Use of ECRAs vs RACE for a Fire Response Mnemonic in Surgical and Procedural Areas

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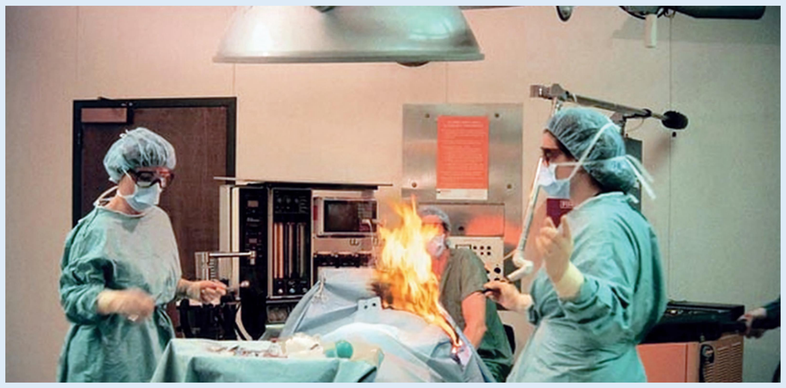
BACKGROUND

According to ECRI Institute, one of the nation's leading, most trusted resources for safety involving medical devices and practices in all healthcare settings, approximately 90-100 surgical fires are reported per year.

As there is an increased risk of fire in surgical/ procedural areas due to a greater amount of fuel and ignition sources, coupled with higher rates of oxygen flow delivery; the concern regarding the possibility of the occurrence of a fire is not unwarranted and cannot be over-emphasized when providing education and awareness for perioperative personnel.



REFERENCES

1. ECRI (2019). Surgical fire prevention. Retrieved August 2019 from https://www.ecri.org/solutions/accident-investigation-services/surgical-fire-prevention/

2.The Joint Commission (2009). Preventing operating room fires. *Environment of Care News*™ (February) 6-10.

PURPOSE

To enlighten perioperative staff members about a mnemonic that more accurately reflects the actual response to a fire either **ON** the patient or **IN** the patient

EMERGENCY PROCEDURE

EXTINGUISHING A SURGICAL FIRE

Fighting Fires ON the Surgical Patient

Review before every surgical procedure.

In the Event of Fire on the Patient:

1. **Stop the flow of all airway gases to the patient.**
2. **Immediately remove the burning materials** and have another team member extinguish them. If needed, use a CO_2 fire extinguisher to put out a fire on the patient.
3. **Care for the patient:**
   - —Resume patient ventilation.
   - —Control bleeding.
   - —Evacuate the patient if the room is dangerous from smoke or fire.
   - —Examine the patient for injuries and treat accordingly.
4. **If the fire is not quickly controlled:**
   - —Notify other operating room staff and the fire department that a fire has occurred.
   - —Isolate the room to contain smoke and fire.

Save involved materials and devices for later investigation.

Extinguishing Airway Fires

Review before every surgical intubation.

At the First Sign of an Airway or Breathing Circuit Fire, Immediately and Rapidly:

1. **Remove the tracheal tube,** and have another team member extinguish it. Remove cuff-protective devices and any segments of burned tube that may remain smoldering in the airway.
2. **Stop the flow of all gases to the airway.**
3. **Pour saline or water into the airway.**
4. **Care for the patient:**
   - —Reestablish the airway, and resume ventilating with air until you are certain that nothing is left burning in the airway, then switch to 100% oxygen.
   - —Examine the airway to determine the extent of damage, and treat the patient accordingly.

Save involved materials and devices for later investigation.

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Developed in collaboration with the Anesthesia Patient Safety Foundation. apsf

Source: New Clinical Guide to Surgical Fire Prevention. *Health Devices* 2009 Oct;38(10):330. ©2009 ECRI Institute
More information on surgical fire prevention, including a downloadable copy of this poster, is available at www.ecri.org/surgical_fires

PROCEDURE

The use of the mnemonic RACE (Rescue, Alarm, Contain, Extinguish/Evacuate) has been in existence for as long as most healthcare and emergency providers can recollect and is an easy method to remember the elements of fire response and rescue. However, in the surgical/procedural setting, use of the mnemonic RACE is incongruous with actual practice.

The February 2005 *Environment of Care News*, discussed how response to fires in surgical/procedural settings was exactly opposite of the traditional RACE mnemonic. Using the **ECRAs** mnemonic, staff should **E**xtinguish the oxygen source, **C**ontain the fire by removing the burning materials, **R**escue the patient by caring for him/her, **A**larm, and finally, **s**equester involved items for further investigation.

In 2009, ECRI Institute distributed posters outlining the **ECRAs** steps; however, the suggested deviation from the customary RACE mnemonic has largely gone unnoticed by the majority of healthcare facilities.