

# Surgical Smoke Management Recommendations

CONMED Corporation

## Dear Partners in Healthcare,

In this time of heightened concern, it is important that you have factual information and resources to help guide you in your decisions regarding smoke evacuation systems to help mitigate risk. This communication is designed to give you general recommendations related to the use of Smoke Evacuation:

### Recommendations for Surgical Smoke Management

- Smoke evacuators should have a minimum flow rate of 25 cubic feet per minute with variable flow rate to accommodate various levels of smoke.<sup>1</sup>
- Personal respiratory protection (e.g., a surgical N95 respirator) provides **secondary protection** against residual surgical smoke that evades evacuation.<sup>1</sup>
- A smoke evacuator with a 0.1µm filter (e.g., ultra-low particulate air (ULPA) should be used when surgical smoke or any aerosolization of particulates is anticipated (Example: ENT Cases, GI Endoscopy, Anesthesia extubation and intubation, or during electrocautery of tissue).
- A medical-surgical vacuum system (i.e. wall suction) may be used to evacuate small amounts of surgical smoke as defined by the health care organization's policy & procedures. When using a medical-surgical vacuum system, a 0.1µm in-line filter (e.g., ULPA) should be in place between the suction wall connection & the suction canister.<sup>1</sup>
- The smoke evacuation system (e.g., smoke evacuator, medical-surgical vacuum with in-line filter) should be activated at all times while surgical smoke or aerosolization of particulates is being generated.<sup>1</sup>
- Perioperative personnel should ensure the smoke capture device (e.g., wand, tubing) is positioned as close to the surgical site as necessary to effectively collect all traces of surgical smoke.<sup>1</sup>
- The perioperative team should use a smoke evacuation system during minimally invasive procedures (*See CONMED Insufflation Recommendations*).
- Used smoke evacuator filters, tubing, and wands must be handled using standard precautions, and disposed of as biohazardous waste.<sup>1</sup>

### Recommendations for Open Cases

Consider using a smoke evacuator along with every open procedure which generates surgical smoke as a general standard precaution.

Smoke Evacuation Disposables should be as close to the source of smoke generation as possible. ConMed recommends the use of a smoke evacuation pencil such as PlumePen® Elite (PLP2020), PlumePen® Ultra (PLPUL4020), & PlumePen® Pro (PLPRO4020). If a smoke evacuation pencil is not available or clinically acceptable, alternatives include an electrosurgical pencil adapter, such as SnapEvac® (SNAPEVAC20) or PenAdapt® (PA2010), or open tubing (such as VTWT624).

### Recommendations for In-line Filtration

When a smoke evacuator is not available, or smoke evacuation via suction is deemed appropriate, an ULPA-rated in-line filter should be placed between the suction canister and the suction wall connection. CONMED solutions include BILF150 and BILF200.

In-Line filters should contain ULPA-rated media (Capable of filtering 0.1 to 0.2 micron size at 99.999% efficiency)

If the smell of vaporized tissue is present during the procedure, this suggests inadequate evacuation of surgical smoke. If smell persists, consider using a smoke evacuator with adequate flow rate (*see Recommendations for Surgical Smoke Management section*).

### Guidelines for Utilizing Smoke Evacuation During Intubation

Anesthesia professional may be at increased risk during intubation and extubation<sup>2,3</sup>. Some hospitals are beginning to use smoke evacuation in addition to PPE as an additional protective measure for anesthesia. Should you decide to adopt such a technique, we recommend the following setup:

- Avoid having the circulating OR nurse holding patient, which puts them inside the 6 ft distance during extubation.
- Move patient to stretcher prior to extubation and pull up the rails, and enable the OR nurse to stand 6ft or greater away from the bed.
- Alternatively, double strap the patient to the OR table to prevent fall. A smoke evacuator should be positioned in every operating room at the head with anesthesia.

- Open tubing (Ex: VTWT624 or VT78-6) is attached to the smoke evacuator, placed within 2 inches of the mouth, and activated prior to intubation and extubation.
- The tubing is single-use and discarded after every case.
- Use of fluid traps may reduce the risk of fluid and tissue contamination of the filter. CONMED recommends product code VSFT10 be used for every procedure. Ensure these fluid traps are treated as a single-use disposable as indicated on the IFU.
- General precautions such as wearing appropriate PPE when interacting with smoke evacuator is recommended.
- Dispose of single-use products in conjunction with the biohazard protocol the facility adheres to.

#### **Guidelines for Handling Smoke Evacuation Equipment**

- Close all smoke evacuation filter ports when they are not in use.

This material provides information regarding how to use CONMED medical devices and instruments in medical procedures. It is not medical advice and each health care professional should use their own professional judgment before using in a particular procedure.

**Stay Safe,**

**CONMED Corporation**

1. Fencel JL. Guideline Implementation: Surgical Smoke Safety. AORN J. 2017;105(5):488–497.
2. Kamming D, Gardam M, Chung F. Editorial I. Anaesthesia and SARS. Br J Anaesth. 2003;90(6):715-718. doi:10.1093/bja/aeg173
3. Caputo KM, Byrick R, Chapman MG, Orser BA, Orser BJ. Intubation of SARS patients: Infection and perspectives of healthcare workers. Can J Anesth. 2006;53(2):122-129. doi:10.1007/BF03021815