Department of Fire Services
Commonwealth of Massachusetts

Massachusetts Burn Injury Reporting System

2012 Annual Report

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Massachusetts Burn Injury Reporting System

2012 Annual Report

27 Years

Helping Prevent Burn Injuries

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Executive Summary

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 (DPH). The "Burn Registry" also provides valuable data on the nature of the burn problem in the Commonwealth. In 2012, the twenty-seventh full year of the Massachusetts Burn Injury Reporting System (M-BIRS), 44 acute care hospitals and other health care facilities reported 400 victims of burns. Forty-two (42) of these 400 victims received care at two Massachusetts hospitals and were reported to the system twice.

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 started in the desperate days after the deadly 1942 nightclub fire at Boston's Cocoanut Grove and continue today with advances from The 2003 Station nightclub fire in West Warwick, RI.

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 in order 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 fire, 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.

DPH Alerts OSHA to Severe Burn Injuries in the Workplace
DPH notifies one of the three Occupational Safety and Health Administration (OSHA) area offices about those companies in which an employee was burned as a result of explosions, chemical exposures, electrocutions, or those that appeared to indicate likely violations of OSHA standards. Eleven (11) burn injuries were referred to OSHA in 2012 for cases that met the criteria.

Scalds Caused 46% of Reported Burn Injuries
Scalds have been the leading cause of burn injuries for the past 27 years. In 2012, scalds caused 166, or 45%, of the burn injuries reported to M-BIRS. Cooking liquids caused the majority of scald burns. Hot beverages, hot tap water, and hot foods also caused significant numbers of scald burns.

Keep Hot Liquids Away from Babies and Preschoolers
In 2012, young children were the most frequent victims of scald burns. Fifty-three percent (53%) of the 166 scald victims were under five years old, and most were less than one year old. Children under five years of age were almost 9.5 times more likely to be scalded. Hot beverages posed the greatest risk to these 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. Caregivers 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 an adult 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, take place in the kitchen as well as scalds to young children who inadvertently get in the way.. Since we must cook every day, we must learn to do so safely.

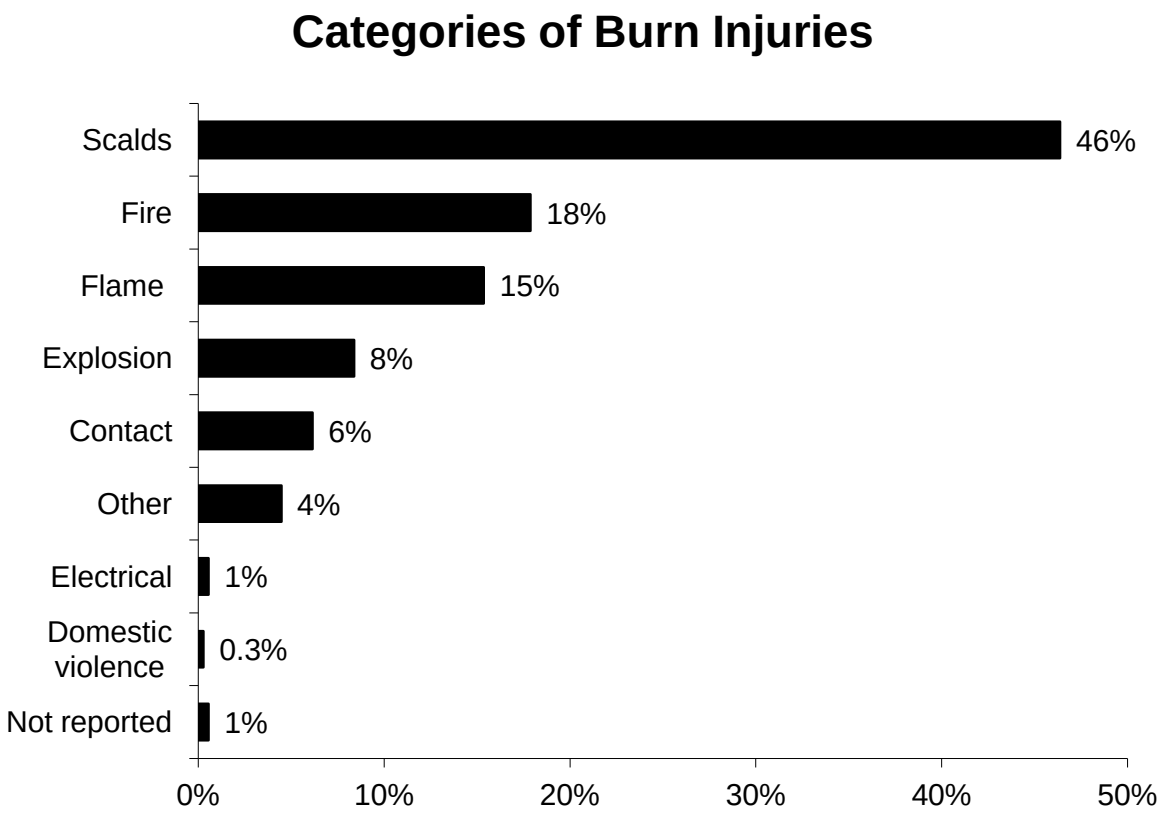
Cooking Fire Safety Campaign
The Department of Fire Services developed a public awareness campaign focused on cooking fire safety as it is the leading cause of home fires and injuries. In 2011, the Cooking Fire Safety Campaign has two key messages: *Stand by Your Pan* and *Put a Lid On It*.

Burns from Fires Cause the 2nd Most Burns
Burn injuries from fires were the second highest cause of burn injuries in 2012 accounting for 18% of the burn injuries. Camp or bon fires caused 42%, of these burn injuries. Flame burn injuries caused 15% of the 2012 burn injuries. Gasoline and other ignitable liquids caused 24% of flame burns in 2012.

Almost 2/3 of Burns Occurred in the Victim's Home
Of the 358 burn injuries reported to M-BIRS in 2012, 234, or 65%, occurred in the victim's home or surrounding yard. Over half, 57%, of these burn injuries were scalds. Ten (10), or 4%, 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[1], a scald or something else? In the second section we look at burns by age, gender, work-related burns, burns in the home, burns reported by individual hospitals, and burn injuries by month.



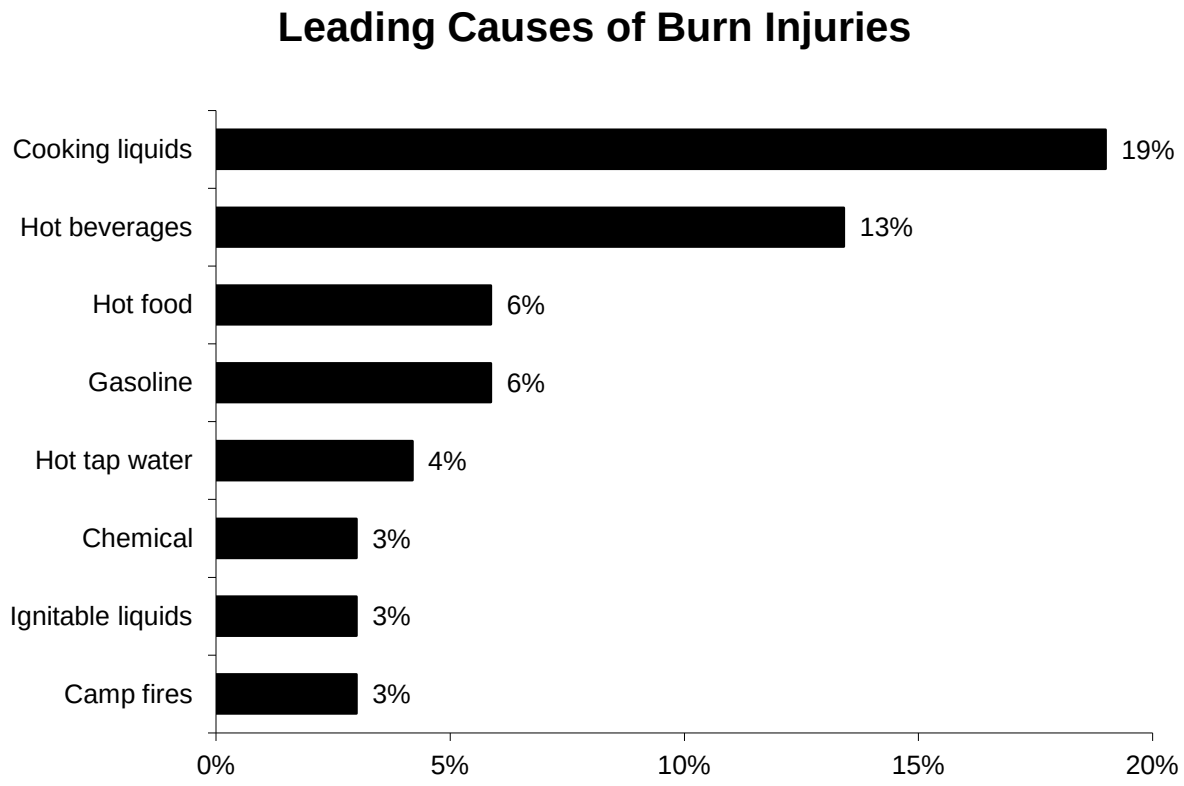
Almost 1/2 of All Burn Victims Never Come Near a Flame

Scalds from cooking liquids and grease, hot liquids, tap water, food and steam caused 46% of the 358 burn injuries reported in 2012. Eighteen percent (18%) were caused by fires. Flames from burning clothing, bedding or similar objects caused 15% of the burns. Explosions caused 8% of these burns; 6% were caused by contact with hot objects; while electrical incidents such as electrocutions caused 1% of the burns. Four percent (4%) of the reported burns in 2012 had other causes, such as chemical burns or sunburns; and less than 1% of the burns were caused by an incidence of domestic violence. The burn type was not reported for 1% of these injures.

[1] 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.

Type of Incidents Causing Burn Injuries

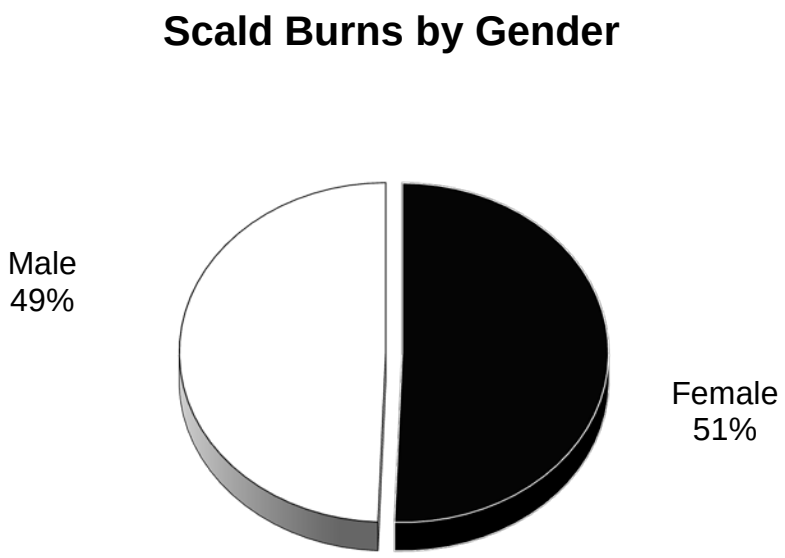
Look at Specific Causes and Equipment to Develop Prevention Strategies
To develop effective burn prevention policies and programs, we must first look at the specific items or behaviors that caused the burns. Nineteen percent (19%) of the 358 burn injuries reported in 2012 were scalds from cooking liquids. Thirteen percent (13%) of the burns were caused by hot beverages. Hot food and gasoline each caused 6% of the burn injuries in 2012. Hot tap water caused 4% of total burns. Chemicals, ignitable liquids other than gasoline and camp fires each caused 3% of the total burn injuries in Massachusetts in 2012. For more information, please refer to the table *Specific Causes of Burn Injuries* in the Appendix.



Burn Injuries Caused by Scalds

Scalds Have Been the Leading Cause of Burn Injuries Every Year
Scalds have been the leading cause of burn injuries every year since the inception of M-BIRS. The percentage of total burns has ranged from a high of 47% in 1998 to a low of 35% in 2005. The 10-year average from 2003 through 2012 is 40%[2] of total annual reported burns.

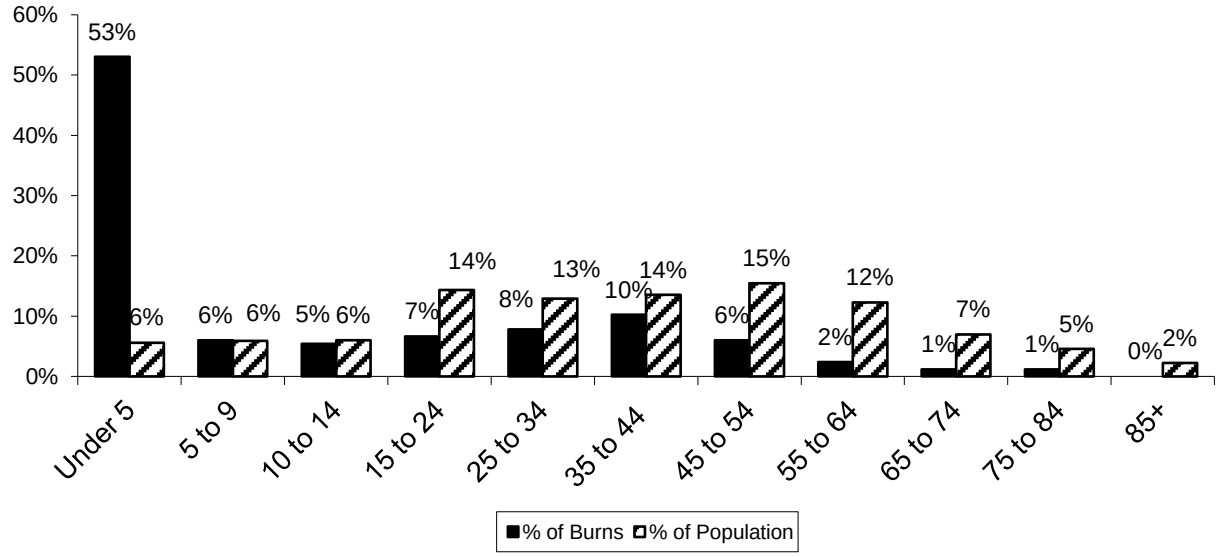
Scalds Caused 46% of All Burns
One hundred sixty-seven (166), or 46%, of the 358 reported burns were scalds. Fifteen (15), or 10%, of the 166 scalds occurred while the victim was working. Eighty-four (84), or 51%, of the 166 scald victims were female and 82, or 49%, were male.



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 2010 U.S. Census, children under the age of five comprised 6% of the Massachusetts population. However that same age group accounted for over half, or 53% of all scald burns in 2012. Fifty-six (56), or 34%, were infants one year old or younger. Children aged five to nine accounted for 6% of scald burn injuries, while children aged 10 to 14 accounted for 5% of these injuries.

[2] 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 the second lowest in the past 10 years.

Scalds by Age Group



Pre-schoolers 9 ½ Times More Likely to Suffer Scald Burns

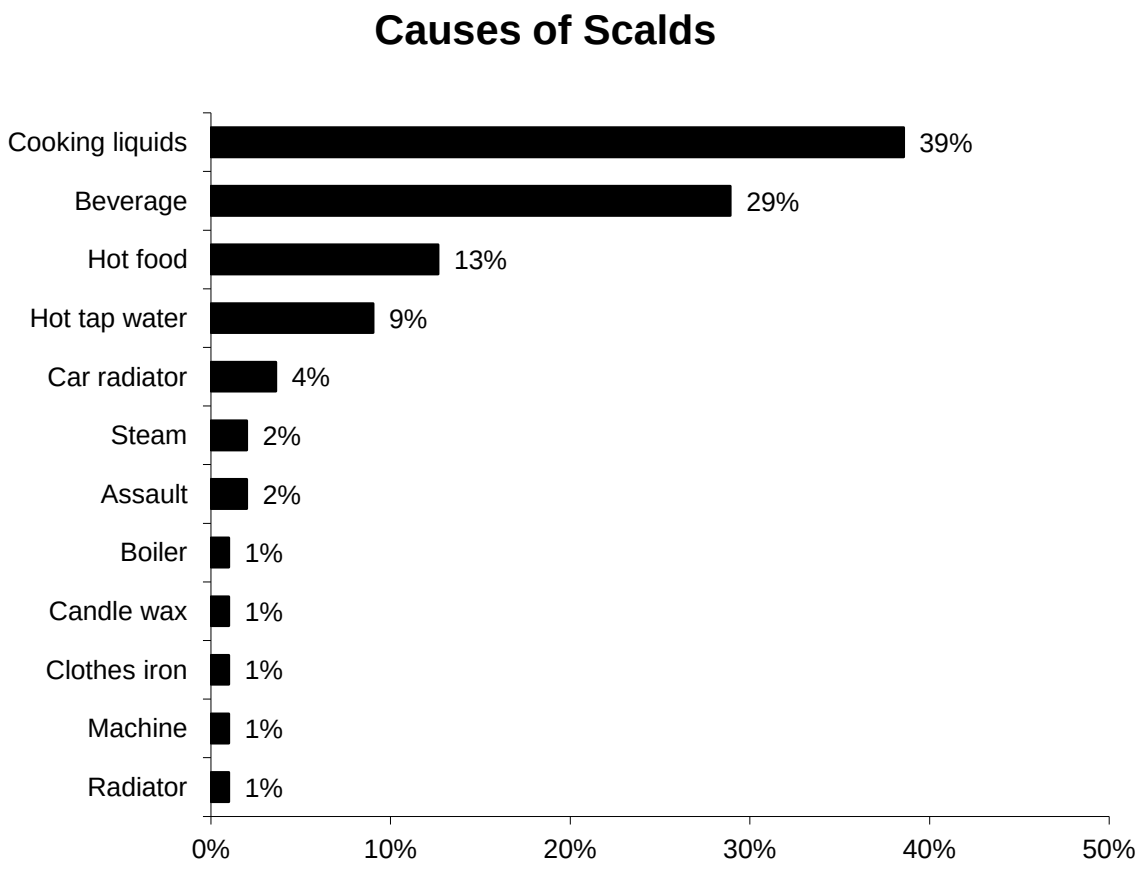
Many adults also suffered burns from scalds. Seven percent (7%) of scald burn victims were between 15 and 24 years old; 8% were between 25 and 34; 10% were between 35 and 44 years of age; 6% were between 45 and 54; 2% were between 55 and 64; 1% were between 65 and 74; 1% were between 75 and 84; and there were no scald burn victims over the age of 84. A one-month old boy was the youngest scald burn victim, while the oldest victim was a 78-year old woman. When the black shaded bar of the graph representing the percent of scald burns is higher than the black and white shaded 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 nine and a half times more likely to suffer a scald burn.

Cooking Liquids Caused Over 39% of All Scald Burns

Cooking liquids were the leading cause of scald burns, accounting for 39% of all scald burns in 2012. Scald burns from hot beverages were the second leading cause of scald burns, causing 29%, of the 166 scald burns. Thirteen percent (13%) were caused by hot food. Nine percent (9%) were caused by hot tap water. Scald burns from car radiators caused 4% and an assault and steam each caused 2% of scald burns. A boiler, wax from a candle, a clothes iron, a machine and a heating radiator each caused 1% of these scald burn injuries in 2012.

Since the beginning of M-BIRS in 1984, hot beverages had been the leading cause of scalds, however, this was not the case in 1999 or from 2005 through 2008[3]. Recently cooking liquids and hot beverages have been jockeying back and forth as the leading cause of scalds. In 1999 scald burns from cooking liquids were one percentage point higher than scald burns from hot beverages.

[3]In 1999, and from 2005 – 2008 and 2010 - 2012, cooking liquids were the leading cause of scald burns. From 1984 – 1998, 2000 – 2004 and in 2009, hot beverage scalds were the leading cause.



41-Year Old Man Scalded in an Assault
On December 14, 2012, a 41-year old man received scald burns to 20% of his body surface area when he was assaulted by someone tossing hot water on him.

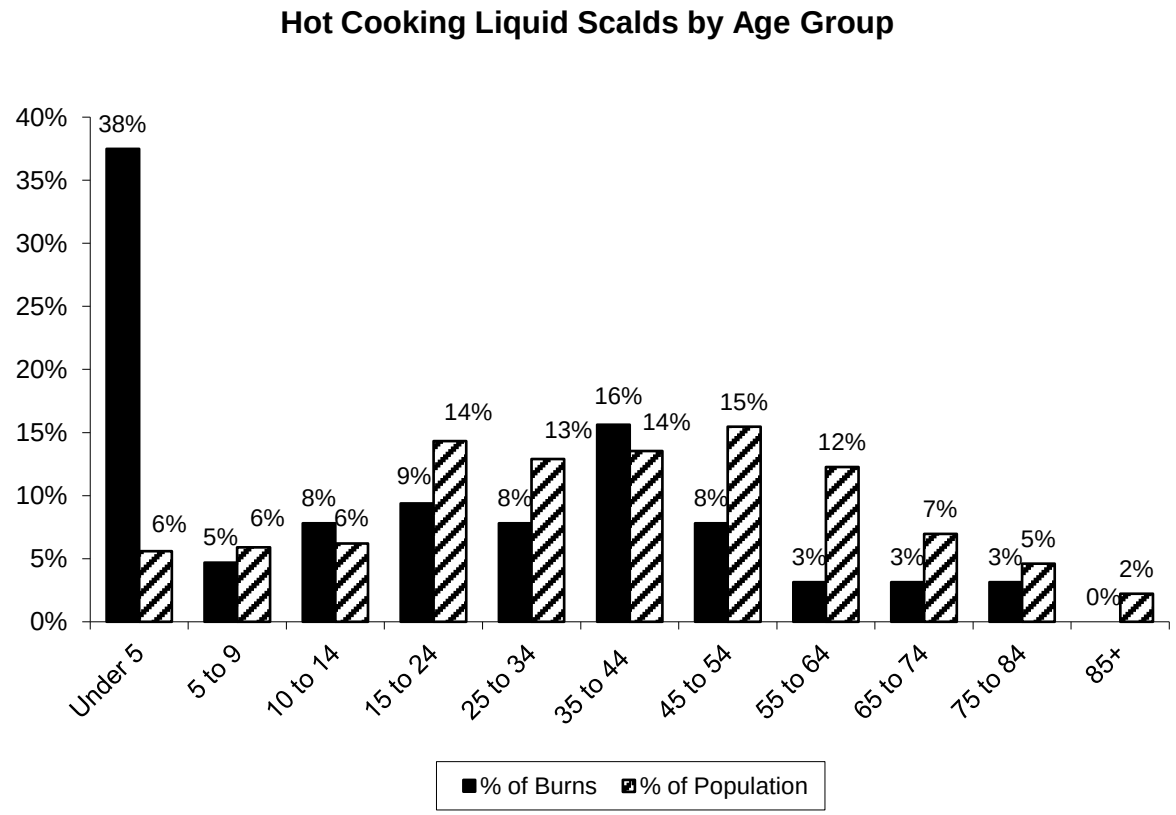
30-Year Old Man Receives Scald from Car Radiator
On August 24, 2012, a 30-year old man received scald burns to 12% of his body surface area when he opened his car radiator and anti-freeze exploded on him.

Hot Cooking Liquids

Hot Cooking Liquids Caused 39% of Scalds, 18% of All Burns
Scald burns from hot cooking liquids were the leading cause of all burn injuries. Hot cooking liquids which includes boiling water, grease and oil, caused 64, or 39%, of the 166 scald burns and 18% of the 358 total burn injuries reported in 2012. Fifty-three percent (53%) of the victims were female and 47% were male. Hot cooking liquids scalded six people while they were at work, four victims were men and two were women.

38% of Cooking Liquid Scald Victims Were Under 5

Those most likely to be under foot in the kitchen were most at risk to be burned by hot liquids on the stovetop. In 2012, 38% of the cooking liquid scald victims were under five years old. They were almost six and a half times more likely to be victims of a hot cooking liquid scald. This risk is most likely attributed to children getting in the way of adults as they prepare meals. Establishing a "No Zone" in the kitchen and putting toddlers safely in high chairs or playpens during meal preparation can reduce these injuries.



Five percent (5%) were children between the ages of five and nine. Eight percent (8%) of the victims were within the age group between 10 and 14; members of the age group between 15 and 24 accounted for 9%, this is most likely due to young adults working for the first time especially in fast food restaurants and also cooking for themselves for the first time. Eight percent (8%) were between 25 and 34. Sixteen percent (16%) were between 35 and 44, this is one of only two age groups that were more likely to get a scald burn; 8% were between 45 and 54; 3% were between 55 and 64; another 3% were between 65 and 74; and another 3% were between 75 and 84. No one over the age of 78 received a scald burn injury from hot cooking liquids. The youngest hot cooking liquid scald burn victim was a six-month old boy, while the oldest person to have one of these burns was a 78-year old woman.

4-Year Old Scalded by Cooking Liquids
On March 18, 2012, a four-year old girl was splashed with boiling hot water. She received severe scald burns to 20% of her body surface area.

43-Year Old Man Scalded by Cooking Liquids at Home
On June 30, 2012, a 43-year old Lawrence man was burned by hot cooking grease. He received severe scald burns to approximately 36% of his body surface area.

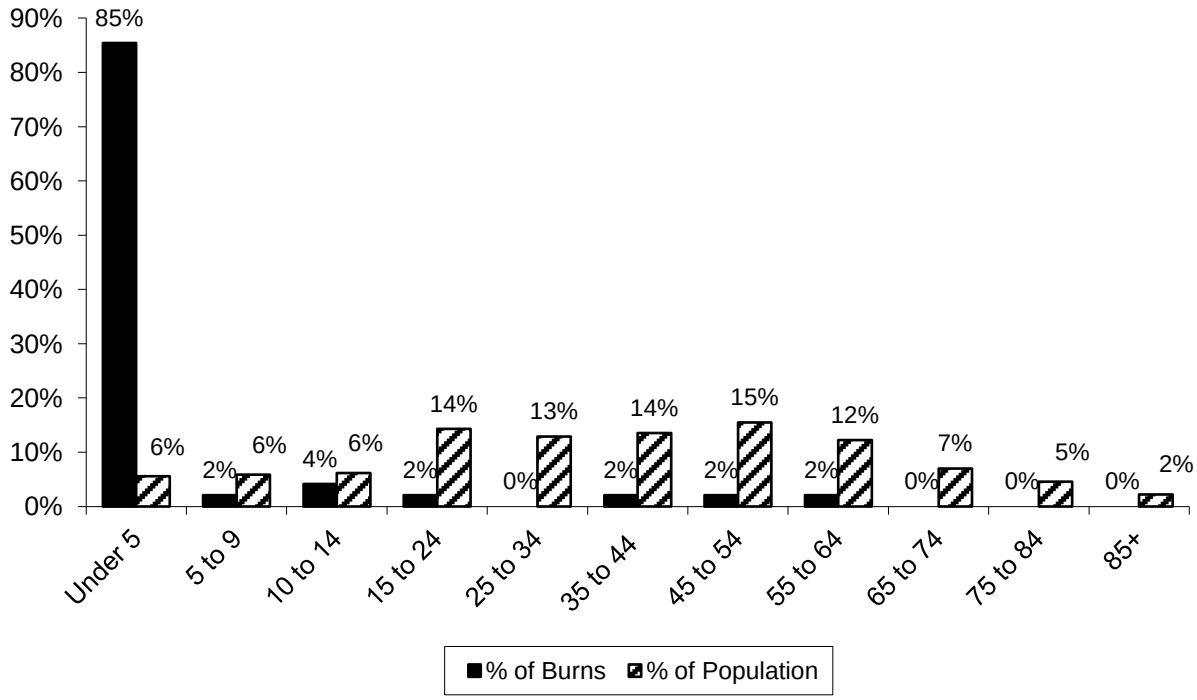
Hot Beverages

Hot Beverages Caused 29% of All Scalds
Forty-eight (48), or 29%, of the 166 scald burns were caused by hot beverages. They account for 13% of the 358 total burn injuries. Since the inception of M-BIRS in 1984, hot beverages have historically been the leading cause of scald burns except for 1999, 2005 to 2008, and 2010 to 2011.

Fifty-four percent (54%) of the 48 hot beverage scald victims were female and 46% were male. In 2012, no one was reported to have received a hot beverage scald while working.

85% of the Hot Beverage Scald Victims Were Under 5
Eighty-five percent (85%) of the 48 hot beverage scald victims were less than five years of age. Children under five years old were 15 times more likely to be scalded by a hot beverage. Twenty-eight (28), or 58%, of the victims who were scalded were one-year old or younger. Another eight, or 17%, were two-year old toddlers. Last year, 57% of the victims of hot beverage scalds were also less than five years old.

Hot Beverage Scalds by Age Group



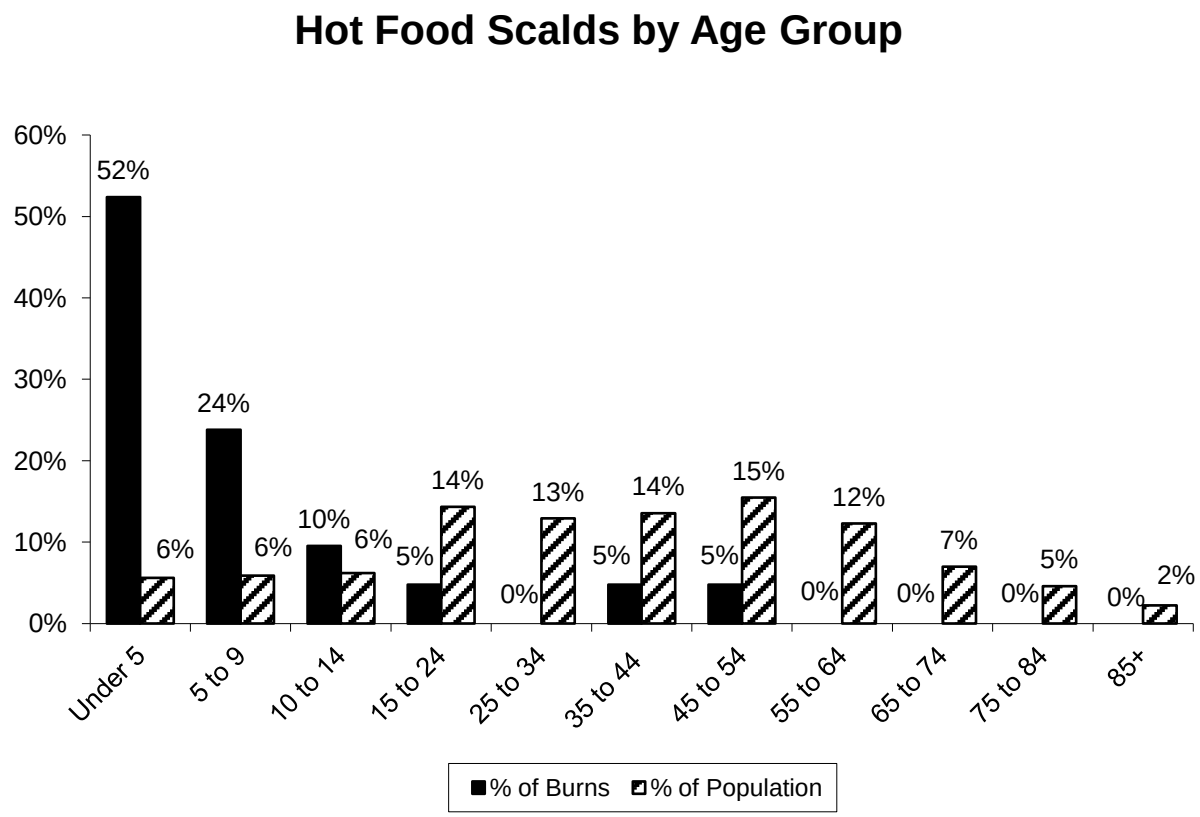
Two percent (2%) of the hot beverage scald victims were between five and nine years old; 4% were between the ages of 10 and 14; 2% were between the ages of 15 and 24; no one between 25 and 34 was reported to receive a scald from a hot beverage; 2% were between 35 and 44; 2% were between the ages of 45 to 54; and another 2% of these victims were between 55 and 64 years old. No one over the age of 63 was reported to have received a scald burn from a hot beverage in 2012. A one-month old girl was the youngest person to be scalded by a hot beverage in 2012, while the oldest person was a 63-year old man.

1-Year Old Scalded by Beverage
On March 27, 2012, a one-year old girl was splashed with hot tea. She received severe scald burns to multiple parts of her body.

Hot Food

Hot Food Caused 13% of Scalds, 6% of All Burns
Hot food caused 21, or 13%, of the 166 scald burns and 5% of the 358 total burn injuries reported in 2012. Fifty-seven percent (57%) of the victims were female and 43% were male. There was one work-related hot food scald reported in 2012, and it happened to a woman.

Almost 2/3 of Hot Food Scald Victims Were Under 10
Of the 21 reported scald victims from hot food in 2012, 16, or 66%, were under the age of ten. Eleven (11), or 52%, were under five years old; five victims, or 24%, were between five and nine; two victims, or 10%, were between the age of 10 and 14; one victim, or 5%, was between 15 and 24; no one between 25 and 34 was reported to receive a hot food scald; another victim, or 5%, was between 35 and 44 years old; and the last victim, or 5%, was between the ages of 45 to 54 years old. No one over the age of 51 was reported to have received a scald burn injury from hot food in 2012. The youngest hot food scald burn victim was a nine-month old boy, while the oldest person to have one of these burns was a 51-year old man.



3-Year Old Boy Receives Scald Burns from Food
On February 28, 2012, a three-year old Randolph boy received scald burns to his chest, abdomen and groin when a bowl of hot soup accidentally spilled on him.

Hot Tap Water

Hot Tap Water Caused 9% of All Scalds
Excessively hot tap water caused 15, or 9%, of the 166 scald burns and 4% of the 358 total burn injuries reported to M-BIRS in 2012. 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

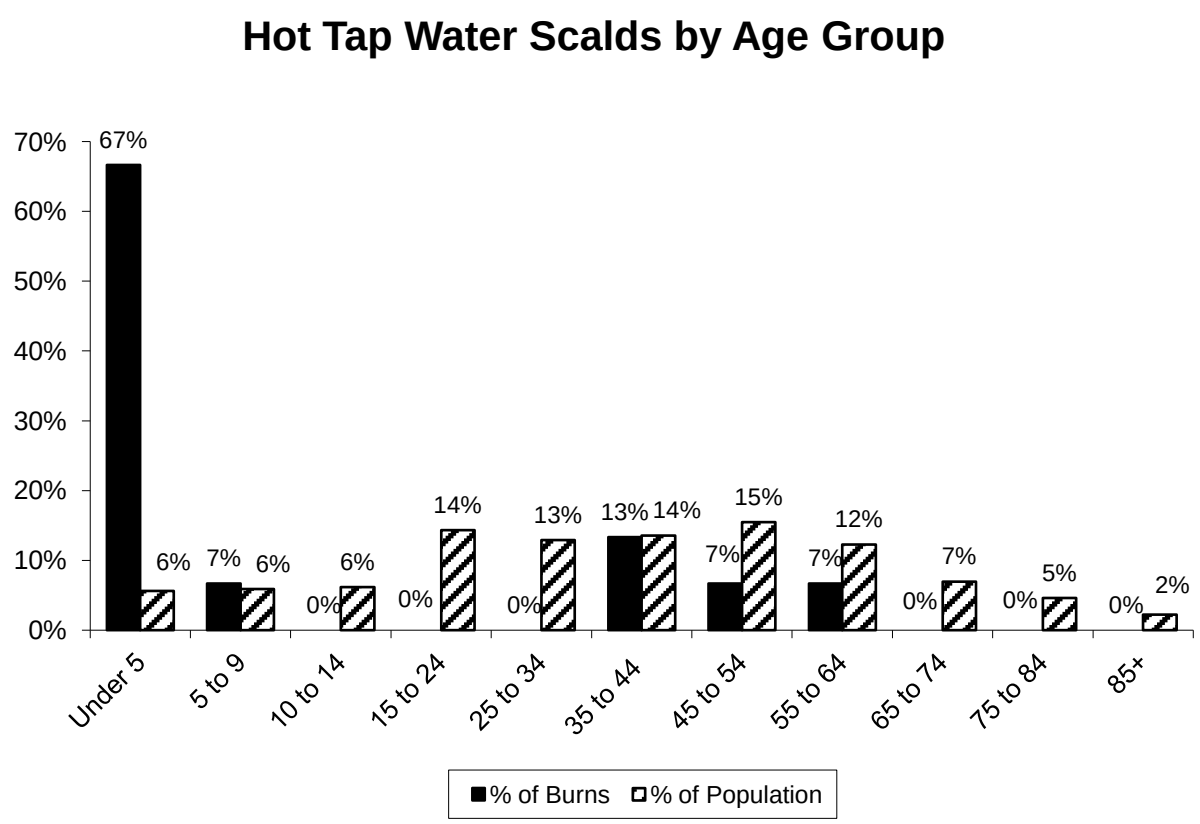
130º F and most dishwashers have coils to boost their internal water temperature. It is important for homeowners to make sure their own water heaters are set in the appropriate range. At 155º F it takes only one second to sustain a third degree burn. At 130º F it takes thirty seconds. At 120º F it can take a full five minutes to sustain a third degree burn.[4] 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.

In 2012, 60% of the victims were male while the other 40% were female. One (1), or 7%, of the 15 victims were scalded during work-related activities.

2/3 of Tap Water Scald Victims Were Under the Age of 5

Sixty-seven percent (67%), or 10 of the 15 hot tap water scald victims 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. Last year in 2011, 12, or 71%, of the hot tap water scald burn victims were under the age of five.

Seven percent (7%) were between five and nine years of age; there were no reported burns between 10 and 34 years of age; 13% were between the ages of 35 and 44; 7% were between 45 and 54; another 7% were between 55 and 64; and no one over the age of 60 was reported to have been scalded by tap water in 2012. The youngest hot tap water scald burn victim was a one-month old boy, while the oldest person to have one of these burns was a 60-year old woman.

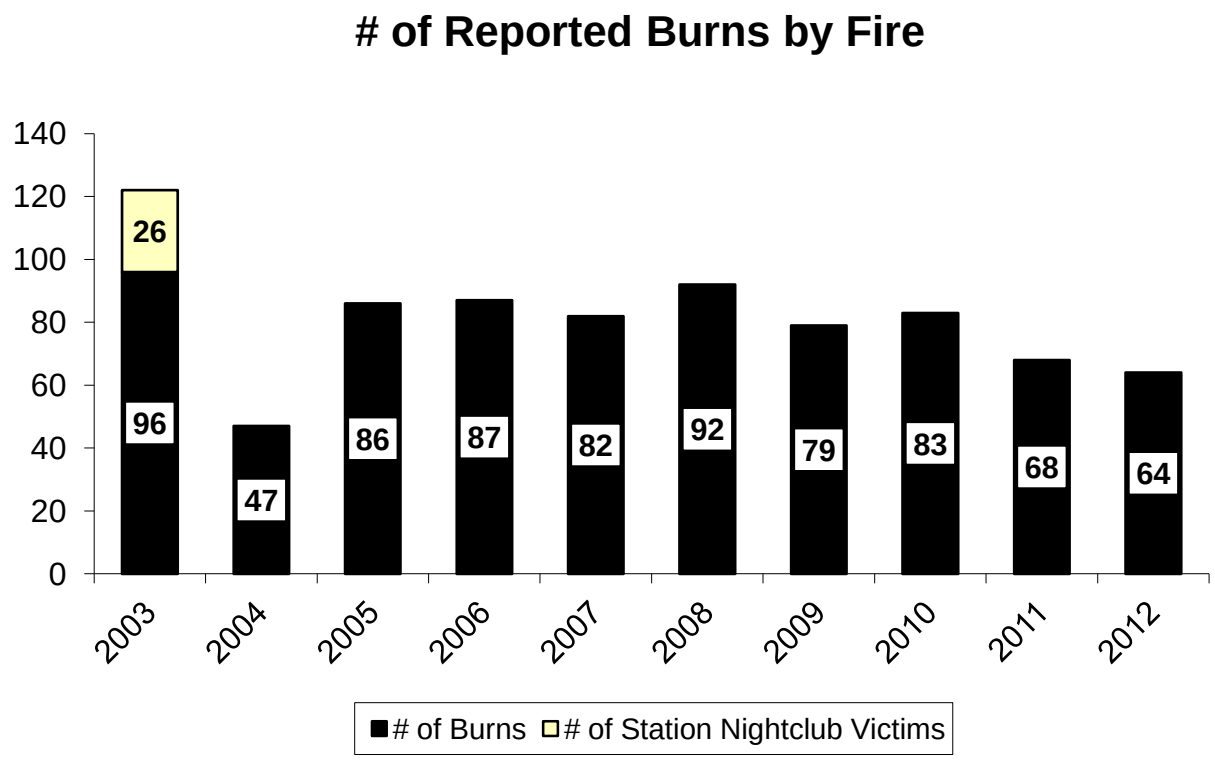


[4] Source: Knapp Burn Foundation

3-Month Old Scalded While Taking a Bath
On January 9, 2012, a three-month old Boston boy was scalded while taking a bath. He received severe scald burns to his abdomen, thighs and perineum.

Burn Injuries Caused by Fires

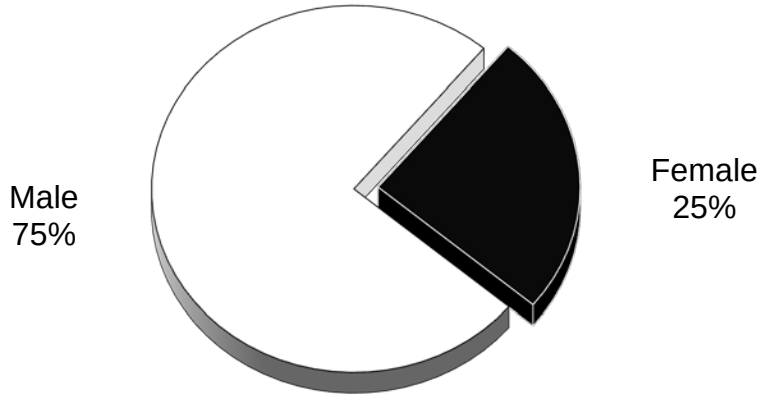
Fires Caused 18% of All Burn Injuries
Sixty-four (64), or 18% of the 358 burn injuries reported in 2012 were caused by fires. This is an 8% decrease from the 69 fire burns reported the previous year. The highest number of burn injuries from a fire were the 96 burn injuries in 2003, excluding the 26 burn victims from the Station nightclub fire that were treated in Massachusetts. The following graph shows the number of burns from fire reported to M-BIRS from 2003 through 2012.



Three-fourths, or 75%, of the 64 victims were male and 25% were female. Analysis of data from the Massachusetts Fire Incident Reporting System found that the majority of fire injuries occurred while the victim was escaping or attempting to control the fire and that men are more likely than women to attempt to control the fire and become injured[5].

[5] 2011 Annual Report of the Massachusetts Fire Incident Reporting System, MA Dept. of Fire Services, pg. 111.

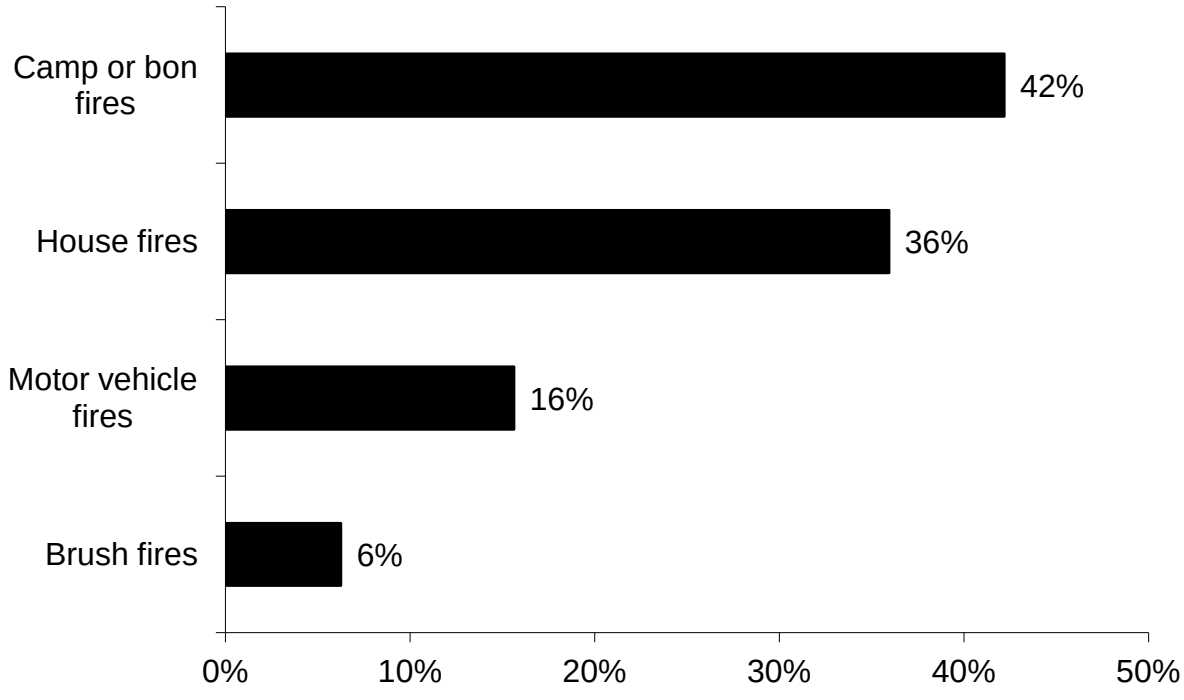
Fire Burn Victims by Gender



47% of Fire Burn Injuries Occurred at Camp or Bon Fires

Camp or bon fires caused 27, or 42% of the 64 fire burn injuries reported in 2012. House fires caused 23, or 36%. Ten (10), or 16%, were due to motor vehicle fires; and four, or 6%, of the victims received their burns at brush fires.

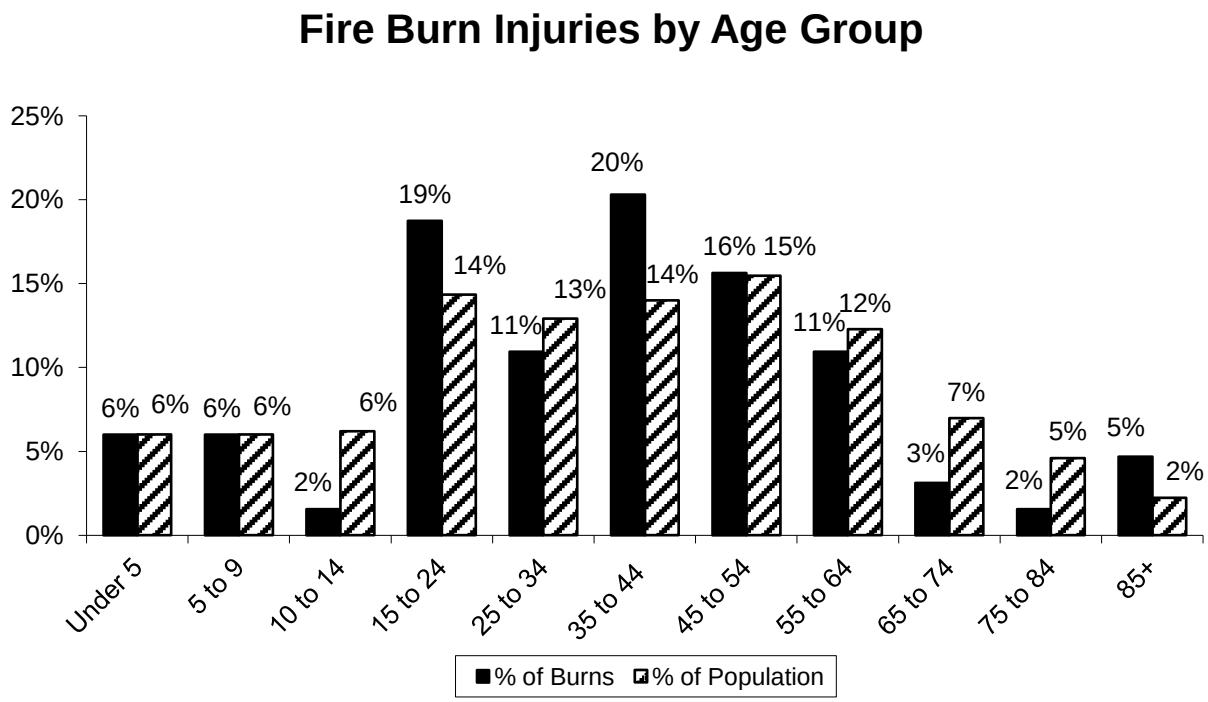
Types of Fires Causing Burns



Middle Aged &Young Adults Most Likely to Be Burned in Fires
Four (4), or 6%, of the victims burned in fire incidents were under five years old; another four, or 6%, were between five and nine years of age; one, or 2%, were between 10 and 14; 12, or 19%, were between 15 and 24; seven, or 11%, were between 25 and 34; 13, or 20%, were between 35 and 44; 10, or 16%, were between the ages of 45 and 54; seven, or 11%, were between the ages of 55 and 64; two, or 3%, were between the ages of 65 and 74; one, or 2%, were between the ages of 75 and 84; and three, or 5%, were over the age of 85. Adults between the ages of 35 and 44 were 1.5 times more likely to be burned in a fire; and young adults between the ages of 15 and 24 were the second most likely, at 1.3 times to be burned in fires. With only three burn injuries from fires, older adults over the age of 85 were 2.1 times more likely to be burned in a fire.

Historically young adults between the ages of 15 and 24 are the most likely to be burned in a fire.

The following chart illustrates the data mentioned in the above paragraph.



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. Most fire deaths are not recorded in M-BIRS; only the severely burned who survive for a period of time and die later in a hospital are reported. Properly maintained smoke detectors and quick-response residential sprinklers could prevent many of the injuries caused by fires. Detectors

sound an early warning to leave the area and quick-response sprinklers can control or possibly extinguish a fire in its earliest stages thus preventing injuries.

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.

6 Fire Deaths Recorded in M-BIRS
Six (6) of the victims that were reported to have received their burn injuries from fires died as a result of their injuries. Five (5) of the six victims were Massachusetts residents. Of these victims, three victims died in residential fires, two caused by heaters and one by smoking while on oxygen. Two (2) victims died in camp fires and one person died in a motor vehicle fire.

92-Year Old Man Dies in House Fire
On November 19, 2012, a 92-year old Westfield man died in a house fire. The fire was started by the central heating system. The victim received burns to 25% of his body surface area.

67-Year Old Woman Dies in House Fire While Smoking
On February 27, 2012, a 67-year old Malden woman died from burn injuries to half her body surface area when she was smoking in her home. She accidentally ignited her bathrobe with her cigarette.

Middle-Age Couple Seriously Injured in Airplane Crash
On September 1, 2012, a 57-year old man and a 54-year old woman both received burns to over 60% of their body surface areas when the small plane they were in crashed and resulted in a fire.

18-Year Old Man Injured in Bon Fire
On May 13, 2012, an 18-year old Merrimac man received severe burn injuries to 12% of his body surface area when he tripped into a bon fire.

18-Year-Old Man Seriously Hurt in Outside Fire
On March 30, 2012, an 18-year old Methuen man was tending to a fire in his backyard by using gasoline while drinking alcohol. He received life-threatening burns to approximately 60% of his body.

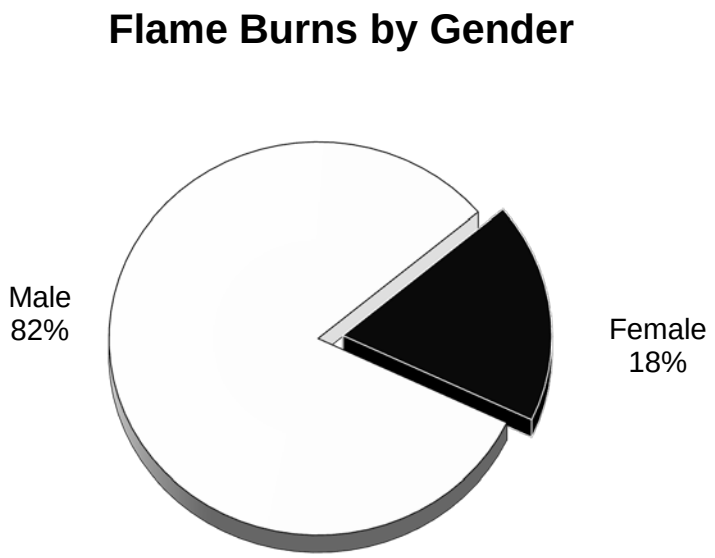
50-Year Old Woman Dies from Self-immolation
On June 9, 2012, a 50-year old Northampton woman received burns to approximately 95% of her body surface area when she successfully attempted self-immolation outside of her home. She was transported to a local hospital where she later succumbed to her injuries.

34-Year Old Man Burned by Fire Pit
On July 7, 2012, a 34-year old Marshfield man was starting a fire in his fire pit with an ignitable liquid when it flashed and ignited his clothes. He received severe burns to his hands, wrist, abdomen and thighs.

Flame Burn Injuries

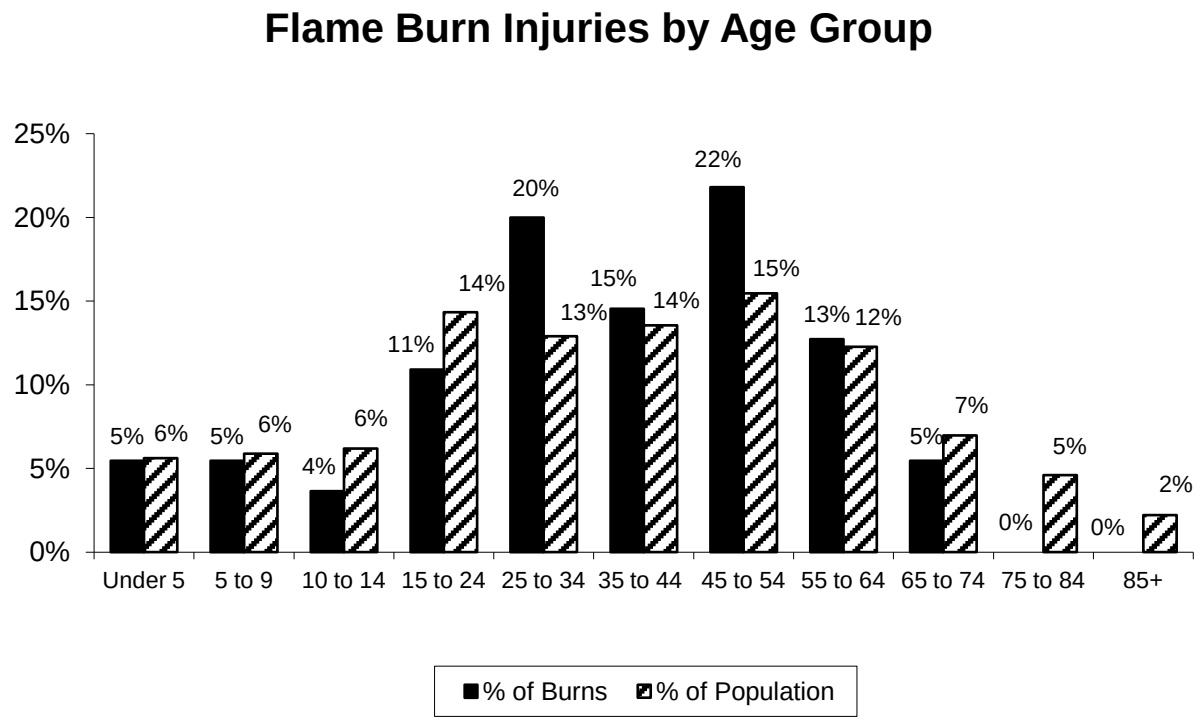
Flames Caused 15% of Reported Burn Injuries
There were 55 reported flame burn injuries. These 55 injuries accounted for 15% of the 358 burn injuries reported in 2012. A burn is said to result from flame when the fire is confined to the victim or the victim's clothing. When a wider area burns, the cause of the injury is considered a fire. Burns caused by self-immolation, smoking in bed or burning clothing usually result from flames.

Eighty-two percent (82%) of the flame burn casualties were male and 18% were female. Four (4), or 7%, of the 55 flame burns occurred during work-related activities; all four were men.



Adults 25 to 54 Faced Higher Risk of Flame Burns
Three (3) groups were at a higher risk for burns from flames. Adults between 25 and 34 were 1.5 times more likely to be burned, adults between the ages of 35 to 44 were 1.1 times more likely; and people between 45 and 54 were 1.4 times more likely to receive a flame burn injury.

There were three reported flame burn injuries to children under the age of five, accounting for 5% of these burns. Another 5% were between the ages of five and nine; 4% were between 10 and 14; 11% were victims aged 15 to 24; 20% were between 25 and 34; 15% were between 35 and 44; 22% were between 45 and 54; 13% were between 55 and 64; and 5% were between the ages of 65 and 74. There were no reported burn injuries over the age of 68. The youngest person to receive a flame burn injury was a seven-month old girl, while the oldest was a 68-year old man.



Ignitable Liquids Were the Leading Cause of Flame Burn Injuries
In 2012, ignitable liquids caused 13, or 24%, of flame burn injuries. Gasoline caused eight, or 15%; and ignitable liquids other than gasoline caused five, or 9%, of the flame burns.

Cooking Was the 2nd Leading Cause of Flame Burns
Cooking was the second leading cause of flame burn injuries in 2012. In 2011 it was the leading cause of flame burns. Eight (8), or 15%, of all flame burn victims received their injuries while cooking. Seven percent (7%), or four of the victims, were burned while barbequing on a gas grill. Three (3), or 5%, received their flame burn injuries from ignitions of hot cooking liquids, generally grease or oil; and a stove was involved in one, or 2%, of the cooking-related flame burns.

Smoking Caused of 7% of Flame Burn Injuries
Smoking accounted for four, or 7%, of all flame burn injuries in 2012. Two (2) flame burns, or 4%, were from smoking while on oxygen. A cigarette and an unspecified smoking act each caused 2% of flame burn injuries.

Clothing Ignitions Caused 7% of Flame Burns
Clothing ignitions caused four, or 7%, of these burns; three were from candles and one was an unspecified clothing ignition.

Aerosols Caused 4% of Flame Burns
Aerosols, lighters, propane, self-immolation, welding, woodstoves, and unspecified flame burns were each responsible for two, or 4%, of flame burns in 2012.

Multiple Single Causes
An assault, a camp fire, a car part, trying to extinguish a fire, a firefighter, fireworks, a heat lamp, unspecified ignitables, a match, a water craft and a water heater were each the cause of one, or 2%, of these flame burn injuries.

67-Year Old Man Killed Working on His Car
On October 18, 2012, a 67-year old Pembroke man was working on his car's engine at home. Gasoline vapors ignited causing burns to approximately 65% of his body surface area. He was transported to a local hospital where he later succumbed to his injuries.

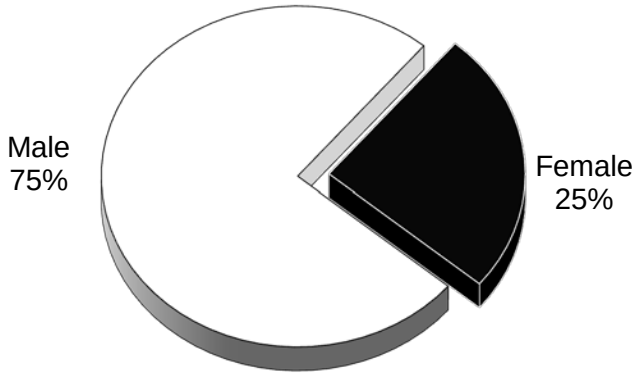
18-Year Old Man Burned Using Cleaner
On October 4, 2012, an 18-year old Abington man was using an alcohol based foam cleaner when it ignited. The resultant burns covered approximately 25% of his body surface area.

Clothing Ignitions

Clothing Ignitions Account for Only 15% of Flame Burn Injuries
There were only eight clothing ignitions resulting in flame burn injuries, which accounted for 15% of all flame burn injuries. Clothing were the primary cause of the injury in four of these injuries. Because of more detailed descriptions as to how burn injuries occurred, it was determined that clothes were also involved in four additional injuries that were coded with a different primary description. There were no reported clothing ignitions while cooking in 2012. Three (3) victims, or 5%, of flame burn clothing ignitions involved candles. One (1) victim's clothing ignition involved gasoline accounting for 2% of all flame burn ignitions. A match and a lighter were each involved in one clothing ignition, accounting for 2% each. Welding and an unspecified clothing ignition each caused one clothing ignition accounting for 2% of all 2012 flame burn injuries.

3/4 Clothing Flame Burn Injuries Were Men
Six (6), or 75%, of clothing ignition victims were men and two, or 25% were women.

Clothing Ignitions by Gender

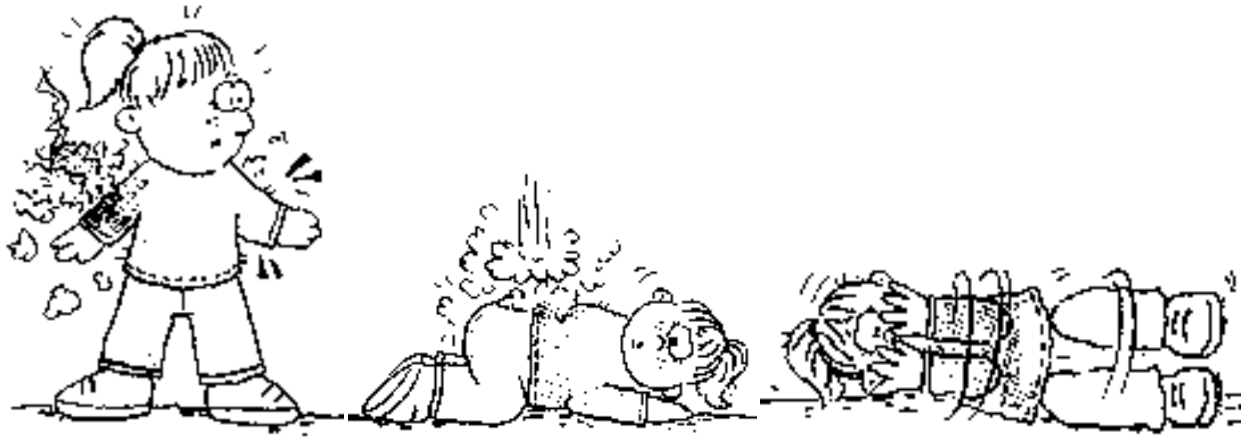


Flame Burns Due to Clothing Ignitions Low in 2012
There were only eight flame burn injuries due to clothing ignitions reported in 2012. In 2011 there were 22 flame burn injuries from clothing ignitions, this is a 64% decrease in these kinds of burns from last year. One child under the age of five received a flame burn due to a clothing ignition. One (1) child between the ages of five and nine also received these burns. Three (3) victims were in the age group 15 to 24. Another victim of flame burn injuries due to clothing ignitions was between 45 and 54 years old; and two victims were between 55 and 64 years old. The youngest person to receive a flame burn injury from a clothing ignition was a one-year old boy whose clothing was ignited by a candle. The oldest victim of a clothing ignition flame burn injury was a 57-year old man whose clothes ignited when he was welding.

57-Year Old Man Injured in While Welding
On February 23, 2012, a 57-year old Deerfield, NH man was burned when his shirt ignited while he was welding. Earlier he had inadvertently gotten some cleaning chemicals on his shirt while he was at work. He received burns to approximately 16% of his body surface area.

21-Year Old Man Burned with a Lighter
On September 08, 2012, a 21-year old Leominster man was standing too close to a campfire when the lighter in his pants pocket ignited. The victim's pants ignited giving him burns to approximately 20% of his body surface area.

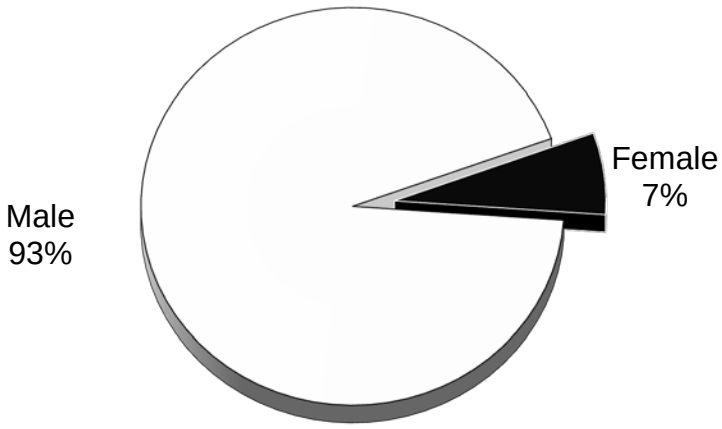
ALWAYS REMEMBER TO:
STOP DROP & ROLL



Burn Injuries Caused by Explosions

Explosions Caused 8% of Reported Burn Injuries
Thirty (30), or 8%, of the 358 burn injuries reported in 2012 were caused by explosions. Ninety-three percent (93%) of the explosion burn victims were male and 7% were female.

Explosion Burn Injuries by Gender



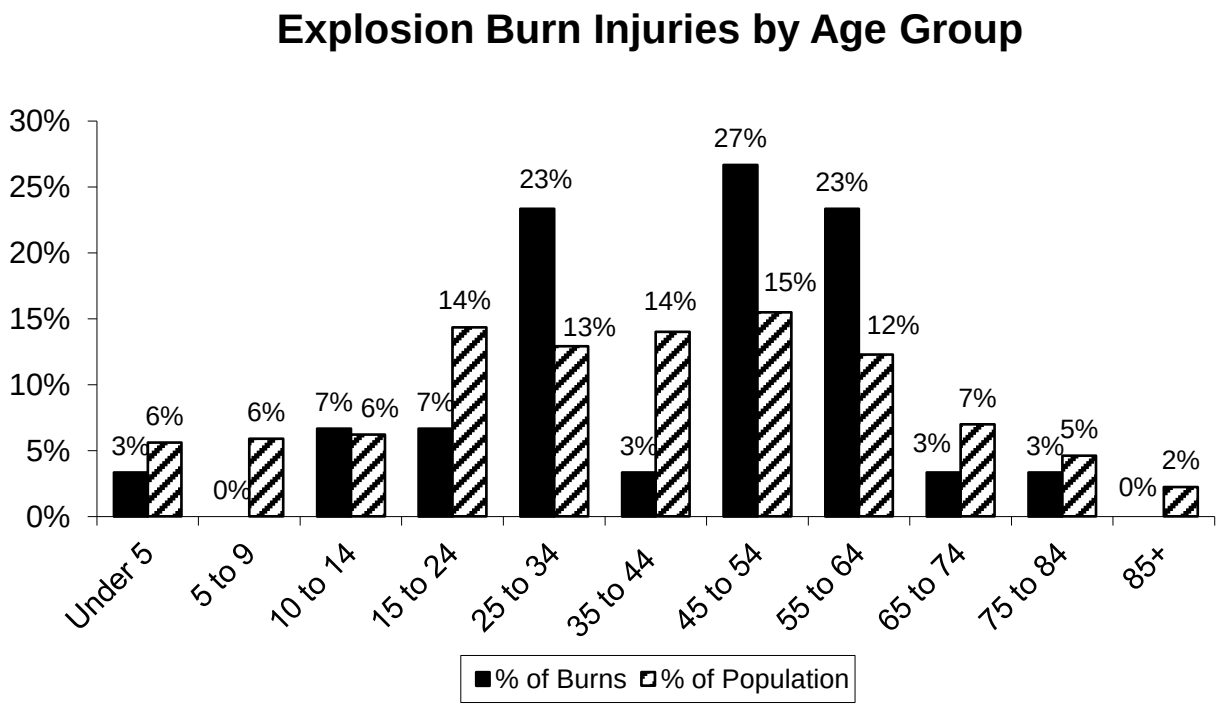
Five (5) burns, or 17%, occurred during work-related activities. All five of these work-related victims were men.

Out of these 29 injuries there was one explosion with two or more injuries. This was the residential fire in Pelham, NH that was started by explosions from consumer grade fireworks. A three-year old boy and two adults were injured in this explosion.

Adults Ages 25 to 34 & 55 to 64 Face Greatest Risk of Explosion Burns

One (1) child under the age of five, or 3%, was reported to have received a burn injury from an explosion in 2012. No one between the ages of five and nine was reported to be burned in an explosion. Two (2) children, or 7%, between the ages of 10 and 14 received their burn injuries from explosions. Another two young adults between the ages of 15 and 24 were burned in explosions, accounting for 7% of these burns; adults between the ages of 25 and 34 received seven, or 23%, of the explosion related burns; one, or 3%, was between 35 and 44; eight or 27%, were between 45 and 54 years of age; seven, or 23%, were between 55 and 64 years old. One person, or 3%, between the ages of 65 and 74 was burned in an explosion; and another person, or 3%, was between 75 and 84. No one over the age of 84 received a burn injury due to an explosion. The youngest victim to receive a burn injury from an explosion in 2012 was a three-year old boy; and the oldest person to receive one of these burns was an 84-year old man.

The following graph illustrates the data in the above paragraph.



Ignitable Gases Were the Leading Cause of Explosion Burn Injuries
Ignitable gases accounted for 10, or 33%, of the explosion-related burn injuries in 2012. Six (6), or 20%, were from natural gas; three, or 10%, were from propane; and one, or 3%, was from a gas powered barbeque.

Seven (7), or 24%, of the explosion burns involved ignitable liquids. Four (4), or 14%, involved ignitable liquids other than gasoline and three, or 10%, were from gasoline. Fireworks caused six, or 21%, of the explosion related burn injuries in 2012; and two, or 7%, of these burns involved suicide attempts.

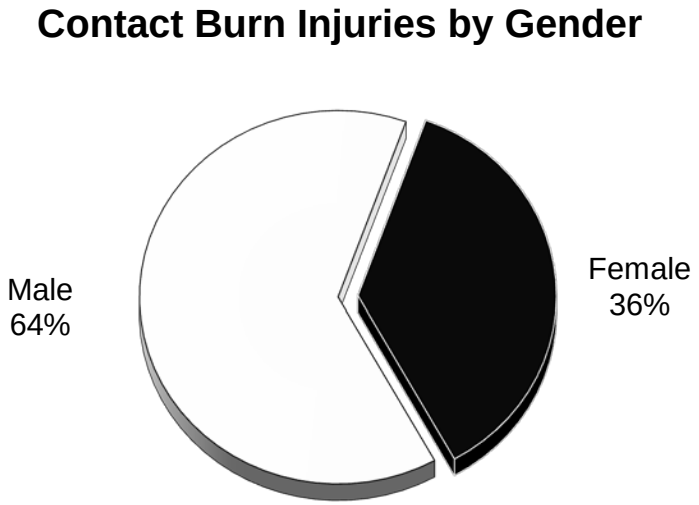
An aerosol, alcohol, an electrical event, an engine and a stove each accounted for one, or 3%, of the explosion related burn injuries in 2012.

36-Year Old Man Injured While Burning Oil
On October 15, 2012, a 36-year old Gardner man received life-threatening burns to approximately 80% of his body surface when there was an explosion while he was burning excess oil in his fire pit at home.

52-Year Old Man Injured by Fireworks Explosion
On July 4, 2012, a 52-year old Hanover man received severe burns to his hand, lower abdomen and lower extremities as the fireworks he was holding with his hands between his legs exploded.

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 2012 were caused by contact with hot objects. Sixty-four percent (64%) of the burn victims were male and 36% were female. There

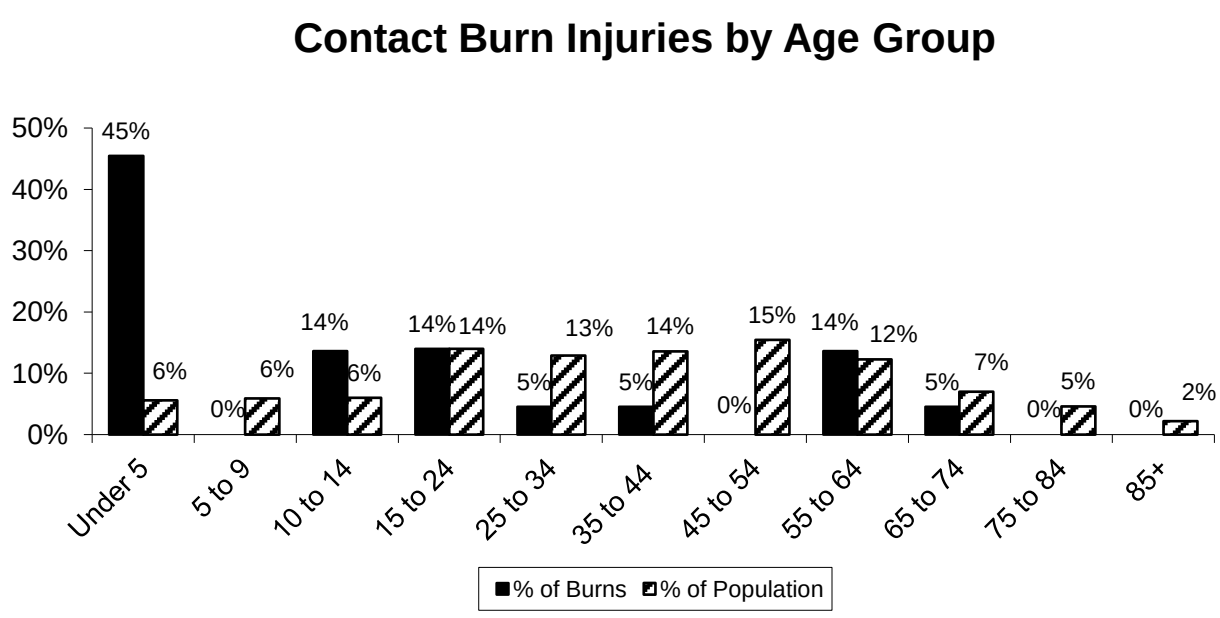


were two reports of contact burns that occurred at work in 2012, both were men.

Almost 1/2 of Contact Burns Were to Children Under 5
Children under the age of five accounted for 10, or 45%, of all contact burns. Pre-schoolers faced just over eight times the risk of contact burns. This disproportionate risk could be the result of young children exploring their environment and underscores the need for constant supervision of toddlers.

There were no reported burn injuries between the ages of five and nine; three victims, or 14%, were in the age group between 10 and 14; another three, or 14%, were between the ages of 15 and 24; one of the victims, or 5%, were between 25 and 34; and another injury, or 5%, occurred to one person in the age group 35 to 44; there were no reported contact burns to people between the ages of 45 and 54; three of the victims, or 14%, were between the ages of 55 and 64; one victim, or 5%, was between the ages of 65 and 74; no one over the age of 68 was reported to have received a contact burn injury in 2012. The youngest person to receive a contact burn in 2012 was a seven-month old girl, and the oldest person was a 68-year old man.

The following graph illustrates the data in the above paragraph.



Cooking Was the Leading Cause of Contact Burns
Contact with cooking equipment caused seven, or 32%, of the contact burns in 2012. Contact with stoves caused four, or 18%; contact with barbeques caused two, or 9%; and contact with an unspecified cooking device caused one, or 5%, of 2012 contact burn injuries.

Heating Equipment, Car Parts & Wax Were the Next Leading Causes of Contact Burns
Heating equipment caused three, or 14%, of these burns; contact with a heater, a radiator and a woodstove each accounted for one of these injuries. Car parts and hot wax each caused two, or 9%, of these types of burn injuries.

A clothes iron, a curling iron, embers, fireworks, a machine, a motorcycle, pavement burns, and an unspecified contact burn each caused one, or 5%, of contact burns in 2012.

There were two reported work-related contact burn injuries in Massachusetts in 2012.

1-Year Old Burned by Candle Wax
On August 22, 2012, a one-year old Attleboro boy received burns to 10% of his body surface area when he grabbed a hot candle that was still lit.

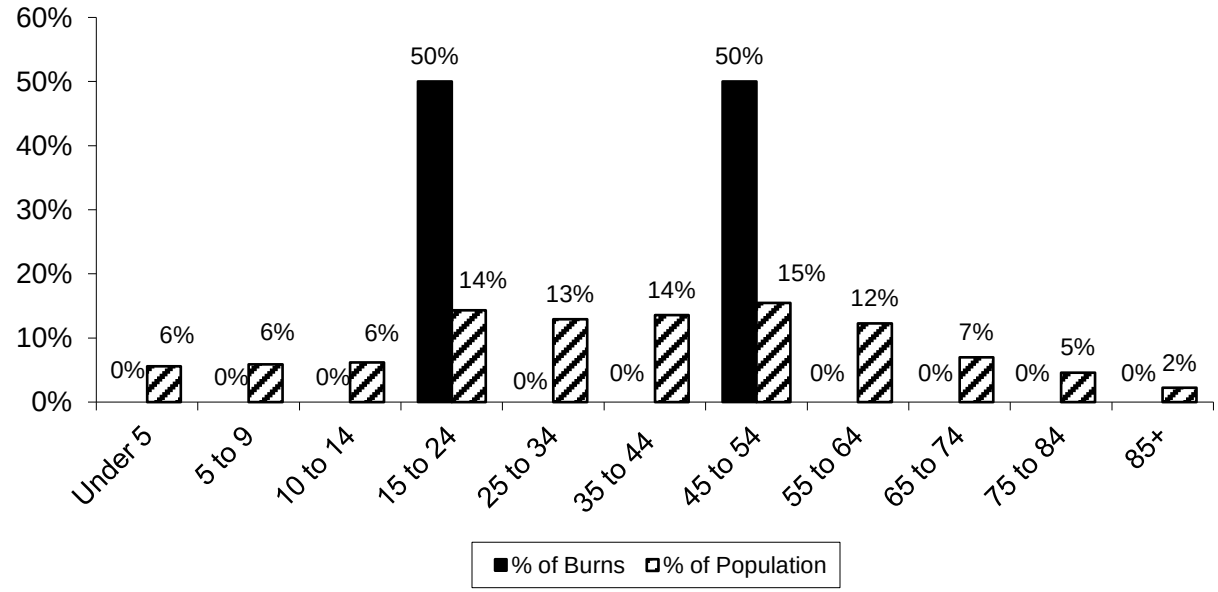
20-Year Old Woman Burned by Curling Iron
On August 20, 2012, a 20-year old Boston woman dropped a hot curling iron on her leg burning her left upper thigh.

Electrical Burn Injuries

Electrical Incidents Caused 1% of Burn Injuries
Only two, or 1%, of the 358 burn injuries reported in 2012 were caused by electrical accidents. Both of the electrical burn victims were men. One (1), or 50%, occurred during work-related activities.

A 15-Yr Old & 47-Yr Old Received Electrical Burns
The youngest person to receive an electrical burn injury was a 15-year old boy, and the oldest victim was a 47-year old man.

Electrical Burn Injuries by Age Group



Both Electrical Burns Were Unspecified
Undefined electrical accidents caused both of these burns.

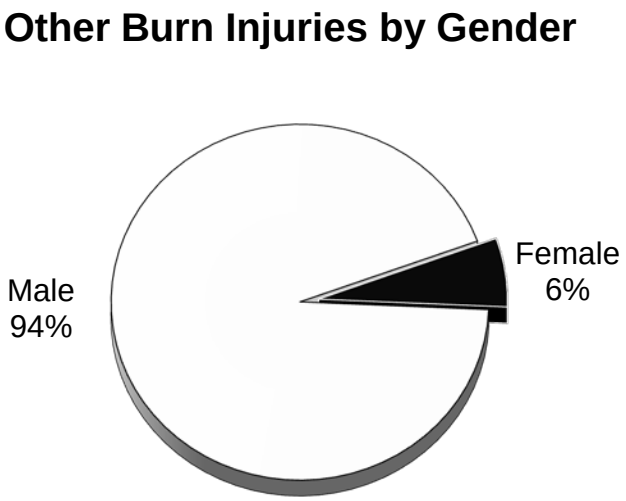
47-Year Old Man Burned While Working on Generator
On May 11, 2012, a 47-year old man was working in Springfield when he received severe electrical burns to his hands and face.

15-Year Old Honduras Boy Burned
On February 23, 2012, a 15-year old boy in Honduras received electrical burns to approximately 28% of his body surface area. He was transferred to Shriner's Hospital for Children in Boston for further treatment of his injuries.

Other Types of Burn Injuries

***Other* Type Burns Cause 16 Injuries**
In 2012, there were 16 burn injuries that were characterized as *Other*. Eleven (11) *Other* burns, or 69%, were attributed to exposure to chemicals. Four (4) burns, or 25%, were caused by severe sunburns. And one burn, or 6%, was attributed to burns suffered while making a bomb.

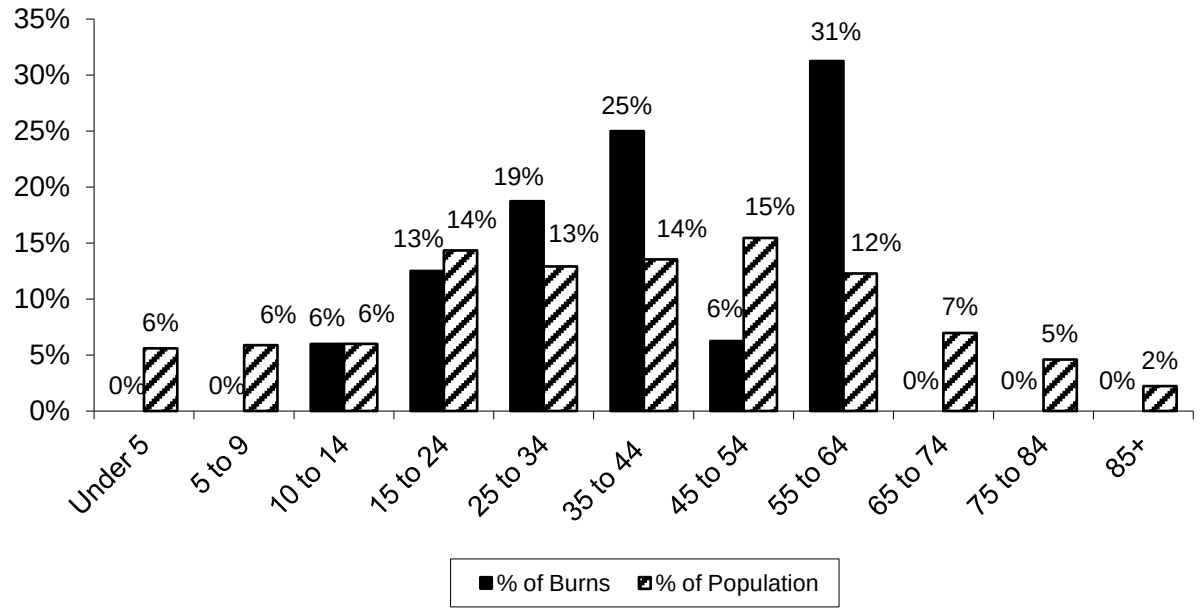
Ninety-four percent (94%) of the 16 victims were male and 6% were female. Health care facilities reported that seven, or 44%, of the 16 *Other* burn victims were working when injured. Exposure to chemicals caused all seven of these work-related injuries, and all seven were men.



1/2 of *Other* Burn Victims Were Between 25 & 54 Years Old

In 2012 there were no *Other* burn victims under 14-years old. One (1) victim, or 6%, was between the ages of 10 and 14; two victims, or 13%, were between 15 and 24; three victims, or 19%, were between the ages of 25 and 34; four victims, or 25%, were between 35 and 44 years old; one victim, or 6%, was between 45 and 54 years old; and five victims, or 31%, were between the ages of 55 and 64. No one over the age of 59 suffered an *Other* type of burn injury. The youngest victim was a 14-year old boy and the oldest victim was a 59-year old man.

Other Burn Injuries by Age Group



19-Year Old Man Burned Sunbathing
On May 31, 2012, a 19-year old Rochester man received a sunburn to his torso and back when he stayed out too long sunbathing on a boat.

58-Year Old Man Received Chemical Burn from Making a Bomb
On June 30, 2012, a 58-year old man received severe chemical burns to approximately 7% of his body surface area. He was attempting to make a bomb when it inadvertently exploded.

31-Year Old Man Burned by a Chemical at Work
On June 2, 2012 a 31-year old Haverhill man received chemical burns to approximately 30% of his body surface area. He received his burns when he was mixing hydrogen peroxide and water while at work.

Domestic Violence Burn Injuries

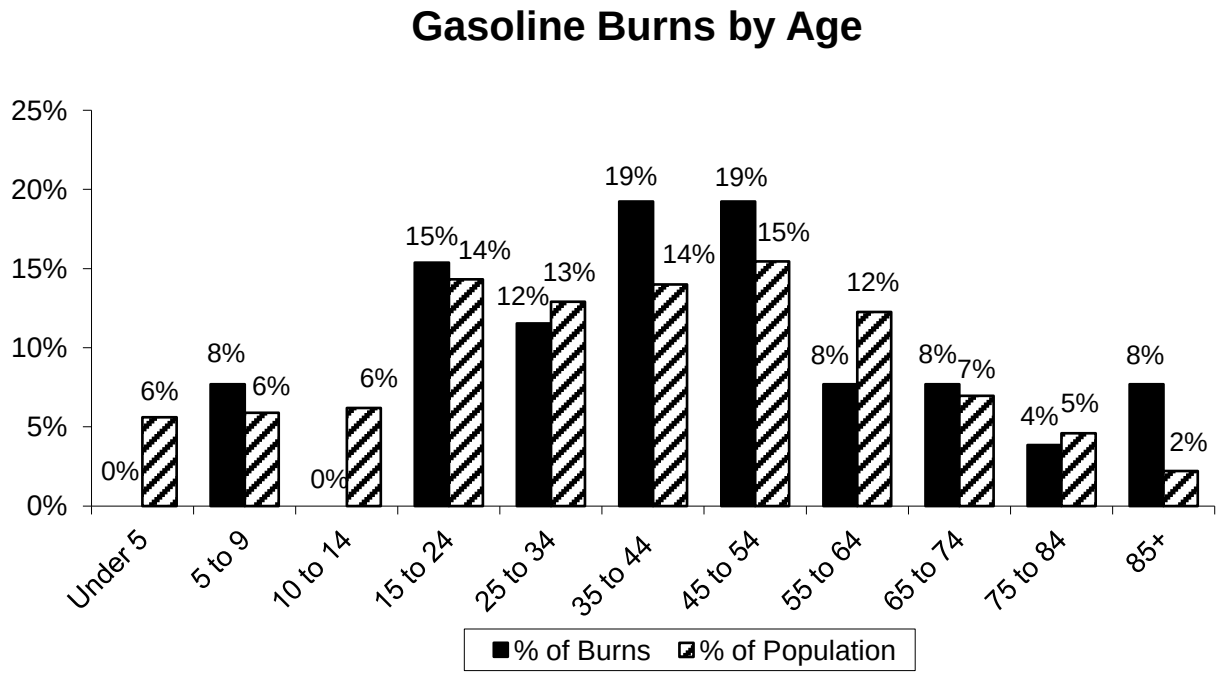
Domestic Violence Burns Cause 1 Injury
In 2012, there was one burn injury that was characterized as domestic violence. This one burn accounted for less than 1% of the total 358 burn injuries in 2012. On April 14, 2012, a 22-year old Lawrence woman received severe scald burns to her face, arm, chest and abdomen when hot oil was thrown at her during a domestic altercation.

Gasoline Related Burn Injuries

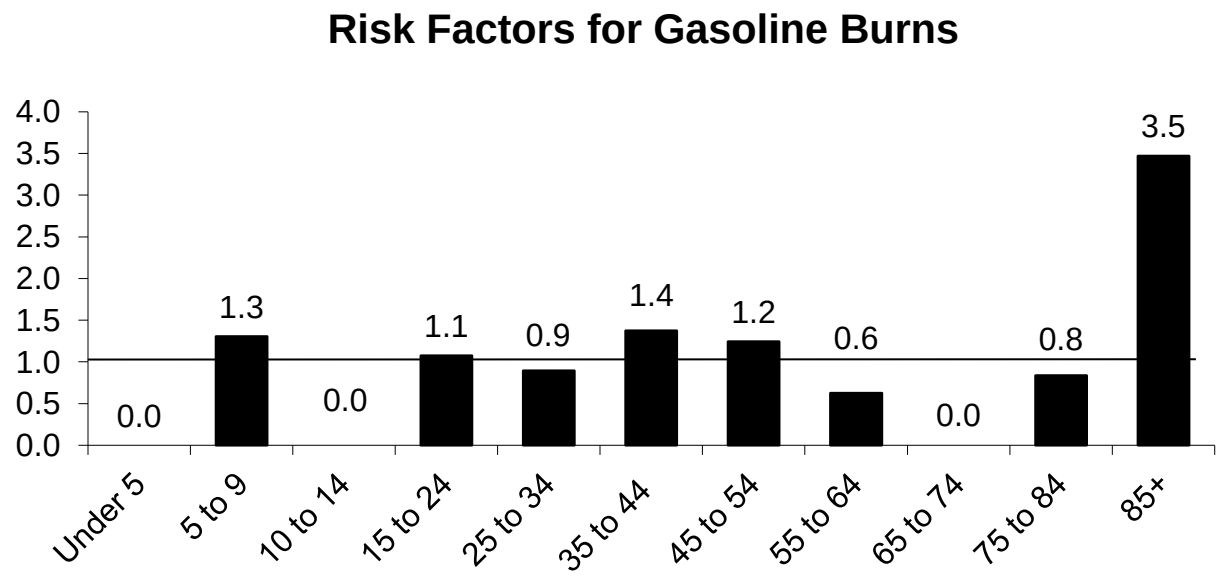
Gasoline Involved in 7% of Reported Burn Injuries
Gasoline was involved in 26, or 7%, of the 358 burns reported to M-BIRS in 2012. Gasoline was the primary cause of the injury in 21, or 81%, of these injuries. Because of more detailed descriptions as to how burn injuries occurred, it was determined that gasoline was also involved in five additional, or 19%, of burn injuries that were coded with a different primary description, such as using it to start a cutting torch.

Twelve (12), or 46%, of the gasoline related burn injuries were caused by fires. Ten (10), or 38%, of the burn injuries involving gasoline were flame burn injuries. Four (4), or 22%, of these injuries were caused by explosions. Twenty-four (24), or 92%, of the 26 gasoline related burn victims in 2012 were men, and two, or 8% were women. Four (4), or 15%, of the injuries occurred during work-related activities. Three (3), or 12%, of the gasoline burn injuries in 2012 were to children; 23, or 88%, of these injuries occurred to adults.

31% of Gasoline-Related Burn Victims Were Between the Ages of 25 & 44
No one under the age of five in 2012 was the victim of a burn injury involving gasoline. Two (2), or 8%, of the victims were between the ages of five and nine. There were no reported gasoline burns to anyone between the ages of 10 and 14. This age group has historically been the most at risk for these types of injuries. Four (4), or 15%, of the victims were between 15 and 24. Three (3), or 12%, were between 25 and 34; five, or 19% were between 35 and 44; five victims, or 19%, were between the ages of 45 and 54; two victims, or 8%, were in the age group 55 to 64 years old; another two victims, or 8% were between 64 and 74; one victim, or 4%, was between 75 and 84 years old; and two victims, or 8% were over 85. The youngest victim was a five-year old boy and the oldest victim was an 89-year old man.



The following graph illustrates the risk factor for gasoline burns by age group. If an age group has a risk factor greater than one it is said that an individual in that age group has a greater risk of being burned by gasoline. If an age group has a risk factor less than one, then individuals in that age group have a lesser risk of receiving any burns involving gasoline. In 2012, people over the age of 85 had the highest risk of getting a burn involving gasoline. Members of the age group 35 to 44 had the second highest risk of getting a gasoline burn. Historically, adolescents in the age group 10 to 14 have had the greatest risk of getting a burn involving gasoline. In 2012 they had no risk of getting a burn involving gasoline.



64-Year Old Man Burned in Gasoline Flash Fire
On June 11, 2012, a 64-year old Southampton man received severe burns to his chest, arms and face while he was working on his car. The victim had disconnected the fuel line and then started a cutting torch igniting the gasoline vapors that were inside the garage.

68-Year Old Man Injured Using Gasoline
On April 1, 2012, a 68-year old Harwich man was using gasoline at his home when it accidentally ignited resulting in severe burns to approximately 24% of his body surface area.

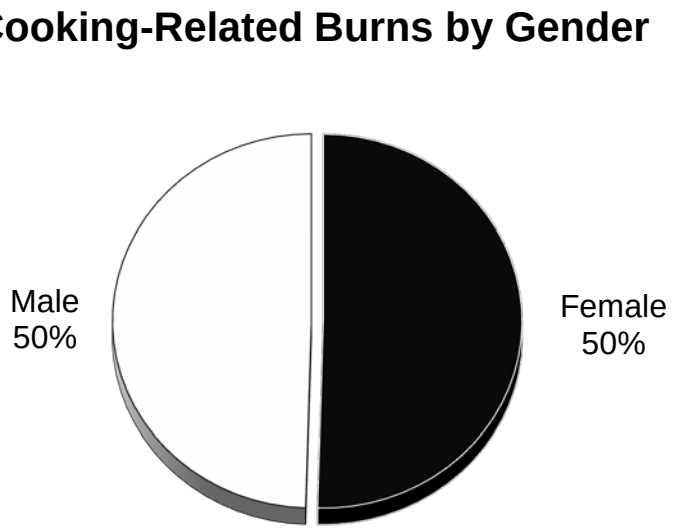
Some Safety Measures
It is actually gasoline vapors that burn, not the liquid itself. The vapors are generated at very low temperatures, are heavier than air and can travel a distance to find a spark or other ignition source. A spark or lit cigarette is enough to ignite the invisible fumes that may linger on clothing.

- If you must store gasoline, store it outside the home in a detached garage or shed in approved safety cans away from open flames, 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.
- Never add gasoline to any fire or smoldering embers, the vapors spread quickly and ignite explosively.

Burns Caused by Cooking Activities

Cooking Activities Caused 30% of Reported Burn Injuries
Cooking activities caused 109, or 30%, of the 358 total burn injuries reported to the Massachusetts Burn Injury Reporting System in 2012. Cooking activities were the primary cause of the injury in 104, or 95%, 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, or 5%, of other burn injuries that were coded with a different primary description such as 'natural gas.'

Fifty-five (55), or 50%, of the 109 victims were female and the 54, or 50%, were male. Sixteen (16), or 15%, of the 109 people burned by cooking activities were working when injured.



Scalds Cause 82% of Cooking-Related Burn Injuries
Eighty-nine (89), or 82%, of the 109 burn injuries caused by cooking were scalds. Sixty-four (64), or 59%, of these scald victims were injured by hot cooking liquids; hot food accounted for 21, or 19%, of these victims; two, or 2%, were caused by steam; and an assault and a gas oven each accounted for one, or 1% of cooking injuries.

Nine (9), or 8%, of all cooking-related burns were flame burn injuries. Four (4), or 4% of the cooking-related flame burn victims involved gas grills. Three (3), or 3%, were burned when cooking liquids started stovetop fires. A firefighter burned while trying to extinguish a cooking fire and a stove were each responsible for one, or 1%, of cooking-related flame burn injuries in 2012.

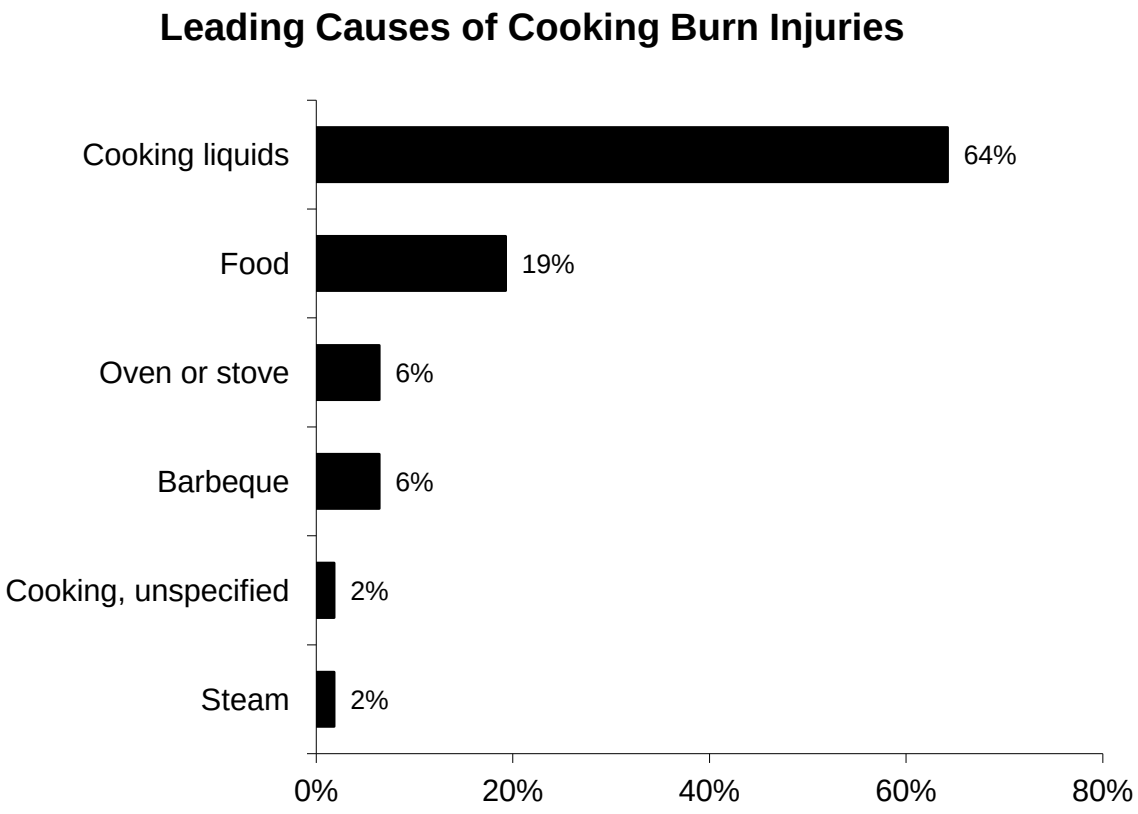
Seven (7), or 6% of all cooking-related burn victims, received contact burns while cooking. Contact with stoves caused four, or 4%; contact with barbeques caused two, or 2%; and an unspecified cooking act accounted for one, or 1%, of burn injuries while cooking.

Two (2) victims received burn injuries in cooking-related explosions, accounting for 2% of cooking burn injuries in 2012. A gas grill and a stove were each involved in one, or 1% of the cooking-related explosion burn injuries.

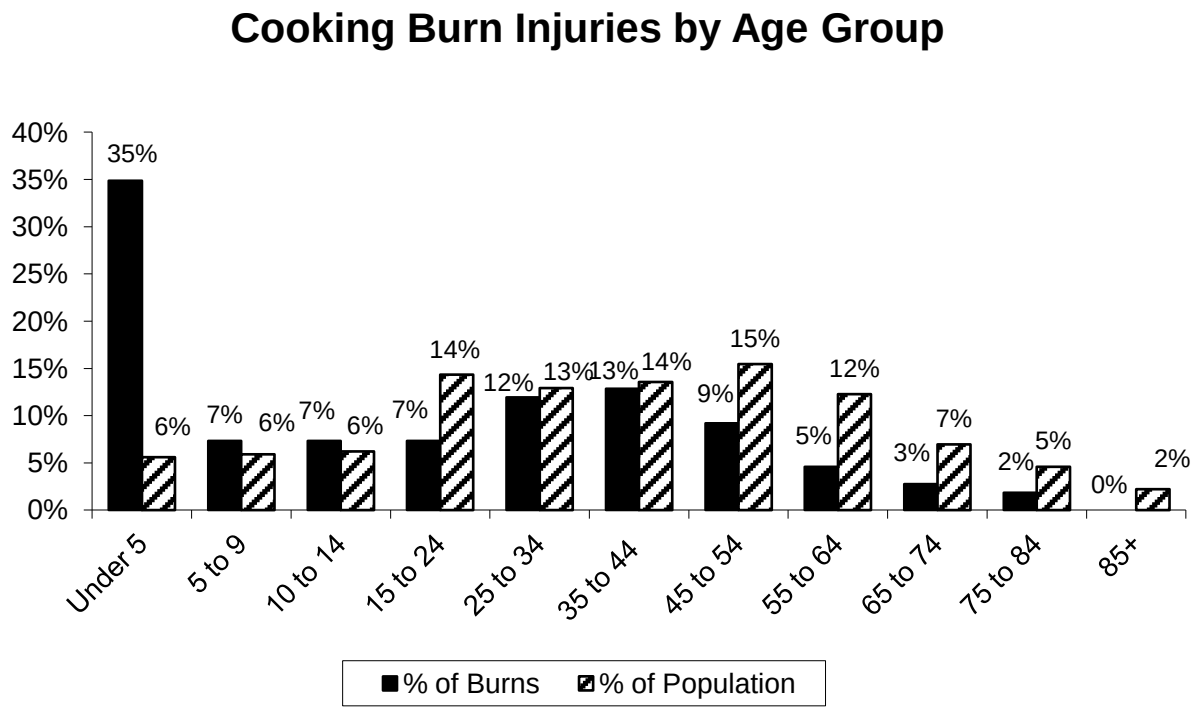
One (1) of these cooking burn injury victims, or 1%, received their burn injuries from a fire. This was in an unspecified cooking act resulting in a house fire; the other cooking burn injury was a domestic violence incident involving cooking liquids, accounting for 1% of all cooking related burns.

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 2012. These burns accounted for 70, or 64%, of all cooking-related burn injuries. Burns from hot food were the second leading cause of cooking-related injuries. They caused 21, or 19%, of these injuries. Burns from conventional ovens and stoves caused seven, or 6% of these burns. Burns received while barbequing also accounted for seven, or 6%, of all cooking burn injuries. Clothing ignitions while cooking caused eight, or 6%. Steam and unspecified cooking activities each caused two, or 2% of the cooking related burns in the Commonwealth in 2012.



Children Under 5 Over 6 Times as Likely to be Burned by Cooking Activities
Thirty-eight (38), or 35%, of the cooking-related burn victims were under age five. This age group was 6.2 times more likely to be burned by cooking related activities. Eight (8), or 7%, were aged between five and nine years of age; eight, or 7%, were between 10 and 14; eight, or 7%, were between 15 and 24 years old; 13, or 12%, were between 25 and 34; 14, or 13%, were between 35 and 44; 10, or 9%, were between 45 and 54; five, or 5%, were between 55 and 64; three victims, or 3%, were between 65 and 74; and two, or 2%, of the victims belong to the age group between 75 and 84 years of age. No one over the age of 85 was reported to have a cooking related burn in 2012. The youngest victim of a cooking-related burn was a six-month old boy who was burned by cooking liquids, while the oldest victim was a 78-year old woman who also received her burn injuries from cooking liquids.



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. Adults should keep young children safely away from the stove and food preparation areas while they are cooking.

In 2012 Older Adults Not at a Higher Risk for Cooking-Related Burn Injuries
Historically, older adults over the age of 65 were more likely to be burned while cooking. However in 2012, five older adults received burn injuries as a result of cooking in 2012. They represented 5% of the cooking burn injuries and 14% of the population and so were not injured by cooking at a disproportionate rate. Three (3), or 60%, of these victims were women and two, or 40%, were men. Four (4) of these older adults were burned by cooking liquids, and one was burned by a stove.

No Clothing Ignitions while Cooking
Loose-fitting sleeves can easily come into contact with burners and catch fire. However in 2012, there were no reported clothing ignitions while cooking. In 2011, there were eight of these burns.

According to data collected by the Massachusetts Fire Incident Reporting System (MFIRS), unattended and other unsafe cooking practices caused 11,847 fires in 2011. These fires caused three civilian deaths, 72 civilian injuries, 26 fire service injuries along with $9.6 million in losses. Many of these people also suffered from smoke inhalation[6].

Serious Burns from Cooking

- On January 25, 2012, a 55-year old Wayland woman received burns to her back when she backed into her hot stove.
- On May 3, 2012, a 13-year old Marblehead girl received burns to her hand when she touched the hot glass on the gas burning stove.
- On May 20, 2012 a 31-year old Stow man received burn injuries to 28% of his body surface area when he sprayed sun screen onto himself and then got too close to his gas grill.
- On July 7, 2012, a 25-year old Weymouth man was at work where he received severe burns to his face and arms when he dropped a can of stove cleaner on a lit burner and it exploded moments later.

Safety Measures

- ✓ Never leave cooking food unattended.
- ✓ Stand by your pan.
- ✓ Put a lid on stovetop fires, never move the pan.
- ✓ Keep a large pot lid handy to put out stovetop fires.
- ✓ Keep children at a safe distance from all hot items by using playpens, high chairs, etc.
- ✓ Create and enforce a 3 foot **NO** zone around the stove. Do not let children play around the stove or barbeque.
- ✓ 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.
- ✓ 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 or 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.

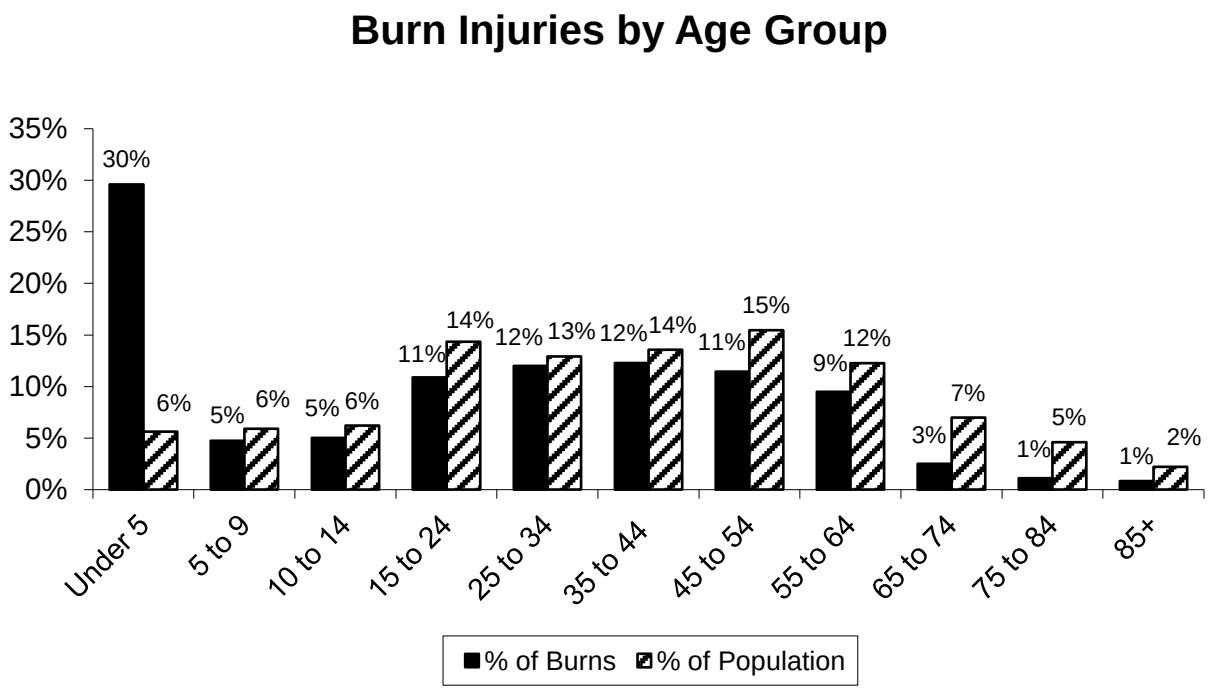
[6] 2011 Annual Report of the Massachusetts Fire Incident Reporting System; MA Dept. of Fire Services; pg. 134.

Burn Injuries by Age Group

Only one age group of our population was at a greater than average risk of a burn injury. Although burn injuries were reported in all age groups, very young children suffer more than their share and are almost four and a half times more likely to be burned. Children under the age of five were 5.3 times more likely to suffer a burn injury in Massachusetts in 2012.

Thirty percent (30%) of all burn victims were children under the age of five. One hundred and six (106) children under age five were seriously burned in 2012. Seventeen (17), or 5% of the burn injuries, occurred to children aged five to nine; 18, or 5%, were youths aged 10 to 14. Thirty-nine (39), or 11% of the burn victims, were young adults aged 15 to 24. Forty-three (43), or 12% of the 2012 burn victims, were adults aged 25 to 34. Forty-four (44), or 12%, were people aged 35 to 44. Forty-one (41), or 11% of the burn injuries, occurred to adults aged 45 to 54; 34, or 9%, of people who were reported to have incurred burns were between 55 and 64; nine, or 3% of 2012 burn victims, were older adults in the 65 to 74 age group; four, or 1%, were in the 75 to 84 year old age group; and three adults over the age of 85, or 1% of all reported burn victims in 2012, received burns of more than 5% of their body surface area.

The following graph illustrates the figures in the previous paragraph.



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 that age group represents in the general population. Only 6% of the population in Massachusetts is under the age of five (source: 2010 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 30% of the reported burn injuries in 2012, making them 5.3 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. Seventy-five (75) babies and toddlers under the age of two accounted for 19% of all burn victims, but all children under the age of five accounted for only 6% of the Massachusetts population.

Scald & Flame Burns the Leading Type of Burn to Most Age Groups
While scalds remain the leading cause of burn injuries overall, they were also the leading cause of burn injuries to six of the age groups. Scalds were the leading cause of burn injuries in the age groups of children under five, children between the ages of five and nine, young adults between the ages of 10 and 14, adults between the ages of 25 and 34, 35 to 44 and older adults between the ages of 75 and 84.

Flame burns were the leading cause or tied for the leading cause for three age groups. Flame burns were the leading cause of burn injuries to adults 45 to 54, 65 to 74, and tied with fires and explosions for the leading cause of burn injuries to adults between 55 and 64.

Fires were the leading cause of burn injuries to young adults between the ages of 15 and 24 and older adults over the age of 85. They were also tied with flame burns and explosions as the leading cause of burn injuries to adults between the ages of 55 and 64.

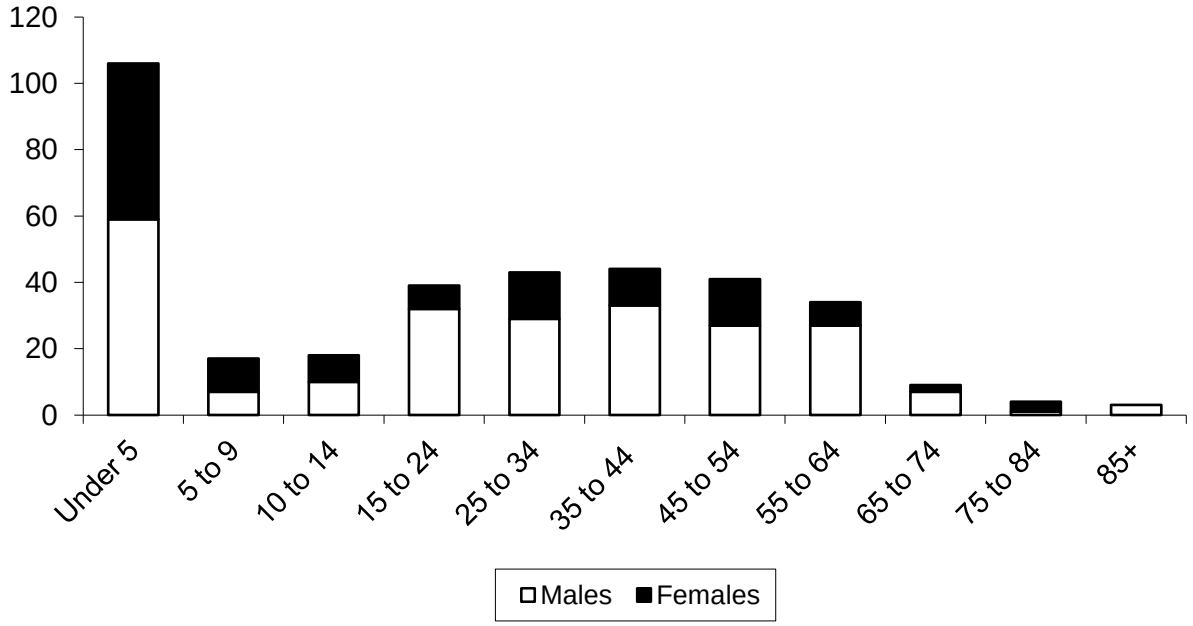
To learn more about the specific causes for each age group, please look at the age specific sections within *Burn Injuries by Age Group*.

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. Thirty-eight percent (38%) of the burns incurred by these young children were scalds caused by hot beverages, 23% were caused by cooking liquids, and 10% were caused by scalds from hot food. Cooking liquid scalds, gasoline and other ignitable liquids were frequent causes of burn injuries to older teens and young adults.

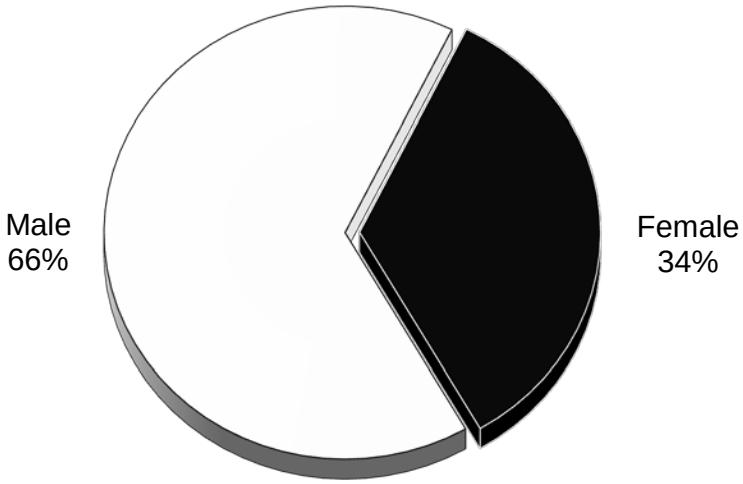
Parents of young children must be educated about the danger of scalds from hot beverages, cooking liquids and tap water. Teens and young adults need information about cooking safely, procedures to follow when a car overheats and the correct uses of gasoline. To be effective, burn prevention educators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

Burn Victims by Age and Gender



Except for the age groups of children between the ages of five and nine where 10 girls and seven boys were burned, and older adults between 75 and 84 where three women and one man were burned, males were burned more frequently than females. In 2012, 235, or 66%, of the 358 burn victims were male, and 123, or 34%, were female.

Burns by Gender



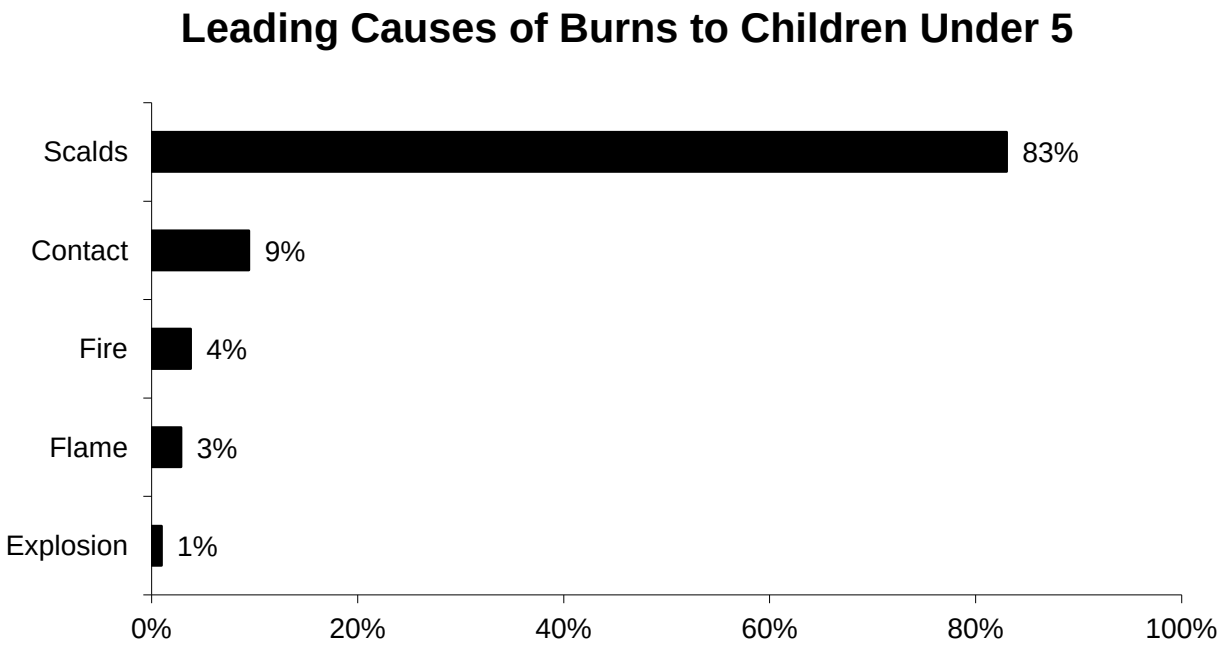
Children Under 5

30% of Reported Burns Incurred by Children Under 5
One hundred and six (106), or 30%, of the burn injuries reported to M-BIRS in 2012 were incurred by children under five years old. According to the 2010 U.S. Census, only 6% of Massachusetts residents are under the age of five. Children under five were 5.3 times as likely to be burned, as were members of the general population. No other age group faced a risk this high. Fifty-six percent (56%) of burned pre-schoolers were boys and 44% were girls.

Scalds Caused 83% of Burns to Pre-Schoolers
Scalds caused 88, or 83%, of the burn injuries incurred by children under five. Forty-one (41) were from hot beverages; 35 were from cooking activities; 24 burns were from cooking liquids and 11 were from hot food. Ten (10) burns to children under five were from hot tap water. A scald from candle wax and a clothes iron each caused one burn to a child under five in 2012.

Contact burns accounted for 10, or 9%, of the injuries to children under the age of five. Three (3) children were burned during cooking activities; two from touching a barbeque and an unspecified cooking act. Two (2) children were burned by hot wax. Two (2) children were burned by coming into contact with heating equipment; one child touched a heater and the other a radiator. Contact with a curling iron, a motorcycle and an unspecified contact injury each caused one burn injury to this age group.

Fires caused four, or 4%, of the injuries to this age group. Two (2) were from house fires, both involved children playing with matches. One (1) injury was caused when flammables were tossed into a brush fire, and the other injury involved a camp fire.



Three (3) children, or 3%, received flame burns; a clothing ignition from a candle, fireworks and ignitable materials each caused one of these burns.

One (1) child under the age of five received a burn injury from a fireworks explosion causing 1% of the burn injuries to children under five in 2012.

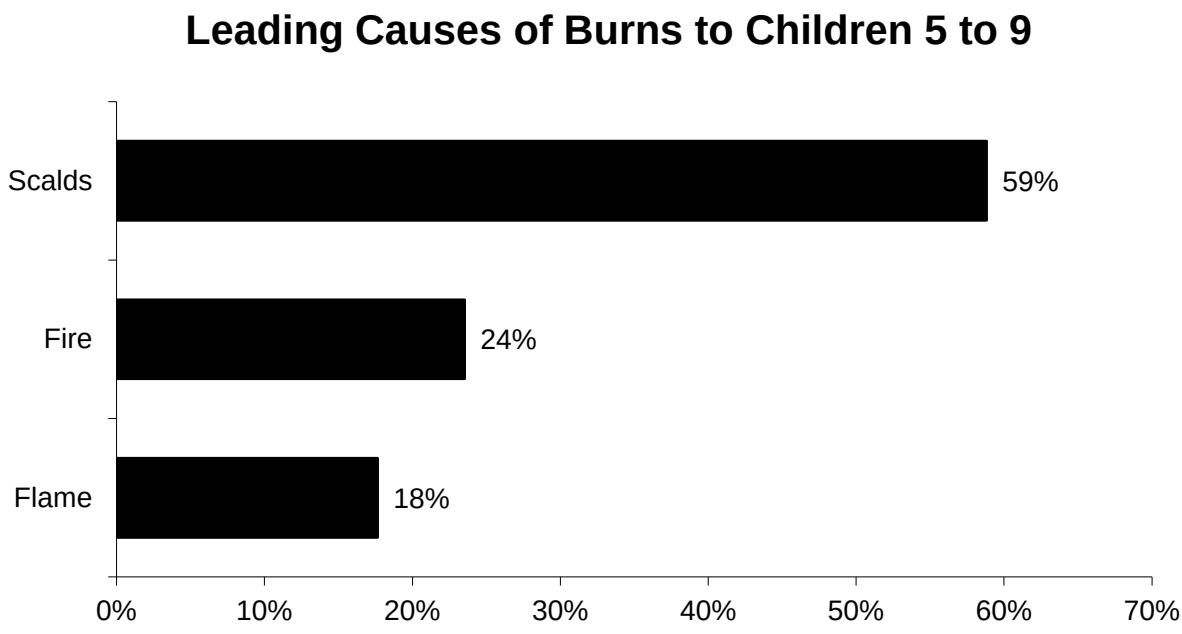
Children Ages 5 to 9

5% of Reported Burn Injuries Incurred by Children 5-9
Seventeen (17), or 5%, of the burn injuries reported in 2012 were incurred by children between five and nine years of age. Ten (10), or 59%, of the burn victims were girls, and, seven or 41%, were boys. Children in this age bracket accounted for 6% of the population of Massachusetts and 5% of the burn injuries in 2012.

Burns from Scalds Were the Leading Causes to Children 5-9
The leading causes of burn injuries to children aged five to nine were scalds. Scalds caused 10, or 59%, of the burn injuries incurred by children aged five to nine in 2012. The scald burn injuries included eight from cooking activities, five from hot food and three from cooking liquids; one from hot beverages and the other from hot tap water.

In 2012 burns from fires accounted for four burn injuries, or 24%, to this age group. Three (3) house fires and a camp fire involving the use of gasoline caused these injuries.

Flame burns accounted for three, or 18%, of the burn injuries to this age group. An aerosol can ignition, a clothing ignition from a candle, and gasoline each caused one of these flame burn injuries.



Children Ages 10 to 14

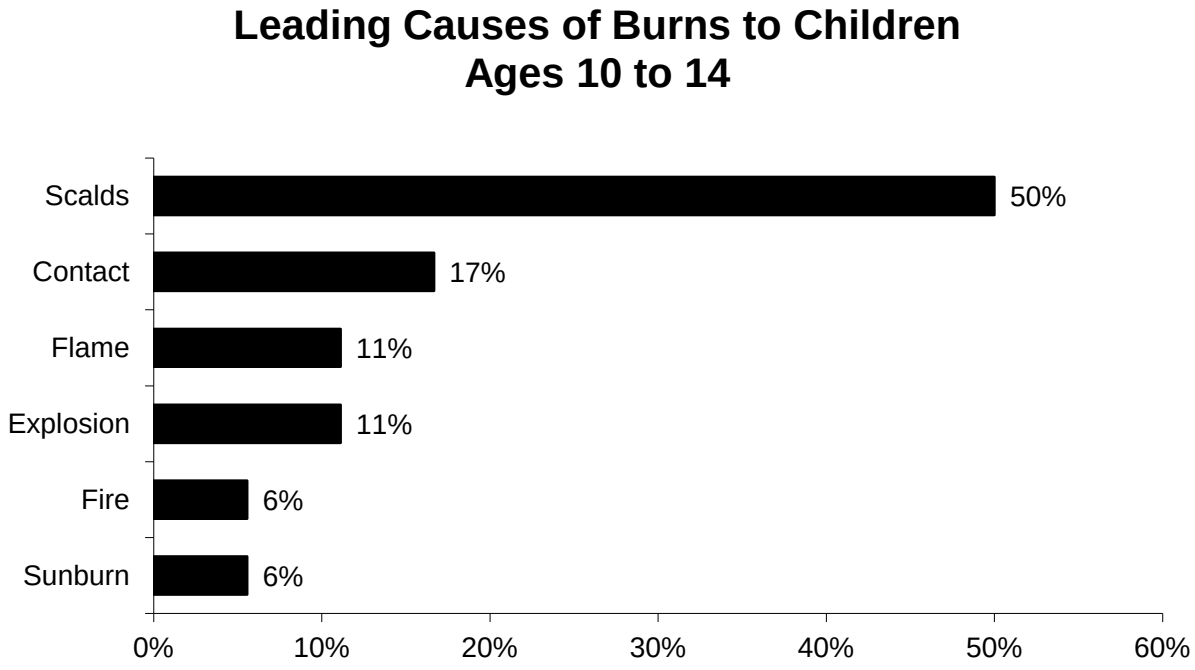
5% of Reported Burns Incurred by Children 10-14
Children between the ages of 10 and 14 suffered 18, or 5%, of the burn injuries reported in 2012. Ten (10), or 56%, were boys and eight, or 44%, were girls. Children in this age bracket accounted for 6% of the population in the Commonwealth of Massachusetts and 5% of the total reported burn injuries. 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.

Burns from Scalds Were the Leading Cause of Burns to Children 10-14
Scalds caused nine, or half of the burns incurred by children aged 10 to 14. Cooking activities caused seven of these burns; cooking liquids were responsible for five and hot food for two. Hot beverages caused two of these burns.

There were three contact burns to this age group, accounting for 17% of these burns. Hot embers, fireworks and a stove each caused one of these burns.

Two (2) pre-teens, or 11%, were injured by explosions. Both of these injuries involved children misusing ignitable liquids. Another two pre-teens, or 11%, were burned by flame type injuries. Flammables and ignitable liquids each caused one flame burn injury to this age group on 2012.

A house fire started by a heater and a sunburn each accounted for one, or 6%, of the burn injuries to this age group.



Ignitable Liquids & Fireworks Caused 3 Pre-teen Burns
Historically gasoline, other ignitable liquids, and fireworks are significant factors in pre-teen burn injuries. In 2012, they were only a factor in three, or 17%, of the burn injuries to pre-teens. Two children misusing ignitable liquids and one playing with fireworks were involved in burn injuries to this age group.

Ages 15 to 24

11% of Reported Burn Victims Between 15-24
Teens and young adults between the ages of 15 and 24 incurred 39, or 11%, of the burn injuries reported in 2012. Thirty-two (32), or 82%, were male and seven, or 18%, were female. Young adults aged 15 to 24 account for 14% of the population of Massachusetts and 11% of the burn injuries in 2012. Seven (7), or 18%, of the burn injuries incurred by this age group were work-related, six were male and one was a female.

31% of Burns Were From Fires
Thirty-one percent (31%), or 12, of the burn injuries incurred by people aged 15 to 24 were from fires. Eleven (11) victims received burns from camp or bonfires, and one victim was hurt in a motor vehicle accident with ensuing fire. Most young adults are injured in fires that occur outside the home.

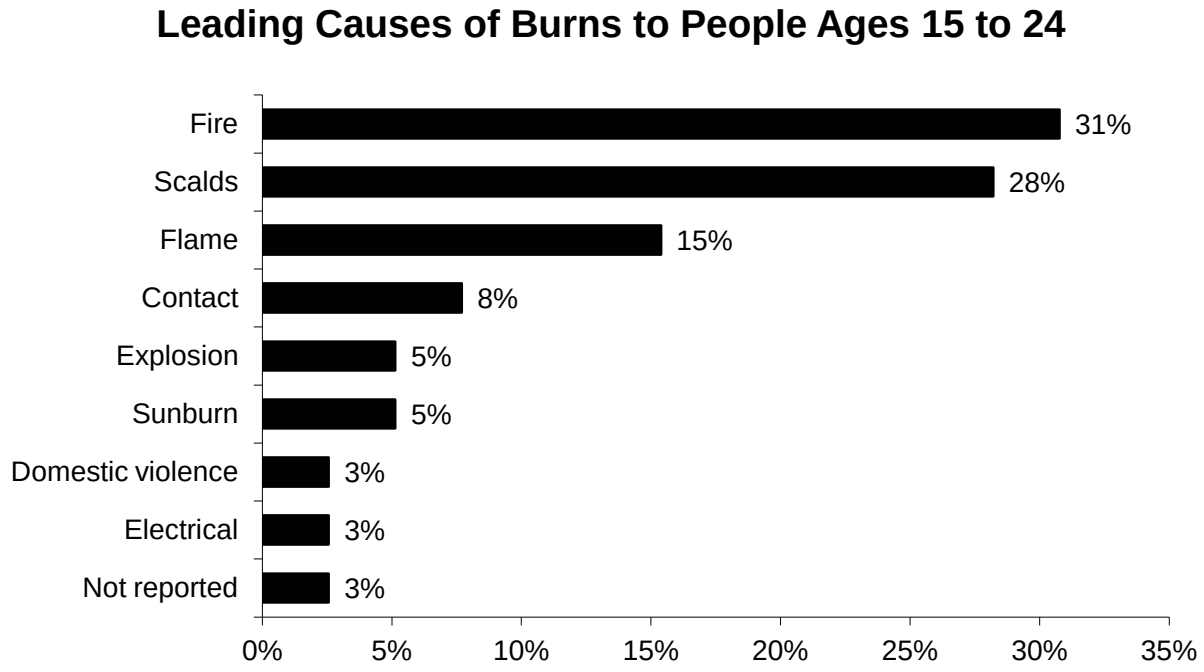
The second leading cause of burn injuries to this age group were scald burn injuries. Eleven (11), or 28%, of the burn injuries to people 15 to 24 years of age were caused by scalds. Seven (7) were caused by cooking activities; six from cooking liquids and one from hot food. A hot beverage, a boiler, a car radiator and a machine each caused one of these burns.

Six (6), or 15%, of the burn injuries to this age group were caused by flames. Ignitable liquids caused three of these injuries; two from ignitable liquids other than gasoline and one from gasoline. A clothing ignition, a lighter and a water heater each caused one injury.

Contact with hot objects caused three, or 8%, of the burns to this age group. Contact with a hot car part, a clothes iron and a machine caused one burn injury to this age group.

Explosions injured two, or 5%, of people in this age category. Ignitable liquids were involved in both of these injuries; one was from gasoline and the other was from another ignitable liquid. Sunburns also injured two, or 5%, of people in this age category.

There was one unspecified electrical burn injury to this age group. This burn accounted for 3% of the injuries to 15 to 24 year olds in 2012. There was also one case of domestic violence in which a victim was scalded by cooking liquids. This represented 3% of these burn injuries. There was also one unspecified burn injury, or 3%, to this age group.



Ages 25 to 34

12% of Burn Victims Were Between 25 and 34
Forty-three (43), or 12%, of the burn injuries reported in 2012 were incurred by people between 25 and 34 years of age. Twenty-nine (29), or 67%, of the victims were men and 14, or 33%, were women. Seven (7), or 16%, of the burn injuries suffered by this age group were work-related; six were men and one was a woman. People between the ages of 25 and 34 accounted for 13% of the population of Massachusetts while accounting for 12% of the total number of burn injuries reported in 2012.

Scalds Caused 30% of Burn Injuries
Scalds accounted for 13 burns, or 30%, of the burn injuries for this age group. Five (5) of the scalds were from cooking liquids, three were from car radiators, another three were from steam, and two scald burn injuries to this age group were from assaults.

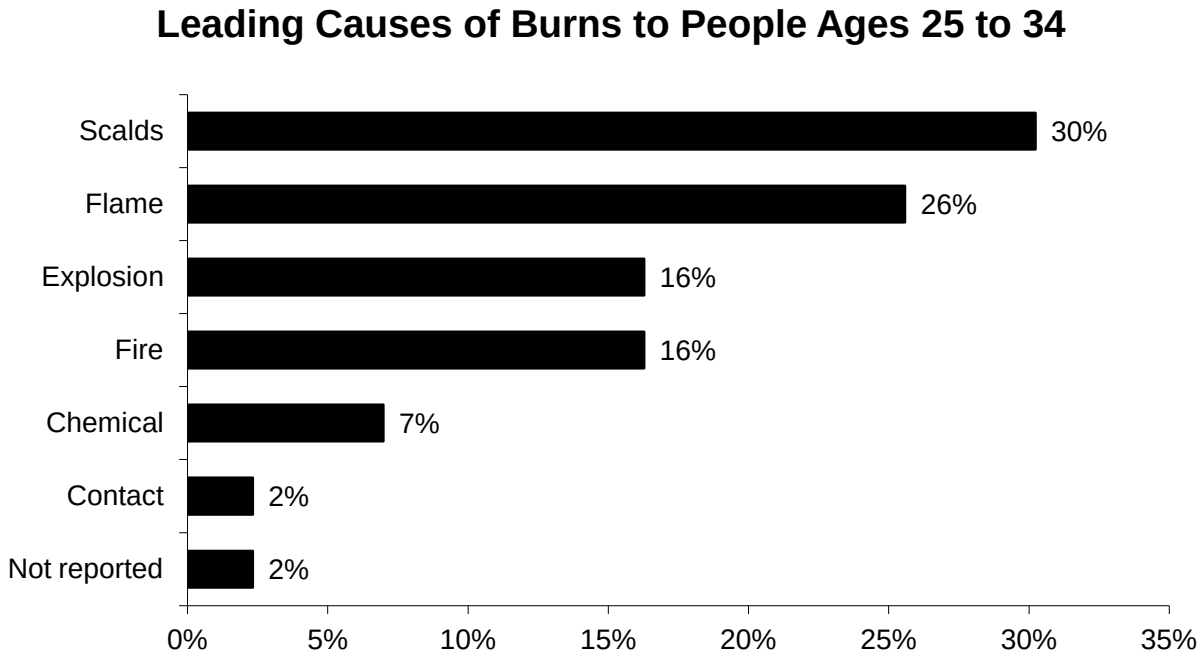
Flame burns caused 11, or 26%, of the injuries to 25-34 year olds. Cooking caused four of these burns; two were from gas grills and two were from flaming cooking liquids. Gasoline, a camp fire, an attempt at self-immolation, welding and a woodstove each caused one flame burn injury to someone in this age group.

Seven (7), or 16%, of the burns to 25 to 34 year olds were caused by explosions. Fireworks caused three of these injuries. An aerosol, an engine, natural gas and a stove were each involved in an explosion that injured one person in this age group.

Burns from fires also caused seven injuries and accounted for 16% of the burn injuries to this age group. These fire-related burns included four from camp or bon fires, two from motor vehicle fires and one from a house fire. The majority of these burn injuries occurred outside the home.

Three (3) people, or 7%, between the ages of 25 and 34 received *Other* type burns. All three were burned by chemicals.

Contact with a hot car part caused one, or 2%, of the burns to this age group. One person in the age group, or 2%, received an unspecified burn injury.



Ages 35 to 44

12% of Reported Burn Victims Were Between 35 and 44 Years of Age
Forty-four (44), or 12%, of the burn injuries reported in 2012 occurred to people between the ages of 35 and 44. Thirty-three (33), or 75%, of the victims were men and 11, or 25%, of the victims were women. Adults between the ages of 35 and 44 accounted for 14% of the Massachusetts population but only 12% of the reported burns in 2012.

16% of Burn Injuries Were Work-Related
Seven (7), or 16%, of the burn injuries incurred by this age group were work-related. Five (5) of these work-related burn victims were men, and two were women.

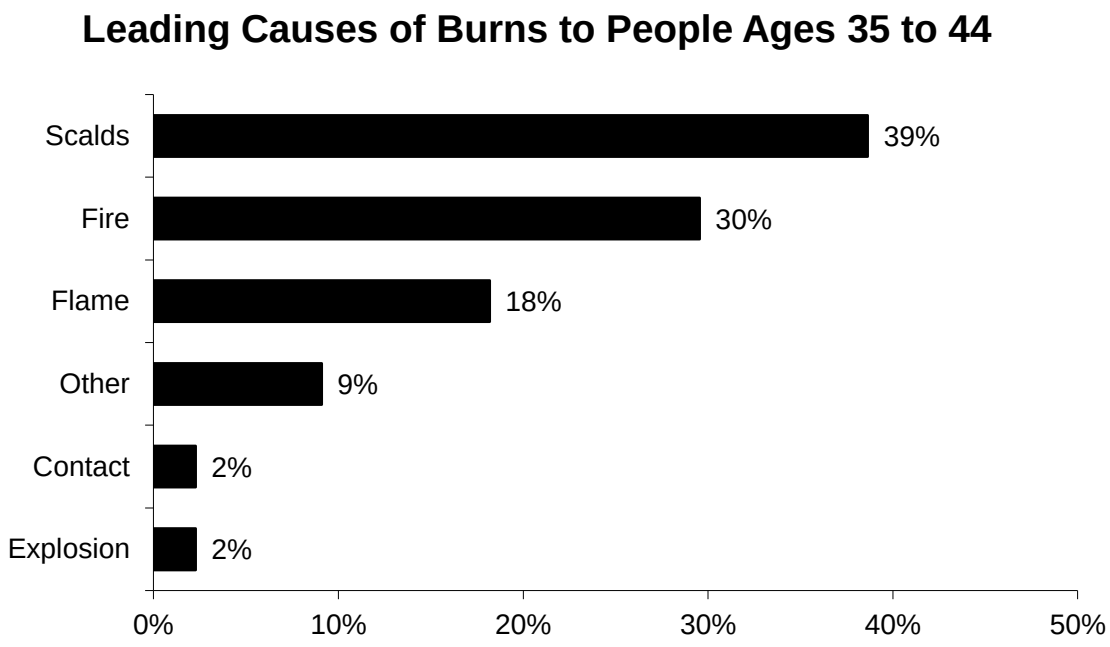
Burns from Scalds Were the Leading Cause of Injuries to 35-44-Year Olds
In 2012, burns from scalds were the leading cause of burns to 35 to 44 year olds. Scalds caused 17, or 39%, of the burn injuries to this age group. Eleven (11) of these injuries involved cooking; 10 were from cooking liquids and one involved hot food. Hot tap water caused two scalds, and an assault, a hot beverage, a car radiator, and steam each caused one scald burn injury to this age group.

Burns from fires accounted for 13, or 30%, of the burn injuries to this age group. Six (6) were from camp or bon fires, five were from house fires and two injuries were from motor vehicle fires.

Flame burns caused eight, or 18%, of burn injuries to adults between the ages of 35 and 44. An assault, a gas grill, an ignitable liquid, a lighter, an attempt at self-immolation, and a woodstove each caused one flame burn injury in this age group. There were also two victims with unspecified flame burn injuries in this age group.

Other type burns accounted for four, or 9% of burns to this age group. Three (3) were from chemicals and one was a sunburn.

Contact with a hot stove accounted for one, or 2%, of the burns to this group. An explosion caused by ignitable liquids also accounted for one, or 2%, of the total burn injuries to this age group.



Ages 45 to 54

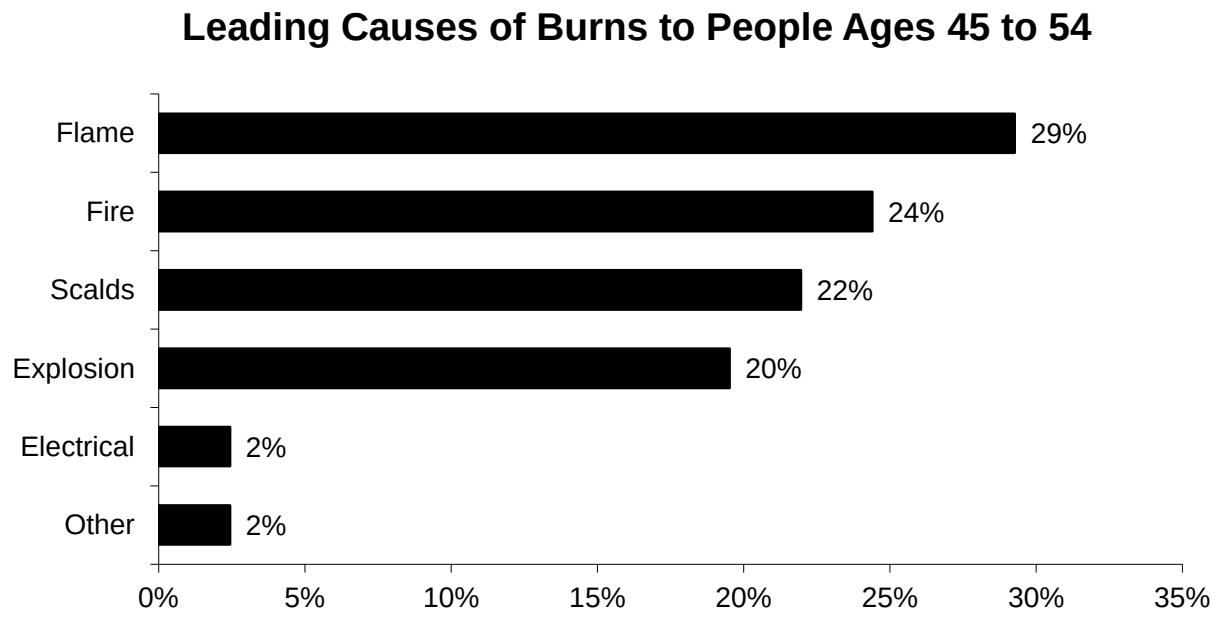
11% of Reported Burn Injuries Were Between 45 and 54 Years of Age
People between the ages of 45 and 54 incurred 41, or 11%, of the reported burns in 2012. Twenty-seven (27) or 66%, of the victims were male, and 14, or 34%, were female. Eight (8) of the 41 burn victims aged 45 to 54, or 20%, were burned while at work; all eight of them were men. This age group represents 15% of the population of Massachusetts while it received only 11% of the burn injuries in 2012.

Flame Burns Were the Leading Cause of Burns
Flame burns were incurred by 12, or 29%, of the burn victims between the ages of 45 and 54. Ignitable liquids were responsible for four of these injuries; three were from gasoline, and the other was from an ignitable liquids. Smoking caused two of these injuries, a cigarette and smoking while on oxygen each caused one injury. Cooking liquids, fire control, a firefighter, a match and propane each caused one of the burns to this age group.

Burns from fires caused 10, or 24%, of the burn injuries to victims 45 to 54 years old. Five (5) burns were caused by house fires; two were from brush fires and another two were from motor vehicle fires. One burn injury came from a clothing ignition from a camp or bon fire.

Scalds caused nine, or 22% of the burn injuries to this age group. Cooking activities caused six of these injuries; cooking liquids caused five and hot food caused one. A hot beverage, a car radiator and hot tap water each caused one of these injuries.

Eight (8) members of this age group were victims of explosions. They accounted for 20% of the burn injuries to this age group. Six (6) of these injuries involved explosions from ignitable gases; three were from natural gas, two were from propane and one was a gas grill. Fireworks and a suicide attempt each caused one of these injuries.



An unspecified electrical burn was responsible for one, or 2%, of the burns to this age group. A chemical burn was another burn injury to this age group, also accounting for 2% of the burn injuries.

Ages 55 to 64

9% of Burn Victims Were Between 55 and 64 Years Old
Thirty-four (34), or 9%, of the burns reported in 2012 were incurred by people between the ages of 55 and 64. Twenty-seven (27), or 79%, of the victims were men, and seven, or 21% were women. Nine (9), or 26%, of the 34 burn injuries incurred by people between 55 and 64 years old were reported to be work-related; all nine were men. People of this age group represent 12% of the total population of Massachusetts but only received 9% of the burns in 2012.

Explosions Fires & Flame Burns Were All the Leading Causes of Burns
Burns from explosions, fires and flame burns each caused seven, or 21%, of the injuries to this age group. Three (3) of the injuries from explosions were caused by ignitable gases; two from natural gas and one from propane. Alcohol, fireworks, gasoline, and a suicide attempt were each the cause of one of these burn injuries.

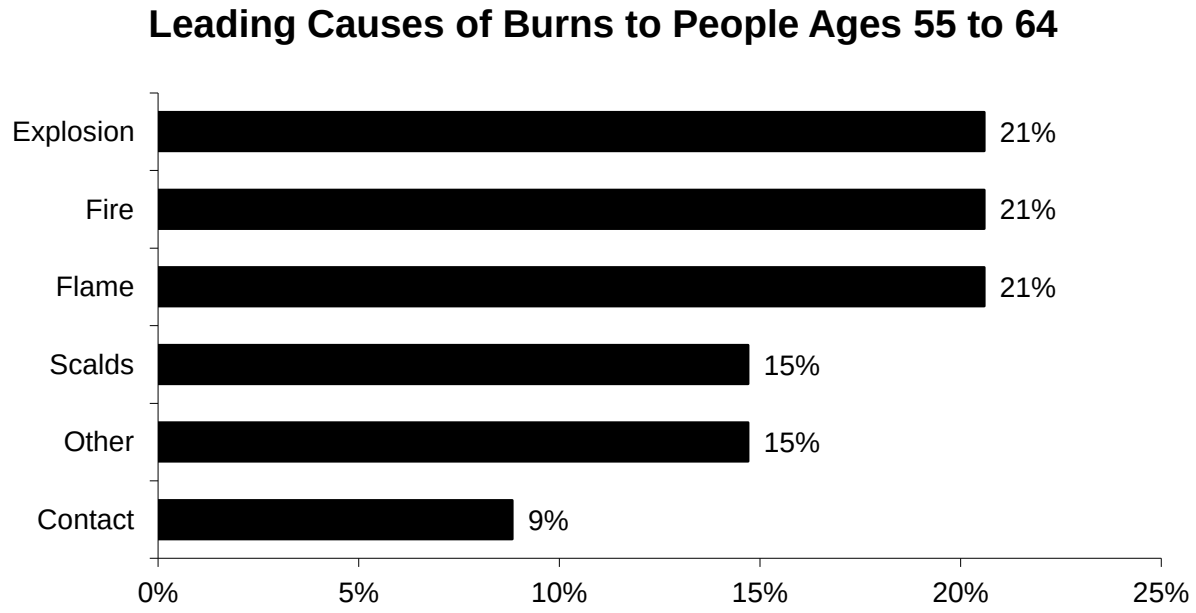
Burns from fires caused seven injuries to people between the ages of 55 and 64 years of age in 2012, accounting for 21% of these injuries. Four (4) were injured in house fires, including one involving home oxygen, and three were from motor vehicle fires.

Flame burns also accounted for seven, or 21%, of the injuries to this age group. Two (2) of these injuries involved ignitable gases; one involved a gas grill, the other propane. A clothing ignition from a candle, a heat lamp, smoking on oxygen, a water craft and welding each caused one flame burn injury to someone in this age group.

Scalds caused five, or 15%, of the burn injuries to people between the ages of 55 and 64. Cooking liquids caused two of these burns; a hot beverage, a radiator and hot tap water each caused one scald burn injury to this age group in 2012.

Another five burn injuries, or 15%, were *Other* type burns. Four were caused by chemicals and one was caused by making a bomb.

Contact burns were responsible for three, or 9%, of the injuries to this age group. Contact with stoves caused two of these burns and contact with hot asphalt caused one burn injury.



Over 65 – Older Adults

16 Burn Victims Over 65
Sixteen (16), or 4%, of the burn victims in 2012 were over 65 years old. Nine (9) were between 65 and 74; four were between 75 and 84; and three were 85 years old or older. Eleven (11), or 69% of the victims were men, and five, or 31%, were women. Older adults represent 14% of the total Massachusetts population but only 4% of the burn injuries in 2012, which means that in 2012 they were proportionately less likely to receive a burn injury.

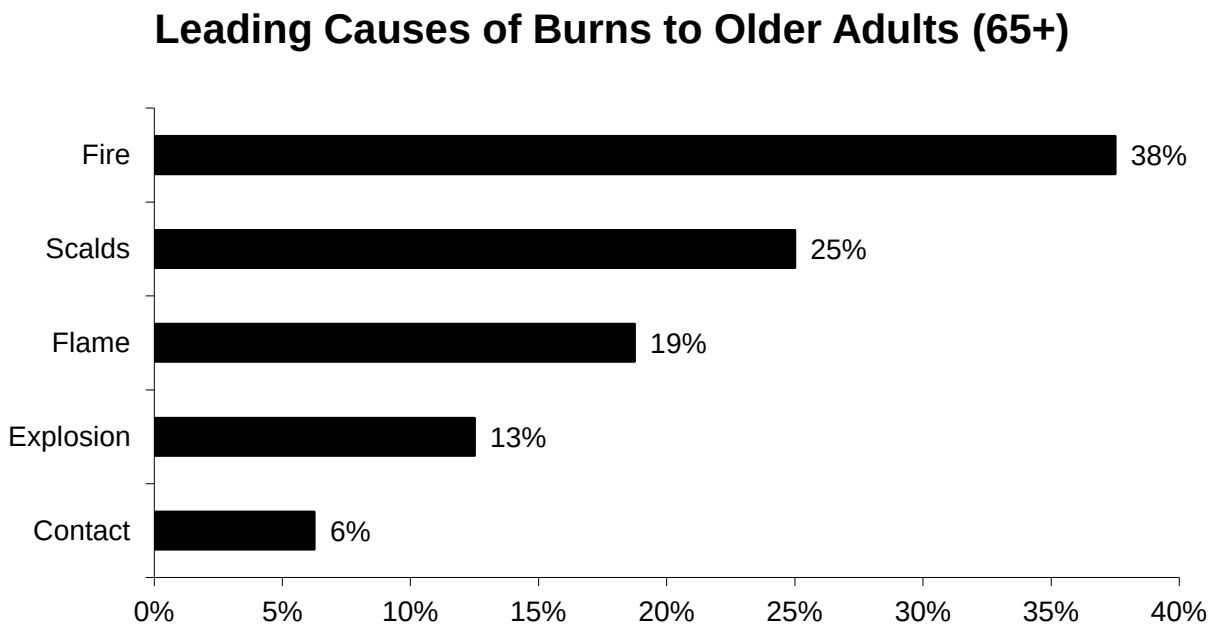
Historically older adults account for 7% of the total number of burn injuries during the year. Since 1984 there have been 13,850 reported burn injuries to M-BIRS, and 955 of these have been incurred by people over the age of 65. In 2001, they accounted for 11% of the total number of burn injuries, the highest percentage of any year since the inception of M-BIRS in 1984. In 2006, older adults accounted for the smallest percentage of total burn injuries since 1984, 3%.

Burns from Fires Caused Over 1/3 of Burns to Older Adults
In 2012, burn injuries from fires were the leading cause of burns to older adults. Burns from fires caused six, or 38%, of burn injuries to adults over the age of 65. Camp or bon fires caused three injuries, house fires caused two of these burn injuries, and a brush fire caused one of these injuries.

Scalds caused four, or 25%, of the burn injuries to this age group. All four were from cooking liquids.

Flame burns caused three, or 19%, of the burn injuries to people over the age of 65. A car part, gasoline and a stove each caused one flame burn injury to this age group.

Explosions caused two, or 13%, of the injuries to older adults. Gasoline and an electrical problem each caused one of these injuries. Contact with a hot woodstove caused one, or 6%, of the burn injuries to older adults in 2012.



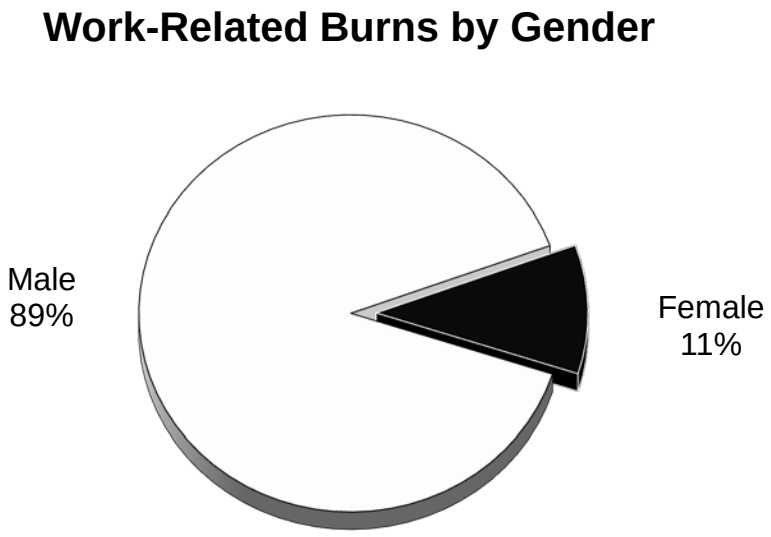
According to the Burn Awareness Coalition, the following scenarios increase the chance of a burn injury for older adults: smoking when tired, drinking alcohol or taking medications which can cause drowsiness, wearing loose fitting clothing while cooking, kitchen fires from unattended cooking, and grease fires on the stove top. During 2012, cooking accounted for five, or 31% of the reported burn injuries in Massachusetts incurred by older adults and smoking accounted for one, or 6% of the burn injuries to older adults.

Safety Tips for Older Adults

- Cook with the pot and pan handles turned in.
- Wear clothes with short or tight fitting sleeves and watch for clothes touching elements on the stove.
- Never leave boiling, broiling or frying food unattended.
- Keep stove surfaces clean of built up grease.
- Do not attempt to lift or carry heavy pots of hot liquid or food.
- Do not use a cooking stove for heating purposes or for drying clothes.
- Remember “Stop, Drop, & Roll” – It just may save your life.
- Do not smoke when you are tired, drinking alcohol or taking medications that make you drowsy. If you must smoke, make sure there are working smoke detectors in the immediate vicinity.

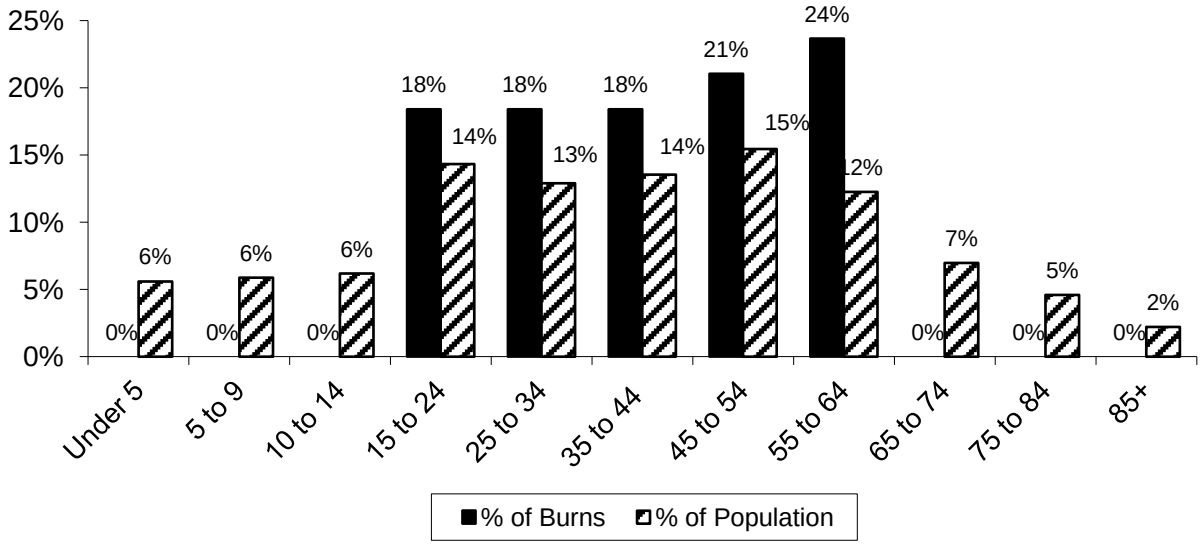
Work-Related Burn Injuries

11% of Reported Burns Occurred at Work
Massachusetts hospitals indicated that 38, or 11%, of the 358 burn injuries reported in 2012 occurred while the victim was at work. Men were much more likely to be burned while working than women. Thirty-four (34) men, or 89%, and four women, or 11%, were burned at work in 2012.



1/4 of Work-Related Burns Incurred by People Between 55 and 64
No one under the age of 17 received a work-related burn in 2012. Seven (7), or 18%, were between 15 and 24 years of age. Seven (7), or 18%, of the victims were between 25 and 34 years of age; another seven, or 18%, belonged to the 35 to 44 age group. Eight (8), or 21%, of work-related burn injuries were victims 45 to 54 years old. Nine (9), or 24%, of work-related burns occurred in the 55 to 64 age group; which was the oldest age group to have any. There was only one work-related burn injury to this age group in 2011. The youngest person to receive treatment for a work-related burn in Massachusetts in 2012 was a 17-year old boy who received a scald burn from a boiler. The oldest victim to receive a work-related burn was a 61-year old man who received a scald burn from a radiator. Two (2) firefighters received burns greater than 5% of their body surface area and sought treatment at a Massachusetts hospital in two separate fires in 2012.

Work-Related Burns by Age Group



Scalds Caused 39% of Work-Related Burns
Scalds were the leading cause of work-related burns in 2012. These 15 burn injuries accounted for 39% of work-related burns. Seven (7) involved cooking activities; six were caused by cooking liquids and one was caused by hot food. Steam caused two of these burns. An assault, a boiler, a car radiator, a machine, a radiator and hot tap water each accounted for one of the work-related scald burns in 2012.

Other type burns caused seven, or 18%, of work-related burns. Chemicals were responsible for all seven of these burns.

Explosions caused five, or 13%, of the work-related burns. Natural gas caused three of these injuries, and alcohol and a stove each caused one work-related explosion burn injury in 2012.

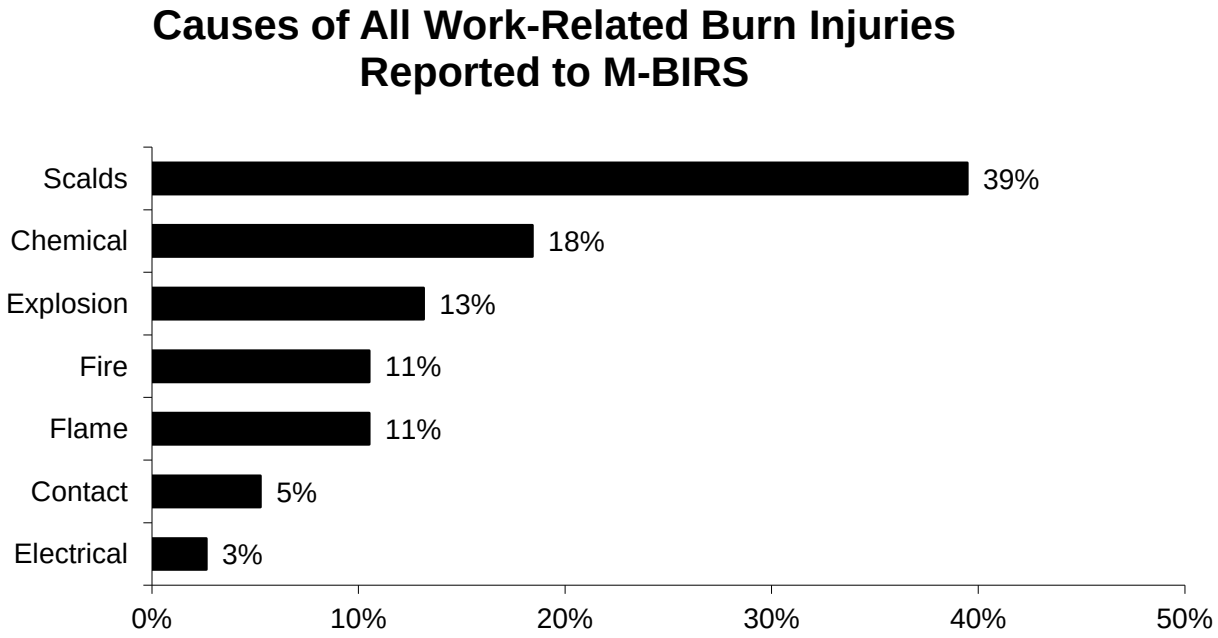
Four (4) victims were burned in fires while at work in 2012. Three (3) were burned in house fires and one was burned in motor vehicle fire. These burns accounted for 11% of the work-related burn injuries in 2012.

Flame burns also accounted for four, or 11%, of these work-related burns. Welding caused two of these burns. A firefighter and propane each caused one of the work-related flame burn injuries in 2012.

Two (2) victims, or 5%, received contact burns while working in 2012. Asphalt and a machine were each responsible for one.

An unspecified electrical burn accounted for one, or 3%, of work-related burns in 2012. In 2011, there were 10 work-related injuries from electrical accidents.

The following chart shows the breakdown of the causes of all work-related burn injuries reported to M-BIRS regardless of whether they occurred in Massachusetts or not.



87% of Work-Related Burns Reported to M-BIRS Occurred in MA

Most, but not all of the work-related burn injuries treated in Massachusetts occurred in Massachusetts. Thirty-three (33), or 87% of the 38 work-related burns reported to M-BIRS in 2012 occurred in Massachusetts. Four (4) of the work-related burns reported yo M-BIRS occurred in New Hampshire. There was one reported injury where the victims lived in Massachusetts but the address where the burn occurred was not reported.

Intervention and Prevention Efforts

The Massachusetts Department of Public Health (MDPH) tracks work-related burn injuries as part of ongoing sentinel surveillance of work-related injuries and illnesses in Massachusetts. MDPH refers select burn injuries to the Occupational Safety and Health Administration (OSHA), Region I, for inspection to ensure that the hazardous conditions associated with the burn injuries among employees in the private sector have been corrected and to ensure that workers are no longer at risk from hazardous conditions.[7] MDPH also refers work-related burn injuries among public sector workers to the Massachusetts Department of Labor Standards (DLS). MDPH requested that OSHA investigate 11 workplaces, and DLS investigate one workplace where burn injuries occurred in 2012. OSHA had already been informed about four of the incidents and was already investigating those workplaces.

[7] Those injuries caused by explosions, chemical exposures, electricity, or that appeared to indicate likely violations of the OSHA standards, are referred to OSHA.

Seven (7) companies were inspected by OSHA based solely on the MDPH referrals. OSHA identified hazards in five of the seven workplaces investigated. The hazards that were identified included absence of protection from electrical hazards, failure to provide appropriate personal protective equipment, inadequate care of walking and working surfaces, problems with hazardous waste storage, no emergency action plan, problems with spray finishing using combustible materials, and inadequate lockout-tagout protection. One moderate to severe burn injury occurred in a 19-year old worker who was assigned to replace the cover on a fryolater without gloves, goggles or an apron. In this case, OSHA issued citations for failures to provide protective equipment for performing cleaning and other tasks on the fryolater, and fined the company $2,975. OSHA has proposed over $17,000 in fines for a company that failed to protect its employee from nitric acid which was used to clean metal sheets. For at least one of the referred injuries and several of the injuries that were not referred, the location of the workplace, or the employer could not be ascertained from the emergency department reports. Accurate information will help ensure that the hazards that resulted in burn injuries have been corrected. The one referral to DLS of a burn injury in a public sector worker has not yet been investigated.

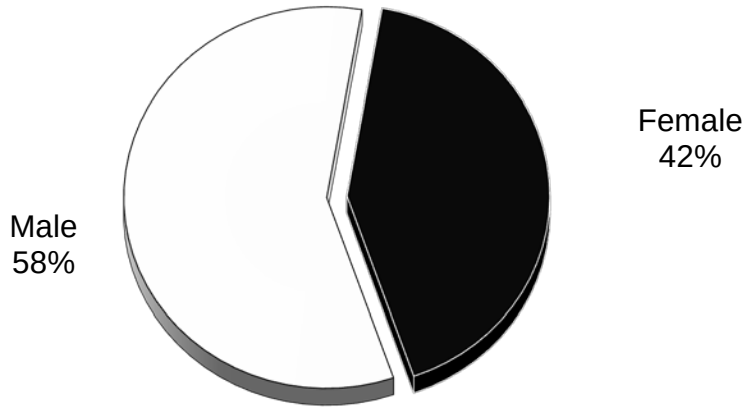
The relationship between the Department of Fire Services, Department of Public Health and OSHA serves as a model for how state and federal agencies can collaborate around the country. Based on this model, MDPH has also initiated referrals for amputation injuries, and is working on a guide for health departments to learn about OSHA and enhance communication and action on serious work-related cases.

Burn Injuries in the Home

Almost 2/3 of Burn Injuries Occur in the Home

The home is the most common place for burn injuries to occur. In 2012, 234 people, or 65%, of all the reported burn injuries took place in the victim's home or surrounding yard. More men were burned at home than women. One hundred and thirty-six (136) men, or 58%, and 98 women, or 42%, were burned at home in 2012.

Home Burns by Gender



57% of All Home Burns Are Scalds
One hundred and thirty-three (133), or 57%, of the burn injuries that occurred in the home in 2012 were scalds. Cooking activities caused 69 of these home burn injuries; cooking liquids caused 55 and hot foods caused 14. Hot beverages caused 44 of burns at home. Scalds from hot tap water accounted for 13 of these burns. Steam caused three, and car radiators caused two of these burns. An assault and candle wax each accounted for one of all home burn injuries in 2012.

Flame Burns & Burns from Fire Tied for 2nd Leading Cause of Burns at Home
Flame burns were tied for the second leading cause of burn injuries in the home. Flame burns accounted for 33, or 14%, of all home-related burn injuries.

Eight (8), or 3%, were caused by ignitable liquids; four were from gasoline and another four were from other ignitable liquids.

Cooking activities accounted for six, or 3%, of all home flame burn injuries; cooking liquids caused three, gas grills caused two and a stove caused one of these injuries.

Smoking caused three, or 1%, of these flame burn injuries; smoking while on oxygen caused two injuries and a cigarette caused one of these burns.

Aerosols, clothing ignitions from candles, and attempts at self-immolation each caused two home-related flame burn injuries, accounting for 1% of all home burn injuries in 2012.

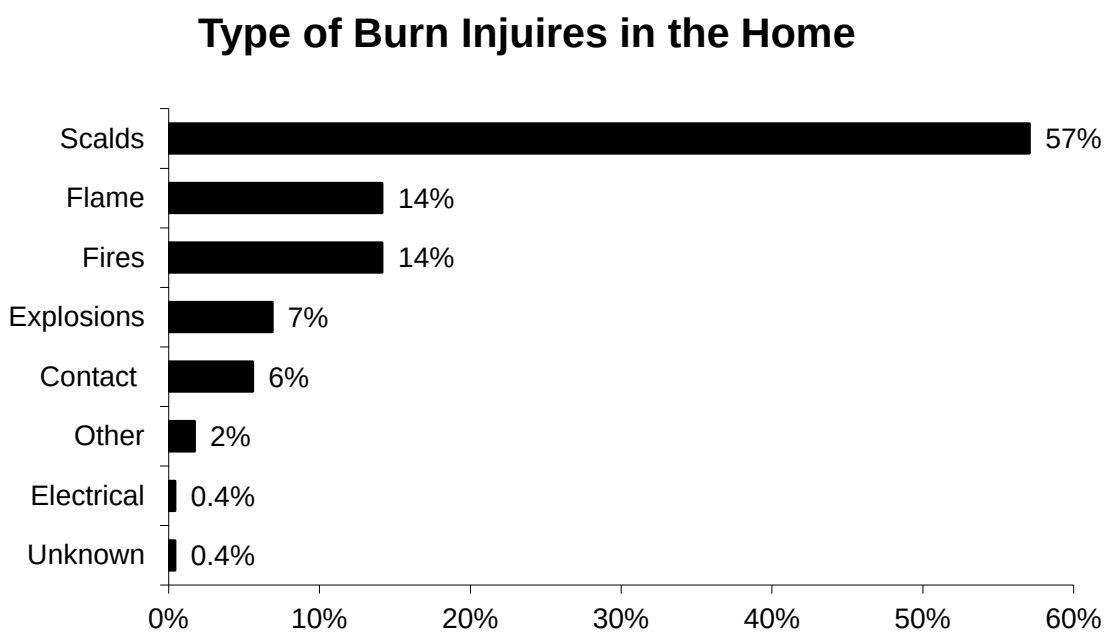
An assault, a camp fire, an attempt at fire control, fireworks, a heat lamp, a match, a water heater, a woodstove and an unspecified flame burn injury each caused one, or less than 1%, of the home burn injuries in 2012.

Burn injuries from fires also accounted for 33, or 14% of all burn injuries in homes. Seventeen (17) injuries were from house fires accounting for 7% of all home burn injuries. Many of these house fires were caused by electrical problems, smoking or heating. There were 12 injuries, or 5%, caused by camp or bon fires in the victim's yards. Brush fires caused three, or 1%, of these injuries, and a motor vehicle fire was responsible for one, or less than 1%, of home burn injuries.

Explosions Responsible for 7% of Burns in Homes
Explosions caused 16, or 7%, of all reported burn injuries in homes in 2012. Ignitable liquids were involved in six, or 3%, of these burn injuries; three involved in gasoline and the other three involved ignitable liquids other than gasoline. Ignitable gases caused five, or 2%, of these injuries; three involved natural gas and the other two injuries were caused by propane. There were two suicide attempts by explosion in 2012. An aerosol can, an engine and fireworks were each involved in one, or less than 1%, of the 2012 home explosion burn injuries.

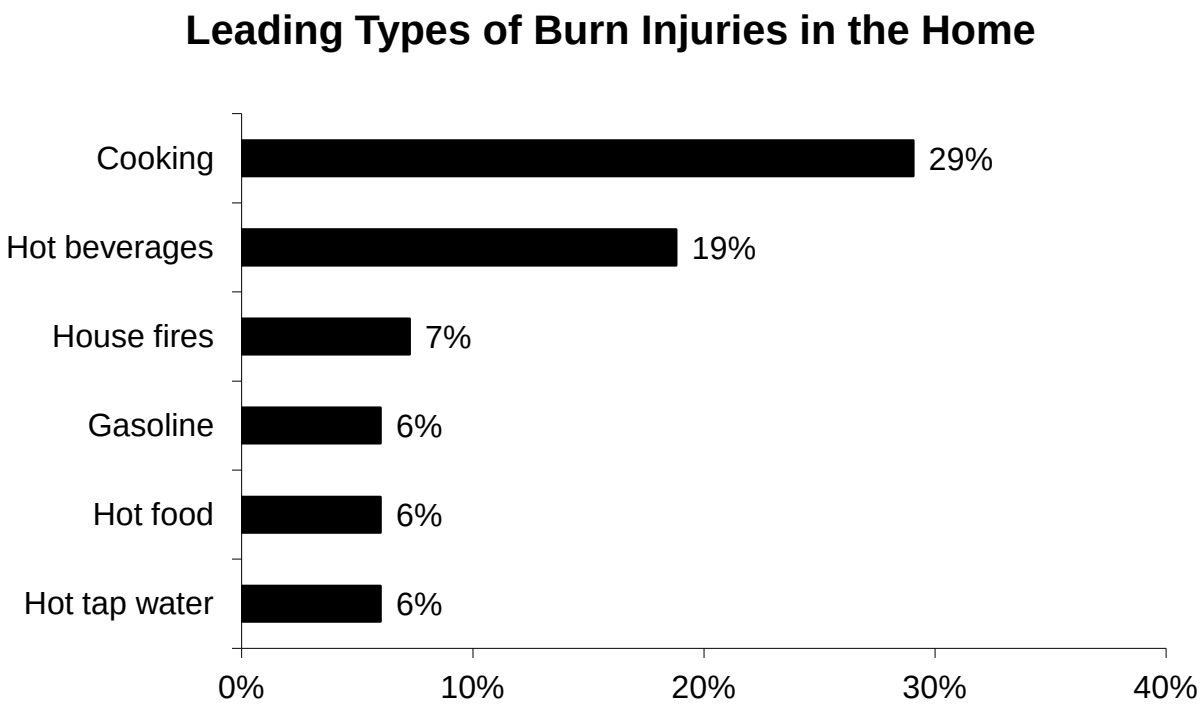
6% of Home Burns Come from Touching Hot Items
Contact burn injuries accounted for 13, or 6%, of all the burn injuries that occurred in homes in 2012. Cooking activities caused six, or 3%, of these burns; four from contact with a stove, and one each from contact with a barbeque and an unspecified cooking act. Touching heating equipment burned two victims at home, or 1%, of these injuries; one injury involved a heater the other a radiator. Contact with a car part, a clothes iron, a curling iron, hot wax and an unspecified contact burn injury each caused one, or less than 1%, of the reported burn injuries that occurred in homes in 2012.

***Other* Types of Burns Cause 2% of Home Burns**
Four (4) *Other* types of burn injuries were reported occurring to victims in their homes in 2012, accounting for 2% of home burn injuries in 2012. Three (3) of these three injuries involved chemicals, accounting for 1%, and the other involved a making a bomb for less than 1%..



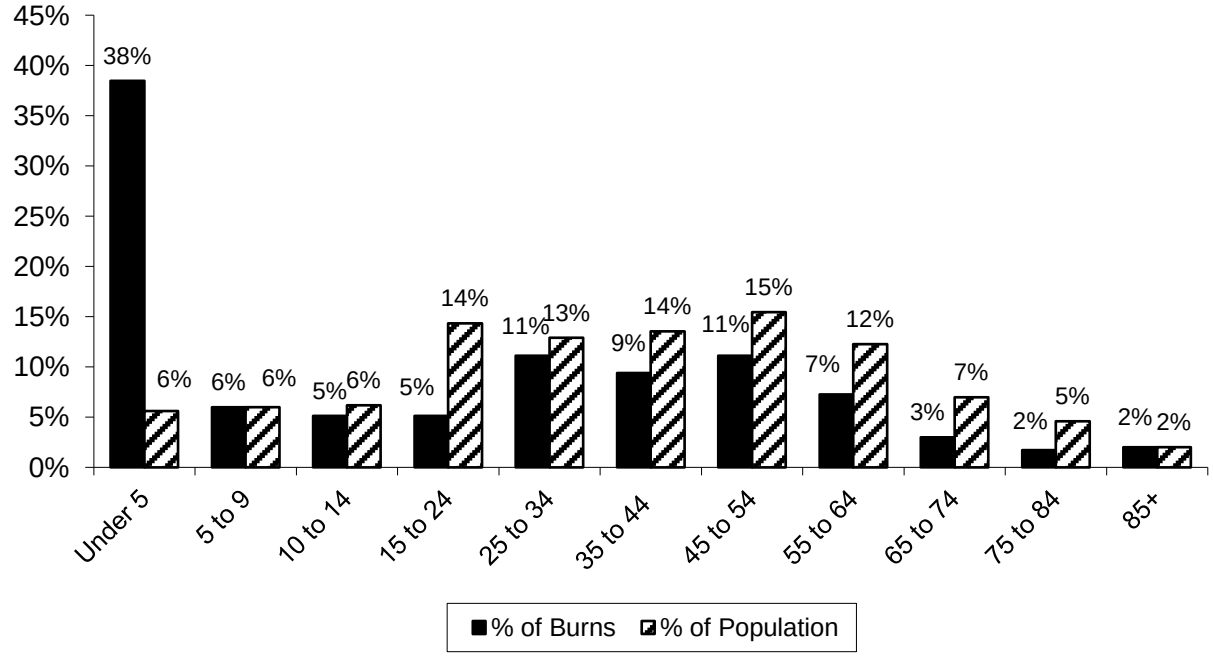
Less Than 1% of Home Burns Caused by Electrical Problems
One (1) person received a burn at home in 2012 from an unspecified electrical problem accounting for less than 1% of all home burns. One (1) victim was also injured by an unspecified burn injury at home.

Cooking Caused 29% of Burn in Homes
In 2012 cooking activities caused the most overall burns regardless of burn type. Burns from cooking caused 68, or 29%, of burns in Massachusetts homes. Hot beverages were the cause of 44, or 19%, of home burns in 2012. House fires caused 17, or 7%, of the burns that were reported to have occurred in homes in 2012. Gasoline was involved in 15, or 6%, of home burn injuries. Hot food was the cause of 14, or 6%, of home burns in 2012. Hot tap water accounted for 13, or 6%, of these burns.



38% of Home Burns Were to Children Under 5
Thirty-eight percent (38%) of the 234 victims that received their burns at home were less than five years old. They were 6.9 times more likely to suffer a burn at home. Children between the ages of five and nine received 6% of the burn injuries that occurred in people's homes, while children aged 10 to 14 accounted for 5% of these injuries. Young adults between the ages of 15 and 24 accounted for 5% of these burns; 11% were between 25 and 34; 9% were between 35 and 44; 11% were between 45 and 54; 7% were between 55 and 64; 3% were between 65 and 74; 2% were between 75 and 84; and 2% were over the age of 85.

Home Burn Injuries by Age Group



Hot Tap Water Scalds Youngest Victim
A three-month old boy, who received scald burns to 20% of his body surface area from hot tap water, was the youngest victim to receive an at-home burn injury. The oldest victim to receive a burn at home was a 92-year old man who received burns to 25% of his body surface area in a house fire started by the central heating system.

4% of Home Burns Resulted in Death
Ten (10), or 4%, of the 234 reported burn injuries that occurred in homes in 2012 resulted in death for the victim. Six (6), or 60% of these deaths, were men; and four, or 40%, were women. The youngest victim was a 27-year old man who died from a successful self-immolation attempt. The oldest victim to succumb to his injuries was a 92-year old man who received burns to 25% of his body surface in a house fire.

For more information on all residential fire deaths please refer to the annual reports of the Massachusetts Fire Incident Reporting System (MFIRS). Most victims of fatal fires die immediately and are not reported to or captured by M-BIRS.

Burn Injury Reports by Hospital

Forty-one (41) out of the 97 acute care health care facilities in Massachusetts submitted a total of 400 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.

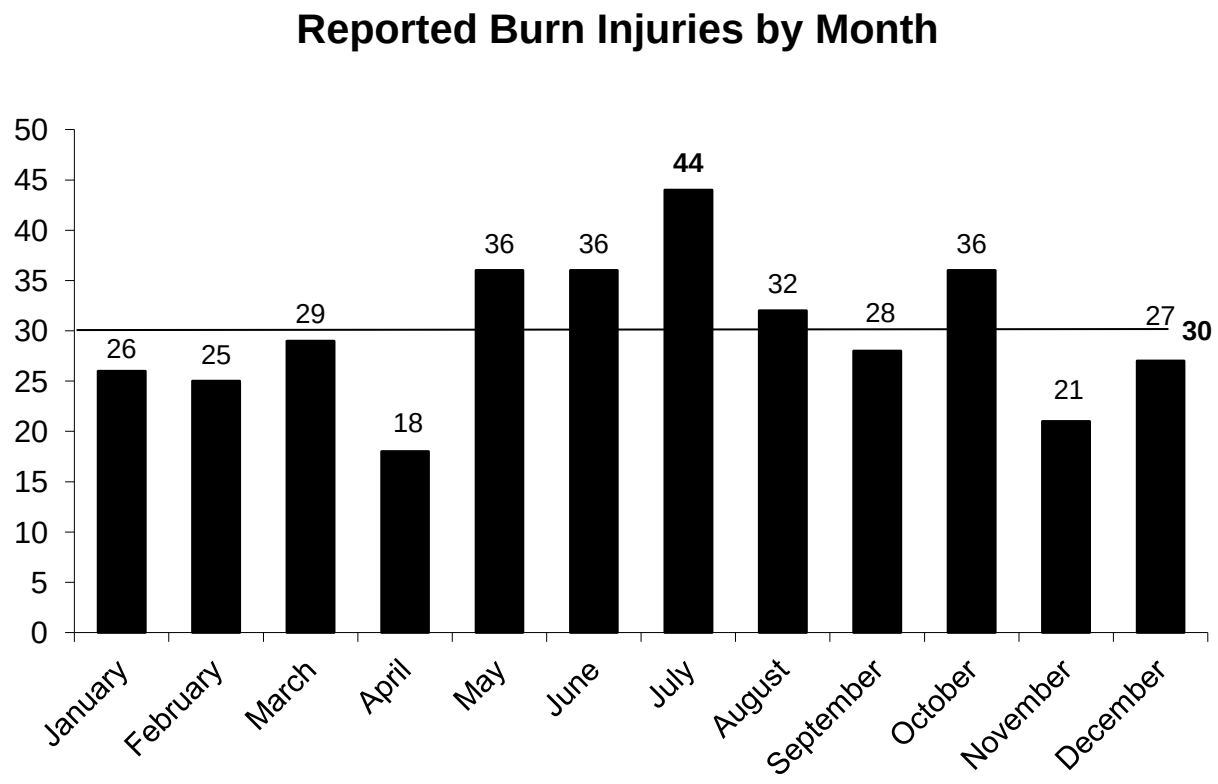
Hospitals May Fax Reports or Call and Submit Written Reports
Health care facilities have a choice about how to report burn injuries. Health care providers may fax their burn injury reports to the State Fire Marshal at the Department of Fire Services, (978) 567-3199. A completed transmission will satisfy 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 state 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 and then attempt to avoid detection by seeking medical treatment far from the crime scene. Our data has also been used to identify problems that need to be addressed through public education or regulation and to develop appropriate strategies. We need to know what type of activity injures who, if the injuries are seasonal, and how old the victims are in order 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.

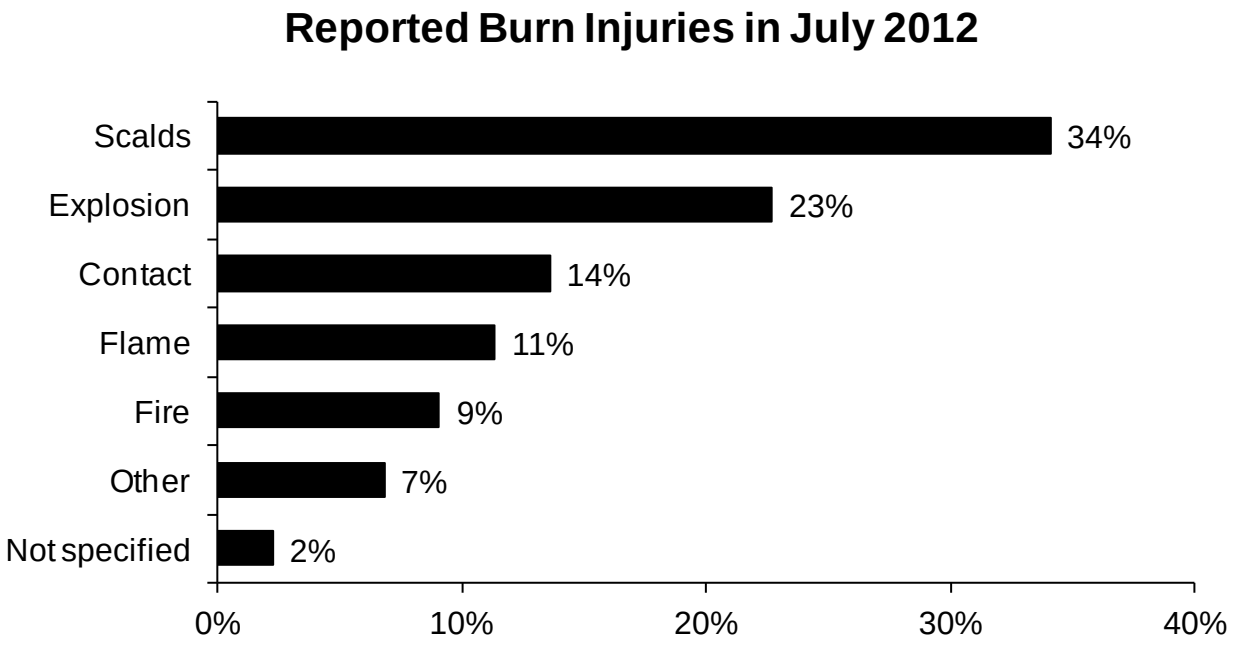
Burn Injuries by Month

Average of 30 Burns a Month
An average of 30 burns was reported during each month of 2012, from a low of 18 in April to a high of 44 in July. It is below the 5-year (2008-2012) average of 35 burns per month and also below the 10-year (2003-2012) average of 33 burns per month.



Scalds caused the most burn injuries during all 12 months of the year. Burns from fires did tie with scalds as the leading cause of burn injuries in April.

July Was the Peak Month for Burns
July was the peak month for burns in 2012. Forty-four (44) burn injuries were reported to M-BIRS during July. In July, scalds accounted for 15, or 34%, of these burns. Burns from explosions caused 10, or 23%, of the burn injuries in July. Contact burns accounted for six, or 14% of these injuries. Flame burn injuries caused five, or 11%, of these burns. Burns from fires accounted for four, or 9%, of July's burn injuries. *Other* burns caused three, or 9%, of these injuries. One (1) burn injury, or 2%, in July 2012 in Massachusetts was not specified.



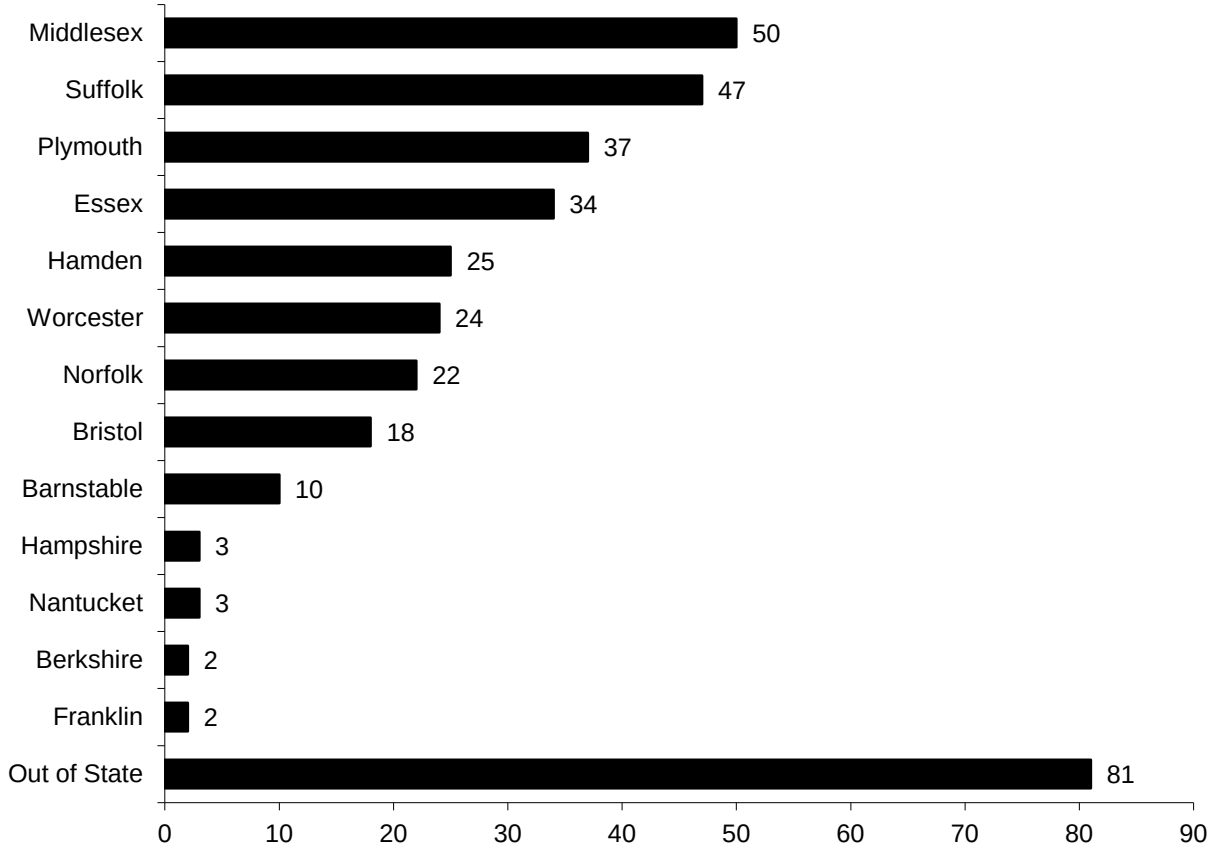
For more information, please refer to the table *Causes of Burn Injuries by Month* in the Appendix.

Geographical Demographics

Massachusetts Burn Victims from 129 Cities and Towns
Massachusetts medical facilities treated 277 residents of 114 Massachusetts cities and towns. Burn victims came from 13 of the 14 counties in the Commonwealth. The largest numbers of reported burn injuries were incurred by residents of Middlesex, Suffolk and Plymouth counties. It appears that some large Boston hospitals (Suffolk County) may have under reported the burns they treated.

Eighty-one (81) 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.

Reported Burn Injuries by County



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 39 of its residents reported to have a burn injury in 2012, this is down from 57 reported in 2011. Springfield had the second largest number of victims with 16. Brockton had 12 injury reports, Lowell had nine and Haverhill and Lawrence each had eight residents receive burn injuries. Worcester had six residents with burn injuries and Lynn had five reported burn injuries in 2012.

Burns Per 10,000 Population

The map on page 65, *2012 Burns by 10K Population*, displays the number of burns reported by community per 10,000 of its residents. The darker the community is shaded the more burns per 10,000 population were reported from that municipality. Cities and towns that are white did not have a reported burn injury in 2012.

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 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 the total number of reported injuries fall towards the bottom of the rankings. Communities with one, two or three reported burns take over the top spots because of the very small populations. These communities may have a rate that far exceeds the actual number of burns that were reported. The legend symbols are consistent in both maps.

Royalston had the highest rate of burn injuries per 10,000 population at 7.95. Next highest was Becket with 5.62 burn injuries per 10,000 population; Avon had 4.59; Rochester had 3.82; Northfield had 3.30; and Millville had 3.13 burn injuries per 10,000 population[8].

Scalds Per 10,000 Population

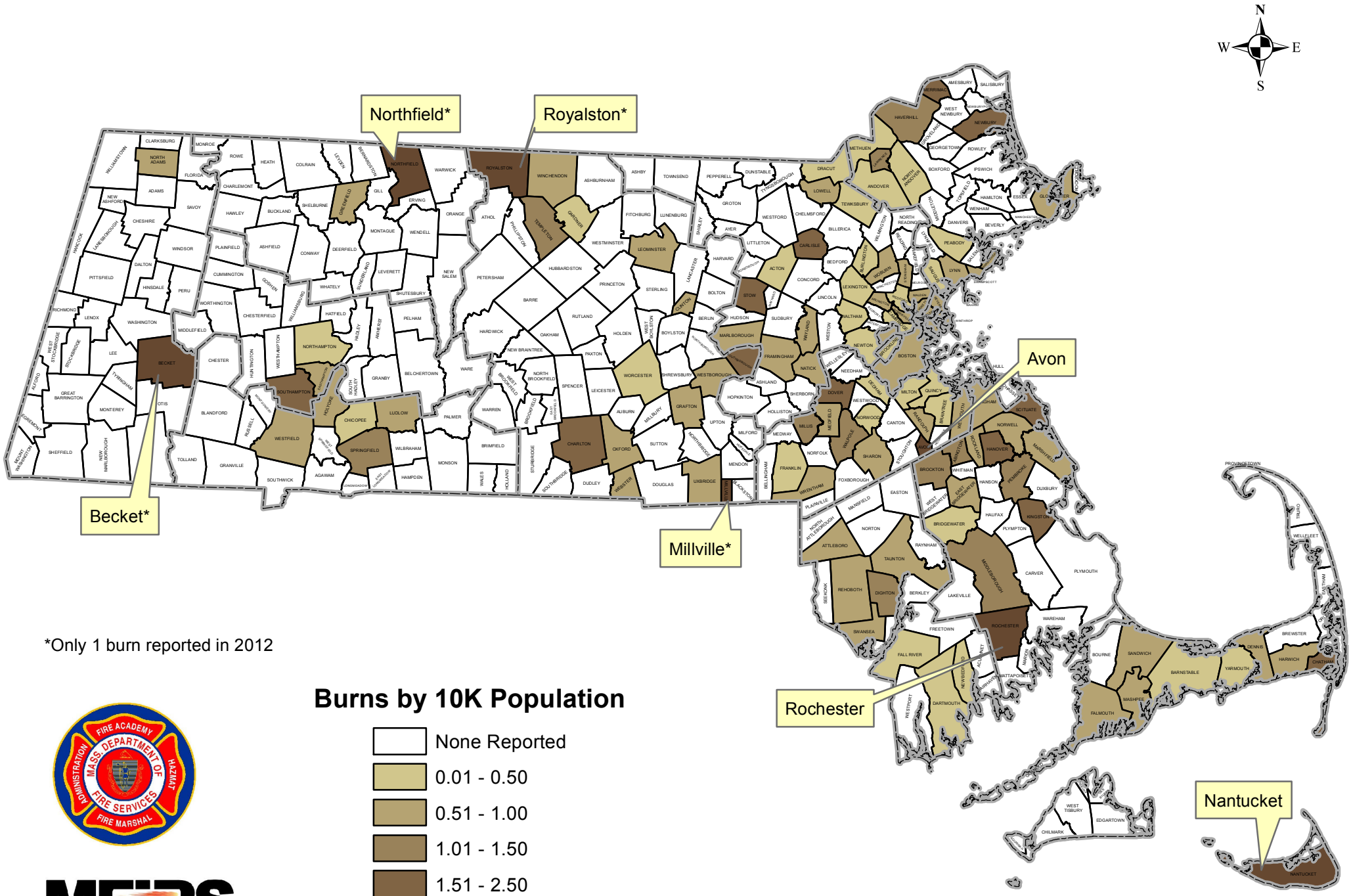
The map on page 66, *2012 Scalds per 10K Population*, displays the rate of reported scald burn injuries by the victim's home community for every 10,000 of that community's population. The darker the community is shaded the more burn injuries per 10,000 people were reported from that municipality. Cities and towns that are white did not have a reported burn injury in 2012.

Chester had the highest rate of 7.48 scald burn injuries per 10,000 population. Next highest was Avon with 2.30 scald burn injuries per 10,000 population; Carlisle had 2.06; Southborough had 2.05; and Manchester had 1.95 scald burn injuries per 10,000 population[9].

[8] Royalston, Becket, Avon, Northfield and Millville each only had 1 burn injury reported in 2010. Avon and Rochester each had 2 reported burn injuries in 2012

[9] Each of these communities only had one scald burn reported in 2012, except Southborough which had two reported scalds.

2012 MA Burns by 10K Population



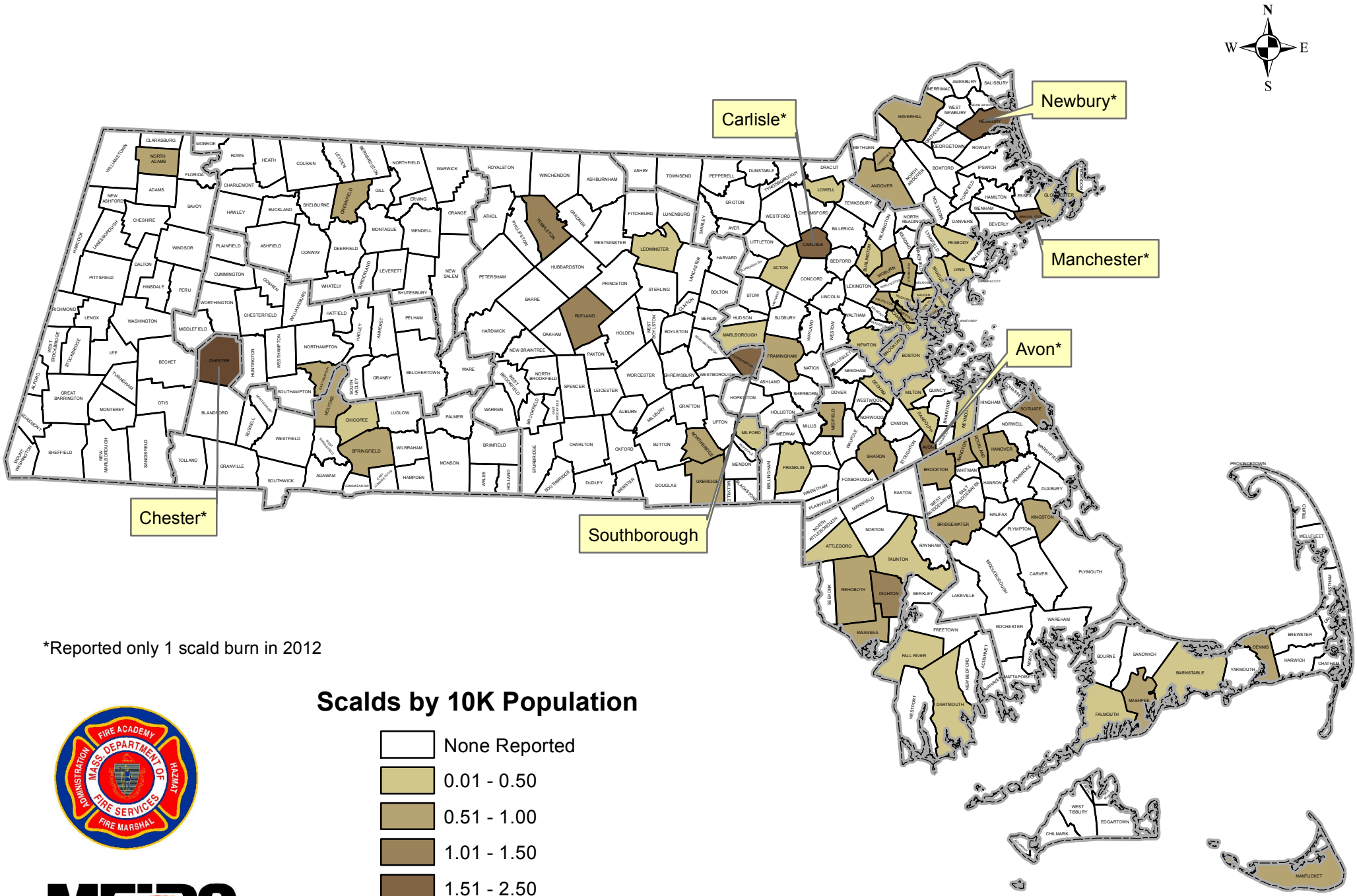
*Only 1 burn reported in 2012

Burns by 10K Population

- None Reported
- 0.01 - 0.50
- 0.51 - 1.00
- 1.01 - 1.50
- 1.51 - 2.50
- 2.51 - 8.00

MFIRS
Massachusetts Fire Incident Reporting System

2012 MA Scalds by 10K Population



*Reported only 1 scald burn in 2012

MFIRS
Massachusetts Fire Incident Reporting System

2012 Appendix

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

Specific Causes of Burn Injuries

Cause	# of Burns	% of Burns
Scalds	**167**	**46.6%**
Cooking	85	22.1%
Cooking Liquids	*64*	*17.9%*
Food	*21*	*5.9%*
Beverages	48	13.4%
Hot Tap Water	15	4.2%
Car Radiator	6	1.7%
Steam	4	1.1%
Assault	3	0.8%
Boiler	1	0.8%
Candle	1	0.8%
Clothes iron	1	0.8%
Gas	1	0.8%
Machine	1	0.8%
Radiator	1	0.8%
Fires	**64**	**17.9%**
Camp or Bon Fires	27	7.5%
Camp Fire	*8*	*2.2%*
Gasoline	*7*	*2.0%*
Aerosol	*3*	*0.8%*
Bon Fire	*3*	*0.8%*
Appliance	*1*	*0.3%*
Chemical	*1*	*0.3%*
Cigarette	*1*	*0.3%*
Clothes	*1*	*0.3%*
Fire Control	*1*	*0.3%*
Ignitable Liquids	*1*	*0.3%*
House Fires	23	6.4%
Unspecified	*6*	*1.7%*
Child w/matches	*2*	*0.6%*
Smoking on Oxygen	*2*	*0.6%*
Smoking (Unspec.)	*2*	*0.6%*
Cooking (Unspec.)	*1*	*0.3%*
Domestic Violence	*1*	*0.3%*
Electrical (Unspec.)	*1*	*0.3%*
Firefighter	*1*	*0.3%*
Flammables	*1*	*0.3%*
Heat/Central	*1*	*0.3%*
Heater	*1*	*0.3%*
Ignitable Liquids	*1*	*0.3%*
Machine	*1*	*0.3%*
Propane	*1*	*0.3%*

Cause	# of Burns	% of Burns
Fire (cont'd)		
Welding	*1*	*0.3%*
Motor Vehicle Fires	10	2.8%
MV Accident	*4*	*1.1%*
Airplane Crash	*2*	*0.6%*
Car Fire	*1*	*0.3%*
Gasoline	*1*	*0.3%*
Self-immolation	*1*	*0.3%*
Torch	*1*	*0.3%*
Brush Fires	6	1.6%
Gasoline	*2*	*0.6%*
Unspecified	*1*	*0.3%*
Flammables	*1*	*0.3%*
Flame Burns	**55**	**15.4%**
Ignitable Liquids	13	3.1%
Gasoline	*8*	*1.4%*
Ignitable Liquids	*5*	*1.1%*
Cooking	8	2.2%
Barbeque (gas)	*4*	*1.1%*
Cooking Liquids	*3*	*0.8%*
Stove	*1*	*0.3%*
Smoking	4	1.1%
Smoking on Oxygen	*2*	*0.6%*
Cigarette	*1*	*0.3%*
Smoking (Unspec.)	*1*	*0.3%*
Clothes	4	1.1%
Candle/Clothes	*3*	*0.8%*
Clothes	*1*	*0.3%*
Aerosol	2	0.6%
Self-immolation	2	0.6%
Propane	2	0.6%
Welding	2	0.6%
Woodstove	2	0.6%
Assault	1	0.3%
Camp Fire	1	0.3%
Car Part	1	0.3%
Fire Control	1	0.3%
Firefighter	1	0.3%
Fireworks	1	0.3%
Flame (Unspec.)	1	0.3%
Flammables	1	0.3%

Cause	# of Burns	% of Burns
Flame Burns (cont'd)		
Heat Lamp	1	0.3%
Ignitables	1	0.3%
Match	1	0.3%
Water Craft	1	0.3%
Water Heater	1	0.3%
Unknown	1	0.3%
Metal	1	0.3%
Explosions	**29**	**8.1%**
Ignitable Gases	9	2.5%
Natural Gas	*5*	*1.4%*
Propane	*3*	*0.8%*
Barbeque (Gas)	*1*	*0.3%*
Ignitable Liquids	7	2.0%
Ignitable Liquids	*4*	*1.1%*
Gasoline	*3*	*0.8%*
Fireworks	6	1.7%
Self-immolation	2	0.6%
Aerosol	1	0.3%
Alcohol	1	0.3%
Electrical	1	0.3%
Engine	1	0.3%
Contact Burns	**22**	**6.1%**
Cooking	7	2.0%
Stove	*4*	*1.1%*
Barbeque	*2*	*0.6%*
Cooking (Unspec.)	*1*	*0.3%*

Cause	# of Burns	% of Burns
Contact Burns (cont'd)		
Heating	3	0.8%
Heater	*1*	*0.3%*
Radiator	*1*	*0.3%*
Woodstove	*1*	*0.3%*
Car Part	2	0.6%
Clothes Iron	3	0.8%
Curling Iron	1	0.3%
Embers	1	0.3%
Fireworks	1	0.3%
Machine	1	0.3%
Motorcycle	1	0.3%
Unknown	1	0.3%
Other Burn Injuries	**16**	**4.5%**
Chemical	11	3.1%
Sunburn	4	1.1%
Bomb Making	1	0.3%
Electrical	**2**	**0.6%**
Electrical (Unspec.)	2	0.6%
Domestic Violence	**1**	**0.3%**
Cooking Liquids	1	0.3%
Not Reported	**2**	**0.6%**
Unknown	2	0.6%

Causes of Burn Injuries by Age

UNDER 5	**106**	**29.6%**
Cause	**# of Burns**	**% By Age**
Scalds	**88**	**83.0%**
Beverages	41	38.7%
Cooking	35	33.0%
Cooking Liquids	*24*	*22.6%*
Food	*11*	*10.4%*
Hot Tap Water	10	9.4%
Candle	1	0.9%
Clothes Iron	1	0.9%
Contact	**10**	**9.4%**
Cooking	3	2.8%
Barbeque	*2*	*1.9%*
Cooking (Unspec.)	*1*	*0.9%*
Wax	2	1.9%
Heating	2	1.9%
Heater	*1*	*0.9%*
Radiator	*1*	*0.9%*
Curling Iron	1	0.9%
Motorcycle	1	0.9%
Unknown	1	0.9%
Fire	**4**	**3.8%**
House Fires	2	1.9%
Child w/Matches	*2*	*1.9%*
Brush Fires	1	0.9%
Flammables	*1*	*0.9%*
Camp or Bon Fires	1	0.9%
Camp Fire	*1*	*0.9%*
Flame	**3**	**2.8%**
Candle/Clothes	1	0.9%
Fireworks	1	0.9%
Ignitables	1	0.9%
Explosion	**1**	**0.9%**
Fireworks	1	0.9%

AGES 5 TO 9	**17**	**4.7%**
Cause	**# of Burns**	**% By Age**
Scalds	**10**	**58.8%**
Cooking	8	47.1%
Food	*5*	*29.4%*
Cooking Liquids	*3*	*17.63%*
Hot Beverages	1	5.9%
Hot Tap Water	1	5.9%
Fires	**4**	**23.5%**
House Fires	3	17.6%
Unspecified	*1*	*5.9%*
Machine	*1*	*5.9%*
Propane	*1*	*5.9%*
Camp or Bon Fires	1	5.9%
Gasoline	*1*	*5.9%*
Flame	**3**	**17.6%**
Aerosol	1	5.9%
Candle/Clothes	1	5.9%
Gasoline	1	5.9%

AGES 10 TO 14	**18**	**5.0%**
Cause	**# of Burns**	**% By Age**
Scalds	**9**	**50.0%**
Cooking	7	38.9%
Cooking Liquids	*5*	*27.8%*
Food	*2*	*11.1%*
Hot Beverages	2	11.1%
Contact	**3**	**16.7%**
Embers	1	5.6%
Fireworks	1	5.6%
Stove	1	5.6%
Flame	**2**	**11.1%**
Ignitable Liquids	1	5.6%
Flammables	1	5.6%
Explosion	**2**	**11.1%**
Ignitable Liquids	2	11.1%
Fire	**1**	**5.6%**
House Fires	1	5.6%
Heater	*1*	*5.6%*
Other	**1**	**5.6%**
Sunburn	1	5.6%

AGES 15 TO 24	**39**	**10.9%**
Cause	**# of Burns**	**% By Age**
Fire	**12**	**30.8%**
Camp or Bon Fires	11	28.2%
Camp Fires	*6*	*15.4%*
Aerosol	*2*	*5.1%*
Gasoline	*2*	*5.1%*
Bon Fire	*1*	*2.6%*
Motor Vehicle Fires	1	2.6%
MV Accident	*1*	*2.6%*
Scalds	**11**	**28.2%**
Cooking	7	28.9%
Cooking Liquids	*6*	*15.4%*
Hot Food	*1*	*2.6%*
Hot Beverages	1	2.6%
Boiler	1	2.6%
Car Radiator	1	2.6%
Machine	1	2.6%
Flame	**6**	**15.4%**
Ignitable Liquids	3	7.7%
Ignitable Liquids	*2*	*5.6%*
Gasoline	*1*	*2.6%*
Clothes	1	2.6%
Lighter	1	2.6%
Water Heater	1	2.6%
Contact	**3**	**7.7%**
Car Part	1	2.6%
Clothes Iron	1	2.6%
Machine	1	2.6%
Other	**2**	**5.1%**
Sunburn	2	5.1%
Explosion	**2**	**5.1%**
Ignitable Gases	1	2.6%
Explosives	1	2.6%
Electrical	**1**	**2.6%**
Electrical (Unspec.)	1	2.6%
Domestic Violence	**1**	**2.6%**
Cooking Liquids	1	2.6%
Not Reported	**1**	**2.6%**
Unknown	1	2.6%

AGES 25 TO 34	**43**	**12.0%**
Cause	**# of Burns**	**% By Age**
Scalds	**13**	**30.2%**
Cooking Liquids	5	11.6%
Car Radiator	3	7.0%
Steam	3	7.0%
Assault	2	4.7%
Flame	**11**	**25.6%**
Cooking	4	9.3%
BBQ (Gas)	*2*	*4.7%*
Cooking Liquids	*2*	*4.7%*
Gasoline	2	4.7%
Camp Fire	1	2.3%
Self-immolation	1	2.3%
Smoking (Unspec.)	1	2.3%
Welding	1	2.3%
Woodstove	1	2.3%
Explosions	**7**	**16.3%**
Fireworks	3	7.0%
Aerosol	1	2.3%
Engine	1	2.3%
Natural Gas	1	2.3%
Stove	1	2.3%
Fire	**7**	**16.3%**
Camp or Bon Fires	4	9.3%
Aerosol	*1*	*2.3%*
Bon Fire	*2*	*2.3%*
Camp Fires	*1*	*2.3%*
Ignitable Liquids	*1*	*2.3%*
Motor Vehicle Fires	2	4.7%
Gasoline	*1*	*2.3%*
MV Accident	*1*	*2.3%*
House Fires	1	2.3%
Unspecified	*1*	*2.3%*
Other	**3**	**7.0%**
Chemical	3	7.0%
Contact	**1**	**2.3%**
Car Part	1	2.3%
Not Reported	**1**	**2.3%**
Unknown	1	2.3%

AGES 35 TO 44	**44**	**12.3%**
Cause	**# of Burns**	**% By Age**
Scalds	**17**	**38.6%**
Cooking	11	25.0%
Cooking Liquids	*10*	*22.7%*
Food	*1*	*2.3%*
Hot Tap Water	2	4.5%
Assault	1	2.3%
Hot Beverages	1	2.3%
Car Radiator	1	2.3%
Steam	1	2.3%
Fire	**13**	**29.5%**
Camp or Bon Fires	6	13.6%
Gasoline	*3*	*6.8%*
Bon Fires	*1*	*2.3%*
Chemical	*1*	*2.3%*
Cigarette	*1*	*2.3%*
House Fires	5	11.4%
Cooking	*1*	*2.3%*
Electrical	*1*	*2.3%*
Flammables	*1*	*2.3%*
Unspecified	*1*	*2.3%*
Smoking	*1*	*2.3%*
Motor Vehicle Fires	2	4.5%
Self-immolation	*1*	*2.3%*
Torch	*1*	*2.3%*
Flame	**8**	**18.2%**
Unknown	2	4.5%
Assault	1	2.3%
BBQ (Gas)	1	2.3%
Ignitable Liquids	1	2.3%
Lighter	1	2.3%
Self-immolation	1	2.3%
Woodstove	1	2.3%
Other	**4**	**9.1%**
Sunburn	3	6.8%
Chemical	1	2.3%
Contact	**1**	**2.3%**
Stove	1	2.3%
Explosions	**1**	**2.3%**
Ignitable Liquids	1	2.3%

AGES 45 TO 54	**41**	**11.5%**
Cause	**# of Burns**	**% By Age**
Flame	**12**	**29.3%**
Ignitable Liquids	4	9.8%
Gasoline	*3*	*7.3%*
Ignitable Liquids	*1*	*2.4%*
Smoking	2	4.9%
Cigarette	*1*	*2.4%*
Smoking on Oxygen	*1*	*2.4%*
Aerosol	1	2.4%
Cooking Liquids	1	2.4%
Fire Control	1	2.4%
Firefighter	1	2.4%
Match	1	2.4%
Propane	1	2.4%
Fire	**10**	**24.4%**
House Fires	5	12.2%
Domestic Violence	*1*	*2.4%*
Firefighter	*1*	*2.4%*
Unspecified	*1*	*2.4%*
Ignitable Liquids	*1*	*2.4%*
Smoking	*1*	*2.4%*
Brush Fire	2	4.9%
Unspecified	*1*	*2.4%*
Gasoline	*1*	*2.4%*
Motor Vehicle Fires	2	4.9%
Airplane Crash	*1*	*2.4%*
MV Accident	*1*	*2.4%*
Camp or Bon Fires	1	2.4%
Clothes	*1*	*2.4%*

Cause	**# of Burns**	**% By Age**
Flame	**12**	**29.3%**
Scalds	**10**	**24.4%**
Cooking	6	14.6%
Cooking Liquids	*54*	*12.2%*
Food	*1*	*2.4%*
Hot Beverages	1	2.4%
Care Radiator	1	2.4%
Hot Tap Water	1	2.4%
Explosions	**8**	**19.5%**
Ignitable Gases	6	14.6%
Natural Gas	*3*	*7.3%*
Propane	*2*	*4.9%*
BBQ (Gas)	*1*	*2.4%*
Fireworks	1	2.4%
Self-immolation	1	2.4%
Electrical	**1**	**2.4%**
Electrical (Unspec.)	1	2.4%
Other	**1**	**2.4%**
Chemical	1	2.4%

AGES 55 TO 64	34	9.5%
Cause	**# of Burns**	**% By Age**
Explosion	**7**	**20.6%**
Ignitable Gases	3	8.8%
Natural Gas	*2*	*5.9%*
Propane	*1*	*2.9%*
Alcohol	1	2.9%
Fireworks	1	2.9%
Gasoline	1	2.9%
Self-immolation	1	2.9%
Fire	**7**	**20.6%**
House Fires	4	11.8%
Unspecified	*2*	*5.9%*
Smoking on Oxygen	*1*	*2.9%*
Welding	*1*	*2.9%*
Motor Vehicle Fires	3	8.8%
Airplane Crash	*1*	*2.9%*
Car Fire	*1*	*2.9%*
MV Accident	*1*	*2.9%*
Flame	**7**	**20.6%**
Ignitable Gases	2	5.9%
BBQ (Gas)	*1*	*2.9%*
Propane	*1*	*2.9%*
Candle/Clothes	1	2.9%
Heat Lamp	1	2.9%
Smoking on Oxygen	1	2.9%
Water Craft	1	2.9%
Welding	1	2.9%
Scalds	**5**	**14.7%**
Cooking Liquids	2	5.9%
Hot Beverages	1	2.9%
Radiator	1	2.9%
Hot Tap Water	1	2.9%
Other	**5**	**14.7%**
Chemical	4	11.8%
Bomb Making	1	2.9%
Contact	**3**	**8.8%**
Stove	2	5.9%
Asphalt	1	2.9%

AGES 65+	16	4.2%
Cause	**# of Burns**	**% By Age**
Fire	**6**	**37.5%**
Camp or Bon Fires	3	18.8%
Appliance	*1*	*6.3%*
Fire Control	*1*	*6.3%*
Gasoline	*1*	*6.3%*
House Fires	2	12.5%
Heat/Central	*1*	*6.3%*
Smoking on Oxygen	*1*	*6.3%*
Brush Fires	1	6.3%
Gasoline	*1*	*6.3%*
Scalds	**4**	**25.0%**
Cooking Liquids	4	25.0%
Flame	**3**	**18.8%**
Stove	1	6.3%
Gasoline	1	6.3%
Car Part	1	4.0%
Explosion	**2**	**12.5%**
Gasoline	1	6.3%
Electrical	1	6.3%
Contact	**1**	**6.3%**
Woodstove	1	6.3%

Causes of Work-Related Burns

Cause	# of Burns	% of Total
Scalds	**15**	**39%**
Cooking	7	18%
Cooking Liquids	*6*	*16%*
Hot Food	*1*	*3%*
Steam	2	5%
Assault	1	3%
Boiler	1	3%
Car Radiator	1	3%
Machine	1	3%
Radiator	1	3%
Hot Tap Water	1	3%
Other	**7**	**18%**
Chemical	7	18%
Explosions	**5**	**13%**
Natural Gas	3	5%
Alcohol	1	3%
Stove	1	3%

Cause	# of Burns	% of Total
Fire	**4**	**11%**
House Fires	3	8%
Firefighter	*1*	*3%*
Flammables	*1*	*3%*
Welding	*1*	*3%*
Motor Vehicle Fires	1	3%
Gasoline	*1*	*3%*
Flame	**4**	**11%**
Welding	2	5%
Firefighter	1	3%
Propane	1	3%
Contact	**2**	**5%**
Asphalt	1	3%
Machine	1	3%
Electrical	**1**	**3%**
Electrical (Unspec.)	1	3%
Total	**38**	**100%**

Number of Reported Burns Per Hospital

Addison Gilbert Hospital	2
Anna Jacques Hospital	4
Baystate Medical Center	22
Brockton Hospital	8
Brigham & Women's Hospital	24
Charlton Memorial Hospital	1
Children's Hospital	23
Clinton Hospital	1
East Boston Health Center	1
Emerson Hospital	1
Fairview Hospital	1
Falmouth Hospital	3
Faulkner Hospital	1
Harrington Memorial Hospital	1
Heywood Hospital	1
Holyoke Hospital	1
Lawrence General Hospital	9
Leominster Hospital	1
Lowell General Hospital	3
Massachusetts Eye and Ear Infirmary	1
Massachusetts General Hospital	141
Melrose-Wakefield Hospital	2
Merrimack Valley Hospital	1
Metro West Medical Center	1
Milton Whitinsville Hospital	1
North Adams Regional Hospital	2
Nantucket Hospital	2
Newton Wellesley Hospital	1
Noble Hospital	1
Norwood Hospital	2
St. Anne's Hospital	2
St. Elizabeth's Medical Center	3
St. Luke's Hospital	3
St. Vincent's Hospital	1
Saints Medical Center	1
South Shore Hospital	17
Shriners Hospital for Children	80
Sturdy Memorial Medical Center	6
Tobey Hospital	4
UMass Medical Center, University Campus	19

Causes of Burn Injuries by Month

JANUARY	**26**	**7.3%**
Cause	**# of Burns**	**% By Month**
Scalds	**14**	**53.8%**
Hot Beverages	6	23.1%
Cooking	5	192%
Hot Food	*3*	*11.5%*
Cooking Liquids	*2*	*7.7%*
Hot Tap Water	3	11.5%
Fire	**4**	**15.4%**
Brush Fires	1	3.8%
Unspecified	*1*	*3.8%*
Camp or Bon Fires	1	3.8%
Gasoline	*1*	*3.8%*
House Fires	1	3.8%
Cooking	*1*	*3.8%*
MV Fires	1	3.8%
MV Accident	*1*	*3.8%*
Flame	**4**	**15.4%**
Cigarette	1	3.8%
Gasoline	1	3.8%
Propane	1	3.8%
Unknown	1	3.8%
Contact	**2**	**7.7%**
Radiator	1	3.8%
Stove	1	3.8%
Explosion	**1**	**3.8%**
Stove	1	3.8%
Not Reported	**1**	**3.8%**
Unknown	1	3.8%

FEBRUARY	**25**	**7.0%**
Cause	**# of Burns**	**% By Month**
Scalds	**17**	**68.0%**
Cooking	12	48.0%
Cooking Liquids	*8*	*32.0%*
Hot Food	*4*	*16.0%*
Hot Tap Water	3	12.0%
Hot Beverages	2	8.0%
Fire	**5**	**20.0%**
House Fires	1	4.0 %
Child w/Matches	*1*	*4.0%*
Heater	*1*	*4.0%*
Ignitable Liquids	*1*	*4.0%*
Smoking on Oxygen	*1*	*4.0%*
Smoking	*1*	*4.0%*
Electrical	**1**	**4.0%**
Electrical	1	4.0%
Explosion	**1**	**4.0%**
Aerosol	1	4.0%
Flame	**1**	**4.0%**
Welding	1	4.0%
		.
2 Deaths		

MARCH	**29**	**8.1%**
Cause	**# of Burns**	**% By Month**
Scalds	**13**	**44.8%**
Hot Beverages	6	20.7%
Cooking	6	20.7%
Cooking Liquids	*4*	*13.8%*
Hot Food	*2*	*6.9%*
Hot Tap Water	1	3.4%
Fire	**9**	**31.0%**
Camp or Bon Fires	4	13.8%
Gasoline	*2*	*6.9%*
Aerosol	*1*	*3.4%*
Camp Fire	*1*	*3.4%*
House Fires	3	10.3%
Electrical	*1*	*3.4%*
Smoking on Oxygen	*1*	*3.4%*
Unspecified	*1*	*3.4%*
Brush Fires	2	6.9%
Flammables	*1*	*3.4%*
Gasoline	*1*	*3.4%*
Flame	**4**	**13.8%**
Clothes	1	3.4%
Ignitable Liquids	1	3.4%
Smoking on Oxygen	1	3.4%
Woodstove	1	3.4%
Contact	**2**	**6.9%**
Stove	1	3.4%
Unknown	1	3.4%
Explosion	**1**	**3.4%**
Natural Gas	1	3.4%

APRIL	**18**	**5.0%**
Cause	**# of Burns**	**% By Month**
Fire	**6**	**33.3%**
Camp or Bon Fires	4	22.2%
Camp Fires	*2*	*11.1%*
Cigarette	*1*	*5.6%*
Fire Control	*1*	*5.6%*
House Fires	2	11.1%
Machine	*1*	*5.6%*
Smoking	*1*	*5.6%*
Scalds	**6**	**33.3%**
Hot Beverages	3	16.7%
Cooking Liquids	3	16.7%
Flame	**5**	**27.8%**
Ignitable Liquids	2	11.1%
Gasoline	*1*	*5.6%*
Ignitable Liquids	*1*	*5.6%*
Flammables	1	5.6%
Smoking	1	5.6%
Woodstove	1	5.6%
Domestic Violence	**1**	**5.6%**
Cooking Liquids	1	5.6%

MAY	**36**	**10.1%**
Cause	**# of Burns**	**% By Month**
Scalds	**17**	**47.2%**
Cooking	10	27.8%
Cooking Liquids	*5*	*13.9%*
Hot Food	*5*	*13.9%*
Hot Beverages	4	11.1%
Hot Tap Water	2	5.6%
Clothes Iron	1	2.8%
Fire	**8**	**22.2%**
Camp or Bon Fires	3	8.3%
Bon Fires	*2*	*5.6%*
Camp Fire	*1*	*2.8%*
House Fires	3	8.3%
Unspecified	*2*	*5.6%*
Flammables	*1*	*2.8%*
Brush Fires	1	2.8%
Gasoline	*1*	*2.8%*
MV Fires	1	2.8%
Torch	*1*	*2.8%*
Flame	**5**	**13.9%**
Cooking	3	8.3%
Barbeque (Gas)	*2*	*5.6%*
Cooking Liquids	*1*	*2.8%*
Aerosol	1	2.8%
Ignitable Liquids	1	2.8%
Other	**3**	**8.3%**
Chemical	2	5.6%
Sunburn	1	2.8%
Contact	**2**	**5.6%**
Heater	1	2.8%
Stove	1	2.8%
Electrical	**1**	**2.8%**
Electrical	1	2.8%

JUNE	**36**	**10.1%**
Cause	**# of Burns**	**% By Month**
Scalds	**19**	**52.8%**
Cooking	10	27.8%
Cooking Liquids	*8*	*22.2%*
Hot Food	*2*	*5.6%*
Hot Beverages	4	11.1%
Steam	2	5.6%
Boiler	1	2.8%
Candle	1	2.8%
Car Radiator	3	7.5%
Explosion	**6**	**16.7%**
Gasoline	3	8.3%
Barbeque (Gas)	1	2.8%
Electrical	1	2.8%
Self-immolation	1	2.8%
Fire	**5**	**13.9%**
Camp or Bon Fires	4	11.1%
Bon Fire	*1*	*2.8%*
Camp Fire	*1*	*2.8%*
Clothes	*1*	*2.8%*
Gasoline	*1*	*2.8%*
MV Fires	1	2.8%
Self-immolation	*1*	*2.8%*
Flame	**3**	**8.6%**
Gasoline	2	5.6%
Candle/Clothes	1	2.8%
Other	**2**	**5.6%**
Bomb Making	1	2.8%
Chemical	1	2.8%
Contact	**1**	**2.8%**
Asphalt	1	2.8%

3 Deaths

JULY	**44**	**12.3%**
Cause	**# of Burns**	**% By Month**
Scalds	**15**	**34.1%**
Cooking Liquids	9	20.5%
Car Radiator	3	6.8%
Hot Tap Water	2	4.5%
Hot Beverages	1	2.3%
Explosion	**10**	**22.7%**
Fireworks	6	13.6%
Engine	1	2.3%
Ignitable Liquids	1	2.3%
Natural Gas	1	2.3%
Stove	1	2.3%
Contact	**6**	**13.6%**
Cooking	2	4.5%
Barbeque (Gas)	*2*	*2.3%*
Unspecified	*1*	*2.3%*
Car Part	1	2.3%
Fireworks	1	2.3%
Machine	1	2.3%
Motorcycle	1	2.3%
Flame	**5**	**22.7%**
Barbeque (Gas)	2	4.5%
Fireworks	1	2.3%
Gasoline	1	2.3%
Welding	1	2.3%
Fire	**4**	**9.1%**
Camp or Bon Fires	3	6.8%
Camp Fire	*2*	*4.5%*
Gasoline	*1*	*2.3%*
Motor Vehicle Fires	1	2.3%
Gasoline	*1*	*2.3%*
Other	**3**	**6.8%**
Sunburn	2	4.5%
Chemical	1	2.3%
Not Reported	**1**	**2.3%**
Unknown	1	2.3%

AUGUST	**32**	**8.9%**
Cause	**# of Burns**	**% By Month**
Scalds	**13**	**41.9%**
Cooking	5	15.6%
Cooking Liquids	*4*	*12.5%*
Hot Food	*4*	*3.1%*
Hot Beverages	3	9.4**%**
Assault	1	3.1%
Machine	1	3.1%
Steam	1	3.1%
Flame	**8**	**25.0%**
Assault	1	3.1%
Camp Fire	1	3.1%
Fire Control	1	3.1%
Firefighter	1	3.1%
Self-immolation	1	3.1%
Water Craft	1	3.1%
Water Heater	1	3.1%
Unknown	1	3.1%
Fire	**6**	**18.8%**
Camp or Bonfires	3	22.2%
Camp Fire	*1*	*3.1%*
Chemical	*1*	*3.1%*
Gasoline	*1*	*3.1%*
House Fires	2	6.3%
Domestic Violence	*1*	*3.1%*
Propane	*1*	*3.1%*
Motor Vehicle Fires	1	3.1%
Car Fire	*1*	*3.1%*
Explosion	**3**	**9.7%**
Propane	2	6.3%
Natural Gas	1	3.1%
Contact	**2**	**6.3%**
Clothes Iron	1	3.1%
Wax	1	3.1%

SEPTEMBER	**28**	**7.8%**
Cause	**# of Burns**	**% By Month**
Scalds	**14**	**50.0%**
Cooking	7	25.0%
Cooking Liquids	*6*	*21.4%*
Hot Food	*2*	*7.1%*
Hot Beverages	5	17.9%
Hot Tap Water	2	7.1%
Fire	**6**	**21.4%**
House Fires	2	7.1%
Unspecified	*2*	*7.1%*
Motor Vehicle Fires	2	7.1%
Airplane Crash	*2*	*7.1%*
Camp or Bon Fires	2	7.1%
Aerosol	*1*	*3.6%*
Appliance	*1*	*3.6%*
Flame	**5**	**17.9%**
Gasoline	2	7.1%
Lighter	2	7.1%
Smoking on Oxygen	1	3.6%
Contact	**2**	**7.1%**
Barbeque	1	3.6%
Embers	1	3.6%
Other	**1**	**3.6%**
Chemical	1	3.6%

1 Death

OCTOBER	**36**	**10.1%**
Cause	**# of Burns**	**% By Month**
Scalds	**12**	**33.3%**
Cooking	7	19.4%
Cooking Liquids	*6*	*16.7%*
Hot Food	*1*	*2.8%*
Hot Beverages	4	11.1%
Steam	1	2.8%
Flame	**7**	**19.4%**
Cooking Liquids	2	5.6%
Ignitable Liquids	2	5.6%
Gasoline	*1*	*2.8%*
Ignitable Liquids	*1*	*2.8%*
Car Part	1	3.0%
Ignitables	1	2.8%
Self-immolation	1	2.8%
Explosion	**6**	**16.7%**
Ignitable	3	8.3%
Alcohol	1	2.8%
Natural Gas	1	2.8%
Self-immolation	1	2.8%
Fire	**5**	**13.9%**
Camp or Bon Fires	3	8.3%
Gasoline	*2*	*5.6%*
Aerosol	*1*	*2.8%*
House Fires	2	5.6%
Child w/Matches	*1*	*2.8%*
Unspecified	*1*	*2.8%*
Other	**5**	**13.9%**
Chemical	4	11.1%
Sunburn	1	2.8%
Contact	**1**	**2.8%**
Car Part	1	2.8%

3 Deaths

NOVEMBER	**21**	**5.9%**
Cause	**# of Burns**	**% By Month**
Scalds	**12**	**57.1%**
Hot Beverages	7	33.3%
Cooking Liquids	3	14.3%
Assault	1	4.8%
Hot Tap Water	1	4.8%
Fire	**4**	**19.0%**
House Fires	3	14.3%
Firefighter	*1*	*4.8%*
Heater/Central	*1*	*4.8%*
Welding	*1*	*4.8%*
Motor Vehicle Fires	1	4.8%
MV Accident	*1*	*4.8%*
Explosion	**2**	**9.5%**
Natural Gas	2	9.5%
Contact	**2**	**9.5%**
Curling Iron	1	4.8%
Woodstove	1	4.8%
Flame	**1**	**4.8%**
Aerosol	1	4.8%

1 Death

DECEMBER	**27**	**7.5%**
Cause	**# of Burns**	**% By Month**
Scalds	**14**	**51.9%**
Cooking	8	29.6%
Cooking Liquids	*6*	*22.2%*
Hot Food	*2*	*7.4%*
Hot Beverages	3	11.1%
Assault	1	3.7%
Hot Tap Water	1	3.7%
Radiator	1	3.7%
Flame	**7**	**25.9%**
Candle/Clothes	2	7.4%
Heat Lamp	1	3.7%
Ignitable Liquids	1	3.7%
Match	1	3.7%
Propane	1	3.7%
Stove	1	3.7%
Other	**2**	**7.4%**
Chemical	2	7.4%
Contact	**2**	**7.4%**
Stove	1	3.7%
Wax	1	3.7%
Fire	**2**	**7.4%**
Motor Vehicle Fires	2	7.4%
MV Accidents	*2*	*7.4%*

Burn Injuries by Victim's Community

County	# of Burns
Barnstable	**10**
Barnstable	1
Chatham	1
Dennis	1
Falmouth	2
Harwich	1
Mashpee	1
Sandwich	2
Yarmouth	1
Berkshire	**2**
Becket	1
North Adams	1
Bristol	**18**
Attleboro	3
Dartmouth	1
Dighton	1
Fall River	3
New Bedford	3
North Attleboro	1
Rehoboth	1
Swansea	1
Taunton	4
Essex	**34**
Andover	1
Gloucester	2
Haverhill	8
Lawrence	8
Lynn	5
Marblehead	1
Merrimac	1
Methuen	2
Newbury	1
North Andove	1
Peabody	2
Saugus	1
Swampscott	1
Franklin	**2**
Greenfield	1
Northfield	1

County	# of Burns
Hampden	**25**
Chicopee	1
Holyoke	3
Ludlow	2
Springfield	16
Westfield	3
Hampshire	**3**
Easthampton	1
Northampton	1
Southampton	1
Middlesex	**50**
Acton	1
Arlington	3
Burlington	1
Cambridge	2
Carlisle	1
Dracut	1
Everett	4
Framingham	4
Lexington	1
Lowell	9
Malden	3
Marlborough	2
Medford	2
Natick	2
Newton	1
Somerville	4
Stow	1
Tewksbury	1
Waltham	1
Wayland	1
Woburn	1
Nantucket	**3**
Nantucket	3
Norfolk	**22**
Avon	2
Braintree	1
Brookline	1
Dedham	1
Dover	1

County	# of Burns
Norfolk (con't)	
Franklin	1
Medfield	1
Millis	1
Milton	1
Norwood	1
Quincy	1
Randolph	2
Sharon	1
Walpole	3
Weymouth	3
Wrentham	1
Plymouth	**37**
Abington	2
Bridgewater	1
Brockton	12
East Bridgewater	1
Hanover	3
Hingham	2
Kingston	2
Marshfield	2
Middleborough	3
Norwell	1
Pembroke	2
Rochester	2
Rockland	1
Scituate	3

County	# of Burns
Suffolk	**47**
Boston	39
Chelsea	3
Revere	4
Winthrop	1
Worcester	**24**
Charlton	2
Clinton	1
Gardner	1
Grafton	1
Leominster	3
Millville	1
Oxford	1
Royalston	1
Southborough	2
Templeton	1
Uxbridge	1
Webster	1
Westborough	1
Winchendon	1
Worcester	6
Out of State	**81**

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The Commonwealth of Massachusetts
Department of Fire Services
Division of Fire Safety

Post Office Box 1025 – Stow, Massachusetts 01775

TO: Massachusetts Burn Injury Reporting System

FROM: _____

Name of Hospital and Attending Physician

RE: Burn Injury Extending to 5% or More of Body Surface Area

To fax burn injury reports, dial (978) 567-3199.

When you fax the burn report, you satisfy both the telephone and written reporting notification requirements for the State Fire Marshal. You still need to notify the police chief in the community where the burn occurred.

-OR-

Call 1-800-475-3443 anytime to report burns over the phone AND mail this sheet to the above address.

Victim's Name _____
Last *First* *M.*

Victim's Home Address _____
Street Address (No PO Boxes) **City / Town** **State** **Zip**

Victim's Age _____ Gender _____ Local Police Department Notified? ❑ Yes ❑ No

Was the Victim at Work When Burned? ❑ Yes ❑ No

Date of Burn _____ If Yes: Employer _____

Address Where Burn Occurred _____
Street Address (No PO Boxes) **City / Town** **State** **Zip**

Part of Body Injured or %BSA: _____

Cause of Burn (e.g. spilled coffee, tap water, clothing ignited while cooking): _____

_____

Type of Burn: *(check one)*

☐ Flame ☐ Scald ☐ Domestic Violence

☐ Fire ☐ Electrical ☐ Other
☐ Sunburn
☐ Chemical

☐ Explosion ☐ Contact

Severity: *(check one)*

☐ Minor ☐ Life-threatening

☐ Moderate ☐ Dead

☐ Severe

If you have any questions about the Massachusetts Burn Injury Reporting System, call the Fire Data and Public Education Unit at (978) 567-3380 or leave a message at 1-800-475-3443.