

INJURY UPDATE

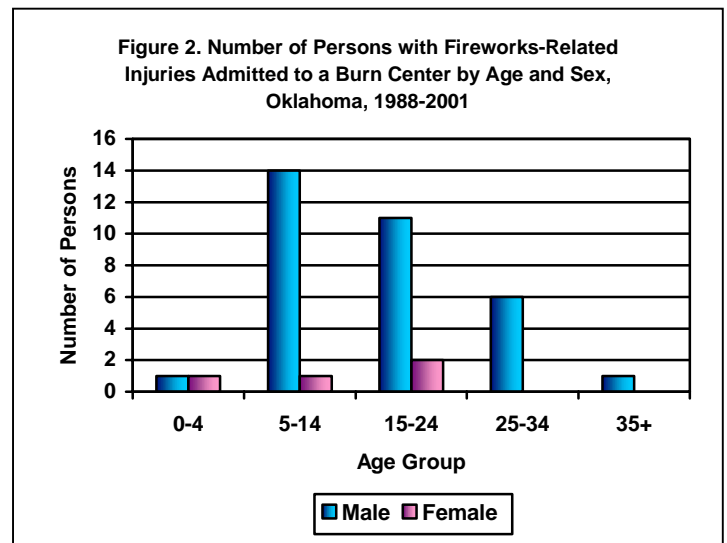
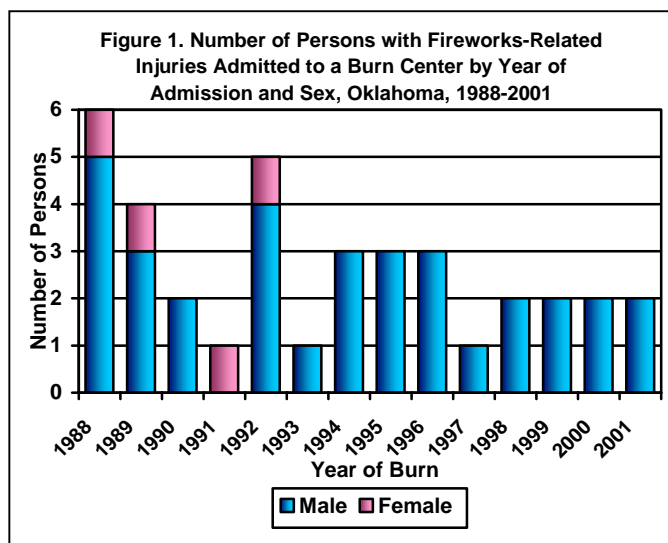
*A Report to Oklahoma Injury Surveillance Participants**

June 30, 2003

Fireworks-Related Burn Injuries Admitted to a Burn Center, Oklahoma, 1988-2001

During 2001, the U.S. Consumer Product Safety Commission (CPSC) estimated that firework devices were involved in 9,500 injuries treated in U.S. hospital emergency departments. Sixty percent of fireworks-related injuries occurred during the July 4th holiday period (June 22 – July 22).¹ The number of emergency department treated fireworks-related injuries has decreased over the past several years with the exception of 2000. Due to 2000 being a millennial year celebration, there were an unusually high number of injuries in January (1,400 in 2000; 400 in 2001).¹ From 1992-1994, an average of 12,500 injuries were treated each year. In a study done by the CPSC, most persons with fireworks-related injuries were treated at emergency departments and released, yet an estimated 12 out of every 100 injuries required hospital admission or transfer to a burn center for treatment.¹ The hands, eyes, and head/face were the parts of the body most commonly injured. Backyard fireworks such as firecrackers, bottle rockets, Roman candles, fountains, and sparklers caused two-thirds of fireworks-related injuries.² This report describes fireworks-related injuries that were serious enough to result in death or require admission to a burn center in Oklahoma from 1988-2001.

In Oklahoma, as seen nationally, fireworks-related injuries decreased between 1988 and 2001 (Figure 1). During this 14-year period, 37 Oklahomans were injured due to fireworks, including one fatality. Males were 8.3 times more likely to be injured than females. Since 1993, males have accounted for all the injuries. Ages ranged from children 2 years of age to adults 51 years of age; 46% of the injuries occurred among children 14 years of age and younger (Figure 2). The annual rate of fireworks-related injuries requiring admission to a burn center was highest among males between the ages of 5 to 14 years of age (0.4 per 100,000 population).



*The INJURY UPDATE is a report produced by the Injury Prevention Service, Oklahoma State Department of Health. Other issues of the INJURY UPDATE may be obtained from the Injury Prevention Service, Oklahoma State Department of Health, 1000 N.E. 10th Street, Oklahoma City, Oklahoma 73117-1299, 405/271-3430 or 1-800-522-0204 (in Oklahoma). INJURY UPDATES and other IPS information is also available at www.health.state.ok.us/program/injury.

Injuries occurred throughout the day, but most (22/37, 59%) occurred between 7:00 p.m. and 2:00 a.m. The 4th of July was the most frequent date of injury, accounting for 14 (38%) injuries. Sixty-five percent (24/37) of the injuries occurred between June 15th (when fireworks stands can legally open) and July 15th (Figure 3). Alcohol use by the injured person was reported for 4 persons, all of whom were males over 18 years of age. Two of the alcohol-related injuries occurred during a house fire caused by fireworks that exploded inside the home.

Burn center stays for injured persons ranged from 1 to 33 days with an average of 6 days. The average total body surface area (TBSA) burned for injured persons was 9%. The majority (22/37, 59%) of the injuries were 5% or less TBSA (Figure 4).

CASE BRIEFS

- A 9-year old girl was holding a handful of sparklers while her mother tried to light them with a lighter. The sparklers all ignited at the same time and burned the child's hands. She spent 10 days in a burn center.
- An 11-year old boy was lighting firecrackers; one of them did not go off. He tried to relight it and the firecracker exploded in his face. He spent 33 days in a burn center.
- A 3-year old girl was standing near a firework when it malfunctioned. The firework was supposed to spin and light up like a flower. Instead, the firework went off like a chaser and flew up the girl's shirt catching it on fire.
- A 7-year old boy and his family were playing with fireworks when a rocket type firework was misdirected. It struck the boy in the head and the "butterfly" type fireworks in the tip of the rocket flew into the hood of his jacket and burned his scalp. He spent 2 days in a burn center.
- A 12-year old boy was playing with firecrackers when one exploded near a gas can. The gas can ignited burning 10% of the boy's body; he spent 6 days in a burn center.
- A 10-year old boy was playing with gunpowder trying to make a firecracker. He used matches to light the "firecracker," and it exploded burning 4% of his body.
- A 19-year old man was riding in a car with friends. They were lighting and throwing firecrackers out the windows when a lit firecracker fell into a pile of fireworks that were inside the car. The fireworks ignited and burned 16% of the man's body. He spent 12 days in a burn center.

Figure 3. Number of Persons with Fireworks-Related Injuries Admitted to a Burn Center Between June 15th and July 15th, Oklahoma, 1988-2001

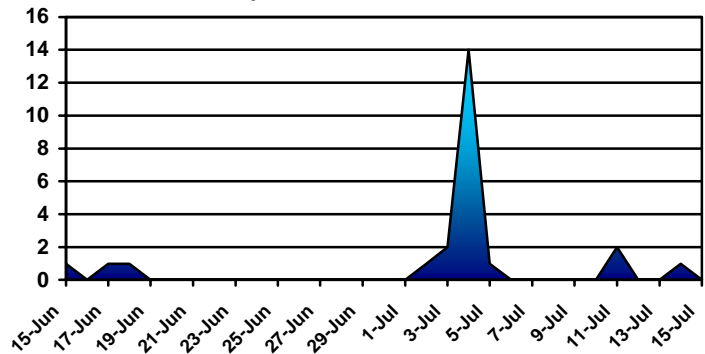
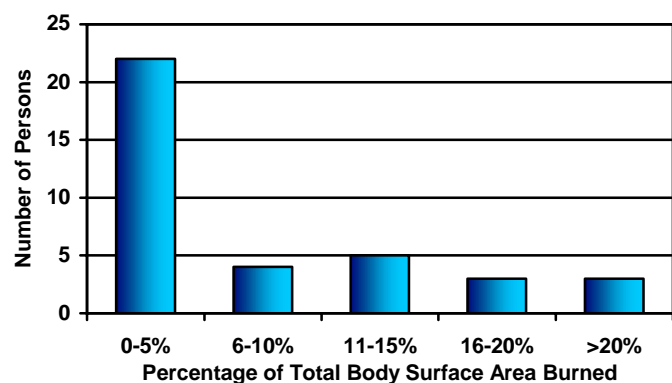


Figure 4. Number of Persons with Fireworks-Related Injuries Admitted to a Burn Center by Percentage of Total Body Surface Area Burned, Oklahoma, 1988-2001



PREVENTION

Several laws have been passed in Oklahoma to increase fireworks safety. In Oklahoma, it is illegal to offer fireworks for retail sale to residents of the state before June 15th or after July 6th and before December 15th or after January 2nd. It is unlawful to explode or ignite fireworks within 500 feet of any church, hospital, asylum, public school, unharvested agricultural crop, or where fireworks are stored or sold. In addition, fireworks may not be lit in or thrown from motor vehicles or thrown at or near a group of people. State law in Oklahoma prohibits the sale, gift, distribution, or use of skyrockets with sticks as defined by the U.S. Department of Transportation. This prohibition includes, but is not limited to, explosive devices commonly known as “bottle rockets.” Under state law, any city or town can pass ordinances as deemed necessary to regulate or prohibit the sale and use of fireworks within its corporate limits. Information on Oklahoma’s fireworks law, Title 68, Article 16, Section 1621-1634, can be accessed through the Office of the State Fire Marshal’s website (www.oklaosf.state.ok.us/~firemar/fwxlaws.htm). Additional information regarding national fireworks regulations can be accessed by searching for the keyword “fireworks” at the U.S. CPSC website (www.cpsc.gov).

The following recommendations can help prevent fireworks-related injuries.

- Never build or experiment with homemade fireworks.
- Before using fireworks, be sure they are permitted. Check with your local police or fire department to determine what fireworks can be legally discharged in your area.
- Never allow children to handle or ignite fireworks. Even sparklers, which burn at 1000°F, can be dangerous.
- Read all warnings and instructions.
- Be sure other people are out of range and warned before lighting fireworks.
- Never ignite fireworks while holding them.
- Only light fireworks on a smooth, flat surface away from houses, dry leaves and brush, and flammable materials.
- Never try to relight fireworks that have not functioned properly.
- Keep a bucket of water nearby in case of a malfunction.
- Contact the fire department if a fire starts.
- The safest way to prevent fireworks-related injuries is to leave fireworks displays to trained professionals.

REFERENCES

1. Greene M., Race P. Fireworks-Related Deaths, Emergency Department Treated Injuries, and Enforcement Activities During 2001. 2001 Fireworks Annual Report. U.S. Consumer Product Safety Commission, June 2002.
2. U.S. Consumer Product Safety Commission. Fireworks—Publication #12.

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June 20, 2003