

This is a draft of possible language regarding Occupational Safety and Health Standards Board Petition 567. This draft is for discussion purposes only, and is not a rulemaking proposal.

Add new Section 51XX to read:

§ 51XX. Occupational Exposure to Surgical Plume

- (a) Scope and Application. This section applies to occupational exposure to surgical plume in general acute care hospitals, acute psychiatric hospitals, and special hospitals.

NOTE: This section does not preclude the application of sections 3203, 5141, 5143, 5193, 5199 or other title 8 safety orders to occupational exposure to surgical plume.

- (b) Definitions.

- (1) “Acute psychiatric hospital” means a health facility as defined in Health and Safety Code section 1250(b) and all services within the hospital's license to operate issued by the California Department of Public Health (CDPH).
- (2) “Electrocautery device” means a medical device that is electrically heated to cut, ablate, or coagulate tissue.
- (3) “Electrosurgical device” means a medical device that uses a radiofrequency electric current that passes through the patient to cut, ablate, or coagulate tissue.
- (4) “Energy-based medical device” means a medical device that transmits energy (light and other forms of electromagnetic radiation, electrical, ultrasound, and mechanical) to tissue with enough energy to alter the structure of the tissue. Examples of energy-based devices include lasers, electrosurgical generators, broadband light sources, ultrasonic instruments, plasma generators, bone saws, reamers, and drills.
- (5) “General acute care hospital” means a health facility as defined in Health and Safety Code section 1250(a) and all services within the hospital's license to operate issued by CDPH.
- (6) “Plume scavenging system” means smoke evacuators, laser plume evacuators, plume scavengers, and local exhaust ventilators that capture surgical plume at the site-of-origin and before plume can contact the eyes or respiratory tract of employees.
- (7) “Site-of-origin” means the location where tissue is being altered, worked on or destroyed by a medical device or devices.
- (8) “Special hospital” means a health facility as defined in Health and Safety Code section 1250(f) and all services within the hospital's license to operate issued by CDPH.
- (9) “Surgical Plume” means airborne contaminants (dusts, fumes, mists, vapors and gases) generated during the use of energy-based medical devices, electrosurgical devices,

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electrocautery devices, or powered mechanical tools during surgical, diagnostic, or therapeutic procedures.

(c) Written Procedures.

Employers shall develop written procedures that provide clear instructions for the effective use of plume scavenging systems to minimize employee exposure to surgical plume.

- (1) The procedures shall be implemented whenever surgical plume is generated.
- (2) The procedures shall be reviewed and evaluated at least annually, and updated as necessary, to ensure that they reflect current, safe work practices.

(d) Control Measures.

(1) Engineering Controls.

(A) Plume Scavenging Systems. Exposure to surgical plume shall be prevented by plume scavenging systems to the greatest extent feasible. Plume scavenging systems shall be in operation continually and located as close as possible to the site-of-origin whenever surgical plume is generated.

Exception: Plume scavenging systems may be located farther away from the site-of-origin if a licensed healthcare professional directly involved in a patient's care determines, in the reasonable exercise of clinical judgement, that the location of the engineering controls will jeopardize the patient's safety or jeopardize the success of the medical procedure.

NOTE: The use, construction, installation, inspection, testing, and maintenance of exhaust ventilation systems must comply with section 5143.

(B) General Ventilation. General room ventilation of 20 air exchanges per hour shall be used in addition to plume scavenging systems and other local exhaust ventilation systems.

- (2) Administrative Controls, including work practices, shall be used when plume scavenging systems are not placed as close as possible to the site of origin as allowed by the exception to subsection (d)(1), or when plume scavenging systems do not prevent visible surgical plume from contacting the eyes or respiratory tract of employees. Administrative controls shall minimize employee exposure to surgical plume to the greatest extent feasible.

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- (3) Respiratory protective equipment, in accordance with section 5144, shall be used when the engineering controls and administrative controls do not prevent visible surgical plume from contacting the eyes or respiratory tract of employees.

NOTE: Surgical masks are not approved respiratory protective equipment pursuant to section 5144.

- (4) The employer shall provide and ensure employees use appropriate eye protection where visible plume may contact the eyes of an employee.
- (e) Training. The employer shall provide effective training to all employees that have occupational exposure to surgical plume and to those employees' supervisors. The initial training shall be provided when the written procedures are first established and annually thereafter. Training shall include at least the following elements as applicable to the employee's assignment:
- (1) The contents of plume.
 - (2) Procedures, diagnostics and techniques used at the worksite that generate surgical plume.
 - (3) The health hazards associated with exposure to surgical plume.
 - (4) The appropriate use of the plume scavenging systems utilized by the employer, including the employer's written procedures required by subsection (c).
 - (5) The employer's procedures to ensure proper use, inspection, and maintenance of engineering controls and personal protective equipment, as applicable.
 - (6) Administrative controls to minimize exposure to surgical plume, as applicable.
 - (7) An opportunity for interactive questions and answers with a person knowledgeable about occupational exposure to surgical plume and the specific controls utilized by the employer.

- (f) Recordkeeping.

- (1) Training records shall be maintained in accordance with section 3203.
- (2) Records of testing of plume scavenging systems shall be maintained in accordance with section 5143.
- (3) The written operating procedures required by subsection (c) shall be available to affected employees and their representatives at the worksite at all times.

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Appendix A (Non-Mandatory)

The following are examples of professional occupational safety guidelines for the protection of health care workers exposed to surgical plume:

2017 AORN Guideline for Surgical Smoke Safety.

CSA Z305.1313, Plume scavenging in surgical, diagnostic, therapeutic, and aesthetic settings.

ISO 16571:2014(E), Systems for evacuation of plume generated by medical devices.

Note: Authority cited: Sections 142.3 and 144.6, Labor Code. Reference: Section 142.3, 144.6 and 6308, Labor Code.

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