

September 2, 2005

## PLANNING FOR FIRE RESPONSE

**1. PURPOSE:** This Veterans Health Administration (VHA) Directive establishes the minimum requirements for planning fire response to fire incidents in all patient-occupied buildings, and establishes the minimum requirements for:

- a. Securing the fire incident scene for investigation, and
- b. Protecting buildings, equipment, and furnishings from water and smoke damage so that patient care activities can resume as soon as possible.

## 2. BACKGROUND

a. VHA experienced a serious fire incident in 2004 where a patient died who was smoking in bed during oxygen administration. This incident resulted in a significant fire exposure to the other patients in the sleeping room, as well as other patients on the floor and the staff that responded to the incident. Quick action by nursing staff, in conjunction with the operation of smoke detectors, the facility fire alarm system, and sprinklers in the room of fire origin, prevented further injury. A key to preventing further injury was having enough staff to respond to the fire area and assist with patient relocation. After the fire, water damage was excessive due to a delay in shutting off the fire sprinkler system control valve. Also, clean up began before initial fire investigation efforts could begin.

b. As a result of this fire and others, a VHA Patient Safety Alert was issued on January 7, 2005, addressing fire response and planning. The actions included in that Alert are incorporated into this Directive.

c. The National Fire Protection Association Life Safety Code (NFPA 101) in Sections 19.7.1 and 19.7.2 requires health care facilities to have a fire plan and procedures in effect, including fire drills, to ensure adequate preparedness. The Joint Commission on Accreditation of Healthcare Organizations' Environment of Care Standards in EC.5.30 require organizations to conduct fire drills and have an adequate fire response, including follow-up evaluations on the effectiveness of the fire plan and response.

**3. POLICY:** It is VHA policy that each medical facility must have staff, plans, procedures, policies, equipment, and drills to adequately respond to any fire emergency in their patient occupied buildings, to protect buildings and contents from post-fire water and smoke damage, and to ensure adequate staff response to each of the aforementioned procedures to facilitate resumption of patient care activities and to secure fire incident scenes, as needed, for further investigations.

**THIS VHA DIRECTIVE EXPIRES SEPTEMBER 31, 2010**

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**4. ACTION**

a. **Network Director.** Network Directors must ensure local facility implementation of the requirements of this Directive.

b. **Facility Director.** Each Facility Director is responsible for ensuring that:

(1) A local facility policy is issued implementing the requirements of this Directive with specific staff accountability and responsibilities identified.

(2) There is an adequate number of staff, including clinical staff, immediately responding to the fire area regardless of the day of the week or time of day, to assist in patient relocation to the next smoke zone or another safe area should it become necessary. The number of responders needed is dependent upon the number of patients in the impacted by the smoke zone, the mobility of patients, and the acuity level of the patients. Based upon past fire events, the minimum staff response (not counting Fire Department personnel) are:

(a) For Patient Care Buildings with Overnight Stay That are not Fully Sprinkler-protected. One responder for every two non-ambulatory patients. If this response ratio cannot be met, a plan must be developed to provide adequate response by June 1, 2006. Options for compliance include: installing sprinkler protection, modifying the number (mix) of non-ambulatory to ambulatory patients in the smoke zone, reducing the size of the smoke zone(s), or a combination of these actions.

(b) For Fully Sprinkler-protected Patient Care Buildings with Overnight Stay: One responder for every four non-ambulatory patients. If this response ratio cannot be met by October 1, 2005, a risk assessment must be conducted to determine that an appropriate level of safety is being provided. This risk assessment is not to be used to reduce the number of responders in the facility's fire plan, if the 1:4 ratio is currently being met (see Att. A).

***NOTE:** For the purposes of this Directive, non-ambulatory patients include individuals with physical, cognitive, or behavioral impairments who need assistance when relocating to an adjacent smoke zone.*

(3) The fire plan clearly identifies the individual(s) in the unit or area responsible for turning off the room or zone oxygen shut off control valve should it become necessary. This is especially important in surgery and Intensive Care Unit areas. These individuals must be knowledgeable of the areas served by the valves.

(4) A requirement to telephone the fire department is part of the written fire plan as newly required in NFPA 101, 19.7.2.2.

(5) Qualified response staff are identified who are provided with special keys and/or tools when needed (e.g., to open doors and windows, turn off or turn on utilities), who are knowledgeable in the operation of:

(a) The electrical system; heating, ventilating, and air conditioning (HVAC) equipment; and fire protection systems (sprinkler shut off and drain valves), and

(b) Are available to consult with fire department personnel.

(6) Safety and Health, Facilities Management Engineering, or other qualified personnel, verify that personnel and equipment are available to limit damage to the building immediately after fire department personnel declare the fire is extinguished. This may be accomplished by evacuating smoke, shutting off sprinkler control valves, and containment of sprinkler and fire hose discharge water. Water damage may be limited through the use of plugs specifically designed to seal open fire sprinklers and absorbent “pigs” to dike water on the floor to keep it from spreading. Smoke spread may be limited by opening windows, stopping the HVAC environmental air re-circulation and by using dedicated portable exhaust fans.

(7) Safety and Health, Police and Security, or other qualified personnel develop a policy or Standard Operating Procedure that addresses how the fire scene is to be secured after the event and before clean up, to permit an investigation to be conducted by qualified individuals. The purpose of this investigation is to determine fire cause and assess the effectiveness of both active (e.g., suppression and detection) and passive (e.g., smoke and fire barriers) fire protection systems.

## 5. REFERENCES

a. VHA Patient Safety Alert dated January 7, 2005, Fire Response and Planning. See <http://vaww.ncps.med.va.gov/alerts.html>.

b. National Fire Protection Association’s Life Safety Code (NFPA 101) 2003 edition.

c. Joint Commission on Accreditation of Healthcare Organizations Environment of Care Standards.

**6. FOLLOW-UP RESPONSIBILITIES:** The Assistant Deputy Under Secretary for Health for Operations and Management (10N) is responsible for the contents of this Directive. Questions can be referred to the Directive, Safety and Technical Service at 202-273-5844 and to the National Center for Patient Safety at 734-930-5890.

**7. RESCISSIONS:** None. This VHA Directive expires September 31, 2010.

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**FIRE EVACUATION AND/OR RELOCATION RESPONSE  
SPRINKLER-PROTECTED SMOKE ZONE RISK ASSESSMENT**

*NOTE: This Risk Assessment is not to be used to reduce the number of responders in the facility's fire plan if the 1:4 ratio is currently being met.*

1. Consider the following factors when assessing the adequacy of the facility fire response for sprinkler protected smoke zones.
2. A responder may be any individual who can respond within 8 minutes, is trained in the fire plan, or participates in the fire drills (Fire Department personnel may not be counted since their primary efforts may be in suppression activities).
3. For the purposes of this risk assessment, the number of non-ambulatory patients present in a smoke zone must be the "most likely worst case" scenario. Base this upon the greatest number of non-ambulatory patients simultaneously present in the smoke zone over the past 36 months.

4. **Factors**

a. **Private Rooms.** If the smoke zone is comprised of private rooms, there is a greater likelihood that a fire and its products of combustion (smoke) will be contained to the room of fire origin, as staff will not need to re-enter the room to rescue additional patients. **(Award 1 Point)**

b. **Room Separation.** If the walls between the patient sleeping room and adjacent rooms, as well as the corridor, extend from floor slab to floor slab and are without penetrations, there is a greater likelihood that patients in rooms adjacent to the room of fire origin will not have to be relocated. **(Award 2 Points)**

c. **Quick Response Sprinklers.** A faster sprinkler response will significantly reduce the heat and products of combustion generated by the fire. Quick Response sprinklers will activate faster than Standard Response sprinklers. **(Award 3 Points)**

d. **Smoke Detection.** Properly installed and maintained smoke detectors will provide early detection of a fire and will give additional time for staff response. **(Maximum of 2 Points permitted)**

e. System smoke detectors throughout all areas of the smoke zone. **(Award 2 Points)**

f. System smoke detectors in patient sleeping rooms and throughout the corridor. **(Award 1.5 Points)**

g. Single station smoke alarms in all patient sleeping rooms. **(Award 1 Point)**

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h. System smoke detectors provided only throughout the corridors (**Award 0.5 Points**)

5. **Heating, Ventilation, and Air Conditioning (HVAC) Systems.** An environmental air system that is fully ducted will aid in containing the products of combustion from a fire. (**Award 1 Point**)

6. **Oxygen not present.** The presence of oxygen in the patient sleeping rooms (piped, cylinder, or concentrator) can increase how rapidly a fire will spread. (**Award 1 Point**)

7. **Reporting Table**

<b>Number of Points *</b>	<b>Minimum Number of Responders to Non-ambulatory Patients</b>
3	1:4
*>3 to 8	1:5
≥8.5	1:6

\* Measures adding up to less than 3 points would not be sufficient to allow a minimum response of 1 to 4 ratio.

> Greater than.

≥ Greater or less than