CALIFORNIA MEDICAL ASSOCIATION

June 01, 2026

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Division of Occupational Safety and Health
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Sent via e-mail to rs@dir.ca.gov

RE: Occupational Exposure to Plume in Heath Care Revised Draft Standard, April 24, 2026 Discussion Draft

Dear Ms. Ali and Ms. Delizo:

On behalf of our over 50,000 physician and medical student members, the California Medical Association (CMA) submits the following comments to the Division of Occupational Safety and Health (Cal/OSHA) in response to the revised draft standard posted on April 24, 2026, relating to occupational exposure to plume in health care.

As a general comment, CMA would like to acknowledge the challenges associated with developing a single plume standard that applies across a wide range of health care settings, procedures, and technologies. The proposed regulation applies equally to general acute care hospitals and various types of outpatient surgery settings, which are combined for purposes of the regulations under the term ambulatory surgical centers, despite significant differences in their size, resources, physical infrastructure, staffing models, and the types of procedures they perform. Similarly, the regulation applies to a broad spectrum of clinical environments, including operating rooms, procedure rooms, and other procedural spaces that are designed and ventilated to different standards and used for different levels of patient acuity and procedural complexity.

The proposal also treats plume-generating procedures largely the same regardless of the amount of plume generated or the nature of the associated hazards. In practice, however, plume generation exists along a spectrum. Some procedures may generate substantial amounts of plume over an extended period of time, while others may generate only small amounts intermittently. The risks presented by these procedures, and the controls necessary to address those risks, may vary considerably depending on the procedure, equipment, room configuration, ventilation characteristics, and other factors.

As a result, a one-size-fits-all regulatory approach may not always produce the most effective or practical outcome. Requirements that may be appropriate in one setting or for one type of procedure may be unnecessary, challenging to implement, or potentially disruptive in another. Throughout these comments, CMA encourages consideration of whether certain requirements should be tailored differently for hospitals and outpatient surgery settings or otherwise account for the varying risks presented by different procedures and clinical settings. CMA also encourages Cal/OSHA to consider whether greater flexibility, including facility-specific or procedure-specific risk assessments, may provide a more effective means of protecting employees while recognizing the diversity of health care environments subject to the regulation.

1. Definition of Ambulatory Surgical Center (§51XX(b)(2))

The draft text includes outpatient surgery settings accredited by an accreditation agency recognized by the Medical Board of California in the definition of "ambulatory surgical centers" (ASC) but calls them surgical clinics. As detailed in the ASC definition, surgical clinics are a type of licensed facility defined in the statute (Health and Safety Code § 1204(b)(1)). Outpatient surgery settings accredited by an accrediting agency recognized by the Medical Board of California are outpatient settings owned by physicians and do not require a facility license. (*Capen v. Shewry* (2007) 155 Cal.App.4th 378, 395.) They are governed by a different statutory and regulatory structure than surgical clinics as defined in Health and Safety Code § 1204(b)(1). To avoid confusion about the type of setting that is being referenced and remain consistent with current statutory terminology (Gov. Code §11349.1(a)(4)), CMA requests that definition be amended to align with the terminology used in Health and Safety Code § 1248.1(g):

(b) Definitions

* * *

(2) "Ambulatory surgical center or ASC" means any surgical clinic as defined in the California Health and Safety Code Section 1204, subdivision (b)(1), any ambulatory surgical center that is certified to participate in the Medicare program under Title XVIII (42 U.S.C. SEC. 1395 et seq.) of the federal Social Security Act, or any ~~surgical clinic~~ **outpatient setting** accredited by an accrediting agency as approved by the Licensing Division of the Medical Board of California [...].

2. Definition of "Employer" (§51XX(b)(8))

The draft text places various obligations on the "employer," including requirements related to written exposure control plans, employee training, and recordkeeping. However, the term "employer" is not defined. In many hospital settings, multiple employers may operate within the same facility. For example, a physician may be employed by a medical group that contracts with a hospital to provide services, while other personnel may be employed directly by the hospital or by separate entities. CMA is concerned that, absent a clear definition, the term "employer" could be interpreted to require each employer operating within a hospital

or ASC[1] to independently develop and maintain exposure control plans, conduct separate employee trainings, and maintain separate compliance records.

To ensure there are uniform safety standards implemented within hospitals and ASCs, CMA requests that Cal/OSHA add the following definition for employer in subdivision (b):

(b) Definitions

* * *

(8) "Employer" means a general acute care hospital or ambulatory surgery center subject to the requirements of this section.

3. Definition of Qualified Person (§51XX(b)(15))

CMA is concerned that the definition of "qualified person" may create an unnecessary compliance burden. The proposed definition requires a person designated by the employer who is knowledgeable in the standard and competent in industrial hygiene practice, while specifically identifying a Certified Industrial Hygienist (CIH) as meeting that standard. Many covered settings, particularly smaller ASCs, do not employ a CIH. As a result, these settings may be required to retain outside consultants to develop, review, or update the exposure control plan, even where existing personnel possess the clinical, environmental health and safety, infection prevention, facilities management, or occupational health expertise necessary to implement the standard.

Healthcare facilities routinely rely on multidisciplinary teams that include infection preventionists, environmental health and safety professionals, facilities personnel, physicians, and nurses to evaluate a variety of workplace hazards and implement safety protocols. Requiring a CIH may unnecessarily limit who can serve as a qualified person and could compel facilities to obtain outside industrial hygiene services despite already possessing the expertise necessary to safely implement the regulation.

CMA recommends revising the definition to clarify that employers may rely on appropriately trained and experienced personnel with relevant knowledge of plume hazards and control measures, rather than creating the impression that certification as an industrial hygienist is required to comply with the regulation. To address this concern, CMA recommends revising the definition as follows:

(15) "Qualified person" for the purposes of this section, means a person designated by the employer, and who by extensive instruction, knowledge, training, and experience, has demonstrated their ability to effectively identify, evaluate, and control the hazards of occupational exposure to plume **in accordance with this standard**. ~~The qualified person shall be knowledgeable in this standard and shall be competent in industrial hygiene practice. A Certified Industrial Hygienist as codified in California's Business~~

[1] References to ACSs in this letter moving forward means ASC as defined in (b)(2) of the draft proposal.

~~and Professions Code sections 20700-20705 is considered competent in industrial hygiene practice.~~

4. Add Active Involvement of the Organized Medical Staff and Clarify the Authorized Employee Representative Requirement for the Written Exposure Control Plan (§51XX(c)(2)(F))

CMA recommends adding the medical staff to subsection (c)(2)(F). The current language requires active involvement of employees and authorized employee representatives but does not expressly provide for physician participation. Physicians are the primary users of the devices that generate plume and therefore have unique expertise regarding the clinical application, effectiveness, and practical use of plume evacuation systems. Because the selection and use of these systems can directly affect clinical workflows and patient care, physicians should have a meaningful role in the development and implementation of the exposure control plan.

This is particularly important because many physicians practicing in California hospitals are not hospital employees. Instead, they may be independent contractors or employees of separate medical groups that contract with the hospital. As a result, reliance solely on employee participation may exclude many of the physicians who routinely perform plume-generating procedures and whose clinical practice will be most affected by the requirements of this standard.

In hospital settings, the organized medical staff is the appropriate mechanism for obtaining physician input and engagement. Including the organized medical staff in subsection (c)(2)(F) would help ensure that plume evacuation systems and related procedures are practical, effective, and compatible with clinical workflows while also promoting clinician safety and patient care. Accordingly, CMA recommends revising subsection (c)(2)(F) to include the organized medical staff among those actively involved in the exposure control plan.

Additionally, CMA is also concerned that subsection (c)(2)(F) requires active involvement of "authorized employee representatives" without recognizing that some settings, particularly small ASCs, do not have a labor organization, collective bargaining representative, or other authorized employee representative as defined by the regulation. As drafted, the provision could be interpreted to require participation by an entity that does not exist within a particular setting. The regulation should acknowledge that not all settings subject to this requirement have authorized employee representatives and should make clear that participation by such representatives is required only when they exist.

Accordingly, CMA requests the following revisions to subsection (c)(2)(F):

> (F) Effective procedures for obtaining the active involvement of **the organized medical staff,** employees and authorized employee representatives**, where such representatives exist,** in all elements of the exposure control plan including, but not limited to:

5. Reviewing, Evaluating and Updating the Exposure Control Plan (§51XX(c)(3))

CMA recommends revising subsection (c)(3) to distinguish between the requirement to review and evaluate the exposure control plan and the requirement to update the plan. The current language requires the plan to be "reviewed, evaluated, and updated" whenever any of the listed triggering events occur. However, a review and evaluation may reasonably conclude that the existing plan remains adequate and that no modifications are necessary. Requiring an update regardless of whether any changes are warranted would create unnecessary administrative burden without improving employee safety. Instead, the regulation should require employers to review and evaluate the plan at the specified intervals and update it when the review and evaluation identify a need for revisions.

CMA also requests clarifying that subsections (c)(3)(B) and (C) apply when involving occupational exposure to plume. As drafted, the provision requires review, evaluation, and updating of the exposure control plan whenever new processes, procedures, or equipment are introduced into the workplace or whenever a new or previously unrecognized hazard is identified. These events may occur but have no relationship to plume-generating procedures or employee exposure to plume. Without a qualifier, employers could be required to revisit the exposure control plan based on changes unrelated to the hazards addressed by this standard. CMA recommends revising subsections (B) and (C) to apply only when new processes, procedures, equipment, or hazards involve occupational exposure to plume.

Thus, CMA requests the following revisions to subsection (c)(3):

> (3) The exposure control plan shall be reviewed, evaluated, and**, when appropriate,** updated:
>
> > (A) At least annually,
> >
> > (B) When new processes, procedures, and equipment **to address occupational exposure to plume** are introduced to the workplace, and
> >
> > (C) Whenever a new or previously unrecognized hazard **involving plume** is identified.

6. Allow use of Medical-Surgical Vacuums as Plume Evacuation Systems (§51XX(d)(1)(A))

Subsection (d)(1)(A) excludes medical-surgical vacuums from the definition of a plume evacuation system. CMA requests that this prohibition be deleted. As drafted, the proposal provides that "[m]edical-surgical vacuums (e.g., wall suction units, portable suction units) are not considered plume evacuation systems." This is inconsistent with nationally recognized health care standards and guidance that recognize the use of appropriately filtered medical-surgical vacuum systems for certain plume-generating procedures.

NFPA 99 subparagraph 9.3.8.1 expressly permits medical plume to be captured through a medical-surgical vacuum system equipped with an in-line filter with ultra-low particulate air

(ULPA) and gas phase filtration for procedures generating small amounts of plume.[2] Similarly, the Association of periOperative Registered Nurses (AORN) states that procedures anticipated to generate small amounts of plume may use a medical-surgical vacuum equipped with an in-line smoke evacuation filter.[3] As proposed, the prohibition would eliminate a control method that is recognized by both the National Fire Protection Association (NFPA) and AORN and that is routinely used in health care settings for procedures generating small amounts of plume. The regulation should recognize that a medical-surgical vacuum equipped with appropriate ULPA and gas phase filtration may serve as an effective plume control measure for procedures generating small amounts of plume.

To align the draft regulation with NFPA and AORN guidelines, CMA recommends replacing the categorical prohibition of the use of medical-surgical vacuums as plume evacuation systems in subsection (d)(1)(A) with a requirement that medical surgical vacuums include an in-line filter with ULPA and gas phase filtration to be considered plume evacuation systems.

Finally, CMA also requests that Cal/OSHA replace the word "prevented" in subsection (d)(1)(A) with "minimized." The stated purpose of the written exposure control plan is to "minimize employee exposure to plume." Because it may not always be possible to completely prevent exposure to plume, even when appropriate controls are utilized, the term "minimize" more accurately reflects the standard established throughout the regulation. This change would also improve consistency within the regulation. (Gov. Code §11349.1(a)(4).)

CMA requests Cal/OSHA make the following revisions to subsection (d)(1)(A)

> (A) Plume Evacuation Systems. Exposure to plume shall be ~~prevented~~ **minimized** by plume evacuation systems to the greatest extent feasible. Medical-surgical vacuums (e.g., wall suction units, portable suction units) ~~are not~~ **shall have an in-line filter with ULPA and gas phase filtration to be** considered plume evacuation systems. Plume evacuation systems shall:

7. Alignment of General Ventilation Requirements with California Building Standards Code (§51XX(d)(1)(B))

CMA is concerned that the proposed requirement in subsection (d)(1)(B) mandating a minimum total air exchange rate of 20 air changes per hour would effectively limit many procedures to operating rooms or require substantial and costly facility modifications. Current health care facility ventilation standards do not require all rooms in which plume-generating procedures may occur to operate at 20 air changes per hour. Rather, the California Building Standards Code and ANSI/ASHRAE/ASHE Standard 170-2021 establish ventilation requirements based on the type of room and the procedures performed within it.

[2] National Fire Protection Association. (2024). *Health Care Facilities (NFPA 99)*.
[3] Williams, K. (2022), Guidelines in Practice: Surgical Smoke Safety. AORN J, 116: 145-159. https://doi.org/10.1002/aorn.13745

For example, operating rooms are generally required to maintain 20 air changes per hour, while procedure rooms are permitted to operate at 15 air changes per hour. These rooms are routinely used for procedures that may generate plume, including minor surgical procedures performed under local anesthesia. By imposing a uniform 20 air changes per hour requirement whenever plume is generated, the proposed regulation would effectively override existing facility design standards and substantially restrict where these procedures may be performed.

ASCs would be particularly affected by this requirement. Many ASCs perform procedures that generate limited amounts of plume. Unlike larger hospital systems, ASCs often have fewer physical plant resources and less flexibility to absorb the cost of major HVAC renovations. The burden may be especially significant for ASCs serving smaller and rural communities, where facilities are more likely to operate in older buildings. Requiring these facilities to increase air exchange rates to operating room levels could necessitate substantial and costly renovations, potentially limiting the availability of procedural services in communities that already face access-to-care challenges.

Aligning the proposed regulation with existing health facility ventilation standards would help prevent undue confusion regarding applicable facility requirements and promote consistency across California's regulatory framework. (Gov. Code §11349.1(a)(4).) Absent such alignment, facilities could be faced with conflicting or duplicative requirements regarding the ventilation standards applicable to a particular room or procedure.

CMA requests that Cal/OSHA revise subsection (d)(1)(B) to align with the ventilation requirements established in the California Building Standards Code, specifically section 402.1.2 of the California Mechanical Code:

> (B) General Ventilation. **Ventilation** ~~The minimum total air exchange rate~~ for the room or area where surgical plume is generated shall **comply with section 402.1.2 of Chapter 4 of Part 4 of Title 24 of the California Code of Regulations** ~~be at least 20 air changes per hour and shall be used in addition to plume evacuation systems and other local exhaust ventilation systems. The room air shall be exhausted directly to the outdoors or returned to the air circulation system through a HEPA filter~~.

8. Clarifying the requirements related to the use of respirators and eye protection (§51XX(d)(3-4))

CMA is concerned that subsections (d)(3) and (d)(4) may effectively require use of respirators and eye protection for all plume-generating procedures. Under subsection (d)(3), respirators must be used whenever engineering and administrative controls "do not prevent plume from contacting the respiratory tract of employees." Similarly, subsection (d)(4) requires eye protection whenever plume may reasonably be anticipated to contact an employee's eyes. We do not believe this was the intent. Further, this interpretation would not align with the needs of the wide array of settings covered by the proposed rule.

It may be impossible for an employer to demonstrate that plume has been completely prevented from contacting an employee's respiratory tract or eyes. Because plume consists

of both visible and invisible contaminants, as noted in the draft regulations, facilities may have no practical means of verifying that all contact has been prevented. As a result, the proposed language would effectively require use of respirators and eye protection for all plume-generating procedures regardless of the engineering controls in place.

To avoid this application, CMA recommends revising subsection (d)(3) to align the respirator provision with the standard used in subsection (d)(4) for eye protection. As drafted, subsection (d)(3) requires respirators whenever engineering and administrative controls do not prevent plume from contacting the respiratory tract of employees, while subsection (d)(4) applies when plume may reasonably be anticipated to contact an employee's eyes. These provisions address exposure to the same hazard but apply different triggering standards. Aligning subsection (d)(3) with the standard used in subsection (d)(4) would improve consistency within the regulation. (Gov. Code §11349.1(a)(4).)

Additionally, there is concern that protection against organic vapors requires cartridge-based half-face or full-face respirators rather than the N95 respirators commonly used in health care settings. While such respirators may be appropriate in certain circumstances, their routine use in surgical and procedural environments can present operational challenges, including communication difficulties, compatibility issues with other personal protective equipment, and potential impacts on workflow. These considerations further support a risk-based approach that reserves respirator use for situations where engineering and administrative controls are insufficient to adequately control exposure.

CMA also recommends allowing employers to provide high filtration masks as an alternative to respirators. National guidelines recognize that plume evacuation systems are the primary means of controlling plume exposure and that N95 masks and high filtration masks may be used as secondary protection in conjunction with those systems.[4,5,6] While respirators may be appropriate for certain procedures, the regulation should not assume that respirators, with or without a cartridge, are necessary whenever respiratory protection is warranted. CMA notes that the level of respiratory protection necessary to address plume exposure may vary considerably depending on the procedure being performed, the amount of plume generated, the effectiveness of the engineering controls, and the physical characteristics of the healthcare setting. A requirement that treats all plume-generating procedures identically may not adequately account for these differences. Allowing the use of high filtration masks would provide covered settings with additional flexibility while remaining consistent with guidance recognizing their use as a supplemental protective measure when used in conjunction with effective plume evacuation systems.

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[4] American National Standards Institute (ANSI). ANSI Z136.3-2018. 7.4.2.3 Respiratory Protection. Washington, D.C.
[5] The Joint Commission. Alleviating the dangers of surgical smoke. Quick Saf. 2020;(56) https://digitalassets.jointcommission.org/api/public/content/0aab00e86a2241c7afd0b117ce83610a?v=50bb955a
[6] Lewin JM, Brauer JA, Ostad A. Surgical smoke and the dermatologist. J Am Acad Dermatol. 2011 Sep;65(3):636-641. doi: 10.1016/j.jaad.2010.11.017. Epub 2011 May 7. PMID: 21550691.

The requirement for eye protection presents similar concerns. The regulation does not define what constitutes "appropriate" eye protection for purposes of plume exposure. Certain types of eye protection may interfere with visibility and comfort. These concerns become even more significant when eye protection must be used simultaneously with cartridge-based respirators, as compatibility issues may arise between goggles and tight-fitting half-face respirators. In addition to the revisions requested below, CMA requests guidance on what Cal/OSHA considers “appropriate” eye protection for the purposes of this section.

CMA recommends revising subsections (d)(3) and (d)(4) to clarify that respirators or high filtration masks and eye protection must be provided by the employer, while avoiding language that could be interpreted as requiring their use for all plume-generating procedures. As drafted, the triggering standards may effectively result in universal cartridge-based respirator and eye protection requirements despite the regulation's reliance on engineering and administrative controls as the primary means of minimizing exposure. The proposed revisions preserve the availability of personal protective equipment while allowing its use to be determined based on the specific circumstances and risks presented. Thus, CMA recommends revising subsections (d)(3) and (d)(4) as follows:

> (3) **The employer shall provide respirators or high filtration masks**~~Respirators~~ that provide protection against particulates ~~and~~ ~~organic vapors~~ **where plume may be reasonably anticipated to contact the contacting the respiratory tract of employees. When used, respirators** shall be used in accordance with section 5144 ~~when the engineering controls and administrative controls do not prevent plume from contacting the respiratory tract of employees~~.
>
> (A) Surgical masks are not respirators pursuant to section 5144.
>
> (4) The employer shall provide ~~and ensure employees use~~ appropriate eye protection where plume may be reasonably anticipated to contact the eyes of an employee.

9. Streamlining and Clarifying Training Requirements (§51XX(e))

CMA recommends deleting the word "effective" from subsection (e) or asks that Cal/OSHA clarify how it determines the efficacy of a training. The regulation already establishes detailed and objective training requirements through subsections (e)(1) through (10). However, the proposal does not define what constitutes "effective" training or identify any additional criteria by which training effectiveness will be evaluated. As a result, employers may be uncertain whether compliance with the enumerated training requirements is sufficient. Deleting the term would improve clarity and ensure that compliance is measured against the specific training elements established in the regulation.

CMA also requests revising the frequency of required training. The proposal would require initial training when written procedures are first established and annually thereafter regardless of whether any changes have occurred. Requiring annual retraining in the absence of any material changes would create unnecessary administrative burdens while providing limited additional safety benefits. Instead, CMA recommends requiring training when written procedures are first established, when employees are first assigned duties

which would expose them to plume, and whenever changes are made to the written exposure control plan described in (c). This approach would ensure that employees receive training when it is most relevant and necessary while avoiding repetitive training where no substantive changes have occurred.

To address these concerns, CMA requests the following revisions:

> (e) Training. The employer shall provide ~~effective~~ training to all employees who have occupational exposure to plume, including new employees**,** and to exposed employees' supervisors. ~~The initial training shall be provided when the written procedures are~~ **Training shall be provided when the written exposure control plan is** first established, **when an employee is first assigned duties involving occupational exposure to plume, and when the written exposure control plan is changed** ~~and annually thereafter~~. Training shall include at least the following elements:

10. Lengthening Records Production Timeframe ((§51XX(f))

CMA requests that the record production timeframe in subsection (f) be extended from five business days to thirty calendar days. The proposed regulation requires employers to make available and provide copies of records to employees and employee representatives within five business days of a request. While this timeframe may be achievable for some larger facilities, it may be difficult for smaller ambulatory surgical centers that have limited administrative staff and resources. A thirty calendar day response period would provide employees with sufficient time to produce records while still ensuring timely access for employees and their representatives. CMA recommends revising subsection (f) as follows:

> (f) Recordkeeping. The employer shall make available for examination and provide copies of records required by this subsection to employees, authorized employee representatives, and designated employee representatives within ~~five business~~ **thirty calendar** days upon request. These records shall also be made available to representatives of the Division upon request.

11. Clarification of Plume Evacuation System Recordkeeping Requirements ((§51XX(f)(3)(A))

CMA requests clarification regarding subsection (f)(3)(A) and the types of records Cal/OSHA expects employers to maintain to demonstrate compliance. For example, while facilities may maintain records relating to installation, maintenance, filter replacement, or testing, it is less clear how employers would document ongoing operation of the equipment in accordance with manufacturer instructions. Further, subsection (d)(1)(A) requires plume evacuation systems to operate continuously whenever plume is present, generated, or whenever a plume-generating device is in use. It is unclear how a facility would document ongoing compliance with this requirement or what records Cal/OSHA would consider sufficient to demonstrate compliance. Additional guidance regarding the records Cal/OSHA expects employers to maintain would assist covered settings in developing compliant recordkeeping

practices and help ensure consistent enforcement of the standard across health care settings.

Thank you for consideration of CMA's comments. Should you have questions, please do not hesitate to contact me at (916) 444-5532 or levensen@cmadocs.org.

Sincerely,

Lucas Evensen

Lucas Evensen
Associate Director, Strategic Engagement
California Medical Association