



## HOSPITAL FIRE

Weymouth, MA  
January 24, 1993

Includes:  
*Sprinklers Prevent Tragedy in Two Health Care Facility Fires*  
By Michael S. Isner  
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# FIRE INVESTIGATIONS

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All non-NFPA photographs have been removed from this document.



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## **SUMMARY**

### **FIRE INVESTIGATION REPORT**

**HOSPITAL FIRE**

**SPRINKLER SUCCESS**

**WEYMOUTH, MASSACHUSETTS**

**JANUARY 24, 1993**

**PREPARED BY**

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**NATIONAL FIRE PROTECTION ASSOCIATION**

On Sunday, January 24, 1993, an incendiary fire occurred at South Shore Hospital. One sprinkler operated in the room of fire origin, extinguishing the flames before they spread to other areas and before fire fighters arrived. The flame and heat damaged only materials in the room of fire origin. However, water and smoke spread into the corridor and resulted in some damage in that area. Six staff were treated and released for smoke-related injuries.

Compliance with fire safety code requirements, training of staff, and the use of automatic sprinklers significantly reduced the potential for loss of life and large property loss during the fire at the South Shore Hospital.

Publishers of the National Fire Codes® and National Electrical Code®

A non-profit membership organization dedicated to promoting safety from fire, electricity, and related hazards through research, codes and standards, technical advisory services, and public education since 1896.

## **Introduction**

The National Fire Protection Association (NFPA), with the cooperation of South Shore Hospital and the Weymouth Fire Department, investigated this fire as part of its ongoing program to document technically significant incidents. It was not NFPA's intention that the investigation and resulting report pass judgment on or fix liability for the losses sustained during this fire. Rather, the NFPA documented and analyzed this incident intending to determine significant factors that prevented the loss of life and additional property losses. In addition, the NFPA intended to report the lessons learned to the fire service and other parties interested in preventing the loss of life and property due to fire.

## **Background**

South Shore Hospital was first opened in 1922. Over the years, several additions and renovations expanded the original facility to its current capacity of 342 beds. The original structure is of ordinary construction, and all other areas, comprising most of the facility, are of fire-resistive construction. The building ranges in height from two stories to six stories.

Most areas in the hospital, including the room in which the fire occurred, were protected with an automatic sprinkler system using standard-response sprinkler heads. In addition to the sprinkler system, fire extinguishers were provided throughout the facility, patient room doors were equipped with smoke-actuated door closers, and magnetic hold-open devices were installed on corridor fire doors. In addition, the building's alarm system was interlocked with the sprinkler system, the closing devices for patient room doors, and the magnetic hold-open device for corridor doors. The activation of any component in the building's alarm system would automatically release all patient room doors and corridor fire doors. The building's alarm system also was connected directly to the Weymouth Fire Department dispatch center.

All staff personnel received regular fire safety training that included an introduction to the fire extinguisher. Many staff who were considered first responders for fire emergencies received additional fire extinguisher training by fire department personnel. This training included the extinguishment of fires using extinguishers. Quarterly fire/evacuation drills were held on all shifts, complementing the fire protection training and equipment that was provided.

### **The Fire**

At approximately 7:18 a.m., for some undetermined reason, a 69-year-old patient in a private room intentionally ignited tissue paper and other combustible materials she had placed on the bed's foamed plastic mattress. After starting the fire, the patient went to the secretary's desk and reported that there was a problem in her room. Upon investigation of this report, the unit secretary discovered two-foot high, orange flames covering one end of the bed and gray and black smoke accumulating at the ceiling. It was about this time that the sensor on the automatic door closer sensed smoke, initiated the first alarm, closed the door to the room of fire origin, and caused the release of all other patient room doors and corridor fire doors throughout the hospital.

The secretary immediately operated a manual pull station, then ran to her desk and called the hospital operator who, in turn, made an announcement regarding the fire. Other staff began their emergency response, which included ensuring that all patient room doors were closed, placing towels around the door to the room of fire origin, bringing fire extinguishers to the fire area, and evacuating all 27 patients from the wing. During these activities, the sprinkler system operated.

Fire fighters arrived at the room of fire origin approximately five minutes after receiving the alarm. The fire fighters found that the operating sprinkler had extinguished the fire before they could make entry into the room. As a result, the fire fighters simply ensured that the fire was in fact extinguished and that the fire did not extend beyond the area of origin.

## **Conclusion**

The NFPA has investigated numerous incidents in health care facilities where fire safety deficiencies have been documented and patient deaths and extensive damage have occurred. The fire at South Shore Hospital was notably different from other fires because no patients were injured and direct flame damage was limited primarily to the bed on which the fire occurred. Although six staff members sustained minor smoke-related injuries and some damage to the facility occurred during the fire and sprinkler operation, the impact that this fire had on occupants and on the facility was minimal compared to the impact documented by the NFPA following fires in facilities without sprinklers or with documented fire safety deficiencies.

Based on its investigation, the NFPA concludes that compliance with fire safety code requirements, training of staff, and the use of automatic sprinklers significantly reduced the potential for loss of life and property damage during the fire at South Shore Hospital.

# Sprinklers Prevent Tragedy in Two Health Care Facility Fires

*Compliance with code requirements, activation of sprinkler systems, and proper staff actions saved lives in two recent Massachusetts fires.*

## INVESTIGATION REPORT

The NFFPA has investigated numerous fires in health care facilities where fire safety deficiencies were documented, patients died, and extensive damage occurred.

Two recent fires—at a nursing center in Woburn, Massachusetts, on October 30, 1992, and a hospital in Weymouth, Massachusetts, on January 24, 1993—were notably different from other fires documented by the NFFPA. There were no fatalities at these fires, injuries were kept to a minimum, and property damage due to direct flame contact was limited. Moreover, the fire protection equipment and training programs at these facilities were consistent with current fire safety codes and standards.

Analyses of the two fires indicate that compliance with fire safety code requirements, proper training of staff members in emergency procedures, and the activation of automatic sprinklers can significantly reduce the potential for loss of life and for property losses in health care facilities.

### **WOBURN NURSING CENTER FIRE**

On Friday, October 30, 1992, an explosion and fire resulted in the total evacuation of the Woburn Nursing Center, a 101-bed facility in Woburn, Massachusetts.

The explosion occurred when natural

**Firefighters evacuate a resident of the Woburn Nursing Center after leaking propane caused a fire and explosion.**

DAN CUMMINGS/WOBURN ADVOCATE

The nursing center's 101 residents were safely evacuated in 15 or 20 minutes and were taken to a school that was used as a temporary shelter.

Emergency medical personnel check a resident's identity and vital medical data before she was transported to the temporary shelter and then to a hospital or nursing home.

gas, accidentally released during construction activities, filled combustible concealed spaces in the building's core area and was ignited by an undetermined heat source. The gas-fed fire spread vertically in the core area from the basement to the third floor and blew off part of the roof. Twenty-one sprinklers operated and controlled the fire.

Staff members evacuated all of the facility's residents with the help of construction workers, neighbors, and others who provided limited, but valuable, assistance. Because the evacuation was already in progress when first-alarm fire fighters arrived, most of them were able

to concentrate on suppressing the fire.

Twenty-one civilians and two fire fighters sustained injuries, most of them minor. Damage to the building and its contents was estimated at \$1.5 million.

### The building

The building housing the Woburn Nursing Center varied in height from two to four stories. The original structure, built in 1905, was a two-story-plus-attic, wood-frame dwelling that was converted for use as a nursing home. Through the years, it had been expanded by the construction of five additions, the first in 1962 and the most recent in 1992. All of

the additions were of light, noncombustible construction and were so located that the original structure was surrounded by new wings. Thus, the old wood-frame structure became the core area of the facility (see Figure 1).

At the time of the fire, the residents' rooms were located in the wings, which were separated from the original structure—now the core area—by noncombustible, slab-to-slab walls. Self-closing, fire-rated doors protected the openings in these separation walls. Slab-to-slab walls also separated the residents' rooms from the corridor, and all the residents' rooms had solid-core wood doors.

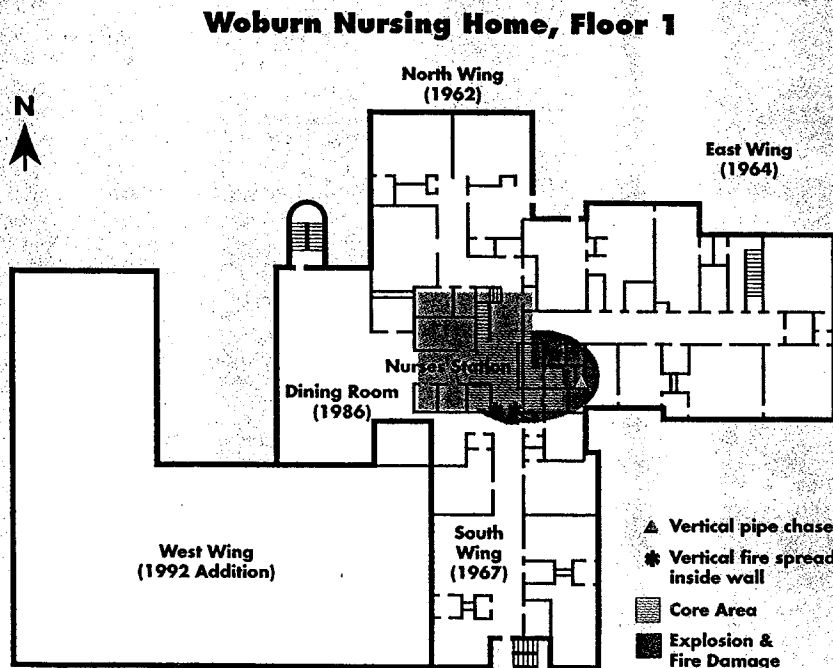
### Fire protection features

The entire facility was protected by an approved automatic sprinkler system with standard 160°F sprinkler heads. Smoke detectors were installed in the residents' rooms and the corridors, and there were heat detectors in utility areas such as the electrical rooms, the laundry, and the kitchen. The operation of the sprinkler system or a smoke or heat detector initiated a building-wide alarm, automatically notified the fire department, and released magnetic hold-open devices on the fire doors.

Fire extinguishers were provided throughout the facility. Emergency lighting fixtures were connected to an emergency power system operated by a natural-gas-driven generator in the basement of the building.

The owners and administrators of the nursing center had worked closely with the Woburn Fire Department when the newest addition to the facility was designed and planned in 1992. As a result of this cooperation, they added several fire protection enhancements to the property, including a new water main, new fire hydrants, and a new access road for fire apparatus.

FIGURE 1



**The fire and explosion occurred in the central core area on the first floor of the Woburn Nursing Center. Residents' room were in wings surrounding the core area.**

**Explosion and fire damage in the core area of the nursing center extended from the first floor to the third floor, shown here. Fire doors at left closed automatically.**

### Staff training

As part of their initial orientation, new employees received instruction on the center's fire and disaster plan. All staff members also received regular fire safety training that included fire extinguisher operation, a review of how the alarm system operated, and techniques for evacuating the residents. In addition, quarterly fire drills were held for all shifts.

The fire safety training and fire drills were documented, and training records were reviewed periodically to ensure that all staff members received the required training. The nursing home staff worked closely with the Woburn Fire Department's fire prevention bureau in developing the fire safety programs and performing fire safety training.

### Occupants of the building

At the time of the fire, all 101 beds in the nursing center were occupied and most of the residents were in their rooms, where a few were receiving visitors. There were about 22 staff members present, including nurses, aides, kitchen personnel, a receptionist, a development specialist, an activities specialist, and a maintenance person. An estimated four to six construction workers also were in the building and another four were working outside, in the general area.

### The fire

At about 3:45 p.m., a plumber completed his work on a 2-inch-diameter branch line for natural gas that had been installed at a previous time. Unaware that the plumbers who installed the branch line had left an unplugged 1-inch orifice in a tee fitting, he charged the branch line with natural gas. According to reports, the natural gas branch line would not main-

tain a stable pressure, so he looked for a possible leak in the system.

After the incident, investigators estimated that the gas had flowed freely for 15 to 20 minutes while the plumber tried to find the cause of the pressure fluctuation. During this time, about 300 to 500 cubic feet of natural gas leaked out of the main and spread to various areas in the building.

When staff members smelled gas, they notified maintenance personnel, who looked for its source. As the odor became stronger, an off-duty Woburn Fire Department officer visiting his mother, who was a resident of the center, suggested that staff members open a few windows, and they did so. A few moments later, a loud explosion occurred.

Staff members immediately began to close the doors to the residents' rooms and started evacuating residents from the rooms closest to the explosion area. They were assisted by the visiting fire officer, several construction workers, and a few neighbors.

The Woburn Fire Department dispatch center received an automatic alarm from the nursing center at 4:07 p.m. and a subsequent telephone call reporting that a generator had exploded and part of the building's roof had been blown off. Three engines, a tower, and a rescue unit were dispatched. Because the initial report indicated that an explosion had occurred, the chief of the Woburn Fire Department also responded.

The officer on the first-arriving engine company immediately reported heavy smoke and flames coming from the roof. He requested a second alarm, and another engine and a truck were dispatched.

Another engine company went to the back of the building, where they saw elderly residents being helped down a fire escape. At 4:11 p.m., the officer on

this engine requested a third alarm, ambulances, and a bus.

The department chief arrived at this time and saw a severely burned victim—the plumber who had been working on the natural gas branch line. After the chief confirmed that there were thick smoke and flames at roof level, he received a report of heavy fire in the second-floor ceiling and ordered a fourth alarm at 4:12 p.m.

During his initial size-up of the situation, the chief had assessed the fire as quite severe, but he was aware that the nursing center's staff members were managing the evacuation of the residents. As a result, he had most of the first-alarm companies concentrate on attacking the fire and conducting a primary search of the facility.

Fire fighters advanced two handlines to the second floor, where heavy fire had been reported. They also took a third line to the third floor, because there had been a report that someone might be trapped there. Some first-alarm fire fighters were assigned to assist in the evacuation.

Second-alarm companies established the water supply for the first-alarm crews attacking the fire. They also took part in searching the building, helped attack the fire on the first and second floors and on the roof, and aided in the evacuation. One of the many mutual-aid engine companies that had responded to the third alarm advanced a hose line into the first floor to suppress the fire in that area. Other third- and fourth-alarm companies assisted in the secondary search of the building, fire suppression operations, and the evacuation of residents.

Although the fire was considered under control at 4:35 p.m., fire fighters had to open many walls and areas in the ceiling assemblies to check for fire extension in these areas. Final extinguishment was completed at about 5:15 p.m.

**Damage in a resident's room adjacent to the core area of the nursing center. The patient sustained only minor injuries.**

### **Injuries and damage**

Twenty-three people were injured by the explosion and subsequent fire. Most severely hurt was the plumber, whose hands, arms, and head were badly burned. Nine residents sustained injuries that included chest pains, burns on the back, smoke inhalation, bruises, lacerations, and hypertension. Injuries to 10 staff members included smoke inhalation, back strain, bruises, shock, and a burned neck. One fire fighter was treated for smoke inhalation, and a second bruised his leg. A construction worker bruised his back and one hand.

Most of the explosion and fire damage occurred in the wood-frame core area of the building, where there was similar explosion damage from the basement to the third (top) floor. Ceilings collapsed, walls were damaged, and combustible materials inside the wall, ceiling, and roof assemblies were burned. Fire damage was severe inside the floor/ceiling assemblies and the wall assemblies.

### **Fire origin and spread**

Although investigators were unable to determine the exact ignition source, they believe that it most likely involved electrical equipment because the gas leak occurred in an electrical room in the basement.

Once the gas was ignited, the explosion and subsequent fire propagated along the paths through which the leaking natural gas had spread. These included corridors, cracks around doors, and natural voids and cavities such as joist channels in the floor/ceiling assemblies. The fire also spread vertically through a nonfirestopped pipe chase and explosively ignited natural gas that had accumulated in the attic.

Overpressurization during the explosion caused extensive damage to wall and ceiling assemblies in the core area.

**Damage in the attic of the nursing center, where a portion of the roof was torn off by the force of the propane gas explosion.**

The explosive ignition of gas in the attic also blew off a section of roof. Combustible materials inside wall and flood ceiling assemblies were ignited and continued to burn after the explosion subsided.

### **Performance of fire and safety equipment**

Twenty-one sprinklers operated during the explosion and subsequent fire. The operating sprinklers controlled the fire in the core area of the building and, in conjunction with the fire barriers between the core area and the wings, prevented the fire from spreading to areas not directly affected by the explosion. Although the sprinkler system controlled the fire, fire fighters had to complete the final extinguishment because fire was spreading inside the combustible wall and floor assemblies.

Emergency lighting and other emergency systems were powered by electricity from a natural-gas-fired emergency generator. When a maintenance man shut off the main natural-gas control valve in response to the explosion, he also shut off the only fuel supply to the emergency generators. The most significant result of the loss of emergency power was immediate failure of emergency lighting in the building, which darkened all the corri-

dors and increased the difficulty of evacuation and rescue operations.

### **Staff performance**

Over the years, the administrators of the nursing center had emphasized fire-safety programs for the facility and fire-safety training for all staff members. This training provided the staff with the knowledge and confidence to evacuate all the residents from the darkened building while an extremely serious fire was in progress in the core area. Not only was the evacuation performed with a minimum of injuries to the residents, but it also was accomplished in about 15 or 20 minutes.

After all 101 residents had been removed from the building, the major concern of the nursing staff and emergency personnel who were assisting them was caring for their medical and other needs. The evacuated residents were taken to a triage area that had been set up on the property, where their condition could be evaluated and they could be protected from the weather. As soon as possible, they were transported to a school that was being used as a temporary shelter.

Because of limited transportation facilities and other organizational difficulties, some residents remained at the fire scene up to an hour before being taken to the shelter. During the period when the residents were being transferred to the shelter, staff members found it difficult to keep track of their location. As staff members organized activities at the temporary shelter, they were able to account for all the residents.

Another problem staff personnel faced was ensuring that medical records were retrieved and accompanied residents being relocated to other health care facilities. They were able to solve this problem before the residents were transported from the temporary shelter.

### **Complete report on Woburn fire available**

**T**he report on the explosion and fire at the Woburn Nursing Home was adapted from the complete, 18-page NFPA investigation report, which is available from the NFPA Fire Investigations Department. To obtain a copy of the report, telephone (617) 984-7473.

## Code analysis

In order to compare conditions and other details of this fire with current national consensus codes, the NFPA used the 1992 edition of NFPA 1, *The Fire Prevention Code*. It is recognized, however, that current codes were not part of the legal requirements governing life safety at the Woburn Nursing Center.

The following discussion concerns requirements that have particular relevance to this fire. It is not intended to be a complete description of all parts of the codes that could be applied to this health care facility.

Fires are much more likely to occur during construction projects than they are in a completed structure. The increased hazard is the direct result of large quantities of combustible materials and debris and the presence of numerous ignition sources such as cutting, welding,

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and plumbers' torch operations; temporary heating devices; open fires; and smoking.

To minimize the fire risk and protect occupants of buildings under construction, Section 41-2.16.8 of the 1992 edition of NFPA 1 requires that fire protection systems in the structure remain operational at all times. In addition, it states that all required exit components and fire-resistive assemblies and construction also must be maintained. These requirements are repeated in NFPA 241, *Standard for Safeguarding Construction, Alteration, and Demolition Operations*.

Events that occurred during the nursing center fire corroborate the value and importance of the NFPA requirements for maintaining fire protection provisions during construction and renovation activities. Specifically, the operating sprinklers, in conjunction with the fire-rated doors and walls, controlled the fire and prevented it from spreading into the wings, where the residents' rooms were located. In addition, residents were able

to evacuate through alternate exits, even though the core area was filled with fire, because both the primary and the alternate exits were maintained during construction.

The NFPA considers administrative policies and staff personnel an integral part of the life safety provisions in a health care facility. Accordingly, Chapter 31 of the 1991 edition of NFPA 101, *The Life Safety Code*<sup>®</sup>, requires that administrators of health care facilities establish a written plan that specifies the protection of all of a facility's occupants if a fire should occur. Chapter 31 also requires that staff members be instructed on their duties under the plan and on life safety procedures to be followed. The fire safety provisions at the Woburn Nursing Center appeared to be consistent with these NFPA requirements, and staff members at the center felt that their training helped them to respond effectively during the evacuation of the residents.

Total evacuation of a building, such as the one that took place at the Woburn Nursing Center, is not a common response to a fire at a health care facility. Emergency fire plans in these facilities typically address events that affect only a small part of the facility at any time. As a result, evacuation and other emergency response plans for the facility commonly anticipate that the residents will be relocated to areas *within* the building that are not directly involved in the emergency. Rarely do incidents occur that require an entire building to be evacuated, and in such situations, administrators and staff members have to adapt their emergency procedures spontaneously to meet the challenges of a complete building evacuation. Management of the residents after they were safely evacuated apparently was the greatest challenge that the administrators and staff members faced during the Woburn Nursing Center fire.

NFPA 99, *Standard for Health Care Facilities*, provides guidelines that can help health care emergency planners prepare for a complete evacuation of their facility. Recognizing that health care facilities may have to provide services during large-scale disasters—such as an incident that causes a large influx of people needing medical services, a hurricane, or a bomb alert that requires the total evacuation of the facility—NFPA 99 includes an annex that provides useful disaster procedures and guidelines for establishing a disaster plan. By establishing such a disaster plan, trained health care administrators and staff members may be able to adapt the plan's disaster policies and procedures to provide responses to fire emergencies that are totally beyond those that can be reasonably anticipated or expected.

## SOUTH SHORE HOSPITAL FIRE

On Sunday, January 24, 1993, an incendiary fire occurred in a patient's room at the South Shore Hospital in Weymouth, Massachusetts. One sprinkler operated in the room, extinguishing the flames before they spread to other areas and before fire fighters arrived. The flames and heat damaged only materials in the room of fire origin. However, water and smoke spread into the corridor, causing some damage in that area.

Six staff members were treated for smoke-related injuries and released. None of the patients were injured.

Compliance with fire safety code requirements, proper training of staff members, and the presence of automatic sprinklers significantly reduced the potential for loss of life and property loss during this fire.

### The building

The South Shore Hospital opened in 1922. Over the years, several additions and renovations had expanded the original facility to its current 342-bed capacity. The original structure was of ordinary construction, and all other areas, which comprised most of the facility, were of fire-resistive construction. The building ranged from two to six stories high.

Most areas in the hospital, including the room in which the fire occurred, were protected by an automatic sprinkler system with standard-response sprinkler heads. In addition, fire extinguishers were provided throughout the facility, doors to patients' rooms were equipped with smoke-actuated door closers, and magnetic hold-open devices were installed on corridor fire doors.

The building's alarm system was interlocked with the sprinkler system, the closing devices for patient-room doors, and the magnetic hold-open devices for corridor doors. Activation of any component in the building's alarm system automatically released all patient-room doors and corridor fire doors. The alarm system was connected directly to the Weymouth Fire Department dispatch center.

### Staff training

All staff members at the hospital received regular fire safety training that included an introduction to the use of fire extinguishers. In addition, many staff members who were considered first responders to fire emergencies received additional fire extinguisher training from fire department personnel that included instructions on how to use extinguishers on fires. Quarterly fire-and-evacuation drills were held on all shifts, complementing the fire protection training and equipment that were provided.

<sup>®</sup>Reg., TM, The National Fire Protection Assoc., Inc.

**A patient started the fire in the South Shore Hospital by igniting paper and other combustible materials on her bed. Damage was limited to the room and nearby area.**

**The patient's room where the hospital fire occurred. The photograph was taken several days after damage from the fire had been cleaned up.**

### **The fire**

At about 7:18 a.m., for some reason that has not been determined, a 69-year-old patient in a private room on the third floor intentionally ignited tissue paper and other combustible materials she had placed on her bed's foamed-plastic mattress. She then went to the unit secretary's desk at the nurses' station and reported that there was a problem in her room.

The unit secretary investigated and found orange flames 2 feet high burning at one end of the bed and gray and black smoke accumulating at ceiling level. About this time, the sensor on the automatic door closer sounded the first alarm, closed the door to the room of fire origin, and released all the other patient-room doors and corridor fire doors throughout the hospital.

Staff members responded to the emergency by performing the tasks for which they had been trained. A secretary immediately operated a manual pull station. She then ran to her desk and called the telephone operator, who announced the fire to the staff over the loudspeaker system. Other staff members made sure that all the patient-room doors were

closed, placed towels around the door to the room of fire origin, brought fire extinguishers to the fire area, and evacuated all 27 patients from that wing to other wings. As they did so, the sprinkler in the room of fire origin operated.

Fire fighters arrived at the door of the

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*When a hospital patient ignited a fire in her room, staff members performed the tasks for which they had been trained. A sprinkler extinguished the fire before fire fighters arrived.*

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room about 5 minutes after receiving the alarm and found that the sprinkler had already extinguished the fire. As a result, they merely had to verify that the fire was extinguished and that it did not extend

beyond the area of origin.

None of the patients in the wing were injured, but six staff members sustained minor smoke-related injuries. Direct flame damage was limited primarily to the bed on which the fire had been set, and the most severe smoke damage was in the room of fire origin. Water from the operating sprinkler and some smoke leaked into the corridor, causing minor damage in that area and in adjacent patient rooms.

Although a few staff members sustained minor injuries and the facility suffered some damage during the fire and subsequent sprinkler activation, injuries probably would have been more severe and property damage much greater if staff members had not been trained and if automatic sprinklers had not been installed in the facility.

### **Conclusion**

Based on the NFPA's investigations and analyses, the following significant factors contributed to the successful outcome of the fires at the Woburn Nursing Center and the South Shore Hospital:

- the installation and operation of a supervised and approved automatic sprinkler system;
- the existence of, and administrative commitment to, programs and procedures that described staff members' duties in response to emergencies;
- the actions taken by trained staff members in response to the fires; and
- the quick response of fire department, emergency medical, and other personnel who, through a coordinated effort, performed their respective tasks and assisted the facilities' staff members in caring for the evacuated residents.

### **Why the Investigations Were Conducted**

The NFPA investigated these fires with the cooperation of the Woburn Nursing Center and the Woburn Fire Department, and the South Shore Hospital and the Weymouth Fire Department.

The two fires were investigated as part of the NFPA's ongoing program to document technically significant fires. It was not the NFPA's intention that the investigations and resulting reports pass judgment on, or fix lia-

bility for, the losses sustained during these fires. Rather, the NFPA documented and analyzed these fires to determine significant factors that prevented the loss of life and additional property losses.

The NFPA also reports the lessons learned so that the fire service and other interested parties can prevent the loss of life and property due to fire in similar situations.

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