

INJURY UPDATE

A Report to Oklahoma Injury Surveillance Participants*

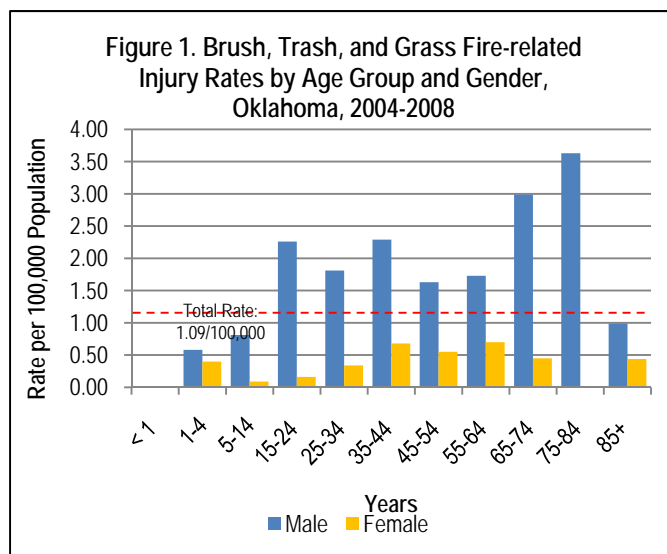
May 13, 2011

Brush, Trash, and Grass Fire-Related Injuries, Oklahoma, 2004-2008

Each year, more than 650,000 outdoor fires occur in the United States, resulting in 50 deaths, 875 injuries, and more than \$150 million in damages. Nearly 50% of outdoor fires are trash or rubbish fires. Fire and burn-related injuries are the sixth leading cause of unintentional injury death in Oklahoma. Burns and smoke inhalation injuries that result in hospitalization or death are reportable conditions in Oklahoma, and the Injury Prevention Service has been collecting burn and smoke inhalation data since September 1987. During the 5-year period 2004-2008, 1,998 Oklahomans died or were hospitalized in a burn center as a result of a burn or smoke inhalation injury. Ten percent (194) of these injuries involved a brush, trash, or grass fire.

Brush, trash, or grass fires resulted in 33 deaths and 161 non-fatal burn or smoke inhalation-related injuries.

Males were 4.5 times more likely than females to suffer a burn or smoke inhalation injury due to a brush, trash, or grass fire (1.80 and 0.39 injuries per 100,000 population, respectively). Children under 15 years of age had the lowest rate of injury of any age group (0.43 per 100,000), while adults aged 35-44 had the highest (1.49 per 100,000). Males aged 75-84 had the highest rate of injury of any group (3.63 per 100,000) (Figure 1). Eighty-eight percent of individuals injured were white and 10% were Native American. The rate of injury for whites and Native Americans was the same over the 5-year period (1.18 per 100,000).



Nearly two-thirds (63%) of injuries involved some sort of accelerant. The most common accelerant was gasoline (85%); other accelerants used included diesel fuel, propane, methanol, and aerosol cans. The most common types of fires were intentionally set brush (61%) and trash (24%) fires. Six percent of fires involved an unspecified grass fire, and 3% were due to stuck motor vehicles spinning wheels (Table 1). Drug or alcohol use was a contributing factor in 14% of injuries to individuals aged 16 and older. Clothing ignited in 40% of all non-fatal brush, trash, and grass fire injuries, compared to over 90% of fatal injuries. Six percent of non-fatal injury cases suffered a smoke inhalation injury, compared to half (49%) of fatal injuries.

Table 1. Types of Fires Resulting in Injury, Oklahoma, 2004-2008

Type of Fire	Number	Percent
Brush	118	60.8%
Trash	47	24.2%
Grass	12	6.2%
MVA*	6	3.1%
Other	11	5.7%
	194	100.0%

*Motor vehicle accident



*The INJURY UPDATE is a publication of the Injury Prevention Service, Oklahoma State Department of Health. This and other IPS information may be obtained from the Injury Prevention Service, Oklahoma State Department of Health, 1000 N.E. 10th Street, Oklahoma City, OK 73117, 405-271-3430 or 1-800-522-0204 (in Oklahoma). IPS publications are also available at <http://ips.health.ok.gov>

The average length of hospital stay for individuals injured in a brush, trash, or grass fire was 13 days. On average, those injured sustained burns to 16% total body surface area. Those with fatal injuries sustained burns to 40% total body surface area, more than three times that of non-fatal injuries (13%) (Table 2). Four percent of brush, trash, and grass fire injuries were work-related. More than one-fourth (28%) of hospital stays were paid by private insurance, another one-fourth (26%) by self-pay, 19% by Medicare, and 14% by Medicaid.

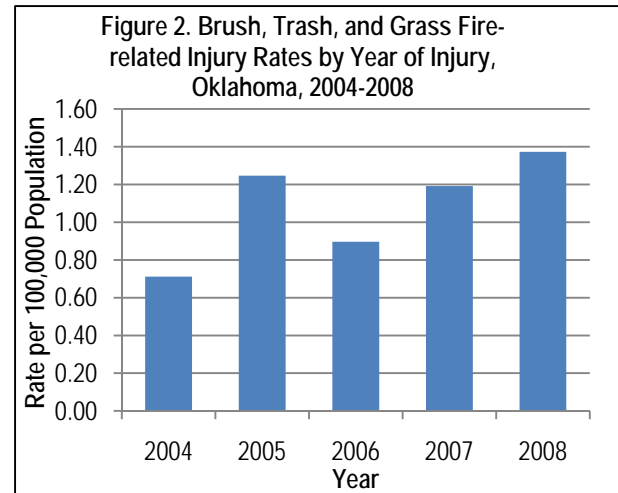
The counties with the highest rates of injury were Okmulgee (4.1 per 100,000), Lincoln (3.7), McCurtain (3.0), and Pontotoc (2.8). County of injury was not known for 20% of cases. Nearly two-thirds (64%) of injuries occurred between noon and 8:00 PM. Half of all injuries occurred from May to August. From 2004-2008, the number and rate of brush, trash, and grass fire-related injuries doubled (Figure 2).

CASE BRIEFS

- A young adult volunteer firefighter was helping to fight a grass fire when high winds caused cedar trees nearby to ignite. The flames came too close to the fire truck the victim was riding in, and he was forced to run through the flames to get away from the fire. He was wearing turnout gear, a mask, and helmet. He sustained second degree burns to more than 10% of his body and was hospitalized for 18 days before being discharged home.
- A middle-aged woman was an unrestrained driver in a single-vehicle motor vehicle crash. She was drinking heavily at her son's home and attempted to drive home after they had an argument. Her vehicle ran off the left side of the roadway and impacted an embankment. The driver's side door was lodged against the embankment and she was unable to exit the vehicle. The vehicle was lodged in soft sand and surrounded by high grass. The spinning of the vehicle's wheels started a grassfire. She died at the scene from heavy burns and smoke inhalation.
- An older man was burning brush on his private property. He was using gasoline as an accelerant. The gasoline can ignited and his clothes caught on fire. He was able to drive his tractor back to his house to call for help. He was hospitalized with burns to more than one-third of his body and died ten days later.
- An adult man was burning trash using gasoline as an accelerant. The fire flashed and ignited his shirt. He sustained partial thickness burns to 8% of his body and was hospitalized for two days.
- An older man fell into a large pit of burning brush. He could not get out of the fire due to hip problems. A family member eventually pulled him out. He was hospitalized for three days with burns to more than one-fourth of his body before he died.
- An older man was burning trash in a barrel at his home. The barrel was blown over by high winds and caught the surrounding grass on fire. The man tried to stomp out the fire and his pants ignited. He rolled on the ground, but this did not entirely extinguish the flames. He was hospitalized with burns to more than one-third of his body and died five days later.

Table 2. Mean Days of Hospitalization and Mean Percentage Total Body Surface Area Burned for Fatal and Non-fatal Injuries, Oklahoma, 2004-2008

	Number of days hospitalized	Degree of Burn		Total
		First/Second	Third	
Fatal	15	13%	12%	40%
Non-fatal	13	11%	9%	13%



PREVENTION

- Do not burn brush or trash using accelerants such as gasoline.
- Instead of burning brush and trash, haul it to a local landfill.
- Do not put articles, such as aerosol cans, that have the potential to explode into fires. Dispose of these objects as recommended on the label.
- Do not allow children to burn brush or trash or to play around burning or recently extinguished fires.
- Do not wear loose fitting clothes near a fire. Loose fitting clothes can hang over the fire and are more susceptible to catching fire.
- Do not burn brush or trash while drinking alcohol or using any sort of mind-altering drugs.
- Adhere to state administered burn bans.
- Do not leave a brush or trash fire unattended.
- Be sure there is a source of water or a fire extinguisher easily accessible to put out a fire.

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