1999 Fireworks Annual Report

Fireworks-Related Deaths, Emergency Department Treated Injuries, and Enforcement Activities During 1999

June 2000

Michael A. Greene
Division of Hazard Analysis
Directorate for Epidemiology
U.S. Consumer Product Safety Commission

Patrick M. Race
Office of Compliance
U.S. Consumer Product Safety Commission

Executive Summary

This report provides the results of the U. S. Consumer Product Safety Commission (CPSC) staff analysis of 1999 data on fireworks-related injuries and deaths. The report also includes a summary of CPSC enforcement activities during 1999.

We obtained information on fireworks deaths primarily from news clips in CPSC's Injury and Potential Injury Incident (IPII) database. We estimated fireworks injuries from CPSC's National Electronic Injury Surveillance System (NEISS). More detailed analyses of injuries including the type of injury and the firework involved were based on a special study conducted between June 23 and July 23, 1999.

Highlights of the report are as follows:

- CPSC has reports of 16 deaths from fireworks in 1999. There were 13 deaths reported in 1998.

- Fireworks devices were involved in an estimated 8,500 injuries treated in U. S. hospital emergency departments during calendar year 1999. CPSC estimated the same number of injuries in 1998.

- There was no increase in injuries in 1999 despite a 20 percent increase in the dollar value of fireworks imported into the United States. Some of the increase in imports was for the additional fireworks activity associated with millennium celebrations.

- Estimated emergency department treated injuries for the period 1997-1999 were significantly lower than the estimates for 1992 through 1994, when the average was almost 12,500 injuries per year.

- An estimated 5,700 fireworks-related injuries were treated in U. S. hospital emergency departments during the one month special study period surrounding the Fourth of July, 1999 (June 23, 1999 – July 23, 1999). The highest injury estimates were for firecrackers (1,800), rockets (1,000), and sparklers (600). These were about the same levels as 1998.

- During this one-month period, as in previous years, injuries to children were a major component of fireworks-related injuries with children under 15 accounting for 45 percent of the injuries.

- About 35 percent of the injuries to children under age 15 involved firecrackers. Rockets accounted for about 20 percent of the injuries and sparklers accounted for about 15 percent of the injuries. About three times as many males were injured as females.

- Also during this period, the parts of the body most often injured were the hands (estimated 2,300 cases), eyes (1,000) and head/face (1,200). Over half the injuries involved burns. Burns were the most frequent injury to all parts of the body except the eyes, where contusions, lacerations, and foreign bodies in the eyes were the most frequent.

- A review of NEISS in-depth investigations of injuries during the special study period, showed that some serious injuries were associated with (1) fireworks explosions that were earlier or later than expected by the user, (2) rockets with errant flight patterns or (3) inappropriate use of fireworks by children.

- During 1999, CPSC has participated in multi-state fireworks investigations. As a result, several fireworks retailers and distributors of illegal fireworks were shut down and tens of thousands of illegal explosive devices were seized. Following a separate investigation, a large fireworks importer was permanently enjoined from selling violative fireworks.

- CPSC and the U.S. Customs Service have continued to sample shipments and to seize shipments that violate CPSC's mandatory safety requirements.

- During 1999, these surveillance operations were stepped-up in anticipation of increased fireworks usage and also to cover an extended sales season associated with the millennium celebrations.

- In criminal cases, five defendants pled guilty to violations of Federal explosives laws and violations of the Federal Hazardous Substances Act. The courts imposed prison sentences, fines and forfeitures.

Table of Contents

Introduction

This report describes injuries and deaths associated with fireworks during 1999. The report also describes CPSC enforcement activities for 1999.

Fireworks deaths were obtained from the CPSC Death Certificate file and the IPII (Injury or Potential Injury Incident) file. There may be up to a two-year lag between when a death occurs and when the death is reported in the Death Certificate file, so reporting for 1999 may not be complete. Data for the IPII file come from news clips, consumer complaints and reports from government agencies. Because reporting is voluntary, there may have been fireworks deaths that were not reported to any of these sources, and are not included among the deaths in this report. Therefore, the number of deaths from fireworks-related injuries might be greater than reported here.

Total estimated emergency department treated injuries for fireworks in 1999 were obtained from CPSC's National Electronic Injury Surveillance System (NEISS). NEISS is a probability sample of U. S. hospitals that have emergency departments.[1] All estimates for the number of injuries in this report were obtained using the hospital totals and the sampling weights in NEISS. These estimates reflect emergency department treated injuries for the entire country.

The detailed analysis of injuries in hospital emergency departments in this report is based on a special study of fireworks injuries treated between June 23, 1999 and July 23, 1999. This special study focused on the types of fireworks involved in these injuries. Victims were shown illustrations of fireworks at emergency departments to help them identify the device associated with the injury. The type of fireworks device was not usually recorded during other periods of the year.

Also, during the special study period, CPSC completed in-depth investigations of 38 fireworks injuries. These in-depth investigations were limited to injuries involving amputation, eye injuries, or injuries requiring admission to the hospital. There were also some investigations where it was suspected that the fireworks device was illegal or that the device was illegally purchased. In most cases, victims were telephoned and read a questionnaire. These investigations were intended to determine how the most serious injuries occurred. Victims were asked about the circumstances of the incident, where the device was obtained and future medical treatment required for the injury.

In this report, injury estimates derived from NEISS are rounded to the nearest 100 injuries and percentages are rounded to the nearest 5 percent. Estimates of less than 50 injuries are shown with an asterisk (*). Values may not add to totals because of rounding.

---

[1] For a description of NEISS, including the revised sampling frame, see Kessler and Schroeder (1998). Procedures used for variance and confidence interval calculations, and adjustments for the sampling frame change in 1997 are found in Marker, Lo, Brick, and Davis (1999). SAS statistical software for trend and confidence intervals is documented in Schroeder (2000).

Although a number of different analyses are provided in this report for different categories of injuries, including the age distribution of victims and the types of fireworks involved in the injury, interpretation of these estimates should be made with caution. This is because estimates based on small sample sizes have relatively large amounts of sampling variability. For example, when comparing subsets of the data, say between injuries associated with two different types of fireworks, or between two different years, it is difficult to determine how much of the difference between estimates is associated with sampling variability and how much comes from real differences in national injury totals.

Information about enforcement activities was provided by CPSC's Office of Compliance.

Death and Injury Estimates

Fireworks-related Deaths for 1999

CPSC has reports of 16 deaths that occurred from fireworks during 1999. Brief descriptions are found below.

- Five people in Gardendale, Alabama were killed when smoldering fireworks remains in a trash can adjacent to a house ignited. The fire spread to the house. The victims were a 43 year-old male, 41 year-old female and 3 male children, 10, 10 and 6 years old.
- A house fire that started from smoldering fireworks debris in a trash can, killed 5 people in Salem, Wisconsin. This included a 31 year-old female, a 9 year-old male, a 4 year-old male, and two female children, one 2 years old and the other 1 year old.
- Three teenagers were killed in Centerville, Arizona, when a shell exploded in a trailer that contained fireworks. The ages of the victims were not disclosed in the newspaper account of this incident.
- A 5 year-old male in the San Diego area was killed from burns when sparklers ignited in his pocket.
- A 15 year-old male was killed in Kanorado, Kansas. He placed fireworks in a partially buried pipe. When he lit them, he was killed by the explosion.
- A 13 year-old male in Lake Roesiger, Washington was killed when he placed a shell inside a tube. The shell struck him in the head when it exploded.[2]

[2] This incident was also in CPSC's Death Certificate File.

National Injury Estimates for 1999 and Comparison with Prior Years

Table 1 and Figure 1 present the estimated number of fireworks-related injuries for 1988 through 1999 treated in U. S. hospital emergency departments annually.

Table 1
Estimated Fireworks-Related Injuries 1988-1999

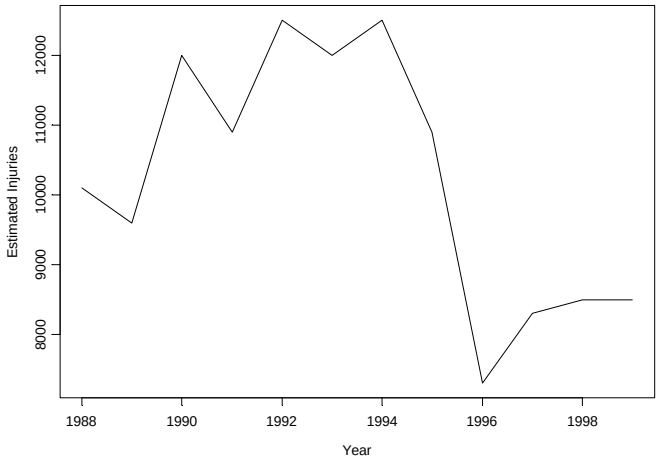
Year	Estimated Injuries
1999	8,500
1998	8,500
1997	8,300
1996	7,300
1995	10,900
1994	12,500
1993	12,000
1992	12,500
1991	10,900
1990	12,000
1989	9,600
1988	10,100

Source: NEISS, U. S. Consumer Product Safety Commission/EPHA. Estimates for 1988-1996 were revised to adjust for the new sampling frame and do not match values published in reports for 1997 or earlier.

In 1999, there were an estimated 8,500 fireworks injuries for the calendar year.[3] This was the same value as the estimate reported for 1998 and was slightly greater than the values reported for 1996 and 1997 (Greene, 1999). None of the totals for 1996-1999 were statistically significantly different from each other.[4] However, the difference between 1999 and the high value in 1994 of 12,500 injuries was significant.[5] Also, the difference between the three-year average for 1997-1999 and the three-year average for the historic high period between 1992 and 1994 was statistically significant.[6]

[3] 95 percent confidence interval 6,000 to 11,000.
[4] *P-values* as follows: for 1998 and 1999, p=0.9849; for 1999 and 1997, p=0.8576.
[5] p=0.0411, one tail.
[6] $p < 0.01$, one tail.

Figure 1. Fireworks Injuries 1988-1999



In 1999, 75 percent of fireworks injuries occurred during the July 4th holiday period (June 23 - July 23). In the last decade, about 60 to 80 percent of fireworks-related injuries occurred during this period.

There was no increase in injuries in 1999 despite an increase of about 20 percent in shipments of fireworks to the United States from 1998 to 1999, based on dollar values.[7] Some of the increase in imports was probably associated with the additional fireworks activity for the millennium celebrations.

Injury Estimates for the 1999 Special Study

The remainder of the injury analysis in this report presents the results of the 1999 special study of hospital emergency department treated fireworks injuries that occurred between June 23 and July 23, 1999. During this period, there were an estimated 5,700 fireworks-related injuries for the special study period.[8] This estimate was based on 179 emergency department cases.

Fireworks Types and Injury Dispositions

Table 2 below shows the distribution of July 1999 holiday season fireworks injuries by type of device.

[7] Data from the USITC Trade Database-Web Access. Included was U.S. imports at Customs value for HTS8 36041010 and HTS8 36041090.

[8] 95 percent confidence interval: 4,000 to 7,500.

Table 2
Estimated Fireworks-Related Injuries
By Type of Firework
June 23-July 23, 1999

Fireworks Type	Estimated Injuries
Total	5,700
Firecrackers	1,800
Small	100
Illegal	500
Unknown	1,200
Rockets	1,000
Bottle Rockets	700
Other, Unspecified	300
Other Consumer Devices	1,900
Sparklers	600
Fountains	*
Novelties	200
Multiple Tube and Shell	400
Roman Candles	600
Helicopters	*
Homemade/Altered	*
Public Display	100
Unknown	900

Source: NEISS, U. S. Consumer Product Safety Commission/EPHA. Based on 179 reported emergency department visits between June 23, 1999 and July 23, 1999. Cases were weighted by the NEISS sampling weights. Frequencies reported in the table were rounded to the nearest 100. Totals may not add due to rounding. Estimates of less than 50 injuries are shown as an asterisk (*). Caution is recommended in comparing estimates in this table because of the relatively small number of injuries from which each estimate was derived.

As shown in Table 2, firecrackers accounted for about 30 percent (1,800) of all injuries that occurred during this period. Among firecrackers, illegal, large firecrackers, such as M-80's were involved in 500 estimated injuries. This was less than 10 percent of the total injuries. Among legal consumer devices, rockets (1,000 injuries), sparklers (600 injuries), and Roman candles (600 injuries) were the major contributors. Bottle rockets accounted for 700 of the 1,000 rocket-related injuries

Although most of these fireworks-related injuries were treated at emergency departments and then released, an estimated 7 percent (400 cases) required hospital admission or transfer to another hospital for treatment. This was somewhat higher than the hospitalization and treat/transfer rate of 4.5 percent for all consumer products.

Age and Sex of Injured Persons

Less than 10 percent (400 injuries) of all fireworks-related injuries were to children under 5 years of age as shown in Table 3. Children in the 5 to 14 age group accounted for about 35 percent (estimated 2,100) fireworks-related injuries. Together, children under 15 experienced 45 percent of the fireworks injuries.

The age group 15 to 24 had 30 percent of the injuries (1,800) and the 25 to 44 age group had 20 percent of the injuries (1,100). There were no recorded fireworks-related injuries to people 65 years of age and over in the NEISS sample.

Injury rates per 100,000 population were highest among people aged 5 to 24 years. Children between 5 and 14 years of age had 5.3 injuries per 100,000 people, while young adults 15 to 24 had 4.8 injuries per 100,000 people.

In general, most injuries were to males, accounting for 4,200 incidents. About three times as many males were injured as females.

Table 3
Estimated Fireworks-Related Injuries
By Age and Sex
June 23-July 23, 1999

Age Group (years)	Total	Male	Female	Injuries per 100,000 people
Total	5,700	4,200	1,500	2.1
Less than 5	400	300	200	2.1
5 to 14	2,100	1,600	500	5.3
15 to 24	1,800	1,200	500	4.8
25 to 44	1,100	1,000	200	1.3
45 to 64	300	100	100	0.5

Source: NEISS, U. S. Consumer Product Safety Commission/EPHA. Notes: See Table 2. US population from www.census.gov/population/estimates/nation/intfile2-1.txt

Age of the Injured Person by Type of Fireworks

Table 4 presents the ages of those injured by the type of fireworks device involved in the injury. Injuries to the youngest children, under 5, were associated with sparklers, firecrackers, and bottle rockets. For 5-14 year olds and for 15-24 year olds, firecrackers, other devices (including sparklers) and rockets were the source of injuries.

Table 4
Estimates Fireworks-Related Injuries
By Device Type and Age Group
June 23-July 23, 1999

Fireworks Type	Totals	Age Group (Years) <5	5-14	15-24	25-44	45-64
Total	5,700	400	2,100	1,800	1,100	300
Firecrackers	1,800	100	800	700	200	*
Small	100	*	100	*	*	*
Illegal	500	*	*	400	100	*
Unspecified	1,200	100	700	300	100	*
Rockets	1,000	100	400	200	200	*
Bottle	700	100	300	100	100	*
Other	300	*	100	100	100	*
Other Devices	1,900	300	600	400	400	100
Sparklers	600	100	300	*	100	100
Various	1,200	100	300	400	300	100
Homemade/Altered	*	*	*	*	*	*
Public Display	100	*	*	*	100	*
Unspecified	900		200	400	200	100

Source: NEISS, U. S. Consumer Product Safety Commission/EPHA. Notes: See Table 2. Various Other Devices include multiple tube devices, novelties, reloadable aerial shell devices, Roman candles, fountains, and novelties.

Injury Diagnosis and Body Part Injured

Table 5 presents the types of injuries sustained to specific parts of the body. Eighty percent of injuries (4,500) were to the hands, head/face, and eyes. Hands and fingers with an estimated 2,300 injuries, accounted for 40 percent of the total injuries. Injuries to the head and face at 1,200 total injuries were about 20 percent of the total.

Among diagnoses, burns with 3,200 estimated injuries and 55 percent of the total, were the most frequent. Contusions and lacerations, at 1,300 injuries and 25 percent of the total were the second most frequent. Contusions, lacerations, and foreign bodies (in other diagnoses) were the most common eye injuries. Head and facial injuries primarily involved burns and contusions or lacerations.

Table 5
Estimated Fireworks-Related Injuries
By Body Part and Diagnosis
June 23-July 23, 1999

Body Part	Total	Burns	Contusions Lacerations	Fractures Sprains	Other Diagnoses
Total	5,700	3,200	1,300	300	900
Hands/Fingers	2,300	1,300	500	200	300
Head/Face	1,200	600	400	*	200
Eyes	1,000	300	300	*	400
Legs	300	300	*	*	*
Trunk	200	100	*	*	100
Arms	500	400	*	100	*
Feet/Toes	100	100	*	*	*

Source: NEISS, U. S. Consumer Product Safety Commission/EPHA. Notes: See Table 2. Fractures and sprains also included dislocations. Other diagnoses included all other injury categories. Head/Face injuries include the NEISS codes for face, eyelid, eye area and nose, head, neck, mouth, lips, tongue, teeth and ear. The category for legs includes codes for upper leg, knee, lower leg, and ankle. Trunk includes NEISS codes for lower trunk, upper trunk (not including shoulders), and pubic region. The arms category includes lower arm, elbow, upper arm, shoulder, and wrist.

Type of Fireworks and Body Part Injured

Table 6 below presents estimated injuries by the fireworks device and body part involved. Firecracker injuries occurred most frequently to the hand (900 injuries). Typically, victims sustained injuries from firecrackers while holding the device, or attempting to release it after ignition. Rockets were represented in injuries to the eye, head/face, and arm/leg region. Victims sustained injuries from erratic rocket flight

patterns, or burning debris from the rocket. Sparkler injuries typically involved the hands. Sparklers burn at a high temperature.

Table 6
Estimated Fireworks-Related Injuries
By Type of Firework and Body Part Injured
June 23-July 23, 1999

Type of Fireworks	Total	Hands Fingers	Head Face	Eyes	Arms Legs	Trunk
Total	5,700	2,300	1,200	1,000	900	200
Firecrackers	1,800	900	400	300	100	100
Sparklers	600	400	100	100	-	-
Rockets	1,000	100	300	300	300	-
Other Devices	2,200	900	400	300	600	100

Source: NEISS, U. S. Consumer Product Safety Commission/EPHA. Notes: See Table 2. The arms and legs category includes feet and toes. The other body regions are defined in the note under Table 5. Other devices included fountains, novelties, multiple tube and shell, Roman candles, public display, homemade/altered and unspecified.

In-depth Investigations of Fireworks Deaths and Injuries

CPSC conducted in-depth investigations of the more serious injuries associated with fireworks that occurred during the month surrounding the July 4 holiday. Injuries were selected when they involved the eye, or amputations, or when the victim was either admitted to the hospital or transferred to another facility for treatment. These injuries were selected for investigation to develop information on potential long term effects. Investigations were also conducted because the injury was suspected to result from the use of illegal fireworks.

Most of these investigations were conducted by telephone. Either the victim was the source of information or the victim's guardian, when the victim was under 18.

Thirty-eight completed investigations were reviewed. A summary of these investigations is in the appendix. Typical causes of injuries shown in these reports included the following:

- Fireworks that exploded earlier or later than the victim expected. Often the device exploded after the victim thought it was not operating and the victim retrieved it to light it again. For example, in the Appendix, see task numbers 990708HEP9008 and 990722HEP9007.

- Errant flight paths for rockets and mortars, injuring bystanders. In some cases, the rocket had blown off its stand, or the flight path had been affected by the wind. For example, see Appendix task numbers 990713HEP9013 and 990714HEP9003.

- Inappropriate usage of fireworks devices, especially by children. This includes cutting open fireworks, using them near flammable liquids, using devices indoors or in cars, burying devices in pipes, etc. See Appendix task numbers 990706HEP9001 and 990713HEP9007.

The review of the investigations showed that victims, for the most part, expected a full recovery. Some eye injuries, however, involved surgery for cornea or lens replacement. (An example was in task number 990722HEP9018 in the Appendix.) Also, some hand injuries resulted in severe burns and lacerations. One victim reported some loss of function with full recovery uncertain (task number 990723HEP9007). A second victim had part of his thumb amputated. He reported that partial recovery was expected after prolonged physical therapy (task number 990804HEP9010).

Enforcement Activities

As part of its focus on reducing fireworks injuries, CPSC is working to ensure that imported fireworks meet CPSC's regulations. CPSC works with the U. S. Customs Service on surveillance of fireworks imports. Surveillance operations were stepped-up in 1999 in anticipation of increased fireworks usage, and also to cover an extended sales season associated with the millennium celebrations. As part of these activities, CPSC and Customs selectively sampled 522 shipments of fireworks to ascertain the level of compliance with fireworks regulations. About 31 percent of these shipments were found to violate fireworks regulations. These shipments accounted for more than 6 million units presenting violations serious enough to warrant seizure or other actions by the U.S. Customs Service (CPSC, 2000).

Also during 1999, CPSC collected and tested more than three times as many domestic fireworks samples than in previous years.

CPSC has also initiated or participated in multi-state criminal investigations of illegal fireworks. These investigations have led to more than a dozen criminal search warrants and the seizure of tens of thousands of illegal explosive devices, tons of professional display fireworks being illegally sold or distributed to consumers, and components used to manufacture illegal fireworks. Several fireworks retailers and distributors have either been permanently or temporarily shut down. In addition, a recent

CPSC investigation led to a permanent injunction in a civil case against Midwest Fireworks Manufacturing Co., Inc. of Ohio, a large fireworks importer. This order enjoined the firm from distributing and selling violative fireworks.

Also, five defendants in criminal cases pled guilty to felony violations of Federal explosives laws as well as violations of the Federal Hazardous Substances Act. Four defendants were sentenced to federal prison terms of 8 to 30 months. Fines ranging from $6,000 to $60,000 were imposed. One defendant also forfeited $300,000 in illegal proceeds to the federal government.

Discussion

The total number of estimated fireworks injuries for 1999 was the same as for 1998, 8,500. Despite a 20 percent increase in imports this year, there were no changes in the number of injuries. Also, the injuries for recent years continue to be significantly lower than the estimates for the years 1992 through 1994.

Injuries during the 1999 one-month special study period at 5,700 were higher than 1998's estimate of 5,000, but the difference was not statististically significant. For 1999, the types of fireworks associated with the injuries, the age and gender distribution, hospital dispositions and diagnoses, all were within the range of what was reported for 1998.

As in previous years, in 1999, injuries to children were a major component of fireworks-related injuries with children under 15 accounting for 45 percent of the injuries. The disproportionate involvement of children is further illustrated by the high rate of injury for the 5 to 14 age group, compared to the rate for the population as a whole. Children in this age group experienced 5.3 emergency department treated fireworks injuries per 100,000 people as compared with the general population rate of 2.1 per 100,000 people.

A review of in-depth investigations of serious fireworks injuries showed that typical causes of injuries included (1) fireworks exploding earlier or later than expected by the user, (2) errant flight paths or tipping over of rockets, and (3) inappropriate use.

During 1999, CPSC's Office of Compliance increased its investigation of the sale of illegal fireworks. Compliance was involved in seizures of illegal devices, injunctions against manufacture of illegal devices and criminal cases for violation of the Federal Hazardous Substances Act.

References

Greene MA (1999), "1998 Fireworks-Related Injuries," U. S. Consumer Product Safety Commission, Washington, DC.

Kessler E and Schroeder T (1998), "The NEISS Sample (Design and Implementation)," U. S. Consumer Product Safety Commission, Washington, DC.

Marker D, Lo A, Brick M and Davis W (1999), "Comparison of National Estimates from Different Samples and Different Sampling Frames of the National Electronic Injury Surveillance System (NEISS)," Final Report prepared for the U. S. Consumer Product Safety Commission, Westat. Rockville, MD.

Schroeder T (2000), "Trend Analysis of NEISS Data." U. S. Consumer Product Safety Commission, Washington, D. C.

U.S. Consumer Product Safety Commission (2000), "Saving Lives and Keeping Families Safe," 1999 Performance Report. Washington, D. C.; www.cpsc.gov/about/gpra/gpra.html.

Appendix
In-Depth Investigations

Task Number	Age	Sex	Treatment Date	Disposition	Diagnosis	Body Part	Type of Fireworks	Apparent Cause	Medical Treatment and Prognosis
990706HEP9001	9	Male	990624	TRANSF	BURNS, THERMAL	FACE	Cracker/size unk	Victim throwing fireworks into a septic tank that ignited.	1st and 2nd degree burns to face, victim will recover.
990708HEP9007	43	Male	990705	HOSP	OTHER	EYEBALL	Bottle Rockets	NA	NA
990708HEP9008	33	Male	990704	HOSP	BURNS, THERMAL	HAND	Cracker/size unk	Relit firework that exploded in his hand.	NA
990713HEP9007	15	Male	990703	HOSP	BURNS, THERMAL	HAND	Cracker/large	Victim cut open an M-100 and ignited the powder.	Victim will recover From Burns.
990713HEP9008	22	Male	990702	HOSP	LACERATION	HAND	Large Firecrackers	Victim ignited an M-80 inside a mobile home	Severe lacerations to the hand.
990713HEP9009	9	Male	990630	HOSP	BURNS, THERMAL	UPPER LEG	Bottle Rockets	NA	NA
990713HEP9010	39	Male	990705	HOSP	BURNS, THERMAL	EYEBALL	Reloadable Shells	Homemade mortar firework exploded while handled.	NA
990713HEP9013	18	Male	990704	HOSP	LACERATION	EYEBALL	Bottle Rockets	Victim injured by off course Texas Pop Rocket	Victim needs lens and corneal replacement. Return of full vision not expected.
990714HEP5361	12	Male	990707	HOSP	BURNS, THERMAL	LOWER TRUNK	Sparklers	Brother poured alcohol on victim's shirt and ignited with firework.	Complete recovery expected.
990714HEP8213	10	Male	990707	HOSP	BURNS, THERMAL	25-50% OF BODY	Cracker/size unk	Victim lit fireworks in his pocket, which ignited his pants.	Full recovery expected.
990714HEP9003	2	Male	990703	TRANSF	BURNS, THERMAL	LOWER TRUNK	Reloadable Shells	Firework ignited by victim's father. Tipped over and struck victim.	Full recovery expected.

Task Number	Age	Sex	Treatment Date	Disposition	Diagnosis	Body Part	Type of Fireworks	Apparent Cause	Medical Treatment and Prognosis
990719CEP9004	33	Male	990703	TRANSF	LACERATION	LOWER TRUNK	Cracker/size unk	NA	NA
990722HEP7812	10	Male	990701	TR/REL	BURNS, THERMAL	UPPER LEG	Cracker/size unk	NA	NA
990722HEP9007	17	Male	990703	TR/REL	FRACTURE	FINGER	Large Firecrackers	Victim picked up a lit M-80 that exploded in his hand	Full recovery expected.
990722HEP9008	17	Female	990704	TR/REL	BURNS, THERMAL	HAND	Cracker/size unk	NA	NA
990722HEP9012	17	Male	990704	TR/REL	CRUSHING	HAND	Large Firecrackers	M-80 exploded in victim's hand.	Full recovery expected.
990722HEP9013	13	Male	990704	TR/REL	OTHER	EYEBALL	Unknown	Victim injured by debris from fireworks.	Loss of vision in one eye from injury. Recovery uncertain.
990722HEP9014	25	Male	990704	TR/REL	CRUSHING	HAND	Reloadable Shells	Mortar fuse burned quicker than expected by victim.	Full recovery expected.
990722HEP9015	20	Male	990704	TR/REL	FRACTURE	FINGER	Unknown	Firework exploded in victim's hand	Full recovery expected.
990722HEP9016	36	Female	990623	TR/REL	FRACTURE	FINGER	Large Firecrackers	NA	NA
990722HEP9017	41	Male	990704	TR/REL	FRACTURE	FINGER	Reloadable Shells	Mortar fuse burned quicker than expected by victim.	Full recovery expected.
990722HEP9018	40	Male	990705	TR/REL	BURNS, THERMAL	EYEBALL	Other Rockets	Spark from rocket went into victim's eye.	Victim has had laser surgery and a cornea transplant. Full recovery uncertain.
990722HEP9019	26	Male	990705	TR/REL	FRACTURE	ELBOW	Other Rockets	NA	NA
990722HEP9020	21	Female	990705	TR/REL	BURNS, THERMAL	HAND	Roman Candles	Firework exploded in victim's hand	Full recovery expected.
990723HEP9006	4	Male	990704	HOSP	BURNS, THERMAL	FACE	Unknown	NA	NA

Task Number	Age	Sex	Treatment Date	Disposition	Diagnosis	Body Part	Type of Fireworks	Apparent Cause	Medical Treatment and Prognosis
990723HEP9007	18	Male	990701	TR/REL	LACERATION	FINGER	Large Firecrackers	M-80 exploded in victim's hand, when he attempted to relight it.	Scarring and limited motion likely. Full recovery uncertain.
990723HEP9008	14	Male	990705	TR/REL	BURNS, THERMAL	FACE	Reloadable Shells	Victim bent over to relight a firework, which exploded before he could light it.	Burns to the cheek and face. Full recovery expected.
990723HEP9009	14	Female	990704	TR/REL	BURNS, THERMAL	UPPER LEG	Reloadable Shells	Wind blew over a lit rocket that hit the victim.	Full recovery expected.
990723HEP9010	10	Female	990704	TR/REL	CONTUSIONS, ABR.	FACE	Bottle Rockets	Errant bottle rocket hit victim in the face.	Full recovery expected.
990723HEP9011	24	Female	990705	TR/REL	BURNS, THERMAL	SHOULDER	Other Rockets	NA	NA
990726HEP9005	9	Male	990721	TR/REL	LACERATION	FINGER	Reloadable Shells	Victim's finger was cut by already exploded mortar shell	Full recovery expected.
990728HEP9005	12	Male	990718	TR/REL	CONTUSIONS, ABR.	EYEBALL	Bottle Rockets	Pebble hit victim's eye while firing a bottle rocket	Full recovery expected.
990728HEP9006	36	Male	990704	TR/REL	BURNS, THERMAL	HAND	Reloadable Shells	Patient struck in the chest by a mortar type firework, burning chest, hand, face and arm.	Full recovery expected.
990728HEP9007	39	Male	990705	TRANSF	AMPUTATION	FINGER	Reloadable Shells	Explosion of mortar shell resulted in partial thumb amputation and burn to cornea.	NA
990728HEP9008	18	Male	990704	TR/REL	OTHER	EYEBALL	Large Firecrackers	NA	NA
990729HEP9011	16	Male	990714	HOSP	AMPUTATION	FINGER	Large Firecrackers	M-80 exploded before victim could throw. Partial amputation of thumb and two other fingers.	NA

Task Number	Age	Sex	Treatment Date	Disposition	Diagnosis	Body Part	Type of Fireworks	Apparent Cause	Medical Treatment and Prognosis
990804HEP9006	19	Male	990705	TR/REL	BURNS, THERMAL	HAND	Ground Spinners and Novelties	Victim lighting spinning wheel firework in a moving vehicle which exploded in his hand.	Full recovery expected.
990804HEP9010	20	Male	990718	HOSP	AMPUTATION	FINGER	Large Firecrackers	M-80 exploded in hand before he could throw it. Partial amputation of thumb.	Partial recovery expected after prolonged physical therapy.