Massachusetts Burn Injury Reporting System

2004 Annual Report

Publication Number: **CR1106-82-350-6/05-DFS**
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Executive Summary

In 2004, the twentieth full year of the Massachusetts Burn Injury Reporting System (M-BIRS), 46 acute care hospitals and other health care facilities reported 358 victims of burns. Forty-five (45) of these 358 victims received care at two Massachusetts hospitals and were reported to the system twice. M-BIRS was established in the Department of Public Safety in 1984 as a tool to help fire service and law enforcement personnel identify arsonists that may have been burned while setting fires. M-BIRS, along with the Office of the State Fire Marshal, was carried over to the Department of Fire Services in 1996. It remains a joint program of the Department of Fire Services and the Massachusetts Department of Public Health. The "Burn Registry" also provides valuable data on the nature of the burn problem in the Commonwealth.

Massachusetts is renowned for its medical institutions and in particular for the advanced treatment available for burn and trauma victims. Many advances in treatment that have lead to increased ability for victims to survive serious burn injuries took place in Massachusetts. Those advances occurred in the desperate days after the deadly 1942 nightclub fire at Boston's Cocoanut Grove.

Statutory Authority for M-BIRS in MGL 112, Section 12A
According to Massachusetts General Law (MGL) Chapter 112, Section 12A, the treatment of all burn injuries extending over 5% or more of a person's body surface area must be reported immediately to the State Fire Marshal.

M-BIRS Has Two Main Purposes — Identifying Arsonists and Burn Prevention
Data collected by the Massachusetts Burn Injury Reporting System is used in several ways. Investigators use the data to determine if an arsonist was treated for a burn that resulted from an attempt to illegally burn a building or vehicle. If these burns are not reported promptly, arsonists may continue to light fires that threaten life and property.

Our data has also been used to identify problems that need to be addressed by public education, regulation or development of appropriate intervention strategies. We need to know what type of activity injures whom, if the injuries are seasonal and how old the victims are to develop and implement effective prevention programs. We appreciate the efforts of the many dedicated doctors, nurses and clerical personnel who report the burn injuries promptly and completely. They make the program work.

Painful, disfiguring and expensive burn injuries exact a tremendous toll from their victims, their families and society. The statistics in this report illustrate the need for more burn prevention education and indicate to whom specific safety messages should be targeted.

State Fire Marshal Stephen D. Coan invites health and medical professionals, classroom and community educators, day care teachers and elder service workers to join with him in making the Commonwealth safer from burn injuries.

Program to Reduce Scalds to Restaurant Kitchen Workers
In an effort to protect workers, often teenagers, who are burned working in restaurant kitchens, the Department of Fire Services and the Mass. Department of Public Health have collaborated with the Mass. Restaurant Association to develop a poster on first aid for burns in restaurants.

Scalds Caused 41% of Reported Burn Injuries
Scalds have been the leading cause of burn injuries for the past 20 years. In 2004, scalds caused 147 or 41% of the burn injuries reported to M-BIRS. Spilled hot beverages caused the majority of scald burns. Hot tap water, cooking liquids and grease, and hot food also caused scald burns.

Keep Hot Liquids Away from Babies and Preschoolers
In 2004, young children were the most frequent victims of scald burns. Over half (59%) of the 147 scald victims were under five years old, and most were less than one year old. Children under five years of age were 10 times more likely to be scalded. Hot beverages posed the greatest risk to young children; parents and caregivers of young children must remember that it is dangerous to drink coffee or tea while holding a baby.

Set Hot Water Heaters at 125° F or Lower
Hot tap water is also a danger to very young children. It takes only one second of exposure to water at 155°F to cause a third degree burn. Hot water heaters should be set to temperatures of 125° F or lower. Massachusetts state law states that the temperature must be set between 110°F and 130°F. Parents should never leave a baby or toddler alone in a bath. Young children like to turn knobs and use levers and they may turn on the hot water when a parent is distracted.

Kitchen is a Dangerous Place
A significant number of the burn injuries occur in the kitchen each year. Flame burns such as sleeves igniting while cooking, scald burns from grease splatters and hot liquids while cooking, many hot coffee and tea spills, contact burns from touching hot stoves, take place in the kitchen. Since we must cook every day, we must learn to do so safely. Children should also be kept in a safe area such as a high chair or playpen while cooking is taking place.

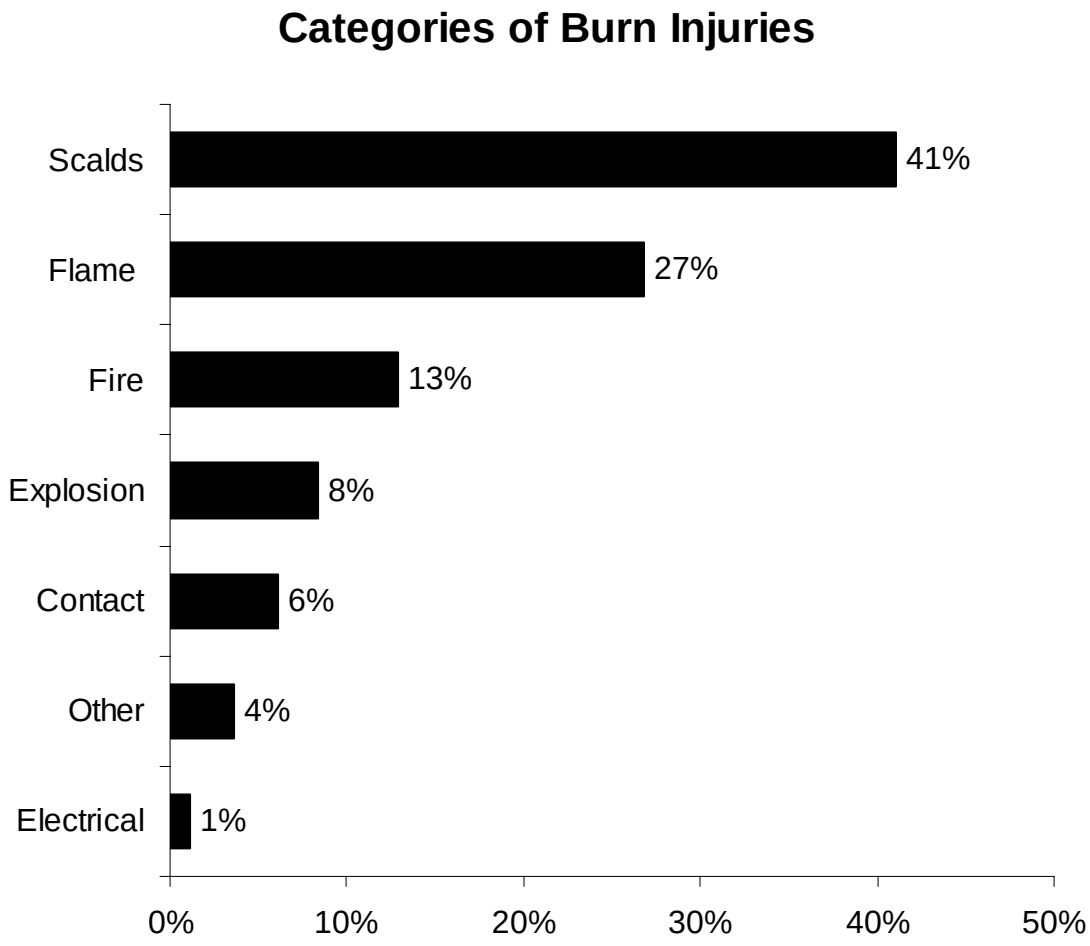
18% of Flame Burns from Cooking
Flame burn injuries were the second highest cause of burn injuries in 2004 accounting for 27% of the burn injuries. Flame burn injuries from cooking caused 18% of all flame burns. Flame burns from gasoline caused 15% of these types of burns, and 10% were caused by smoking.

14% of Burns Work-Related
Hospitals reported that 14% of the burn victims were burned while working, up from the 12% reported in 2004. Eighty-six percent (86%), of the people burned while working were male.

Over 2/3 of Burns Occurred in the Victim's Home
Of the 358 burn injuries reported to M-BIRS in 2004, 248, or 69%, occurred in the victim's home or surrounding yard. Forty-six percent (46%) of these burn injuries were scalds. Five (5), or 2%, of the home-related burn injuries resulted in the victim succumbing to his or her injuries.

Causes of Burn Injuries

In this report, we look at burn injuries in two different ways. In the first section, we look at the type of incident that caused the burn. Was the burn caused by a fire, a flame, a scald or something else? A burn is said to result from a flame when the fire is confined to the victim or the victim's clothing. When a wider area burns, the injury is considered to result from fire.

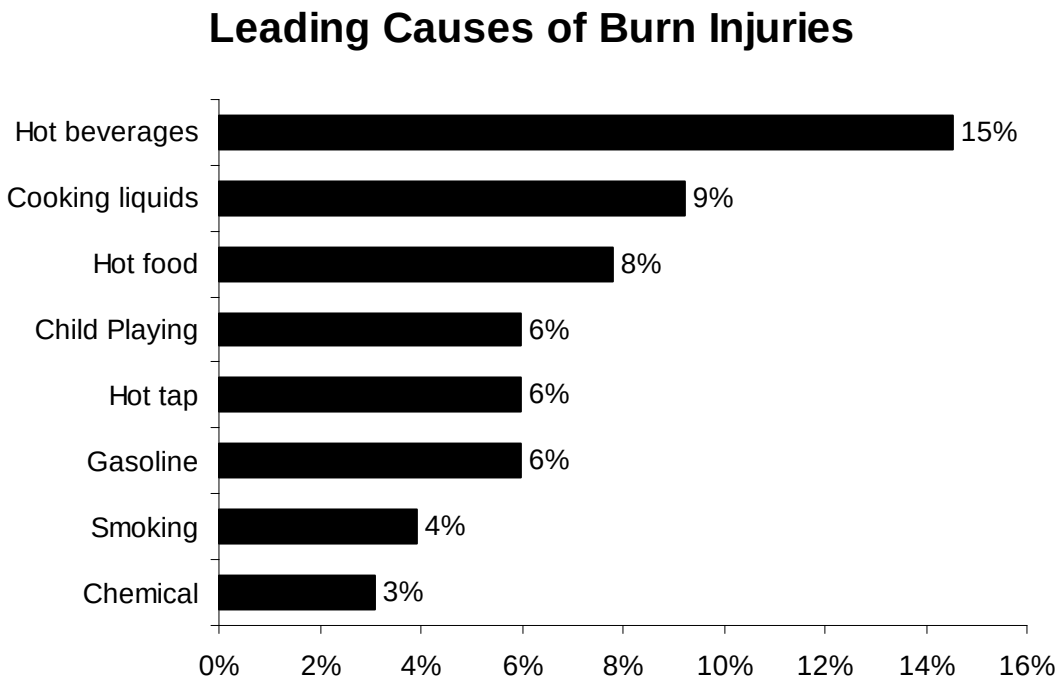


We also look at more specific causes such as hot beverage scalds or incidents involving gasoline.

Type of Incidents Causing Burn Injuries

41% of All Burn Victims Never Come Near a Flame
Scalds from hot liquids, cooking grease and steam caused 41% of the 358 burn injuries reported in 2004. Flames from burning clothing, bedding or similar objects caused 27% of the burns. Thirteen percent (13%) were caused by fires; 8% were caused by explosions, and 6% were caused by contact with hot objects. Electrical incidents such as electrocutions, flashburns[1] and explosions caused 1% of the burns. Four percent (4%) of the reported burns in 2004 had other causes, such as chemical burns or sunburns.

Look at Specific Causes and Equipment to Develop Prevention Strategies
To develop effective burn prevention policies and programs, we must first look at the specific items or behaviors that caused the burns. Fifteen percent (15%) of the 358 burn injuries reported in 2004 were scalds from hot beverages. This is a return to the familiar trend that was interrupted in 2003 when house fires overtook hot beverages as the leading cause of burn injuries. Nine percent (9%) of the burns were caused by cooking liquids. Eight percent (8%) were caused by hot food. Children playing with matches, lighters or gasoline, hot tap water and gasoline being used by adults each caused 6% of the burn injuries. Smoking caused 4% of the burn injuries in Massachusetts in 2004. Chemicals accounted for 3% of the burns reported in 2004. For more information, please refer to the table *Specific Causes of Burn Injuries* in the Appendix.

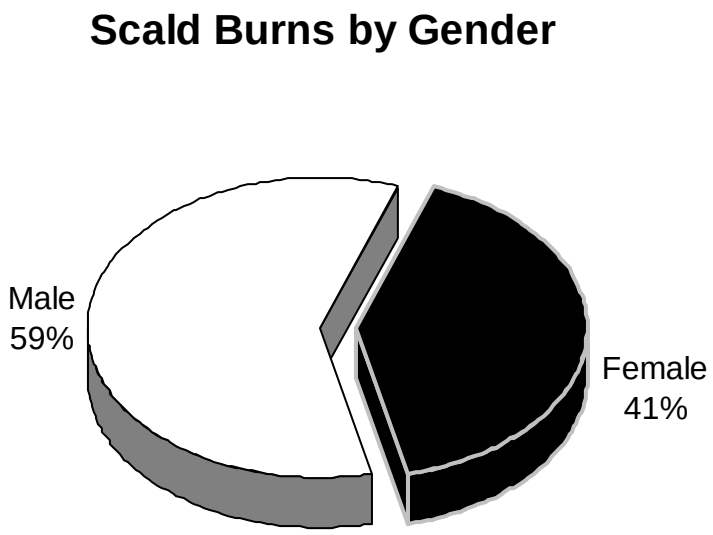


[1] A flashburn is a burn caused by short-term exposure to super-heated air generally from an explosion; there is no direct contact with flame.

Burn Injuries Caused by Scalds

Scalds Caused 41% of All Burns
Scalds have been the leading cause of burn injuries every year since the inception of M-BIRS. Over the past 10 years, scalds have averaged 42% of total burns. The percentage of total burns has declined from a high of 47% in 1998 to a relatively stable 40% or 41% since 1998[3].

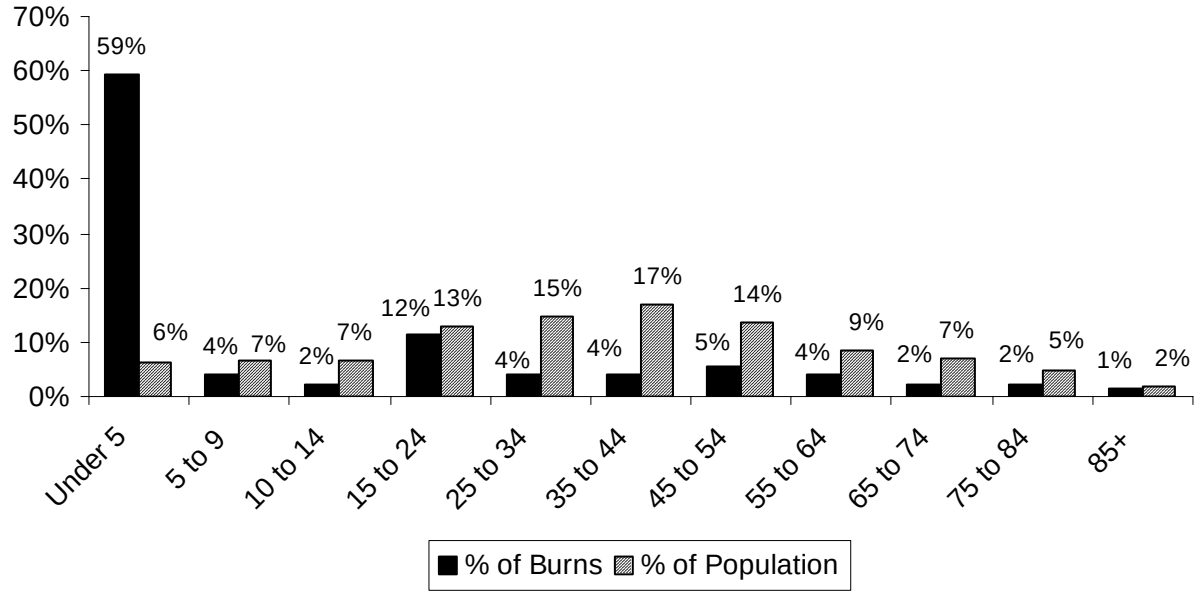
One hundred forty-seven (147), or 41%, of the 358 reported burns were hot scalds. Fourteen (14), or 10%, of the 147 scalds occurred while the victim was working. Eighty-six (86), or 59%, of the 147 scald victims were male and 61, or 41%, were female.



Children Under 5 Years Old Were Most at Risk for Scald Burns
Young children were the most frequent victims of scald burns. According to the 2000 U.S. Census, children under the age of five comprised 6% of the Massachusetts population. However that same age group accounted for 59% of all scald burns in 2004. Fifty-four (54), or 37%, were infants one year old or younger. Children aged five to nine accounted for 4%, while children aged 10 to 14 accounted for 2% of these injuries.

[3] In 2003, Scalds represented 36% of all the burns reported to M-BIRS. However if not for The Station nightclub fire victims that were treated in Massachusetts, scalds would have represented 38% which would still be an the lowest in the past 11 years.

Scalds by Age Group

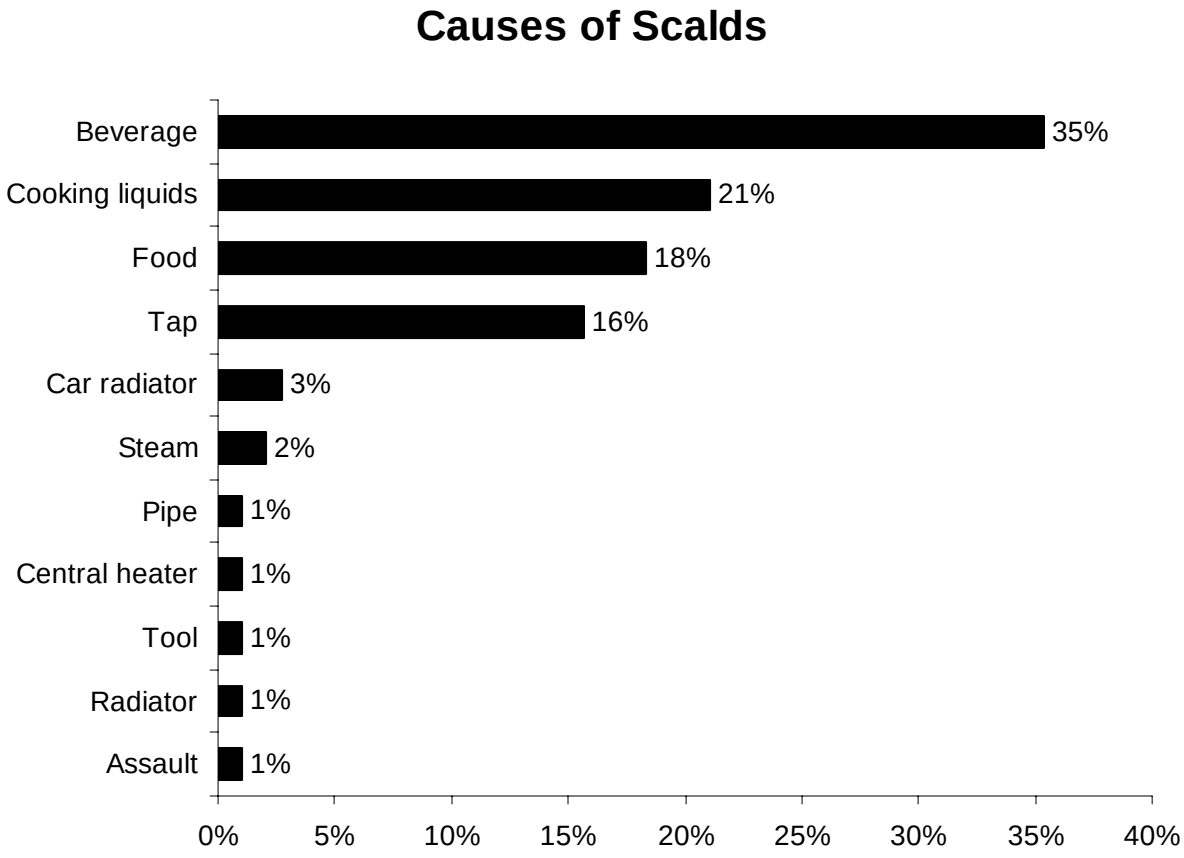


Pre-schoolers 10 Times More Likely to Suffer Scald Burns

Many adults also suffered burns from scalds. Twelve percent (12%) were between 15 and 24 years old; 4% were between 25 and 34; another 4% were between 35 and 44 years of age; 5% were between 45 and 54; 4% were between 55 and 64; 2% were between 65 and 74; 2% were between 75 and 84; and 1% were over the age of 85. A four-month old boy was the youngest scald burn victim, while the oldest person was an 86-year old woman. When the shaded bar of the graph representing the percent of scald burns is higher than the striped bar representing percent of population, higher than expected risk at this type of injury exists. Only pre-schoolers were scalded at a disproportionate rate; they were 10 times more likely to suffer a scald burn.

Hot Beverages Caused Over 1/3 of All Scald Burns

Spilled hot beverages caused more scalds and more burn injuries than any other cause. This has been the trend of the past 11 years that was only interrupted in 1999 when hot cooking liquids was the leading cause by one percentage point over hot beverages. Thirty-five percent (35%), of the 147 scald burns were caused by hot beverages. Cooking liquids accounted for 21% of all scald burns. Eighteen percent (18%) were caused by hot foods. Sixteen percent (16%) were caused by hot tap water. Three percent (3%) were caused by car radiators. Steam caused 2% of these scald burn injuries. A central heater, a burst pipe, an assault, a radiator and a tool were each the source in 1% of the reported scald burn injuries in 2004.

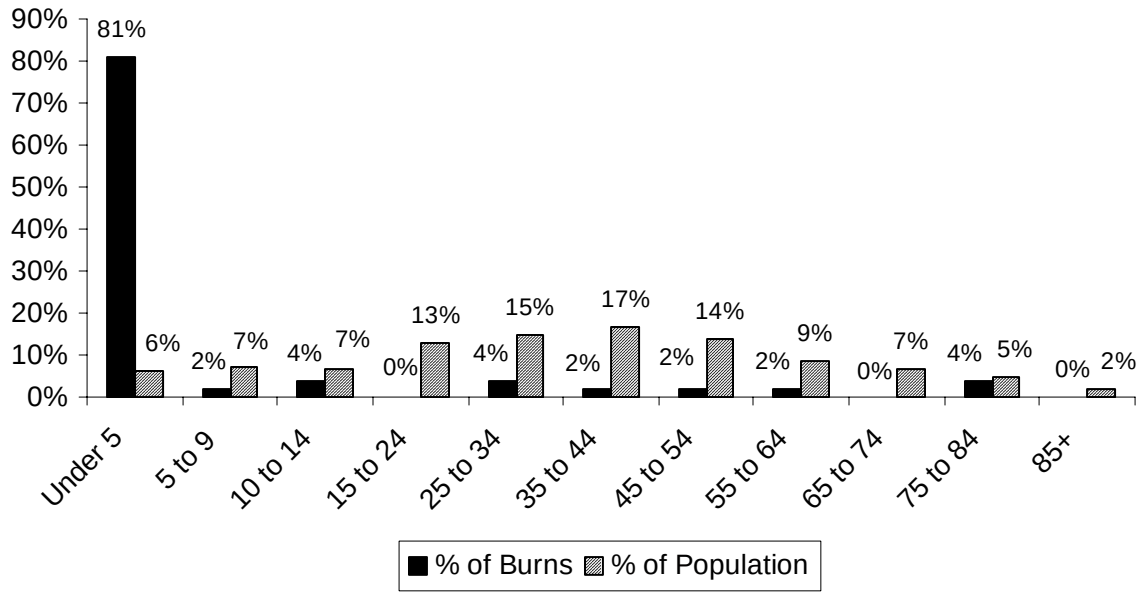


Hot Beverages

Hot Beverages Caused Over 1/3 of All Scalds
Fifty-two (52), or 35%, of the 147 scald burns were caused by hot beverages. These 52 burns accounted for 15% of the 358 burn injuries reported in 2004. Except for 1999, hot beverages have been the leading cause of scald burns since the inception of M-BIRS in 1984.

Fifty-six percent (56%) of the 52 hot beverage scald victims were male and 44% were female. In 2004 one woman was reported to receive a hot beverage scald while working.

Hot Beverage Scalds by Age Group

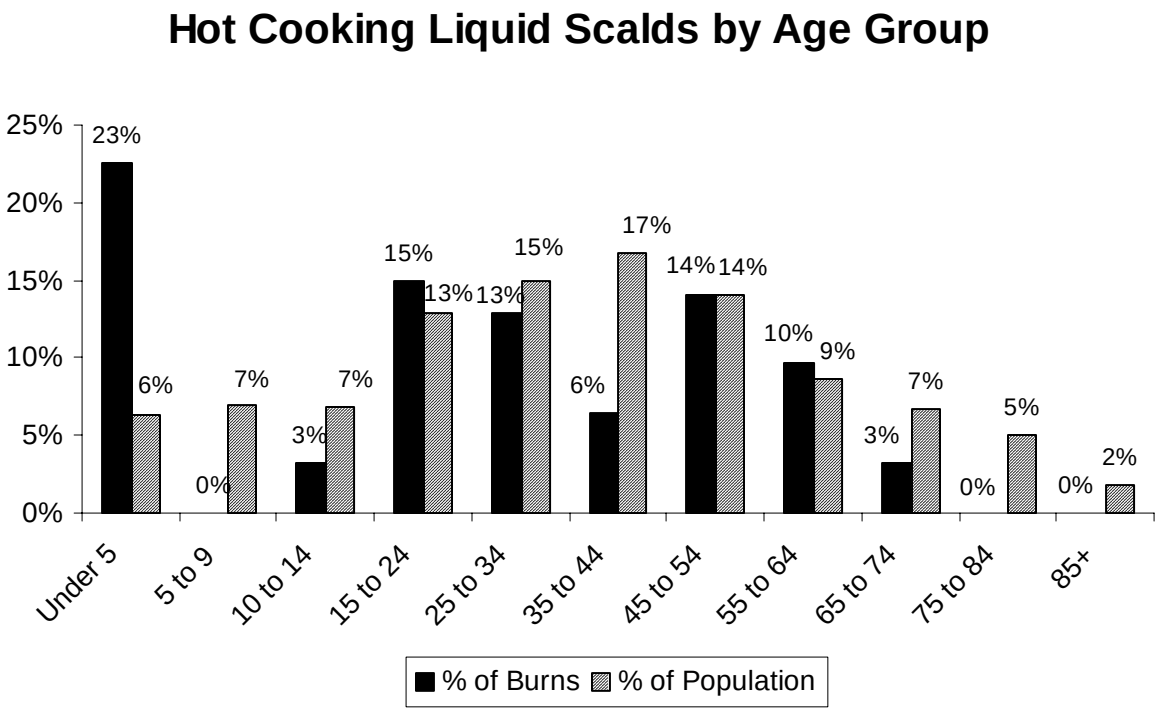


81% of the Hot Beverage Scald Victims Were Under 5
Eighty-one percent (81%) of the 52 hot beverage scald victims of known age were less than five years of age. Children under five years old were 13.5 times more likely to be scalded by a hot beverage. Twenty-eight (28), or 54%, of the victims who were scalded were one-year old or younger. Another 19% were two or three-year old toddlers. In the previous year, 73% of the victims of hot beverage scalds were less than five years old.

Two percent (2%) of the hot beverage scald victims were between five and nine years old; 4% were between the ages of 10 and 14; no one between the ages of 15 and 24 years of age received a scald burn from a hot beverage; 4% were between 25 and 34; 2% were between 35 and 44; 2% were between 45 and 54; 2% were between 55 and 64; 4% of the hot beverage scald burn victims were over the age of 65. A one-year-old girl was the youngest hot beverage scald burn victim, while the oldest person was a 78-year old woman.

Hot Cooking Liquids

Hot Cooking Liquids Caused 21% of Scalds, 9% of All Burns
Hot cooking liquids which includes grease and oil, caused 31, or 21%, of the 147 scald burns and 9% of the 358 total burn injuries reported in 2004. Sixty-five percent (65%) of the victims were male and 35% were female. Hot cooking liquids scalded eight people while they were at work, five men and three women.

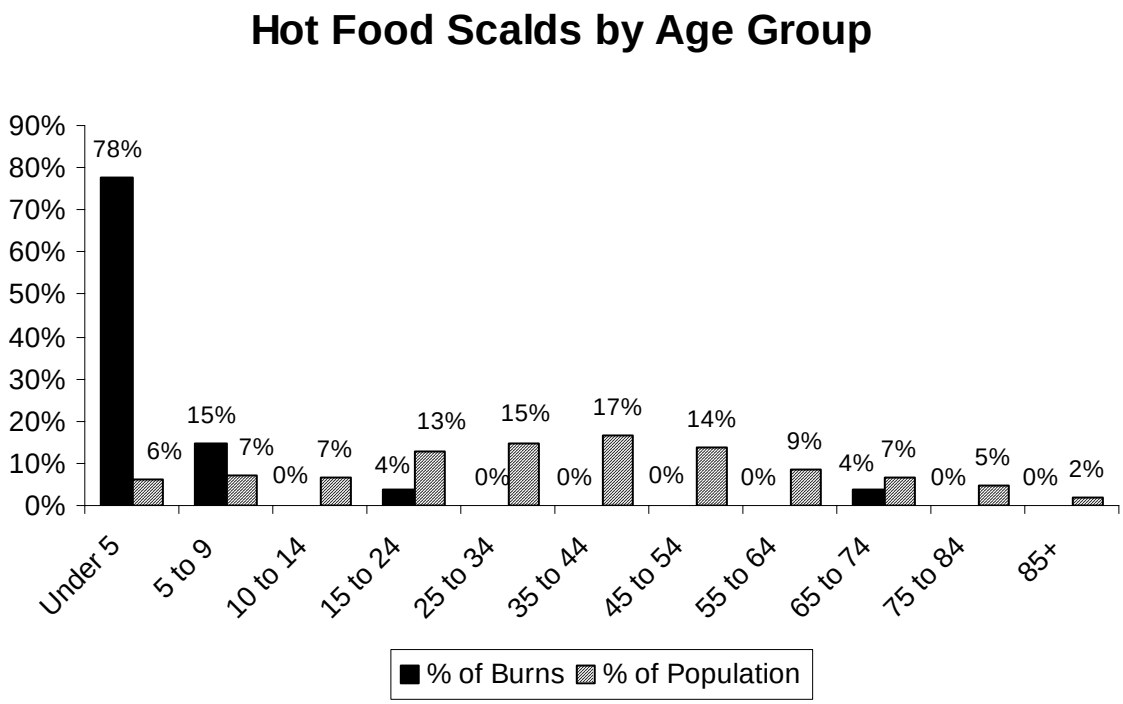


Almost 1/4 of Cooking Liquid Scald Victims Were Under the Age of 5
Those most likely to be under foot in the kitchen were most at risk to be burned by hot liquids on the stovetop. Twenty-three percent (23%) of the cooking liquid scald victims were under five years old. They were almost four times more likely to be victims of a hot cooking liquid scald. In 2004, no children between the ages of five and nine were scalded by hot cooking liquids; 3% of these injuries occurred within the age group between 10 and 14; members of the age group between 15 and 24 were in the second highest group of scalds caused by hot cooking liquids accounting for 15%; 13% were between 25 and 34; 6% were between 35 and 44; 14% were between 45 and 54; 10% were between 55 and 64; 3% were between 65 and 74; no one over the age of 66 received a scald burn injury from hot cooking liquids. The youngest hot cooking liquid scald burn victim was a nine-month old boy, while the oldest person to have one of these burns was a 66-year old man.

Hot Food

Hot Food Caused 18% of Scalds, 8% of All Burns
Hot food caused 27, or 18%, of the 147 scald burns and 8% of the 358 total burn injuries reported in 2004. Sixty-three percent (63%) of the victims were male and 37% were female. There were no work-related hot food scalds reported in 2004.

Over 3/4 of Hot Food Scald Victims Were Under 5
Of the 27 reported scald victims from hot food in 2004, over three-fourths, or 78%, were under five years old; 15% were between five and nine; and one victim (4%) was between 15 and 24 years old. Another victim (4%) was between 65 and 74 years old. There were no reported hot food scald burn injuries to anyone between the ages of 25 and 64, or to anyone over the age of 65. The youngest hot food scald burn victim was a one-year old girl, while the oldest person to have one of these burns was a 65-year old woman.

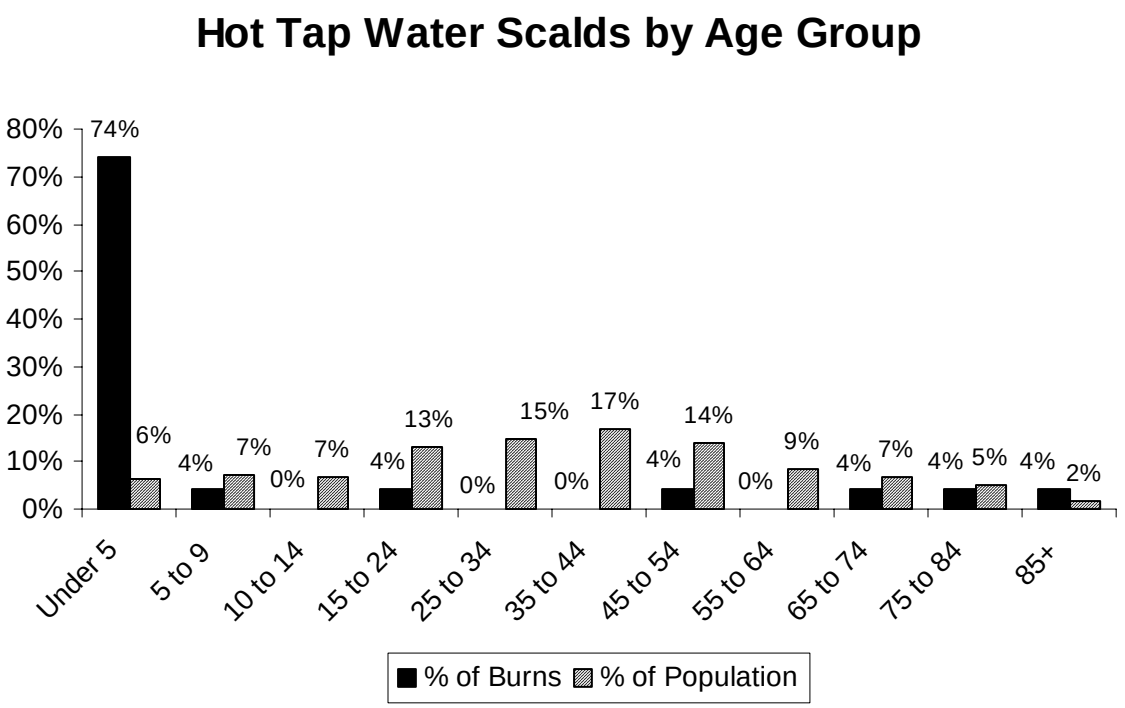


Hot Tap Water

Hot Tap Water Caused Over 16% of All Scalds
Excessively hot tap water caused 23, or 16%, of the 147 scald burns and 6% of the 358 total burn injuries reported to M-BIRS in 2004. Hot water heaters should be set to temperatures of 125º Fahrenheit or less. Massachusetts law states that the temperature must be set between 110º and 130º F and most dishwashers have coils to boost their internal water temperature. It is important for homeowners to make sure their own water heaters are set in the appropriate range. At 155º F it takes only one second to sustain a third degree burn. At 130º F it takes thirty seconds. At 120º F it can take a full five minutes to sustain a third degree burn.[2] Adults may prepare a safe bath, but a child may turn on the hot water if left alone for a moment or two. Experts recommend placing a child in the tub facing away from the faucet.

[2] Source: Knapp Burn Foundation

Seventy percent (70%) of victims were female while the other 30% were male. This is a reversal as the previous year it was 52% male and 48% female; and since the beginning of M-BIRS 54% of the hot tap water scald victims have been men and 46% have been women. Only one of the 33 victims, a 50-year old man, was scalded during work-related activities.



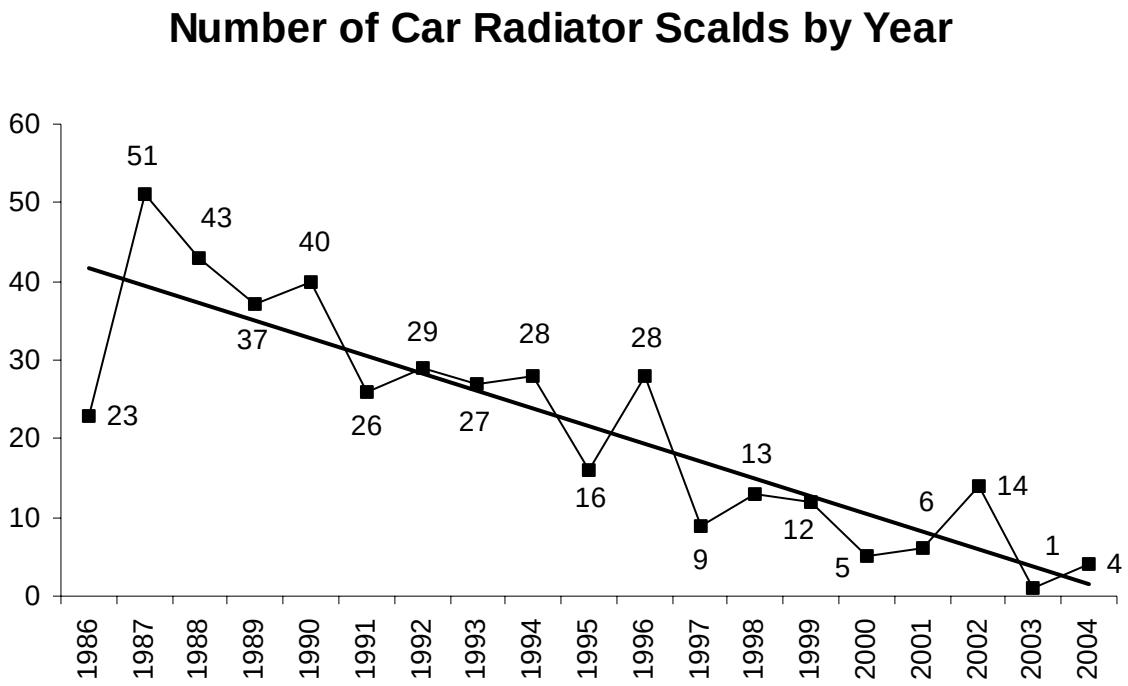
Almost 3/4 of Tap Water Scald Victims Were Under the Age of 5
Seventy-four percent (74%) of the 23 hot tap water scald victims of known age were less than five years old. Some were very young infants placed in water that was too hot for their sensitive skin. Other children were interested in exploring their environment and turned on faucets.

Four percent (4%) of the tap water victims were between the ages of five and nine; there were no hot water tap scalds for the age group between 10 and 14 years old; 4% were between 15 and 24 years of age; no one between the ages of 25 and 44 received a scald burn from hot tap water in 2004; 4% were between 45 and 54; there were no reported tap water scald victims between 55 and 64; 4% were between 65 and 74; another 4% were between 75 and 84; and yet another 4% were over the age of 85. The youngest hot tap water scald burn victim was a four-month old girl, while the oldest person to have one of these burns was an 86-year old woman.

68-Year Old Woman Receives Scald Burns to 1/4 of Her Body
On May 2, 2004, a 68-year old woman received burns to 25% of her body surface area. The second degree burns were on her arms, legs, chest and abdomen. She received her burns when she fell down a set of stairs while she was carrying a bucket of hot tap water.

Car Radiators

Four Reported Car Radiator Scald Burns In 2004
In 2004, there were four reported scald burn injuries caused by the improper opening of a hot car radiator. All four of the victims were male and two, or 50%, were between the ages of 15 and 24, and the other two, or 50%, were between the ages of 35 and 44 years old. These four injuries are a slight increase over the single injury reported in 2003. As the chart below depicts, even though there have been some years where the number of reported car radiator burns has increased from one year to the next, only once has there been an increase two years in a row, from 2000 to 2002. Overall the trend for the past 15 years has been one of decline. From 1987 to 2004 there was a 92% drop in reported car radiator scald burns. From 1995 to 2004 there was a 75% drop in reported car radiator scald burns.



Three of these four burns occurred during the summer months, one each in June, July and August, and the fourth occurred during October.

23-Year Old Man Receives Scald Burns to 1/4 of His Body
On October 10, 2004, a 23-year old man received scald burns to 25% of his body when he opened his overheated car radiator.

40-Year Old Man Receives Scald Burns to Chest Neck & Face
On June 27, 2004, a 40-year old man opened his overheated car radiator and received burns to 12-15% of his body surface area. He was burned on his chest, neck and face.

Car Radiator Safety Measures

- ✓ When your car overheats, keep in mind that the contents of the radiator are under tremendous pressure. If you open it, the boiling liquid and steam can erupt and cause severe burns to your hands, arms and face. Wait at least a half hour for the car to cool down, and then use a rag to slowly open the cap, releasing the pressure as slowly as possible.

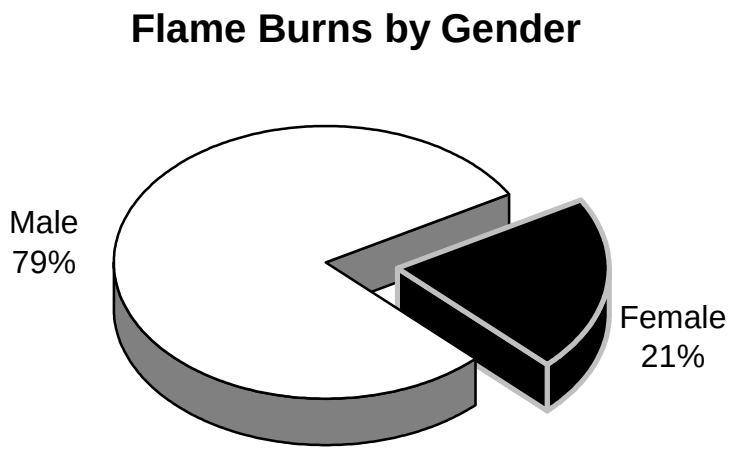
- ✓ The coolant in your overflow reservoir may also be extremely hot and may also be under pressure. Take the same precautions when opening the coolant reservoir that you would when taking off the radiator cap.

Flame Burn Injuries

Flames Caused 27% of Reported Burn Injuries

Ninety-six (96), or 27%, of the 358 burn injuries reported in 2004 were considered flame burn injuries. A burn is said to result from flame when the fire is confined to the victim or the victim's clothing. When a wider area burns, the cause of the injury is considered a fire. Burns caused by self-immolation, smoking in bed or burning clothing usually result from flames.

Seventy-nine percent (79%) of the flame burn casualties were male and 21% were female. Thirteen (13), or 14%, of the 96 flame burns occurred during work-related activities; 12 were male and one was female.

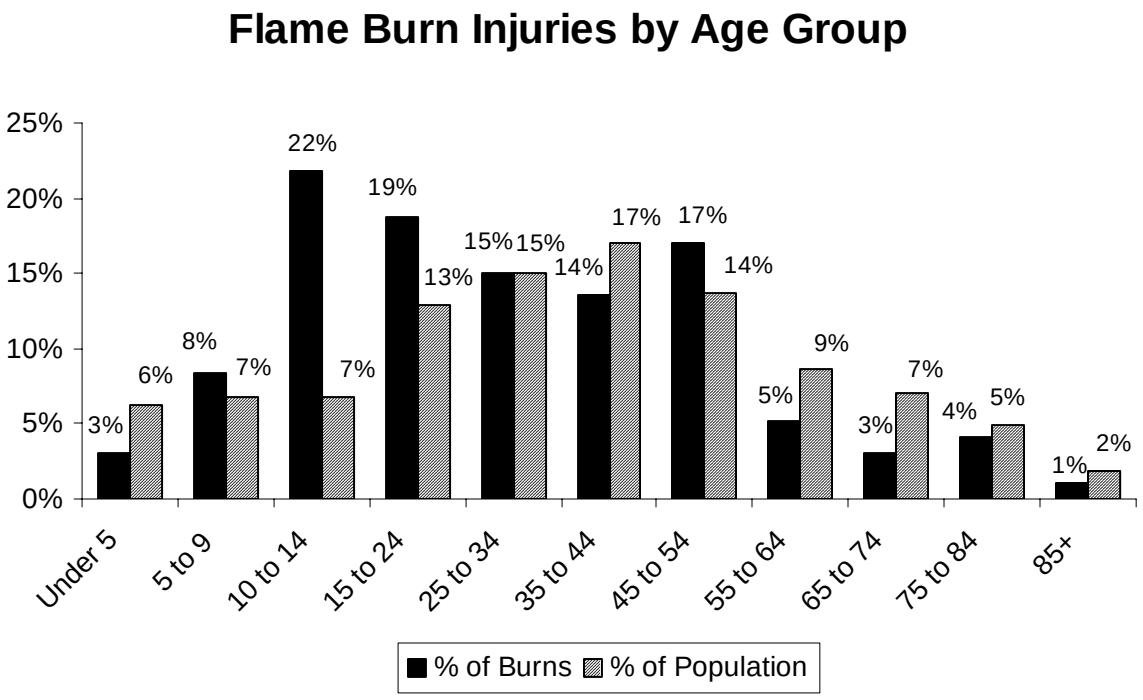


Young Adults 10-24 Faced Highest Risk of Flame Burns

Four groups were at a higher risk for burns from flames. Children between the ages of 10 and 14 were three times as likely to be burned by a flame burn injury. Young adults between the ages of

15 and 24 were 1.5 times as likely to receive a flame burn injury. Children 5 to 9 and adults between the ages of 45 and 54, were all 1.2 times as likely to be burned.

Three percent (3%) of the 96 flame burn victims were children under the age of five; 8% were between the ages of five and nine; 22% were between 10 and 14; 19% were victims with ages 15 to 24; 15% were between 25 and 34; 14% were between 35 and 44; 17% were between 45 and 54; 5% were between 55 and 64; 3% were between 65 and 74; 4% were between 75 and 84; and 1% were over the age of 85. The youngest person to receive a flame burn injury was a two-year old boy, while the oldest was an 86-year old woman.



Cooking Was the Leading Cause of Flame Burns

Cooking was the leading cause of flame burn injuries in 2004. Seventeen (17), or 18%, of all flame burn victims received their injuries while cooking. Eight (8), or 8%, of the flame burns involved clothing ignitions while cooking. Three (3), or 3%, of the cooking-related flame burns involved an unreported cooking activity. Three (3), or 3%, of the victims were burned while barbequing. Two (2), or 2% of the victims, received their flame burn injuries from ignitions of hot cooking liquids, generally grease or oil. One (1), or 1%, of the victims received his injury by coming into contact with a hot oven.

Children Playing Caused 17% of Flame Burn Injuries

There were 16 total flame burn injuries from children playing with various objects accounting for 17% of these injuries. Nine (9), or 9% of all flame burn victims, were children playing with lighters; five, or 5% were children playing with gasoline; and two children (2%) were injured while playing with matches.

Smoking & Ignitable Liquids Were the Third Leading Cause of Flame Burn Injuries
Smoking accounted for 12, or 13%, of all flame burn injuries in 2004. Five victims, or 5%, received their flame burn injuries from unspecified smoking actions. Three (3) flame burns, or 3%, were from smoking while in bed. Two (2) were ignitions from a cigarette lighter accounting for 2% of these injuries. One victim received a flame burn injury from a lit cigarette, accounting for 1% of the flame burn injuries in 2004; and another victim (1%) received his injuries from his clothing igniting while he was smoking.

In 2004, ignitable liquids also caused 12, or 13%, of flame burn injuries. In 2003 they were the leading cause of flame burn injuries and accounted for 17, or 18%, of all flame burn injuries. In 2004 gasoline caused nine, or 9%, of the flame burns. The other three, or 4%, of these injuries were caused by various other types of ignitable liquids.

Candles Involved In 8% of All Flame Burns
Candles were the cause of eight, or 8%, of 2004 flame burn injuries. Two (2), or 2%, were clothing ignitions from candles. Self-immolation resulted in five, or 5%, of the flame burn injuries.

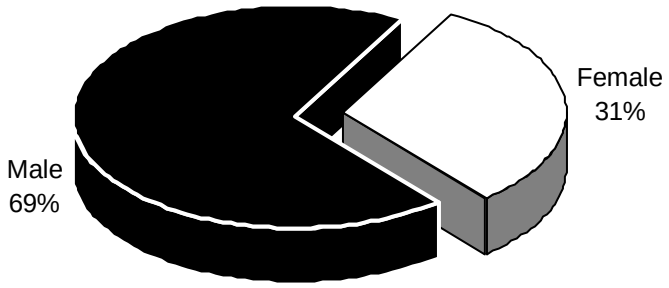
Explosives caused five, or 5%, of flame burns. Three (3), or 3%, of these injuries were caused by fireworks, one, or 1%, was caused by an attempt to make a bomb and the other injury, or 1%, was caused by gunpowder. Welding and cutting torches were also the cause of five, or 5%, of these flame burn injuries. Three (3), or 3%, were caused by welding and the other two, or 2%, were caused by cutting torches.

Ignitable gases caused three, or 3%, of these injuries. Two (2), or 2%, of these ignitable gas related injuries involved natural gas and the other (1%) involved propane. Alcohol and wood stoves each caused two, or 2%, of these injuries. An assault, a boiler, a bonfire, camp fire, domestic violence, a motor vehicle accident, and an unspecified flame burn injury each accounted for one, or 1%, of these burns.

Clothing Ignitions Account for 14% of Flame Burn Injuries
There were 13 clothing ignitions resulting in flame burn injuries accounting for 14% of all flame burn injuries. Clothing ignitions while cooking were the cause of eight, or 8%, of these injuries. Two victims, or 2% of the flame burn injuries, received burn when candles ignited their clothes. Clothing ignitions from unreported heat sources were responsible for two, or 2%, of the burns. Another victim's clothing ignited while he was smoking, accounting for 1% of all flame burn injuries in 2004

Over 2/3 of Clothing Flame Burn Injuries Were Male
Nine (9), or 69%, of clothing ignition victims were male and four, or 31% were female.

Clothing Ignitions by Gender



Almost 1/3 of All Flame Burn Injury Victims Due to Clothing Ignitions Were Over 65
Four (4), or 31% of all the victims of flame burn injuries due to clothing ignitions were over 65-years old. No one under the age of 12 incurred this type of flame burn injury. Children between the ages of 10 and 14 accounted for two, or 15%, of these injuries. There was one victim in the age group, 15 to 24, accounting for 8% of these burns. No one in the age group 25 to 34 years old received a flame burn due to a clothing ignition. The age groups 35 to 44 and 45 to 54 and 55 to 64, each had two of these victims accounting for 15% of the clothing ignition flame burn injuries in 2004. Another victim, or 8%, of flame burn injuries due to clothing ignitions was between 65 and 74 years old. There were three victims, or 3% of these types of burn injuries, in the age group 75 to 84 years of age. The youngest person to receive a flame burn injury from a clothing ignition was a 12-year old boy whose clothes were ignited when he walked to close to a candle; and the oldest victim from a clothing ignition flame burn injury was an 84-year old woman who received her injuries while cooking. No one over the age of 84 received a flame burn due to clothing ignition.

84-Year Old Woman Dies From Clothing Ignition While Cooking
On March 1, 2004, an 84-year old Hudson, NH woman accidentally ignited her clothes while cooking at home and received burns to approximately 70% of her body surface area. She was med-flighted to Massachusetts General Hospital for immediate treatment where she unfortunately succumbed to her injuries.

54-Year Old Man Dies From Self-Immolation
On August 24, 2004, a 54-year old Lowell man doused himself with gasoline and set himself on fire. He received burns to 70% of his body. He was brought to Massachusetts General Hospital for treatment where he unfortunately died a short while later.

13-Year Old Boy Burned Playing With Gasoline & Matches
On June 12, 2004, a 13-year old Boston boy was received life-threatening injuries when he inadvertently ignited the gasoline he was playing with matches. He received burns to 40% of his body surface area. He was transferred to Shriner's Burn Hospital and released home.

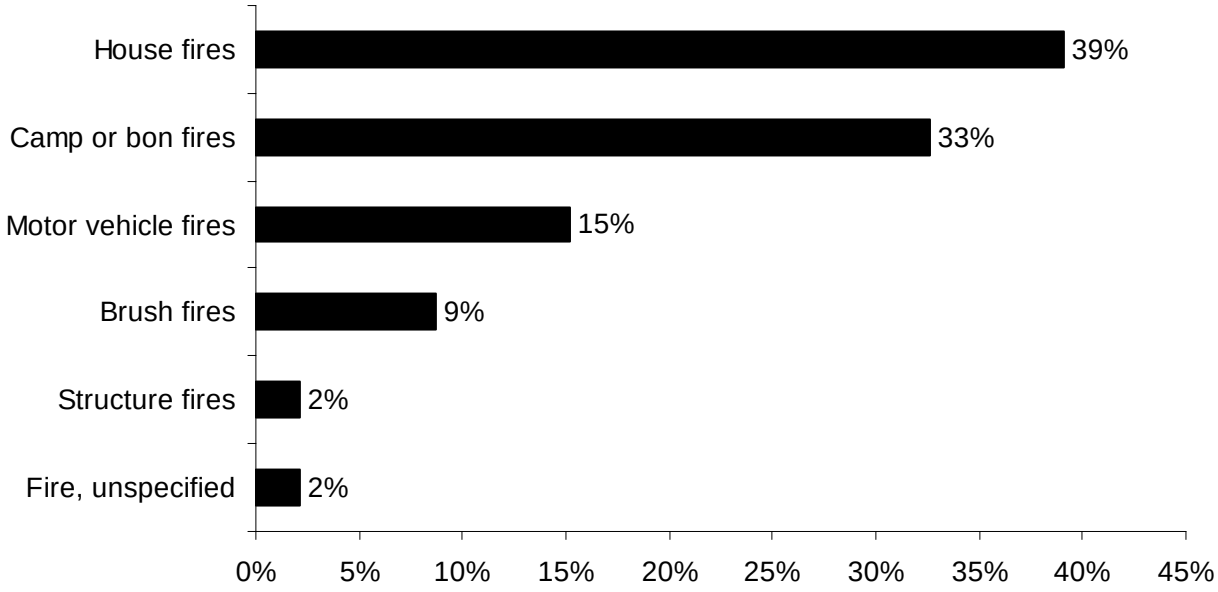
Burn Injuries Caused by Fires

Fires Caused 13% of Burn Injuries
Forty-six (46), or 13% of the 358 burn injuries reported in 2004 were caused by fires. This is a 61% decrease over the 119 fire burns reported in 2003, which included 26 victims from the fire at The Station nightclub in West Warwick, Rhode Island on February 20, 2004. If we exclude these victims from our calculations there was a 51% drop in reported fire burn injuries from 2004 to 2003 and a 32% decrease in burn injuries caused by fire from 2004 to 2002.

Eighty percent (80%) of the 46 victims were male and 20% were female. Analysis of data from the Massachusetts Fire Incident Reporting System found that the majority of fire injuries occurred while the victim was attempting to control the fire and that men are more likely than women to attempt to control the fire and become injured.

39% of Fire Burn Injuries Occurred in People's Homes
Residential fires caused 18, or 39%, of the 46 fire burn injuries reported in 2004. Fifteen (15), or 33%, were caused by camp or bon fires; seven, or 15%, were due to motor vehicles fires; four, or 9%, of the victims received their burns in brush fires; one victim, or 2%, was burned in a non-residential structure fire; and another victim, or 2%, of fire burn injuries occurred in an unclassified fire started by a child playing with matches.

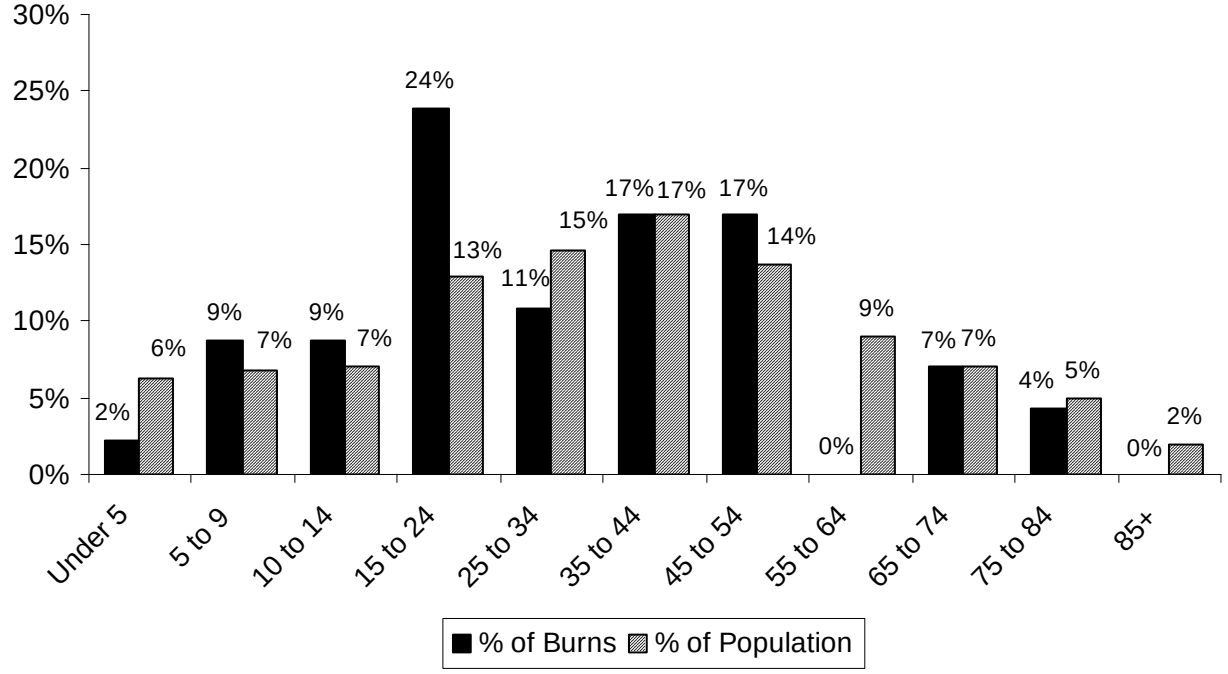
Types of Fires Causing Burns



Young Adults Most Likely to Be Burned in Fires

One, or 2%, of the victims burned in fire incidents were under five years old; four, or 9%, were between five and nine years of age; another four, or 9%, were between 10 and 14; 11, or 24%, were between 15 and 24; five, or 11%, were between 25 and 34; eight, or 17%, were between 35 and 44; eight, or 17%, were between the ages of 45 and 54; no one between the ages of 55

Fire Burn Injuries by Age Group



and 64 was reported burned in a fire; three, or 7%, were aged between 65 and 74; two, or 4%, were between 75 and 84; and no one over the age of 82 was reported burned in a fire in 2004.

Reported Burns Are a Fraction of Injuries From Fires
Only burn injuries that extend to 5% or more of the body surface area and are treated by a medical professional are reported to the *Massachusetts Burn Injury Reporting System*. Consequently, the human cost of fires is under-reported in this analysis. Smoke inhalation, cuts, fractures and less severe burns incurred while fighting or fleeing the fire are not recorded here. Fire deaths are not recorded. Properly maintained smoke detectors and quick-response residential sprinklers could prevent many of the injuries caused by fires. Detectors should sound an early warning to leave the area and quick-response sprinklers can control or possibly extinguish a fire in its earliest stages.

Refer to MFIRS Annual Report for More Information about Fires
For more information about the causes of fires and fire-related casualties, please refer to the *Massachusetts Fire Incident Reporting System – Annual Reports*. Using data collected by the Massachusetts Fire Incident Reporting System (MFIRS), these reports examine the causes of fires, fire deaths and fire injuries. Information is provided on fires in different occupancies and on special topics such as children and fire, fires caused by smoking, electrical fires, cooking fires and heating equipment fires.

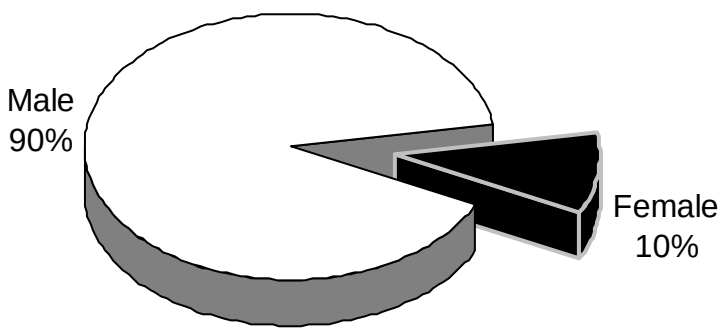
Homeless Man Dies in Tent & Brush Fire
On August 10, 2004, a 65-year old Barnstable man received second and third-degree burns to the lower half of his body. He had been living in a tent in the Barnstable woods and had inadvertently knocked over a candle that he was using as a light. The candle ignited the tent and the then the surrounding brush. The victim who was a double amputee was unable to get out of the area. The victim was brought to Cape Cod Hospital and then transported to Massachusetts General Hospital in Boston where he later died from his injuries.

53-Year Old Woman Dies From Smoking in Bed
On September 2, 2004, a 53-year old Leominster woman died from burns to over a quarter of her body when she fell asleep while smoking.

2 Men Die in House Fire Started by Floor Sanding
On September 2, 2004, a crew of four Boston floor sanders had been working in a Somerville residence on a third floor renovation project, refinishing the wood floors. An explosion and subsequent house fire resulted in the death of two, and burn injuries to the other two crewmembers.

Burn Injuries Caused by Explosions

Explosions Caused 8% of Reported Burn Injuries
Thirty (30), or 8%, of the 358 burn injuries reported in 2004 were caused by explosions. Ninety percent (90%) of the explosion burn victims were male and 10% were female.

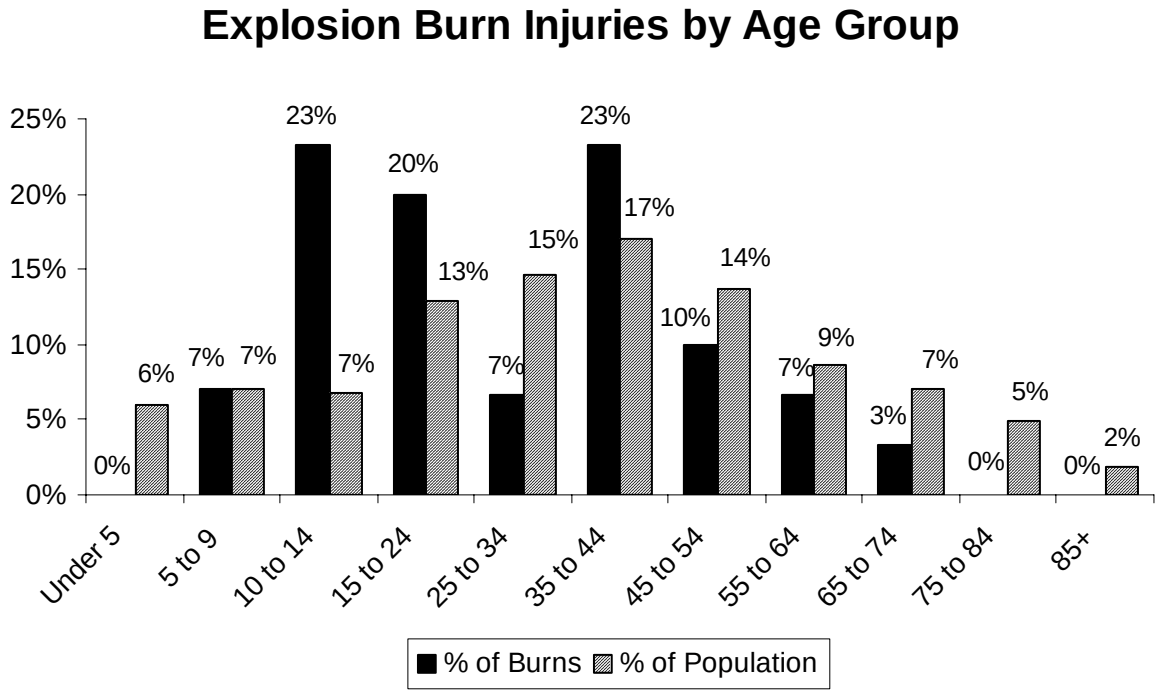


Eight (8) burns, or 27%, occurred during work-related activities. Seven (7) of these eight victims were male and the other work-related victim was female. This is a downward turn of the trend where 15, or 42%, of explosions were work-related in 2003, 12, or 40% of explosions in 2002 were work-related, 14, or 38%, were work-related in 2001, in 1999, nine, or 41%, were work-related. In 2000 only two burns, or 7%, of the burns caused by explosions were work-related.

Out of these 30 injuries there were two explosions with two or more injuries. All of these victims were men. Two men were injured in a propane explosion while they were filling tanks at a private residence on Nantucket. Three Tewksbury teenage boys and one North Andover teenage boy were injured when a gas can they were using to soak and ignite tennis balls exploded.

Children Ages 10 to 14 Face Greatest Risk of Explosion Burns
There were no burns from explosion to children under five years old in 2004; two, or 7%, of explosion-related burns were to children between the ages of five and nine; children between the ages of 10 to 14 accounted for seven, or 23%, of these injuries; six, or 20%, were between the ages of 15 to 24; adults between the ages of 25 and 34 received two, or 7%, of the explosion related burns; seven, or 23%, were between 35 and 44, tying the 10 to 14 age group for the most explosion burn injuries in 2004; three, or 10%, were between 45 and 54 years of age; two, or 7%, were between 55 and 64 years old; and one, or 3%, were between 65 to 74 years old. No one over the age of 66 received a burn injury due to an explosion. The youngest victim to receive a

burn injury from an explosion in 2003 was a five-year old boy; and the oldest person to receive one of these burns was a 66-year old man.



Ignitable Liquids Were the Leading Cause of Explosion Burn Injuries

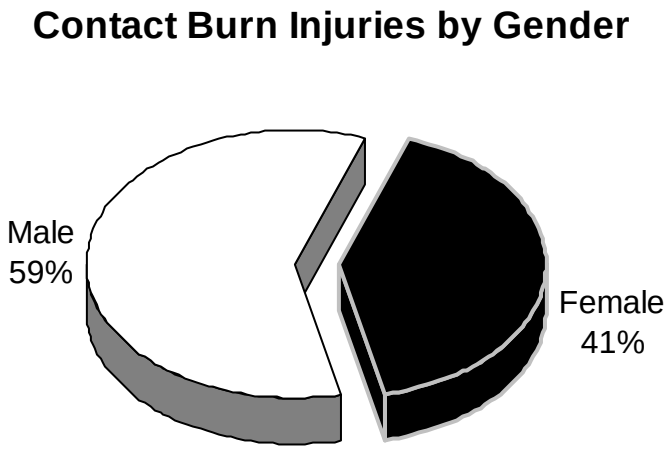
Ignitable liquids accounted for 11, or 37%, of the explosion-related burn injuries in 2004. Five of these 11 burns were from children playing with gasoline, the other five were from adults using gasoline; and one was from another ignitable liquid. Ignitable gases were the second leading cause of explosion injuries, causing six, or 18%. Four (4), or 13%, of the ignitable gas injuries were caused by propane and one each (3%) by natural gas and an unspecified ignitable gas. Electricity caused three, or 10%, of these burn injuries in 2004. Cooking caused two, or 7%; one (3%) was from an oven and the other (3%) was from an unspecified cooking action. Explosives also caused two, or 7%, of explosion burn injuries. Fireworks and a professional grade explosive each caused one, or 3%, of explosion injuries. Car parts, and chemicals each also accounted for two, or 7%, of the explosion burn injuries in the Commonwealth. An aeorosol can and a dryer fire, each accounted for one, or 3%, of the explosion-related burn injuries in 2004.

39-Year Old Electrician Dies While Working

On August 4, 2004, a 39-year old male Massport electrician was working at a substation at the Logan Airport Hilton when there was an electrical explosion. The explosion threw the victim from his work position. He received burns to approximately 26% of his body and also suffered head trauma from the fall. He died from the severe burns and the head trauma.

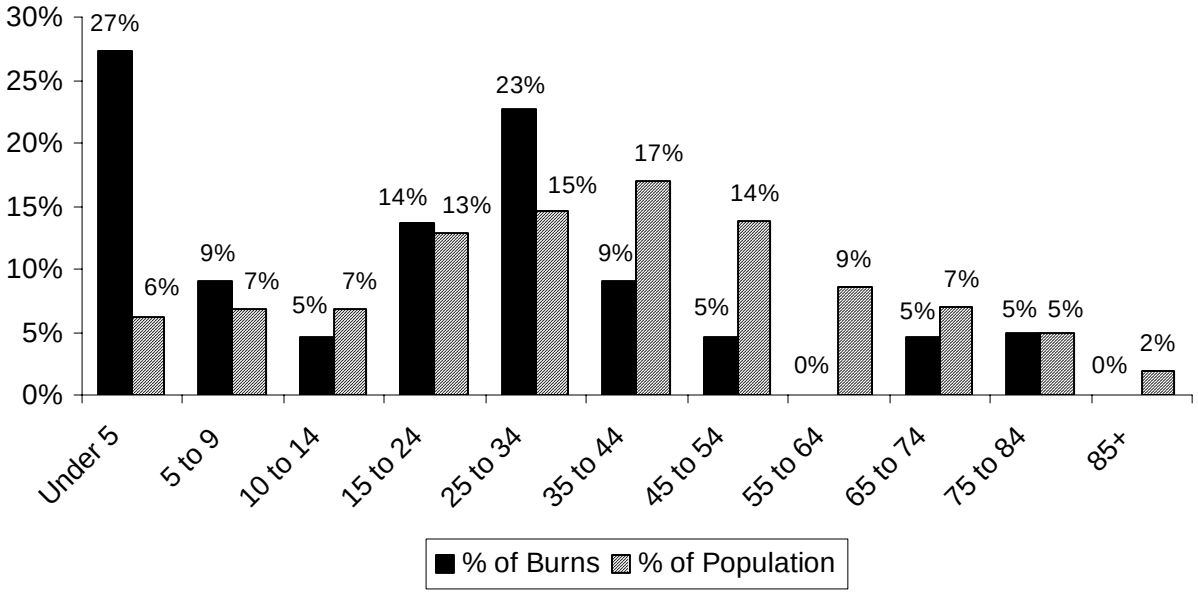
Contact Burn Injuries

Contact with Hot Objects Caused 6% of Reported Burn Injuries
Twenty-two (22), or 6%, of the 358 burn injuries reported in 2004 were caused by contact with hot objects. Fifty-nine percent (59%) of the burn victims were male and 41% were female. Three (3), or 14%, of contact burns occurred at work in 2004.



27% of Contact Burns Were to Children Under 5
Over one-quarter of all the 22 contact burns reported in 2004 were to children under the age of five. This age group accounted for six, or 27%, of all contact burns. Pre-schoolers faced 4.4 times the risk of contact burns or were four and half times as likely to receive a contact burn. This disproportionate risk could be the result of young children exploring their environment and underscores the need for constant supervision of toddlers. Two, or 9%, of these burn victims were between the ages of 5 and 9; one adolescent in the age group between 10 and 14 received a contact burn injury accounting for 5%; three, or 14%, were between 15 and 24; five, or 23%, of the victims were between 25 and 34; the age group 35 to 44 accounted for two victims, or 9%; one victim was in the age group 45 to 54, and accounted for 5% of these injuries; there were no victims in the age grouping 55 to 64; one victim, or 5% were between 65 and 74; and one victim, or another 5% of contact burn victims, belonged to the age group 75 to 84 years of age. In 2004, no one over the age of 78 received a burn from contact with a hot object. The youngest person to receive a contact burn in 2004 was a four-month old girl, and the oldest person was a 78-year old man.

Contact Burn Injuries by Age Group



Home Heating Was the Leading Cause of Contact Burns
Contact with home heaters caused six, or 27%, of the contact burns in 2004. Contact with radiators caused four, or 18%, of all contact burns; and contact with a heater and a fireplace each caused one, or 5% of these types of burns. Cooking caused four, or 18%, of the 22 reported contact burns in 2004. Contact with a stove, an oven, hot food, and an unspecified cooking activity each caused one of these burns. Contact with hot motorcycle parts caused another three, or 14%, of the contact burns. Chemicals, hot pieces of metal and embers from camp fires each caused two, or 9%, of these types of burns. A welding torch, a clothes iron, and hot asphalt each caused one, or 5%, of the contact burns in 2004. There were three work-related contact burn injuries in Massachusetts in 2004. Two of these three work-related injuries were male, the other was a woman.

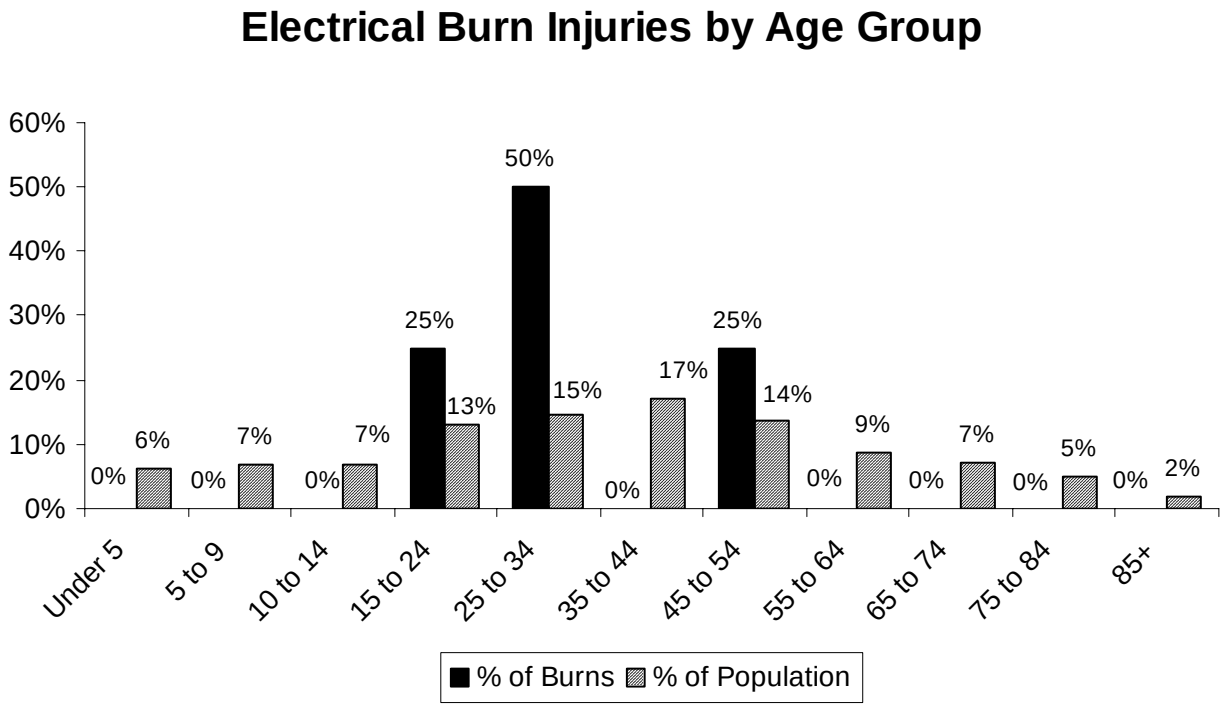
73-Year Old Burns Self on Radiator
On May 4, 2004, a 73-year old Lowell woman fell and came into contact with one of the radiators in her home. She received burns to her face and left arm or approximately 10% of her body surface area.

28-Year Old Burned by Liquid Asphalt at Work
On September 2, 2004, a 28-year old Salem man was accidentally splashed with hot liquid asphalt while working at a job site in Wilmington. He received burns to head, neck and left arm, or approximately 10% of his total body surface area.

Electrical Burn Injuries

Electrical Incidents Caused 1% of Burn Injuries
Four (4), or 1%, of the 358 burn injuries reported in 2004 were caused by electrical accidents. All of the electrical burn victims were male. All four occurred during work-related activities.

All Electrical Burn Victims Were Between the Ages of 20 and 48
No one under the age of 20 and no one over the age of 48 was reported to have received a burn from an electrical source. One (1), or 25% of the victims who received electrical burns, was between 15 and 24; two of the victims, or 50%, were between 25 and 34; the other victim, or 25%, was between 45 and 54. People aged 45 to 54 received three, or 43%, of the reported electrical burns, they were three times more likely to be an electrical burn victim.

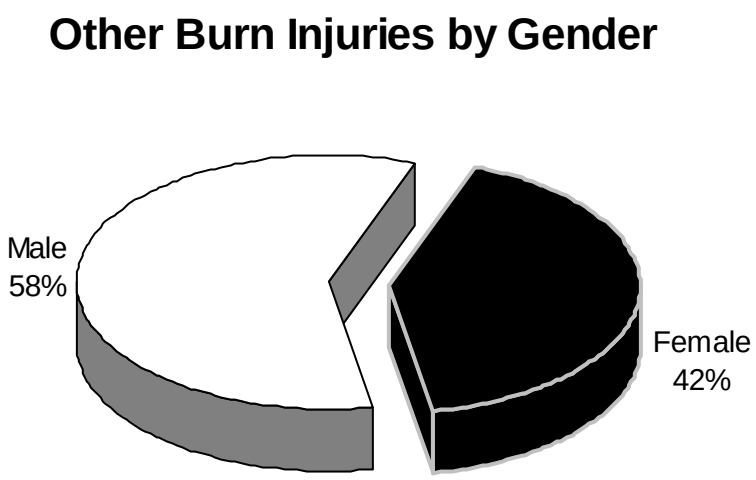


1/2 of Electrical Burns Were Caused by Undefined Electrical Accidents
Two (2), or 50%, of the electrical burn injuries in 2004 were from undefined electrical accidents. Electrocutions accounted for the other two, or 50%, of electrical burns.

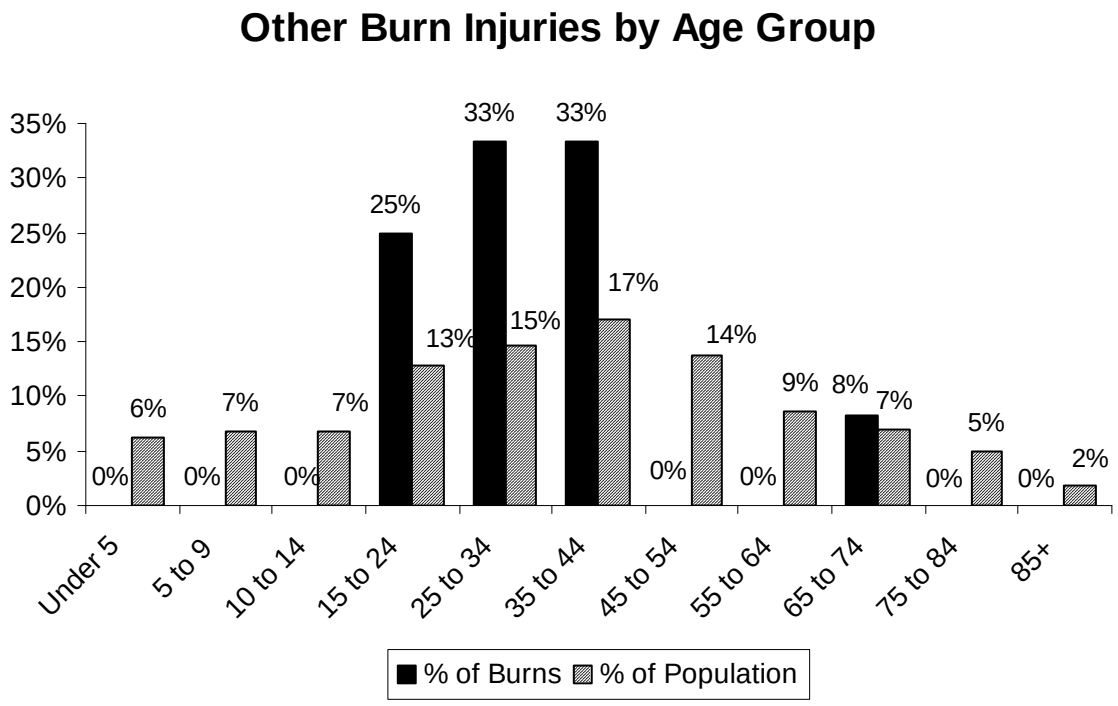
20-Year Old Man Dies From Work-Related Electrical Burns
On February 3, 2004, a 20-year old Falmouth man was electrocuted while working. He had grabbed a charged electrical line. The electricity caused burns to both hands and he died shortly thereafter.

Other Types of Burn Injuries

Chemical Exposures & Sunburns Cause *Other* Burns
In 2004 there were 12 burn injuries that were characterized as *Other*. These include seven (7) burns, or 58%, caused by exposure to chemicals. Three *Other* burns, or 25%, were attributed to severe sunburns; and the last two *Other* burn injuries came from Ultra violet (UV) lamps, accounting for 17% of these types of burns. Fifty-eight percent (58%) of the 12 victims were male and 42% were female. Health care facilities reported that three, or 25%, of the 12 *Other* burn victims were working when injured. Exposure to chemicals is how all three of these victims received their burn injuries.



2/3 of *Other* Burn Victims Were Between 25 to 44 Years Old
None of the *Other* burn victims were under 17-years old. Three (3) victims accounting for 25% of these burn victims, were between 15 and 24. Four (4) victims, or 33%, were between the ages of 25 and 34; another four, or 33%, were between 35 and 44. No one over between the ages of 45 and 64 suffered an *Other* burn injury. One victim, or 8%, was between 65 and 74 years of age. No one over the age of 69 received an *Other* type of burn. The youngest victim was a 17-year old girl and the oldest victim was a 69-year old woman.



Man Working Burned By Chemicals
On June 17, 2004 a 30-year old New Hampshire man was at work at a job site in Natick, MA where he was splattered with concrete mix. Chemical burns covered approximately 40% of his body surface area.

37-Year Old Injured by Sulfuric Acid
On January 14, 2004, a 37-year old Arlington man accidentally spilled and ingested sulfuric acid. The victim received chemical burns to approximately 40% of his body surface along with burns to his internal organs.

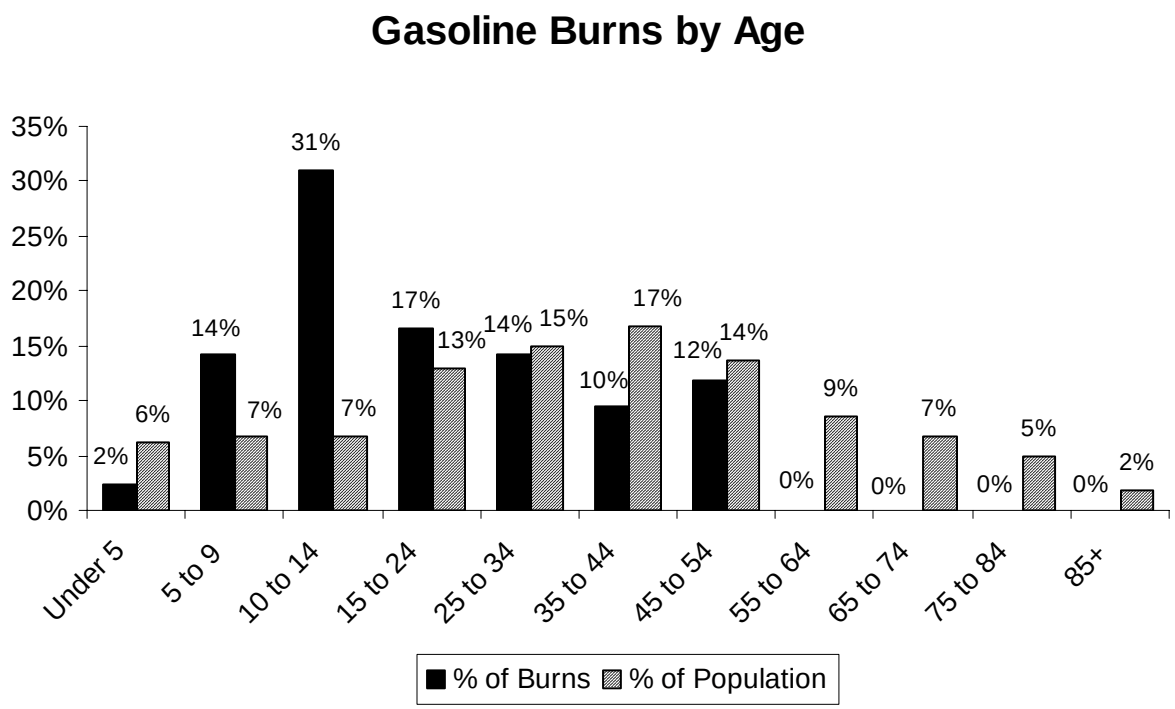
Gasoline Related Burn Injuries

Gasoline Involved in 12% of Reported Burn Injuries
Gasoline was involved in 42, or 12%, of the 358 burns reported to M-BIRS in 2004. Gasoline was the primary cause of the injury in 28, or 67%, of these injuries. Because of more detailed descriptions as to how burn injuries occurred, it was determined that gasoline was also involved in 14 (33%) other burn injuries that were coded with a different primary description such as a car part, self-immolation, a clothing ignition, a cigarette, or a cutting torch.

Twenty-six (26), or 62%, of the burn injuries involving gasoline were flame burn injuries. Eleven (11), or 26% were the result of explosions involving gasoline. Five (5), or 12%, of the

gasoline related burn injuries were caused by fires. Forty (40), or 95%, of the 42 gasoline related burn victims in 2004 were men, and two, or 5% were women. Only two of the incidents occurred during work-related activities, accounting for 5% of all gasoline related burn injuries. Twenty (20), or 48%, of the gasoline burn injuries in 2004 involved children; 22, or 52% of these injuries occurred to adults.

Almost 1/3 of Gasoline-Related Burn Victims Were Between the Ages of 10 and 14
There was one victim under the age of five, accounting for 2% of all gasoline burns in 2004. Six (6) victims, or 14%, were between 5 and 9 years of age. Thirteen (13), or 31%, of the victims were between the ages of 10 and 14 years old. This age group has historically been the most at risk for these types of injuries, and this year this age group returned to this trend being 4.5 times at a greater risk of gasoline burn injuries. Seven (7), or 17%, of the victims were between 15 and 24; young adults in this age group were only slightly more likely to be burned while handling gasoline. Six (6), or 14%, were between 25 and 34; four, or 10% were between 35 and 44; and five, or 12%, were between the ages of 45 and 54. No one over the age of 51 was the victim of one of these burns. The youngest victim was a five-year old boy and the oldest victim was 51-year old man.



It is actually gasoline vapors that burn, not the liquid itself. The vapors are generated at very low temperatures, are heavier than air and can travel a distance to find a spark. A spark or lit cigarette is enough to ignite the invisible fumes that may linger on clothing. Gasoline is a tool, but a dangerous one, and it demands respect.

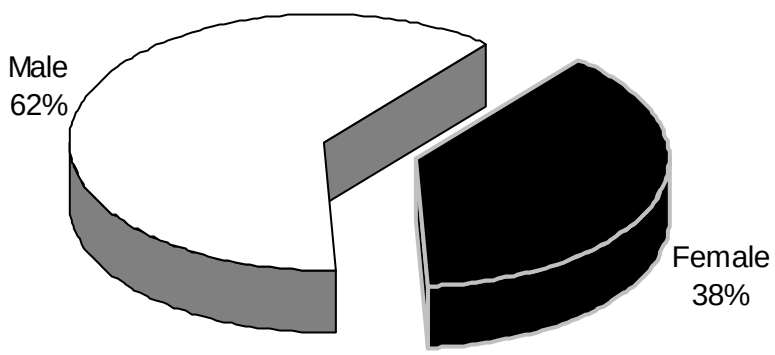
Gas Fumes Ignite Near Portable Heater
On March 12, 2004, while working on a motorcycle in a garage, a gas can was knocked over and gasoline was spilled on the floor and the victim and ran towards the heater. Gas fumes ignited causing the garage and the victim to catch fire. The victim, a 49-year old Holliston man received burns to approximately 70% of his body. He was initially transported to Milford Regional Hospital and then transferred to UMASS-Memorial Hospital – University Campus for treatment.

13-Year Old Burned While Playing with Gasoline & Matches
On June 12, 2004, a 13-year old Boston teenager was burned while playing with matches and gasoline. Approximately 40% of his body surface area was burned.

Some Safety Measures
- If you must store gasoline, store it outside the home in approved safety cans away from open flames (i.e. water heaters and pilot lights) and out of reach of children.
- Never regularly carry gasoline in your trunk.
- A one-gallon approved container could be carried empty to be used only for emergencies.

Burns Caused by Cooking Activities

Cooking Activities Caused Almost 1/4 of Reported Burn Injuries
Cooking activities caused 87, or 24%, of the 358 burn injuries reported to the Massachusetts Burn Injury Reporting System in 2004. Cooking activities were the primary cause of the injury in 82, or 94%, of these injuries. Because of more detailed descriptions as to how burn injuries occurred, it was determined that cooking activities were also involved in five (6%) other burn injuries that were coded with a different primary description such as an assault, domestic



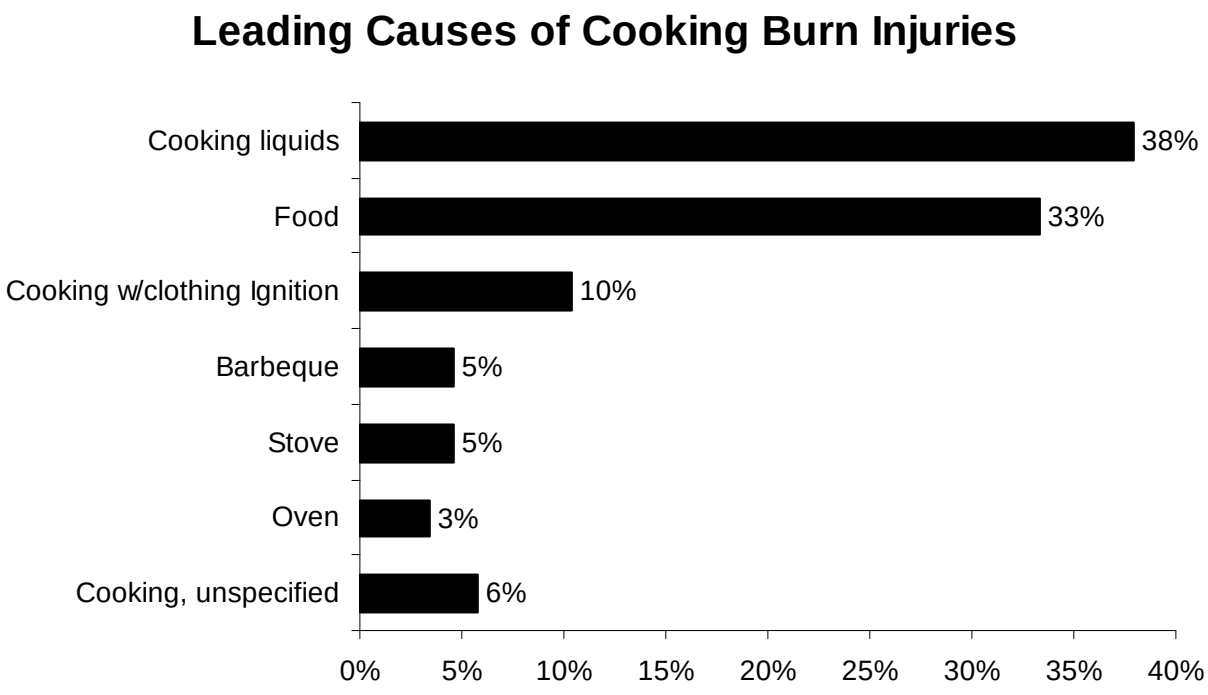
violence, natural gas, or gasoline. Fifty-four (54), or 62%, of the 87 victims were male and the other 33, or 38%, were female. Fifteen (15), or 17%, of the 87 people burned by cooking activities were working when injured.

Fifty-eight (58), or 67%, of the 87 burn injuries caused by cooking were scalds. Thirty-one (31), or 51%, of these scald victims were injured by hot cooking liquids; hot food accounted for 28, or 49%, of the victims. Twenty-one (21), or 24%, of all cooking-related burns were flame burn injuries. Eight, or 39% of the cooking-related flame burn victims, were burned when their clothing ignited while cooking. Four (4) victims received their burns from coming into contact with hot stoves, or other cooking equipment, causing 5% of these burns. Two (2) victims received burn injuries in cooking-related explosions, accounting for 2% of cooking burn injuries in 2004. One (1) injury in a house fire caused by clothing ignition while cooking accounting for 1% of the cooking-related burn victims.

Cooking Liquids Were the Leading Cause of Cooking-Related Burns

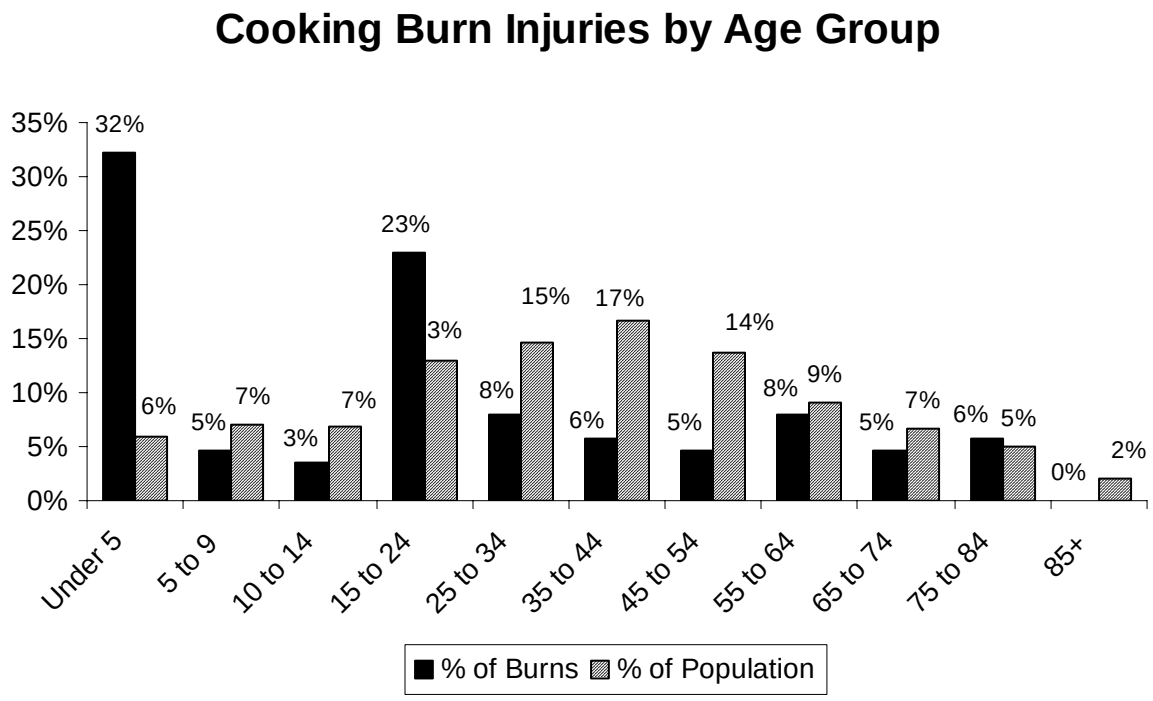
Burns from cooking liquids were the leading cause of all cooking-related burns in Massachusetts in 2004. These burns accounted for 33, or 38%, of all cooking-related burn injuries. Scalds from hot food were the second leading cause of cooking-related injuries. They caused 29, or 33%, of these injuries. Clothing ignitions while cooking caused nine, or 10%. Flame burn injuries from stoves and burns from coming into contact with a hot stove in 2004 accounted for four, or 5%, of these injuries. Burns received while barbequing also accounted for four, or 5%, of all cooking burn injuries. Burns from conventional ovens caused three, or 3% of these burns; and unspecified cooking activities caused five, or 6%, of the cooking burns in the Commonwealth in 2004.

The following graph shows the leading causes of cooking related burn injuries in Massachusetts in 2004 regardless of the type of burn.



Children Under 5 Were 5.4 Times as Likely to be Burned by Cooking Activities
Twenty-eight (28), or 32%, of the cooking-related burn victims were under age five. This age group was 5.4 times as likely to be burned by cooking related activities. Four (4), or 5%, were aged between five and nine years of age; three, or 3%, were between 10 and 14; 20, or 23%, were between 15 and 24 years old; seven, or 8%, were between 25 and 34; five, or 6%, were between 35 and 44; another four, or 5%, were between 45 and 54; seven, or 8%, were between 55 and 64; four victims, or 5%, were between 65 and 74; five, or 6%, of the victims belong to the age group between 75 and 84 years of age, and no one over the age of 84 received a cooking-related burn, in 2004. The youngest victim of a cooking-related burn was a nine-month old boy, while the oldest victim was an 84-year old woman who received his burn injuries from a clothing ignition while cooking.

The cause of burns varied with age. Pre-schoolers generally do not cook. They do, however, grab pot handles and sometimes get underfoot when adults are cooking. Cooking liquids or cooking grease frequently scalds them. Parents should keep young children away from the stove and food preparation areas while adults are cooking.



Older Adults at Risk for Cooking-Related Burn Injuries
In the past older adults over the age of 65 were usually more likely to burned while cooking. However in 2004, nine older adults received burn injuries as a result of cooking in 2004. They represented 11% of the cooking burn injuries and 14% of the population. Five, or 56%, of these victims were men and four, or 44%, were women. Five older adults, three women and two men had their clothing ignite while they were cooking. Two older adults received flame burn injuries from stoves. There were two scald burns, one older man received a scald burn from cooking liquids; and one older woman received scald burns from hot food.

Clothing Ignitions while Cooking
In 2004, nine, or 10% of the victims with cooking-related burns, were injured when their clothing ignited while cooking. Five (5), or 56%, of the victims of clothing ignitions while cooking were men and four, or 44% were women. Five (5) were 65 years old or older. Loose-fitting sleeves can come into contact with burners and catch fire.

According to data collected by the Massachusetts Fire Incident Reporting System, unattended and other unsafe cooking practices caused 6,019 fires in 2003. These fires killed four civilians and caused 78 civilian injuries and 31 fire service injuries along with $10.3 million in losses. Many of these people also suffered from smoke inhalation

Serious Burns from Cooking
On February 3, 2004 a 73-year old Ashburnham woman received flame burns to 22% of her body surface area when her clothes ignited while cooking.

On June 26, 2004, a 51-year old Boston woman received flame burn injuries to 15% of her body when she someone threw an ignitable liquid onto the grill and flames shot up out of the grill.

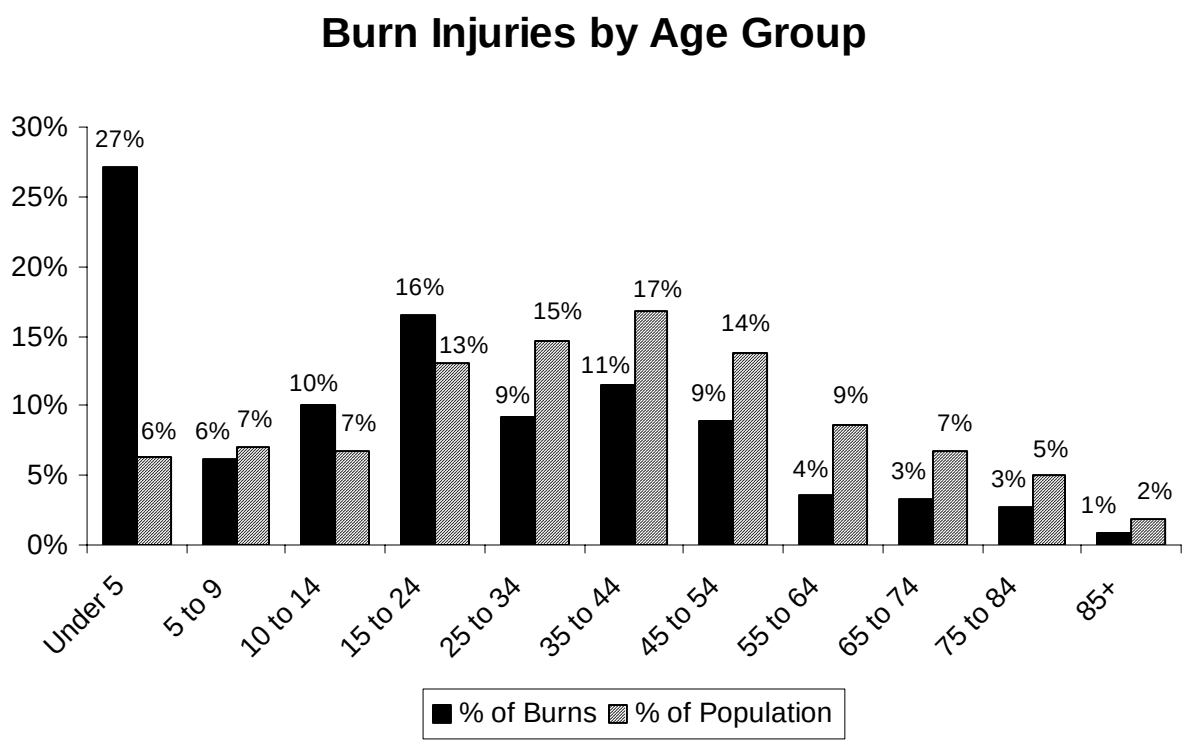
On August 4, 2004 a 23-year old Cape Cod man burned approximately 15% of his body surface area when he was attempting to relight his broiler oven.

On December 25, 2004, a 33-year old Fitchburg man received burns to his face when fryolator grease splashed on his face while he was a work.

Safety Measures
- Never leave cooking food unattended.
- Keep children at a safe distance from all hot items by using playpens, high chairs, etc.
- Create a safe zone for children.
- Test all heated food before giving it to young children.
- Keep pot handles turned in over the stove or countertop.
- Always use oven mitts or potholders.
- Secure loose sleeves or wear short sleeves while cooking.
- Keep a large pot lid handy to put out stovetop fires.
- Never use water on a stovetop grease fire.
- Read and follow directions when using microwave ovens and other cooking appliances.
- Children should not be allowed to use cooking/heating appliances until they are mature enough to understand safe-use procedures and tall enough to safely handle items and reach cooking surfaces.
- If cabinets exist over cooking surfaces use them to store only items that will not be needed during cooking.
- When barbequing, use only charcoal lighter fluid to start a fire. Once the coals have been ignited, never add more charcoal lighter fuel to the fire; the container may explode in your hand.
- Dispose of used coals in a proper metal container away from the house or porch.

Burn Injuries by Age Group

Although burn injuries were reported in all age groups, very young children suffer more than their share. Over one quarter (27%) of all burn victims were children under the age of five. Ninety-seven (97) children under age five were seriously burned in 2004. Twenty-two (22), or 6% of the burn injuries, occurred to children aged five to nine; 36, or 10%, were youths aged 10 to 14. Fifty-nine (59), or 16% of the burn victims, were young adults aged 15 to 24. Thirty-three (33), or 9% of 2004 burn victims were adults aged 25 to 34. Forty-one (41), or 11%, were people aged 35 to 44. Thirty-two (32), or 9% of the burn injuries, occurred to adults aged 45 to 54; 13, or 4% of people who were reported to have incurred burns were between 55 and 64; 12, or 3% of all burn victims, were older adults in the 65 to 74 age group, 10, or 3% were in the 75 to 84 years old age group and three adults over the age of 85, or 1% of all reported burn victims in 2004, received burns of more than 5% of their body surface area.



Children Under 5 At Highest Risk of Burn Injuries

The above graph compares the percentage of burn injuries incurred by each age group with the percentage of that age group in the general population. Only 6% of the population in Massachusetts is under the age of five (source: 2000 U.S. Census data). We would expect therefore that children under five would account for a maximum of 6% of the burn injuries. In fact, they accounted for 27% of the reported burn injuries in 2004, making them over four times more likely to suffer burn injuries. Children of this age group are the most dependent on others to protect them and are the least able to move out of harm's way unassisted.

The threat of burns is most severe for children less than two-years old. Fifty-eight (58) babies under the age of two, accounted for 16% of all burn victims, but all children under the age of five accounted for 6% of the Massachusetts population.

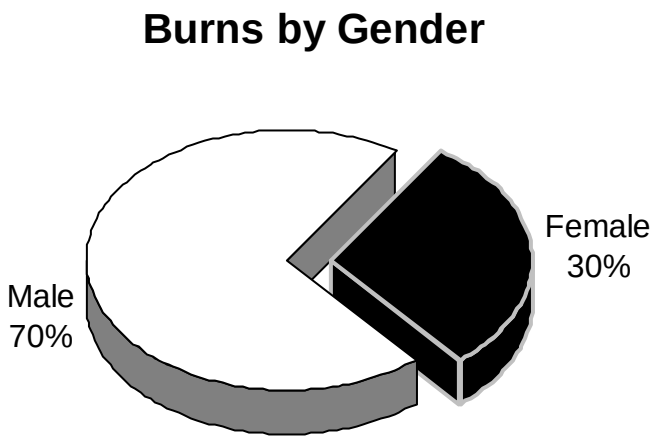
While scalds remain the leading cause of burn injuries overall, for the first time, scalds are not the leading cause of burn injuries for the majority of age groups. Flame burn injuries were the leading cause for the six age groups over the age of five years old. Scalds were the leading cause of burn injuries in the age groups children under five and adults between the ages of 55 and 64. Flame burns and scalds tied as the leading cause of burn injuries for older adults over the age of 65.

To learn more about the specific causes and prevention strategies for each age group, please look at the age specific sections within *Burn Injuries by Age Group*.

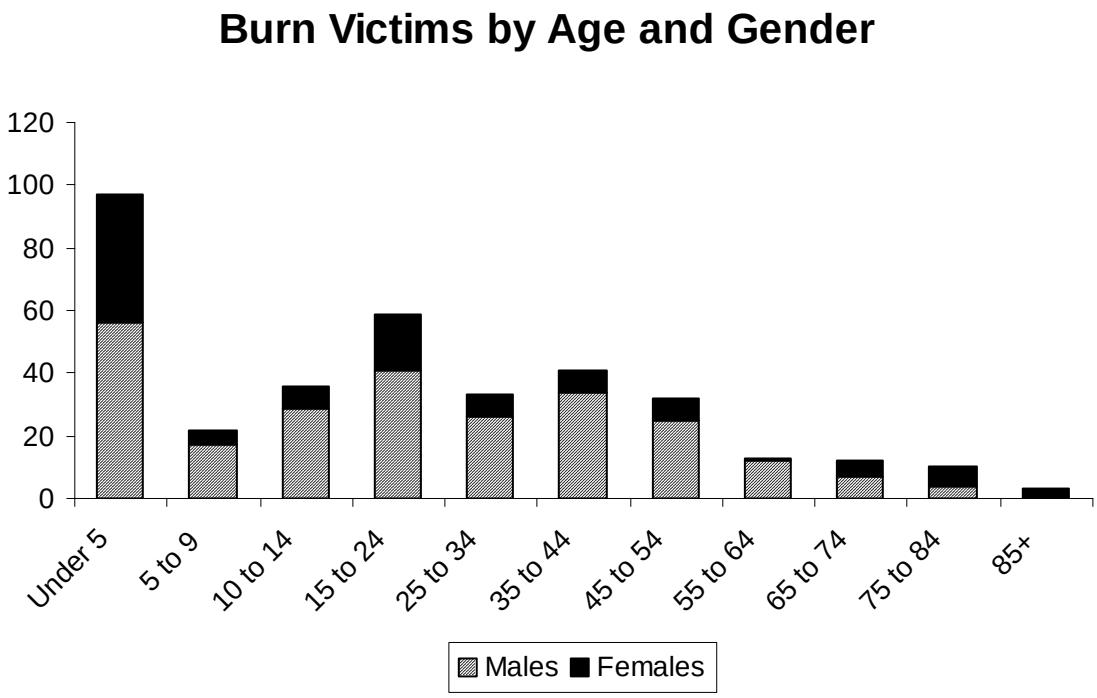
Causes of Burn Injuries by Age and Gender

The leading causes of burn injuries vary widely between age groups depending on the nature of activities in which people are involved. Children under five are busy exploring their environment and reaching for anything in their grasp. Forty-three percent (43%) of the burns incurred by these young children were scalds caused by hot beverages and another 21% were caused by scalds from hot food. Cooking liquids scalds, gasoline and other ignitable liquids were frequent causes of burn injuries to older teens and young adults.

Parents of young children must be educated about the danger of scalds from hot beverages, cooking liquids and tap water. Teens and young adults need information about cooking safely, procedures to follow when a car overheats and the correct uses of gasoline. To be effective, burn prevention educators must develop strategies that address the risk faced by each age group.



Up until 75 years of age, males were burned more frequently than females. In 2004 251, or 70%, of the 358 burn victims were male, and 107, or 30%, were female.



Children Under 5

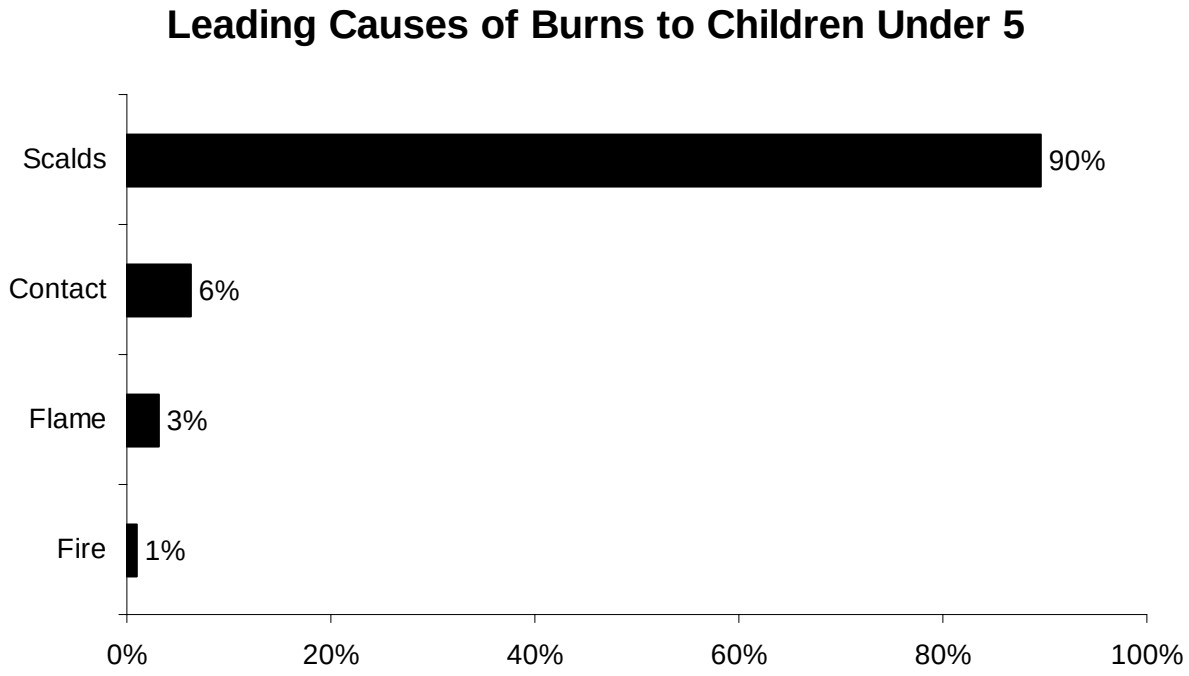
Over 1/4 of Reported Burns Incurred by Children Under 5
Ninety-seven (97), or 27%, of the burn injuries reported to M-BIRS in 2004 were incurred by children under five years old. According to the 2000 U.S. Census, only 6% of Massachusetts residents are under the age of five. Children under five were four times as likely to be burned as were members of the general population. No other age group faced a risk this high. Fifty-eight percent (58%) of burned pre-schoolers were male and 42% were female.

Scalds Caused 9 Out of Every 10 Burns to Pre-Schoolers
Scalds caused 87, or 90%, of the burn injuries incurred by children under five. Forty-two (42) were from hot beverages; 28 were from cooking, 21 from hot food and seven from hot cooking liquids; and 17 were from hot tap water.

Contact burns accounted for six, or 6%, of the injuries to children under the age of five. Three children were burned by touching a hot radiator. Contact with hot embers from a camp fire caused two more burn injuries to this age group. One child received his burns by touching a hot clothes iron.

Flame burns caused three, or 3%, of burns to this age group. One child was injured when someone sprayed flaming alcohol on him. Another child was burned while he was playing with matches. A cigarette caused a flame burn injury to one of the children under five.

Fire caused one, or 1%, of the injuries to this age group. This child was burned by a camp fire.



Children Ages 5 to 9

6% of Reported Burn Injuries Incurred by Children 5-9
Twenty-two (22), or 6%, of the burn injuries reported in 2004 were incurred by children between five and nine years of age. Seventeen (17), or 77%, of the burn victims were male, and five, or 23%, were female. Children in this age bracket accounted for 7% of the population of Massachusetts and 6% of the burn injuries in 2004.

Flame Burns Caused Over 1/3 of All Burns to Children 5-9
The leading causes of burn injuries to children aged five to nine were flame burns, scalds, fires, contact burns, and explosions.

Flame burns accounted for eight, or 36%, of the burn injuries to this age group. This is one of eight age groups that had flame burns as the leading type of burn injuries. Six (6) children were injured by flame burn injuries while playing with something dangerous. Three (3) children in this age category suffered flame burn injuries from playing with a lighter; two children were playing

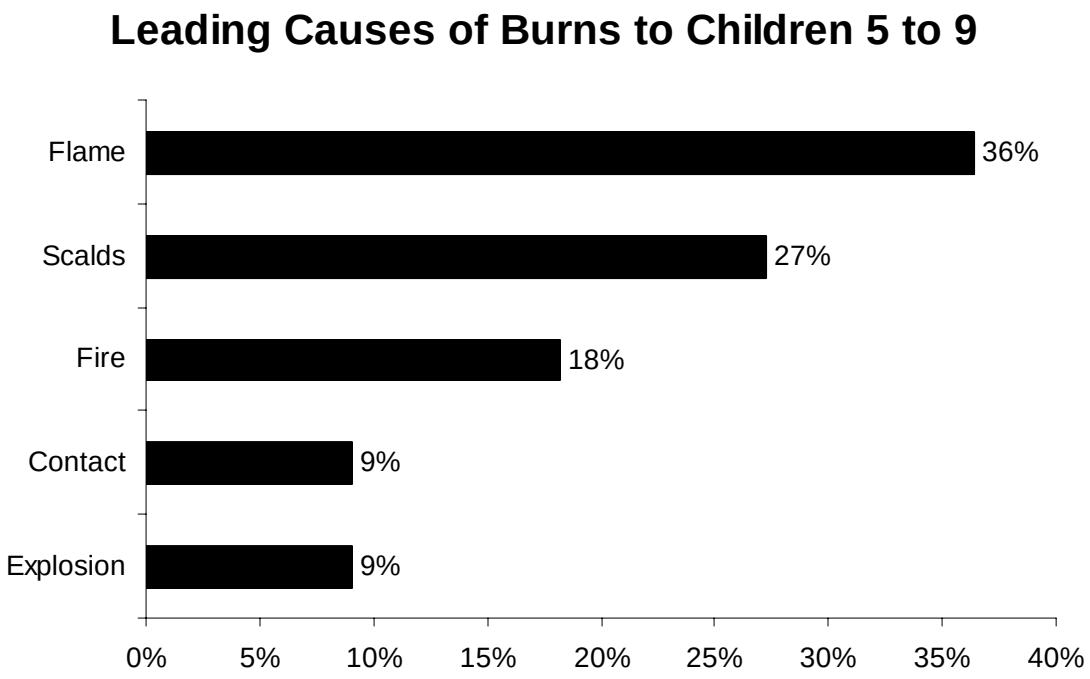
with gasoline; one child was playing with matches and one child was playing with fireworks (there was also one explosion burn injury from fireworks in this age group). A bonfire was the cause of another flame burn injury to a child in this age group.

Scalds caused six, or 27%, of the burn injuries incurred by children aged five to nine in 2004. The scald burn injuries included four from hot food, one from a hot beverage, and one from hot tap water.

Fires accounted for four burn injuries to this age group. Two house fires and two bonfires accounted for four, or 18%, of the burn injuries to children between the ages of five and nine. In one of these bonfires the child had access to gasoline.

Contact burns caused two, or 9%, of the burns to children aged five to nine. One child was injured when he touched a hot motorcycle part, and the other child was injured when he touched a hot piece of metal.

Two explosions caused two, or 9%, of the burn injuries to children between the ages of five and nine. One child was injured when a clothes dryer exploded and the other was injured in a fireworks explosion (there was also one flame burn injury from fireworks in this age group).



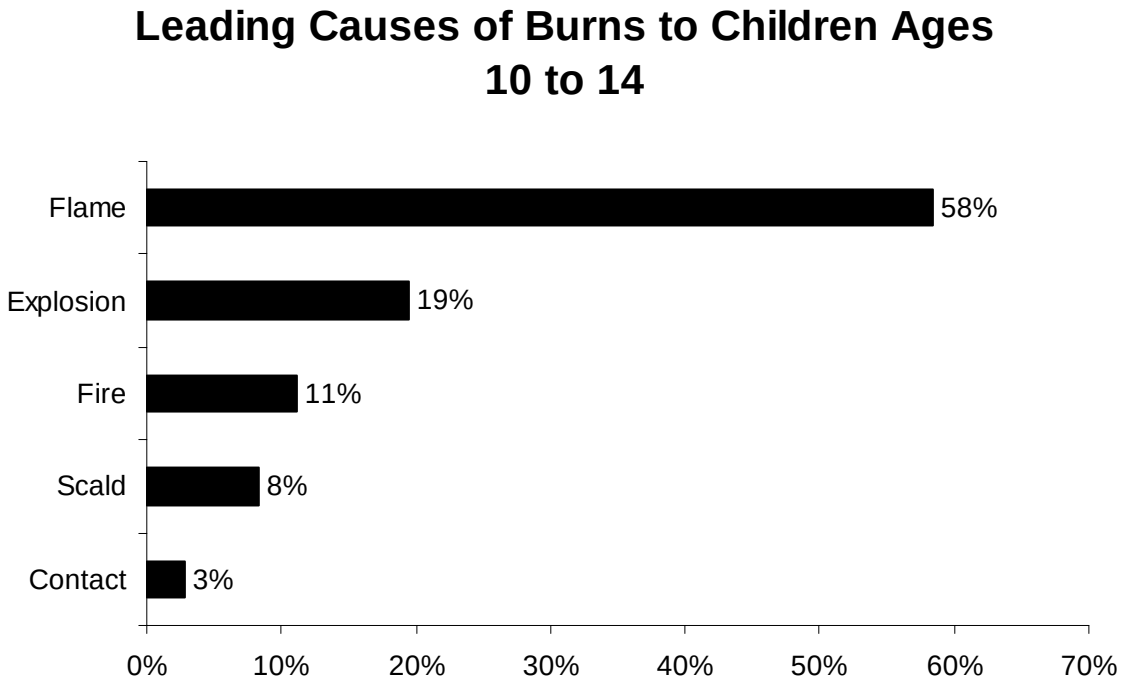
Children Ages 10 to 14

10% of Reported Burns Incurred by Children 10-14
Children between the ages of 10 and 14 suffered 36, or 10%, of the burn injuries reported in 2004. Twenty-nine (29), or 81%, were male and seven, or 19%, were female. Children in this age bracket accounted for 7% of the population in the Commonwealth of Massachusetts but 10% of the total reported burn injuries. In 2004 these children were 1.5 times more at risk at getting a burn. At this age, children are exploring their environment more on their own, but often without the maturity or experience to reason out cause and effect.

Flame Burns Were the Leading Cause of Burns to Children 10-14
Twenty-one (21) pre-teens, or 58%, were injured by flame burn injuries. Nine of these victims were injured while playing with something dangerous. Six (6) victims were children playing with lighters and three involved children playing with gasoline. Explosives caused three injuries; one child was injured trying to make a bomb, another was injured by fireworks and the third was injured by gun powder. Two (2) children received their flame burns from woodstoves. A child of this age group was also injured by a flame burn by a candle, an unspecified clothing ignition, a clothing ignition while cooking, ignitable liquids, a cutting torch, welding and an undetermined flame burn.

Explosions caused seven, or 19%, of the 36 burn injuries to children ages 10 to 14. Five (5) children were burned when the gasoline they were playing or working with exploded. One child in this age group was hurt when an aerosol can exploded. Another child was injured by an explosion of unspecified explosives.

Four, or 11%, of the burn injuries to this age group were due to fires; two pre-teens were injured



in camp or bon fires, one received burns from a house fire and one from an unspecified fire.

Scalds represented three, or 8%, of the burns incurred by children aged 10 to 14. Two were scalded by hot beverages and one was scalded by cooking liquids.

Contact with hot food accounted for one, or 3%, of the burn injuries to this age group.

Preteens Injured by Gasoline & Explosives
Overall gasoline and ignitable liquids were a factor in 11, or 31%, of the burn injuries to pre-teens; five explosions, four flame burns and two bonfires. Explosives were a factor in four, or 11%, of these injuries; three were flame burn injuries, and one was from an explosion.

Ages 15 to 24

16% of Reported Burn Victims Between 15-24
Teens and young adults between the ages of 15 and 24 incurred 59, or 16%, of the burn injuries reported in 2004. Forty-one (41), or 69%, were male and eighteen, or 31%, were female. Young adults aged 15 to 24 account for 13% of the population of Massachusetts and 16% of the burn injuries in 2004. Sixteen (16), or 27%, of the burn injuries incurred by this age group were work-related, 11 were male and five were female.

Almost 1/3 of Burns Were Flame Burns
Eighteen (18), or 31%, of the burn injuries to this age group were caused by flames. Cooking caused four flame burn injuries; two unspecified cooking activities, one from cooking liquids and one from on oven. Candles caused two burn injuries; one involved a clothing ignition. Ignitable liquids also caused two burn injuries to this age group. One was from gasoline and the other involved an unspecified ignitable liquid. Ignitable gases were also the factor in two of these burns; one of these involved propane and the other natural gas. Two victims of this age group received their injuries by attempting self-immolations. Burns from alcohol, an assault, a child using a lighter, fireworks, a motor vehicle accident, and smoking in bed each accounted for one injury.

Seventeen (17), or 29%, of the burn injuries to people 15 to 24 years of age were caused by scalds. Thirteen (13) were caused by cooking; 12 cooking liquid scalds and a scald from hot food. The other four were caused by two car radiator scalds; and one scald each from an assault and hot tap water.

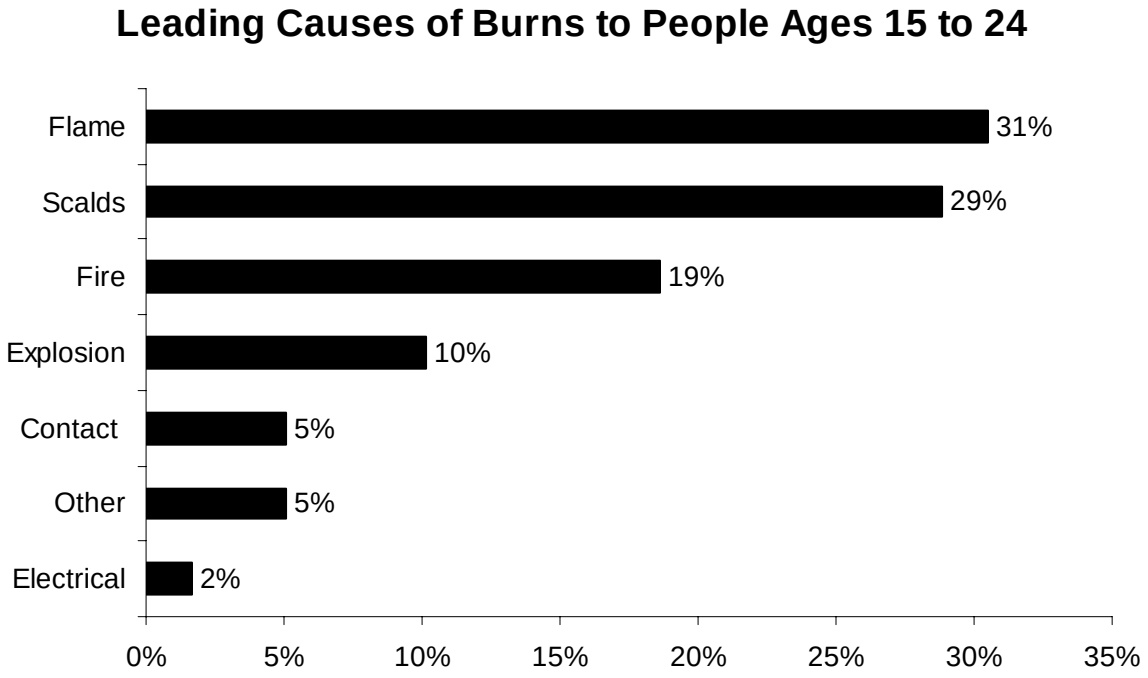
Burns from fire were dropped from the leading cause of burn injuries to this age group in 2003 to the third leading cause in 2004. Nineteen percent (19%), or 11, of the burn injuries incurred by people aged 15 to 24 were burn injuries from fires. Four (4) victims received burns from camp or bonfires, three from house fires, three more received burns from motor vehicle fires, and one young adult received a burn from a brush fire.

Explosions injured six, or 10%, of people in this age category. Four explosion injuries included ignitable liquids; three involved gasoline, one of which involved a minor and the other injury was caused by an unspecified ignitable liquid. Two of these explosion burn injuries were caused by ignitable gases; an unspecified ignitable gas and propane each caused a burn injury to a member of this age group in an explosion.

Contact burns accounted for three, or 5%, of burn injuries suffered by victims between the ages of 15 and 24. Contact with a hot motorcycle part, a welding torch and an unspecified cooking activity each accounted for one contact burn injury to this age group.

There were three, or 5%, of *Other* type burns to members of this age group. Two young adults received their injuries through sunburns and one of the victims between the ages of 15 and 24 received his burn injuries from a chemical.

There was one unspecified electrical burn injury to people in this age group accounting for 2% of the burn injuries to children between the ages of 10 and 14.



Ages 25 to 34

9% of Burn Victims Were Between 25 and 34
Thirty-three (33), or 9%, of the burn injuries reported in 2004 were incurred by people between 25 and 34 years of age. Twenty-six (26), or 79%, of the victims were male and seven, or 21% were female. Nine (9), or 27%, of the burn injuries suffered by this age group were work-related;

eight of these were men and one was a woman. People between the ages of 25 and 34 accounted for 15% of the population of Massachusetts while accounting for 9% of the total number of burn injuries reported in 2004.

Over 1/4 of Burn Injuries Were Flame Burns

Flame burns caused nine, or 27%, of the injuries to 25-34 year olds. Ignitable liquids caused five of these injuries; four from gasoline and one from an unspecified ignitable liquid. Two (2) injuries were from smoking, and one each from a candle and an unsuccessful attempt at self-immolation.

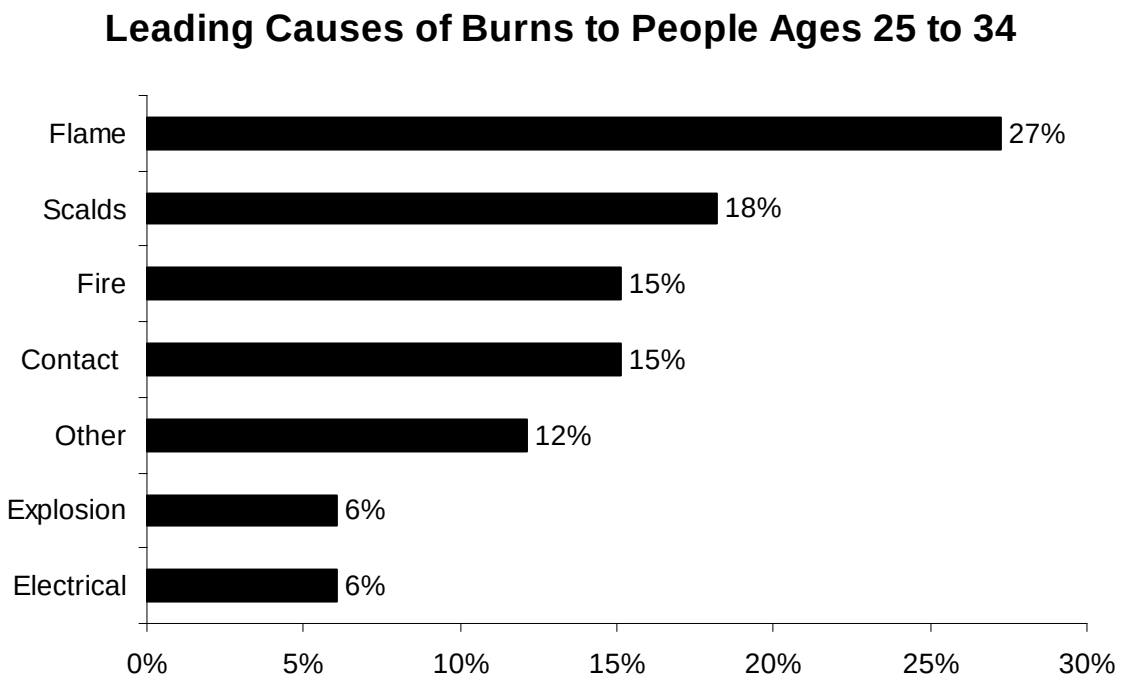
Scalds accounted for the second most burns in this age group, accounting for six burns, or 18%. Four of the scalds were from cooking liquids and two were from hot beverages.

Burns from fires were the third leading cause of burns to people between the ages of 25 and 34. Five (5) burns accounted for 15% of the burn injuries to this age group. These fire-related burns included three victims of house fires and two burns from camp or bonfires.

Contact burns also accounted for five, or 15%, of the burn injuries to people between the ages of 25 and 34. Two (2) of these contact burns were from cooking; one from contact with an oven and one from a stove. The remaining three burns were incurred from contact with hot asphalt, a heater, and a hot motorcycle part.

Four victims, or 12%, of the burns incurred by this age group were classified as *Other* burns. Chemicals burned two of these victims, a sunburn and an ultraviolet lamp burned the other two victims.

Two (2), or 6%, of the burns to 25 to 34 year olds were caused by explosions. A car part and



propane were each involved in one explosion.

Two victims, also accounting for 6% of the injuries to this age group, were injured by electrical burns. One victim was electrocuted and the other victim received an unspecified electrical burn.

Ages 35 to 44

12% of Reported Burn Victims Were Between 35 and 44 Years of Age
Forty-one (41), or 12%, of the burn injuries reported in 2004 occurred to people between the ages of 35 and 44. Thirty-four (34), or 83%, of the victims were male and seven, or 17%, of the victims were female. Adults between the ages of 35 and 44 accounted for 17% of the Massachusetts population but only 11% of the reported burns in 2004.

Almost 1/4 of Burn Injuries Were Work-Related
Nine (9), or 22%, of the burn injuries incurred by this age group were work-related. All of these work-related burn victims were men.

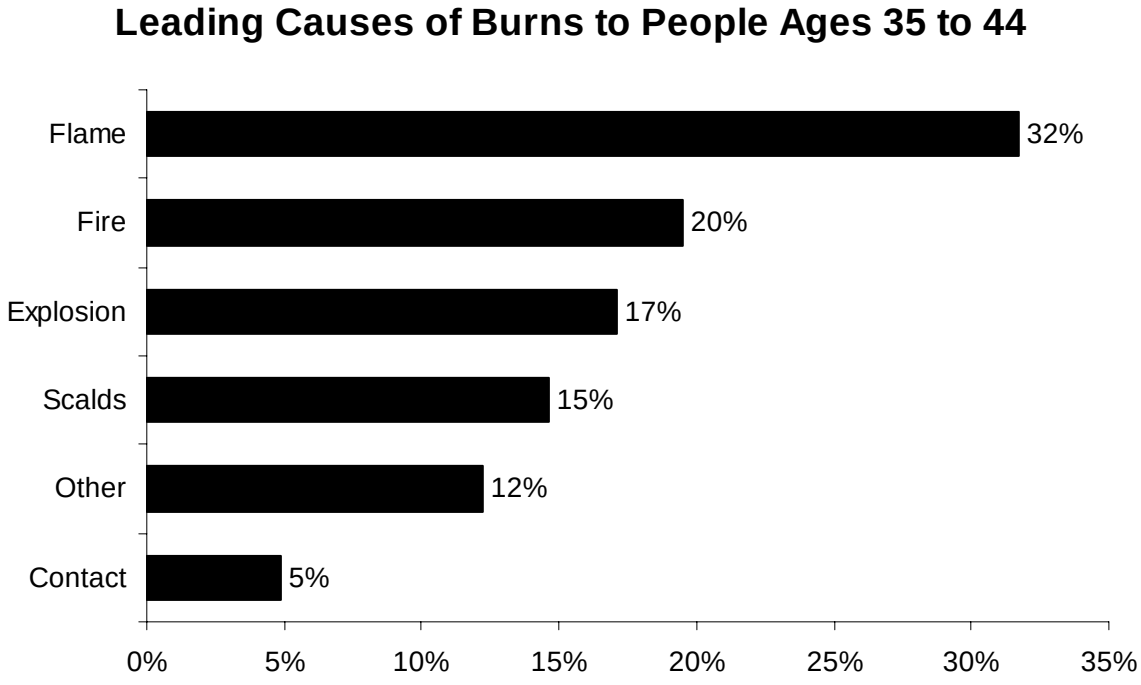
1/3 of Burn Injuries Were Flame Burn Injuries
Flame burns were the leading cause of burn injuries to adults between the ages of 35 and 44. They caused 13, or 32%, of the burn injuries to this age group. Cooking caused three of these burns; with barbeques causing two and a clothing ignition while cooking causing the other. Candles and gasoline each caused two of the flame burns to victims of this age group. Smoking also caused two of these burns; a cigarette and smoking in bed each caused one flame burn injury to this age group. Embers from a camp fire, a clothing ignition, an unsuccessful attempt at self-immolation and welding each caused one flame burn injury in this age group.

Burn injuries from fires caused eight, or 20%, of the burn injuries to adults between the ages of 35 and 44. Three were from house fires, another three were from camp or bonfires, and two were from motor vehicle fires.

Explosions accounted for seven, or 17%, of the total burn injuries to this age group. Two of these seven explosions were caused by propane. The other five explosions were caused by a car part, a chemical, electricity, gasoline and natural gas.

The next leading cause of burns to people between 35 and 44 years of age was scalds. Six (6), or 15%, of these burn injuries were caused by scalds. These injuries included two scalds from cooking liquids, two from car radiators, one from a broken pipe and one from a hot beverage.

Other burns accounted for five, or 12% of the injuries to people between the ages of 35 to 44. Three of these injuries were due to chemicals, one was from an ultraviolet lamp and the last was an unspecified burn injury.



Contact burns accounted for two, or 5% of the burns to this group. One of these injuries was from contact with a hot piece of metal and the other was from contact with a chemical.

Ages 45 to 54

9% of Reported Burn Injuries Were Between 45 and 54 Years of Age
People between the ages of 45 and 54 incurred 32, or 9%, of the reported burns in 2004. Twenty-five (25) or 78%, of the victims were male, and seven, or 22%, were female. Eleven (11) of the 32 burn victims aged 45 to 54, or 34%, were burned while at work. This age group represents 14% of the population of Massachusetts while it only received 9% of the burn injuries in 2004.

Flame Burns Cause Over 1/3 of the Burn Injuries
Flame burns were incurred by 11, or 34%, of the burn victims between the ages of 45 and 54. Smoking caused three of these flame burn injuries; two were attributed to unspecified smoking activities and the third was caused by a cigarette lighter. Cooking caused two flame burn injuries to this age group; one was from a barbeque and the other was from cooking liquids. Gasoline also caused two of these flame burn injuries. A boiler, a clothing ignition, a successful attempt at self-immolation, and welding were each responsible for one flame burn injury to this age group.

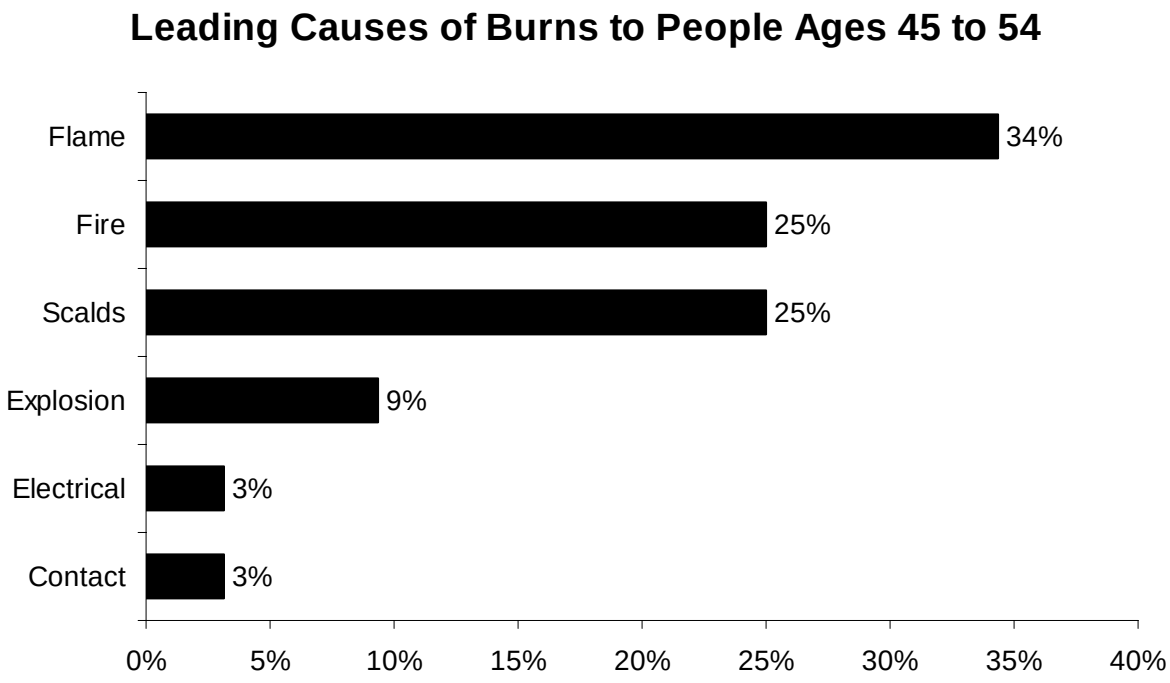
Burns from fires caused eight, or 25%, of the burn injuries to victims 45 to 54 years old. Five (5) house fires, one brush fire, one camp or bonfire, and one motor vehicle fire accounted for all eight of the burn injuries to this age group.

Scalds also caused eight, or 25% of the burn injuries to this age group. These scald burns included two from steam, and one each from a hot beverage, cooking liquids, a pipe, a radiator, hot tap water and a tool.

Three (3) members of this age group were victims of explosions. They accounted for 9% of the burn injuries to this age group. A chemical, gasoline and an oven each caused one explosion that caused one burn injury to people in this age group.

There was one unspecified electrical burn, accounting for 3% of the burns to people between 45 and 54 years of age.

Another one, or 3%, of the burns to victims between the ages of 45 to 54 was a contact burn. This contact burn was from contact with a chemical.



Ages 55 to 64

4% of Burn Victims Were Between 55 and 64 Years Old
Thirteen (13), or 4%, of the burns reported in 2004 were incurred by people between the ages of 55 and 64. Twelve (12), or 92%, of the victims were male, and one, or 8% were female. Two (2),

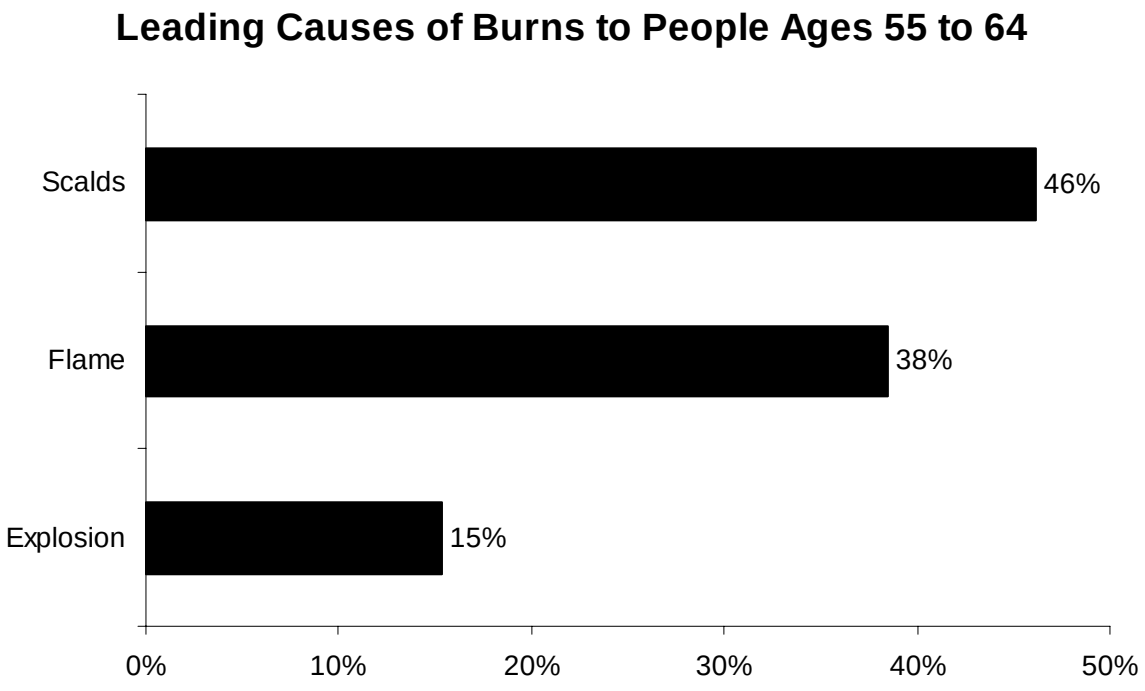
or 14%, of the 13 burn injuries incurred by people between 55 and 64 years old were reported to be work-related, and both of these victims were male. People of this age group represent 9% of the total population of Massachusetts but only received 4% of the burns in 2004.

46% of Burn Injuries Were Scalds

Scalds were the leading cause of burn injuries to this age group. Six (6), or 46%, of the burn injuries incurred by people between the ages of 55 and 64 were scalds. These scald burns included three from cooking liquids, and one each from hot beverages, a central heater and steam. Children under five and older adults over 65 years of age were the only other age groups where scalds were the leading type of burn injury.

Flame burns accounted for five (5), or 38%, of the injuries to this age group. Cooking caused three of these injuries; two were clothing ignitions while cooking and the other was an unspecified cooking injury. Smoking caused the other two flame burn injuries to this age group. One injury was caused by smoking in bed; and the other injury was from an unspecified smoking activity.

Two (2) victims belonging to this age group received their burn injuries through explosions. These two injuries accounted for 15% of all the burns injuries to people between the ages of 55 and 64. One victim received a burn when an aerosol can he was using exploded while he was cooking, while the other victim received his burns from an electrical explosion.



Over 65

25 Burn Victims Over 65
Twenty-five (25), or 7%, of the burn victims in 2004 were over 65 years old. Twelve (12) were between 65 and 74; 10 were between 75 and 84; and three (3) were over 85 years old. Eleven (11), or 44% of the victims were male, and 14, or 56%, were female. This is the only age group where there were more burn injuries to females than males. Older adults represent 14% of the total Massachusetts population but only 7% of the burn injuries in 2004.

Flame Burns Are a Leading Cause of Burns to Older Adults
Eight (8), or 32%, of the burn injuries to people over the age of 65 can be attributed to flame burns. Four of the burn injuries were attributed to clothing ignitions while cooking; and one each from a candle, domestic violence, natural gas and welding.

All of the cooking-related flame burns, were from clothing ignitions while cooking

According to the Burn Awareness Coalition, smoking when tired, drinking alcohol or taking medications which can cause drowsiness, wearing loose fitting clothing while cooking, kitchen fires from unattended cooking, and grease fires on the stove top are leading causes of burn injuries to older adults. During 2004, cooking accounted for six, or 24% of the reported burn injuries in Massachusetts incurred by older adults. There were no reported burn injuries to older adults from smoking in 2004.

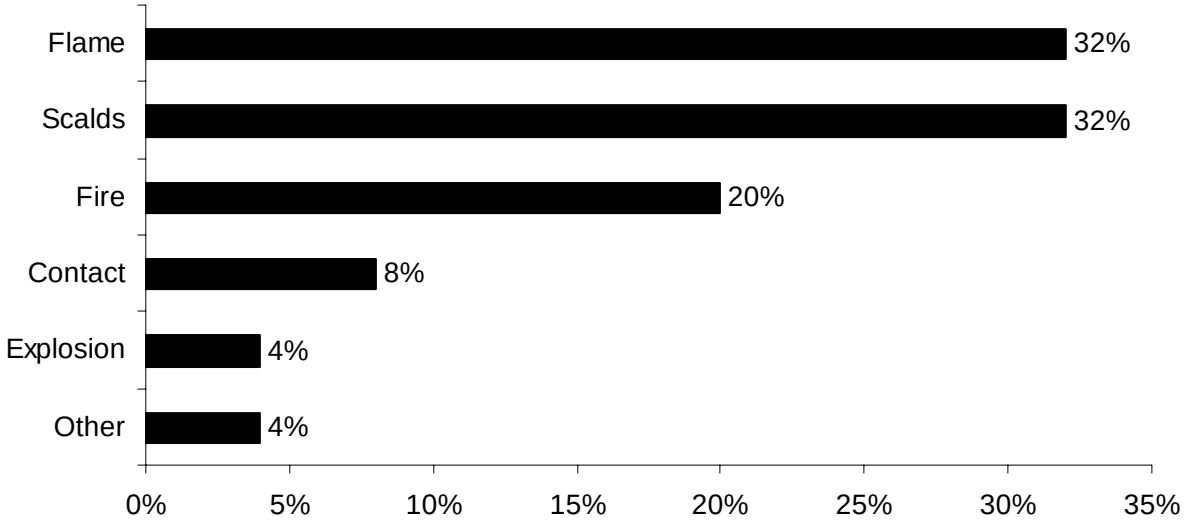
Clothing Ignitions Cause 16% of Burns To Older Adults
Clothing ignitions to older adults has consistently been an issue, but this trend is on a decline. During 2004, only five (5), or 20%, of the burn injuries to those victims over the age of 65 were due to clothing ignitions. These types of injuries accounted for 1% of the total 358 burn injuries reported in Massachusetts in 2004. Unfortunately two of these five victims succumbed to their burn injuries.

Scalds Also a Leading Cause of Burns to Older Adults
The other leading cause of burn injuries to older adults was scalds. Another eight, or 32%, of these burns were caused by scalds. Three (3) were from hot tap water and two were from hot beverages. Cooking also caused two of these burns; one scald was from cooking liquids and the other was from hot food. A central heater caused one of the scald burns to this age group.

Burns from fires caused five, or 20%, of burn injuries to adults over the age of 65. Two brush fires, one house fire, one structure fire and one motor vehicle accident accounted for all five of the fire-related burn injuries. The house fire and one of the brush fires each resulted in a fatality. The house fire fatality was caused by a clothing ignition while cooking and the brush fire fatality was started by a candle.

Two (2) of the victims over the age of 65 received contact burns resulting in 8% of the burns to this age group. Contact with a radiator and a fireplace each caused one of the burn injuries to this age group.

Leading Causes of Burns to Older Adults (65+)



An electrical explosion caused one, or 4%, of the burn injuries to this age group.

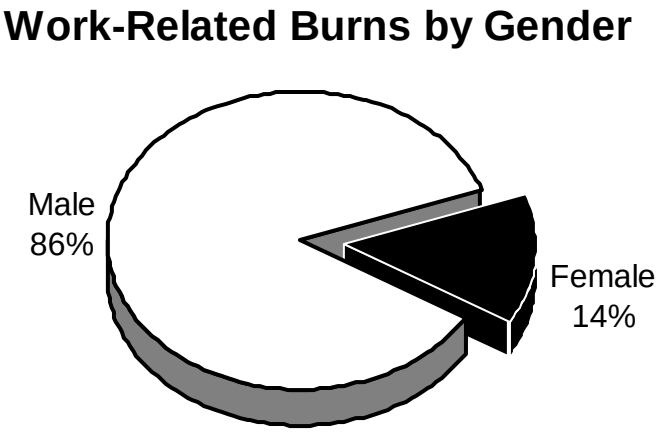
Exposure to a chemical caused one *Other* type burn. This burn also accounted for 4% of the burn injuries to older adults in Massachusetts in 2004.

Safety Tips

- Do not smoke when you are tired, drinking alcohol or taking medications, which make you drowsy. If you must smoke, make sure there are working smoke detectors in the immediate vicinity.
- Wear clothes with tight fitting sleeves and watch for clothes touching elements on the stove.
- Do not use a cooking stove for heating purposes or for drying clothes.
- Never leave food that is cooking unattended. Set a kitchen timer to remind you to turn off the burners and/or the oven. If you must leave the kitchen, take a wooden spoon or potholder as a reminder that you have left something unattended on the stove.
- Keep stove surfaces clean of built up grease.
- Do not attempt to lift or carry heavy pots of hot liquid or food.
- Cook with the pot and pan handles turned in.
- Remember “Stop, Drop, & Roll” – It just may save your life.

Work-Related Burn Injuries

14% of Reported Burns Occurred at Work
Massachusetts hospitals indicated that 49, or 14%, of the 358 burn injuries reported in 2004 occurred while the victim was at work. Men were much more likely to be burned while working than women. Forty-two (42) men, 86%, and seven women, 14%, were burned at work in 2004.

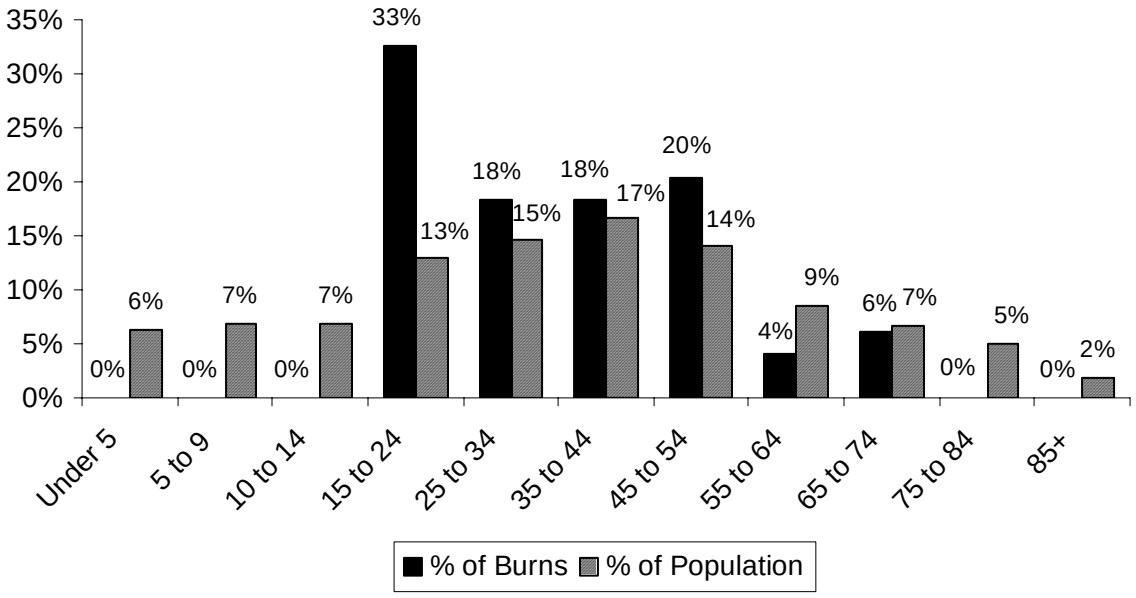


1/4 of All MA Work-Related Burns Occur in Eating and Drinking Establishments
According to the Massachusetts Department of Public Health's Occupational Health Surveillance Program, 11 of the 44 reported Massachusetts work-related burn injuries[4] occurred in eating and drinking places. The workers suffering burn injuries in eating and drinking establishments were younger (average age of these burn injuries is 29 years of age) and slightly less likely to be male than other work-related burn injuries; seven out of 11, or 64%, were male.

90% of Work-Related Burns Are Incurred by People Between 15 and 54
No one under the age of 15 received a work-related burn in 2004. Sixteen (16), or 33%, were between 15 and 24 years of age. Nine (9), or 18%, of the victims were between 25 and 34 years of age; nine, or 18%, belonged to the 35 to 44 age group. Ten (10), or 20%, of work-related burn injuries were victims 45 to 54 years old. Two (2), or 4% of work-related burns occurred in the 55 to 64 age group. The oldest age group to have a work-related burn injury was the 65 to 74 group and they experienced three, or 6% of the burn injuries in the workplace. The youngest person to receive a work-related burn in Massachusetts in 2004 was a 15-year old boy who received a flame burn injury from propane. The oldest victim to receive a work-related burn was a 73-year old man who received his burns from an ignitable liquid.

[4] Among the 44 burn injuries, industry could only be identified for 32. One additional burn injury occurred in a movie theater that was not included in this description.

Work-Related Burns by Age Group



29% of Work-Related Burns Were Scalds

Scalds were the leading cause of work-related burns in 2004. These 14 accounted for 29% of work-related burns. Eight (8) of these burns were the result of cooking liquids; and two were from steam. A hot beverage, a hot tool, hot tap water, and a pipe were each responsible for one work-related scald burn in 2004.

Flame burns accounted for 13, or 27%, of these work-related burns. Cooking caused four of these flame burn injuries; two were caused by cooking liquids, and one each by an oven and an unspecified cooking act. Gasoline and welding each caused two of the work-related flame burn injuries. Ignitable gases also caused two of the work-related flame burn injuries; natural gas and propane were each responsible for one of these burns. A boiler, a clothing ignition and a cutting torch each caused one work-related flame burn injury in 2004.

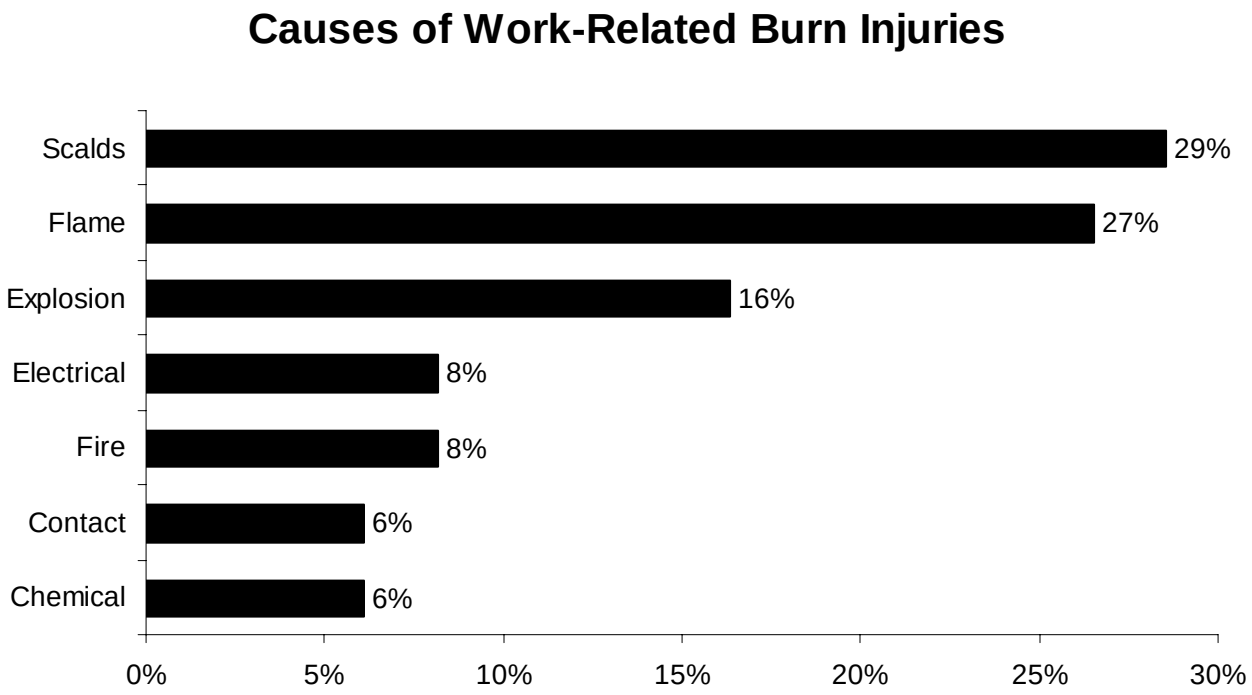
Eight (8), or 16%, of the 49 work-related burns were from explosions in 2004. Three (3) of the work-related explosions involved electricity. Another three of these work-related explosions involved ignitable gases; two involved propane and the other involved an unspecified ignitable gas. An oven and an ignitable liquid each caused one work-related explosion in 2004.

Electrical burns caused four, or 8%, of work-related burn injuries in 2004. Two were from electrocutions and two were from unspecified electrical accidents.

Four (4), or 8%, of the work-related burn injuries were from fires. Flammable materials caused one house fire with three injuries and an ignitable liquid caused one camp or bon fire in one of these injuries.

Three (3), or 6%, of the work-related burn injuries in 2004 were from contact with hot objects. Coming into contact with hot asphalt, a hot piece of metal, and an unspecified cooking act were each responsible for one of these injuries.

Three (3), or 6%, of work-related burn injuries in 2004 were chemical burns.



Work-Related Injuries Resulted in 4 Deaths

- On February 3, 2004, a 20-year old Falmouth man was electrocuted while working. He had grabbed a charged electrical line. The electricity caused burns to both hands and he died shortly thereafter.

- On August 4, 2004, a 39-year old male Massport electrician was working at a substation at the Logan Airport Hilton when there was an electrical explosion. The explosion threw the victim from his work position. He received burns to approximately 26% of his body and also suffered head trauma from the fall. He died from the severe burns and the head trauma.

- On September 2, 2004, a crew of four Boston floor sanders had been working in a Somerville residence on a third floor renovation project, refinishing the wood floors. An explosion and subsequent house fire resulted in the death of two, and burn injuries to the other two crewmembers.

Intervention and Prevention Efforts

For the past two years the Department of Fire Services has been collaborating with the Massachusetts Department of Public Health to ensure that information regarding burn injuries occurring at work is used for intervention and prevention. As part of this effort, burn injuries that were caused by explosions, chemical exposures, or electrocutions, or that appeared to indicate likely violations of OSHA standards were referred to the appropriate Massachusetts OSHA area office for investigation. OSHA has agreed to conduct on-site investigations in response to these referrals and report back to the Department of Public Health. Eleven burn injuries were referred to OSHA in 2004 for cases that met these criteria; OSHA had not been notified by any other source about these eleven incidents. Among these, seven resulted in citations, two were assessed to be unavoidable incidents in companies with good programs and two more were unresolved. OSHA was already involved in investigations of four additional workplaces, including the floor sanding incident described above.

In addition to referrals for enforcement, the Department of Public Health's Occupational Health Surveillance Program (OHSP) conducts education and outreach to ensure that the lessons learned from burn injuries are used to prevent injuries in the future. For example, a case series of burn injuries among teens in bakeries identified coffee brewing as the source of many burn injuries. Pulling out the brew basket before the water had drained was the source of these injuries. This information was used to help redesign the brew basket so that it could not be pulled out too early, thus preventing the hot slurry from splashing out onto the hands of working teens. OHSP also designed, with DFS assistance, a poster about burn injuries in restaurants. In 2005, the *Teens at Work Injury Surveillance and Intervention* project will be initiating an effort with restaurants to prevent teen injuries that will be informed by the burn injuries reported by local hospital emergency departments.

Comparisons to Work-Related Burn Injuries: Hospitalizations and ED Treated Cases

The Massachusetts Department of Public Health's Occupational Health Surveillance Program reviewed two other sources of data describing work-related burn injuries. This data confirms the risks identified through M-BIRS—scalds and contact with objects were leading causes of work-related burn injuries. They also provide a perspective on serious work-related burns that resulted in hospitalizations and on the full range of burn injuries treated in emergency departments.

There were 379 hospitalizations for work-related burns over the time period 1996-2000, the most recent data available, approximately 76 per year. Ninety-one percent (91%) involved male patients. Most patients (61%) were between 25 and 44 years of age. Burns due to scalds accounted for 116[5], or 31%, of those cases. Electrical contact caused 57, or 15%, more than the 9% identified through M-BIRS for 2004, and 10% in M-BIRS 2003. Among the hospitalized burns for which the percent of body surface affected was coded, 85 had burns that affected 10% or more of body surface area, or about 17 per year[6]. There is no mechanism to compare hospitalized burns directly to those reported to M-BIRS, because of the difference in burn injuries that are reported. Nor do the time periods from the two sources overlap.

[5] The cause of injury was missing for 9 work-related burn injury cases. 370 of the 379 had codes.

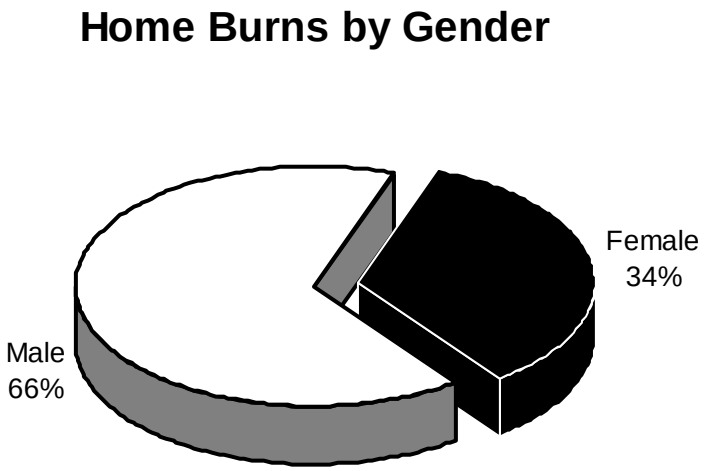
[6] The estimated 17 cases/year identified as affecting 10% or more of BSA among hospitalized work-related burn injuries, and the 76 burn cases/year identified as hospitalized work-related burn injuries bracket the 42-50 per year identified to the Department of Fire Services.

Emergency department records from October 1, 2001 through September 30, 2002, the most recent year available for analysis, were also reviewed for burn injuries that were associated with work[7]. These emergency room visits include those that are not necessarily reportable to the Department of Fire Services, as they may include injuries to less than 5% of body surface area. In the one-year period, 2,286 work-related burn injuries were identified, compared to the 42-50 reported annually (2001-2004) to M-BIRS. Among these, the majority of burns were to male workers. However, the majority of work-related burn victims under the age of 20 were female employees. This may reflect a concentration of young female workers in food preparation and service jobs. Only 2% of burns treated in emergency rooms were electrical burns, compared to 15% of hospitalized burns in the five year data and 10% in 2004 M-BIRS data. This indicates that electrical burn incidents are relatively more severe. In fact, in 2004, two deaths were caused by electrical contact.

Burn Injuries In the Home

Over 2/3 of Burn Injuries Occur In the Home

The home is the most common place for burn injuries to occur. In 2004, 248 people, over two-thirds (69%), of all the reported burn injuries took place in the victim's home or surrounding yard. Men were much more likely to be burned at home than women. One hundred and sixty-three (163) men, 66%, and 85 women, 34%, were burned in their homes in 2004.



[7] Work-related injuries were identified if workers compensation was identified as expected payer, or if the location of the injury was identified as "at work."

46% of All Home Burns Are Scalds

One hundred and thirteen (113), or 46%, of the burn injuries that occurred in the home in 2004 were scalds. Scalds from hot beverages accounted for 45, or 18%, of these burns. Cooking caused 43, or 17%; hot food caused 23 and cooking liquids caused 20. Hot tap water caused 20, or 8% of burns at home. Heating equipment caused three, or 1% of home scalds; central heaters accounted for two and a radiator caused one. A pipe and steam each accounted for one, or less than 1%, of the home burn injuries in 2004.

Flame Burns Account for Over 1/4 of All Burns at Home

Flame burns accounted for 70, or 28%, of all home-related burn injuries. Children playing with dangerous items accounted for 17, or 6%, of these burn injuries; children with lighters caused seven, children with gasoline caused three and children playing with matches caused two of these burns. Smoking caused 11 of these injuries; six were caused by unspecified smoking activities, three by smoking in bed, one by a cigarette and the other was caused by a cigarette lighter. Cooking activities also accounted for 11, or 4%, of home burn injuries; clothing ignitions while cooking caused seven; barbeques caused two and unspecified cooking activities caused another two injuries. Ignitable liquids were responsible for eight, or 3%; gasoline caused six; and unspecified ignitable liquids were responsible for two of these injuries. Candles were responsible for seven, or 3%, of these fires; one of these candle flame burns was a clothing ignition. Explosives caused five, or 2%, of the burn injuries; three were caused by fireworks; one by gunpowder and the other by attempting to make a bomb. There were three (1%) acts of self-immolation, one successful and two unsuccessful. There were two unspecified clothing ignitions accounting for 1% of all home burn injuries. Cutting torches and woodstoves were each the cause of two, or 1%, of these injuries. Alcohol, an act of domestic violence, natural gas, welding, and an unspecified act were all responsible for one, or less than 1%, of the home burn injuries in 2004.

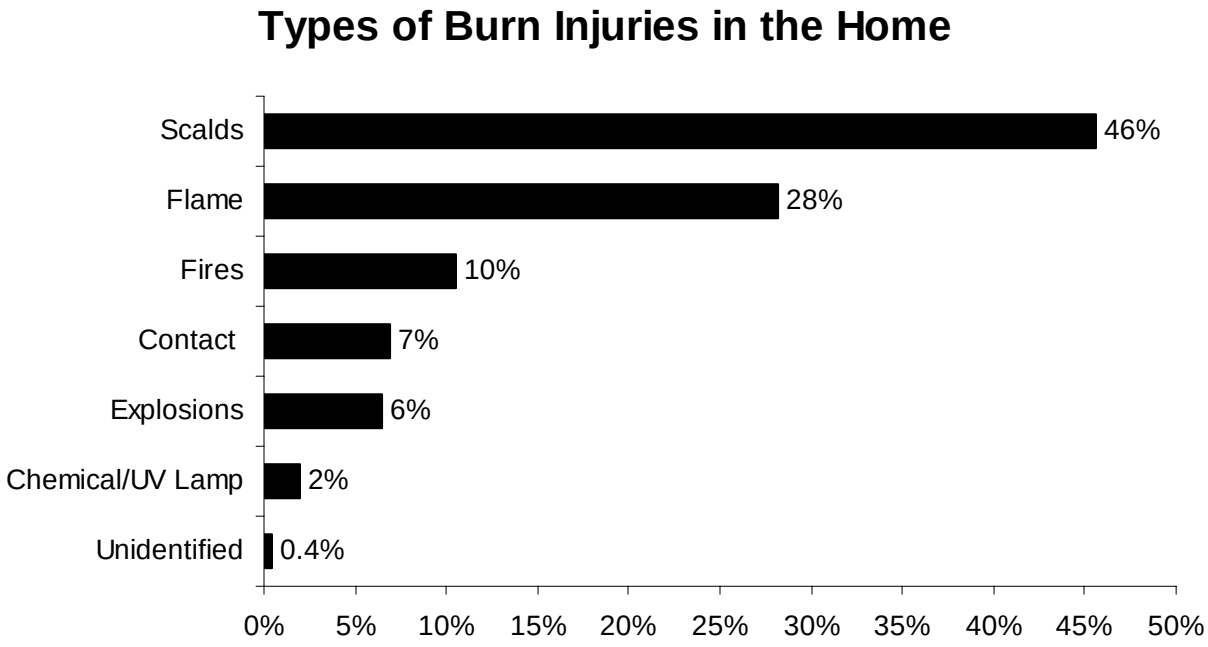
Burn injuries from fires accounted for 26, or 10% of all home burn injuries. Twenty-six (26) house fires accounted for 10% of all home burn injuries. Many of these fires were caused by smoking, electrical problems and candles. There were six (2%) reported camp or bon fires in the victim's yards that resulted in burn injuries. Half of these fires (50%) involved gasoline. Three (3) brush fires accounted for 1% of all home burn injuries. One of these brush fires in people's back yards involved gasoline; and another involved a cigarette. Two (2) car fires, accounted for 1% of the home burn injuries. There was also a structure fire accounting for less than 1% of these fires; it also involved gasoline.

Contact burn injuries accounted for 17, or 7%, of all the burn injuries that occurred in homes in 2004. Contact with heating equipment was the leading reason for contact burn injuries, causing four, or 2%, of all the at-home burn injuries in 2004. Contact with radiators caused four burns and contact with a fireplace and a heater each caused one burn injury. Contact with hot motorcycle parts caused three, or 1%, of these injuries. Cooking activities also caused three, or 1%, of these injuries; hot food, an oven and a stove each accounted for one of these injuries. Camp fire embers and chemicals each cause two, or 1% of these fires. A clothes iron caused one, or less than 1%, of the reported contact burn injuries that occurred in homes in 2004.

Explosions caused 16, or 6%, of all reported home burn injuries in 2004. Gasoline caused six, or 2% of these injuries; two of the gasoline injuries occurred to children. Chemicals caused another two home explosions. Explosives, one incident with fireworks and one with unspecified explosives, also caused two, or 1%, of these injuries. Ignitable gases also caused two, or 1%, of these injuries; propane and natural gas each accounted for one injury. A car part, a dryer fire, electricity, and an unspecified cooking act were each involved in one, or less than 1%, of the 2004 home burn injuries from explosions.

Five (5) *Other* type of home burn injuries were reported in 2004. These five injuries accounted for 2% of the home burn injuries. Four (4) were chemical burns (2%), and the other burn was from an ultraviolet lamp.

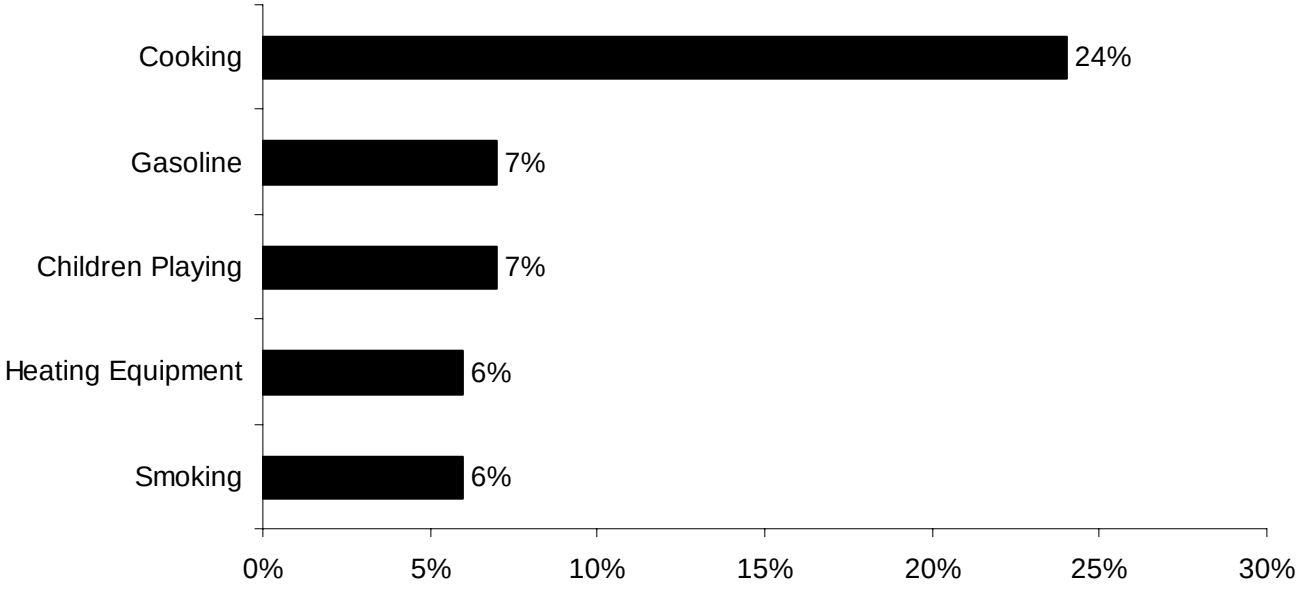
There was one unidentified burn injury that was reported to have occurred in the home in 2004. It was responsible for less than 1% of the reported home burn injuries in 2004.



Cooking Caused Almost 1/4 of Burn in Homes

In 2004 cooking activities caused the most overall burns regardless of burn type. Burns from cooking caused 59, or 24%, of burns in Massachusetts' homes. Gasoline, including children playing with gasoline accounted for 18, or 7%, of these burns. Children playing with dangerous items such as matches, lighters and gasoline accounted for 17, or 7%. Heating equipment caused 14, or 6%, of at home burns. Smoking activities and paraphernalia also caused 14, or 6%, of the burn injuries that were reported to have occurred in Massachusetts' homes in 2004.

Leading Types of Burns Injuries in the Home

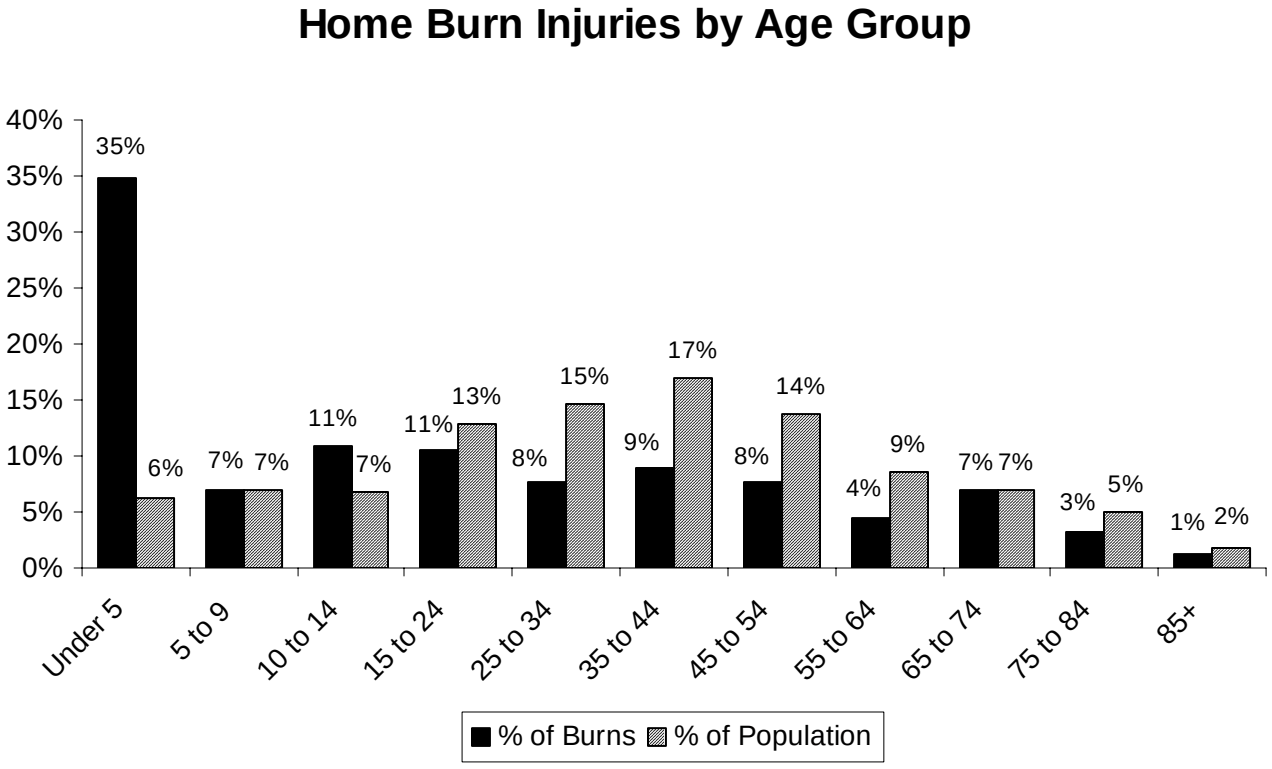


Over 1/3 of Home Burns Were to Children Under 5

Thirty-five percent (35%) of the 247 victims that received their burns at home of known age were less than five years of age. Children under five years old were 5.6 times more likely to be burned at home. Children between the ages of five and nine received 7% of the home burns while children aged 10 to 14 accounted for 11% of these injuries. Young adults between the ages of 15 and 24 were also responsible for 11% of these burns; 8% were between 25 and 34; 9% were between 35 and 44; 8% were between 45 and 54; 4% were between 55 and 64; 7% were between 65 and 74; 3% were between 75 and 84; and 1% were over the age of 85-years old.

Hot Tap Water Scalds Youngest & Oldest At Home Burn Victims

The youngest victim to receive an at-home burn injury was a four-month old girl who received a scald burn to 7% of her body from hot tap water. The oldest victim to receive a burn at home was an 86-year old woman who received scald burns to 15% of her body surface area from hot tap water.



2% of Home Burns Resulted in Death

Five (5), or 2%, of the 247 reported burn injuries that occurred in homes in 2004 resulted in death for the victim. Two (2), or 40% of these deaths, were male; and three, or 60%, were female. The youngest victim to die from burns she received at home was a 13-year old girl who received burns to 50% of her body in a house fire. The oldest victim to succumb to her injuries was an 84-year old woman who received burns to 70% of her body surface area when her clothing ignited while she was cooking. Three (3), or 60%, of the victims received their injuries in house fires; and two, or 40%, received their injuries through flame burns.

Burn Injury Reports by Hospital

Forty-six (46) out of the 97 acute care health care facilities in Massachusetts submitted a total of 403 burn injury reports for 358 victims to the Massachusetts Burn Injury Reporting System (M-BIRS). Some individuals were treated at more than one hospital, resulting in more burn reports than total victims. For information on the number of burn reports submitted by each hospital, please refer to the table *Number of Reported Burn Injuries Per Hospital* in the Appendix.

Law Requires Hospitals to Report Burn Injuries Over 5% of the Body
Massachusetts General Law (MGL) Chapter 112, Section 12A requires all physicians and medical treatment facilities to immediately report treatment of every burn injury extending to 5% or more of a person's body surface area to the State Fire Marshal and to the police department in the community in which the burn occurred.

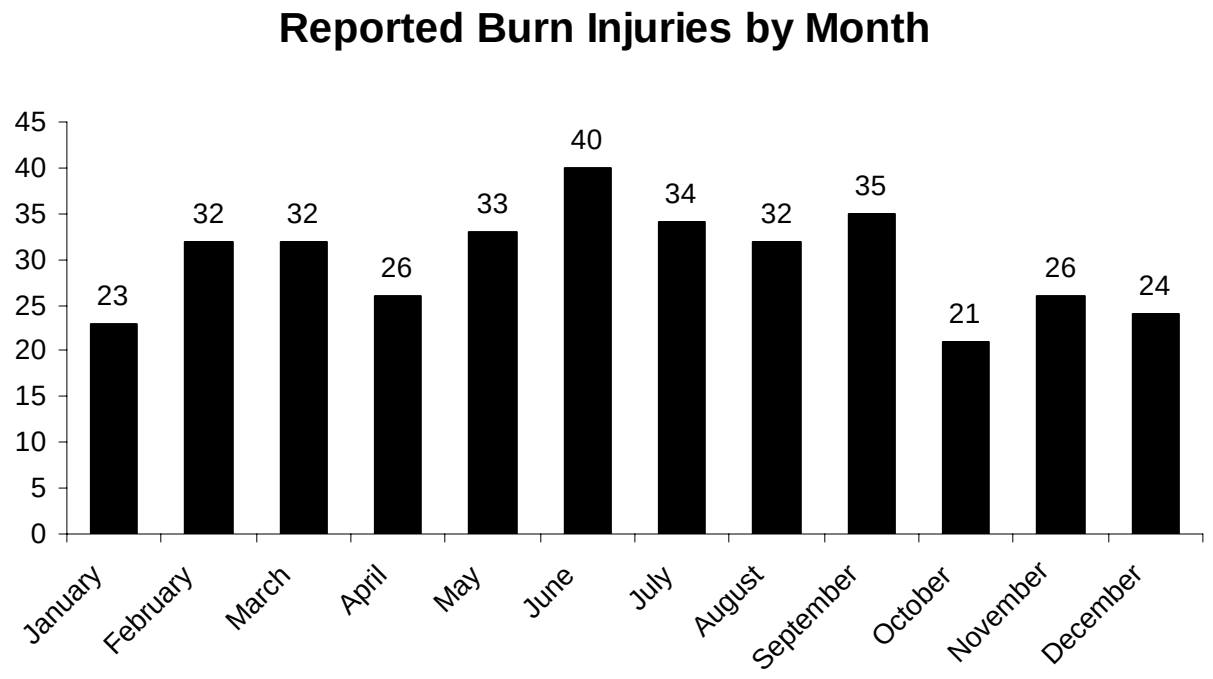
Hospitals May Fax Reports or Call and Submit Written Report
Health care facilities now have a choice about how to report burn injuries. If they choose to do so, health care providers may now fax their burn injury reports to the State Fire Marshal at the Department of Fire Services, (978) 567-3199. A completed transmission will satisfy both the telephone and written notification provisions of the law. Hospitals not opting for the fax report method must report burn injuries by telephone at (800) 475-3443 and submit a written report.

Although M-BIRS was instituted under the Department of Public Safety in June of 1984, Massachusetts hospitals have been required to report burn injuries to a government agency since 1973. M-BIRS, along with the Office of the State Fire Marshal, was carried over to the newly created Department of Fire Services in 1996. It remains a joint program of the Department of Fire Services and the Massachusetts Department of Public Health.

M-BIRS Has Two Main Purposes — Identifying Arsonists and Burn Prevention
Data collected by the Massachusetts Burn Injury Reporting System is used in several ways. Investigators use the data to determine if an arsonist was treated for a burn that resulted from an attempt to illegally burn a building or vehicle. If these burns are not reported promptly, arsonists may continue to light fires that threaten life and property. Our data has also been used to identify problems that need to be addressed by public education or regulation and to develop appropriate strategies. We need to know what type of activity injures whom, if the injuries are seasonal, and how old the victims are to develop and implement effective prevention programs. We appreciate the efforts of the many dedicated doctors, nurses and clerical personnel who report the burn injuries promptly and completely. They make the program work.

Burn Injuries by Month

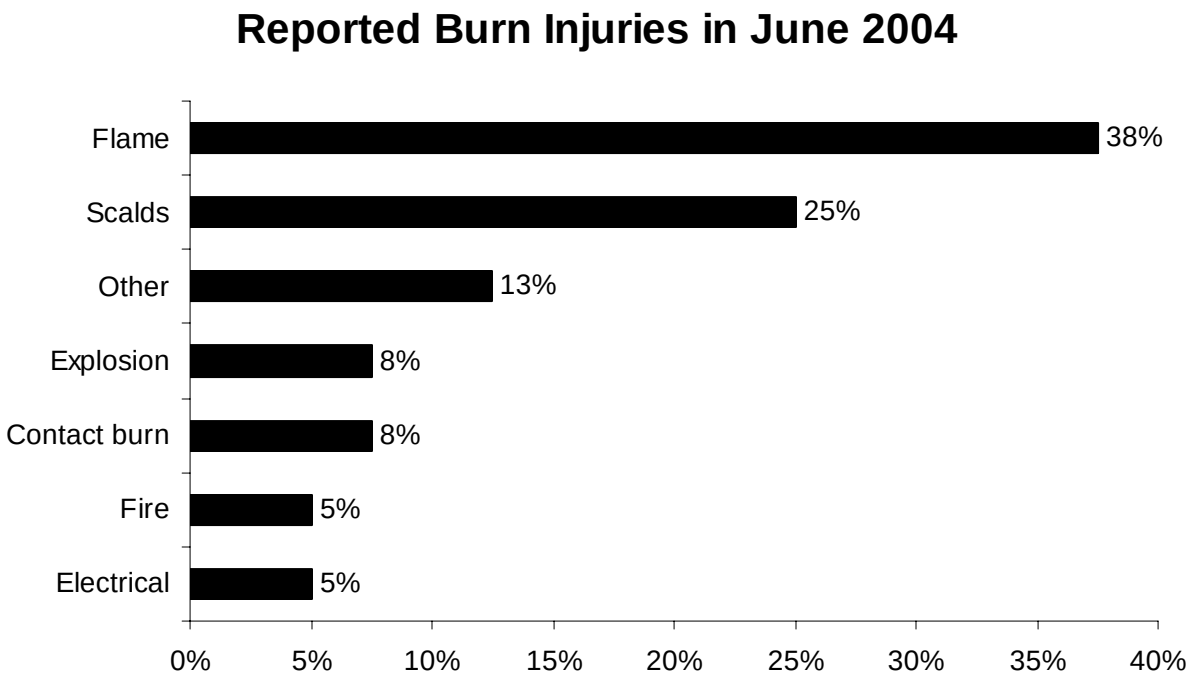
Average of 30 Burns a Month
An average of 30 burns was reported during each month of 2004, from a low of 21 in October to a high of 40 in June. This average is down from 35 burns per month in 2003, 31 burns in 2002, 39 burns per month in 1999 and 38 burns per month in 1998. It is also below the 10-year (1995-2004) average of 36 burns per month.



Scalds caused the most burn injuries during 11 months of the year. June was the only month in 2004 when scalds was not the leading cause of reported burn injuries. In June flame burn injuries were the leading cause of burns injuries.

June Peak Month for Burns
June was the peak month for burns in 2004. Flame burn injuries were the leading cause of burn injuries in June. These burns accounted for 15, or 38%, of the burns in June of 2004. Scalds accounted for 10, or 25%, of these burns. *Other* type burns accounted for five, or 13%. There were three explosion burn injuries in June accounting for 8% of the total burn injuries. Another three of June's burns, or 8% were caused by contact with hot objects. Burns from fires accounted for two, or 5% of June's burn injuries. Electrical burns also caused two, or 5%, of these injuries in June 2004 in Massachusetts.

The following chart indicates the leading causes of burn injuries reported in June of 2004.

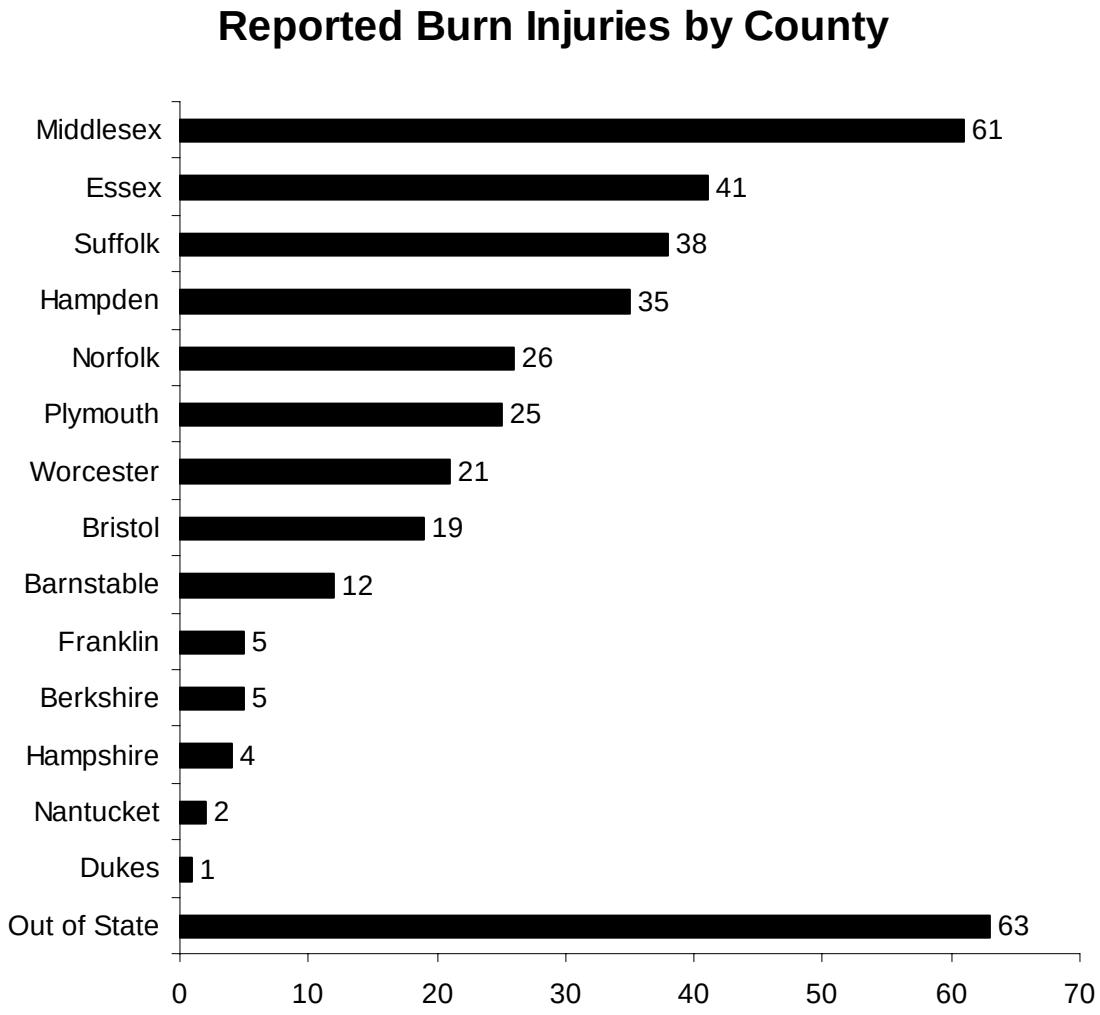


For more information, please refer to the table *Causes of Burn Injuries by Month* in the Appendix.

Geographical Demographics

Massachusetts Burn Victims from 124 Cities and Towns
Massachusetts medical facilities treated 295 residents of 124 Massachusetts cities and towns. Burn victims came from every county in the Commonwealth. The largest numbers of reported burn injuries were incurred by residents of Middlesex, Essex, and Suffolk counties. It appears that some large Boston hospitals (Suffolk County) may have under reported the burns they treated.

Sixty-three (63) burn victims from out-of state-received treatment at Massachusetts facilities. Some of the people were injured while vacationing here; others came to Massachusetts specifically for the specialized treatment of burn injuries that is available in the Commonwealth.



For information on the number of burn victims from each Massachusetts community, please refer to the table *Burn Injuries by Victim's Community* in the Appendix.

Boston & Springfield had the Most Reported Burn Injuries

Boston was home to the most burn injury victims with 34 of its citizens reported to have a burn injury in 2004. Springfield had the second most number of victims at 23. Brockton and Lawrence each tied for the third most victims with nine of their citizens receiving burn injuries. Lowell had seven reported burn injuries and New Bedford had six.

The map on page 61, *2004 Burns by Community*, displays the actual number of burns reported by community. The darker the community is shaded the more burns were reported from that municipality. Cities and towns that are white did not have a reported burn injury in 2004.

However if we look at the number of burn injuries compared to the total population of the individual community we get a different picture. One would expect that the bigger cities and

towns to have more burn injuries because of their populations. When we calculate the rate of reported burn injuries for every 10,000 people in a given municipality, the ranking changes. The top six communities in terms of number of reported injuries fall towards the bottom of the rankings. Communities with one, two or three reported burns take over the top spots.

Washington had the highest rate of 18.4 burn injuries per 10,000 population. Next highest was Wellfleet with 7.3 burn injuries per 10,000 population; Pelham had 7.1; Manchester had 5.7; Stockbridge and Rochester each had 4.4 burn injuries per 10,000 population.

The map on page 62, *2004 Burns per 10K Population*, displays the rate of reported burn injuries by the victim's home community for every 10,000 of that community's population. The darker the community is shaded the more burn injury per 10,000 people were reported from that municipality. Cities and towns that are white did not have a reported burn injury in 2004.

2004 Appendix

* Italicized names are sub-categories for the headings listed above them.

Specific Causes of Burn Injuries

Cause	# of Burns	% of Burns
Scalds	**147**	**41.1%**
Cooking	58	16.2%
Cooking Liquids	*31*	*8.7%*
Food	*27*	*7.5%*
Beverages	52	14.5%
Hot Tap Water	23	6.4%
Car Radiator	4	1.1%
Steam	3	0.8%
Central Heater	2	0.6%
Pipe	2	0.6%
Assault	1	0.3%
Radiator	1	0.3%
Tool	1	0.3%
Flame Burns	**96**	**26.8%**
Cooking	17	4.7%
Cooking/Clothes	*8*	*2.2%*
Barbeque	*3*	*0.8%*
Cooking (Unspec.)	*3*	*0.8%*
Cooking Liquids	*2*	*0.6%*
Oven	*1*	*0.3%*
Child Playing	16	4.5%
Child w/Lighter	*9*	*2.5%*
Child w/Gasoline	*5*	*1.4%*
Child w/Matches	*2*	*0.6%*
Smoking	12	3.4%
Smoking (Unspec.)	*5*	*1.4%*
Smoking in Bed	*3*	*0.8%*
Lighter	*2*	*0.6%*
Cigarette	*1*	*0.3%*
Smoking/Clothes	*1*	*0.3%*
Ignitable Liquids	12	3.4%
Gasoline	*9*	*2.5%*
Ignitable Liquids	*3*	*0.8%*
Candle	8	2.0%
Candle	*6*	*1.7%*
Candle/Clothes	*2*	*0.3%*
Explosives	5	1.4%
Fireworks	*3*	*0.8%*
Bomb Making	*1*	*0.3%*
Gunpowder	*1*	*0.3%*
Self-Immolation	5	1.4%

Cause	# of Burns	% of Burns
Flame Burns (con't)		
Welding & Cut. Torch	5	1.4%
Welding	*3*	*0.8%*
Cutting Torch	*2*	*0.6%*
Ignitable Gas	3	0.8%
Natural Gas	*2*	*0.6%*
Propane	*1*	*0.3%*
Alcohol	2	0.6%
Clothing Ignition	2	0.8%
Woodstove	2	0.6%
Assault	1	0.3%
Boiler	1	0.3%
Bonfire	1	0.3%
Camp Fire	1	0.3%
Domestic Violence	1	0.3%
MVA	1	0.3%
Unspecified	1	0.3%
Fires	**46**	**12.8%**
House Fires	18	5.0%
House Fire	*5*	*1.4%*
Flammables	*3*	*0.8%*
Smoking in Bed	*2*	*0.6%*
Heater	*2*	*0.6%*
Arson	*1*	*0.3%*
Candle	*1*	*0.3%*
Cooking/Clothes	*1*	*0.3%*
Fire Control	*1*	*0.3%*
Smoking (Unspec.)	*1*	*0.3%*
Camp or Bon Fires	15	4.2%
Campfire	*6*	*1.7%*
Bon Fire	*3*	*0.8%*
Gasoline	*3*	*0.8%*
Alcohol	*1*	*0.3%*
Child w/Gasoline	*1*	*0.3%*
Ignitable Liquids	*1*	*0.3%*
Motor Vehicle Fires	7	2.0%
MVA	*5*	*1.4%*
Car Fire	*2*	*0.6%*
Brush Fires	4	1.1%
Candle	*1*	*0.3%*
Brush fire	*1*	*0.3%*

Cause	# of Burns	% of Burns
Fires (con't)		
Cigarette	*1*	*0.3%*
Ignitable Liquid	*1*	*0.3%*
Structure Fire	1	0.3%
Fire control	*1*	*0.3%*
Fires, Other	1	0.3%
Child w/Matches	*1*	*0.3%*
Explosions	**30**	**8.4%**
Ignitable Liquids	11	3.1%
Child w/Gasoline	*5*	*1.4%*
Gasoline	*5*	*1.4%*
Ignitable Liquid	*1*	*0.3%*
Ignitable Gas	6	1.7%
Propane	*4*	*1.1%*
Ignitable Gas	*1*	*0.3%*
Natural Gas	*1*	*0.3%*
Electrical	3	0.8%
Electrical (Unspec.)	*2*	*0.6%*
Electrocution	*1*	*0.3%*
Cooking	2	0.6%
Oven	*1*	*0.3%*
Cooking (Unspec.)	*1*	*0.3%*
Explosives	2	0.6%
Fireworks	*1*	*0.3%*
Explosives (Unspec.)	*1*	*0.3%*
Car Part	2	0.6%
Chemical	2	0.6%
Aerosol Can	1	0.3%
Dryer	1	0.3%

Cause	# of Burns	% of Burns
Contact Burns	**22**	**6.1%**
Heating	6	1.7%
Radiator	*4*	*1.1%*
Heater	*1*	*0.3%*
Fireplace	*1*	*0.3%*
Cooking	4	1.1%
Food	*1*	*0.3%*
Stove	*3*	*0.3%*
Cooking (Unspec.)	*1*	*0.3%*
Oven	*1*	*0.3%*
Motorcycle	3	0.8%
Camp Fire (embers)	2	0.6%
Chemical	2	0.6%
Metal	2	0.6%
Asphalt	1	0.3%
Clothes Iron	1	0.3%
Welding	1	0.3%
Other Burn Injuries	**12**	**3.4%**
Chemical	7	2.0%
Sunburn	3	0.8%
Ultraviolet Lamp	2	0.6%
Electrical	**4**	**1.1%**
Electrocution	2	0.6%
Electrical (Unspec.)	2	0.6%

Causes of Burn Injuries by Age

UNDER 5	**97**	**27.1 %**
Cause	**# of Burns**	**% By Age**
Scalds	**87**	**89.7%**
Beverages	42	43.3%
Cooking	28	17.0%
Food	*21*	*21.6%*
Cooking Liquids	*7*	*7.2%*
Hot Tap Water	17	17.5%
Contact	**6**	**6.2%**
Radiator	3	3.1%
Camp Fire (embers)	2	2.1%
Clothes Iron	1	1.0%
Flame	**3**	**3.1%**
Child Playing	1	1.0%
Child w/Matches	*1*	*1.0%*
Smoking	1	1.0%
Smoking (Unspec.)	*1*	*1.0%*
Alcohol	1	1.0%
Fire	**1**	**1.0%**
Camp or Bonfires	1	1.0%

AGES 5 TO 9	**22**	**6.1%**
Cause	**# of Burns**	**% By Age**
Flame	**8**	**36.4%**
Child Playing	6	31.8%
Child w/Lighter	*3*	*13.6%*
Child w/Gasoline	*2*	*9.1%*
Child w/Matches	*1*	*4.5%*
Fireworks	*1*	*4.5%*
Bonfire (sparks)	1	4.5%
Scalds	**6**	**27.3%**
Food	4	18.2%
Beverages	1	4.5%
Hot Tap Water	1	4.5%
Fires	**4**	**18.2%**
House Fires	2	9.1%
Smoking in Bed	*1*	*4.5%*
House Fire	*1*	*4.5%*
Camp or Bon Fire	2	9.1%
Bonfire	*1*	*4.5%*
Child w/Gasoline	*1*	*4.5%*
Contact	**2**	**9.1%**
Metal	1	4.5%
Motorcycle	1	4.5%
Explosion	**2**	**9.1%**
Dryer	1	4.5%
Fireworks	1	4.5%

AGES 10 TO 14	**36**	**10.1%**
Cause	**# of Burns**	**% By Age**
Flame	**21**	**58.3%**
Child Playing	9	25.0%
Child w/Lighter	*6*	*16.7%*
Child w/Gasoline	*3*	*8.3%*
Explosives	3	8.3%
Bomb Making	*1*	*2.8%*
Fireworks	*1*	*2.8%*
Gunpowder	*1*	*2.8%*
Woodstove	2	5.6%
Candle	1	2.8%
Clothing Ignition	1	2.8%
Cooking/Clothes	1	2.8%
Ignitable Liquids	1	2.8%
Cutting Torch	1	2.8%
Welding	1	2.8%
Unspecified	1	2.8%
Explosion	**7**	**27.3%**
Child w/Gasoline	5	13.9%
Aerosol Can	1	2.8%
Explosives	1	2.8%
Fire	**4**	**11.1%**
Camp or Bon Fires	2	5.6%
Ignitable Liquids	*1*	*2.8%*
Gasoline	*1*	*2.8%*
House Fire	1	2.8%
House Fire	*1*	*2.8%*
Fire, Unspecified	1	2.8%
Child w/Matches	*1*	*2.8%*
Scalds	**3**	**8.3%**
Beverages	2	5.6%
Cooking Liquids	1	2.8%
Contact Burns	**1**	**2.8%**
Food	1	2.8%

AGES 15 TO 24	**59**	**16.5%**
Cause	**# of Burns**	**% By Age**
Flame	**18**	**30.5%**
Cooking	4	6.8%
Cooking (Unspec.)	*2*	*3.4%*
Cooking Liquids	*1*	*1.7%*
Oven	*1*	*1.7%*
Candle	2	3.4%
Candle (Unspec.)	*1*	*1.7%*
Candle/Clothes	*1*	*1.7%*
Ignitable Liquids	2	3.4%
Gasoline	*1*	*1.7%*
Ignitable Liquids	*1*	*1.7%*
Ignitable Gas	2	3.4%
Natural Gas	*1*	*1.7%*
Propane	*1*	*1.7%*
Self-immolation	2	3.4%
Alcohol	1	1.7%
Assault	1	1.7%
Child Playing	1	1.7%
Child w/Lighter	*1*	*1.7%*
Fireworks	1	1.7%
MVA	1	1.7%
Smoking in Bed	1	1.7%
Scalds	**17**	**28.8%**
Cooking	13	22.0%
Cooking Liquids	*12*	*20.3%*
Food	*1*	*1.7%*
Car Radiator	2	3.4%
Assault	1	1.7%
Hot Tap Water	1	1.7%

Cause	**# of Burns**	**% By Age**
Fire	**11**	**18.6%**
Camp or Bon Fire	4	6.8%
Camp Fire	*2*	*3.4%*
Alcohol	*1*	*1.7%*
Gasoline	*1*	*1.7%*
House Fire	3	5.1%
Arson	*1*	*1.7%*
Smoking in Bed	*1*	*1.7%*
Space Heater	*1*	*1.7%*
Vehicle Fires	1	1.7%
MVA	*1*	*1.7%*
Brush Fires	1	1.7%
Explosion	**6**	**10.2%**
Ignitable Liquids	4	6.8%
Gasoline	*2*	*3.4%*
Child w/Gasoline	*1*	*1.7%*
Ignitable Liquids	*1*	*1.7%*
Ignitable Gas	2	3.4%
Ignitable Gas	*1*	*1.7%*
Propane	*1*	*1.7%*
Contact	**3**	**5.1%**
Cooking (Unspec.)	1	1.7%
Motorcycle	1	1.7%
Welding	1	1.7%
Other	**3**	**5.1%**
Sunburn	2	3.4%
Chemical	1	1.7%
Electrical	**1**	**1.7%**
Electrocution	1	1.7%

AGES 25 TO 34	**33**	**9.2%**
Cause	**# of Burns**	**% By Age**
Flame	**9**	**27.3%**
Ignitable Liquids	5	15.2%
Gasoline	*4*	*12.1%*
Ignitable Liquids	*1*	*3.0%*
Smoking (Unspec.)	2	6.1%
Candle	1	3.0%
Self-immolation	1	3.0%
Scalds	**6**	**18.2%**
Cooking Liquids	4	12.1%
Beverages	2	6.1%
Fire	**5**	**15.2%**
House Fires	3	9.1%
Flammables	*1*	*3.0%*
Candle	*1*	*3.0%*
House Fires	*1*	*3.0%*
Camp or Bon Fire	2	6.1%
Bon Fire	*1*	*3.0%*
Campfire	*1*	*3.0%*

Cause	**# of Burns**	**% By Age**
Contact Burns	**5**	**15.2%**
Cooking	2	6.1%
Oven	*1*	*3.0%*
Stove	*1*	*3.0%*
Asphalt	1	3.0%
Heater	1	3.0%
Motorcycle	1	3.0%
Other	**4**	**12.1%**
Chemical	2	6.1%
Sunburn	1	3.0%
Ultraviolet Lamp	1	3.0%
Explosions	**2**	**6.1%**
Car Part	1	3.0%
Propane	1	3.0%
Electrical	**2**	**6.1%**
Electrocution	1	3.0%
Unspecified	1	3.0%

AGES 35 TO 44	**41**	**11.5%**
Cause	**# of Burns**	**% By Age**
Flame	**13**	**31.7%**
Cooking	3	7.3%
Barbeque	*2*	*4.9%*
Cooking/Clothes	*1*	*2.4%*
Candle	2	4.9%
Gasoline	2	4.9%
Smoking	2	4.9%
Cigarette	*1*	*2.4%*
Smoking in Bed	*1*	*2.4%*
Campfire (embers)	1	2.4%
Cutting Torch	1	2.4%
Self-immolation	1	2.4%
Fire	**8**	**19.5%**
House Fires	3	7.3%
Flammables	*2*	*4.9%*
House Fire	*1*	*2.4%*
Camp or Bon Fires	3	7.3%
Campfire	*2*	*4.9%*
Bon Fire	*1*	*2.4%*
Vehicle Fires	2	4.9%
Car Fires	*2*	*4.9%*
Explosions	**7**	**17.1%**
Propane	2	4.9%
Car Part	1	2.4%
Chemical	1	2.4%
Electrocution	1	2.4%

Cause	**# of Burns**	**% By Age**
Explosions (con't)		
Gasoline	1	2.4%
Natural Gas	1	2.4%
Scalds	**6**	**14.6%**
Cooking Liquids	2	4.9%
Car Radiator	2	4.9%
Beverages	1	2.4%
Pipe	1	2.4%
Other	**5**	**12.2%**
Chemical	3	7.3%
Ultraviolet Lamp	1	2.4%
Unspecified	1	2.4%
Contact	**2**	**4.9%**
Chemical	1	2.4%
Metal	1	2.4%

AGES 45 TO 54	**32**	**8.9%**
Cause	**# of Burns**	**% By Age**
Flame	**11**	**34.4%**
Smoking	3	9.4%
Smoking (Unspec.)	*2*	*6.3%*
Lighter	*1*	*3.1%*
Cooking	2	6.3%
Barbeque	*1*	*3.1%*
Cooking Liquids	*1*	*3.1%*
Gasoline	2	6.3%
Boiler	1	3.1%
Clothing Ignition	1	3.1%
Self-Immolation	1	3.1%
Welding	1	3.1%
Fire	**8**	**25.0%**
House Fires	5	15.6%
Heater	*2*	*6.3%*
Fire Control	*1*	*3.1%*
Smoking	*1*	*3.1%*
House Fire	*1*	*3.1%*
Brush Fires	1	3.1%
Cigarette	*1*	*3.1%*
Camp or Bon Fires	1	3.1%
Gasoline	*1*	*3.1%*
Vehicle Fires	1	3.1%
MVA	*1*	*3.1%*
Scalds	**8**	**25.0%**
Steam	2	6.3%
Beverages	1	3.1%
Cooking Liquids	1	3.1%
Pipe	1	3.1%
Radiator	1	3.1%
Hot Tap Water	1	3.1%
Tool	1	3.1%
Explosions	**3**	**9.4%**
Chemical	1	3.1%
Gasoline	1	3.1%
Oven	1	3.1%
Electrical	**1**	**3.1%**
Unspecified	1	3.1%
Contact	**1**	**3.1%**
Chemical	1	3.1%

AGES 55 TO 64	**13**	**3.6%**
Cause	**# of Burns**	**% By Age**
Scalds	**6**	**46.2%**
Cooking Liquids	3	23.1%
Beverages	1	7.7%
Central Heater	1	7.7%
Steam	1	7.7%
Flame	**5**	**38.5%**
Cooking	3	23.1%
Cooking/Clothes	*2*	*15.4%*
Cooking (Unspec.)	*1*	*7.7%*
Smoking	2	15.4%
Smoking in Bed	*1*	*7.7%*
Smoking (Unspec.)	*1*	*7.7%*
Explosion	**2**	**15.4%**
Cooking (Unspec.)	1	7.7%
Electrical	1	7.7%

AGES 65+	**25**	**7.0%**
Cause	**# of Burns**	**% By Age**
Flame	**8**	**32.0%**
Cooking/Clothes	4	16.0%
Candle	1	4.0%
Domestic Violence	1	4.0%
Natural Gas	1	4.0%
Welding	1	4.0%
Scalds	**8**	**32.0%**
Hot Tap Water	3	12.0%
Beverages	2	8.0%
Cooking	2	8.0%
Cooking Liquids	*1*	*4.0%*
Food	*1*	*4.0%*
Central Heater	1	4.0%
Fire	**5**	**20.0%**
Brush Fires	2	8.0%
Candle	*1*	*4.0%*
Ignitable Liquids	*1*	*4.0%*
House Fires	1	4.0%
Cooking/Clothes	*1*	*4.0%*
Structure Fires	1	4.0%
Fire Control	*1*	*4.0%*
Vehicle Fires	1	4.0%
MVA	*1*	*4.0%*
Contact	**2**	**8.0%**
Fireplace	1	4.0%
Radiator	1	4.0%
Explosion	**1**	**4.0%**
Electrical	1	4.0%
Other	**1**	**4.0%**
Chemical	1	4.0%

Causes of Work-Related Burns

Cause	# of Burns	% of Total
Scalds	**14**	**29%**
Cooking Liquids	8	16%
Steam	2	4%
Beverages	1	2%
Pipe	1	2%
Hot Tap Water	1	2%
Tool	1	2%
Flame	**13**	**27%**
Cooking	4	8%
Cooking Liquids	*2*	*4%*
Oven	*1*	*2%*
Cooking (Unspec.)	*1*	*2%*
Gasoline	2	4%
Welding	2	4%
Ignitable Gas	2	4%
Natural Gas	*1*	*2%*
Propane	*1*	*2%*
Boiler	1	2%
Clothing Ignition	1	2%
Cutting Torch	1	2%
Explosion	**8**	**16%**
Electrical	3	6%
Unspecified	*2*	*4%*
Electrocution	*1*	*2%*
Ignitable Gas	3	6%
Propane	*2*	*4%*
Ignitable Gas	*1*	*2%*
Ignitable Liquids	1	2%
Oven	1	2%

Cause	# of Burns	% of Total
Electrical	**4**	**8%**
Electrocution	2	4%
Unspecified	2	4%
Fire	**4**	**8%**
House Fires	3	6%
Flammables	*3*	*6%*
Camp or Bon Fires	1	2%
Ignitable Liquids	*1*	*2%*
Contact	**3**	**6%**
Asphalt	1	2%
Cooking	1	2%
Metal	1	2%
Other	**3**	**6%**
Chemical	3	6%
Total	**49**	**100%**

Number of Reported Burns Per Hospital

Addison Gilbert Hospital	1
Anna Jaques Hospital	1
Athol Memorial Hospital	1
Baystate Medical Center	32
Berkshire Medical Center	1
Beverly Hospital	1
Boston Medical Center	3
Brigham & Women's Hospital	30
Cape Cod Hospital	5
Charlton Memorial Hospital	2
Children's Hospital	3
Elliot Hospital (NH)	1
Emerson Hospital	4
Falmouth Hospital	5
Faulkner Hospital	1
Franklin Medical Center	7
Good Samaritan Medical Center	2
Health Alliance Hospital, Leominster	1
Henry Heywood Hospital	1
Harrington Memorial Hospital	1
Holy Family Hospital	7
Hubbard Regional Hospital	2
Lawrence General Hospital	11
Lowell General Hospital	6
Mary Lane Hospital	3
Massachusetts General Hospital	100
Melrose – Wakefield Hospital	2
Merrimack Valley Hospital	3
Milford-Whitinsville Hospital	6
Milton Hospital	2
Morton Hospital	1
Nantucket Cottage Hospital	3
Nashoba Hospital	2
New England Baptist Hospital	1
Newton Wellesley Hospital	1
North Adams Regional Hospital	1
North Shore Children's Hospital	1
Norwood Hospital	6
St. Anne's Hospital	1
St. Luke's Hospital	8
Shriners Burns Hospital	119
Sturdy Memorial Medical Center	2
Tobey Hospital	1
UMass Medical Center, University	9
UMass Amherst	1

Causes of Burn Injuries by Month

JANUARY	**23**	**6.4%**
Cause	**# of Burns**	**% By Month**
Scalds	**11**	**47.8%**
Beverages	4	17.4%
Food	3	13.0%
Central Heater	2	8.7%
Hot Tap Water	1	4.3%
Tool	1	4.3%
Flame	**6**	**26.1%**
Welding	2	8.7%
Assault	1	4.3%
Cooking/Clothes	1	4.3%
Ignitable Liquids	1	4.3%
Smoking (Unspec.)	1	4.3%
Fire	**3**	**13.0%**
House Fires	3	13.0%
Candle	*1*	*4.3%*
Cooking/Clothes	*1*	*4.3%*
Smoking in Bed	*1*	*4.3%*
Contact	**2**	**8.7%**
Chemical	1	4.3%
Radiator	1	4.3%
Other	**1**	**4.3%**
Chemical	1	4.3%

1 Death

FEBRUARY	**32**	**8.9%**
Cause	**# of Burns**	**% By Month**
Scalds	**16**	**50.0%**
Beverages	5	15.6%
Hot Tap Water	5	15.6%
Cooking	5	15.6%
Cooking Liquids	*4*	*12.5%*
Food	*1*	*3.1%*
Steam	1	3.1%
Flame	**8**	**25.0%**
Cooking	4	12.5%
Cooking/Clothes	*3*	*9.4%*
Cooking (Unspec.)	*1*	*3.1%*
Clothing Ignition	1	3.1%
Gasoline	1	3.1%
Smoking in Bed	1	3.1%
Welding	1	3.1%
Fire	**3**	**9.4%**
House Fires	2	6.3%
House Fire	*2*	*6.3%*
Camp or Bon Fires	1	3.1%
Child w/Gasoline	*1*	*3.1%*
Contact	**2**	**6.3%**
Chemical	1	3.1%
Heater	1	3.1%
Explosion	**2**	**6.3%**
Child w/Gasoline	2	3.1%
Dryer	1	3.1%
Electrical	**1**	**3.1%**
Electrocution	1	3.1%

1 Death

MARCH	**32**	**8.9%**
Cause	**# of Burns**	**% By Month**
Scalds	**17**	**53.1%**
Beverages	9	28.1%
Cooking	7	21.9%
Food	*6*	*18.8%*
Cooking Liquids	*1*	*3.1%*
Hot Tap Water	1	3.1%
Explosion	**1**	**3.4%**
Ignitable Liquids	6	18.8%
Child w/Gasoline	*4*	*12.5%*
Gasoline	*2*	*6.3%*
Ignitable Gas	1	3.1%
Fire	**5**	**15.6%**
House Fires	1	3.1%
Fire Control	*1*	*3.1%*
Structure Fires	1	3.1%
Fire Control	*1*	*3.1%*
Brush Fires	1	3.1%
Ignitable Liquid	*1*	*3.1%*
Camp or Bon Fires	1	3.1%
Bon Fire	*1*	*3.1%*
Vehicle Fires	1	3.1%
MVA	*1*	*3.1%*
Flame	**3**	**9.4%**
Alcohol	1	3.1%
Cooking/Clothes	1	3.1%
Natural Gas	1	3.1%

1 Death

APRIL	**26**	**7.3%**
Cause	**# of Burns**	**% By Month**
Scalds	**11**	**42.3%**
Beverages	4	15.4%
Cooking	4	15.4%
Food	*3*	*11.5%*
Cooking Liquids	*1*	*3.8%*
Hot Tap Water	2	7.7%
Pipe	1	3.8%
Flame	**7**	**26.9%**
Child Playing	4	15.4%
Child w/Matches	*2*	*7.7%*
Child w/Gasoline	*1*	*3.8%*
Child w/Lighter	*1*	*3.8%*
Candle	1	3.8%
Cooking/Clothes	1	3.8%
Natural Gas	1	3.8%
Fire	**3**	**11.5%**
Camp or Bon Fire	2	7.7%
Gasoline	*2*	*7.7%*
Brush Fires	1	3.8%
Brush Fire	*1*	*3.8%*
Contact	**3**	**11.5%**
Camp Fire (embers)	1	3.8%
Clothes Iron	1	3.8%
Welding	1	3.8%
Explosion	**1**	**3.8%**
Electrical	1	3.8%
Other	**1**	**3.8%**
Sunburn	1	3.8%

MAY	**33**	**9.2%**
Cause	**# of Burns**	**% By Month**
Scalds	**12**	**36.4%**
Cooking	7	21.2%
Food	*5*	*15.2%*
Cooking Liquids	*2*	*6.1%*
Beverages	3	9.1%
Hot Tap Water	2	6.1%
Flame	**10**	**30.3%**
Gasoline	4	12.1%
Child w/Lighter	2	6.1%
Candle	2	6.1%
Bomb Making	1	3.0%
Self-immolation	1	3.0%
Explosion	**4**	**12.1%**
Ignitable Liquids	3	9.1%
Gasoline	*2*	*6.1%*
Ignitable Liquids	*1*	*3.0%*
Flammables	1	3.0%
Contact	**3**	**9.1%**
Radiator	2	6.1%
Cooking (Unspec.)	1	3.0%
Fire	**2**	**6.1%**
Camp or Bon Fires	2	6.1%
Camp Fire	*1*	*3.0%*
Gasoline	*1*	*3.0%*
Electrical	**1**	**3.0%**
Unspecified	1	3.0%
Other	**1**	**3.0%**
Chemical	1	3.0%

JUNE	**40**	**11.2%**
Cause	**# of Burns**	**% By Month**
Flame	**15**	**37.5%**
Smoking	5	12.5%
Smoking (Unspec.)	*2*	*5.0%*
Cigarette	*1*	*2.5%*
Lighter	*1*	*2.5%*
Smoking in Bed	*1*	*2.5%*
Child Playing	2	5.0%
Child w/Gasoline	*1*	*2.5%*
Child w/Lighter	*1*	*2.5%*
Cooking	2	5.0%
Barbeque	*1*	*2.5%*
Cooking/Clothes	*1*	*2.5%*
Ignitable Liquids	2	5.0%
Gasoline	*1*	*2.5%*
Ignitable Liquids	*1*	*2.5%*
Boiler	1	2.5%
Fireworks	1	2.5%
Self-immolation	1	2.5%
Unspecified	1	2.5%
Scalds	**10**	**25.0%**
Cooking Liquids	6	15.0%
Beverages	3	7.5%
Car Radiator	1	2.5%
Other	**5**	**12.5%**
Chemical	2	5.0%
Sunburn	2	5.0%
Ultraviolet Lamp	1	2.5%
Explosion	**3**	**7.5%**
Car Part	1	2.5%
Fireworks	1	2.5%
Oven	1	2.5%
Contact	**3**	**7.5%**
Camp Fire (embers)	2	2.5%
Food	1	2.5%
Motorcycle	1	2.5%
Fire	**2**	**5.0%**
House Fires	1	2.5%
Smoking in Bed	*1*	*2.5%*
Camp or Bon Fires	1	2.5%
Camp Fire	*1*	*2.5%*
Electrical	**2**	**5.0%**
Electrocution	1	2.5%
Electrical (Unspec.)	1	2.5%

JULY	**34**	**9.5%**
Cause	**# of Burns**	**% By Month**
Scalds	**12**	**35.3%**
Cooking Liquids	6	17.6%
Beverages	3	8.8%
Hot Tap Water	2	5.9%
Car Radiator	1	2.9%
Flame	**9**	**26.5%**
Cooking	2	5.9%
Barbeque	*1*	*2.9%*
Cooking Liquids	*1*	*2.9%*
Smoking	2	5.9%
Lighter	*1*	*2.9%*
Smoking in Bed	*1*	*2.9%*
Child w/Lighter	1	2.9%
Gunpowder	1	2.9%
Ignitable Liquids	1	2.9%
MVA	1	2.9%
Propane	1	2.9%
Explosion	**5**	**14.7%**
Propane	2	5.9%
Aerosol Can	1	2.9%
Chemical	1	2.9%
Electrical	1	2.9%
Fire	**4**	**11.8%**
Camp or Bon Fires	2	5.9%
Camp Fire	*2*	*5.9%*
House Fires	1	2.9%
House Fire	*1*	*2.9%*
Fire, Unspecified	1	2.9%
Child w/Matches	*1*	*2.9%*
Contact	**3**	**8.8%**
Motorcycle	2	5.9%
Metal	1	2.9%
Other	**1**	**2.9%**
Chemical	1	2.9%

1 Death

AUGUST	**32**	**8.9%**
Cause	**# of Burns**	**% By Month**
Scalds	**10**	**31.3%**
Beverages	4	12.5**%**
Cooking	4	12.5%
Cooking Liquids	*2*	*6.3%*
Food	*2*	*6.3%*
Car Radiator	1	3.1%
Hot Tap Water	1	3.1%
Flame	**9**	**28.1%**
Child Playing	3	9.4%
Child w/Lighter	*2*	*6.3%*
Child w/Gasoline	*1*	*3.1%*
Clothing Ignition	1	3.1%
Cutting Torch	1	3.1%
Fireworks	1	3.1%
Gasoline	1	3.1%
Oven	1	3.1%
Self-Immolation	1	3.1%
Fire	**9**	**28.1%**
Vehicle Fires	3	9.4%
MVA	*2*	*6.3%*
Car Fire	*1*	*3.1%*
House Fires	3	9.4%
Heater	*2*	*6.3%*
Arson	*1*	*3.1%*
Brush Fires	2	6.3%
Candle	*1*	*3.1%*
Cigarette	*1*	*3.1%*
Camp or Bonfires	1	3.1%
Camp Fire	*1*	*3.1%*
Other	**2**	**6.3%**
Chemical	1	3.1%
Sunburn	1	3.1%
Contact	**1**	**3.1%**
Metal	1	3.1%
Explosion	**1**	**3.1%**
Electrocution	1	3.1%

4 Deaths

SEPTEMBER	**35**	**9.8%**
Cause	**# of Burns**	**% By Month**
Scalds	**14**	**40.0%**
Cooking	5	14.3%
Food	*3*	*8.6%*
Cooking Liquids	*2*	*5.7%*
Hot Tap Water	4	11.4%
Beverages	3	8.6%
Pipe	1	2.9%
Steam	1	2.9%
Flame	**9**	**25.7%**
Cooking	3	8.6%
Cooking (Unspec.)	*2*	*5.7%*
Barbeque	*1*	*2.9%*
Child Playing	3	8.6%
Child w/Lighter	*2*	*5.7%*
Child w/Gasoline	*1*	*2.9%*
Candle	2	5.7%
Domestic Violence	1	2.9%
Fire	**7**	**20.0%**
House Fires	5	14.3%
Flammables	*3*	*8.6%*
House Fire	*1*	*2.9%*
Smoking (Unspec.)	*1*	*2.9%*
Camp or Bon Fire	2	5.7%
Alcohol	*1*	*2.9%*
Camp Fire	*1*	*2.9%*
Contact	**2**	**5.7%**
Asphalt	2	2.9%
Stove	1	2.9%
Explosion	**2**	**5.7%**
Gasoline	2	2.9%
Propane	1	2.9%
Other	**1**	**2.9%**
Chemical	1	2.9%

3 Deaths

OCTOBER	**21**	**5.9%**
Cause	**# of Burns**	**% By Month**
Scalds	**14**	**66.7%**
Cooking	4	19.0%
Cooking Liquids	*3*	*14.3%*
Food	*1*	*4.8%*
Beverages	4	19.0%
Hot Tap Water	2	9.5%
Assault	1	4.8%
Car Radiator	1	4.8%
Radiator	1	4.8%
Steam	1	4.8%
Flame	**4**	**19.0%**
Assault	1	4.8%
Child w/Gasoline	1	4.8%
Gasoline	1	4.8%
Smoking (Unspec.)	1	4.8%
Fire	**2**	**9.5%**
House Fires	1	4.8%
House Fire	*1*	*4.8%*
Camp or Bon Fires	1	4.8%
Bon Fire	*1*	*4.8%*
Explosion	**1**	**4.8%**
Natural Gas	1	4.8%

NOVEMBER	**26**	**7.3%**
Cause	**# of Burns**	**% By Month**
Scalds	**11**	**42.3%**
Beverages	8	30.8%
Cooking Liquids	3	11.5%
Flame	**10**	**38.5%**
Self-immolation	2	7.7%
Smoking (Unspec.)	2	7.7%
Camp Fires (embers)	1	3.8%
Candle	1	3.8%
Cutting Torch	1	3.8%
Fireworks	1	3.8%
Gasoline	1	3.8%
Woodstove	1	3.8%
Fire	**3**	**11.5%**
Camp or Bon Fires	2	7.7%
Bon Fires	*1*	*3.8%*
Ignitable Liquids	*1*	*3.8%*
Vehicle Fires	1	3.8%
MVA	*1*	*3.8%*
Explosion	**2**	**7.7%**
Cooking (Unspec.)	1	3.8%
Propane	1	3.8%

DECEMBER	**24**	**6.7%**
Cause	**# of Burns**	**% By Month**
Scalds	**9**	**37.5%**
Cooking	4	16.7%
Food	*3*	*12.5%*
Cooking Liquids	*1*	*4.2%*
Hot Tap Water	3	12.5%
Beverages	2	8.3%
Flame	**6**	**25.0%**
Clothing Ignitions	3	12.5%
Candle/Clothes	*1*	*4.2%*
Cooking/Clothes	*1*	*4.2%*
Unspecified	*1*	*4.2%*
Bonfire (sparks)	1	4.2%
Cooking Liquids	1	4.2%
Woodstove	1	4.2%
Contact	**3**	**12.5%**
Fireplace	1	4.2%
Oven	1	4.2%
Radiator	1	4.2%
Fire	**3**	**12.5%**
Vehicle Fires	2	8.3%
Car Fire	*1*	*4.2%*
MVA	*1*	*4.2%*
House Fires	1	4.2%
Space Heater	*1*	*4.2%*
Explosion	**2**	**8.3%**
Car Part	1	4.2%
Explosives	1	4.2%
Other	**1**	**4.2%**
Unspecified	1	4.2%

Burn Injuries by Victim's Community

County	# of Burns
Barnstable	**12**
Barnstable	1
Bourne	1
Falmouth	3
Mashpee	1
Sandwich	2
Wellfleet	2
Yarmouth	2
Berkshire	**5**
Adams	1
Dalton	1
Pittsfield	1
Stockbridge	1
Washington	1
Bristol	**19**
Attleboro	2
Fairhaven	3
Fall River	3
Freetown	1
New Bedford	6
Swansea	1
Taunton	3
Dukes	**1**
Oak Bluffs	1
Essex	**41**
Andover	2
Beverly	1
Boxford	1
Danvers	2
Gloucester	1
Haverhill	5
Ipswich	1
Lawrence	9
Lynn	3
Manchester	3
Methuen	4
North Andover	4
Peabody	1
Salem	3
Saugus	1

County	# of Burns
Franklin	**5**
Greenfield	2
Northfield	1
Orange	2
Hampden	**35**
Chicopee	2
East Longmeadow	1
Holyoke	1
Longmeadow	2
Ludlow	1
Springfield	23
West Springfield	2
Westfield	1
Wilbraham	2
Hampshire	**4**
Belchertown	1
Pelham	1
Ware	2
Middlesex	**61**
Acton	2
Arlington	2
Ayer	1
Belmont	2
Burlington	1
Cambridge	6
Chelmsford	1
Concord	1
Dracut	3
Everett	3
Framingham	1
Groton	1
Holliston	1
Hudson	3
Lexington	1
Lincoln	1
Littleton	2
Lowell	7
Malden	5
Newton	4
Reading	1
Shirley	1

County	# of Burns
Middlesex	**(con't)**
Somerville	2
Tewksbury	2
Wakefield	2
Waltham	2
Winchester	1
Nantucket	**2**
Norfolk	**26**
Bellingham	1
Brookline	1
Dedham	2
Dover	2
Franklin	1
Millis	1
Milton	1
Needham	1
Norwood	3
Quincy	1
Randolph	6
Sharon	2
Stoughton	2
Walpole	1
Wrentham	1
Plymouth	**25**
Bridgewater	1
Brockton	9
Carver	1
Duxbury	1
Marshfield	1
Mattapoisett	1
Pembroke	1
Plymouth	6
Rochester	2
West Bridgewater	1
Whitman	1

County	# of Burns
Suffolk	**38**
Boston	34
Chelsea	1
Revere	3
Worcester	**21**
Ashburnham	1
Auburn	1
Dudley	1
Fitchburg	2
Gardner	1
Hardwick	1
Holden	1
Hubbardston	1
Leominster	1
Lunenburg	1
Milford	1
Millville	1
Southbridge	2
Upton	1
Warren	1
Webster	2
Worcester	3