AORN
SAFE SURGERY TOGETHER
2170 South Parker Road, Suite 400 · Denver, CO 80231 · (800) 755-2676 · www.aorn.org

Surgical Smoke Evacuation Legislation

HF4011 (Berg) / SF3948 (McEwen)

What is surgical smoke?
Surgical smoke (plume) is the result of human tissue contact with lasers and electrosurgical pencils commonly used for dissection and hemostasis during surgery. Approximately 90% of all surgical procedures generate surgical smoke, and an estimated 500,000 health care workers are exposed to surgical smoke each year. The average daily impact of surgical smoke to the surgical team is the equivalent of inhaling the smoke of 27-30 unfiltered cigarettes.

What makes surgical smoke dangerous?
Surgical smoke contains over 150 hazardous chemicals and carcinogenic and mutagenic cells. It contains toxic gases and vapors such as benzene, hydrogen cyanide, formaldehyde, bioaerosols, dead and live cellular material, blood fragments, and viruses.

In addition to the danger to health care workers, surgical smoke can cause cancer cells to metastasize in the incision site of patients having cancer removal surgery. Babies born by C-section breathe in their mother's surgical smoke at birth.

Solution: Evacuate harmful surgical smoke.
Surgical smoke can be safely and effectively eliminated with available technologies. Captured surgical smoke is disposed of as hazardous waste. It is important to note that surgical smoke evacuation does not involve construction costs or changes to a facility's HVAC system or general room ventilation.

Recognition of the Hazards of Surgical Smoke
Regulations and safety precautions recommended to minimize or eliminate the potential harm from smoke inhalation or absorption are offered by regulatory and standard-setting organizations including the following: the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the Centers for Disease Control and Prevention (CDC), and The Joint Commission.

Need for Smoke Evacuation Law
While many agencies recognize the hazards of surgical smoke and a few even go on to recommend evacuation, there are no national or statewide enforceable requirements for the evacuation of surgical smoke.

Many surgical facilities do evacuate during some procedures, but few facilities evacuate consistently during all procedures which generate surgical smoke. Nurses have little control over whether they are assigned to a smoking or non-smoking operating room. Whether or not smoke is evacuated during surgery tends to be based one team member's decision to use or not use an evacuator.

To date, Arizona, California, Colorado, Connecticut, Georgia, Illinois, Kentucky, Louisiana, Missouri, New Jersey, New York, Ohio, Oregon, Rhode Island, and Washington have enacted legislation.