administer HeliOx with mechanical ventilation, but the AVEA ventilator with on-board HeliOx capabilities allows us to standardize the practice and make it consistent for all of our patients. The process is relatively straight-forward – the AVEA just needs a few adjustments and a few pieces of specialty equipment in order to give HeliOx. When HeliOx is used as a source gas, no adjustments to volume readings are necessary, as the ventilator takes the source gas into account. Although research has never come out and definitively embraced HeliOx via mechanical ventilation, there are anecdotal stories of success which may indicate the effectiveness of the gas in certain subsegments of the patient population. Please keep in mind that HeliOx is simply a way to provide temporary relief of symptoms while treating a patients' underlying condition, and should not be used as single stand-alone therapy.

Objectives: At the conclusion of the competency, the participant will be able to do the following:

- ☑ Identify the specific AVEA that can be used for HeliOx administration
- ☑ Identify the special HeliOx adapter that is used with the AVEA
- ☑ List the three special accessories that are needed when setting up HeliOx with the AVEA ventilator
- ☑ Describe the procedure that is used to disconnect the oxygen hose and connect the HeliOx hose, with special emphasis on the unusual nature of the adapter
- ☑ State the correct HeliOx cylinder to use with the ventilator, and describe the required elements on the cylinder sticker that must be identified
- ☑ Identify the on-screen icon that is present when HeliOx is being used
- ☑ Identify the ventilator controls that will interrupt HeliOx delivery
- ☑ Discuss the use of nebulizers as recommended by the manufacturer
- ☑ Describe the process used when testing the "Loss of HeliOx" alarm
- ☑ Identify the desired clinical strategy when administering HeliOx, and calculate the delivered FiHe for any given set FiO2
- ☑ Discuss potential challenges unique to the administration of HeliOx through the ventilator, and identify a strategy to address potential problems
- ☑ Discuss potential effects that HeliOx may have on a ventilator circuit due to the thermal conductivity properties of Helium
- ☑ Discuss the use of HeliOx as a tertiary form of treatment