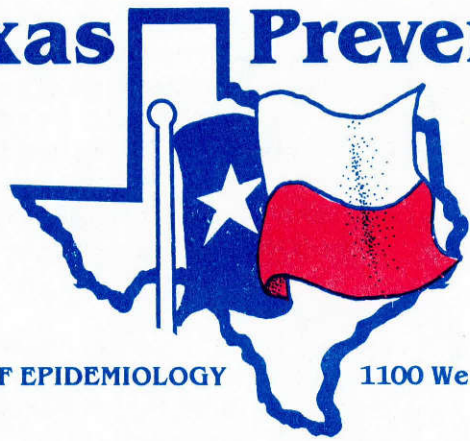


Texas Preventable Disease NEWS



TEXAS STATE DOCUMENTS
COLLECTION

contents:

Fireworks-related Injuries, July 1-5, 1983
Austin, Texas
Viral Isolates for May 1984

BUREAU OF EPIDEMIOLOGY

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FIREWORKS-RELATED INJURIES, JULY 1-5, 1983 AUSTIN, TEXAS

Injuries related to fireworks have been relatively ignored in Texas, as in much of the nation, as causes of morbidity and mortality. In July 1983, the Bureau of Epidemiology, Texas Department of Health (TDH) conducted a survey of all hospital emergency rooms, emergency-treatment centers, and private ophthalmologists in the Austin area (Travis County and the Georgetown area of Williamson County) to identify fireworks-related injuries that occurred during the Fourth of July holiday period.

METHODS

Following initial contact with the administrators of hospitals and emergency-treatment centers in the Austin area, data collection forms and instructions were sent to a designated employee in each facility. Austin-area ophthalmologists received an introductory letter to the study followed by data collection forms and instructions mailed just prior to the data collection period. A separate form was used to verify that no fireworks-related injuries had been seen. Reports were returned to the Bureau of Epidemiology in stamped, self-addressed envelopes provided by the Bureau. Facilities or individuals who had not responded by mail by July 18 were telephoned.

RESULTS

All hospitals with emergency rooms (6), minor-emergency centers (6), and ophthalmologists (37) in the Austin area participated in the study, including one hospital and one ophthalmologist in Georgetown. Twelve persons reportedly sustained 16 fireworks-related injuries during the study period, July 1 to July 5, 1983. Five cases were reported by hospital emergency rooms; 6, by minor-emergency centers; and 1, by an ophthalmologist not working in an emergency-room setting. Injuries occurred from Friday, July 1 through Monday, July 4 with the number of injuries increasing each day (Figure 1). Injuries were evenly distributed between males and females with median ages of 11 and 22 years for males and females, respectively (Figure 2). All injured were white, three of these being of Hispanic ethnicity. All six of the males were injured while handling the device that caused the injury, and five of the six were less than 20 years old. All six females were injured while in the vicinity of, but not actually handling, the device that caused the injury; most were 20 years of age or older (Figure 2).

The majority of injuries involved first- and second-degree burns (7) and eye injuries (8) including one burn to the eye lid. In none of the eye injuries was there permanent, visual impairment. One laceration and one ligament strain were also reported (Table 1). Of those persons injured who were less than 18 years old, only half reportedly had some form of adult supervision.

Alcohol use was not involved in six of the cases, and its involvement in two others is unknown. However, three injured adults (one male and two females) reportedly consumed alcohol up to two hours prior to injury, and one adult supervisor of an injured child reported consuming alcohol while fireworks were being exploded.

Six of the 12 accidents occurred in yards of homes, and an additional two occurred in "the street"; only one occurred in the country. The place of occurrence of the other three is not clear.

No particular type of device stood out as a cause of injury. Two persons each were injured by sky rockets, Roman candles, and firecrackers; one each by a sparkler, a smoke bomb, and a bottle rocket. Specific causes of injury for the remaining three cases are unknown; however, two persons were injured at aerial displays.

DISCUSSION

Texas state law prohibits the sale or ignition of certain types of fireworks in counties having a population of more than 1,700,000 persons. Harris County is the only county with a population of this size. State law also prohibits the sale of any fireworks to children under 10 years of age or to any intoxicated or irresponsible person. Home-rule cities may define nuisances and prohibit them within the city and for 5,000 feet outside the city limits. Based on this allowance of the law, the Austin City Code prohibits the sale, storage, or explosion of fireworks within the city and for 5,000 feet beyond city boundaries except when permits have been granted. Other Texas cities have similar regulations. Although these regulations provide some control over the amount of fireworks discharged within high-risk areas, fireworks remain readily available from the numerous fireworks stands which commonly surround Texas cities.

Studies have been published with data from several states. Some report only injuries treated in hospitals^{1,2}; others, only those treated by ophthalmologists.^{3,4} Methods of data collection are not always apparent. Passive or optional reporting systems favor the reporting of severe injuries; minor injuries frequently are not identified as fireworks-related even on the patients' medical charts or on discharge diagnoses.

The current study serves as a pilot effort for future Texas studies. Only twelve persons injured by fireworks were seen for medical treatment in 1983. Because no estimate can be made of the true population at risk of fireworks-related injuries, incidence rates have not been calculated. Instead, the amount of injury that will be tolerated as a side effect of a pleasurable or socially acceptable activity must be considered.

Generally, males are injured more frequently than females, and the age groups most affected are consistently within the teen years.¹⁻⁴ Half of those injured in the Texas study population were women, a fact not observed in any other study. None of these women was actually handling the device causing the injury, and it could be that such injuries are not always recorded in medical records as having been caused by fireworks. The age distribution of injured males is similar to other studies; however, the older age of injured females considerably alters the age distribution of the patients in this study.

The types of injuries seen in this study are no different than what would be expected based on the findings of other studies. Although most burns affected only the hands, one involved the upper arm and right chest area. Only one injury, ligament strains of the knee and ankle sustained as the victim ran from an oncoming firecracker, differed from those usually associated with fireworks. A 1981 Indiana study found that nearly one third of all fireworks injuries involved the eye. Other studies suggest a proportion closer to 20%.⁵ In this study, 42% of the injuries affected the eye.

Previous studies have not evaluated the questions of adult supervision of injured children or alcohol use by the individual injured. Although some children were not supervised and some of the injured had consumed alcohol, the importance of these factors increasing the likelihood of injury cannot be evaluated without an adequate comparison group. The limited results of this survey do not suggest that these would be important risk factors.

All studies indicate most fireworks-related injuries occur in a home setting. The increasing popularity of professional fireworks displays may draw people from high-risk home settings to the safer public displays. The Austin Junior Chamber of Commerce estimates attendance of 20,000 persons at the 1982 display and 50,000 persons at the 1983 display at Austin's Town Lake. Attendance at public displays will be a factor to consider when evaluating trends in fireworks-related injuries.

In 1976, the Consumer Product Safety Commission enacted rigid standards for the construction and performance of fireworks. The amount of powder in any device was regulated, and more reliable and slower burning fuses were required. Although the effect of such regulations cannot be measured because of the absence of reliable data on fireworks injuries over a period of years in any particular geographic area, legislation remains the primary way to control and prevent injuries related to fireworks.

This report was prepared by Leslie P. Boss, MPH, PhD, Medical Epidemiologist, Bureau of Epidemiology, Texas Department of Health.

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Table 1
Types of Injuries Related to Use of Fireworks
Austin Area, July 1983*

Eye Injuries		Non-eye Injuries	
Type of Injury	Number	Type of Injury	Number
Embedded object	2	Burn	6
Conjunctivitis	1	Hand	(4)
Corneal abrasion	2	Face	(1)
Eye-lid laceration	1	Arm-chest	(1)
Eye-lid burn	1	Laceration	1
Hyphema	1	Ligament strains	1

*Multiple injuries occurred to some individuals

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VIRAL ISOLATES FOR MAY 1984	
<u>Adenovirus</u>	Bell (1), Dallas (1), Lubbock (1), Tarrant (2)
<u>Cytomegalovirus</u>	Bell (1), Bexar (1), Dallas (4), Galveston (3), Tarrant (2)
<u>Echo (9)</u>	Galveston (1), Harris (1)
<u>Echo (11)</u>	Galveston (1)
<u>Echo (17)</u>	Bexar (1)
<u>Rotavirus</u>	Bexar (1)
<u>Chlamydia trach.</u>	Bell (1), Bexar (2), Dallas (2), Travis (5)

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