



# The Case for Operating Room Fire Safety

The phrase “put out a fire” means to solve a problem or fix a situation. In operating rooms across America, said situation is far too often an actual fire, which can lead to patient injury or death and irreparable reputational damage to a hospital within the community.

Some of the most highly publicized medical errors are surgical fires - take the example of the fire at Madigan Army Medical Center that made national news headlines, disfigured a child known as B.J, and left the hospital owing **\$12.3 million** to the victim (1).

## Implications

Surgical fires are preventable medical errors that can be devastating to the livelihoods of patients, the careers of clinicians, and the reputations of healthcare institutions. Current estimates show the number of surgical fires at approximately **600 per year** in the US, but systemic underreporting means that there are likely many more - **up to 4 times the documented incidence** (2). These burns often occur in the head and neck areas, where they can lead to particularly painful and damaging disfigurement (3). Thirteen month old B.J will require numerous reconstructive surgeries throughout his life to repair his injuries (1).

In addition to the emotional and reputational consequences of these horrific events, surgical fires often result in incredibly expensive malpractice litigation, with up to **\$30 million** in damages being awarded to the victims of surgical fires (4). Another high profile incident from 2013 resulted in damages of **\$18 million** being awarded to a woman from Washington (5). Other settlements as high as **\$500,000** frequently occur, and the average settlement is over **\$470,000** (6-9)

## Causes

Up to 38% of these fires are ignited by fiber-optic light cables used in laparoscopic surgery (10). This means that hundreds of operating room fires are potentially started every year by fiber-optic cables, opening healthcare providers and facilities up to tens, or even hundreds, of millions of dollars of liability on an annual basis. These fires still occur despite guidelines from the National Fire Protection Association stating: "...fiber optic devices shall be secured as recommended by the manufacturer of the device, when not in active use," (NFPA 99 Guidelines for Healthcare Facilities - 8.5.2.3.1) (11). The Joint Commission, the FDA, ECRI, and the American Society of Anesthesiologists all acknowledge that fiber optic light cables can serve as ignition sources for operating room fires, and the FDA's Safety Communication recommends the use of a safety cover when these light cables are not in use (12-16).

## Prevention with GloShield

According to the FDA, the most common ignition sources in operating room fires that are essential for surgery include devices that produce heat and energy such as electrosurgical units (ESUs), electrocautery devices, lasers and fiber-optic light cables.

GloShield is an FDA Class I safety cover for fiber-optic light cables that can be used with Storz, Stryker, and Olympus light cables to mitigate the risk of operating room fires. For less than the price of surgical disposables like Xodus Medical's Pink Pad, hospitals, providers, and patients just like B.J can be protected from the dangers and liabilities that arise from the risk of operating room fires. Whether it is a public relations catastrophe or a literal fire, it is always better to prevent a fire from starting in the first place.

# SOURCES

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10. <https://pubmed.ncbi.nlm.nih.gov/23422795/>
11. <https://www.sciencedirect.com/science/article/abs/pii/S0196070907000853?via%3Dihub>
12. NFPA 99 8.5.2.3.1 Active electrodes or other applicators of electrosurgical, surgical laser, or fiber optic devices shall be secured as recommended by the manufacturer of the device, when not in active use.  
**8.5.2.3.2** The cable that provides power from the electrosurgical generator to the active electrode shall be disconnected from the generator when contamination occurs.  
**8.5.2.4** During Administration of Respiratory Therapy.  
**8.5.2.4.1\*** Electrical equipment used within the site of intentional expulsion shall have no hot surfaces.
13. [https://www.ecri.org/Resources/Whitepapers\\_and\\_reports/2013\\_Health\\_Devices\\_Top\\_10\\_Hazards.pdf](https://www.ecri.org/Resources/Whitepapers_and_reports/2013_Health_Devices_Top_10_Hazards.pdf)
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16. FDA- <https://www.fda.gov/medical-devices/safety-communications/recommendations-reduce->



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