



Fire Safety

Fire Drill Scenarios

This document contains eight perioperative fire event scenarios that can be used to set the stage for fire drills in the perioperative area or as part of case-based learning for fire safety education.

Each of the scenarios describes a unique situation in which a fire occurs in the OR. These vignettes are intended to help educators guide personnel in learning how to respond appropriately in the event of an OR fire and can also be used as an additional learning activity (eg, mock root cause analysis exercise) to facilitate exploration of reasons why OR fires occur.

There are questions that educators can use to facilitate learner discussion, along with items to guide dialogue during a post-drill debrief. Debriefing after a drill allows participants to discuss and reflect on their performance and what has been learned, clarify areas of misunderstanding, address knowledge gaps, and transfer and apply what has been learned into clinical practice.

Before the scenario:

- Prepare the perioperative area(s) for the fire drill exercise.
- Assemble the group of drill participants.
- Identify the role that each participant will perform (see “Perioperative Team Member Roles During a Fire” in the AORN Fire Safety Tool Kit).
- Direct participants how to react to the situation (eg, verbalize actions for a tabletop exercise, act out interventions for a simulated activity).
- Read the scenario and begin the fire drill.

Post-drill debrief questions:

- How do you feel about the team’s performance during the fire drill?
- In what ways did the team perform well in responding to the fire?
- If the fire drill was repeated, what would you do differently?
- What circumstances in this scenario led to the fire (ie, what elements of the fire triangle were present)?
- How could this fire have been prevented?
- What is the process for fire risk assessment?
- Should the fire department have been notified? Who is responsible for this?
- What communication should take place when a fire occurs?
 - Between team members?
 - Between the OR and charge RN?
 - Between the charge RN and other departments or facility areas?
- What should be done with the items involved in the fire after the event?
- What should each member of the team do if a fire ignites in the OR?



Fire Safety

Discussion points for post-drill debrief:

- The facility-specific plan and procedure for evacuation of the OR.
- The location of medical gas shut-off valves for the OR suite and facility-specific procedures for turning them off.
- Identification of the circumstances under which medical gas valves should be turned off.
- The level of communication between the charge RN and other team members while in the OR.
- How a fire drill or actual fire event might affect surgeries in progress and those that are scheduled for later in the day.
- The process for post-event debriefing, root cause analysis, and evaluation for trauma response.
- A review of policies and procedures related to fire safety (eg, evacuation, fire alarm activation, event reporting).

Scenarios

Scenario 1 – Small Fire

An arthroscopy of the right knee is being performed. One of the scrubbed team members places the end of the unconnected active fiberoptic light cord on the sterile drapes, and the drape material ignites.

Scenario 2 – Small Fire

The patient is under general anesthesia and about to undergo a laparoscopic cholecystectomy. The alcohol-based skin antiseptic used to perform the preoperative skin prep has pooled in the umbilicus. The surgeon makes the skin incision near the umbilicus, and then uses an electro-surgical device. Activation of the device sparks a flame in the area of the umbilicus.

Scenario 3 – Small Fire

The patient is under moderate sedation for a blepharoplasty and is receiving oxygen via nasal cannula. Povidone iodine was used to prep the patient's face and the patient was then draped. Dry 4x4 sponges are on the surgical field. During the procedure, the surgeon activates an electro-surgical device and one of the sponges near the surgical site ignites.

Scenario 4 – Small Fire

The patient has been anesthetized with topical anesthetic eye drops and is about to undergo a minor ophthalmic procedure with a YAG laser. The laser assistant turns on the laser but forgets to put it in standby mode. The laser is inadvertently fired, igniting a 4x4 sponge.

Scenario 5 – Airway or Endotracheal (ET) Tube Fire

The six-year-old pediatric patient is under general anesthesia for a tonsillectomy and intubated with an ET tube. The surgeon uses an electro-surgical device in the patient's mouth and the ET tube ignites.

Scenario 6 – Equipment Fire

You are relieving the RN circulator for lunch and notice that the electrical cord to the anesthesia machine is frayed. You notify the anesthesia professional, who says they are aware of it but that no replacement machines are available right now and that they had no choice but to use it. As the procedure progresses, you detect the odor of smoke and notice smoke is coming from the back of the anesthesia machine.



Fire Safety

Scenario 7 – Large Fire

The patient is under general anesthesia for an abdominal hysterectomy. The patient's perineum was prepped with povidone iodine, and the abdomen was prepped with an alcohol-based antiseptic. The antiseptic solution has pooled in the umbilicus and on the sheets. The patient is draped before the solution is allowed to dry. The surgeon makes an incision with the scalpel and immediately uses an electrocautery device to cauterize subcutaneous bleeding. There is a spark at the electrode tip, and the fumes from the skin antiseptic ignite. The surgeon removes the burning drapes from the patient, but the flames have spread to the sheets. After the drapes are moved to the floor, they continue to burn.

Scenario 8 – Large Fire

The patient is under general anesthesia and intubated with an ET tube for an excisional biopsy of a supraclavicular lymph node. An alcohol-based skin antiseptic was used to prep the patient, and the solution has pooled in the sternal notch and on the sheets. A surgical resident who is assisting with the case drapes the patient, and some of the pooled solution soaks the lower edges of the thyroid drape. The surgical procedure begins before the surgeon enters the OR. After making the skin incision, the resident uses an electrocautery device to cauterize bleeding. The drape suddenly ignites in flames near the patient's face as the surgeon enters the room. The surgeon quickly removes the drapes from the patient and throws them to the floor, but the fire has spread to the sheets on the bed. The scrub person pours water on the sheets, extinguishing the fire near the patient, but an active blaze is burning the drapes on the floor.