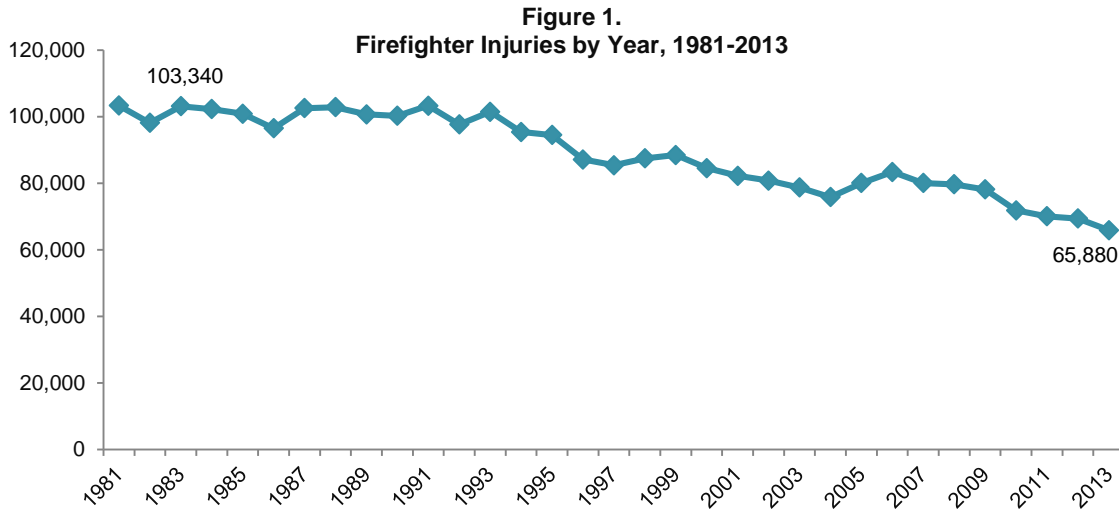


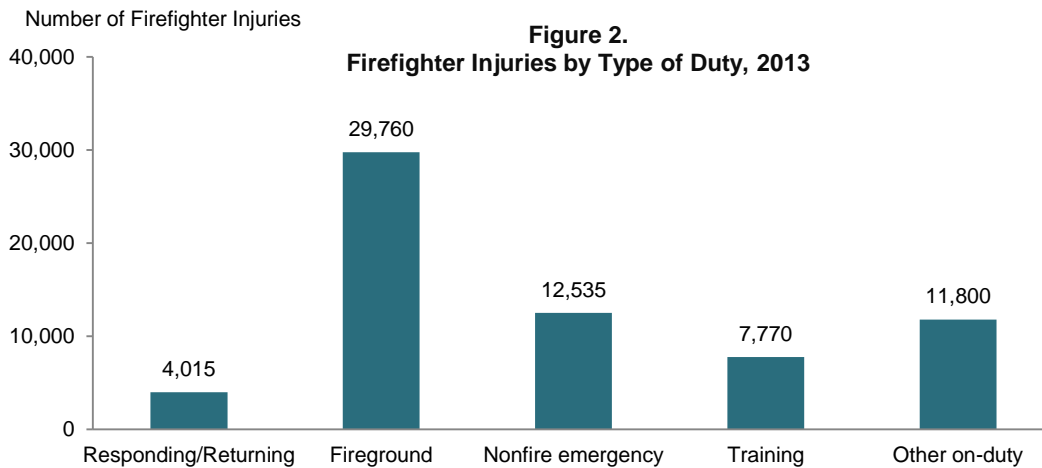


Trends in Firefighter Injuries

Almost 66,000 line of duty firefighter injuries were reported in 2013, according to NFPA estimates. Based on the results of the 2013 fire experience survey, NFPA estimates that there were 65,880 injuries to firefighters in the line of duty in 2013, as indicated in Figure 1.¹ This is the fewest number of firefighter line of duty injuries since NFPA began reporting this data in 1981 and is a 5% drop from the 69,400 estimated injuries in 2012.



Almost half of firefighter injuries occurred at the fireground. An estimated 29,760 of the on-duty injuries (45% of the total) occurred during fireground operations. Injuries during training activities (12%) or while responding to or returning from an incident (6%) accounted for the remaining injuries. Another 12,535 injuries (19%) occurred at nonfire emergency incidents, and 11,800 injuries (18%) during other on-duty activities.



¹ The estimates in this report were taken from NFPA’s report, [U.S. Firefighter Injuries - 2013](#), by Michael J. Karter, Jr. and Joseph L. Molis.

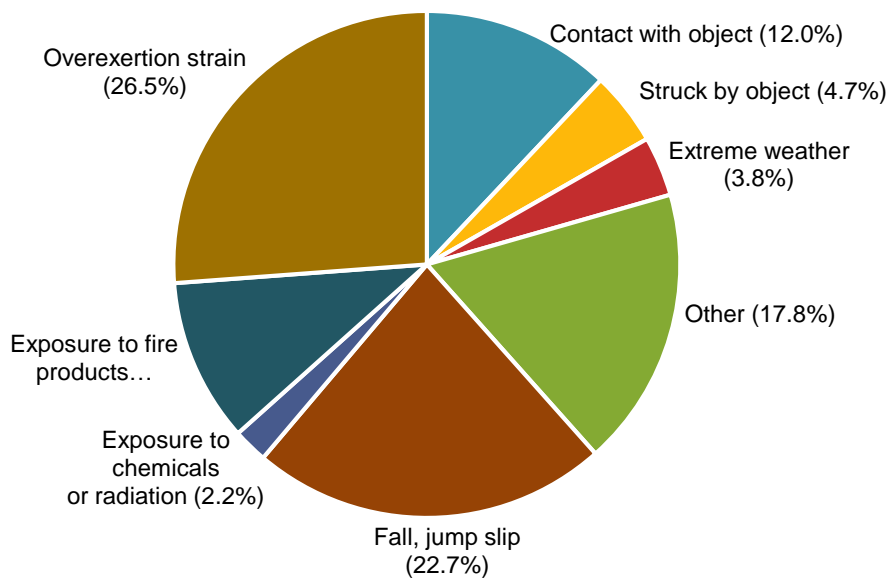
Firefighters work in hazardous conditions with physically demanding job tasks, and they experience a variety of injuries, with musculoskeletal injuries particularly high among them.

- The major type of injury for all line of duty injuries was *strain, sprain, muscular pain*, accounting for 57% of injuries, followed by *wound, cut, bleeding, bruise*, with 16% of the total.
- Thermal stress (3.2%), burns (3%), smoke or gas inhalation (2.9%), and dislocation, fracture (2.9%) were the other leading types of injury for all line of duty injuries.
- In addition to injuries, NFPA estimates that there were 7,100 exposures to infectious diseases (such as hepatitis, meningitis, HIV) and 17,400 exposures to hazardous conditions (asbestos, radioactive materials, chemicals, etc.) in 2013.

Firefighters face a number of types of hazards on the job, including physical (heat), chemical (carbon monoxide), biological (infectious disease), ergonomic (lifting, awkward postures), safety (falling objects, vehicular), and psychological (stress).

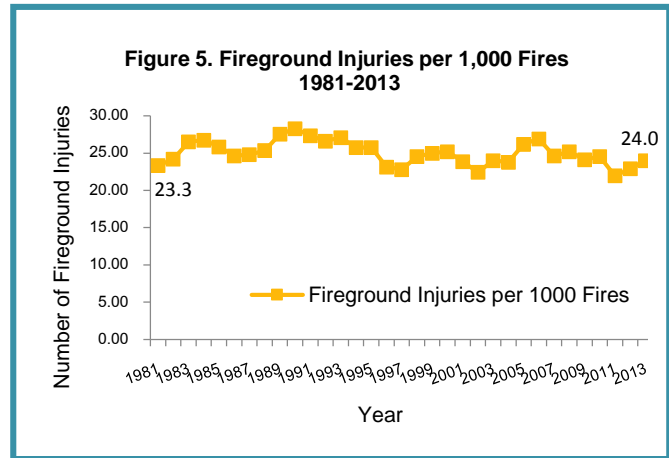
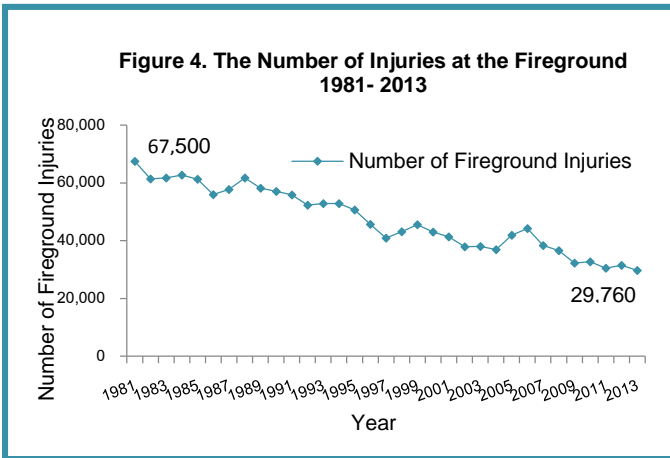
The leading causes of injuries experienced on the fireground are *overexertion or strain* (26.5% of all fireground injuries) and *falls, slips, or jump* (22.7%). As shown in Figure 3, other major causes of injury included contact with object (12%), exposure to fire products (10.4%), and struck by object (4.7%).

**Figure 3.
Fireground Injuries by Cause, 2013**

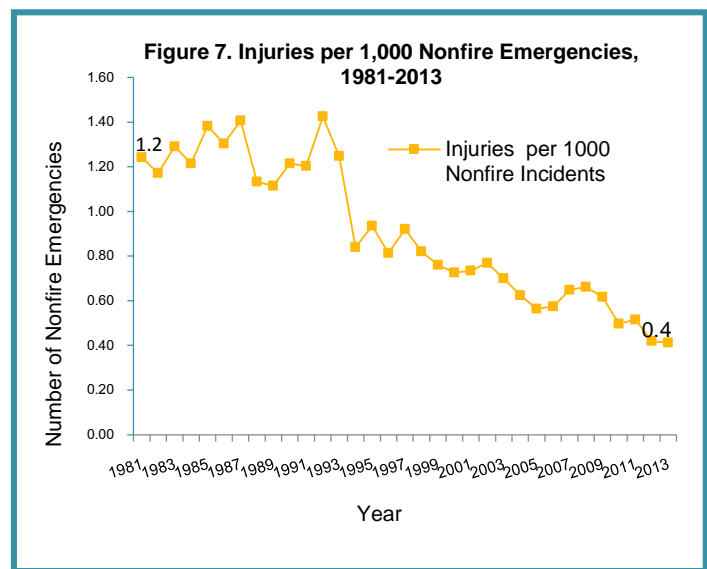
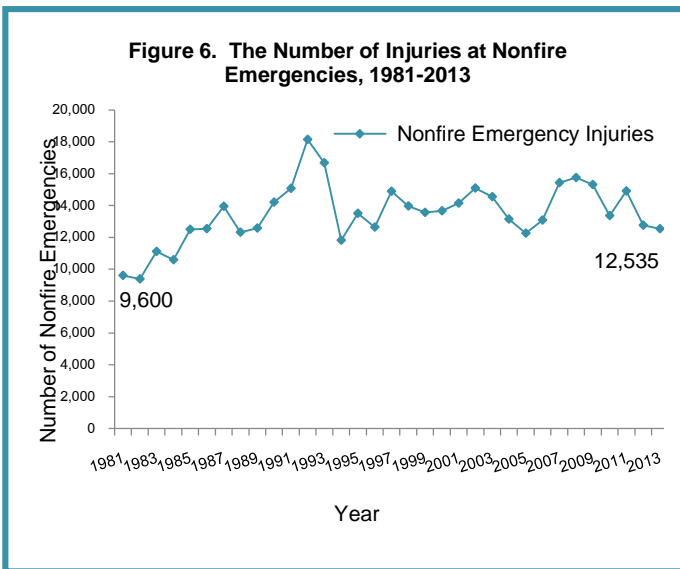


Fireground injuries per 1,000 fires do not show improvement, underscoring the hazardous nature of work in firefighting occupations

Although injuries at the fireground have fallen by 55.9% since 1981, as shown in Figure 4, there has also been a 57.1% decrease in the number of fires. As shown below in Figure 5, the rate of fireground injuries per 1,000 fires since 1981 does not show a consistent up or down trend.



Injuries to firefighters in non-fire emergencies increased from 9,600 in 1981 to 12,535 in 2013, an increase of 31%, as shown in Figure 6. This increase was largely due to a substantial 294% increase in the number of non-fire emergencies. The injury rate for non-fire emergencies has actually declined due to the increase in incidents, from 1.24 injuries per 1,000 non-fire emergencies in 1981 to 0.41 injuries in 2013, as shown in Figure 7.



The number of fireground injuries experienced by a fire department is influenced by the size of the underlying community. The number of fires that a fire department responds to is directly related to population size it serves, and the number of fireground injuries incurred by a fire department is related to the number of fires to which it responds, as illustrated by data from 2013 in Table 1.

Table 1. Average Number of Fires, Fireground Injuries, and Injury Rates, by Population Protected, 2013				
Population of Community Protected	Average Number of Fires	Average Number of Fireground Injuries	Number of Fireground Injuries Per 100 Fires	Number of Fireground Injuries Per 100 Firefighters
1,000,000 or more*	4,574.3	120.1	2.6	5.5
500,000 to 999,999	2,258.8	42.5	1.9	3.8
250,000 to 499,999	982.1	29.5	3.0	6.8
100,000 to 249,999	479.0	8.7	1.8	3.8
50,000 to 99,999	190.2	3.2	1.7	3.1
25,000 to 49,999	105.3	2.4	2.3	3.9
10,000 to 24,999	57.7	0.9	1.6	2.1
5,000 to 9,999	3.9	0.4	1.3	1.3
2,500 to 4,999	20.6	0.3	1.5	1.1
Under 2,500	10.0	0.2	2.0	1.0

*Excludes New York City

- The average number of fireground injuries by department ranged from a high of 120.1 for departments that protected populations of 1,000,000 or more to a low of 0.2 for departments that protect populations of fewer than 2,500.
- This wide range narrows if the number of fireground injuries per 100 fires is calculated, from a high of 3.0 injuries per every 100 fires for fire departments that protect communities with populations of 250,000 to 499,999 to a low of 1.3 injuries per every 100 fires for departments that protect communities with populations from 5,000 to 9,999.
- The highest injury rates per 100 firefighters were in departments that protected populations of 250,000 to 499,999 and those that protected 1,000,000 or more, while the lowest rates were in the departments that protected the smallest populations.

Protecting Firefighter Safety and Health

NFPA 1500, Standard on Fire Department Occupational Safety and Health Program specifies minimum requirements for fire department occupational safety and health programs and identifies core elements of an occupational health and safety program, including requirements in the areas of organization/policy, risk management, roles and responsibilities, accident prevention and investigation, occupational safety and health committees, records management and data analysis, appointment of health and safety officers, training and education, personal protective equipment, emergency operations, tools and equipment, post-incident analysis, facility safety, infection control, medical and physical requirements, behavioral health and wellness, critical incident stress management, and others.