The Faculty of Intensive Care Medicine

Fire Simulation 2

Set-up:	
Lines/access:	RIJ CVC, Left radial arterial line, one peripheral cannula
Infusions:	Sedatives, Noradrenaline, 1L crystalloid.
Airway:	COETT, ventilation circuit
Ventilator:	SIMV, TV 450ml RR12 FiO2 0.6
Other:	Mapleson C (Waters circuit), CD O2 cylinders, transfer bag, torch. Fire equipment – fire blanket, fire extinguishers, assembly point sign. Fire action cards and evacuation policy.

Clinical setting

I: You are the nurse / doctor looking after the patient

S: The patient has returned from a transfer to CT for chest imaging.

B: 75 year old male with CAP and septic shock

A: The bed sheets have started to smoulder and the room is filling with smoke

R: You recognise there is a fire and call for help

Potential Clinical Course:

- Initially
  - A Oral ETT
  - B SpO2 92%, FiO2 60%, SIMV 450mL x 12bpm, ETCO2 4.5kPa
  - C HR 93 bpm AF, BP 98/65 mmHg, noradrenaline at 0.3mcg/kg/min
  - D Propofol 8ml/hr, alfentanil 4 mL/hr
- Oxygen cylinder has been placed on the bed for transfer and has been left on despite being disconnected from the transport ventilator.
- The nurse has noticed that the bedsheets are smoldering, then burst into flames. Thick black smoke fills the room.
- The rest of the bed catches fire. Nurse needs to get help by pulling emergency buzzer
- Nurse in charge = fire warden. Activates fire point and gets evacuation cards to coordinate response
- The patient's legs start to get burnt causing an increasing tachycardia and BP
- The patient requires evacuation from the room
- Fire attempted to be extinguished – blanket, fire extinguishers. Able to put fire out on bed, but curtains now on fire

This Simulation Scenario has been adapted by Dr Jonathon Wong and Dr David Melia, originally written by Dr Sarah Marsh, the document has been produced by Dr Melia and approved by the FICM Education Sub-Committee. If you have any queries, please contact FICM via contact@ficm.ac.uk.

- Evacuate the patient through to PACU using waters circuit/transport ventilator
- Assess need to evacuate rest of the unit and interruption of O2 supply
- Establish on vent in PACU
- Assess patient – ABC, burn assessment
- Assess staff for injuries – transfer to ED if necessary

Key steps

- The nurse should call for help either by pulling the arrest buzzer or shouting for help - FIRE
- Help should arrive and leave to activate fire call point, get evacuation reference cards
- Nurse in charge – evacuation coordinator/fire warden
- Trained personnel to use fire extinguishers – location, type
- Plan the evacuation – PACU is the closest level 2/3 location.
- Consider oxygen use – locate oxygen cylinders to aid evacuation, shut off valves, Waters circuit/transport ventilator
- Alert relevant staff – evac fire card – COTD, ICU cons, theatre coordinator
- Clear way to PACU for mass evacuation
- Close fire doors if not already
- Plan unit evacuation

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Info Sheet For Faculty:

- Initial settings: SpO2 92% on FiO2 0.6
  ETCO2 4.5kPa
  RR12
  Reduced breath sounds both bases
  HR 98bpm AF
  BP 98/68

- Initial deterioration after fire:
  SpO_2 89% on FiO_2 0.6
  $ETCO_2$ 3.5kPa
  RR 26
  HR 148bpm SR
  BP 145/88
  Desynchrony with ventilator

- On transfer:
  SpO_2 to 100% if using FiO2 1.0 or Mapleson C (Waters Circuit)
  $ETCO_2$ 3.0kPa
  RR - manual
  HR 150bpm AF
  BP 150/90

- After transfer to PACU
  SpO_2 to 92 on FiO2 0.6 once back on ventilator
  $ETCO_2$ 4.0kPa
  RR - 24
  HR 150bpm AF
  BP 150/90

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Faculty Roles:

Bedside Nurse 1:

- You are an experienced ITU Nurse
- You are helping settle the patient after the transfer when you notice the oxygen cylinder in the bed being on.
- You notice that the bedsheets are smoldering and then catch fire.
- You call for help when instructed.

Nurse in charge:

- You are also a fire warden.
- You hand out fire evacuation policy and action cards
- You confirm there is fire and relay this information to switchboard via 2222 / fire call point when directed
- You can operate the oxygen shut off valves if needed.
- You explain horizontal evacuation destination is PACU.

PACU consultant:

- Arrive and offer help, take handover

HiLLO: 1, 2, 4, 5

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