

**The Florida Senate**  
**BILL ANALYSIS AND FISCAL IMPACT STATEMENT**

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

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Prepared By: The Professional Staff of the Committee on Health Policy

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BILL: SB 410

INTRODUCER: Senator Garcia

SUBJECT: Protection from Surgical Smoke

DATE: January 12, 2024

REVISED: \_\_\_\_\_

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Looke	Brown	HP	<b>Favorable</b>
2.			FP	
3.			RC	

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**I. Summary:**

SB 410 requires hospitals and ambulatory surgical centers (ASC) to, by January 1, 2025, adopt and implement policies that require the use of a smoke evacuation system during any surgical procedure that is likely to generate surgical smoke.

The bill provides an effective date of July 1, 2024.

**II. Present Situation:**

Surgical smoke is produced by the thermal destruction of tissue by the use of lasers or electrosurgical devices.<sup>1</sup> Surgical smoke has been shown to contain toxic gases, vapors and particulates, dead and live cellular material, and viruses.<sup>2</sup>

At high concentrations the smoke causes ocular and upper respiratory tract irritation in health care personnel, and can create view obstruction for the surgeon. The smoke has unpleasant odors and has been shown to have mutagenic potential.<sup>3</sup> Studies have shown that surgical smoke is causing many complications such as carcinogenicity, toxicity, mutagenicity, irritants, respiratory diseases, spread of pathogenic microorganisms, Human Papillomavirus DNA transfer, Hepatitis B transfer, tumor cell transmission, headache, dizziness, drowsiness, bad hair odor and runny

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<sup>1</sup> The National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention, *Control of Smoke From Laser/Electric Surgical Procedures*, last updated June 30, 2017, available at <https://www.cdc.gov/niosh/docs/hazardcontrol/hc11.html> (last visited Jan. 8, 2024).

<sup>2</sup> *Id.*

<sup>3</sup> The National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention, *Control of Smoke From Laser/Electric Surgical Procedures: Engineering Controls Database*, last updated Nov. 16, 2018, available at <https://www.cdc.gov/niosh/engcontrols/ecd/detail193.html>, (last visited Jan. 8, 2024).

eyes.<sup>4</sup> Some researchers have suggested that surgical smoke may act as a vector for cancerous cells that may be inhaled.<sup>5</sup>

According to the federal Occupational Safety and Health Administration, recognized controls and work practices for surgical smoke include:

- Using portable local smoke evacuators and room suction systems with in-line filters.
- Keeping the smoke evacuator or room suction hose nozzle inlet within two inches of the surgical site to effectively capture airborne contaminants.
- Having a smoke evacuator available for every operating room where plume is generated.
- Evacuating all smoke, no matter how much is generated.
- Keeping the smoke evacuator "ON" (activated) at all times when airborne particles are produced during all surgical or other procedures.
- Considering all tubing, filters, and absorbers as infectious waste and dispose of them appropriately.
- Using new tubing before each procedure and replace the smoke evacuator filter as recommended by the manufacturer.
- Inspecting smoke evacuator systems regularly to ensure proper functioning.<sup>6</sup>

Additionally, the Joint Commission, a major accrediting organization for hospitals and ambulatory surgical centers, addressed the issue of surgical smoke in its newsletter entitled "Quick Safety Issue 56: Alleviating the Dangers of Surgical Smoke." In the newsletter the Joint Commission recommends that "health care organizations that conduct surgery and other procedures using lasers and other devices that produce surgical smoke should take the following actions to help protect patients and especially staff from the dangers of surgical smoke.

- Implement standard procedures for the removal of surgical smoke and plume through the use of engineering controls, such as smoke evacuators and high filtration masks.
- Use specific insufflators for patients undergoing laparoscopic procedures that lessen the accumulation of methemoglobin buildup in the intra-abdominal cavity. (Surgical smoke is cytotoxic if absorbed into the blood and can cause elevated methemoglobin.) For example, a lapro-shield smoke evacuation device — a filter that attaches to a trocar — helps clear the field inside the abdomen.
- During laser procedures, use standard precautions, such as those promulgated by the Blood-Borne Pathogen Standard (29 CFR 1910.1030) and the Center for Disease Control and Prevention's Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings, to prevent exposure to the aerosolized blood, blood by-products and pathogens contained in surgical smoke plumes.
- Establish and periodically review policies and procedures for surgical smoke safety and control. Make these policies and procedures available to staff in all areas where surgical smoke is generated.

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<sup>4</sup> Merajikhah A, Imani B, Khazaei S, Bouraghi H. Impact of Surgical Smoke on the Surgical Team and Operating Room Nurses and Its Reduction Strategies: A Systematic Review. *Iran J Public Health*. 2022 Jan;51(1):27-36. doi: 10.18502/ijph.v51i1.8289. PMID: 35223623; PMCID: PMC8837875. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8837875/>, (last visited Jan. 8, 2024).

<sup>5</sup> United States Department of Labor, Occupational Safety and Health Administration, *Surgical Suite >> Smoke Plume*, available at <https://www.osha.gov/etools/hospitals/surgical-suite/smoke-plume>, (last visited Jan. 8, 2024).

<sup>6</sup> *Supra* n. 5.

- Provide surgical team members with initial and ongoing education and competency verification on surgical smoke safety, including the organization’s policies and procedures.
- Conduct periodic training exercises to assess surgical smoke precautions and consistent evacuation for the surgical suite or procedural area.”<sup>7</sup>

### III. Effect of Proposed Changes:

SB 410 creates s. 395.1013, F.S., to require that hospitals and ASCs adopt and implement policies that require the use of a smoke evacuation system during any surgical procedures that is likely to generate surgical smoke. The bill defines:

- “Smoke evacuation system” to mean equipment that effectively captures, filters, and eliminates surgical smoke at the site of origin before the smoke makes contact with the eyes or respiratory tract of occupants in the room; and
- “Surgical smoke” to mean the gaseous byproduct produced by energy-generating devices such as lasers and electrosurgical devices. The term includes, but is not limited to, surgical plume, smoke plume, bio-aerosols, laser-generated airborne contaminants, and lung-damaging dust.

The bill requires hospitals and ASCs to adopt and implement the required policies by January 1, 2025.

The bill provides an effective date of July 1, 2024.

### IV. Constitutional Issues:

#### A. Municipality/County Mandates Restrictions:

None.

#### B. Public Records/Open Meetings Issues:

None.

#### C. Trust Funds Restrictions:

None.

#### D. State Tax or Fee Increases:

None.

#### E. Other Constitutional Issues:

None.

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<sup>7</sup> Quick Safety Issue 56: Alleviating the Dangers of Surgical Smoke, the Joint Commission, available at <https://www.jointcommission.org/resources/news-and-multimedia/newsletters/newsletters/quick-safety/quick-safety-issue-56/quick-safety-issue-56/> (last visited Jan. 8, 2024).

**V. Fiscal Impact Statement:****A. Tax/Fee Issues:**

None.

**B. Private Sector Impact:**

SB 410 may have a negative fiscal impact on a hospital and ASC if the hospital or ASC is required to purchase and maintain equipment in order to meet the requirements of the bill.

**C. Government Sector Impact:**

None.

**VI. Technical Deficiencies:**

None.

**VII. Related Issues:**

None.

**VIII. Statutes Affected:**

This bill creates section 395.1013 of the Florida Statutes.

**IX. Additional Information:****A. Committee Substitute – Statement of Changes:**

(Summarizing differences between the Committee Substitute and the prior version of the bill.)

None.

**B. Amendments:**

None.