pNeuton

Pneumatic Transport Ventilation

Pneumatic Ventilators for Disasters

The pNeuton Ventilator is an ideal pneumatic ventilator for disaster mitigation. Here's why:

- Loss of patient life has occurred in hospitals that experience extended power loss due to hurricanes, tornados or other natural / man made disasters. All electrical powered ventilators, even battery powered transport ventilators, eventually become useless during these disasters. Having pneumatic ventilators for disaster preparation provide hospitals with a true **All Hazards Preparation** approach that hospitals and EMS agencies need.
- The pNeuton model A ventilator meets all **clinical** CDC recommendations for ventilators used for disaster preparation. The CDC recommendations include operational requirements that the ventilator use minimal oxygen, not depend on oxygen as a power source and that it be able to run on batteries. The primary purpose of these operational recommendations is for ventilators to use minimal oxygen. In fact, many electrical transport ventilators have oxygen systems that waste oxygen, some more than pNeuton.
- To improve staff familiarity with disaster ventilators, hospitals should use these ventilators on a routine basis. One advantage the pNeuton Ventilator offers which is not found with other electrical transport ventilators is **MRI compatibility**. Using the pNeuton ventilator for MRI use and routine clinical transport will improve hospital staff knowledge of the ventilator. This feature will also give hospitals ventilators that can be used in the MRI during a disaster.
- The pNeuton ventilator has a **remote alarm output** that will easily interface into hospital nurse call systems. This will allow hospitals to use the ventilator for strict isolation patients and still monitor for alarms. This feature is recommended by the CDC (item 4) but is not available in other pneumatic ventilators.
- Since hospitals are responsible for keeping their disaster ventilators always available for use, they are concerned about continuing maintenance costs. The advantage the pNeuton ventilator offers is **no storage costs** or battery charging and much lower preventative maintenance costs than all electrically powered transport ventilators.

The following page shows how the pNeuton ventilator matches up with the CDC recommendations.

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CDC	pNeuton A Ventilator	Notes
FDA approved for adult and pediatric patients	**Yes**	Also approved for **non-invasive** ventilation
Provide adequate oxygenation and ventilation for adult and pediatric populations	**Yes**	Integrated PEEP / CPAP, peak flow to 140 L/min, meets patient demands for respiratory failure
Should provide maximal patient safety through audible alarms.	**Yes**	
Should protect the health care worker safely through a variety of mechanisms including the ability for remote monitoring and assisting with infection control	**Yes**	Remote alarm output uses standard output signal configuration
Should utilize medical gases efficiently and should not require pressurized medical gases as their power source for operation.	Minimal oxygen usage for internal operation (4 L/min), no electrical power required	JCAHO Sentinel Alert Issue 37 and the Katrina experience highlights the concern during major catastrophes that emergency power systems can not always be depended upon
Should be able to operate on a battery or non-AC power source.	No battery or electricity required	Operates for weeks without electrical power
Should be able to operate for days to weeks.	**Yes**	Provides ventilation in any location including MRI, hazardous environments
Should be able to accept standardized connections.	**Yes**	No separate PEEP valves or reservoir / enrichment kits. Simple, inexpensive patient circuit.
Should be intuitive to use and require minimal to no training for safe operation	**Yes**	Easy for caregiver set-up, little to no training needed
Should be relatively inexpensive to purchase and maintain	**Yes**	**No maintenance** during storage, low PM costs