

EXAMPLE OF SUGGESTED ANNUAL HBO SAFETY DRILL:

TIMED FIRE EGRESS FOR FIRE IN THE HYPERBARIC OXYGEN SUITE

Refer to the NBS emergency procedure cards, the NBS operations manual under emergency procedures and NFPA 99 hyperbaric facilities chapter and Annex sections.

The scenario should be the worst-case scenario so that we have a better idea of the actual time it would take us to evacuate safely during a fire.

The rationale for recording the 'timing' is to be certain that while the staff are managing both the patients and the fire (RACE) they are also using their smoke hoods. When one applies ALL of the steps recommended in the 'fire in the chamber' fire drill, the time is expected to be greater than the 5mins. The Drager brand smoke hoods have a 15-minute charcoal filter life. NFPA wants to ensure we know that smoke hood will be effective for the duration of time while we are in the chamber suite filled with smoke while (R) Rescuing/evacuating patients, don the smoke hoods (A) Alarm: calling the operator/pulling fire alarm, use the extinguishers (C) Confining or closing off adjoining doors, shutting down oxygen at each chamber, unplugging all electrical behind the chambers and near bye, (E) Evacuate the HBO suite, turn off the O2 zone valve then get to the next fire zone as established by the hospital.

In your write up summary, you would confirm that a hospital map is posted in the unit that is accurate for the evacuation route. You should describe the realistic mock scenario for example: Patient 'Joe Blow' who brought in his lighter to chamber #2 and decided to light it up 30 mins into his CO tx at 3 ATA after his apparent suicide attempt at home. The staff failed to do a safety check and he snuck the lighter in. The suicidal patient not only succumbed to CO poisoning but the rest of his family members did too when the garage leaked the gas throughout the house resulting in more two adult CO victims. (all chambers full at 3 ATA) 1 patient is on the ventilator. The other 2 pts are conscious but groggy and unstable; therefore all victims are non-ambulatory. Make it creative and fun but it must be realistic and allow for everyone to throw in their own ideas and suggestions. You may also have some patients waiting in the room for treatment while on portable mask oxygen. They will also need to be evacuated.

In summary include in the documentation:

1. Describe the scenario
2. State the rate of decompression that was used and from what ATA.
3. State when the staff don the smoke hoods.
4. State who was in charge of doing what during the drill; call the operator to report the fire, pulling the fire signaling device, securing open doors in the unit, checking the rooms for extra patients or staff, handling the fire extinguisher, apply PASS (pull pin, aim hose, squeeze handle, sweep), note the type of extinguisher, staff simulating with the 'practice' smoke hood, unplugging all electrical monitors, TV, DVD, etc in the vicinity of the chambers, once at surface, staff are turning off the wall oxygen wheeling the gurneys out to the hospital established next safe fire zone, as posted on the current unit evacuation map.

As the staff exit, someone should have turned off the oxygen zone valve. You should include some reference about RACE for order of response and PASS (Pull pin, Aim the hose, Squeeze the knob and Sweep the fire) for extinguisher handling.

Describe how and when you would open the door of the chamber that was on fire and what protection did you have in place for the staff member that opens the door to save the pt on fire. Recognize that when or if the fire goes out in the chamber that it may reignite when the chamber door is opened. Consider that the chamber door will be hot. Discuss the concern of the heat and possible fire at the point of exhaust, discuss the safety of not standing at the chamber door on fire related to the fire causing increased heat, increased pressure that could blow out the chamber end plates and explode off in both directions and possibly injuring or killing those in its pathway.

Most of our centers with 3 chambers take about 7-8 mins for total evacuation out of the unit when done correctly. You can refer the staff to the emergency procedure cards during the drill for a refresher that is why they are hanging there for you. Read over the actual procedure in the NBS ops manual so you don't miss anything. Also review the material in NFPA 99 Annex C 14.3.2

Other Safety Drills:

Create mock scenarios for the following emergency procedures and other scenarios involving all staff

1. Emergency procedure for local oxygen supply failure
2. Emergency procedure for hospital wide oxygen supply failure
3. Emergency procedure for chamber door safety pin jammed
4. Emergency procedure for communication failure
5. Emergency procedure for suspected pneumothorax
6. Emergency procedure for cardiopulmonary arrest
7. Emergency procedure for oxygen toxicity
8. HBO specific fire drill; fire in the chamber, fire in the department, fire in the adjacent area **(performed quarterly; refer to operations manual)**
9. Emergency decompression procedure training for ALL staff and physicians (as required by UHMS; refer to NBS operations manual)
10. Confirm the emergency decompression timing as 2 min or less for each chamber from 3ATA using the emergency vent rate with purge flow rate set at its maximum. Start timer when you push the emergency vent and stop the timer when the safety pin disengages for the door.
11. Visually inspect all outdoor chamber exhaust lines for occlusions such as lint and debris. Ensure the exhaust line is covered with a large gauge wire screen no smaller than ½ inch wire mesh per Sechrist users manual.
12. Ventilator assembly, operation, & inspection of all parts for signs of wear & tear
13. Meet with local fire department; discuss fire hazards unique to HBO chambers, loss of O2 results in immediate decompression of 3-5psi/min if the FD closes off O2 valves.
14. Meet at local fire dept education office; practice using fire extinguisher apply PASS method
15. Identify and discuss common cardiac dysrhythmias to enhance ECG monitor recognition
16. Discuss how to respond to a suicidal patient in the chamber with a lighter
17. Discuss how best to first respond to a patient who describes symptoms of anxiety and/or nausea
18. Discuss how best to treat an unconscious CO patient whose a mechanic and smells gas and oil
19. Describe a plan for how to respond to intubated patient that loses a secure airway in chamber
20. Discuss the plan for how to respond to a patient that is locked inside the bathroom and has fallen and cannot get up
21. Describe how to respond to the patient who is observed having a seizure at pressure
22. Describe how to respond to the patient that complains of sharp right-sided chest pain; pulse 130
23. Describe procedure of how to treat a diabetic with BS of 80
24. **Discuss and plan how to manage an HBO patient with any of the following:**
Wound VAC, Coban dressing, fever, implantable medication pump, defibrillator or pacemaker, external pacemaker, Vaseline gauze dressing, hearing aide, medication patch, diaper, Kotex, Thermacare warmer, On-Q pain pump ball, Unna boot, silver dressing, external fixator, non-gas permeable contact lens, loose fillings, dentures, synthetic hair, pressure ulcers on the coccyx, wedding band unable to be removed, upper respiratory infection, Teed scores >2, anxiety, claustrophobia, steroid use or seizure disorder.