

# Perioperative Fire Safety

Perioperative Services  
Gary Smith  
Technical Resource RN  
Fire Safety Officer  
859-301-6759

# Objectives

- Describe methods for reducing fire risks in the perioperative environment
- Describe appropriate actions to take in the event of a fire
- Review evacuation routes and location of fire extinguishers in the department

# Fire Statistics

- Most recent U.S. Fire Administration findings related to annual medical facility fires:
  - 5,000 fires in medical facilities
    - 650 fires in the Operating Room
    - 0 deaths from 2014-2015
      - 32 fires due to bovie/cautery
      - 11 due to lasers
- Consequences are significant and almost completely preventable with proper attention to fire safety strategies.



# The Fire Triangle

- To prevent a fire... keep the components of the fire triangle separated
- If any one of these elements is missing, a fire cannot start
  - Ignition source
  - Oxidizer
  - Fuel



# Controlling Ignition Sources

## ● Electrosurgical Units

- Place the ESU pen in a holster when not in use
- Use a bipolar on head and neck cases if  $>30\%$   $O_2$  is being delivered

## ● Lasers

- Place damp towels around the procedural area
- Place laser on stand-by when not in use
- Laser is activated by person controlling the beam
- Have water available to douse a possible fire

# Controlling Ignition Sources

## ● Light Sources, Drills

- Attach light cord to scope before turning unit on
- Do not place lighted cords or scopes onto drapes
- Be aware that drills can cause sparks

## ● Electrical Equipment

- Take equipment with frayed cords out of service immediately. Do NOT use.
- Wipe up spills on or around electrical equipment.

# Controlling Oxidizers

- The use of O<sub>2</sub> in the presence of ignition sources must be carefully evaluated and monitored.
- In the procedural room:
  - Deliver the minimum concentration of O<sub>2</sub> possible
  - Vent the surgical drapes at the patient's head to avoid accumulation of O<sub>2</sub> in the surgical field
  - Communicate with the surgeon using an ignition source in the presence of O<sub>2</sub>.

# Controlling Fuel Sources

- Allow alcohol-based prep solutions to dry before draping the patient.
  - Utilize the timers available in the procedural room to monitor prep dry time (usually 3 minutes, but follow manufacturer's guidelines.)
- No open flames of any kind permitted.
- All equipment must be checked by Clinical Engineering prior to use in the clinical setting.



# Responding to a Fire

## ● R.A.C.E.

- R = Rescue/Relocate anyone in immediate danger
- A = Alert others for help/Activate the fire alarm
- C = Contain the fire: close doors & shut off O<sub>2</sub>
- E = Extinguish the fire/Evacuate the area



# Fire Plan

- Edgewood, Florence, Fort Thomas:
  - Pull the Fire Pull Station handle down
  - Dial 2-2222
  - Report a Code **Red**
  - State your name and the location of the fire
- Surgery Centers @ Edgewood & Crestview Hills:
  - Dial 911



# Fire Evacuation

- Hospital policy is to “shelter in place” but...
- Evacuation will be ordered if the fire cannot be controlled or if patients, visitors and employees are in immediate danger
  - Lateral – evacuation through fire doors to a safe area on the same floor
  - Vertical – evacuation to another safe floor or out of the building

# Fire Plan

- According to policy...
  - surgical procedures are not to begin until the situation is resolved.
  - Once oxygen lines are turned off because of a fire, only the fire department can allow them to be turned on again.



# Classes of Fires

- A – wood, paper, trash
- B – gasoline, oil, paint, flammable liquids
- C – electrical
- D – combustible metals

# Fire Extinguishers

- Water Mist (AC)
  - In the OR and areas that do special procedures
- CO<sub>2</sub> (BC)
  - In the lab, mechanical rooms and flammable liquid storage areas
- Dry Chemical (ABC)
  - In most areas throughout the hospital

# Fire Extinguishers

- Look around your department!
- Know the location and type of fire extinguisher available.



Water Mist  
(Class AC fires)



CO2  
(Class BC fires)



Dry Chemical  
(Class ABC fires)

# Fire Extinguisher Use

- P.A.S.S.

- P = Pull the pin
- A = Aim the nozzle
- S = Squeeze the handle
- S = Sweep the base of the fire



# Before you consider fighting a fire...

- Determine whether a fire is small and not spreading
- Confirm a safe exit path
- Use available fire extinguishers if the fire is small enough to fight and is not spreading
- Evacuate and allow the fire department to deal with large or out of control fires

# SEHC Code Red

- Edgewood:
  - Alarms are activated by department (or zone); alarms sound only in the zone where the fire occurs
  - General fire alarms are heard throughout the hospital
- Florence/Fort Thomas:
  - No “zones”; all areas respond to a general alarm
- Surgery Centers
  - General alarm sounds

# General Reminders

- Do not prop doors open
- Hallways must have 8 feet of egress at all times; clear the clutter
- Storage must be at least 18 inches below the bottom of the sprinkler head / ceiling
- Do not block fire alarm pull boxes or fire extinguishers with equipment or stretchers



**CAN PREVENT HOSPITAL FIRES**

# The End

- Thank you for reviewing this CBL.
- Please proceed to the test.