

FIRES IN HEALTH CARE FACILITIES

Marty Ahrens

November 2012



**National Fire Protection Association
Fire Analysis and Research Division**

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Abstract

In 2006-2010, U.S. fire departments responded to an estimated average of 6,240 structure fires in or on health care properties per year. These fires caused an average of six civilian deaths, 171 civilian injuries and \$52.1 million in direct property damage annually. Almost half (46%) were at nursing homes, and almost one-quarter (23%) were in hospitals or hospices. Cooking equipment was involved in three out of five (61%) fires; dryers were involved in 7%, 6% were intentionally set; another 6% were started by smoking materials, and heating equipment was also involved in 6%. Only 4% of these fires spread beyond the room of origin. Causes, circumstances, and extent of fire spread varied by occupancy.

This report provides estimates of fire frequency and associated losses for reported fires in: all health care properties; in nursing homes; in hospitals or hospices; in mental health facilities caring for those with developmental disabilities, mental retardation, mental illness or substance abuse issues; and in clinics or doctors' offices. Estimates were derived from NFPA's fire department survey and the USFA's National Fire Incident Reporting System (NFIRS).

Keywords: fire statistics; health care fires; nursing home fires; clinic fires; medical fires;

Acknowledgements

The National Fire Protection Association thanks all the fire departments and state fire authorities who participate in the National Fire Incident Reporting System (NFIRS) and the annual NFPA fire experience survey. These firefighters are the original sources of the detailed data that make this analysis possible. Their contributions allow us to estimate the size of the fire problem. We are also grateful to the U.S. Fire Administration for its work in developing, coordinating, and maintaining NFIRS.

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1 Batterymarch Park

Quincy, MA 02169-7471

www.nfpa.org

e-mail: osds@nfpa.org

phone: 617-984-7443

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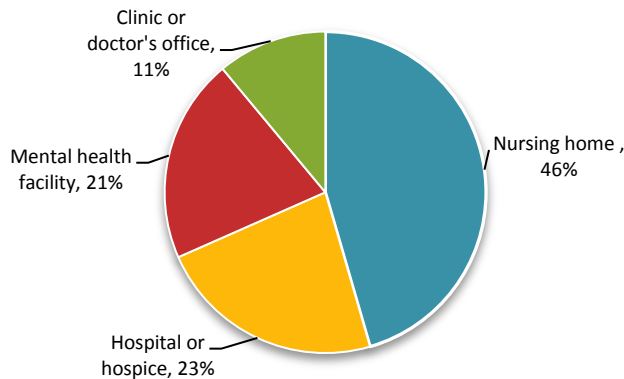
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U.S. Structure Fires in Health Care Properties Fact Sheet

U.S. fire departments responded to an estimated average of 6,240 structure fires in health care properties per year in 2006-2010. These fires caused annual averages of

- 6 civilian deaths
- 171 civilian injuries
- \$52 million in property damage

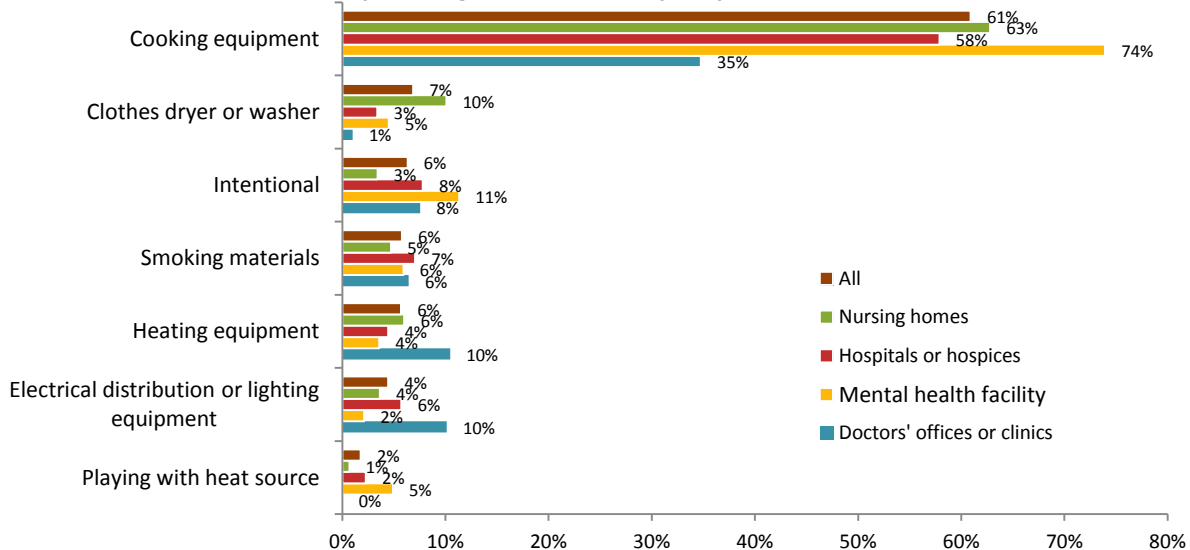
Structure Fires in Health Care Facilities, by Occupancy Type: 2006-2010



- Most fires in these properties are small. Fire spread beyond the room of origin in only 4% of health care fires.
- Sprinklers were present in 55% of reported health care fires. The direct property damage per fire was 61% lower in properties with wet pipe sprinklers than in properties with no automatic extinguishing equipment.
- Leading causes, fire spread, and fire circumstances varied by specific health care occupancy.

Cooking was the leading cause of fires in all health care properties. Nursing homes are more likely to have fires involving clothes dryer or washers than other health care properties. Facilities providing care of those with developmental disabilities, mental illness or substance abuse had more fires that were intentionally set.

Structure Fires in Health Care Facilities by Leading Cause and Occupancy: 2006-2010



NFPA's Fire Safety Resources

NFPA's wealth of fire-related research includes investigations of technically significant fire incidents, fire data analysis, and the Charles S. Morgan Technical Library, one of the most comprehensive fire literature collections in the world. In addition, NFPA's Fire Protection Research Foundation is a source of independent fire test data. Find out more at:

www.nfpa.org/research

Properly installed and maintained smoke alarms are necessary to provide a warning of any fire to all occupants. You can find out more information about smoke alarms here: [NFPA Smoke Alarm Information](#)

Home fire sprinkler systems provide even greater protection. These systems respond quickly to reduce the heat, flames, and smoke from a fire until help arrives. More information about home fire sprinklers may be found at www.firesprinklerinitiative.org

Simply put, smoke alarms and fire sprinklers save lives.

Research

Advocacy



Codes & Standards

Public Education

NFPA also develops, publishes, and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks. Among these are:

[NFPA1: Fire Code:](#)

[NFPA 101: Life Safety Code®:](#)

[NFPA 99: Health Care Facilities](#)

[NFPA 72, National Fire Alarm Code®](#)

[For consumers:](#) NFPA has consumer safety information regarding causes, escape planning, fire & safety equipment, and many other topics.

Sparky.org has important [For Kids](#) for kids delivered via fun games, activities, and cartoons.

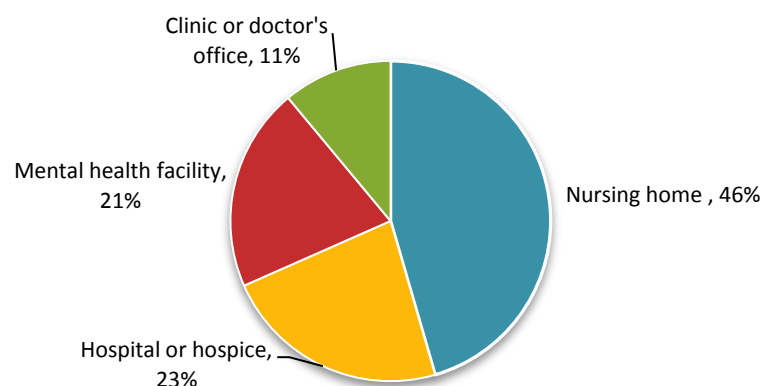
[For public educators:](#) Resources on fire safety education programs, educational messaging, grants & awards, and many other topics.

Structure Fires in Health Care Facilities

6,240 structure fires were reported in these properties per year.

During the five-year period of 2006-2010, U.S. fire departments responded to an estimated average of 6,240 structure fires in health care facilities per year. These fires caused an annual average of six civilian deaths, 171 civilian fire injuries, and \$52.1 million in direct property damage. Figure 1 and Table A show that almost half (46%) of these fires were in nursing homes, while almost one-quarter (23%) were in hospitals. One in five (21%) were in mental health facilities.

Figure 1. Structure Fires in Health Care Facilities, by Occupancy Type: 2006-2010



For this analysis the term “health care facilities” includes four broad categories of occupancies:

- 1) Hospitals or hospices;
- 2) Licensed nursing homes providing 24-hour care;
- 3) Mental health facilities providing 24-hour care to individuals with substance abuse issues, developmental disability or mental retardation or asylums or mental illness; and
- 4) Clinics, ambulatory care facilities, doctors’ or dentists’ offices or free-standing dialysis units.

This report includes an analysis of fires in health care properties overall and of fires in each of the four major categories. Note that there is some overlap between categories. Hospitals often have ambulatory clinics. A continuum exists from nursing homes and mental retardation or substance abuse facilities to residential board and care, assisted living, or rest homes. Residential board and care¹ or assisted living shares some traits with health care occupancies and others with residential. It is grouped with residential properties in the U.S. Fire Administration’s (USFA’s) National Fire Incident Reporting System (NFIRS).

Only fires reported to public fire departments are included in these statistics. Unclassified institutional properties are not included. Supporting tables are provided at the end of this section.

1.2% of all structure fires were in health care facilities

¹ See NFPA’s 2012 report, [Structure Fires in Residential Board and Care Facilities](#), by Ben Evarts, at

During 2006-2010, the 6,240 fires in health care properties accounted for 1.2% of the 506,400 structure fires, 0.2% of the 2,810 civilian structure fire deaths, 1.1% of the 14,960 civilian structure fire injuries, and 0.5% of the \$10.6 billion in direct property loss.

Data Sources, Definitions and Conventions Used in this Report

Unless otherwise specified, the statistics in this analysis are national estimates of fires reported to U.S. municipal fire departments and so exclude fires reported only to Federal or state agencies or industrial fire brigades. The 2006-2010 estimates are projections based on the detailed information collected in Version 5.0 of the U.S. Fire Administration's National Fire Incident Reporting System (NFIRS 5.0) and the National Fire Protection Association's (NFPA's) annual fire department experience survey. Except for property use and incident type, fires with unknown or unreported data were allocated proportionally in calculations of national estimates.

In general, any fire that occurs in or in a structure is considered a structure fire, even if the fire was limited to contents and the building itself was not damaged.

What are "confined" and "non-confined" fires?

NFIRS 5.0 includes a category of structure fires collectively referred to as "confined fires," identified by incident type. These include confined cooking fires, confined chimney or flue fires, confined trash fires, confined fuel burner or boiler fires, confined commercial compactor fires, and confined incinerator fires (incident type 113-118). Losses are generally minimal in these fires, which by definition, are assumed to have been limited to the object of origin. Although causal data is not required for these fires, it is sometimes present.

Confined and non-confined fires were analyzed separately and then summed for Cause of Ignition, Heat Source, Factor Contributing to Ignition, Area of Origin, and Item First Ignited. For Equipment Involved in Ignition, the confined fire incident types are assumed to provide causal information without further analysis.

Additional information

Casualty and loss projections can be heavily influenced by the inclusion or exclusion of one unusually serious fire. Except for trend tables, property damage has not been adjusted for inflation. Fires are rounded to the nearest ten, civilian deaths and injuries are rounded to the nearest one, and direct property damage is rounded to the nearest hundred thousand dollars. Additional details on the methodology may be found in [Appendix A](#) and [B](#).

Table A.
Structure Fires in Health Care Facilities, by Specific Occupancy
2006-2010 Annual Averages

Occupancy	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Nursing home	2,840	(46%)	5	(88%)	110	(65%)	\$13.0	(25%)
Hospital or hospice	1,430	(23%)	0	(7%)	32	(19%)	\$7.5	(14%)
Mental health facilities	1,280	(21%)	0	(5%)	23	(13%)	\$4.9	(9%)
Clinic or doctor's office	690	(11%)	0	(0%)	6	(3%)	\$26.6	(51%)
Total	6,240	(100%)	6	(100%)	171	(100%)	\$52.1	(100%)

The average property loss per 1,000 fires was 61% lower when wet pipe sprinklers were present. NFPA's John Hall analyzed sprinkler performance in a variety of occupancies.² Table B shows that sprinkler systems were present in 55% of reported health care facility fires in 2006-2010. Fires in properties that were under construction or in which automatic extinguishment failed because it was not in the fire area are excluded from these statistics.

Table B.
Sprinkler Systems in Reported Health Care Structure Fires
Excluding Fires in Properties in Construction and
Fires in Which Automatic Extinguishing Equipment Was Present but Not in Fire Area
2006-2010 Annual Averages

Share of reported health care fires with sprinklers present	55%
When present, operated in fires large enough to activate*	88%
When operating, effective in controlling fire*	98%
When present and fire large enough, operated <i>and</i> effective*	86%
Average loss per fire	
Without automatic extinguishing equipment	\$13,000
When wet-pipe sprinklers were present regardless of operation	\$5,000
Percent reduction	61%

*Fires with confined fire incident types 113-118 were excluded from these calculations because of the small number with usable data.

² John R. Hall, Jr. *U.S. Experience with Sprinklers*, Quincy, MA: NFPA, 2012

When present in a fire large enough to expect a sprinkler to operate, the sprinklers operated 88% of the time. They were effective in controlling the fire in 98% of these fires in which they operated. This means that together, sprinklers operated and were effective in controlling the fire in 86% of the fires in which they were present and the fire was large enough for operation to be expected. The average loss per fire was 61% lower when wet pipe sprinklers were present than when no automatic extinguishment was present at all. This calculation is based on fires of all sizes.

Fire Causes and Circumstances in Health Care Structure Fires Overall

This section describes the causes and circumstances in all types of health care occupancies. Each occupancy is discussed separately in the sections that follow. Table numbering is consistent throughout, with different letters used for each specific occupancy. For example, Table 1 shows fire trend data for all health care occupancies, Table 1A has trend data for nursing homes, hospital and hospice fire trends are shown in Table 1B, etc.

Structure fires in these properties peaked between 9:00 a.m. and 6:00 pm.

Tables 2, 3, and 4 show reported structure fires in these properties by month, day of week and alarm time, respectively. There is relatively little variation by month. These fires were more common during the week than on weekends. Patterns by day of week varied by occupancy. Fires in nursing homes and facilities caring for the mentally ill or people with substance abuse issues or mental retardation peaked on Saturday and Sunday, while fires in hospitals or hospices and doctors' offices or clinics were more common during the week. Fires in all of these occupancies were less common between 9:00 p.m. and 6:00 a.m.

Cooking was the leading cause of fires in health care occupancies.

Table 5 shows the leading causes of fires in these properties with data summarized from several NFIRS fields. In some cases, the equipment involved in ignition is most relevant; heat source, the field "cause of ignition," and factor contributing to ignition also provide relevant information. The causes shown in this table are not mutually exclusive when they have been pulled from different fields. Only causes that describe a scenario are shown. More detailed information on equipment involved in ignition may be found in Table 6; more information on heat source is in Table 7.

Figure 2 shows that cooking equipment was listed as the equipment involved in ignition in three out of five (61%) structure fires in these properties. While the leading cause in all categories of health care properties, the share of cooking fires varied by specific occupancy from a low of one-third (35%) in doctors' offices or clinics to a high of three-quarters (74%) in facilities providing 24-hour care for people with developmental disabilities, mental retardation, mental illness or substance abuse issues.

Clothes dryers or washers were involved in 7% of the fires in overall health care properties and 10% of the fires in nursing homes. Six percent of structure fires in or at health care fires were intentionally set, but this jumps to 11% for facilities providing 24-hour care for people with developmental disabilities, mental retardation, mental illness or substance abuse issues. Smoking materials and heating equipment also were involved in 6% of health care structure fires.

The kitchen was the leading area of origin in all health care occupancies.

The leading areas of origin are related to the leading causes. Figure 3 and Table 10 show that the kitchen or cooking area was the leading area of origin for all health care occupancies, although these incidents accounted for only one-quarter (23%) of the fires in doctors' offices or clinics. Six percent of health care fires started in laundry rooms or areas and another 6% started in patient rooms or bedrooms. Eleven percent of the fires in doctors' offices or clinics started in offices.

Figure 2. Structure Fires in Health Care Facilities by Leading Cause and Occupancy: 2006-2010

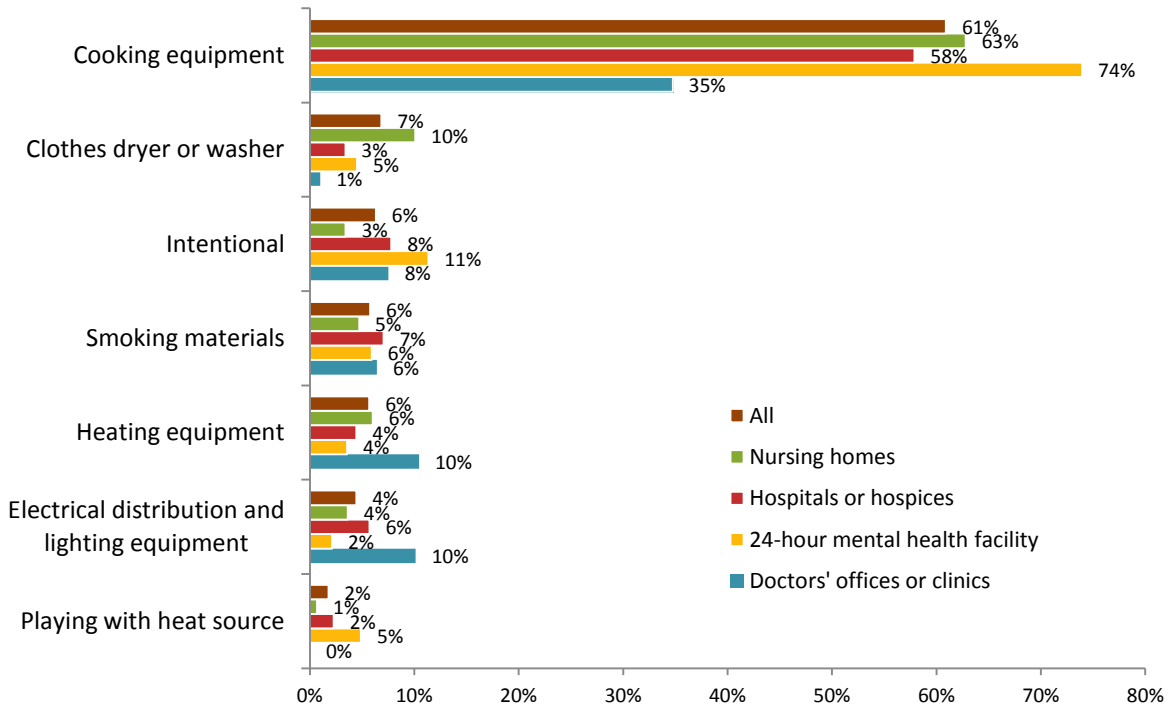
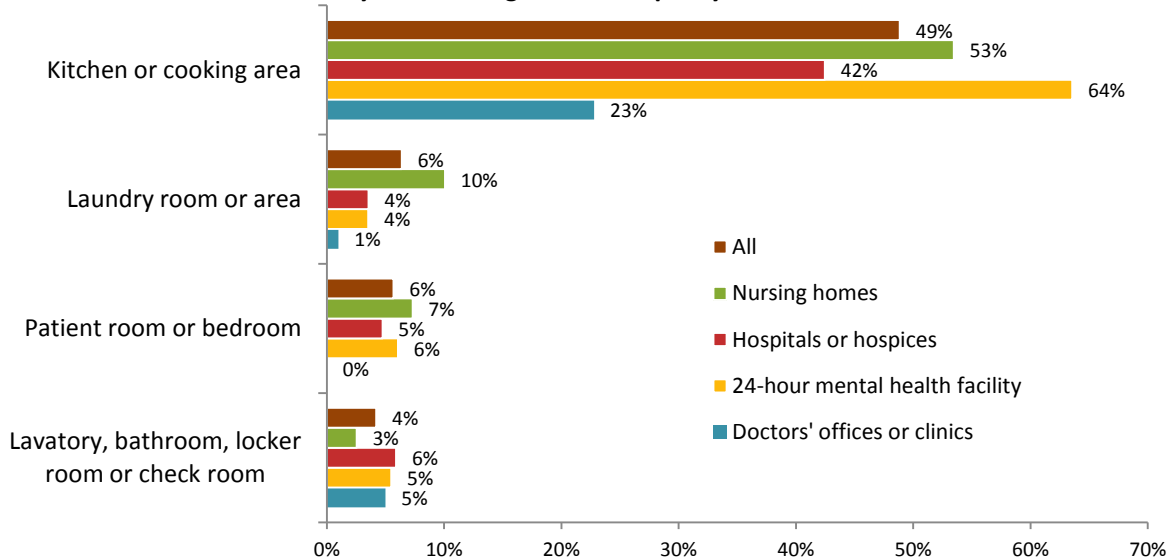


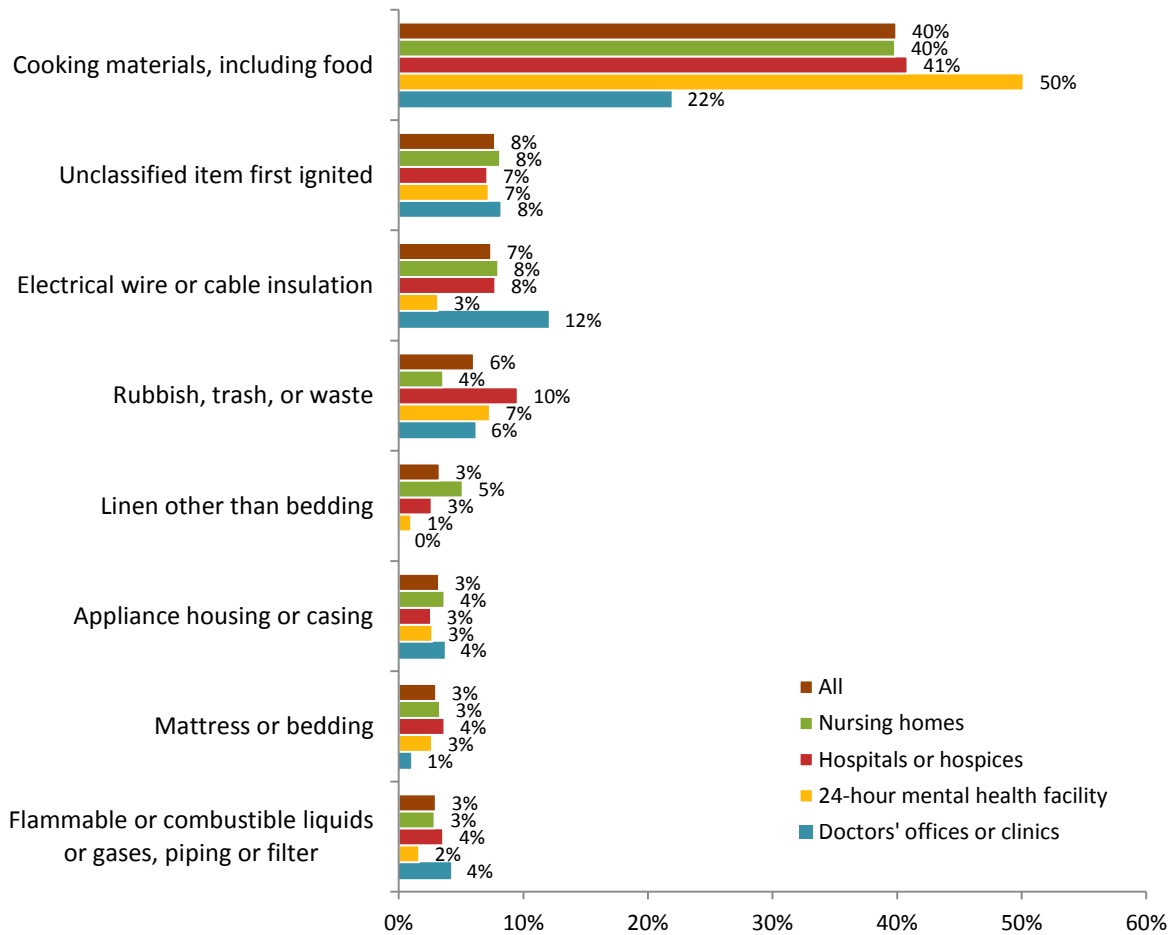
Figure 3. Structure Fires in Health Care Facilities by Area of Origin and Occupancy: 2006-2010



Cooking materials, including food, led in items first ignited.

Figure 4 and Table 11 show that cooking materials, including foods, were the items first ignited in 40% of the reported structure fires in these properties. Electrical wire or cable insulation was first ignited in 7% of health care fires overall but 12% of the fires in doctors’ offices or clinics. Rubbish, trash or waste was first ignited in 6% of the health care fires.

Figure 4. Structure Fires in Health Care Facilities by Item First Ignited and Occupancy: 2006-2010



Most fires in these properties were very small.

Two-thirds (68%) of the structure fires in or on health care properties had incident types that indicated they were confined or contained fires and assumed to have fire spread limited to the object or container of origin. As discussed earlier, Version 5.0 of NFIRS requires less detail about fires confined to a cooking vessel, chimney or flues, incinerators or compactors, or fuel burners or boilers; and contained or confined trash or rubbish fires in or on structures with no flame damage to the structure or other contents.

In addition to the 68% of health care fires with incident types indicating contained or confined fires, Table 12 shows that the fire did not spread beyond the object of origin in another 19% of reported

health care structure fires. Only 4% spread beyond the room of origin. However, 16% of the fires in doctors' offices or clinics spread beyond the room of origin.

2,810 outside or unclassified fires, on average, were reported annually on these properties.

During 2006-2010, an estimated annual average of 2,810 outside and other fires on these properties caused an average of 15 civilian injuries and \$1.2 million in direct property damage per year. Deaths averaged less than one per year. An average of 540 vehicle fires reported on these properties caused an average of three civilian injuries and \$2.4 million in direct property damage per year. No civilian fire deaths resulted from any vehicle fires on these properties that were reported to NFIRS.

Additional information sources

A number of catastrophic hospital fires are summarized in NFPA's 2012 publication, *Major Hospital Fires*, by Marty Ahrens. NFPA members can download a number of investigation reports on health care fires at no cost from [Fire Investigations on Health Care Facilities](#). Non-members may order these investigation reports through the NFPA library.

The chapter on "Health Care Occupancies" by Daniel J. O'Connor, found in the 20th edition of the *NFPA Fire Protection Handbook*, describes some of the special fire safety concerns for these properties. [NFPA 99, Health Care Facilities Code](#), provides the minimum necessary criteria to install, maintain, test and use medical gases safely. This code also includes comparable requirements for performance, maintenance, and testing of electrical systems in health care facilities. [NFPA 101, Life Safety Code](#)® also contains requirements that apply to these properties.

Fires in Specific Health Care Occupancies

Nursing Home Fires

During 2006-2010, U.S. fire departments responded to an estimated average of 2,840 fires per year in nursing homes. These fires caused an average of five civilian deaths, 110 civilian injuries, and \$13.0 million in direct property damage annually. Almost half (46%) of health care property fires, most of the deaths (88%) and two-thirds (65%) of the fire injuries in health care properties during this period occurred in nursing homes. Nursing home fires accounted for 0.6% of the 506,400 total structure fires, 0.2% of the 2,810 civilian structure fire deaths, 0.7% of the 14,960 civilian structure fire injuries, and 0.1% of the \$10.6 billion in direct property loss. Details of the nursing home fire experience are shown in Tables 1A-11A.

Nursing home fires fell sharply in the 1980s and 1990s but have hovered between 2,500 and 3,000 since the data stabilized after NFIRS 5.0 was introduced in 1999. The 2,510 nursing home fires reported in 2010 is 33% lower than the 1980 high of 3,720, but still higher than the late 1990s. It is possible that changes to NFIRS played a role in the trend data. In Version 5.0 of NFIRS, property use code 311 refers to "nursing homes licensed by the state, providing 24-hour care for four or more persons." Earlier versions of NFIRS had four fixed property use code choices for care of the aged. In these versions, code 311 was used for facilities providing "care of the aged with nursing staff."

During 2006-2010, nursing home fires peaked in January and the smallest number occurred in August. They were also more common on Saturday and Sunday than the rest of the week. The peak

time periods were 9.00 a.m. to noon and 3:00 to 6:00 p.m. They were least common between midnight and 6:00 a.m.

Cooking equipment was involved in almost two-thirds (63%) of nursing home fires, clothes dryers or washers involved in 10%, heating equipment in 6% and smoking materials in 5%. The cause profile has changed markedly since 1980-1984 when smoking materials started 21% of the nursing home fires and cooking equipment was involved in only 11%. Appliances other than cooking equipment, heating equipment, or electrical distribution and lighting equipment started 30% of the fires, with dryers the leading appliance type.

In 2006-2010, unattended equipment was a contributing factor to 16% of the fires in nursing homes, mechanical failures or malfunctions were factors in 13%, as were electrical failures or malfunctions. The leading areas of origin were consistent with the leading causes. Half (53%) of the fires began in a kitchen or cooking area and 10% started in a laundry room or area. Half (55%) of the fires and one-third (32%) of the injuries resulted from the 7% of fires that started in a bedroom or resident's room.

Cooking materials, including food, were first ignited in 40% of the fires, electrical wire or cable insulation was first ignited in 8%, and 5% of the fires started with linen other than bedding.

Eighty-eight percent of the nursing home fires in 2006-2010 either had an incident type indicating a confined fire that did not spread beyond the object or container of origin or, for other incident types, the fire was confined to the object of origin. Fire spread beyond the room of origin in only 2% of the fires.

During 1980-1984, automatic extinguishing equipment was present in three out of five (61%) reported nursing home fires. In 2006-2010, such equipment was present in three-quarters (74%) of these fires, and sprinklers were present in two-thirds (67%).³

The deadliest U.S. nursing home fire was the 1963 Golden Age Nursing Home fire in Fitchville, Township, Ohio that claimed 63 lives. This report and other investigations into nursing home fires are available at [Fire Investigations Health Care Facilities](#)

Hospital or Hospice Fires

During 2006-2010, U.S. fire departments responded to an estimated average of 1,430 fires per year in hospitals or hospices. These fires caused an average of 32 civilian injuries, and \$7.5 million in direct property damage annually. Less than one death occurred per year in these properties. Hospices accounted for only 50, or 3%, of the 1,430 fires in this category.

Almost one-quarter (23%) of health care property fires and one-fifth (19%) of the fire injuries in health care properties during this period occurred in hospitals or hospices. These fires accounted for 0.3% of the 506,400 total structure fires, less than 0.1% of the 2,810 civilian structure fire deaths,

³ John R. Hall, Jr. *U.S. Experience with Sprinklers*, Quincy, MA: NFPA, 2012, p. 4.

0.2% of the 14,960 civilian structure fire injuries, and 0.1% of the \$10.6 billion in direct property loss. Details of the hospital or hospice fire experience are shown in [Tables 1B-11B](#).

Hospital or hospice fires fell 86% from 8,330 in 1980 to 1,200 in 2010. Most of the decline occurred in the 1980s and 1990s.

During 2006-2010, hospital or hospice fires were spread fairly evenly across the year. They were less common on Saturday and Sunday than the rest of the week. The peak time period was 9:00 a.m. to noon. They were least common between midnight and 6:00 a.m.

Cooking equipment was involved in three out of five (58%) hospital or hospice fires, 8% were intentionally set, smoking materials started 7%, and electrical distribution or lighting equipment was involved in 6%. The cause profile has changed markedly since 1980-1984 when smoking materials started one-third (35%) of the hospital or hospice fires and cooking equipment was involved in only 11%.

In 2006-2010, unattended equipment was a contributing factor to 13% of the fires in hospitals or hospices, electrical failures or malfunctions were factors in 12%, abandoned or discarded materials or products were factors in 11%, as were mechanical failures or malfunctions. A heat source was too close to something that could catch fire in 10% of the incidents.

Forty-two percent of the hospital or hospice fires started in a kitchen or cooking area. Six percent started in a lavatory, locker room or check room and 5% started in a bedroom or patient room. Cooking materials, including food, were first ignited in 41% of the fires; rubbish trash or waste in 10%, and electrical wire or cable insulation was first ignited in 8% of the fires.

Ninety percent of the hospital or hospice fires in 2006-2010 either had an incident type indicating a confined fire that did not spread beyond the object or container of origin or, for other incident types, the fire was confined to the object of origin. Fire spread beyond the room of origin in only 3% of the fires.

During 1980-1984, automatic extinguishing equipment was present in less than half (47%) the reported hospital fires. In 2006-2010, such equipment was present in four out of five (79%) hospital fires, and sprinklers were present in almost two-thirds (64%).⁴

The deadliest hospital fire in U.S. history in this property class was the 1929 Cleveland Clinic fire in Cleveland, Ohio, that killed 125 people. This incident, and a number of other catastrophic hospital fires are summarized in NFPA's 2012 publication, [Major Hospital Fires](#), by Marty Ahrens. Additional hospital fire investigation reports are available at [Fire Investigations Health Care Facilities](#)

⁴ John R. Hall, Jr. *U.S. Experience with Sprinklers*, Quincy, MA: NFPA, 2012, , p.4.

Fires in Mental Health Facilities Providing 24-Hour Care

During 2006-2010, U.S. fire departments responded to an estimated average of 1,280 fires per year in facilities providing 24-hour care to individuals with developmental disabilities, mental retardation, mental illness or substance abuse issues. These fires caused an average of 23 civilian injuries, and \$4.9 million in direct property damage annually. Less than death occurred per year in these properties. Facilities caring people with developmental disabilities or mental retardation accounted for 830, or two-thirds (65%), of these fires; alcohol or substance recover centers accounted for 350, or 27%, and asylums or mental institutions accounted for 100, or 8%.

One-fifth (21%) of health care property fires and 13% of the associated fire injuries occurred in these facilities. These fires accounted for 0.3% of the 506,400 total structure fires, less than 0.1% of the 2,810 civilian structure fire deaths, 0.2% of the 14,960 civilian structure fire injuries, and less than 0.1% of the \$10.6 billion in direct property loss. Details of the fire experience in these properties are shown in [Tables 1C-11C](#).

These fires fell 21% from 1,530 in 2003 to 1,210 in 2010. Because of the changes in NFIRS, long-term trend analysis was not done.

During 2006-2010, these fires were spread fairly evenly across the year. They were more common on weekends than the rest of the week. The peak time period was from 3:00 to 6:00 p.m. These incidents were least common between 3:00 and 6:00 a.m.

Cooking equipment was involved in three-quarters (74%) of these fires, 11% were intentionally set, smoking materials started 6%, 5% were started by someone playing with a heat source and clothes dryers or washers were involved in another 5%.

Unattended equipment was a contributing factor in one-quarter (27%) of these fires. Abandoned or discarded material or products were a factor in 12%. Almost two-thirds (64%) of these fires started in a kitchen or cooking area. Six percent started in a bedroom or patient room and 5% started in a lavatory, locker room or check room. Cooking materials, including food, were first ignited in half (50%) of the fires and rubbish trash or waste was first ignited in 7%.

Ninety percent of these fires either had an incident type indicating a confined fire that did not spread beyond the object or container of origin or, for other incident types, the fire was confined to the object of origin. Fire spread beyond the room of origin in only 3% of the fires.

Fires in Clinics or Doctors' Offices

During 2006-2010, U.S. fire departments responded to an estimated average of 690 fires per year in clinics or doctors' offices. These fires caused an average of six civilian injuries, and \$26.6 million in direct property damage annually. No fire deaths were reported in these properties. Doctors', dentists' or oral surgeons' offices accounted for 260, or 38% of these fires; the 90 clinic or clinic-type infirmary fires accounted for 14%; the 10 hemodialysis unit fires accounted for 1%, and the 330 unclassified clinic or doctors' office fires accounted for 47%.

Eleven percent of health care property fires, 3% of the associated fire injuries and half (51%) of the direct property damage in health care properties occurred in these facilities. These fires accounted for 0.1% of the 506,400 total structure fires, none of the 2,810 civilian structure fire deaths, less than 0.1% of the 14,960 civilian structure fire injuries, and 0.2% of the \$10.6 billion in direct property loss. Details of the fire experience in these properties are shown in Tables 1D-11D. These fires fell 13% from 710 in 2003 to 620 in 2010. Because of the changes in NFIRS, long-term trend analysis was not done.

In 2006-2010, these fires peaked in January. They were much less common on weekends than the rest of the week and more common between 9:00 a.m. and 6:00 p.m. Unlike other health care properties, these facilities generally close at night. Two-thirds (68%) of the direct property damage from these fires was caused by the 40% of incidents that occurred between 6:00 p.m. and 9:00 .am.

Cooking equipment was involved in one-third (35%) of these fires, heating equipment in 10%, and electrical distribution or lighting equipment was involved in another 10%. Eight percent were intentionally set, smoking materials started 6%, and medical equipment was involved in 4%.

An electrical failure or malfunction was involved in one-quarter (23%) of these fires. Abandoned or discarded material or products were a factor in 15%. Unattended equipment was a contributing factor in 12% and a mechanical failure of malfunction was a factor in 11% of the incidents.

One-quarter (23%) of these fires started in a kitchen or cooking area, 11% began in an office and 5% started in a lavatory, locker room or check room. Cooking materials, including food, were first ignited in almost one-quarter (22%) of the fires, 12% started with electrical wire or cable insulation, and rubbish trash or waste was first ignited in 6%.

Two-thirds (69%) of these fires either had an incident type indicating a confined fire that did not spread beyond the object or container of origin or, for other incident types, the fire was confined to the object of origin. Fire spread beyond the room of origin in 16% of the fires. While still small, this was substantially larger than the 2-3% of fires that spread beyond the room of origin in the other health care occupancies.

Table 1.
Structure Fires in Health Care Facilities
by Year: 2003-2010

Year	Fires	Civilian Injuries	Direct Property Damage (in Millions)	
			As Reported	In 2010 Dollars
2003	6,830	183	\$35.6	\$42.2
2004	6,680	134	\$31.8	\$36.7
2005	6,420	199	\$34.3	\$38.3
2006	6,710	206	\$39.0	\$42.2
2007	6,670	172	\$40.7	\$42.7
2008	6,320	147	\$83.4	\$84.5
2009	5,960	166	\$56.5	\$57.4
2010	5,540	164	\$40.7	\$40.7

Note: Estimated deaths are not shown due to the small numbers involved.

Source: NFIRS and NFPA survey. Inflation adjustments were based on the Consumer Price Index Purchasing Power of the Dollar.

Table 2.
Structure Fires in Health Care Facilities, by Month
2006-2010 Annual Averages

Month	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)
January	580	(9%)	1	(19%)	14	(8%)	\$4.3	(8%)
February	520	(8%)	1	(18%)	13	(8%)	\$3.6	(7%)
March	550	(9%)	0	(5%)	19	(11%)	\$3.5	(7%)
April	520	(8%)	0	(5%)	9	(6%)	\$7.2	(14%)
May	530	(8%)	1	(13%)	15	(9%)	\$4.0	(8%)
June	500	(8%)	0	(0%)	13	(7%)	\$5.4	(10%)
July	480	(8%)	0	(0%)	12	(7%)	\$5.3	(10%)
August	470	(8%)	1	(8%)	16	(9%)	\$3.7	(7%)
September	490	(8%)	1	(19%)	13	(7%)	\$4.5	(9%)
October	540	(9%)	0	(0%)	12	(7%)	\$2.3	(4%)
November	520	(8%)	0	(0%)	18	(11%)	\$4.3	(8%)
December	540	(9%)	1	(13%)	17	(10%)	\$4.0	(8%)
Totals	6,240	(100%)	6	(100%)	171	(100%)	\$52.1	(100%)
Monthly average	520	(8%)	1	(8%)	14	(8%)	\$4.3	(8%)

Table 3.
Structure Fires in Health Care Facilities, by Day of Week
2006-2010 Annual Averages

Month	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Sunday	880	(14%)	0	(7%)	17	(10%)	\$6.3	(12%)
Monday	870	(14%)	1	(23%)	31	(18%)	\$5.7	(11%)
Tuesday	900	(14%)	1	(12%)	33	(19%)	\$5.5	(11%)
Wednesday	910	(15%)	1	(18%)	18	(11%)	\$13.0	(25%)
Thursday	910	(15%)	0	(8%)	20	(12%)	\$8.0	(15%)
Friday	880	(14%)	0	(4%)	24	(14%)	\$7.0	(13%)
Saturday	890	(14%)	2	(29%)	27	(16%)	\$6.8	(13%)
Totals	6,240	(100%)	6	(100%)	171	(100%)	\$52.1	(100%)
Daily average	890	(14%)	1	(14%)	24	(14%)	\$7.4	(14%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 4.
Structure Fires in Health Care Facilities, by Alarm Time
2006-2010 Annual Averages

Alarm Time	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Midnight - 3 a.m.	390	(6%)	2	(28%)	13	(7%)	\$6.0	(12%)
3 - 6 a.m.	300	(5%)	1	(16%)	14	(8%)	\$5.8	(11%)
6 - 9 a.m.	870	(14%)	0	(4%)	26	(15%)	\$3.5	(7%)
9 a.m. - Noon	1,140	(18%)	0	(4%)	26	(15%)	\$9.2	(18%)
Noon - 3 p.m.	1,010	(16%)	0	(4%)	24	(14%)	\$5.8	(11%)
3 - 6 p.m.	1,160	(19%)	0	(5%)	25	(15%)	\$7.8	(15%)
6 - 9 p.m.	850	(14%)	1	(18%)	23	(14%)	\$5.8	(11%)
9 p.m. - midnight	540	(9%)	1	(22%)	19	(11%)	\$8.1	(16%)
Total	6,240	(100%)	6	(100%)	171	(100%)	\$52.1	(100%)
Period average	780	(13%)	1	(13%)	21	(13%)	\$6.5	(13%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 5.
Structure Fires in Health Care Facilities, by Leading Causes
2006-2010 Annual Averages

Leading Causes	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	3,800	(61%)	0	(0%)	30	(18%)	\$1.9	(4%)
Clothes dryer or washer	430	(7%)	1	(18%)	26	(15%)	\$1.5	(3%)
Intentional	390	(6%)	2	(32%)	20	(12%)	\$7.7	(15%)
Smoking materials	360	(6%)	2	(26%)	20	(12%)	\$1.3	(3%)
Heating equipment	350	(6%)	0	(0%)	7	(4%)	\$14.1	(27%)
Electrical distribution and lighting equipment	280	(4%)	0	(0%)	11	(6%)	\$6.4	(12%)
Playing with heat source	110	(2%)	1	(9%)	3	(2%)	\$1.4	(3%)

Note: This table summarizes findings from multiple fields, meaning that the same fire may be listed under multiple causes. The methodology used is described in Appendix B.

Source: NFIRS 5.0 and NFPA survey.

Table 6.
Structure Fires in Health Care Facilities
by Cause of Ignition (from NFIRS Cause Field)
2006-2010 Annual Averages

Cause of Ignition	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)	Amount	(%)
Unintentional	4,580	(73%)	4	(68%)	106	(62%)	\$27.1	(52%)
Non-confined	1,000	(16%)	4	(68%)	86	(50%)	\$26.0	(50%)
Confined	3,580	(57%)	0	(0%)	20	(12%)	\$1.1	(2%)
Failure of equipment or heat source	1,130	(18%)	0	(0%)	42	(24%)	\$14.1	(27%)
Non-confined	750	(12%)	0	(0%)	31	(18%)	\$14.1	(27%)
Confined	370	(6%)	0	(0%)	10	(6%)	\$0.1	(0%)
Intentional	390	(6%)	2	(32%)	20	(12%)	\$7.7	(15%)
Non-confined	170	(3%)	2	(32%)	20	(12%)	\$7.7	(15%)
Confined	230	(4%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified cause	110	(2%)	0	(0%)	3	(2%)	\$1.6	(3%)
Non-confined	50	(1%)	0	(0%)	2	(1%)	\$1.6	(3%)
Confined	60	(1%)	0	(0%)	1	(1%)	\$0.0	(0%)
Act of nature	30	(0%)	0	(0%)	0	(0%)	\$1.5	(3%)
Non-confined	30	(0%)	0	(0%)	0	(0%)	\$1.5	(3%)
Confined	0	(0%)	0	(0%)	0	(0%)	\$0.0	(0%)
Total	6,240	(100%)	6	(100%)	171	(100%)	\$52.1	(100%)
Non-confined	1,990	(32%)	6	(100%)	140	(82%)	\$50.8	(98%)
Confined	4,240	(68%)	0	(0%)	31	(18%)	\$1.2	(2%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 7.
Structure Fires in Health Care Facilities, by Equipment Involved
2006-2010 Annual Averages**

Equipment Involved	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	3,800	(61%)	0	(0%)	30	(18%)	\$1.9	(4%)
Clothes dryer	430	(7%)	1	(18%)	26	(15%)	\$1.5	(3%)
No equipment involved in ignition	380	(6%)	5	(82%)	46	(27%)	\$17.9	(34%)
Contained trash or rubbish fire	360	(6%)	0	(0%)	5	(3%)	\$0.1	(0%)
Heating equipment	350	(6%)	0	(0%)	7	(4%)	\$14.1	(27%)
Confined fuel burner or boiler fire	180	(3%)	0	(0%)	1	(1%)	\$0.0	(0%)
Fixed or portable space heater	90	(1%)	0	(0%)	3	(2%)	\$0.4	(1%)
Other known heating equipment	90	(1%)	0	(0%)	2	(1%)	\$13.6	(26%)
Electrical distribution and lighting equipment	280	(4%)	0	(0%)	11	(6%)	\$6.4	(12%)
Wiring correlated equipment	120	(2%)	0	(0%)	2	(1%)	\$4.4	(8%)
Lamp, bulb or lighting	100	(2%)	0	(0%)	6	(4%)	\$1.6	(3%)
Transformers and power supplies	40	(1%)	0	(0%)	2	(1%)	\$0.4	(1%)
Other known electrical distribution or lighting equipment	10	(0%)	0	(0%)	0	(0%)	\$0.0	(0%)
Fan	140	(2%)	0	(0%)	17	(10%)	\$0.5	(1%)
Air conditioner	120	(2%)	0	(0%)	11	(7%)	\$0.4	(1%)
Torch, burner or soldering iron	40	(1%)	0	(0%)	2	(1%)	\$0.2	(0%)
Other known equipment involved in ignition	350	(6%)	0	(0%)	15	(9%)	\$9.0	(17%)
Total	6,240	(100%)	6	(100%)	171	(100%)	\$52.1	(100%)

Note: Non-confined fires in which the equipment involved in ignition was unknown or not reported have been allocated proportionally among fires with known equipment involved. Fires in which the equipment involved in ignition was entered as none but the heat source indicated equipment involvement or the heat source was unknown were also treated as unknown and allocated proportionally among fires with known equipment involved. Non-confined fires in which the equipment was partially unclassified (i.e., unclassified kitchen or cooking equipment, unclassified heating, cooling or air condition equipment, etc.) were allocated proportionally among fires that grouping (kitchen or cooking equipment; heating, cooling or air conditioning equipment, etc.). Similar processes were done for confined cooking fires. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 8.
Structure Fires in Health Care Facilities, by Heat Source
2006-2010 Annual Averages

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unclassified heat from powered equipment	1,750	(28%)	1	(9%)	36	(21%)	\$9.9	(19%)
Non-confined	480	(8%)	1	(9%)	24	(14%)	\$8.8	(17%)
Confined	1,270	(20%)	0	(0%)	11	(7%)	\$1.1	(2%)
Radiated or conducted heat from operating equipment	1,570	(25%)	0	(0%)	24	(14%)	\$12.9	(25%)
Non-confined	330	(5%)	0	(0%)	11	(6%)	\$12.8	(25%)
Confined	1,240	(20%)	0	(0%)	14	(8%)	\$0.0	(0%)
Unclassified heat source	510	(8%)	1	(15%)	8	(5%)	\$0.9	(2%)
Non-confined	80	(1%)	1	(15%)	5	(3%)	\$0.9	(2%)
Confined	430	(7%)	0	(0%)	3	(2%)	\$0.0	(0%)
Arcing	500	(8%)	0	(0%)	23	(13%)	\$7.5	(14%)
Non-confined	390	(6%)	0	(0%)	23	(13%)	\$7.5	(14%)
Confined	110	(2%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified hot or smoldering object	410	(7%)	0	(0%)	8	(5%)	\$1.3	(3%)
Non-confined	120	(2%)	0	(0%)	7	(4%)	\$1.3	(3%)
Confined	290	(5%)	0	(0%)	1	(1%)	\$0.0	(0%)
Smoking materials	360	(6%)	2	(26%)	20	(12%)	\$1.3	(3%)
Non-confined	130	(2%)	2	(26%)	20	(11%)	\$1.3	(3%)
Confined	230	(4%)	0	(0%)	1	(1%)	\$0.0	(0%)
Spark, ember or flame from operating equipment	310	(5%)	0	(0%)	13	(7%)	\$1.6	(3%)
Non-confined	120	(2%)	0	(0%)	13	(7%)	\$1.5	(3%)
Confined	190	(3%)	0	(0%)	0	(0%)	\$0.0	(0%)
Lighter	170	(3%)	2	(34%)	20	(12%)	\$3.1	(6%)
Non-confined	90	(1%)	2	(34%)	20	(12%)	\$3.1	(6%)
Confined	80	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)

Table 8.
Structure Fires in Health Care Facilities, by Heat Source
2006-2010 Annual Averages
(Continued)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Heat from direct flame or convection currents	160	(3%)	0	(0%)	2	(1%)	\$1.0	(2%)
Non-confined	10	(0%)	0	(0%)	0	(0%)	\$1.0	(2%)
Confined	150	(2%)	0	(0%)	1	(1%)	\$0.0	(0%)
Hot ember or ash	100	(2%)	0	(0%)	2	(1%)	\$3.6	(7%)
Non-confined	40	(1%)	0	(0%)	2	(1%)	\$3.6	(7%)
Confined	60	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Other known heat source	390	(6%)	1	(17%)	16	(9%)	\$8.8	(17%)
Non-confined	200	(3%)	1	(17%)	16	(9%)	\$8.8	(17%)
Confined	200	(3%)	0	(0%)	0	(0%)	\$0.0	(0%)
Total	6,240	(100%)	6	(100%)	171	(100%)	\$52.1	(100%)
Non-confined	1,990	(32%)	6	(100%)	140	(82%)	\$50.8	(98%)
Confined	4,240	(68%)	0	(0%)	31	(18%)	\$1.2	(2%)

Note: Sums may not equal totals due to rounding errors. The statistics on matches, lighters, smoking materials and candles include a proportional share of fires in which the heat source was heat from an unclassified open flame or smoking material. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 9.
Structure Fires in Health Care Facilities, by Factor Contributing to Ignition
2006-2010 Annual Averages

Factor Contributing to Ignition	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Equipment unattended	1,040	(17%)	0	(0%)	10	(6%)	\$0.5	(1%)
Non-confined	60	(1%)	0	(0%)	6	(3%)	\$0.5	(1%)
Confined	990	(16%)	0	(0%)	5	(3%)	\$0.0	(0%)
Electrical failure or malfunction	780	(13%)	0	(0%)	45	(26%)	\$15.3	(29%)
Non-confined	600	(10%)	0	(0%)	45	(26%)	\$15.3	(29%)
Confined	190	(3%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified misuse of material or product	700	(11%)	3	(44%)	28	(17%)	\$4.1	(8%)
Non-confined	150	(2%)	3	(44%)	23	(13%)	\$3.5	(7%)
Confined	540	(9%)	0	(0%)	6	(3%)	\$0.5	(1%)
Mechanical failure or malfunction	690	(11%)	0	(0%)	27	(16%)	\$3.0	(6%)
Non-confined	370	(6%)	0	(0%)	16	(9%)	\$3.0	(6%)
Confined	320	(5%)	0	(0%)	12	(7%)	\$0.0	(0%)
Abandoned or discarded material or product	660	(11%)	1	(18%)	10	(6%)	\$2.3	(4%)
Non-confined	150	(2%)	1	(18%)	10	(6%)	\$2.3	(4%)
Confined	510	(8%)	0	(0%)	0	(0%)	\$0.0	(0%)
Heat source too close to combustibles	570	(9%)	1	(20%)	23	(13%)	\$14.8	(28%)
Non-confined	190	(3%)	1	(20%)	15	(9%)	\$14.7	(28%)
Confined	380	(6%)	0	(0%)	7	(4%)	\$0.0	(0%)
Unclassified factor contributed to ignition	450	(7%)	1	(8%)	7	(4%)	\$4.5	(9%)
Non-confined	110	(2%)	1	(8%)	7	(4%)	\$4.0	(8%)
Confined	330	(5%)	0	(0%)	0	(0%)	\$0.5	(1%)
Failure to clean	350	(6%)	0	(0%)	4	(2%)	\$1.2	(2%)
Non-confined	100	(2%)	0	(0%)	4	(2%)	\$1.2	(2%)
Confined	250	(4%)	0	(0%)	0	(0%)	\$0.0	(0%)
Equipment not being operated properly	220	(4%)	0	(0%)	2	(1%)	\$0.4	(1%)
Non-confined	20	(0%)	0	(0%)	2	(1%)	\$0.4	(1%)
Confined	200	(3%)	0	(0%)	0	(0%)	\$0.0	(0%)

Table 9.
Structure Fires in Health Care Facilities, by Factor Contributing to Ignition
2006-2010 Annual Averages
(Continued)

Factor	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unintentionally turned on or not turned off	210	(3%)	0	(0%)	3	(2%)	\$0.2	(0%)
Non-confined	20	(0%)	0	(0%)	2	(1%)	\$0.2	(0%)
Confined	180	(3%)	0	(0%)	1	(1%)	\$0.0	(0%)
Improper container or storage	130	(2%)	0	(0%)	9	(5%)	\$0.3	(1%)
Non-confined	30	(0%)	0	(0%)	6	(4%)	\$0.3	(1%)
Confined	100	(2%)	0	(0%)	3	(2%)	\$0.0	(0%)
Unclassified operational deficiency	110	(2%)	0	(0%)	1	(0%)	\$0.1	(0%)
Non-confined	40	(1%)	0	(0%)	1	(0%)	\$0.1	(0%)
Confined	80	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Playing with heat source	110	(2%)	1	(9%)	3	(2%)	\$1.4	(3%)
Non-confined	40	(1%)	1	(9%)	3	(2%)	\$1.4	(3%)
Confined	70	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Other known factor contributing to ignition	450	(7%)	0	(0%)	7	(4%)	\$7.9	(15%)
Non-confined	200	(3%)	0	(0%)	6	(3%)	\$7.9	(15%)
Confined	260	(4%)	0	(0%)	1	(1%)	\$0.0	(0%)
Total Fires	6,240	(100%)	6	(100%)	171	(100%)	\$52.1	(100%)
Non-confined	1,990	(32%)	6	(100%)	140	(82%)	\$50.8	(98%)
Confined	4,240	(68%)	0	(0%)	31	(18%)	\$1.2	(2%)
Total Factors	6,480	(104%)	6	(100%)	179	(105%)	\$56.0	(108%)
Non-confined	2,090	(34%)	6	(100%)	145	(85%)	\$54.8	(105%)
Confined	4,390	(70%)	0	(0%)	34	(20%)	\$1.2	(2%)

* Multiple entries are allowed which can result in sums higher than totals. Electrical and mechanical failures or malfunctions include sums of all factors in their respective category. Double counting is possible within the category.

Note: Sums may not equal totals due to rounding errors. Fires in which the factor contributing to ignition was coded as "none," unknown, or not reported have been allocated proportionally among fires with known factor contributing to ignition. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 10.
Structure Fires in Health Care Facilities, by Area of Origin
2006-2010 Annual Averages

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Kitchen or cooking area	3,050	(49%)	1	(17%)	40	(24%)	\$1.4	(3%)
Non-confined	200	(3%)	1	(17%)	12	(7%)	\$1.1	(2%)
Confined	2,850	(46%)	0	(0%)	28	(16%)	\$0.3	(1%)
Laundry room or area	400	(6%)	0	(5%)	18	(11%)	\$1.4	(3%)
Non-confined	300	(5%)	0	(5%)	18	(11%)	\$1.4	(3%)
Confined	100	(2%)	0	(0%)	0	(0%)	\$0.0	(0%)
Bedroom or patient room	350	(6%)	3	(48%)	50	(29%)	\$2.4	(5%)
Non-confined	250	(4%)	3	(48%)	50	(29%)	\$2.4	(5%)
Confined	110	(2%)	0	(0%)	0	(0%)	\$0.0	(0%)
Lavatory, bathroom, locker room or check room	260	(4%)	0	(5%)	11	(6%)	\$1.0	(2%)
Non-confined	130	(2%)	0	(5%)	11	(6%)	\$1.0	(2%)
Confined	140	(2%)	0	(0%)	0	(0%)	\$0.0	(0%)
Office	150	(2%)	0	(0%)	2	(1%)	\$5.1	(10%)
Non-confined	80	(1%)	0	(0%)	2	(1%)	\$4.7	(9%)
Confined	70	(1%)	0	(0%)	0	(0%)	\$0.4	(1%)
Common room, lounge or den	120	(2%)	1	(17%)	7	(4%)	\$0.9	(2%)
Non-confined	40	(1%)	1	(17%)	7	(4%)	\$0.9	(2%)
Confined	80	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Heating equipment room	120	(2%)	0	(0%)	1	(1%)	\$5.5	(11%)
Non-confined	40	(1%)	0	(0%)	1	(1%)	\$5.5	(11%)
Confined	80	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified area of origin	110	(2%)	0	(0%)	2	(1%)	\$0.2	(0%)
Non-confined	40	(1%)	0	(0%)	2	(1%)	\$0.2	(0%)
Confined	70	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified equipment or service area	100	(2%)	0	(0%)	4	(2%)	\$1.6	(3%)
Non-confined	60	(1%)	0	(0%)	2	(1%)	\$1.6	(3%)
Confined	50	(1%)	0	(0%)	2	(1%)	\$0.0	(0%)
Unclassified function area	100	(2%)	0	(0%)	3	(2%)	\$1.6	(3%)
Non-confined	40	(1%)	0	(0%)	3	(2%)	\$1.2	(2%)
Confined	60	(1%)	0	(0%)	0	(0%)	\$0.4	(1%)

Table 10.
Structure Fires in Health Care Facilities, by Area of Origin
2006-2010 Annual Averages
(continued)

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Trash or rubbish chute, area or container	90	(2%)	0	(0%)	1	(1%)	\$0.1	(0%)
Non-confined	0	(0%)	0	(0%)	0	(0%)	\$0.1	(0%)
Confined	90	(1%)	0	(0%)	1	(1%)	\$0.0	(0%)
Other known area of origin	1,370	(22%)	0	(8%)	32	(19%)	\$30.8	(59%)
Non-confined	820	(13%)	0	(8%)	32	(18%)	\$30.8	(59%)
Confined	550	(9%)	0	(0%)	1	(1%)	\$0.0	(0%)
Total	6,240	(100%)	6	(100%)	171	(100%)	\$52.1	(100%)
Non-confined	1,990	(32%)	6	(100%)	140	(82%)	\$50.8	(98%)
Confined	4,240	(68%)	0	(0%)	31	(18%)	\$1.2	(2%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires other than chimney or flue fires (NFIRS incident type 113, and 115-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 11.
Structure Fires in Health Care Facilities, by Item First Ignited
2006-2010 Annual Averages

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Cooking materials, including food	2,490	(40%)	0	(0%)	17	(10%)	\$1.3	(2%)
Non-confined	90	(1%)	0	(0%)	4	(3%)	\$0.6	(1%)
Confined	2,410	(39%)	0	(0%)	13	(8%)	\$0.7	(1%)
Unclassified item first ignited	480	(8%)	1	(12%)	16	(10%)	\$1.6	(3%)
Non-confined	160	(3%)	1	(12%)	11	(7%)	\$1.6	(3%)
Confined	320	(5%)	0	(0%)	5	(3%)	\$0.0	(0%)
Electrical wire or cable insulation	460	(7%)	0	(0%)	17	(10%)	\$7.5	(14%)
Non-confined	360	(6%)	0	(0%)	17	(10%)	\$7.5	(14%)
Confined	100	(2%)	0	(0%)	0	(0%)	\$0.0	(0%)
Rubbish, trash, or waste	380	(6%)	0	(0%)	1	(1%)	\$0.2	(0%)
Non-confined	50	(1%)	0	(0%)	1	(1%)	\$0.2	(0%)
Confined	330	(5%)	0	(0%)	0	(0%)	\$0.0	(0%)
Linen other than bedding	210	(3%)	0	(7%)	11	(6%)	\$0.7	(1%)
Non-confined	120	(2%)	0	(7%)	9	(5%)	\$0.7	(1%)
Confined	80	(1%)	0	(0%)	1	(1%)	\$0.0	(0%)
Appliance housing or casing	200	(3%)	0	(0%)	7	(4%)	\$2.1	(4%)
Non-confined	80	(1%)	0	(0%)	6	(4%)	\$2.1	(4%)
Confined	130	(2%)	0	(0%)	1	(1%)	\$0.0	(0%)
Mattress or bedding	190	(3%)	2	(32%)	34	(20%)	\$2.4	(5%)
Non-confined	140	(2%)	2	(32%)	34	(20%)	\$2.4	(5%)
Confined	50	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Flammable or combustible liquid or gas, piping or filter	190	(3%)	0	(0%)	12	(7%)	\$1.3	(3%)
Non-confined	60	(1%)	0	(0%)	9	(5%)	\$1.3	(3%)
Confined	120	(2%)	0	(0%)	4	(2%)	\$0.0	(0%)
Clothing	150	(2%)	2	(38%)	10	(6%)	\$0.7	(1%)
Non-confined	90	(1%)	2	(38%)	9	(5%)	\$0.7	(1%)
Confined	60	(1%)	0	(0%)	1	(1%)	\$0.0	(0%)
Household utensil	140	(2%)	0	(0%)	3	(2%)	\$0.0	(0%)
Non-confined	20	(0%)	0	(0%)	0	(0%)	\$0.0	(0%)
Confined	120	(2%)	0	(0%)	3	(2%)	\$0.0	(0%)

Table 11.
Structure Fires in Health Care Facilities, by Item First Ignited
2006-2010 Annual Averages
(continued)

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Magazine, newspaper, or writing paper	130	(2%)	0	(0%)	2	(1%)	\$1.0	(2%)
Non-confined	40	(1%)	0	(0%)	1	(1%)	\$1.0	(2%)
Confined	100	(2%)	0	(0%)	1	(1%)	\$0.0	(0%)
Dust, fiber, lint, including sawdust or excelsior	110	(2%)	0	(0%)	3	(2%)	\$1.1	(2%)
Non-confined	80	(1%)	0	(0%)	3	(2%)	\$1.1	(2%)
Confined	30	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Box, carton, bag, basket, or barrel	100	(2%)	0	(0%)	5	(3%)	\$0.2	(0%)
Non-confined	30	(1%)	0	(0%)	5	(3%)	\$0.2	(0%)
Confined	60	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Other known item first ignited	1,030	(16%)	1	(12%)	31	(18%)	\$31.7	(61%)
Non-confined	680	(11%)	1	(12%)	29	(17%)	\$31.3	(60%)
Confined	350	(6%)	0	(0%)	2	(1%)	\$0.4	(1%)
Total	6,240	(100%)	6	(100%)	171	(100%)	\$52.1	(100%)
Non-confined	1,990	(32%)	6	(100%)	140	(82%)	\$50.8	(98%)
Confined	4,240	(68%)	0	(0%)	31	(18%)	\$1.2	(2%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 12.
Structure Fires in Health Care Facilities, by Extent of Fire Spread
2006-2010 Annual Averages

Extent of Fire Spread	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	4,240	(68%)	0	(0%)	31	(18%)	\$1.2	(2%)
Confined to object of origin	1,190	(19%)	1	(12%)	61	(36%)	\$6.7	(13%)
Confined to room of origin	550	(9%)	3	(47%)	64	(37%)	\$9.5	(18%)
Confined to floor of origin	80	(1%)	1	(16%)	3	(2%)	\$6.1	(12%)
Confined to building of origin	160	(3%)	2	(25%)	11	(6%)	\$24.8	(48%)
Beyond building of origin	10	(0%)	0	(0%)	0	(0%)	\$3.6	(7%)
Total	6,240	(100%)	6	(100%)	171	(100%)	\$52.1	(100%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 1A.
Structure Fires in Nursing Homes, by Year
1980-2010**

Year	Fires	Civilian Injuries	Direct Property Damage (in Millions)	
			As Reported	In 2010 Dollars
1980	3,720	120	\$1.5	\$3.8
1981	3,630	264	\$1.8	\$4.3
1982	3,450	129	\$1.4	\$3.1
1983	3,190	173	\$1.6	\$3.6
1984	2,820	163	\$3.4	\$7.2
1985	3,250	170	\$4.2	\$8.5
1986	2,910	178	\$2.0	\$3.9
1987	3,080	93	\$1.7	\$3.3
1988	2,720	160	\$2.0	\$3.6
1989	2,650	135	\$3.0	\$5.3
1990	2,580	248	\$2.5	\$4.2
1991	2,580	295	\$3.9	\$6.2
1992	2,580	152	\$4.7	\$7.4
1993	2,500	247	\$4.6	\$7.0
1994	2,590	250	\$5.6	\$8.2
1995	2,200	175	\$2.3	\$3.3
1996	2,270	149	\$5.6	\$7.8
1997	2,430	264	\$3.2	\$4.3
1998	2,140	199	\$4.0	\$5.3
1999	1,230	102	\$43.5	\$56.9
2000	1,820	63	\$2.3	\$2.9
2001	2,960	92	\$3.4	\$4.2
2002	2,620	150	\$5.9	\$7.1
2003	2,950	142	\$9.0	\$10.7
2004	2,970	99	\$6.5	\$7.5
2005	2,750	129	\$4.9	\$5.5
2006	2,970	123	\$12.8	\$13.8
2007	3,060	130	\$6.3	\$6.6
2008	3,000	103	\$30.0	\$30.4
2009	2,660	92	\$8.0	\$8.1
2010	2,510	104	\$8.0	\$8.0

Note: Estimated deaths are not shown due to the small numbers involved.

Source: NFIRS and NFPA survey. Inflation adjustments were based on the Consumer Price Index Purchasing Power of the Dollar.

**Table 2A.
Structure Fires in Nursing Homes, by Month
2006-2010 Annual Averages**

Month	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
January	280	(10%)	1	(17%)	10	(9%)	\$1.0	(7%)
February	250	(9%)	1	(20%)	8	(8%)	\$1.6	(12%)
March	250	(9%)	0	(6%)	13	(12%)	\$0.5	(4%)
April	240	(9%)	0	(5%)	6	(5%)	\$4.7	(36%)
May	230	(8%)	1	(10%)	6	(5%)	\$0.8	(6%)
June	220	(8%)	0	(0%)	7	(7%)	\$0.5	(4%)
July	220	(8%)	0	(0%)	9	(8%)	\$1.3	(10%)
August	200	(7%)	0	(4%)	9	(8%)	\$0.2	(2%)
September	220	(8%)	1	(22%)	8	(7%)	\$1.0	(8%)
October	250	(9%)	0	(0%)	7	(7%)	\$0.8	(6%)
November	230	(8%)	0	(0%)	16	(14%)	\$0.3	(2%)
December	250	(9%)	1	(15%)	11	(10%)	\$0.4	(3%)
Totals	2,840	(100%)	5	(100%)	110	(100%)	\$13.0	(100%)
Monthly average	240	(8%)	0	(8%)	9	(8%)	\$1.1	(8%)

**Table 3A.
Structure Fires in Nursing Homes, by Day of Week
2006-2010 Annual Averages**

Day	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Sunday	450	(16%)	0	(8%)	12	(11%)	\$1.4	(11%)
Monday	380	(13%)	1	(26%)	20	(18%)	\$1.1	(8%)
Tuesday	380	(13%)	1	(9%)	16	(15%)	\$1.1	(8%)
Wednesday	390	(14%)	1	(20%)	12	(11%)	\$4.9	(38%)
Thursday	390	(14%)	0	(5%)	12	(11%)	\$2.4	(18%)
Friday	400	(14%)	0	(4%)	18	(16%)	\$1.3	(10%)
Saturday	450	(16%)	1	(27%)	20	(18%)	\$0.9	(7%)
Totals	2,840	(100%)	5	(100%)	110	(100%)	\$13.0	(100%)
Daily average	410	(14%)	1	(14%)	16	(14%)	\$1.9	(14%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 4A.
Structure Fires in Nursing Homes, by Alarm Time
2006-2010 Annual Averages

Alarm Time	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Midnight - 3 a.m.	180	(6%)	2	(28%)	10	(9%)	\$1.0	(7%)
3 - 6 a.m.	140	(5%)	1	(13%)	11	(10%)	\$0.7	(6%)
6 - 9 a.m.	420	(15%)	0	(0%)	16	(15%)	\$0.5	(4%)
9 a.m. - Noon	500	(18%)	0	(4%)	14	(13%)	\$5.9	(45%)
Noon - 3 p.m.	430	(15%)	0	(4%)	15	(14%)	\$1.4	(11%)
3 - 6 p.m.	500	(17%)	0	(5%)	16	(15%)	\$1.0	(8%)
6 - 9 p.m.	420	(15%)	1	(20%)	14	(13%)	\$0.7	(5%)
9 p.m. - midnight	260	(9%)	1	(25%)	13	(12%)	\$1.9	(14%)
			0	(0%)	0			
Total	2,840	(100%)	5	(100%)	110	(100%)	\$13.0	(100%)
Period average	350	(13%)	1	(13%)	14	(13%)	\$1.6	(13%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 5A.
Structure Fires in Nursing Homes, by Leading Cause
2006-2010 Annual Averages

Leading Cause	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Cooking equipment	1,780	(63%)	0	(0%)	20	(18%)	\$0.5	(4%)
Clothes dryer or washer	290	(10%)	1	(21%)	19	(17%)	\$0.7	(6%)
Heating equipment	170	(6%)	0	(0%)	5	(4%)	\$7.5	(57%)
Smoking materials	130	(5%)	2	(34%)	15	(14%)	\$0.5	(4%)
Electrical distribution and lighting equipment	100	(4%)	0	(0%)	3	(3%)	\$0.6	(4%)
Intentional	100	(3%)	1	(10%)	10	(9%)	\$1.5	(11%)

Note: This table summarizes findings from multiple fields, meaning that the same fire may be listed under multiple causes. The methodology used is described in Appendix B.

Source: NFIRS 5.0 and NFPA survey.

Table 6A.
Structure Fires in Nursing Homes, by Cause of Ignition (from NFIRS Cause Field)
2006-2010 Annual Averages

Cause of Ignition	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unintentional	2,130	(75%)	5	(90%)	67	(61%)	\$9.2	(71%)
Non-confined	460	(16%)	5	(90%)	52	(47%)	\$9.1	(70%)
Confined	1,660	(59%)	0	(0%)	15	(14%)	\$0.1	(1%)
Failure of equipment or heat source	560	(20%)	0	(0%)	30	(27%)	\$2.2	(17%)
Non-confined	360	(13%)	0	(0%)	27	(24%)	\$2.1	(16%)
Confined	200	(7%)	0	(0%)	3	(3%)	\$0.0	(0%)
Intentional	100	(3%)	1	(10%)	10	(9%)	\$1.5	(11%)
Non-confined	50	(2%)	1	(10%)	10	(9%)	\$1.5	(11%)
Confined	50	(2%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified cause	50	(2%)	0	(0%)	3	(2%)	\$0.1	(1%)
Non-confined	20	(1%)	0	(0%)	1	(1%)	\$0.1	(0%)
Confined	30	(1%)	0	(0%)	1	(1%)	\$0.0	(0%)
Act of nature	20	(1%)	0	(0%)	0	(0%)	\$0.1	(1%)
Non-confined	10	(0%)	0	(0%)	0	(0%)	\$0.1	(1%)
Confined	0	(0%)	0	(0%)	0	(0%)	\$0.0	(0%)
Total	2,840	(100%)	5	(100%)	110	(100%)	\$13.0	(100%)
Non- Confined	900	(32%)	5	(100%)	90	(82%)	\$12.9	(99%)
Confined	1,940	(68%)	0	(0%)	20	(18%)	\$0.1	(1%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 7A.
Structure Fires in Nursing Homes, by Equipment Involved in Ignition
2006-2010 Annual Averages**

Equipment Involved in Ignition	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	1,780	(63%)	0	(0%)	20	(18%)	\$0.5	(4%)
Clothes dryer or washer	290	(10%)	1	(21%)	19	(17%)	\$0.7	(6%)
Heating equipment	170	(6%)	0	(0%)	5	(4%)	\$7.5	(57%)
Confined fuel burner or boiler fire	80	(3%)	0	(0%)	1	(0%)	\$0.0	(0%)
Fixed or portable space heater	50	(2%)	0	(0%)	3	(3%)	\$0.1	(1%)
Confined chimney or flue fire	10	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Other known heating equipment	30	(1%)	0	(0%)	1	(1%)	\$7.4	(56%)
Contained trash or rubbish fire	140	(5%)	0	(0%)	3	(2%)	\$0.0	(0%)
No equipment involved in ignition	120	(4%)	4	(79%)	29	(27%)	\$2.9	(23%)
Electrical distribution and lighting equipment	100	(4%)	0	(0%)	3	(3%)	\$0.6	(4%)
Lamp, bulb or lighting	50	(2%)	0	(0%)	2	(2%)	\$0.0	(0%)
Wiring and related equipment	50	(2%)	0	(0%)	1	(1%)	\$0.5	(4%)
Other known electrical distribution or lighting equipment	10	(0%)	0	(0%)	1	(1%)	\$0.0	(0%)
Fan	70	(2%)	0	(0%)	16	(14%)	\$0.2	(2%)
Air conditioner	70	(2%)	0	(0%)	10	(9%)	\$0.2	(1%)
Other known equipment involved in ignition	100	(3%)	0	(0%)	5	(4%)	\$0.4	(3%)
Total	2,840	(100%)	5	(100%)	110	(100%)	\$13.0	(100%)

Note: Non-confined fires in which the equipment involved in ignition was unknown or not reported have been allocated proportionally among fires with known equipment involved. Fires in which the equipment involved in ignition was entered as none but the heat source indicated equipment involvement or the heat source was unknown were also treated as unknown and allocated proportionally among fires with known equipment involved. Non-confined fires in which the equipment was partially unclassified (i.e., unclassified kitchen or cooking equipment, unclassified heating, cooling or air condition equipment, etc.) were allocated proportionally among fires that grouping (kitchen or cooking equipment; heating, cooling or air conditioning equipment, etc.). Similar processes were done for confined cooking fires. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 8A.
Structure Fires in Nursing Homes, by Heat Source
2006-2010 Annual Averages**

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Unclassified heat from powered equipment	880	(31%)	1	(12%)	24	(22%)	\$1.1	(9%)
Non-confined	240	(8%)	1	(12%)	16	(14%)	\$1.1	(8%)
Confined	640	(23%)	0	(0%)	9	(8%)	\$0.0	(0%)
Radiated or conducted heat from operating equipment	780	(28%)	0	(0%)	14	(13%)	\$6.4	(49%)
Non-confined	170	(6%)	0	(0%)	8	(7%)	\$6.3	(48%)
Confined	610	(21%)	0	(0%)	6	(6%)	\$0.1	(0%)
Unclassified heat source	240	(8%)	1	(10%)	5	(4%)	\$0.2	(2%)
Non-confined	40	(1%)	1	(10%)	2	(2%)	\$0.2	(2%)
Confined	200	(7%)	0	(0%)	3	(2%)	\$0.0	(0%)
Arcing	230	(8%)	0	(0%)	13	(12%)	\$1.4	(11%)
Non-confined	170	(6%)	0	(0%)	13	(12%)	\$1.4	(11%)
Confined	60	(2%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified hot or smoldering object	160	(6%)	0	(0%)	6	(5%)	\$0.2	(2%)
Non-confined	50	(2%)	0	(0%)	5	(4%)	\$0.2	(2%)
Confined	110	(4%)	0	(0%)	1	(1%)	\$0.0	(0%)
Spark, ember or flame from operating equipment	150	(5%)	0	(0%)	11	(10%)	\$0.6	(5%)
Non-confined	50	(2%)	0	(0%)	11	(10%)	\$0.6	(5%)
Confined	100	(4%)	0	(0%)	0	(0%)	\$0.0	(0%)
Smoking materials	130	(5%)	2	(34%)	15	(14%)	\$0.5	(4%)
Non-confined	60	(2%)	2	(34%)	15	(14%)	\$0.5	(4%)
Confined	80	(3%)	0	(0%)	0	(0%)	\$0.0	(0%)
Heat from direct flame or convection currents	40	(2%)	0	(0%)	2	(1%)	\$0.0	(0%)
Non-confined	0	(0%)	0	(0%)	0	(0%)	\$0.0	(0%)
Confined	40	(1%)	0	(0%)	2	(1%)	\$0.0	(0%)

Table 8A.
Structure Fires in Nursing Homes, by Heat Source
2006-2010 Annual Averages
(continued)

Heat Source	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Other known heat source	220	(8%)	2	(44%)	21	(19%)	\$2.5	(20%)
Non-confined	120	(4%)	2	(44%)	21	(19%)	\$2.5	(19%)
Confined	100	(4%)	0	(0%)	0	(0%)	\$0.0	(0%)
Total	2,840	(100%)	5	(100%)	110	(100%)	\$13.0	(100%)
Non-confined	900	(32%)	5	(100%)	90	(82%)	\$12.9	(99%)
Confined	1,940	(68%)	0	(0%)	20	(18%)	\$0.1	(1%)

Note: Sums may not equal totals due to rounding errors. The statistics on matches, lighters, smoking materials and candles include a proportional share of fires in which the heat source was heat from an unclassified open flame or smoking material. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

**Table 9A.
Structure Fires in Nursing Homes, by Factor Contributing to Ignition
2006-2010 Annual Averages**

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage	
							(in Millions)	
Equipment unattended	470	(16%)	0	(0%)	8	(7%)	\$0.2	(1%)
Non-confined	30	(1%)	0	(0%)	4	(4%)	\$0.2	(1%)
Confined	440	(15%)	0	(0%)	3	(3%)	\$0.0	(0%)
Mechanical failure or malfunction	380	(13%)	0	(0%)	12	(11%)	\$0.6	(4%)
Non-confined	180	(6%)	0	(0%)	10	(9%)	\$0.6	(4%)
Confined	200	(7%)	0	(0%)	2	(2%)	\$0.0	(0%)
Electrical failure or malfunction	360	(13%)	0	(0%)	33	(30%)	\$2.4	(18%)
Non-confined	270	(9%)	0	(0%)	33	(30%)	\$2.4	(18%)
Confined	90	(3%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified misuse of material or product	330	(12%)	2	(33%)	17	(16%)	\$0.5	(4%)
Non-confined	70	(2%)	2	(33%)	14	(13%)	\$0.5	(4%)
Confined	260	(9%)	0	(0%)	3	(3%)	\$0.0	(0%)
Heat source too close to combustibles	260	(9%)	2	(28%)	16	(15%)	\$6.9	(53%)
Non-confined	90	(3%)	2	(28%)	9	(8%)	\$6.9	(53%)
Confined	180	(6%)	0	(0%)	8	(7%)	\$0.0	(0%)
Abandoned or discarded material or product	240	(8%)	1	(26%)	9	(8%)	\$0.6	(4%)
Non-confined	60	(2%)	1	(26%)	9	(8%)	\$0.5	(4%)
Confined	180	(6%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified factor contributed to ignition	200	(7%)	0	(0%)	4	(3%)	\$0.6	(5%)
Non-confined	50	(2%)	0	(0%)	4	(3%)	\$0.6	(5%)
Confined	150	(5%)	0	(0%)	0	(0%)	\$0.0	(0%)
Failure to clean	170	(6%)	0	(0%)	4	(3%)	\$0.9	(7%)
Non-confined	70	(2%)	0	(0%)	4	(3%)	\$0.8	(7%)
Confined	100	(4%)	0	(0%)	0	(0%)	\$0.0	(0%)
Equipment not being operated properly	120	(4%)	0	(0%)	0	(0%)	\$0.1	(0%)
Non-confined	10	(0%)	0	(0%)	0	(0%)	\$0.1	(0%)
Confined	110	(4%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unintentionally turned on or not turned off	110	(4%)	0	(0%)	2	(2%)	\$0.1	(1%)
Non-confined	10	(0%)	0	(0%)	1	(1%)	\$0.1	(1%)
Confined	100	(3%)	0	(0%)	2	(1%)	\$0.0	(0%)

Table 9A.
Structure Fires in Nursing Homes, by Factor Contributing to Ignition
2006-2010 Annual Averages
(continued)

Factor Contributing	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Improper container or storage	80	(3%)	0	(0%)	6	(5%)	\$0.1	(0%)
Non-confined	10	(1%)	0	(0%)	2	(2%)	\$0.1	(0%)
Confined	60	(2%)	0	(0%)	3	(3%)	\$0.0	(0%)
Unclassified operational deficiency	60	(2%)	0	(0%)	1	(0%)	\$0.0	(0%)
Non-confined	20	(1%)	0	(0%)	1	(0%)	\$0.0	(0%)
Confined	40	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Other known factor contributing to ignition	190	(7%)	1	(13%)	5	(5%)	\$1.4	(11%)
Non-confined	70	(3%)	1	(13%)	4	(3%)	\$1.4	(11%)
Confined	120	(4%)	0	(0%)	2	(1%)	\$0.0	(0%)
Total fires	2,840	(100%)	5	(100%)	110	(100%)	\$13.0	(100%)
Non-confined	900	(32%)	5	(100%)	90	(82%)	\$12.9	(99%)
Confined	1,940	(68%)	0	(0%)	20	(18%)	\$0.1	(1%)
Total factors*	2,950	(104%)	5	(100%)	116	(105%)	\$14.3	(109%)
Non-confined	930	(33%)	5	(100%)	93	(84%)	\$14.1	(108%)
Confined	2,020	(71%)	0	(0%)	23	(21%)	\$0.2	(1%)

* Multiple entries are allowed which can result in sums higher than totals. Electrical and mechanical failures or malfunctions include sums of all factors in their respective category. Double counting is possible within the category.

Note: Sums may not equal totals due to rounding errors. Fires in which the factor contributing to ignition was coded as "none," unknown, or not reported have been allocated proportionally among fires with known factor contributing to ignition. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

**Table 10A.
Structure Fires in Nursing Homes, by Area of Origin
2006-2010 Annual Averages**

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Kitchen or cooking area	1,520	(53%)	1	(19%)	27	(24%)	\$0.8	(6%)
Non-confined	120	(4%)	1	(19%)	10	(9%)	\$0.7	(5%)
Confined	1,400	(49%)	0	(0%)	17	(15%)	\$0.1	(1%)
Laundry room or area	290	(10%)	0	(6%)	14	(13%)	\$0.8	(6%)
Non-confined	210	(7%)	0	(6%)	14	(13%)	\$0.8	(6%)
Confined	70	(3%)	0	(0%)	0	(0%)	\$0.0	(0%)
Bedroom or resident room	210	(7%)	3	(55%)	35	(32%)	\$1.5	(12%)
Non-confined	160	(5%)	3	(55%)	35	(32%)	\$1.5	(12%)
Confined	50	(2%)	0	(0%)	0	(0%)	\$0.0	(0%)
Lavatory, bathroom, locker room or check room	70	(3%)	0	(6%)	7	(6%)	\$0.5	(4%)
Non-confined	50	(2%)	0	(6%)	7	(6%)	\$0.5	(4%)
Confined	20	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Common room, lounge or den	60	(2%)	1	(10%)	5	(5%)	\$0.2	(2%)
Non-confined	20	(1%)	1	(10%)	5	(5%)	\$0.2	(2%)
Confined	30	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Heating equipment room	60	(2%)	0	(0%)	1	(1%)	\$4.4	(34%)
Non-confined	20	(1%)	0	(0%)	1	(1%)	\$4.4	(34%)
Confined	40	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified area of origin	50	(2%)	0	(0%)	2	(2%)	\$0.1	(1%)
Non-confined	20	(1%)	0	(0%)	2	(2%)	\$0.1	(1%)
Confined	30	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified function area	50	(2%)	0	(0%)	2	(2%)	\$0.6	(5%)
Non-confined	20	(1%)	0	(0%)	2	(2%)	\$0.6	(5%)
Confined	30	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified equipment or service area	40	(2%)	0	(0%)	4	(3%)	\$0.1	(1%)
Non-confined	30	(1%)	0	(0%)	2	(2%)	\$0.1	(1%)
Confined	20	(1%)	0	(0%)	2	(2%)	\$0.0	(0%)

Table 10A.
Structure Fires in Nursing Homes, by Area of Origin
2006-2010 Annual Averages

Area of Origin	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Other known area of origin	500	(18%)	0	(4%)	13	(12%)	\$3.9	(30%)
Non-confined	260	(9%)	0	(4%)	11	(10%)	\$3.9	(30%)
Confined	240	(9%)	0	(0%)	1	(1%)	\$0.0	(0%)
Total	2,840	(100%)	5	(100%)	110	(100%)	\$13.0	(100%)
Non-confined	900	(32%)	5	(100%)	90	(82%)	\$12.9	(99%)
Confined	1,940	(68%)	0	(0%)	20	(18%)	\$0.1	(1%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires other than chimney or flue fires (NFIRS incident type 113, and 115-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 11A.
Structure Fires in Nursing Homes, by Item First Ignited
2006-2010 Annual Averages

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Cooking materials, including food	1,130	(40%)	0	(0%)	8	(7%)	\$0.4	(3%)
Non-confined	40	(1%)	0	(0%)	4	(3%)	\$0.3	(2%)
Confined	1,090	(38%)	0	(0%)	5	(4%)	\$0.1	(0%)
Unclassified item first ignited	230	(8%)	0	(8%)	13	(12%)	\$0.2	(2%)
Non-confined	80	(3%)	0	(8%)	9	(8%)	\$0.2	(2%)
Confined	160	(5%)	0	(0%)	5	(4%)	\$0.0	(0%)
Electrical wire or cable insulation	230	(8%)	0	(0%)	10	(9%)	\$0.7	(5%)
Non-confined	170	(6%)	0	(0%)	10	(9%)	\$0.7	(5%)
Confined	60	(2%)	0	(0%)	0	(0%)	\$0.0	(0%)
Linen other than bedding	150	(5%)	0	(8%)	9	(8%)	\$0.3	(2%)
Non-confined	90	(3%)	0	(8%)	8	(7%)	\$0.3	(2%)
Confined	50	(2%)	0	(0%)	2	(1%)	\$0.0	(0%)
Appliance housing or casing	100	(4%)	0	(0%)	7	(6%)	\$0.3	(2%)
Non-confined	40	(1%)	0	(0%)	6	(5%)	\$0.3	(2%)
Confined	60	(2%)	0	(0%)	1	(1%)	\$0.0	(0%)
Rubbish, trash, or waste	100	(4%)	0	(0%)	1	(1%)	\$0.0	(0%)
Non-confined	10	(0%)	0	(0%)	1	(1%)	\$0.0	(0%)
Confined	90	(3%)	0	(0%)	0	(0%)	\$0.0	(0%)
Mattress or bedding	90	(3%)	2	(32%)	22	(20%)	\$1.3	(10%)
Non-confined	80	(3%)	2	(32%)	22	(20%)	\$1.3	(10%)
Confined	20	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Clothing	90	(3%)	2	(46%)	5	(5%)	\$0.4	(3%)
Non-confined	60	(2%)	2	(46%)	4	(3%)	\$0.4	(3%)
Confined	30	(1%)	0	(0%)	2	(1%)	\$0.0	(0%)
Household utensils	80	(3%)	0	(0%)	3	(2%)	\$0.0	(0%)
Non-confined	10	(0%)	0	(0%)	0	(0%)	\$0.0	(0%)
Confined	70	(3%)	0	(0%)	3	(2%)	\$0.0	(0%)
Flammable or combustible liquid or gas, piping or filter	80	(3%)	0	(0%)	3	(3%)	\$0.0	(0%)
Non-confined	20	(1%)	0	(0%)	3	(3%)	\$0.0	(0%)
Confined	60	(2%)	0	(0%)	0	(0%)	\$0.0	(0%)

**Table 11A.
Structure Fires in Nursing Homes, by Item First Ignited
2006-2010 Annual Averages
(continued)**

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Dust, fiber, lint, including sawdust or excelsior	60	(2%)	0	(0%)	2	(2%)	\$0.8	(6%)
Non-confined	40	(2%)	0	(0%)	2	(2%)	\$0.8	(6%)
Confined	20	(1%)	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified soft goods or wearing apparel	60	(2%)	0	(0%)	4	(4%)	\$0.1	(1%)
Non-confined	30	(1%)	0	(0%)	3	(2%)	\$0.1	(1%)
Confined	20	(1%)	0	(0%)	1	(1%)	\$0.0	(0%)
Magazine, newspaper, or writing paper	50	(2%)	0	(0%)	3	(2%)	\$0.0	(0%)
Non-confined	10	(0%)	0	(0%)	1	(1%)	\$0.0	(0%)
Confined	30	(1%)	0	(0%)	1	(1%)	\$0.0	(0%)
Other known item first ignited	390	(14%)	0	(6%)	20	(18%)	\$8.5	(65%)
Non-confined	210	(8%)	0	(6%)	18	(17%)	\$8.4	(65%)
Confined	170	(6%)	0	(0%)	1	(1%)	\$0.0	(0%)
Total	2,840	(100%)	5	(100%)	110	(100%)	\$13.0	(100%)
Non-confined	900	(32%)	5	(100%)	90	(82%)	\$12.9	(99%)
Confined	1,940	(68%)	0	(0%)	20	(18%)	\$0.1	(1%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 12A.
Structure Fires in Nursing Homes, by Extent of Fire Spread
2006-2010 Annual Averages

Item First Ignited	Fires		Civilian Deaths		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	1,940	(68%)	0	(0%)	20	(18%)	\$0.1	(1%)
Confined to object of origin	570	(20%)	1	(14%)	43	(39%)	\$1.7	(13%)
Confined to room of origin	260	(9%)	2	(45%)	37	(34%)	\$2.2	(17%)
Confined to floor of origin	20	(1%)	1	(19%)	1	(1%)	\$1.2	(9%)
Confined to building of origin	40	(1%)	1	(23%)	8	(8%)	\$7.1	(54%)
Beyond building of origin	0	(0%)	0	(0%)	0	(0%)	\$0.6	(5%)
Total	2,840	(100%)	5	(100%)	110	(100%)	\$13.0	(100%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 1B.
Structure Fires in Hospitals and Hospices, by Year
1980-2010**

Year	Fires	Civilian Injuries	Direct Property Damage (in Millions)	
			As Reported	In 2010 Dollars
1980	8,330	315	\$6.8	\$18.0
1981	8,230	213	\$9.2	\$22.1
1982	7,080	216	\$78.5	\$177.1
1983	6,370	194	\$4.2	\$9.2
1984	5,560	128	\$2.4	\$5.1
1985	5,610	145	\$4.2	\$8.5
1986	4,720	182	\$3.9	\$7.8
1987	4,590	146	\$4.5	\$8.6
1988	3,640	166	\$8.9	\$16.4
1989	3,210	154	\$6.9	\$12.0
1990	2,880	131	\$5.6	\$9.4
1991	2,570	103	\$6.1	\$9.8
1992	2,590	73	\$5.8	\$9.0
1993	2,360	132	\$3.2	\$4.8
1994	2,410	97	\$8.3	\$12.2
1995	1,860	68	\$5.2	\$7.4
1996	1,940	97	\$3.8	\$5.3
1997	1,920	132	\$3.7	\$5.0
1998	1,610	96	\$5.8	\$7.7
1999	780	34	\$9.0	\$11.7
2000	1,100	32	\$2.0	\$2.5
2001	1,160	24	\$2.2	\$2.8
2002	1,340	25	\$3.0	\$3.7
2003	1,640	27	\$10.0	\$11.9
2004	1,560	12	\$3.1	\$3.6
2005	1,580	46	\$2.7	\$3.0
2006	1,610	30	\$6.0	\$6.5
2007	1,520	28	\$12.2	\$12.8
2008	1,450	23	\$8.4	\$8.6
2009	1,360	49	\$7.7	\$7.9
2010	1,200	31	\$3.3	\$3.3

Note: Estimated deaths are not shown due to the small numbers involved.

Source: NFIRS and NFPA survey. Inflation adjustments were based on the Consumer Price Index Purchasing Power of the Dollar.

**Table 2B.
Structure Fires in Hospitals and Hospices, by Month
2006-2010 Annual Averages**

Month	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
January	120	(9%)	3	(9%)	\$0.7	(9%)
February	130	(9%)	3	(11%)	\$0.2	(3%)
March	120	(9%)	1	(4%)	\$0.3	(4%)
April	110	(8%)	2	(7%)	\$0.2	(3%)
May	130	(9%)	3	(11%)	\$2.2	(29%)
June	120	(8%)	2	(8%)	\$0.2	(2%)
July	110	(7%)	2	(8%)	\$0.4	(5%)
August	110	(8%)	4	(14%)	\$0.6	(9%)
September	100	(7%)	5	(14%)	\$0.6	(8%)
October	120	(9%)	1	(4%)	\$0.2	(3%)
November	120	(8%)	1	(2%)	\$1.7	(23%)
December	130	(9%)	3	(9%)	\$0.2	(2%)
Total	1,430	(100%)	32	(100%)	\$7.5	(100%)
Monthly average	120	(8%)	3	(8%)	\$0.6	(8%)

**Table 3B.
Structure Fires in Hospitals and Hospices, by Day of Week
2006-2010 Annual Averages**

Day of Week	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Sunday	160	(12%)	2	(6%)	\$0.4	(5%)
Monday	210	(15%)	9	(27%)	\$1.8	(24%)
Tuesday	230	(16%)	8	(24%)	\$1.2	(16%)
Wednesday	230	(16%)	3	(9%)	\$0.7	(10%)
Thursday	210	(15%)	3	(10%)	\$1.7	(22%)
Friday	200	(14%)	3	(8%)	\$0.7	(9%)
Saturday	180	(12%)	5	(16%)	\$1.1	(15%)
Total	1,430	(100%)	32	(100%)	\$7.5	(100%)
Daily average	200	(14%)	5	(14%)	\$1.1	(14%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 4B.
Structure Fires in Hospitals and Hospices, by Alarm Time
2006-2010 Annual Averages

Alarm Time	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Midnight - 3 a.m.	90	(6%)	1	(4%)	\$0.4	(5%)
3 - 6 a.m.	80	(6%)	2	(5%)	\$1.3	(17%)
6 - 9 a.m.	180	(13%)	7	(22%)	\$0.8	(10%)
9 a.m. - Noon	290	(20%)	9	(27%)	\$1.1	(15%)
Noon - 3 p.m.	250	(18%)	4	(13%)	\$0.9	(12%)
3 - 6 p.m.	220	(16%)	5	(16%)	\$1.4	(18%)
6 - 9 p.m.	180	(13%)	1	(3%)	\$1.5	(19%)
9 p.m. - midnight	130	(9%)	3	(10%)	\$0.3	(4%)
Total	1,430	(100%)	32	(100%)	\$7.5	(100%)
Period average	180	(13%)	4	(13%)	\$0.9	(13%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 5B.
Structure Fires in Hospitals and Hospices, by Leading Causes
2006-2010 Annual Averages

Leading Cause	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	830	(58%)	6	(18%)	\$0.6	(8%)
Intentional	110	(8%)	4	(14%)	\$0.3	(4%)
Smoking materials	100	(7%)	2	(7%)	\$0.0	(1%)
Electrical distribution and lighting equipment	80	(6%)	7	(20%)	\$0.6	(9%)
Heating equipment	60	(4%)	0	(1%)	\$0.0	(0%)
Clothes dryer or washer	50	(3%)	1	(2%)	\$0.2	(2%)
Playing with heat source	30	(2%)	1	(4%)	\$0.2	(2%)
Medical equipment	30	(2%)	3	(9%)	\$0.5	(6%)
Shop tools and industrial equipment excluding torches, burners or soldering irons	20	(2%)	0	(0%)	\$0.0	(0%)
Torch, burner, or soldering iron	20	(2%)	2	(6%)	\$0.0	(1%)

Note: This table summarizes findings from multiple fields, meaning that the same fire may be listed under multiple causes. The methodology used is described in Appendix B.

Source: NFIRS 5.0 and NFPA survey.

Table 6B.
Structure Fires in Hospitals and Hospices, by Cause of Ignition (from NFIRS Cause Field)
2006-2010 Annual Averages

Cause	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Amount	(%)
Unintentional	1,040	(73%)	21	(64%)	\$2.3	(31%)
Non-confined	220	(15%)	18	(56%)	\$1.9	(25%)
Confined	820	(58%)	3	(8%)	\$0.4	(6%)
Failure of equipment or heat source	250	(17%)	7	(20%)	\$4.0	(53%)
Non-confined	180	(13%)	1	(3%)	\$4.0	(53%)
Confined	70	(5%)	6	(17%)	\$0.0	(0%)
Intentional	110	(8%)	4	(14%)	\$0.3	(4%)
Non-confined	40	(3%)	4	(14%)	\$0.3	(4%)
Confined	70	(5%)	0	(0%)	\$0.0	(0%)
Unclassified cause	20	(2%)	1	(2%)	\$0.7	(9%)
Non-confined	10	(1%)	1	(2%)	\$0.7	(9%)
Confined	20	(1%)	0	(0%)	\$0.0	(0%)
Total	1,420	(100%)	32	(100%)	\$7.3	(97%)
Non-confined	450	(31%)	24	(75%)	\$6.9	(91%)
Confined	980	(68%)	8	(25%)	\$0.5	(6%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 7B.
Structure Fires in Hospitals and Hospices, by Equipment Involved in Ignition
2006-2010 Annual Averages**

Equipment Involved	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment, including confined cooking fires	830	(58%)	6	(18%)	\$0.6	(8%)
Contained trash or rubbish fire	120	(8%)	2	(6%)	\$0.0	(0%)
No equipment involved in ignition	90	(6%)	10	(31%)	\$1.3	(18%)
Electrical distribution and lighting equipment*	80	(6%)	7	(20%)	\$0.6	(9%)
Wiring and related equipment	30	(2%)	0	(0%)	\$0.2	(3%)
Lamp, bulb or lighting	30	(2%)	0	(0%)	\$0.0	(0%)
Transformers and power supplies	20	(2%)	0	(0%)	\$0.4	(5%)
Heating equipment, including confined heating equipment fires	60	(4%)	0	(0%)	\$0.0	(0%)
Central heat, including confined fuel burner or boiler fire	40	(3%)	0	(1%)	\$0.0	(0%)
Fixed or portable space heater	10	(1%)	0	(0%)	\$0.0	(0%)
Fireplace or chimney, including confined chimney or flue fire	10	(1%)	0	(0%)	\$0.0	(0%)
Clothes dryer or washer	50	(3%)	1	(2%)	\$0.2	(2%)
Air conditioner	30	(2%)	0	(0%)	\$0.1	(1%)
Torch, burner or soldering iron	20	(2%)	2	(6%)	\$0.0	(1%)
Fan	10	(1%)	0	(0%)	\$0.0	(0%)
Elevator or lift	10	(1%)	0	(0%)	\$0.1	(1%)
Unclassified equipment involved in ignition	10	(1%)	0	(0%)	\$0.0	(0%)
Unclassified medical equipment	10	(1%)	2	(7%)	\$0.1	(1%)
Motor - separate	10	(1%)	0	(0%)	\$0.0	(0%)
Confined commercial compactor fire	10	(1%)	0	(0%)	\$0.0	(0%)
Medical imaging equipment	10	(1%)	0	(0%)	\$0.1	(1%)
Other known equipment involved in ignition	80	(6%)	3	(9%)	\$4.4	(58%)
Total	1,430	(100%)	32	(100%)	\$7.5	(100%)

*All electrical distribution or lighting equipment injuries involved unclassified or unknown electrical distribution or lighting equipment

Note: Non-confined fires in which the equipment involved in ignition was unknown or not reported have been allocated proportionally among fires with known equipment involved. Fires in which the equipment involved in ignition was entered as none but the heat source indicated equipment involvement or the heat source was unknown were also treated as unknown and allocated proportionally among fires with known equipment involved. Non-confined fires in which the equipment was partially unclassified (i.e., unclassified kitchen or cooking equipment, unclassified heating, cooling or air condition equipment, etc.) were allocated proportionally among fires that grouping (kitchen or cooking equipment; heating, cooling or air conditioning equipment, etc.). Similar processes were done for confined cooking fires. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 8B.
Structure Fires in Hospitals and Hospices, by Heat Source
2006-2010 Annual Averages**

Heat Source	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)
Unclassified heat from powered equipment	340	(24%)	7	(20%)	\$2.6	(34%)
Non-confined	110	(8%)	4	(12%)	\$2.2	(29%)
Confined	220	(16%)	3	(8%)	\$0.4	(6%)
Radiated or conducted heat from operating equipment	330	(23%)	6	(17%)	\$1.4	(18%)
Non-confined	70	(5%)	0	(0%)	\$1.4	(18%)
Confined	260	(18%)	6	(17%)	\$0.0	(0%)
Unclassified heat source	130	(9%)	1	(2%)	\$0.3	(4%)
Non-confined	20	(1%)	1	(2%)	\$0.3	(3%)
Confined	110	(8%)	0	(0%)	\$0.0	(0%)
Arcing	110	(8%)	7	(21%)	\$1.3	(17%)
Non-confined	90	(6%)	7	(21%)	\$1.3	(17%)
Confined	20	(2%)	0	(0%)	\$0.0	(0%)
Smoking materials	100	(7%)	2	(7%)	\$0.0	(1%)
Non-confined	20	(1%)	2	(7%)	\$0.0	(1%)
Confined	80	(6%)	0	(0%)	\$0.0	(0%)
Unclassified hot or smoldering object	90	(6%)	1	(4%)	\$0.0	(1%)
Non-confined	20	(2%)	1	(4%)	\$0.0	(1%)
Confined	60	(4%)	0	(0%)	\$0.0	(0%)
Heat from direct flame or convection currents	80	(6%)	0	(0%)	\$0.8	(10%)
Non-confined	0	(0%)	0	(0%)	\$0.8	(10%)
Confined	80	(5%)	0	(0%)	\$0.0	(0%)
Spark, ember or flame from operating equipment	70	(5%)	2	(5%)	\$0.3	(4%)
Non-confined	30	(2%)	2	(5%)	\$0.3	(4%)
Confined	40	(3%)	0	(0%)	\$0.0	(0%)
Lighter	60	(4%)	5	(15%)	\$0.3	(4%)
Non-confined	20	(2%)	5	(15%)	\$0.3	(4%)
Confined	30	(2%)	0	(0%)	\$0.0	(0%)
Hot ember or ash	30	(2%)	0	(0%)	\$0.0	(0%)
Non-confined	10	(1%)	0	(0%)	\$0.0	(0%)
Confined	20	(2%)	0	(0%)	\$0.0	(0%)

Table 8B.
Structure Fires in Hospitals and Hospices, by Heat Source
2006-2010 Annual Averages
(continued)

Heat Source	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Match	30	(2%)	2	(5%)	\$0.0	(1%)
Non-confined	10	(1%)	2	(5%)	\$0.0	(1%)
Confined	20	(1%)	0	(0%)	\$0.0	(0%)
Other known heat source	60	(4%)	1	(4%)	\$0.4	(6%)
Non-confined	30	(2%)	1	(4%)	\$0.4	(6%)
Confined	30	(2%)	0	(0%)	\$0.0	(0%)
Total	1,430	(100%)	32	(100%)	\$7.5	(100%)
Non-confined	450	(32%)	24	(75%)	\$7.1	(94%)
Confined	980	(68%)	8	(25%)	\$0.5	(6%)

Note: Sums may not equal totals due to rounding errors. The statistics on matches, lighters, smoking materials and candles include a proportional share of fires in which the heat source was heat from an unclassified open flame or smoking material. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

**Table 9B.
Structure Fires in Hospitals and Hospices, by Factor Contributing to Ignition
2006-2010 Annual Averages**

Factor Contributing	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	Percentage	Count	Percentage	Amount	Percentage
Equipment unattended	190	(13%)	0	(0%)	\$0.1	(1%)
Non-confined	10	(1%)	0	(0%)	\$0.1	(1%)
Confined	180	(12%)	0	(0%)	\$0.0	(0%)
Electrical failure or malfunction	170	(12%)	8	(25%)	\$3.9	(52%)
Non-confined	140	(9%)	8	(25%)	\$3.9	(52%)
Confined	30	(2%)	0	(0%)	\$0.0	(0%)
Abandoned or discarded material or product	160	(11%)	0	(0%)	\$0.1	(1%)
Non-confined	20	(1%)	0	(0%)	\$0.1	(1%)
Confined	140	(10%)	0	(0%)	\$0.0	(0%)
Mechanical failure or malfunction	160	(11%)	8	(24%)	\$0.9	(12%)
Non-confined	100	(7%)	2	(7%)	\$0.9	(12%)
Confined	60	(4%)	6	(17%)	\$0.0	(0%)
Unclassified misuse of material or product	160	(11%)	4	(12%)	\$0.8	(10%)
Non-confined	30	(2%)	2	(6%)	\$0.3	(5%)
Confined	120	(8%)	2	(6%)	\$0.4	(6%)
Heat source too close to combustibles	140	(10%)	5	(16%)	\$0.3	(4%)
Non-confined	40	(3%)	4	(14%)	\$0.3	(4%)
Confined	100	(7%)	1	(2%)	\$0.0	(0%)
Unclassified factor contributed to ignition	100	(7%)	1	(2%)	\$0.1	(1%)
Non-confined	20	(2%)	1	(2%)	\$0.1	(1%)
Confined	80	(6%)	0	(0%)	\$0.0	(0%)
Failure to clean	80	(6%)	0	(0%)	\$0.1	(1%)
Non-confined	20	(1%)	0	(0%)	\$0.1	(1%)
Confined	60	(4%)	0	(0%)	\$0.0	(0%)
Unintentionally turned on or not turned off	60	(4%)	0	(0%)	\$0.0	(0%)
Non-confined	0	(0%)	0	(0%)	\$0.0	(0%)
Confined	50	(4%)	0	(0%)	\$0.0	(0%)
Equipment not being operated properly	50	(3%)	1	(4%)	\$0.0	(1%)
Non-confined	0	(0%)	1	(4%)	\$0.0	(1%)
Confined	40	(3%)	0	(0%)	\$0.0	(0%)

Table 9B.
Structure Fires in Hospitals and Hospices, by Factor Contributing to Ignition
2006-2010 Annual Averages
(continued)

Factor Contributing	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Cutting or welding too close to combustible	40	(3%)	0	(0%)	\$0.0	(1%)
Non-confined	30	(2%)	0	(0%)	\$0.0	(1%)
Confined	20	(1%)	0	(0%)	\$0.0	(0%)
Playing with heat source	30	(2%)	1	(4%)	\$0.2	(2%)
Non-confined	10	(1%)	1	(4%)	\$0.2	(2%)
Confined	20	(2%)	0	(0%)	\$0.0	(0%)
Unclassified operational deficiency	30	(2%)	0	(0%)	\$0.1	(1%)
Non-confined	10	(1%)	0	(0%)	\$0.1	(1%)
Confined	20	(1%)	0	(0%)	\$0.0	(0%)
Other known factor contributing to ignition	110	(8%)	5	(15%)	\$1.4	(19%)
Non-confined	30	(2%)	5	(15%)	\$1.4	(19%)
Confined	80	(5%)	0	(0%)	\$0.0	(0%)
Total Fires	1,430	(100%)	32	(100%)	\$7.5	(100%)
Non-confined	450	(32%)	24	(75%)	\$7.1	(94%)
Confined	980	(68%)	8	(25%)	\$0.5	(6%)
Total Factors*	1,480	(104%)	33	(102%)	\$8.0	(106%)
Non-confined	470	(33%)	25	(77%)	\$7.5	(100%)
Confined	1,010	(70%)	8	(25%)	\$0.5	(6%)

* Multiple entries are allowed which can result in sums higher than totals. Electrical and mechanical failures or malfunctions include sums of all factors in their respective category. Double counting is possible within the category.

Note: Sums may not equal totals due to rounding errors. Fires in which the factor contributing to ignition was coded as "none," unknown, or not reported have been allocated proportionally among fires with known factor contributing to ignition. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 10B.
Structure Fires in Hospitals and Hospices, by Area of Origin
2006-2010 Annual Averages

Area of Origin	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)
Kitchen or cooking area	610	(42%)	8	(25%)	\$0.1	(2%)
Non-confined	30	(2%)	0	(0%)	\$0.1	(1%)
Confined	570	(40%)	8	(25%)	\$0.0	(1%)
Lavatory, bathroom, locker room or check room	80	(6%)	2	(8%)	\$0.0	(1%)
Non-confined	20	(2%)	2	(8%)	\$0.0	(1%)
Confined	60	(4%)	0	(0%)	\$0.0	(0%)
Bedroom or patient room	70	(5%)	7	(23%)	\$0.4	(6%)
Non-confined	40	(3%)	7	(23%)	\$0.4	(6%)
Confined	30	(2%)	0	(0%)	\$0.0	(0%)
Laundry room or area	50	(4%)	1	(3%)	\$0.2	(3%)
Non-confined	40	(3%)	1	(3%)	\$0.2	(3%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Unclassified function area	40	(3%)	0	(0%)	\$0.4	(5%)
Non-confined	20	(1%)	0	(0%)	\$0.0	(0%)
Confined	20	(2%)	0	(0%)	\$0.4	(5%)
Office	40	(3%)	0	(0%)	\$0.1	(1%)
Non-confined	20	(1%)	0	(0%)	\$0.1	(1%)
Confined	20	(1%)	0	(0%)	\$0.0	(0%)
Machinery room or area or elevator machinery room	30	(2%)	0	(0%)	\$0.2	(3%)
Non-confined	30	(2%)	0	(0%)	\$0.2	(3%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Dining room, bar or beverage area, cafeteria	30	(2%)	0	(0%)	\$0.0	(0%)
Non-confined	0	(0%)	0	(0%)	\$0.0	(0%)
Confined	30	(2%)	0	(0%)	\$0.0	(0%)
Unclassified equipment or service area	30	(2%)	1	(2%)	\$1.0	(14%)
Non-confined	20	(1%)	1	(2%)	\$1.0	(14%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Trash or rubbish chute, area or container	30	(2%)	0	(0%)	\$0.0	(1%)
Non-confined	0	(0%)	0	(0%)	\$0.0	(1%)
Confined	30	(2%)	0	(0%)	\$0.0	(0%)

Table 10B.
Structure Fires in Hospitals and Hospices, by Area of Origin
2006-2010 Annual Averages
(continued)

Area of Origin	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Common room, lounge or den	30	(2%)	0	(0%)	\$0.0	(0%)
Non-confined	0	(0%)	0	(0%)	\$0.0	(0%)
Confined	20	(2%)	0	(0%)	\$0.0	(0%)
Unclassified area of origin	20	(2%)	0	(1%)	\$0.0	(0%)
Non-confined	10	(1%)	0	(1%)	\$0.0	(0%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Exterior roof surface	20	(2%)	0	(0%)	\$1.6	(21%)
Non-confined	20	(2%)	0	(0%)	\$1.6	(21%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Other known area of origin	340	(24%)	12	(38%)	\$3.3	(44%)
Non-confined	190	(13%)	12	(38%)	\$3.3	(43%)
Confined	150	(11%)	0	(0%)	\$0.0	(0%)
Total	1,430	(100%)	32	(100%)	\$7.5	(100%)
Non-confined	450	(32%)	24	(75%)	\$7.1	(94%)
Confined	980	(68%)	8	(25%)	\$0.5	(6%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires other than chimney or flue fires (NFIRS incident type 113, and 115-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 11B.
Structure Fires in Hospitals and Hospices, by Item First Ignited
2006-2010 Annual Averages

Item First Ignited	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)
Cooking materials, including food	580	(41%)	6	(17%)	\$0.5	(6%)
Non-confined	20	(1%)	0	(0%)	\$0.1	(1%)
Confined	570	(40%)	6	(17%)	\$0.4	(6%)
Rubbish, trash, or waste	140	(10%)	0	(0%)	\$0.0	(0%)
Non-confined	20	(1%)	0	(0%)	\$0.0	(0%)
Confined	120	(8%)	0	(0%)	\$0.0	(0%)
Electrical wire or cable insulation	110	(8%)	6	(19%)	\$2.7	(36%)
Non-confined	100	(7%)	6	(19%)	\$2.7	(36%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Unclassified item first ignited	100	(7%)	1	(3%)	\$0.4	(6%)
Non-confined	40	(3%)	1	(3%)	\$0.4	(6%)
Confined	60	(4%)	0	(0%)	\$0.0	(0%)
Mattress or bedding	50	(4%)	7	(20%)	\$0.3	(4%)
Non-confined	30	(2%)	7	(20%)	\$0.3	(4%)
Confined	20	(1%)	0	(0%)	\$0.0	(0%)
Flammable or combustible liquid or gas, piping or filter	50	(4%)	6	(19%)	\$0.1	(2%)
Non-confined	20	(2%)	4	(14%)	\$0.1	(2%)
Confined	30	(2%)	2	(6%)	\$0.0	(0%)
Linen (other than bedding)	40	(3%)	1	(2%)	\$0.1	(1%)
Non-confined	20	(2%)	1	(2%)	\$0.1	(1%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Appliance housing or casing	40	(3%)	0	(0%)	\$0.1	(1%)
Non-confined	10	(1%)	0	(0%)	\$0.1	(1%)
Confined	20	(2%)	0	(0%)	\$0.0	(0%)
Magazine, newspaper, or writing paper	30	(2%)	0	(0%)	\$0.0	(1%)
Non-confined	10	(1%)	0	(0%)	\$0.0	(1%)
Confined	20	(2%)	0	(0%)	\$0.0	(0%)
Dust, fiber, lint, including sawdust or excelsior	30	(2%)	0	(0%)	\$0.1	(1%)
Non-confined	20	(1%)	0	(0%)	\$0.1	(1%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)

Table 11B.
Structure Fires in Hospitals and Hospices, by Item First Ignited
2006-2010 Annual Averages
(continued)

Item First Ignited	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Box, carton, bag, basket, or barrel	20	(2%)	3	(9%)	\$0.1	(1%)
Non-confined	10	(1%)	3	(9%)	\$0.1	(1%)
Confined	20	(1%)	0	(0%)	\$0.0	(0%)
Other known item first ignited	240	(16%)	3	(9%)	\$3.1	(41%)
Non-confined	150	(11%)	2	(7%)	\$3.1	(41%)
Confined	80	(6%)	1	(2%)	\$0.0	(0%)
Total	1,430	(100%)	32	(100%)	\$7.5	(100%)
Non-confined	450	(32%)	24	(75%)	\$7.1	(94%)
Confined	980	(68%)	8	(25%)	\$0.5	(6%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

Table 12B.
Structure Fires in Hospitals and Hospices, by Extent of Fire Spread
2006-2010 Annual Averages

Item First Ignited	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	980	(68%)	8	(25%)	\$0.5	(6%)
Confined to object of origin	310	(22%)	11	(34%)	\$2.1	(28%)
Confined to room of origin	100	(7%)	12	(37%)	\$3.9	(52%)
Confined to floor of origin	20	(1%)	1	(2%)	\$0.5	(7%)
Confined to building of origin	20	(1%)	0	(1%)	\$0.5	(7%)
Beyond building of origin	0	(0%)	0	(0%)	\$0.0	(0%)
Total	1,430	(100%)	32	(100%)	\$7.5	(100%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Table 1C.
Structure Fires in Mental Health Facilities, by Year
2003-2010 Annual Averages

Year	Fires	Civilian Injuries	Direct Property Damage (in Millions)	
			As Reported	In 2010 Dollars
2003	1,530	2	\$2.0	\$2.4
2004	1,450	18	\$2.6	\$3.0
2005	1,400	20	\$2.4	\$2.7
2006	1,430	49	\$3.7	\$4.0
2007	1,310	7	\$6.4	\$6.7
2008	1,180	11	\$7.5	\$7.6
2009	1,290	20	\$4.9	\$4.9
2010	1,210	27	\$2.3	\$2.3

Note: Estimated deaths are not shown due to the small numbers involved.

Source: NFIRS and NFPA survey. Inflation adjustments were based on the Consumer Price Index Purchasing Power of the Dollar.

**Table 2C.
Structure Fires in Mental Health Facilities, by Month
2006-2010 Annual Averages**

Month	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
January	110	(8%)	0	(2%)	\$0.5	(9%)
February	90	(7%)	0	(2%)	\$0.2	(3%)
March	110	(8%)	3	(14%)	\$0.3	(5%)
April	100	(8%)	1	(5%)	\$0.4	(8%)
May	110	(9%)	6	(27%)	\$0.2	(4%)
June	110	(8%)	2	(10%)	\$1.2	(25%)
July	100	(8%)	1	(6%)	\$0.4	(7%)
August	100	(8%)	2	(8%)	\$0.3	(6%)
September	110	(8%)	1	(2%)	\$0.2	(4%)
October	110	(9%)	2	(10%)	\$0.3	(6%)
November	120	(9%)	1	(5%)	\$0.1	(3%)
December	110	(8%)	2	(10%)	\$0.9	(19%)
Totals	1,280	(100%)	23	(100%)	\$4.9	(100%)
Monthly average	110	(8%)	2	(8%)	\$0.4	(8%)

**Table 3C.
Structure Fires in Mental Health Facilities, by Day of Week
2006-2010 Annual Averages**

Day of Week	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Sunday	220	(17%)	4	(16%)	\$1.0	(0%)
Monday	170	(13%)	2	(8%)	\$0.3	(0%)
Tuesday	170	(13%)	7	(31%)	\$1.3	(0%)
Wednesday	170	(13%)	3	(11%)	\$0.3	(0%)
Thursday	190	(15%)	3	(13%)	\$0.4	(0%)
Friday	180	(14%)	2	(11%)	\$1.1	(0%)
Saturday	200	(16%)	2	(10%)	\$0.6	(0%)
Totals	1,280	(100%)	23	(100%)	\$4.9	(0%)
Daily average	180	(14%)	0	(14%)	3	(14%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 4C.
Structure Fires in Mental Health Facilities, by Alarm Time
2006-2010 Annual Averages**

Alarm Time	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Midnight - 3 a.m.	90	(7%)	2	(8%)	\$0.5	(10%)
3 - 6 a.m.	40	(3%)	1	(3%)	\$0.4	(7%)
6 - 9 a.m.	180	(14%)	2	(8%)	\$0.4	(9%)
9 a.m. - Noon	200	(15%)	2	(9%)	\$0.3	(7%)
Noon - 3 p.m.	190	(15%)	2	(10%)	\$1.1	(23%)
3 - 6 p.m.	310	(24%)	3	(15%)	\$1.2	(24%)
6 - 9 p.m.	180	(14%)	8	(35%)	\$0.9	(18%)
9 p.m. - midnight	100	(8%)	3	(12%)	\$0.1	(2%)
Total	1,280	(100%)	23	(100%)	\$4.9	(100%)
Period average	160	(13%)	3	(13%)	\$0.6	(13%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 5C.
Structure Fires in Mental Health Facilities, by Leading Cause
2006-2010 Annual Averages**

Leading Cause	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	950	(74%)	2	(8%)	\$0.2	(5%)
Intentional	150	(11%)	7	(29%)	\$2.9	(58%)
Smoking materials	80	(6%)	3	(14%)	\$0.2	(5%)
Playing with heat source	60	(5%)	1	(4%)	\$0.1	(1%)
Clothes dryer or washer	60	(5%)	11	(48%)	\$0.2	(4%)
Heating equipment	50	(4%)	0	(0%)	\$0.0	(0%)
Electrical distribution and lighting equipment	30	(2%)	0	(0%)	\$0.0	(1%)

Note: This table summarizes findings from multiple fields, meaning that the same fire may be listed under multiple causes. The methodology used is described in Appendix B.

Source: NFIRS 5.0 and NFPA survey.

Table 6C.
Structure Fires in Mental Health Facilities
by Cause of Ignition (from NFIRS Cause Field)
2006-2010 Annual Averages

Cause of Ignition	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)
Unintentional	990	(77%)	14	(60%)	\$1.3	(26%)
Non-confined	140	(11%)	12	(51%)	\$1.1	(21%)
Confined	850	(66%)	2	(10%)	\$0.2	(5%)
Intentional	150	(11%)	7	(29%)	\$2.9	(58%)
Non-confined	50	(4%)	7	(29%)	\$2.9	(58%)
Confined	100	(8%)	0	(0%)	\$0.0	(0%)
Failure of equipment or heat source	130	(10%)	2	(10%)	\$0.6	(12%)
Non-confined	70	(5%)	2	(10%)	\$0.6	(12%)
Confined	60	(5%)	0	(0%)	\$0.0	(0%)
Other known cause	20	(2%)	0	(0%)	\$0.2	(4%)
Non-confined	10	(1%)	0	(0%)	\$0.2	(4%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Total	1,280	(100%)	23	(100%)	\$4.9	(100%)
Non-confined	270	(21%)	21	(90%)	\$4.7	(95%)
Confined	1,010	(79%)	2	(10%)	\$0.2	(5%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 7C.
Structure Fires in Mental Health Facilities
by Equipment Involved in Ignition
2006-2010 Annual Averages**

Equipment Involved	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	950	(74%)	2	(8%)	\$0.2	(5%)
No equipment involved in ignition	90	(7%)	6	(26%)	\$4.1	(82%)
Contained trash or rubbish fire	50	(4%)	0	(1%)	\$0.0	(0%)
Clothes dryer	50	(4%)	11	(48%)	\$0.2	(4%)
Heating equipment	50	(4%)	0	(0%)	\$0.0	(0%)
Confined fuel burner or boiler fire	30	(2%)	0	(0%)	\$0.0	(0%)
Fixed or portable space heater	10	(1%)	0	(0%)	\$0.0	(0%)
Electrical distribution and lighting equipment	30	(2%)	0	(0%)	\$0.0	(1%)
Wiring and related equipment	20	(1%)	0	(0%)	\$0.0	(0%)
Lamp, bulb or lighting	10	(1%)	0	(0%)	\$0.0	(0%)
Fan	10	(1%)	0	(0%)	\$0.1	(1%)
Unclassified equipment involved in ignition	10	(1%)	0	(0%)	\$0.3	(5%)
Other known equipment involved in ignition	40	(4%)	4	(17%)	\$0.0	(1%)
Total	1,280	(100%)	23	(101%)	\$4.9	(100%)

Note: Non-confined fires in which the equipment involved in ignition was unknown or not reported have been allocated proportionally among fires with known equipment involved. Fires in which the equipment involved in ignition was entered as none but the heat source indicated equipment involvement or the heat source was unknown were also treated as unknown and allocated proportionally among fires with known equipment involved. Non-confined fires in which the equipment was partially unclassified (i.e., unclassified kitchen or cooking equipment, unclassified heating, cooling or air condition equipment, etc.) were allocated proportionally among fires that grouping (kitchen or cooking equipment; heating, cooling or air conditioning equipment, etc.). Similar processes were done for confined cooking fires. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 8C.
Structure Fires in Mental Health Facilities, by Heat Source
2006-2010 Annual Averages**

Heat Source	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)
Radiated or conducted heat from operating equipment	360	(28%)	3	(13%)	\$0.2	(5%)
Non-confined	40	(3%)	3	(13%)	\$0.2	(4%)
Confined	320	(25%)	0	(0%)	\$0.0	(0%)
Unclassified heat from powered equipment	350	(27%)	3	(14%)	\$0.6	(12%)
Non-confined	50	(4%)	2	(11%)	\$0.4	(7%)
Confined	300	(23%)	1	(3%)	\$0.2	(4%)
Unclassified heat source	110	(9%)	3	(13%)	\$0.1	(2%)
Non-confined	10	(1%)	2	(10%)	\$0.1	(2%)
Confined	100	(8%)	1	(4%)	\$0.0	(0%)
Unclassified hot or smoldering object	90	(7%)	1	(3%)	\$0.0	(1%)
Non-confined	20	(2%)	1	(3%)	\$0.0	(1%)
Confined	70	(5%)	0	(0%)	\$0.0	(0%)
Smoking materials	80	(6%)	3	(14%)	\$0.2	(5%)
Non-confined	30	(3%)	3	(11%)	\$0.2	(5%)
Confined	40	(3%)	1	(3%)	\$0.0	(0%)
Lighter	70	(6%)	6	(24%)	\$0.4	(9%)
Non-confined	30	(2%)	6	(24%)	\$0.4	(9%)
Confined	50	(4%)	0	(0%)	\$0.0	(0%)
Spark, ember or flame from operating equipment	60	(4%)	0	(0%)	\$0.1	(2%)
Non-confined	10	(1%)	0	(0%)	\$0.1	(2%)
Confined	40	(3%)	0	(0%)	\$0.0	(0%)
Arcing	50	(4%)	3	(13%)	\$0.4	(8%)
Non-confined	40	(3%)	3	(13%)	\$0.4	(8%)
Confined	20	(1%)	0	(0%)	\$0.0	(0%)
Heat from direct flame or convection currents	30	(2%)	1	(3%)	\$0.1	(2%)
Non-confined	0	(0%)	1	(3%)	\$0.1	(2%)
Confined	30	(2%)	0	(0%)	\$0.0	(0%)

Table 8C.
Structure Fires in Mental Health Facilities, by Heat Source
2006-2010 Annual Averages
(continued)

Heat Source	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Match	20	(2%)	1	(2%)	\$0.5	(10%)
Non-confined	10	(0%)	1	(2%)	\$0.5	(10%)
Confined	20	(1%)	0	(0%)	\$0.0	(0%)
Other known heat source	70	(5%)	0	(0%)	\$2.2	(45%)
Non-confined	30	(3%)	0	(0%)	\$2.2	(45%)
Confined	30	(3%)	0	(0%)	\$0.0	(0%)
Total	1,280	(100%)	23	(100%)	\$4.9	(100%)
Non-confined	270	(21%)	21	(90%)	\$4.7	(95%)
Confined	1,010	(79%)	2	(10%)	\$0.2	(5%)

Note: Sums may not equal totals due to rounding errors. The statistics on matches, lighters, smoking materials and candles include a proportional share of fires in which the heat source was heat from an unclassified open flame or smoking material. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

**Table 9C.
Structure Fires in Mental Health Facilities, by Factor Contributing to Ignition
2006-2010 Annual Averages**

Factor Contributing	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)
Equipment unattended	350	(27%)	2	(8%)	\$0.0	(1%)
Non-confined	10	(1%)	2	(8%)	\$0.0	(1%)
Confined	340	(26%)	*	(*%)	\$0.0	(0%)
Abandoned or discarded material or product	150	(12%)	0	(0%)	\$0.1	(1%)
Non-confined	30	(3%)	0	(0%)	\$0.1	(1%)
Confined	120	(9%)	*	(*%)	\$0.0	(0%)
Unclassified misuse of material or product	150	(11%)	6	(26%)	\$1.8	(36%)
Non-confined	30	(3%)	6	(26%)	\$1.7	(34%)
Confined	110	(9%)	*	(*%)	\$0.1	(2%)
Unclassified factor contributed to ignition	110	(9%)	2	(10%)	\$1.4	(29%)
Non-confined	20	(2%)	2	(10%)	\$1.3	(27%)
Confined	90	(7%)	*	(*%)	\$0.1	(2%)
Failure to clean	100	(8%)	0	(0%)	\$0.0	(0%)
Non-confined	20	(1%)	0	(0%)	\$0.0	(0%)
Confined	90	(7%)	*	(*%)	\$0.0	(0%)
Electrical failure or malfunction	90	(7%)	3	(12%)	\$0.6	(12%)
Non-confined	60	(4%)	3	(12%)	\$0.6	(12%)
Confined	40	(3%)	*	(*%)	\$0.0	(0%)
Heat source too close to combustibles	90	(7%)	2	(10%)	\$0.3	(6%)
Non-confined	20	(2%)	2	(10%)	\$0.3	(6%)
Confined	70	(5%)	*	(*%)	\$0.0	(0%)
Mechanical failure or malfunction	70	(5%)	4	(18%)	\$0.2	(3%)
Non-confined	40	(3%)	4	(18%)	\$0.2	(3%)
Confined	30	(2%)	*	(*%)	\$0.0	(0%)
Playing with heat source	60	(5%)	1	(4%)	\$0.1	(1%)
Non-confined	20	(1%)	1	(4%)	\$0.1	(1%)
Confined	50	(4%)	*	(*%)	\$0.0	(0%)
Equipment not being operated properly	40	(3%)	0	(0%)	\$0.0	(0%)
Non-confined	0	(0%)	0	(0%)	\$0.0	(0%)
Confined	40	(3%)	*	(*%)	\$0.0	(0%)
Unintentionally turned on or not turned off	20	(2%)	0	(0%)	\$0.0	(1%)
Non-confined	0	(0%)	0	(0%)	\$0.0	(1%)
Confined	20	(2%)	*	(*%)	\$0.0	(0%)

Table 9C.
Structure Fires in Mental Health Facilities, by Factor Contributing to Ignition
2006-2010 Annual Averages
(continued)

Factor Contributing	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Improper container or storage	20	(2%)	0	(0%)	\$0.0	(0%)
Non-confined	0	(0%)	0	(0%)	\$0.0	(0%)
Confined	20	(1%)	*	(*%)	\$0.0	(0%)
Other known factor contributing to ignition	70	(6%)	0	(11%)	\$0.8	(16%)
Non-confined	30	(3%)	0	(11%)	\$0.8	(16%)
Confined	40	(3%)	*	(*%)	\$0.0	(0%)
Total Fires	1,280	(100%)	23	(100%)	\$4.9	(100%)
Non-confined	270	(21%)	21	(90%)	\$4.7	(95%)
Confined	1,010	(79%)	2	(10%)	\$0.2	(5%)
Total Factors**	1,330	(104%)	23	(99%)	\$5.3	(107%)
Non-confined	290	(22%)	23	(99%)	\$5.0	(102%)
Confined	1,040	(81%)	*	(*%)	\$0.2	(5%)

* Factors contributing to ignition were unknown or not reported for confined fire injuries.

** Multiple entries are allowed which can result in sums higher than totals. Electrical and mechanical failures or malfunctions include sums of all factors in their respective category. Double counting is possible within the category.

Note: Sums may not equal totals due to rounding errors. Fires in which the factor contributing to ignition was coded as "none," unknown, or not reported have been allocated proportionally among fires with known factor contributing to ignition. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

**Table 10C.
Structure Fires in Mental Health Facilities, by Area of Origin
2006-2010 Annual Averages**

Area of Origin	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Kitchen or cooking area	820	(64%)	3	(14%)	\$0.3	(7%)
Non-confined	40	(3%)	2	(8%)	\$0.1	(3%)
Confined	780	(61%)	2	(7%)	\$0.2	(5%)
Bedroom or patient room	80	(6%)	7	(31%)	\$0.3	(5%)
Non-confined	40	(3%)	7	(31%)	\$0.3	(5%)
Confined	30	(3%)	0	(0%)	\$0.0	(0%)
Lavatory, bathroom, locker room or check room	70	(5%)	1	(3%)	\$0.0	(1%)
Non-confined	30	(2%)	1	(3%)	\$0.0	(1%)
Confined	40	(3%)	0	(0%)	\$0.0	(0%)
Laundry room or area	50	(4%)	2	(10%)	\$0.2	(5%)
Non-confined	30	(3%)	2	(10%)	\$0.2	(5%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Common room, lounge or den	20	(2%)	2	(7%)	\$0.3	(7%)
Non-confined	10	(1%)	2	(7%)	\$0.3	(7%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Other known area of origin	250	(20%)	8	(34%)	\$3.7	(76%)
Non-confined	120	(9%)	7	(31%)	\$3.7	(76%)
Confined	130	(10%)	1	(3%)	\$0.0	(0%)
Total	1,280	(100%)	23	(100%)	\$4.9	(100%)
Non-confined	270	(21%)	21	(90%)	\$4.7	(95%)
Confined	1,010	(79%)	2	(10%)	\$0.2	(5%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires other than chimney or flue fires (NFIRS incident type 113, and 115-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

**Table 11C.
Structure Fires in Mental Health Facilities, by Item First Ignited
2006-2010 Annual Averages**

Item First Ignited	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Amount	(%)
Cooking materials, including food	640	(50%)	1	(3%)	\$0.4	(8%)
Non-confined	20	(2%)	1	(3%)	\$0.2	(3%)
Confined	620	(49%)	0	(0%)	\$0.2	(4%)
Rubbish, trash, or waste	90	(7%)	0	(0%)	\$0.0	(0%)
Non-confined	10	(1%)	0	(0%)	\$0.0	(0%)
Confined	80	(7%)	0	(0%)	\$0.0	(0%)
Unclassified item first ignited	90	(7%)	3	(12%)	\$0.2	(4%)
Non-confined	20	(1%)	2	(7%)	\$0.2	(3%)
Confined	80	(6%)	1	(5%)	\$0.0	(0%)
Household utensils	40	(3%)	0	(0%)	\$0.0	(0%)
Non-confined	0	(0%)	0	(0%)	\$0.0	(0%)
Confined	40	(3%)	0	(0%)	\$0.0	(0%)
Electrical wire or cable insulation	40	(3%)	0	(0%)	\$0.3	(6%)
Non-confined	30	(2%)	0	(0%)	\$0.3	(6%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Clothing	40	(3%)	5	(23%)	\$0.2	(3%)
Non-confined	20	(2%)	5	(23%)	\$0.1	(3%)
Confined	20	(1%)	0	(0%)	\$0.0	(0%)
Appliance housing or casing	30	(3%)	1	(3%)	\$0.0	(0%)
Non-confined	10	(1%)	1	(3%)	\$0.0	(0%)
Confined	30	(2%)	0	(0%)	\$0.0	(0%)
Mattress or bedding	30	(3%)	6	(28%)	\$0.2	(4%)
Non-confined	20	(2%)	6	(28%)	\$0.2	(4%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Magazine, newspaper, or writing paper	30	(2%)	0	(0%)	\$0.5	(10%)
Non-confined	0	(0%)	0	(0%)	\$0.5	(10%)
Confined	20	(2%)	0	(0%)	\$0.0	(0%)
Flammable or combustible liquid or gas, piping or filter	20	(2%)	1	(5%)	\$0.0	(1%)
Non-confined	0	(0%)	0	(0%)	\$0.0	(1%)
Confined	20	(1%)	1	(5%)	\$0.0	(0%)

Table 11C.
Structure Fires in Mental Health Facilities, by Item First Ignited
2006-2010 Annual Averages
(continued)

Item First Ignited	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Other known item first ignited	210	(17%)	6	(26%)	\$3.2	(65%)
Non-confined	130	(10%)	6	(26%)	\$3.2	(64%)
Confined	80	(6%)	0	(0%)	\$0.0	(0%)
Total	1,280	(100%)	23	(100%)	\$4.9	(100%)
Non-confined	270	(21%)	21	(90%)	\$4.7	(95%)
Confined	1,010	(79%)	2	(10%)	\$0.2	(5%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

**Table 12C.
Structure Fires in Mental Health Facilities, by Extent of Fire Spread
2006-2010 Annual Averages**

Extent of Fire Spread	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	1,010	(79%)	2	(10%)	\$0.2	(5%)
Confined to object of origin	140	(11%)	7	(29%)	\$1.9	(40%)
Confined to room of origin	90	(7%)	11	(49%)	\$0.6	(12%)
Confined to floor of origin	10	(1%)	1	(3%)	\$0.3	(7%)
Confined to building of origin	30	(2%)	2	(7%)	\$1.6	(34%)
Extended beyond building of origin	0	(0%)	0	(2%)	\$0.4	(8%)
Total	1,280	(100%)	23	(100%)	\$4.9	(100%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 1D.
Structure Fires in Clinics or Doctors' Offices, by Year
2003-2010 Annual Averages**

Year	Fires	Civilian Injuries	Direct Property Damage (in Millions)	
			As Reported	In 2010 Dollars
2003	710	11	\$14.6	\$17.3
2004	710	5	\$19.6	\$22.6
2005	690	3	\$24.3	\$27.2
2006	710	4	\$16.5	\$17.8
2007	770	7	\$15.8	\$16.6
2008	700	11	\$37.5	\$37.9
2009	640	5	\$35.9	\$36.5
2010	620	2	\$27.1	\$27.1

Note: Estimated deaths are not shown due to the small numbers involved.

Source: NFIRS and NFPA survey. Inflation adjustments were based on the Consumer Price Index Purchasing Power of the Dollar.

**Table 2D.
Structure Fires in Clinics or Doctors' Offices, by Month
2006-2010 Annual Averages**

Month	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
January	70	(10%)	0	(0%)	\$2.1	(8%)
February	50	(8%)	1	(22%)	\$1.6	(6%)
March	60	(9%)	1	(20%)	\$2.4	(9%)
April	60	(8%)	0	(6%)	\$2.0	(8%)
May	60	(9%)	0	(0%)	\$0.8	(3%)
June	60	(8%)	0	(7%)	\$3.5	(13%)
July	50	(7%)	0	(0%)	\$3.3	(12%)
August	60	(8%)	1	(21%)	\$2.5	(10%)
September	60	(8%)	0	(0%)	\$2.6	(10%)
October	50	(8%)	1	(12%)	\$1.0	(4%)
November	60	(8%)	1	(13%)	\$2.2	(8%)
December	60	(8%)	0	(0%)	\$2.5	(9%)
Total	690	(100%)	6	(100%)	\$26.6	(100%)
Monthly average	60	(8%)	0	(8%)	\$2.2	(8%)

**Table 3D.
Structure Fires in Clinics or Doctors' Offices, by Day of Week
2006-2010 Annual Averages**

Day of Week	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Sunday	50	(7%)	0	(0%)	\$3.5	(13%)
Monday	110	(16%)	0	(6%)	\$2.5	(10%)
Tuesday	120	(17%)	2	(32%)	\$1.9	(7%)
Wednesday	120	(18%)	1	(9%)	\$7.0	(26%)
Thursday	130	(18%)	2	(40%)	\$3.6	(14%)
Friday	110	(15%)	1	(14%)	\$3.9	(15%)
Saturday	60	(8%)	0	(0%)	\$4.1	(16%)
Totals	690	(100%)	6	(100%)	\$26.6	(100%)
Daily average	100	(14%)	1	(14%)	\$3.8	(14%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 4D.
Structure Fires in Clinics or Doctors' Offices, by Alarm Time
2006-2010 Annual Averages**

Alarm Time	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Midnight - 3 a.m.	40	(5%)	0	(0%)	\$4.2	(16%)
3 - 6 a.m.	30	(5%)	1	(19%)	\$3.4	(13%)
6 - 9 a.m.	90	(13%)	0	(6%)	\$1.8	(7%)
9 a.m. - Noon	150	(22%)	1	(12%)	\$1.9	(7%)
Noon - 3 p.m.	140	(20%)	2	(43%)	\$2.4	(9%)
3 - 6 p.m.	120	(18%)	1	(13%)	\$4.2	(16%)
6 - 9 p.m.	70	(10%)	0	(7%)	\$2.8	(11%)
9 p.m. - midnight	50	(7%)	0	(0%)	\$5.8	(22%)
Total	690	(100%)	6	(100%)	\$26.6	(100%)
Period average	90	(13%)	1	(13%)	\$3.3	(13%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 5D.
Structure Fires in Clinics or Doctors' Offices, by Leading Cause
2006-2010 Annual Averages**

Leading Cause	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Cooking equipment	240	(35%)	2	(40%)	\$0.4	(1%)
Heating equipment	70	(10%)	1	(22%)	\$3.5	(13%)
Electrical distribution and lighting equipment	70	(10%)	0	(0%)	\$6.9	(26%)
Intentional	50	(8%)	0	(0%)	\$3.3	(12%)
Smoking materials	40	(6%)	0	(0%)	\$0.3	(1%)
Medical equipment	30	(4%)	0	(0%)	\$1.1	(4%)
Exposure	20	(3%)	0	(0%)	\$1.2	(4%)
Torch, burner, or soldering iron	20	(2%)	0	(0%)	\$0.2	(1%)
Electronic, office or entertainment equipment	10	(2%)	1	(15%)	\$0.7	(3%)
Candle	10	(2%)	0	(0%)	\$0.1	(0%)

Note: This table summarizes findings from multiple fields, meaning that the same fire may be listed under multiple causes. The methodology used is described in Appendix B.

Source: NFIRS 5.0 and NFPA survey.

**Table 6D.
Structure Fires in Clinics or Doctors' Offices, by Cause of Ignition (from NFIRS Cause Field)
2006-2010 Annual Averages**

Cause of Ignition	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)
Unintentional	420	(61%)	5	(93%)	\$13.3	(50%)
Non-confined	170	(25%)	4	(78%)	\$12.9	(49%)
Confined	250	(36%)	1	(15%)	\$0.4	(1%)
Failure of equipment or heat source	190	(27%)	0	(7%)	\$7.9	(30%)
Non-confined	150	(21%)	0	(7%)	\$7.9	(30%)
Confined	40	(6%)	0	(0%)	\$0.0	(0%)
Intentional	50	(8%)	0	(0%)	\$3.3	(12%)
Non-confined	30	(5%)	0	(0%)	\$3.3	(12%)
Confined	20	(3%)	0	(0%)	\$0.0	(0%)
Unclassified cause	20	(4%)	0	(0%)	\$0.9	(3%)
Non-confined	20	(3%)	0	(0%)	\$0.9	(3%)
Confined	0	(1%)	0	(0%)	\$0.0	(0%)
Act of nature	10	(1%)	0	(0%)	\$1.2	(5%)
Non-confined	10	(1%)	0	(0%)	\$1.2	(5%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Total	690	(100%)	6	(100%)	\$26.6	(100%)
Non-confined	380	(55%)	5	(85%)	\$26.2	(99%)
Confined	310	(45%)	1	(15%)	\$0.4	(1%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 7D.
Structure Fires in Clinics or Doctors' Offices, by Equipment Involved in Ignition
2006-2010 Annual Averages**

Equipment Involved in Ignition	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)
Cooking equipment, including confined cooking fires	240	(35%)	2	(40%)	\$0.4	(1%)
No equipment involved in ignition	80	(12%)	0	(0%)	\$12.0	(45%)
Heating equipment	70	(10%)	1	(22%)	\$3.5	(13%)
Confined fuel burner or boiler fire	30	(5%)	0	(6%)	\$0.0	(0%)
Central heat	20	(2%)	0	(0%)	\$2.2	(8%)
Fixed or portable space heater	10	(2%)	0	(0%)	\$0.7	(2%)
Water heater	10	(2%)	1	(17%)	\$0.6	(2%)
Electrical distribution and lighting equipment	70	(10%)	0	(0%)	\$6.9	(26%)
Wiring and related equipment	30	(5%)	0	(0%)	\$4.8	(18%)
Lamp, bulb or lighting	20	(3%)	0	(0%)	\$2.0	(8%)
Transformers and power supplies	10	(2%)	0	(0%)	\$0.1	(0%)
Contained trash or rubbish fire	50	(8%)	0	(0%)	\$0.0	(0%)
Fan	40	(5%)	0	(0%)	\$0.1	(0%)
Torch, burner or soldering iron	20	(2%)	0	(0%)	\$0.2	(1%)
Air conditioner	10	(2%)	0	(0%)	\$0.0	(0%)
Unclassified equipment involved in ignition	10	(1%)	0	(0%)	\$0.5	(2%)
Elevator or lift	10	(1%)	0	(0%)	\$0.0	(0%)
Sterilizer: medical	10	(1%)	0	(0%)	\$0.0	(0%)
Confined incinerator overload or malfunction fire	10	(1%)	0	(0%)	\$0.0	(0%)
Computer	10	(1%)	0	(0%)	\$0.0	(0%)
Unclassified dental equipment	10	(1%)	0	(0%)	\$0.1	(0%)
Unclassified medical equipment	10	(1%)	0	(0%)	\$0.8	(3%)
Clothes dryer	10	(1%)	0	(0%)	\$0.0	(0%)
Medical imaging equipment	10	(1%)	0	(0%)	\$0.1	(0%)
Other known equipment involved in ignition	40	(6%)	2	(38%)	\$0.9	(3%)
Total	690	(100%)	6	(100%)	\$26.6	(100%)

Note: Non-confined fires in which the equipment involved in ignition was unknown or not reported have been allocated proportionally among fires with known equipment involved. Fires in which the equipment involved in ignition was entered as none but the heat source indicated equipment involvement or the heat source was unknown were also treated as unknown and allocated proportionally among fires with known equipment involved. Non-confined fires in which the equipment was partially unclassified (i.e., unclassified kitchen or cooking equipment, unclassified heating, cooling or air condition equipment, etc.) were allocated proportionally among fires that grouping (kitchen or cooking equipment; heating, cooling or air conditioning equipment, etc.). Similar processes were done for confined cooking fires. Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

**Table 8D.
Structure Fires in Clinics or Doctors' Offices, by Heat Source
2006-2010 Annual Averages**

Heat Source	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Amount	(%)
Unclassified heat from powered equipment	180	(26%)	2	(33%)	\$6.2	(23%)
Non-confined	70	(11%)	2	(33%)	\$5.8	(22%)
Confined	110	(16%)	0	(0%)	\$0.4	(1%)
Arcing	110	(15%)	0	(0%)	\$4.8	(18%)
Non-confined	90	(14%)	0	(0%)	\$4.8	(18%)
Confined	10	(2%)	0	(0%)	\$0.0	(0%)
Radiated or conducted heat from operating equipment	100	(15%)	1	(22%)	\$3.3	(13%)
Non-confined	50	(7%)	0	(6%)	\$3.3	(13%)
Confined	60	(9%)	1	(15%)	\$0.0	(0%)
Unclassified hot or smoldering object	70	(11%)	1	(10%)	\$1.1	(4%)
Non-confined	30	(4%)	1	(10%)	\$1.1	(4%)
Confined	50	(7%)	0	(0%)	\$0.0	(0%)
Smoking materials	40	(6%)	0	(0%)	\$0.3	(1%)
Non-confined	20	(4%)	0	(0%)	\$0.3	(1%)
Confined	20	(3%)	0	(0%)	\$0.0	(0%)
Unclassified heat source	30	(5%)	0	(7%)	\$0.3	(1%)
Non-confined	10	(2%)	0	(7%)	\$0.3	(1%)
Confined	20	(3%)	0	(0%)	\$0.0	(0%)
Spark, ember or flame from operating equipment	30	(4%)	0	(0%)	\$0.4	(1%)
Non-confined	20	(3%)	0	(0%)	\$0.4	(1%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Hot ember or ash	20	(2%)	0	(7%)	\$4.2	(16%)
Non-confined	10	(2%)	0	(7%)	\$4.2	(16%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Candle	10	(2%)	0	(0%)	\$0.1	(0%)
Non-confined	10	(1%)	0	(0%)	\$0.1	(0%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Flame or torch used for lighting	10	(2%)	0	(7%)	\$1.8	(7%)
Non-confined	10	(1%)	0	(7%)	\$1.8	(7%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)

Table 8D.
Structure Fires in Clinics or Doctors' Offices, by Heat Source
2006-2010 Annual Averages
(continued)

Heat Source	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Match	10	(2%)	0	(7%)	\$0.6	(2%)
Non-confined	10	(1%)	0	(7%)	\$0.5	(2%)
Confined	0	(1%)	0	(0%)	\$0.0	(0%)
Molten or hot material	10	(2%)	0	(0%)	\$0.0	(0%)
Non-confined	0	(1%)	0	(0%)	\$0.0	(0%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Heat or spark from friction	10	(2%)	0	(0%)	\$0.2	(1%)
Non-confined	0	(1%)	0	(0%)	\$0.2	(1%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Other known heat source	40	(6%)	0	(7%)	\$3.2	(12%)
Non-confined	40	(5%)	0	(7%)	\$3.2	(12%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Total	690	(100%)	6	(100%)	\$26.6	(100%)
Non-confined	380	(55%)	5	(85%)	\$26.2	(99%)
Confined	310	(45%)	1	(15%)	\$0.4	(1%)

Note: Sums may not equal totals due to rounding errors. The statistics on matches, lighters, smoking materials and candles include a proportional share of fires in which the heat source was heat from an unclassified open flame or smoking material. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

**Table 9D.
Structure Fires in Clinics or Doctors' Offices, by Factor Contributing to Ignition
2006-2010 Annual Averages**

Factor Contributing to Ignition	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	Percentage	Count	Percentage	Amount	Percentage
Electrical failure or malfunction	160	(23%)	0	(8%)	\$9.7	(36%)
Non-confined	140	(20%)	0	(8%)	\$9.7	(36%)
Confined	20	(3%)	0	(0%)	\$0.0	(0%)
Abandoned or discarded material or product	100	(15%)	1	(15%)	\$1.8	(7%)
Non-confined	40	(5%)	1	(15%)	\$1.8	(7%)
Confined	60	(9%)	0	(0%)	\$0.0	(0%)
Equipment unattended	80	(12%)	1	(15%)	\$0.2	(1%)
Non-confined	10	(1%)	0	(0%)	\$0.2	(1%)
Confined	70	(11%)	1	(15%)	\$0.0	(0%)
Mechanical failure or malfunction	80	(11%)	0	(0%)	\$1.4	(5%)
Non-confined	60	(8%)	0	(0%)	\$1.4	(5%)
Confined	20	(3%)	0	(0%)	\$0.0	(0%)
Heat source too close to combustibles	60	(9%)	0	(8%)	\$6.3	(24%)
Non-confined	40	(5%)	0	(8%)	\$6.3	(24%)
Confined	30	(4%)	0	(0%)	\$0.0	(0%)
Unclassified misuse of material or product	60	(9%)	1	(18%)	\$0.4	(1%)
Non-confined	20	(3%)	1	(18%)	\$0.4	(1%)
Confined	40	(6%)	0	(0%)	\$0.0	(0%)
Unclassified factor contributed to ignition	40	(6%)	1	(14%)	\$2.0	(8%)
Non-confined	20	(3%)	1	(14%)	\$1.7	(6%)
Confined	20	(3%)	0	(0%)	\$0.4	(1%)
Exposure fire	20	(3%)	0	(0%)	\$1.2	(4%)
Non-confined	20	(3%)	0	(0%)	\$1.2	(4%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Equipment not being operated properly	10	(2%)	0	(7%)	\$0.4	(1%)
Non-confined	0	(1%)	0	(7%)	\$0.4	(1%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Failure to clean	10	(2%)	0	(0%)	\$0.0	(0%)
Non-confined	0	(0%)	0	(0%)	\$0.0	(0%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)

Table 9D.
Structure Fires in Clinics or Doctors' Offices, by Factor Contributing to Ignition
2006-2010 Annual Averages
(continued)

Factor Contributing to Ignition	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Fire spread or control, other	10	(2%)	0	(0%)	\$0.1	(1%)
Non-confined	0	(0%)	0	(0%)	\$0.1	(1%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Other known factor contributing to ignition	80	(12%)	1	(22%)	\$5.0	(19%)
Non-confined	50	(8%)	1	(22%)	\$5.0	(19%)
Confined	30	(4%)	0	(0%)	\$0.0	(0%)
Total Fires	690	(100%)	6	(100%)	\$26.6	(100%)
Non-confined	380	(55%)	5	(85%)	\$26.2	(99%)
Confined	310	(45%)	1	(15%)	\$0.4	(1%)
Total Factors*	720	(104%)	6	(108%)	\$28.4	(107%)
Non-confined	400	(58%)	5	(93%)	\$28.1	(106%)
Confined	320	(46%)	1	(15%)	\$0.4	(1%)

* Multiple entries are allowed which can result in sums higher than totals. Electrical and mechanical failures or malfunctions include sums of all factors in their respective category. Double counting is possible within the category.

Note: Sums may not equal totals due to rounding errors. Fires in which the factor contributing to ignition was coded as "none," unknown, or not reported have been allocated proportionally among fires with known factor contributing to ignition. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

**Table 10D.
Structure Fires in Clinics or Doctors' Offices, by Area of Origin
2006-2010 Annual Averages**

Area of Origin	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Count	(%)
Kitchen or cooking area	160	(23%)	2	(27%)	\$0.1	(1%)
Non-confined	10	(2%)	1	(12%)	\$0.1	(1%)
Confined	140	(21%)	1	(15%)	\$0.0	(0%)
Office	80	(11%)	1	(12%)	\$5.0	(19%)
Non-confined	40	(6%)	1	(12%)	\$4.6	(17%)
Confined	30	(5%)	0	(0%)	\$0.4	(1%)
Lavatory, bathroom, locker room or check room	30	(5%)	0	(6%)	\$0.4	(2%)
Non-confined	30	(4%)	0	(6%)	\$0.4	(2%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Heating equipment room	30	(4%)	0	(0%)	\$0.7	(3%)
Non-confined	10	(2%)	0	(0%)	\$0.7	(3%)
Confined	20	(2%)	0	(0%)	\$0.0	(0%)
Unclassified outside area	20	(3%)	0	(0%)	\$0.4	(1%)
Non-confined	10	(2%)	0	(0%)	\$0.4	(1%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Exterior wall surface	20	(3%)	0	(6%)	\$0.7	(3%)
Non-confined	20	(3%)	0	(6%)	\$0.7	(3%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Exterior roof surface	20	(3%)	1	(9%)	\$1.0	(4%)
Non-confined	20	(2%)	1	(9%)	\$1.0	(4%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Attic or ceiling/roof assembly or concealed space	20	(3%)	0	(0%)	\$1.8	(7%)
Non-confined	20	(3%)	0	(0%)	\$1.8	(7%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Trash or rubbish chute, area or container	20	(3%)	0	(0%)	\$0.1	(0%)
Non-confined	0	(0%)	0	(0%)	\$0.1	(0%)
Confined	20	(2%)	0	(0%)	\$0.0	(0%)
Unclassified area of origin	20	(3%)	0	(0%)	\$0.1	(0%)
Non-confined	10	(2%)	0	(0%)	\$0.1	(0%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
First aid or treatment room	20	(2%)	0	(0%)	\$0.6	(2%)
Non-confined	10	(2%)	0	(0%)	\$0.6	(2%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)

**Table 10D.
Structure Fires in Clinics or Doctors' Offices, by Area of Origin
2006-2010 Annual Averages
(continued)**

Area of Origin	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Unclassified equipment or service area	10	(2%)	0	(0%)	\$0.4	(2%)
Non-confined	10	(2%)	0	(0%)	\$0.4	(2%)
Confined	0	(1%)	0	(0%)	\$0.0	(0%)
Common room, lounge or den	10	(2%)	0	(0%)	\$0.2	(1%)
Non-confined	0	(1%)	0	(0%)	\$0.2	(1%)
Confined	10	(2%)	0	(0%)	\$0.0	(0%)
Duct for HVAC, cable, exhaust, heating, or air conditioning	10	(2%)	0	(0%)	\$0.0	(0%)
Non-confined	10	(1%)	0	(0%)	\$0.0	(0%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Closet	10	(2%)	0	(0%)	\$0.2	(1%)
Non-confined	10	(2%)	0	(0%)	\$0.2	(1%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Machinery room or area or elevator machinery room	10	(2%)	0	(0%)	\$0.5	(2%)
Non-confined	10	(2%)	0	(0%)	\$0.5	(2%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Ceiling/floor assembly or concealed space	10	(2%)	0	(0%)	\$0.4	(2%)
Non-confined	10	(2%)	0	(0%)	\$0.4	(2%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Laboratory	10	(2%)	0	(0%)	\$2.6	(10%)
Non-confined	10	(1%)	0	(0%)	\$2.6	(10%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Exterior stairway, ramp, or fire escape	10	(2%)	0	(0%)	\$0.1	(0%)
Non-confined	10	(1%)	0	(0%)	\$0.1	(0%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Other known area of origin	160	(24%)	2	(39%)	\$11.0	(42%)
Non-confined	120	(17%)	2	(39%)	\$11.0	(42%)
Confined	40	(6%)	0	(0%)	\$0.0	(0%)
Total	690	(100%)	6	(100%)	\$26.6	(100%)
Non-confined	380	(55%)	5	(85%)	\$26.2	(99%)
Confined	310	(46%)	1	(15%)	\$0.4	(1%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires other than chimney or flue fires (NFIRS incident type 113, and 115-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details. Source: NFIRS 5.0 and NFPA survey.

**Table 11D.
Structure Fires in Clinics or Doctors' Offices, by Item First Ignited
2006-2010 Annual Averages**

Item First Ignited	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
	Count	(%)	Count	(%)	Amount	(%)
Cooking materials, including food	150	(22%)	1	(15%)	\$0.0	(0%)
Non-confined	10	(1%)	0	(0%)	\$0.0	(0%)
Confined	140	(21%)	1	(15%)	\$0.0	(0%)
Electrical wire or cable insulation	80	(12%)	0	(0%)	\$4.3	(16%)
Non-confined	70	(11%)	0	(0%)	\$4.3	(16%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Unclassified item first ignited	60	(8%)	0	(0%)	\$0.9	(3%)
Non-confined	30	(4%)	0	(0%)	\$0.9	(3%)
Confined	30	(4%)	0	(0%)	\$0.0	(0%)
Rubbish, trash, or waste	40	(6%)	0	(7%)	\$0.2	(1%)
Non-confined	20	(2%)	0	(7%)	\$0.2	(1%)
Confined	30	(4%)	0	(0%)	\$0.0	(0%)
Flammable or combustible liquid or gas, piping or filter	30	(4%)	1	(22%)	\$1.3	(5%)
Non-confined	20	(2%)	1	(22%)	\$1.3	(5%)
Confined	10	(2%)	0	(0%)	\$0.0	(0%)
Structural member or framing	30	(4%)	0	(7%)	\$2.4	(9%)
Non-confined	20	(4%)	0	(7%)	\$2.4	(9%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Magazine, newspaper, or writing paper	30	(4%)	0	(0%)	\$0.6	(2%)
Non-confined	10	(2%)	0	(0%)	\$0.6	(2%)
Confined	10	(2%)	0	(0%)	\$0.0	(0%)
Appliance housing or casing	30	(4%)	0	(0%)	\$1.9	(7%)
Non-confined	20	(3%)	0	(0%)	\$1.9	(7%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Exterior wall covering or finish	20	(3%)	0	(0%)	\$4.1	(16%)
Non-confined	20	(3%)	0	(0%)	\$4.1	(16%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Unclassified organic materials	20	(3%)	0	(0%)	\$0.4	(2%)
Non-confined	10	(1%)	0	(0%)	\$0.1	(0%)
Confined	10	(2%)	0	(0%)	\$0.4	(1%)

**Table 11D.
Structure Fires in Clinics or Doctors' Offices, by Item First Ignited
2006-2010 Annual Averages
(continued)**

Item First Ignited	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Insulation within structural area	20	(3%)	1	(11%)	\$0.9	(3%)
Non-confined	20	(3%)	1	(11%)	\$0.9	(3%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Box, carton, bag, basket, or barrel	20	(2%)	1	(15%)	\$0.1	(0%)
Non-confined	10	(2%)	1	(15%)	\$0.1	(0%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Exterior roof covering or finish	10	(2%)	0	(0%)	\$1.5	(5%)
Non-confined	10	(2%)	0	(0%)	\$1.5	(5%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Multiple items first ignited	10	(2%)	0	(0%)	\$2.2	(8%)
Non-confined	10	(1%)	0	(0%)	\$2.2	(8%)
Confined	0	(1%)	0	(0%)	\$0.0	(0%)
Light vegetation including grass	10	(2%)	0	(0%)	\$0.5	(2%)
Non-confined	10	(1%)	0	(0%)	\$0.5	(2%)
Confined	10	(1%)	0	(0%)	\$0.0	(0%)
Unclassified structural component or finish	10	(2%)	0	(8%)	\$0.8	(3%)
Non-confined	10	(2%)	0	(8%)	\$0.8	(3%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Interior wall covering, excluding drapes	10	(2%)	0	(0%)	\$1.3	(5%)
Non-confined	10	(2%)	0	(0%)	\$1.3	(5%)
Confined	0	(0%)	0	(0%)	\$0.0	(0%)
Other known item first ignited	110	(16%)	1	(15%)	\$3.2	(12%)
Non-confined	70	(11%)	1	(15%)	\$3.2	(12%)
Confined	30	(5%)	0	(0%)	\$0.0	(0%)
Total	690	(100%)	6	(100%)	\$26.6	(100%)
Non-confined	380	(55%)	5	(85%)	\$26.2	(99%)
Confined	310	(45%)	1	(15%)	\$0.4	(1%)

Note: Sums may not equal totals due to rounding errors. Confined structure fires (NFIRS incident type 113-118) were analyzed separately from non-confined structure fires (incident type 110-129, except 113-118). See Appendix A for details.

Source: NFIRS 5.0 and NFPA survey.

**Table 12D.
Structure Fires in Clinics or Doctors' Offices, by Extent of Fire Spread
2006-2010 Annual Averages**

Extent of Fire Spread	Fires		Civilian Injuries		Direct Property Damage (in Millions)	
Confined fire identified by incident type	310	(45%)	1	(15%)	\$0.4	(1%)
Confined to object of origin	160	(24%)	1	(13%)	\$1.0	(4%)
Confined to room of origin	100	(15%)	3	(52%)	\$2.8	(10%)
Confined to floor of origin	30	(4%)	0	(7%)	\$4.1	(15%)
Confined to building of origin	80	(11%)	1	(14%)	\$15.8	(59%)
Beyond building of origin	50	(1%)	0	(0%)	\$2.6	(10%)
Total	690	(100%)	6	(100%)	\$26.6	(100%)

Note: Sums may not equal totals due to rounding errors.

Source: NFIRS 5.0 and NFPA survey.

Appendix A. How National Estimates Statistics Are Calculated

The statistics in this analysis are estimates derived from the U.S. Fire Administration's (USFA's) National Fire Incident Reporting System (NFIRS) and the National Fire Protection Association's (NFPA's) annual survey of U.S. fire departments. NFIRS is a voluntary system by which participating fire departments report detailed factors about the fires to which they respond. Roughly two-thirds of U.S. fire departments participate, although not all of these departments provide data every year. Fires reported to federal or state fire departments or industrial fire brigades are not included in these estimates.

NFIRS provides the most detailed incident information of any national database not limited to large fires. NFIRS is the only database capable of addressing national patterns for fires of all sizes by specific property use and specific fire cause. NFIRS also captures information on the extent of flame spread, and automatic detection and suppression equipment. For more information about NFIRS visit <http://www.nfirs.fema.gov/>. Copies of the paper forms may be downloaded from http://www.nfirs.fema.gov/documentation/design/NFIRS_Paper_Forms_2008.pdf.

NFIRS has a wide variety of data elements and code choices. The NFIRS database contains coded information. Many code choices describe several conditions. These cannot be broken down further. For example, area of origin code 83 captures fires starting in vehicle engine areas, running gear areas or wheel areas. It is impossible to tell the portion of each from the coded data.

Methodology may change slightly from year to year.

NFPA is continually examining its methodology to provide the best possible answers to specific questions, methodological and definitional changes can occur. *Earlier editions of the same report may have used different methodologies to produce the same analysis, meaning that the estimates are not directly comparable from year to year.*

NFPA's fire department experience survey provides estimates of the big picture.

Each year, NFPA conducts an annual survey of fire departments which enables us to capture a summary of fire department experience on a larger scale. Surveys are sent to all municipal departments protecting populations of 50,000 or more and a random sample, stratified by community size, of the smaller departments. Typically, a total of roughly 3,000 surveys are returned, representing about one of every ten U.S. municipal fire departments and about one third of the U.S. population.

The survey is stratified by size of population protected to reduce the uncertainty of the final estimate. Small rural communities have fewer people protected per department and are less likely to respond to the survey. A larger number must be surveyed to obtain an adequate sample of those departments. (NFPA also makes follow-up calls to a sample of the smaller fire departments that do not respond, to confirm that those that did respond are truly representative of fire departments their size.) On the other hand, large city departments are so few in number and protect such a large proportion of the total U.S. population that it makes sense to survey all of them. Most respond, resulting in excellent precision for their part of the final estimate.

The survey includes the following information: (1) the total number of fire incidents, civilian deaths, and civilian injuries, and the total estimated property damage (in dollars), for each of the major property use classes defined in NFIRS; (2) the number of on-duty firefighter injuries, by type of duty and nature of illness; 3) the number and nature of non-fire incidents; and (4) information on the type of community protected (e.g., county versus township versus city) and the size of the population protected, which is used in the statistical formula for projecting national totals from sample results. The results of the survey are published in the annual report *Fire Loss in the United States*. To download a free copy of the report, visit <http://www.nfpa.org/assets/files/PDF/OS.fireloss.pdf>.

Projecting NFIRS to National Estimates

As noted, NFIRS is a voluntary system. Different states and jurisdictions have different reporting requirements and practices. Participation rates in NFIRS are not necessarily uniform across regions and community sizes, both factors correlated with frequency and severity of fires. This means NFIRS may be susceptible to systematic biases. No one at present can quantify the size of these deviations from the ideal, representative sample, so no one can say with confidence that they are or are not serious problems. But there is enough reason for concern so that a second database -- the NFPA survey -- is needed to project NFIRS to national estimates and to project different parts of NFIRS separately. This multiple calibration approach makes use of the annual NFPA survey where its statistical design advantages are strongest.

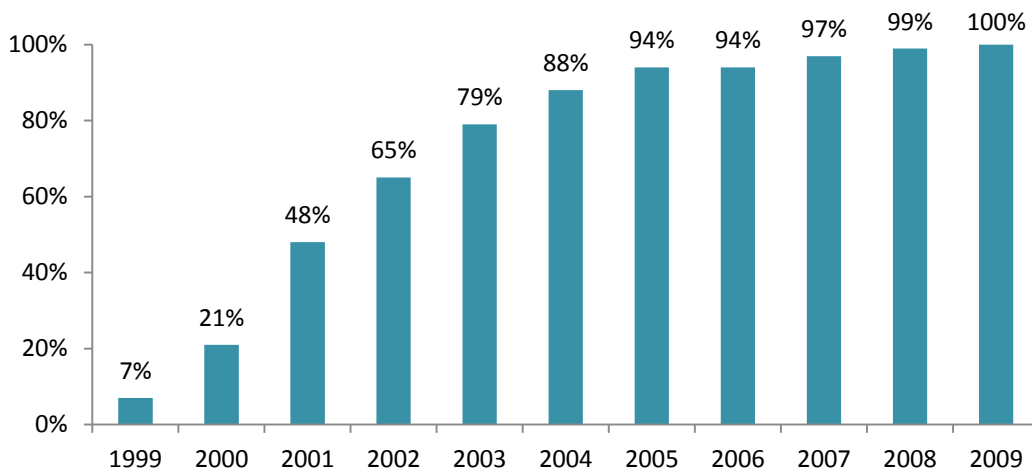
Scaling ratios are obtained by comparing NFPA's projected totals of residential structure fires, non-residential structure fires, vehicle fires, and outside and other fires, and associated civilian deaths, civilian injuries, and direct property damage with comparable totals in NFIRS. Estimates of specific fire problems and circumstances are obtained by multiplying the NFIRS data by the scaling ratios. Reports for incidents in which mutual aid was given are excluded from NFPA's analyses.

Analysts at the NFPA, the USFA and the Consumer Product Safety Commission developed the specific basic analytical rules used for this procedure. "[The National Estimates Approach to U.S. Fire Statistics](#)," by John R. Hall, Jr. and Beatrice Harwood, provides a more detailed explanation of national estimates.

Version 5.0 of NFIRS, first introduced in 1999, used a different coding structure for many data elements, added some property use codes, and dropped others. The essentials of the approach described by Hall and Harwood are still used, but some modifications have been necessary to accommodate the changes in NFIRS 5.0.

Figure A.1 shows the percentage of fires originally collected in the NFIRS 5.0 system. Each year's release version of NFIRS data also includes data collected in older versions of NFIRS that were converted to NFIRS 5.0 codes.

Figure A.1. Fires Originally Collected in NFIRS 5.0 by Year



From 1999 data on, analyses are based on scaling ratios using only data originally collected in NFIRS 5.0:

NFPA survey projections
NFIRS totals (Version 5.0)

For 1999 to 2001, the same rules may be applied, but estimates for these years in this form will be less reliable due to the smaller amount of data originally collected in NFIRS 5.0; they should be viewed with extreme caution.

NFIRS 5.0 introduced six categories of confined structure fires, including:

- cooking fires confined to the cooking vessel,
- confined chimney or flue fires,
- confined incinerator fire,
- confined fuel burner or boiler fire or delayed ignition,
- confined commercial compactor fire, and
- trash or rubbish fires in a structure with no flame damage to the structure or its contents.

Although causal and other detailed information is typically not required for these incidents, it is provided in some cases. Some analyses, particularly those that examine cooking equipment, heating equipment, fires caused by smoking materials, and fires started by playing with fire, may examine the confined fires in greater detail. Because the confined fire incident types describe certain scenarios, the distribution of unknown data differs from that of all fires. Consequently, allocation of unknowns must be done separately.

Some analyses of structure fires show only non-confined fires. In these tables, percentages shown are of non-confined structure fires rather than all structure fires. This approach has the advantage of showing the frequency of specific factors in fire causes, but the disadvantage of possibly overstating the percentage of factors that are seldom seen in the confined fire incident types and of understating the factors specifically associated with the confined fire incident types.

Other analyses include entries for confined fire incident types in the causal tables and show percentages based on total structure fires. In these cases, the confined fire incident type is treated as a general causal factor.

For most fields other than Property Use and Incident Type, NFPA allocates unknown data proportionally among known data. This approach assumes that if the missing data were known, it would be distributed in the same manner as the known data. NFPA makes additional adjustments to several fields. *Casualty and loss projections can be heavily influenced by the inclusion or exclusion of unusually serious fire.*

In the formulas that follow, the term “all fires” refers to all fires in NFIRS on the dimension studied. The percentages of fires with known or unknown data are provided for non-confined fires and associated losses, and for confined fires only.

Cause of Ignition: This field is used chiefly to identify intentional fires. “Unintentional” in this field is a specific entry and does not include other fires that were not intentionally set: failure of equipment or heat source, act of nature, or “other” (unclassified).” The last should be used for exposures but has been used for other situations as well. Fires that were coded as under investigation and those that were coded as undetermined after investigation were treated as unknown.

Factor Contributing to Ignition: In this field, the code “none” is treated as an unknown and allocated proportionally. For Human Factor Contributing to Ignition, NFPA enters a code for “not reported” when no factors are recorded. “Not reported” is treated as an unknown, but the code “none” is treated as a known code and not allocated. Multiple entries are allowed in both of these fields. Percentages are calculated on the total number of fires, not entries, resulting in sums greater than 100%. Although Factor Contributing to Ignition is only required when the cause of ignition was coded as: 2) unintentional, 3) failure of equipment or heat source; or 4) act of nature, data is often present when not required. Consequently, any fire in which no factor contributing to ignition was entered was treated as unknown.

In some analyses, all entries in the category of mechanical failure, malfunction (factor contributing to ignition 20-29) are combined and shown as one entry, “mechanical failure or malfunction.” This category includes:

21. Automatic control failure;
22. Manual control failure;
23. Leak or break. Includes leaks or breaks from containers or pipes. Excludes operational deficiencies and spill mishaps;
25. Worn out;
26. Backfire. Excludes fires originating as a result of hot catalytic converters;
27. Improper fuel used; Includes the use of gasoline in a kerosene heater and the like; and
20. Mechanical failure or malfunction, other.

Entries in “electrical failure, malfunction” (factor contributing to ignition 30-39) may also be combined into one entry, “electrical failure or malfunction.” This category includes:

31. Water-caused short circuit arc;

- 32. Short-circuit arc from mechanical damage;
- 33. Short-circuit arc from defective or worn insulation;
- 34. Unspecified short circuit arc;
- 35. Arc from faulty contact or broken connector, including broken power lines and loose connections;
- 36. Arc or spark from operating equipment, switch, or electric fence;
- 37. Fluorescent light ballast; and
- 30. Electrical failure or malfunction, other.

Heat Source. In NFIRS 5.0, one grouping of codes encompasses various types of open flames and smoking materials. In the past, these had been two separate groupings. A new code was added to NFIRS 5.0, which is code 60: “Heat from open flame or smoking material, other.” NFPA treats this code as a partial unknown and allocates it proportionally across the codes in the 61-69 range, shown below.

- 61. Cigarette;
- 62. Pipe or cigar;
- 63. Heat from undetermined smoking material;
- 64. Match;
- 65. Lighter: cigarette lighter, cigar lighter;
- 66. Candle;
- 67 Warning or road flare, fuse;
- 68. Backfire from internal combustion engine. Excludes flames and sparks from an exhaust system, (11); and
- 69. Flame/torch used for lighting. Includes gas light and gas-/liquid-fueled lantern.

In addition to the conventional allocation of missing and undetermined fires, NFPA multiplies fires with codes in the 61-69 range by

$$\frac{\text{All fires in range 60-69}}{\text{All fires in range 61-69}}$$

The downside of this approach is that heat sources that are truly a different type of open flame or smoking material are erroneously assigned to other categories. The grouping “smoking materials” includes codes 61-63 (cigarettes, pipes or cigars, and heat from undetermined smoking material, with a proportional share of the code 60s and true unknown data.

Equipment Involved in Ignition (EII). NFIRS 5.0 originally defined EII as the piece of equipment that provided the principal heat source to cause ignition if the equipment malfunctioned or was used improperly. In 2006, the definition was modified to “the piece of equipment that provided the principal heat source to cause ignition.” However, much of the data predates the change. Individuals who have already been trained with the older definition may not change their practices. To compensate, NFPA treats fires in which EII = NNN and heat source is not in the range of 40-99 as an additional unknown.

To allocate unknown data for EII, the known data is multiplied by

All fires

(All fires – blank – undetermined – [fires in which EII =NNN and heat source <>40-99])

In addition, the partially unclassified codes for broad equipment groupings (i.e., code 100 - heating, ventilation, and air conditioning, other; code 200 - electrical distribution, lighting and power transfer, other; etc.) were allocated proportionally across the individual code choices in their respective broad groupings (heating, ventilation, and air conditioning; electrical distribution, lighting and power transfer, other; etc.). Equipment that is totally unclassified is not allocated further. This approach has the same downside as the allocation of heat source 60 described above. Equipment that is truly different is erroneously assigned to other categories.

In some analyses, various types of equipment are grouped together.

Code Grouping	EII Code	NFIRS definitions
Central heat	132	Furnace or central heating unit
	133	Boiler (power, process or heating)
Fixed or portable space heater	131	Furnace, local heating unit, built-in
	123	Fireplace with insert or stove
	124	Heating stove
	141	Heater, excluding catalytic and oil-filled
	142	Catalytic heater
	143	Oil-filled heater
Fireplace or chimney	120	Fireplace or chimney
	121	Fireplace, masonry
	122	Fireplace, factory-built
	125	Chimney connector or vent connector
	126	Chimney – brick, stone or masonry
	127	Chimney-metal, including stovepipe or flue
Fixed wiring and related equipment	210	Unclassified electrical wiring
	211	Electrical power or utility line
	212	Electrical service supply wires from utility
	213	Electric meter or meter box
	214	Wiring from meter box to circuit breaker
	215	Panel board, switch board or circuit breaker board
	216	Electrical branch circuit
	217	Outlet or receptacle
	218	Wall switch
219	Ground fault interrupter	
Transformers and power supplies	221	Distribution-type transformer
	222	Overcurrent, disconnect equipment
	223	Low-voltage transformer

	224	Generator
	225	Inverter
	226	Uninterrupted power supply (UPS)
	227	Surge protector
	228	Battery charger or rectifier
	229	Battery (all types)
Lamp, bulb or lighting	230	Unclassified lamp or lighting
	231	Lamp-tabletop, floor or desk
	232	Lantern or flashlight
	233	Incandescent lighting fixture
	234	Fluorescent light fixture or ballast
	235	Halogen light fixture or lamp
	236	Sodium or mercury vapor light fixture or lamp
	237	Work or trouble light
	238	Light bulb
	241	Nightlight
	242	Decorative lights – line voltage
	243	Decorative or landscape lighting – low voltage
	244	Sign
Cord or plug	260	Unclassified cord or plug
	261	Power cord or plug, detachable from appliance
	262	Power cord or plug- permanently attached
	263	Extension cord
Torch, burner or soldering iron	331	Welding torch
	332	Cutting torch
	333	Burner, including Bunsen burners
	334	Soldering equipment
Portable cooking or warming equipment	631	Coffee maker or teapot
	632	Food warmer or hot plate
	633	Kettle
	634	Popcorn popper
	635	Pressure cooker or canner
	636	Slow cooker
	637	Toaster, toaster oven, counter-top broiler
	638	Waffle iron, griddle
	639	Wok, frying pan, skillet
	641	Breadmaking machine

Equipment was not analyzed separately for confined fires. Instead, each confined fire incident type was listed with the equipment or as other known equipment.

Item First Ignited. In most analyses, mattress and pillows (item first ignited 31) and bedding, blankets, sheets, and comforters (item first ignited 32) are combined and shown as “mattresses and bedding.” In many analyses, wearing apparel not on a person (code 34) and wearing apparel on a person (code 35) are combined and shown as “clothing.” In some analyses, flammable and combustible liquids and gases, piping and filters (item first ignited 60-69) are combined and shown together.

Area of Origin. Two areas of origin: bedroom for more than five people (code 21) and bedroom for less than five people (code 22) are combined and shown as simply “bedroom.” Chimney is no longer a valid area of origin code for non-confined fires.

Rounding and percentages. The data shown are estimates and generally rounded. An entry of zero may be a true zero or it may mean that the value rounds to zero. Percentages are calculated from unrounded values. It is quite possible to have a percentage entry of up to 100% even if the rounded number entry is zero. The same rounded value may account for a slightly different percentage share. Because percentages are expressed in integers and not carried out to several decimal places, percentages that appear identical may be associated with slightly different values.

Appendix B. Methodology and Definitions Used in “Leading Cause” Tables

The cause table reflects relevant causal factors that accounted for at least 2% of the fires in a given occupancy. Only those causes that seemed to describe a scenario are included. Because the causal factors are taken from different fields, some double counting is possible. Percentages are calculated against the total number of structure fires, including both confined and non-confined fires. Bear in mind that every fire has at least three “causes” in the sense that it could have been prevented by changing behavior, heat source, or ignitability of first fuel, the last an aspect not reflected in any of the major cause categories. For example, several of the cause categories in this system refer to types of equipment (cooking, heating, electrical distribution and lighting, clothes dryers and washers, torches). However, the problem may be not with the equipment but with the way it is used. The details in national estimates are derived from the Version 5.0 of the U.S. Fire Administration’s National Fire Incident Reporting System (NFIRS 5.0). This methodology is based on the coding system used in Version 5.0 of NFIRS. The *NFIRS 5.0 Reference Guide*, containing all of the codes, can be downloaded from <http://www.nfirs.fema.gov/documentation/reference/>. Actual estimates are projections based derived from NFPA’s annual fire department experience survey and the procedures below.

Cooking equipment and heating equipment are calculated by summing non-confined fires identified by equipment involved in ignition and relevant confined fires. Confined fires will be shown if they account for at least 1% of the incidents. **Confined cooking fires** (cooking fires involving the contents of a cooking vessel without fire extension beyond the vessel) are identified by NFIRS incident type 113;

Confined heating equipment fires include **confined chimney or flue fires** (incident type 114) and **confined fuel burner or boiler** fires (incident type 116). The latter includes delayed ignitions and incidents where flames caused no damage outside the fire box. The two types of confined heating fires may be combined or listed separately, depending on the numbers involved.

Contained trash or rubbish fires with no flame damage to structure or its contents are identified by incident type 118. No cause can be ascertained for these incidents, but they account for a substantial share of the incidents in some occupancies. When appropriate, these fires are generally shown at the bottom of a cause table.

Confined or contained fires (incident type 113-118) are excluded from the remaining estimates. Unknown data is allocated proportionally among non-confined fires. Reports on specific causal factors may include analysis of confined fires and consequently have higher estimates of specific causes,

Intentional fires are identified by fires with a “1” (intentional) in the field “cause.” The estimate includes a proportional share of fires in which the cause was undetermined after investigation, under investigation, or not reported. All fires with intentional causes are included in this category regardless of the age of the person involved. Intentional include those of an incendiary nature and those resulting from a deliberate misuse of the heat source. No age restriction is applied.

Fires caused by **playing with heat source** (typically matches or lighters) are identified by code 19 in the field “factor contributing to ignition.” It appears that “none” is often being used in place of

“unknown.” Fires in which the factor contribution to ignition was undetermined (UU), entered as none (NN) or left blank are considered unknown and allocated proportionally. Because factor contributing to ignition is not required for intentional fires, the share unknown, by these definitions, is somewhat larger than it should be.

The heat source field is used to identify fires started by: **smoking materials** (cigarette, code 61; pipe or cigar, code 62; and heat from undetermined smoking material, code 63); **candles** (code 66), **lightning** (code 73); and **spontaneous combustion or chemical reaction** (code 72). Fires started by heat from unclassified open flame or smoking materials (code 60) are allocated proportionally among the “other open flame or smoking material” codes (codes 61-69) in an allocation of partial unknown data. This includes smoking materials and candles. This approach results in any true unclassified smoking or open flame heat sources such as incense being inappropriately allocated. However, in many fires, this code was used as an unknown.

The equipment involved in ignition field is used to find several cause categories. This category includes equipment that functioned properly and equipment that malfunctioned.

Identified cooking equipment refers to equipment used to cook, heat or warm food (codes 620-649 and 654). Fire in which ranges, ovens or microwave ovens, food warming appliances, fixed or portable cooking appliances, deep fat fryers, open fired charcoal or gas grills, grease hoods or ducts, or other cooking appliances) were involved in the ignition are said to be caused by cooking equipment. Food preparation devices that do not involve heating, such as can openers or food processors, are not included here. A proportional share of fires involving unclassified cooking kitchen and cooking equipment (code 600) are included here.

Identified heating equipment (codes 120-199) includes central heat, portable and fixed heaters (including wood stoves), fireplaces, chimneys, hot water heaters, and heat transfer equipment such as hot air ducts or hot water pipes. Heat pumps are not included. Unclassified heating, ventilation and air condition equipment (code 100) is included here because a larger share of the whole category involved heating rather than air conditioning or ventilation equipment. A proportional share of fires involving unclassified heating, ventilation, and air conditioning equipment (code 100) are included here.

Electrical distribution and lighting equipment (codes 200-299) include: fixed wiring; transformers; associated overcurrent or disconnect equipment such as fuses or circuit breakers; meters; meter boxes; power switch gear; switches, receptacles and outlets; light fixtures, lamps, bulbs or lighting; signs; cords and plugs; generators, transformers, inverters, batteries and battery charges.

Torch, burner or soldering iron (codes 331-334) includes welding torches, cutting torches, Bunsen burners, plumber furnaces, blowtorches, and soldering equipment.

Clothes dryer or washer (codes 811, 813 and 814) includes clothes dryers alone, washer and dryer combinations within one frame, and washing machines for clothes.

Electronic, office or entertainment equipment (codes 700-799) includes: computers and related equipment; calculators and adding machines; telephones or answering machines;

copiers; fax machines; paper shredders; typewriters; postage meters; other office equipment; musical instruments; stereo systems and/or components; televisions and cable TV converter boxes,, cameras, excluding professional television studio cameras, video equipment and other electronic equipment. Older versions of NFIRS had a code for electronic equipment that included radar, X-rays, computers, telephones, and transmitter equipment. Because this code was so broad, it unfortunately converts to equipment involved undetermined.

Shop tools and industrial equipment excluding torches, burners or soldering irons (codes 300-330, 335-399) includes power tools; painting equipment; compressors; atomizing equipment; pumps; wet/dry vacuums; hoists, lifts or cranes; powered jacking equipment; water or gas drilling equipment; unclassified hydraulic equipment; heat-treating equipment; incinerators, industrial furnaces, ovens or kilns; pumps; compressors; internal combustion engines; conveyors; printing presses; casting, molding; or forging equipment; heat treating equipment; tar kettles; working or shaping machines; coating machines; chemical process equipment; waste recovery equipment; power transfer equipment; power takeoff; powered valves; bearings or brakes; picking, carding or weaving machines; testing equipment; gas regulators; separate motors; non-vehicular internal combustion engines; and unclassified shop tools and industrial equipment.

Medical equipment (codes 410-419) includes: dental, medical or other powered bed, chair or wheelchair; dental equipment; dialysis equipment; medical monitoring and imaging equipment; oxygen administration equipment; radiological equipment; medical sterilizers, therapeutic equipment and unclassified medical equipment.

Mobile property (vehicle) describes fires in which some type of mobile property was involved in ignition, regardless of whether the mobile property itself burned. Mobile property includes: highway-type vehicles such as cars, trucks, recreational vehicles, and motorcycles; trains, trolleys and subways; boats and ships; aircraft; industrial, agricultural and construction vehicles; and riding lawn mowers, snow removal vehicles and tractors.

Exposures are fires that are caused by the spread of or from another fire. These fires are identified by factor contributing to ignition 71. This code is automatically applied for all fires with exposure numbers greater than zero. As with playing with fire, Fires in which the factor contribution to ignition was undetermined (UU), entered as none (NN) or left blank are considered unknown and allocated proportionally.

Appendix C. Selected Published Incidents

The following are selected published incidents involving health care facilities. Included are short articles from the “Firewatch” or “Bi-monthly” columns in *NFPA Journal* or its predecessor *Fire Journal* and incidents from either the large-loss fires report or catastrophic fires report. If available, investigation reports or NFPA Alert Bulletins are included and provide detailed information about the fires.

It is important to remember that this is anecdotal information. Anecdotes show what can happen; they are not a source to learn about what typically occurs.

NFPA’s Fire Incident Data Organization (FIDO) identifies significant fires through a clipping service, the Internet and other sources. Additional information is obtained from the fire service and federal and state agencies. FIDO is the source for articles published in the “Firewatch” column of the *NFPA Journal* and many of the articles in this report.

Nursing Homes

Cigarette starts fire in nursing home, Illinois

A sprinkler controlled a fire in a bedroom of a nursing home that investigators believe started when the occupant dropped a cigarette on the bedding. The occupant admitted to smoking only in the designated smoking area, but investigators believe the evidence suggests otherwise.

The 75-room, 142-bed nursing home was one story high and covered an area of approximately 31,390 square feet (2,916 square meters). It was constructed of wood framing with wooden walls covered in a brick veneer and wood truss roof covered with asphalt shingles. It was equipped with a wet- and dry-pipe sprinkler system and a fire detection system, both monitored by a municipal wireless system.

Firefighters received the call at 5:30 p.m. and arrived two minutes later to find smoke in one wing. The incident commander upgraded the response, bringing in additional resources. When firefighters entered the building, they found that the sprinkler had activated after a maintenance person used a portable fire extinguisher on the flames in the room.

Investigators determined that the fire started when a discarded cigarette ignited bedding, a plastic mattress pad, and the mattress. The room's occupant was in the smoking lounge at the time the fire started.

The facility, which was valued at \$2 million, sustained \$10,000 in damage and its contents, which were valued at \$750,000, sustained damage estimated at \$5,000. One woman suffered from smoke inhalation.

Kenneth J. Tremblay, 2012, “Firewatch,” *NFPA Journal*, January/February 18-19.

Sprinkler controls nursing home fire, Tennessee

A sprinkler activated and alerted the staff of a nursing home to a fire in a patient's room, allowing them to remove him before he was seriously injured.

The four-story building held 150 patients and staff. Its monitored fire detection system included hardwired smoke alarms, and a wet-pipe sprinkler system provided coverage throughout.

Firefighters, who responded within two minutes of the 4:10 p.m. alarm, were met by staffers, who confirmed a fire in a patient's room on the third floor. Fire doors on the floor were closed. When they entered the section of the building in which the fire started, they found light smoke some 4 feet (1.2 meters) off the floor. The officer then ordered staff members to evacuate all patients whose doors had been open and whose rooms had filled with smoke to an area of refuge. All other patients remained in their rooms behind closed doors and sheltered in place.

When they entered the third-floor room of origin, firefighters found that a single sprinkler had already extinguished the fire.

Once the staff and patients were accounted for, three staffers were taken to the hospital for smoke inhalation. None of the patients required transport to the hospital. The electric power and the sprinkler in the fire room were shut down. Firefighters completed salvage and overhaul and restored the sprinkler and alarm systems before they left.

Investigators determined that the fire started when electrical wiring in the room arced, overheated, and ignited plastic common covering.

Damage to the structure and its contents was estimated at \$2,000.

Kenneth J. Tremblay, 2011, "Firewatch," NFPA Journal, November/December, 20.

Single sprinkler controls fire in nursing home, Illinois

Firefighters responding to an automatic alarm at a nursing home found a sprinkler controlling a fire that started in a commercial dryer and spread through ductwork to a rooftop ventilation unit.

The single-story, 80-bed nursing home was protected by a monitored wet-pipe sprinkler system and a fire alarm system that automatically transmitted an alarm directly to the local fire department.

The department received the alarm at 6:15 p.m. and responded with two engines, a ladder truck, and a district fire chief. While en route, the department received a follow-up phone call reporting that the fire was a dryer fire, and the incident commander upgraded the response to include an additional engine, ladder, and district fire chief.

Arriving fire crews found smoke showing outside the building. By the time the second group arrived, black smoke was coming from the roof. A fourth engine was dispatched as first-in

companies supplied the sprinkler system, advanced a hose line into the building, and began to assess conditions inside the structure.

One group of firefighters located the fire in the basement laundry room, where the sprinkler was holding it in check. Another crew on the roof used a hose line to extinguish the flames that had spread through the dryer's ventilation duct.

Damage to the property and its contents was estimated at \$50,000. No one was injured.

Kenneth J. Tremblay, 2011, "Firewatch", *NFPA Journal*, July/August, 22.

Propane torch ignites wall in nursing home, California

A contractor using a propane torch to remove flooring in a nursing home unknowingly ignited a wood-framed wall. The fire smoldered inside the wall until staffers in an employee break room saw smoke coming from a wall-mounted air conditioner and called 911 at 5:09 p.m.

Firefighters arriving five minutes after the alarm saw nothing showing from the outside of the building and began an interior investigation. They had just started to examine the air conditioner, which the staff had unplugged, when a firefighter informed the incident commander of a small fire at the base of the wall opposite the air conditioning unit. Opening up the wall, the firefighters found a fire burning near the base of the wall channel and used a water extinguisher to put it out.

When the fire investigators questioned the construction contractors, they learned that one of them had used a propane torch to remove flooring in that area earlier in the day. When he left the area, he was unaware that he had ignited the wall of the break room.

Fire spread was limited to the area of origin. The building, which was valued at \$5 million, sustained \$5,000 in damage. No damage estimates were given for the nursing home's contents. There were no injuries.

Kenneth J. Tremblay, 2011, "Firewatch", *NFPA Journal*, May/June, 49.

Sprinkler controls fire in commercial clothes dryer, Massachusetts

A single sprinkler above a gas-fired commercial clothes dryer in the laundry room of a 150-bed nursing and rehabilitation facility controlled a fire that started when the dryer's contents ignited. Fortunately, that section of the building was undergoing renovation, and there were no patients nearby.

The single-story, wood-frame building had a flat structural steel roof covered with wood and a rubber roof membrane. A fire detection system and a wet- and dry-pipe sprinkler system were monitored by a central station company.

The fire department received the alarm at 11:02 p.m., and responding firefighters found that the sprinkler had activated, controlling the small blaze. Fire crews extinguished the remaining flames.

The \$2 million building sustained no damage, although its contents, valued at \$1 million, sustained an estimated \$10,000 loss.

Ken Tremblay, 2010, Firewatch, *NFPA Journal*, July/August, 31-32.

Sprinkler system controls fatal nursing home fire, Massachusetts

A 51-year-old nurse's aide died of cardiac arrest in an early morning fire at a 169-bed nursing home that began when the contents of a gas-fired commercial clothes dryer ignited, causing the window in the dryer's door to fail. From there, the fire spread to the ceiling, where it activated three sprinklers and a heat detector.

The sprinklers were part of a wet-pipe sprinkler system, and the detectors were part of a system with smoke and heat detectors. Both systems were connected to a master box. The laundry room was located on the first floor in one wing of the two-story nursing home.

The fire department received the alarm at 12:33 a.m., and firefighters arriving within two minutes encountered smoke in the hallway. Noting that sprinklers had controlled the blaze, they stretched a hose line into the laundry room and quickly extinguished the remaining fire.

While firefighters were overhauling the scene, the nurse's aide left the building and suffered cardiac arrest. She was cared for by firefighters and staff but later died at a local hospital. No one else was injured or killed during the fire.

Damage to the building and its contents was not reported. Interior fire walls and doors limited the spread of smoke and flames into other parts of the building, although smoke and water damaged the first floor in the area of origin. The residents were allowed back into their rooms once the area was cleaned and the life safety systems restored.

Kenneth J. Tremblay, 2009, Firewatch, *NFPA Journal*, March/April, 26-27.

Sprinkler controls dryer fire in nursing home, Illinois

A fully operational nursing home was evacuated as smoke from burning bedding within a gas-fired clothes dryer filled the building with smoke. Open access panels leading to an elevator shaft provided an avenue for smoke to travel to upper floors. A single sprinkler fused and extinguished the fire, but five occupants suffered smoke inhalation during the incident.

The two-story building was 150 feet (45 meters) long and 75 feet (22 meters) wide and constructed of concrete block walls covered by brick. The wooden roof had asphalt shingles. The facility had 68 patient rooms and was protected by a smoke detection system with pull

stations. A wet-pipe sprinkler system provided full coverage and a central station alarm company monitored the system. The occupancy was operating 24 hours a day.

The dryer was overloaded with bed linens. The drum was unable to turn due to the weight and volume. Once the dryer was started, warm air filled the bin. The dryer overheated and ignited some of the linen. Heat and smoke coming from the dryer spread from the laundry room to the first floor and upper floor via the elevator shaft. Activation of the sprinkler system and by an employee provided the alarm at 12:53 p.m.

Firewalls and doors prevented spread of some of the smoke and most of the occupants were protected in place. However, some residents were evacuated as fire crews tried to ventilate the building. Five occupants suffered some smoke inhalation, but none were seriously injured. The building, valued at \$1 million with contents of \$350,000, suffered only \$6,000 in structural loss and \$500 of contents loss.

Kenneth J. Tremblay, 2007, Firewatch, NFPA Journal, September/October, 32.

Smoke activates nursing home emergency plan, Massachusetts

Smoke from an electrical short in a dumb waiter's wiring activated the fire detection system in a three-story nursing home, alerting occupants to a possible fire and putting the home's emergency plan into effect.

The protected wood-frame nursing home covered approximately 2,000 square feet (610 square meters) of floor space on each floor. A monitored fire detection and sprinkler system provided full coverage.

Firefighters, who received the alarm from a municipal fire alarm box at 8:03 a.m., were told by the nursing home staff that there was a fire on the second floor, where they found smoke and the remains of a fire extinguisher that staff members had expelled in the hallway. The officer in command ordered the second floor evacuated, called for hose lines to different sides of the building, and struck a second alarm. The evacuation went smoothly.

As patients were being moved, firefighters found that the smoke was coming from electrical wiring in a motor that powered a dumb waiter. Although the fire detection system operated, the fire was too small to activate the sprinkler system, and firefighters used a portable extinguisher to put the fire out.

There were no injuries, and damage was negligible.

Kenneth J. Tremblay, 2006, Firewatch, NFPA Journal, July/August, 28-29.

Light fixture starts fire in nursing home, Maryland

An arcing light fixture produced enough sparks to ignite a nursing home patient's bedding and mattress. Fortunately, the nurse in charge saw smoke coming from the room and found the patient closest to the fire calling for help from the edge of his bed. He placed the patient

on the floor and dragged him and the other patient out of the room and away from the fire. He then instructed others to call 911 at 8:30 p.m.

Firefighters arrived to find heavy smoke on the second floor and immediately called for additional resources, fearing that a number of patients might be affected. When fire crews entered the room of origin, they found the mattress on fire and flames spreading to a chair, a nightstand, and the wall.

The visually impaired patient reported hearing a “pop” and smelling smoke from the head of his bed. Investigators found that a light bulb had been screwed into the fixture incorrectly and failed to make proper contact. It eventually arced, igniting the bedding

Damage to the building was estimated at \$50,000 and to its contents at \$70,000. There were no injuries.

Kenneth J. Tremblay, 2006, Firewatch, NFPA Journal, July/August, 28.

Sprinklers limit nursing home fire damage, Ohio

Several occupants of a nursing home were treated for smoke inhalation when a fire intentionally set by a 69-year-old patient consumed combustibles placed against the door of his room.

The single-story nursing home provided 24-hour nursing care in five separate wings all connected to a central building. The wing in which the fire occurred was of protected non-combustible construction, with prefabricated concrete floors and a wooden roof deck covered with asphalt shingles. The building was protected by a wet-pipe sprinkler system and a fire detection system that included hardwired smoke and heat detectors in the residents’ rooms and common spaces. A central station alarm company monitored the sprinkler water flow and the fire alarm system.

Notification from the alarm company at 9:45 p.m. sent fire crews to the scene, where they discovered several patients unable to leave their rooms without assistance. When firefighters and police officers entering the wing encountered heavy, yellowish smoke, the police officers turned back, but the firefighters, wearing self-contained breathing apparatus and using a thermal imaging camera, continued toward the sound of a sprinkler flowing water.

One of the firefighters located the room of origin, but he could only open the door about a foot (30 centimeters). Some firefighters entered the room of origin through a window and removed the occupant, while others helped evacuated patients from other rooms in the wing.

Investigators determined that the man, who had a history of dementia and was heavily medicated for the end-stage of a terminal illness, had barricaded himself in the room by placing upholstered furniture and a mattress against the door to the hallway and stuffing the bathroom door with sheets and towels. They found three separate points of fire origin.

Heat and smoke tripped the fire alarm and activated a sprinkler, which extinguished the fire, but smoke filling the wing injured five other patients ranging in age from 69 to 90. A 24-year old woman also suffered from exposure to fire products when she helped rescue the occupants.

The victim survived the fire and admitted that he started it with matches, which he had managed to acquire despite a nursing home's policy that allows residents to smoke outside only and only with staff supervision. Residents are not allowed to keep lighters, matches, or cigarettes, although a used ashtray and a pack of cigarettes were found in the victim's room.

The building, valued more than \$6 million, suffered structural damages estimated at \$25,000. Its contents, valued at more than \$2 million, sustained losses estimated at \$50,000. No firefighters were injured.

Kenneth J. Tremblay, 2006, Firewatch, NFPA Journal, July/August, 28.

Sprinklers control nursing home fire, North Carolina

Two sprinklers and staff members extinguished a fire in the laundry room of an occupied nursing home. The single-story, fire-resistive building, which measured 400 feet (122 meters) by 400 feet (122 meters), was equipped with a fire and smoke detection system and a wet-pipe sprinkler system monitored by a central station alarm company.

The detection system sounded the alarm at 9:38 p.m., alerting staff, occupants, and the fire department to a fire in the laundry room. Firefighters arrived within five minutes and discovered that the fire had nearly been extinguished by two sprinklers and portable fire extinguishers used by the nursing home staff. Only some smoldering material remained.

Investigators determined that the fire began when an electrical wall switch arced, igniting linen stacked on a shelf against the switch. The linen burned until the detection and suppression systems activated. Investigators found significant damage to the wiring in the electrical box for the light switch.

The value of the facility was estimated at \$3.5 million. Damage to the building came to \$2,000; damage to its contents is estimated at \$1,000. There were no injuries, and the fire departments credits the detection and suppression systems and the staff for "lives saved" during the incident.

Kenneth J. Tremblay, 2006, Firewatch, NFPA Journal, May/June, 32.

Man smoking in bed starts fire in hospice wing of nursing home, Florida

A 62-year-old hospice patient who had already been caught smoking in bed earlier in the day started a fire that fatally injured him and threatened the nursing home's other occupants. At the time of the fire, nursing home patients occupied 177 beds. Seven other beds, including the victim's, were being used by hospice patients.

The single-story, 185-bed nursing home had four wings spread out like a compass around a central hub and. It was protected by a fire detection and suppression system and was fully staffed at the time of the alarm.

On the morning of the fire, a staff member discovered the victim, who was receiving oxygen through a nasal cannula, smoking in his bed. His cigarettes and lighter were taken from him and locked in a drawer. At 8:14 that evening, two nurses heard the fire alarm go off and saw smoke coming from the victim's room. Responding with a fire extinguisher, they saw flames around his legs. Heat drove them from the room before they could extinguish the fire. The nurses closed the victim's door to prevent the fire from spreading and began to evacuate patients from the wing.

The fire department received a central station alarm at 8:14 p.m. and dispatch called the facility, which confirmed the fire. Firefighters arrived a few minutes later to find smoke filling the wing and the staff removing patients. Advancing a hose line to the victim's room, they found that a single sprinkler had extinguished the blaze. They removed the victim to the hallway where he was pronounced dead. After finding another lighter and pack of cigarettes in the victim's pocket, investigators determined that the man had fallen asleep while smoking and his cigarette ignited the bedding. The victim woke and tried to escape, but he was overcome by smoke. The flames were further fueled by the medical oxygen.

Fire damage was limited to the bedding, the bed, and part of the room. The building's fire protection system had automatically activated the fire doors, confining the smoke damage to the hospice unit. The value of the building and its contents was not reported, but damage to the building was estimated at \$6,000. There were no other injuries.

Kenneth J. Tremblay, 2006, Firewatch, *NFPA Journal*, May/June, 32.

Hospital or Hospice Fires

Sprinkler controls hospital fire, Texas

A single sprinkler controlled a fire that began in a hospital linen closet when a malfunctioning heating unit ignited the linen.

The 10-story, steel-frame building, which measured 200 feet (60 meters) by 500 feet (152 meters), had concrete walls and floors and a flat roof covered by a built-up roof surface. It was protected by a wet-pipe sprinkler system and a fire alarm system, both of which operated as designed.

The sixth-floor linen closet, which had previously been used as a shower room, contained a three-shelf metal cart with plastic sides. An older heating unit overhead had been inadvertently turned on, and investigators, who discovered that a piece of the heating element was missing, concluded that it had broken off and fallen into the cart. The linen in the cart subsequently ignited and burned until the single sprinkler in the closet activated and controlled it.

Firefighters alerted to the fire by the waterflow alarm arrived and found the fire smoldering in the closet. They removed the cart and put the fire out, then controlled the flow of water from the sprinklers, which had already deposited 5 to 6 inches (12 to 15 centimeters) on the fire floor. Using a nearby stairwell, the firefighters pushed the water down to the lowest level and kept it from spreading onto the other floors.

None of the 11 patients on the floor was affected by the fire, which was confined to the linen closet. The building sustained \$1,000 in damage, while the contents of the closet sustained an estimated \$20,000 loss.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, September/October 29-30.

Hospital staff extinguishes fire in computer, Pennsylvania

Staff members notice smoke coming from a mobile computer in a third-floor corridor at a hospital and called security, which called 911 at 11:21 a.m. to report a fire on the third floor. Shortly afterwards, the automatic alarm sounded.

The fire occurred in a four-story, steel-frame addition, which had concrete block walls and floors. It also had a fire detection system and a wet-pipe sprinkler system.

The computer, which was connected to a 120-volt receptacle outlet, was usually moved between rooms to log in patient data. Staff noticed smoke coming from the computer, but flames appeared before anyone could unplug it.

By the time firefighters arrived, staffers had extinguished the blaze. A ladder crew sent to the roof opened stairwell scuttles and used positive pressure ventilation to evacuate the smoke from the floor.

There were no injuries, and the fire did not spread. Damage estimates were not reported.

Kenneth J. Tremblay, 2012, "Firewatch," *NFPA Journal*, September/October 29.

Maintenance worker extinguishes electrical fire, Texas

A hospital maintenance worker detected a fire that started when mops and cardboard boxes stored in a mechanical and electrical room ignited after a fire started in an overheated electrical panel. The worker extinguished the blaze before sprinklers could activate.

The single-story, steel-frame hospital, which was 40 feet (12 meters) long and 40 feet (12 meters) wide, had concrete walls. The building had an automatic detection system and a wet-pipe sprinkle system.

The fire detection system alerted the hospital's occupants and the fire department at 6:24 p.m. By the time firefighters arrived four minutes later, however, the maintenance staff had extinguished the blaze.

Investigators found that a loose electrical lug securing an electrical cable on a panel that provided electricity to a chiller had caused the short circuit. Before they left the scene, firefighters were advised that the electrical power to that panel had been by-passed in order to restore function to the chiller and other equipment.

The value of the building and its contents was not reported, but damage estimates are reported to have come to approximately \$1,000. There were no injuries.

Kenneth J. Tremblay, 2012, "Firewatch", *NFPA Journal*, May/June, 39-40.

Sprinkler extinguishes intentional fire in hospital, Florida

A single sprinkler extinguished a fire that a 58-year-old man set by igniting a paper towel dispenser in a single-occupant restroom at a hospital.

The 10-story hospital was constructed of steel and concrete, and had concrete block walls. The structure was protected by a fire detection system and a wet-pipe sprinkler system.

Firefighters responding to the alarm at 6:10 a.m. arrived 8 minutes later. Security personnel directed them to the second floor, where they found that a sprinkler had already extinguished the blaze.

Security cameras caught the man smoking near the bathroom just before the fire started. Investigators determined that he used his lighter to ignite the paper towels and that the fire spread to the wall-mounted dispenser. The sprinkler extinguished the blaze before it could spread to anything else.

The building and its contents, which were valued at more than \$25 million dollars, sustained \$24,000 in damage. There were no injuries. Police arrested the perpetrator

Kenneth J. Tremblay, 2011, *NFPA Journal*, March/April, 30.

Thermal imaging camera finds burning bearing, Georgia

When firefighters arriving 4 minutes after a 5:17 p.m. fire alarm activation at a three-story hospital were told there was smoke in the third-floor hallways, the officer in charge asked for additional resources. Patients from the second and third floors were evacuated to the lobby and other parts of the building.

As firefighters searched for the source of the smoke, the fire department stayed in contact with the hospital administration and the maintenance staff, which shut down the air-handling units for the second and third floors. About an hour into the incident, crews using thermal imaging equipment found a burned bearing on the conduit box of an air-handling door in the basement.

Once the unit was isolated and other units turned back on, the smoke cleared, and the patients were allowed to return to their rooms.

The amount of property damage was not reported.

Ken Tremblay, 2010, "Firewatch", *NFPA Journal*, May/June, 42.

Sprinkler controls hospital fire, Texas

A sprinkler extinguished a fire in a hospital laboratory's electrical room before firefighters responding to the 7:15 a.m. water flow alarm arrived.

The single-story, steel-frame building had a concrete floor, metal stud walls, and a flat, built-up roof that was covered with tar. It also had fire alarm and wet-pipe sprinkler systems monitored by a central station company.

Investigators determined that the fire began when a power supply transformer malfunctioned and overheated, causing the components of the unit to ignite. Smoke from the fire tripped the smoke detector in the room and the heat activated the sprinkler.

Damage to the building and its contents was not reported. No one was injured.

Kenneth J. Tremblay, 2010, "Firewatch," *NFPA Journal*, January/February, 27.

Patient burned during operation, Nebraska

A woman undergoing an operation was burned when the dressing applied to her neck ignited in the operating room.

The building in which the operating theater was located was constructed of noncombustible components and was equipped with a monitored fire detection system and a wet-pipe sprinkler system.

During the procedure, the patient's neck was prepped with alcohol, which soaked into gauze bandages and gave off vapors that pooled in the area. When a cauterizing instrument came into contact with the vapors, they ignited and set the bandages on fire.

The patient suffered nonfatal burns to her neck. The fire, which was not large enough to activate the sprinklers, caused no structural damage.

Ken Tremblay, 2009, "Firewatch", *NFPA Journal*, November/December, 26.

Vacant hospital fire causes \$60 million in direct property damage, New York

A New York fire in a vacant, six-story, historic psychiatric hospital made of unprotected, ordinary construction was reported at 7:32 p.m. on a May 2007 evening. No one was in the building at the time of the fire. No automatic detection or suppression equipment was present. This fire started when lightning struck the building during a thunderstorm. Firefighters were faced with a rapidly spreading fire and approximately 26 exposed buildings, many of which were interconnected. The yard hydrant system had been shut down years earlier, forcing firefighters to locate hydrants a distance away. The fire caused \$60,000,000 in direct property damage.

Adapted from Stephen G. Badger's "Large-Loss Fires in the United States in 2007," *NFPA Fire Analysis and Research*, Quincy, MA, 2008

Arcing starts fire in operating room, Connecticut

Smoke detectors alerted the safety personnel of an eight-story hospital to a fire in a fourth-floor operating room, and their rapid response with portable fire extinguishers, as well as the activation of a sprinkler, prevented significant loss outside of the room

The protected, noncombustible facility was equipped with a fire detection system and a wet-pipe sprinkler system.

Alerted by the fire alarm, hospital safety personnel responded and discovered the fire in a fourth-floor operating room. They ran to get portable fire extinguishers, returning to the operating room at about the same time as the fire department. By this time, a sprinkler had operated, confining the fire to the room, and firefighters extinguished the blaze.

Investigators believe that the fire started when an electrical arc in a computer monitor ignited the computer's plastic housing.

Damage estimates were not reported, and no one was injured.

Kenneth J. Tremblay, 2006, Firewatch, NFPA Journal, January/February, 20.