

TIP SHEET: SAFER VENTILATION STUDIES DURING COVID-19

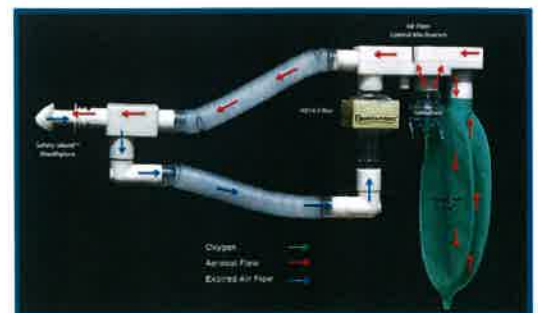
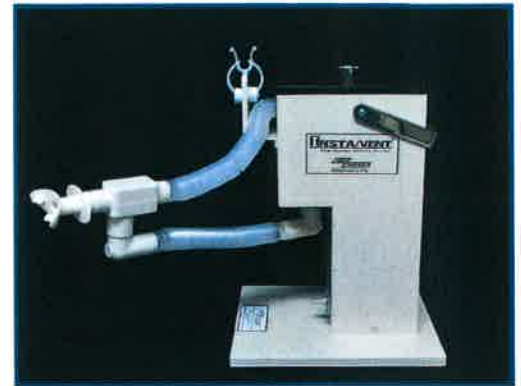
Keeping in mind that a ventilation study itself is a safe procedure, the risky part of performing one is the patient. The same is true of CTs, x-rays, intubations and any other procedure. The patient is the unknown part of any familiar procedure. So, how can we mitigate the risk from patients during a ventilation study?

The following are tips to more safely complete a ventilation study, provided by nuclear techs currently performing them. The assumption that techs have the proper personal protective equipment needed is being made.

ADDRESSING THE CONCERN ABOUT COUGHING

- ◆ Any delivery system that requires deep breathing or breath holding will most certainly induce coughing from a sick patient, and should not be used. This may also apply to Technegas™ or Xenon delivery when deep or rapid breathing is required.
NOTE: Chest CTs require breath holding so coughing is a concern there as well.
- ◆ Use a radioaerosol delivery system, such as Medi/Nuclear's® Aero/Vent™ or Insta/Vent™ systems, that require and **emphasize just tidal breathing**, as these are much less likely to invoke coughing spasms.
- ◆ A properly fitted, non-vented, air cushioned face mask may be used to seal a patient's nose and mouth. To properly apply a face mask 1) place it on the bridge of the nose and 2) carefully roll it down toward the chin. This process will move the soft tissues out of the way, securely sealing the edges of the face mask on the hard bones of the face. **NOTE:** Insta/Vent™ and Aero/Vent™ radioaerosol kits may be ordered with air cushioned face mask. If preferred, face masks may be ordered by the case (20/cs) using #MN5045 for two tube systems or #MN7110 for single tube systems.
- ◆ Because of Covid-19, the use of a face mask harness (#MN9676) is recommended. This secures the face mask and reduces close contact with the patient.
- ◆ For an additional layer of protection, a damp microfiber, cotton, or cotton blend cloth may be placed around the edges of the face mask. The moisture in the cloth will fill the pores of the cloth, allowing escaped particles, if any, to be collected. The cloth may be discarded as hazardous waste after the procedure.
- ◆ When using Medi/Nuclear's® Insta/Vent™ and Aero/Vent™ systems with a properly fitted face mask, a patient's cough will go through the circuit and into the HEPA filter.

See page 2 for Addressing Concerns About Contamination.



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ADDRESSING THE CONCERN ABOUT CONTAMINATION

- ◆ Aero/Vent™ and Insta/Vent™ systems are closed systems with single use, disposable administration kits. Patient exhalation is directed into a HEPA filter, preventing exposure to internal components such as the nebulizer, internal pressure port (used on some shield models) or the oxygen inlet port, thereby minimizing risk of patient cross-contamination.
- ◆ HEPA filters have 99.9% trapping efficiency of particles larger than 0.3 microns. As nebulizers produce particles of various size, and they begin to grow upon inhalation, the chance of pass-through is extremely low. The HEPA filter on two tube (unidirectional) systems is fully contained inside the shield. Once a kit has been discarded, the inside of the shield may be wiped down with rubbing alcohol or other disinfectant, along with the exterior of the shield and study area, to avoid possible surface contamination.
- ◆ Depending on the shield model, an extra HEPA filter (#MN2890) may be added to a single tube kit if additional protection is desired. To better fit a shield, an elbow or adapter may be needed to angle the filter away from the shield.
- ◆ If additional protection is desired, a damp microfiber, cotton or cotton blend cloth may be placed around the outside of a shield during the procedure. The moisture in the cloth will fill the pores of the cloth, allowing escaped particles, if any, to be collected. The cloth may be discarded as hazardous waste after the procedure.
- ◆ The use of a straight mouthpiece should be avoided as leakage from the corners of a patient's mouth is likely. If a mouthpiece is to be used, Medi/Nuclear's® scuba style Safety Shield™ Mouthpiece (#MNMP500) is recommended as it covers the corners of a patient's mouth and has a snap-on cap that can be used to collect contaminated saliva during mouthpiece removal, before being closed.
- ◆ To further reduce the chance of leakage from around a mouthpiece, a damp microfiber, cotton, or cotton blend cloth may be wrapped around it. The moisture in the cloth will fill the pores of the cloth, allowing escaped particles, if any, to be collected. The cloth may be discarded as hazardous waste after the procedure.
- ◆ When using a mouthpiece, be sure to properly apply a nose clip (#MN1050) to prevent leakage from the nose. To place a nose clip properly, ensure the nose pads are located on the lower part of the nose, keeping nostrils closed tightly. If a patient is placing the nose clip, check to make sure it is located properly. This will enhance safety and speed up dosing.
- ◆ After a procedure, before removing a mouthpiece or face mask, allow the patient to continue breathing room air via the kit for an additional 20-30 seconds (4-5 breaths). This will maximize the clearance of any remaining activity in the tubing, and reduce the possibility of inadvertent contamination to the patient, tech or room by allowing particles to be captured in the HEPA filter.
- ◆ Have the patient put on a personal face mask following the procedure, and then clean and disinfect the area according to hospital protocols.



TIP SHEET: SHIELD CLEANING AND MAINTENANCE

For use with:

Aero/Vent™ shield #AV-401, #AV-501, #AV-501A

Aero/Vent™ Jr. shield #AV-101, #AV-102, #AV-101A

Insta/Vent™ shield #IV-601, #IV-601A

- ◆ Shield surfaces are non-porous. To avoid possible surface contamination, gently wipe down the exterior and internal walls of the shield with rubbing alcohol or other disinfectant and let air dry. This should be done following every procedure. **NOTE:** Placing the shield on absorbent paper will also help to protect surfaces and may be discarded as hazardous waste following a procedure.
- ◆ Medi/Nuclear's® radioaerosol delivery systems are closed systems with fully disposable kits. Patient exhalation is directed into a HEPA filter, with 99.9% trapping efficiency. Internal portions of the shield such as the nebulizer, internal pressure port (used in some models) or oxygen inlet port will not be contaminated with proper use of kit.
- ◆ Replacement of oxygen tubing is recommended every 3-4 months or according to facility protocol. Medi/Nuclear's® oxygen tubing has special connectors with small internal diameter to attach snugly to the shield, whereas tubing from other suppliers or Central Supply may be oversized and potentially allow leakage. Replacement oxygen tubing may be ordered from Medi/Nuclear® using part number IV-605.
- ◆ In rare instances, the small orifice inside the pressure port (in Aero/Vent™ Jr. and Insta/Vent™ shields only), can become partially occluded, creating higher than normal backpressure. To ensure free air flow, remove the oxygen tubing from the shield and blow air through the pressure port from inside of the shield. If necessary, the shield may be taken to the Biomed Department where a higher PSI is available and/or warm water may be blown through the pressure port.

For additional information or troubleshooting tips, please contact us.

We're here to be of assistance!



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