Massachusetts Burn Injury Reporting System

2017 Annual Report

Department of Fire Services
Division of Fire Safety

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Massachusetts Burn Injury Reporting System

2017 Annual Report

32 Years

Helping Prevent Burn Injuries

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Executive Summary

The Massachusetts Burn Injury Reporting System (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 (MDPH). The "Burn Registry" also provides valuable data on the nature of the burn problem in the Commonwealth. In 2017, the 32nd full year of the Massachusetts Burn Injury Reporting System (M-BIRS), 35 acute care hospitals and other health care facilities reported 359 victims of burns. Thirty-seven (37) of these 359 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 led 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 nightclub fire at The Station 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 activities cause injuries, 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 Peter J. Ostroskey invites fire, health and medical professionals, classroom and community educators, day care teachers and elder service workers to join with him in making the citizens of 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. In 2017, 19 burn injuries were referred to OSHA and one case to the Department of Labor for public sector cases that met their criteria.

Scalds Caused Half of Reported Burn Injuries
Scalds have been the leading cause of burn injuries for the past 32 years. In 2017, scalds caused 178, or 50%, of the burn injuries reported to M-BIRS. Cooking liquids caused the majority of scald burns. Hot beverages, hot food, and hot tap water also caused significant numbers of scald burns.

Keep Hot Liquids Away from Babies and Preschoolers
In 2017, young children were the most frequent victims of scald burns. Thirty-eight percent (38%) of the 178 scald victims were under five years old, and most were less than one year. Children under five years of age were almost seven times more likely to be scalded than any other age group. Hot beverages posed the greatest risk to these young children; parents and caregivers must remember that it is dangerous to drink hot beverages while holding a baby. Consider using a travel mug that can be locked to prevent injury.

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. The Cooking Fire Safety Campaign has two key messages: *Stand by Your Pan* and *Put a Lid On It*.

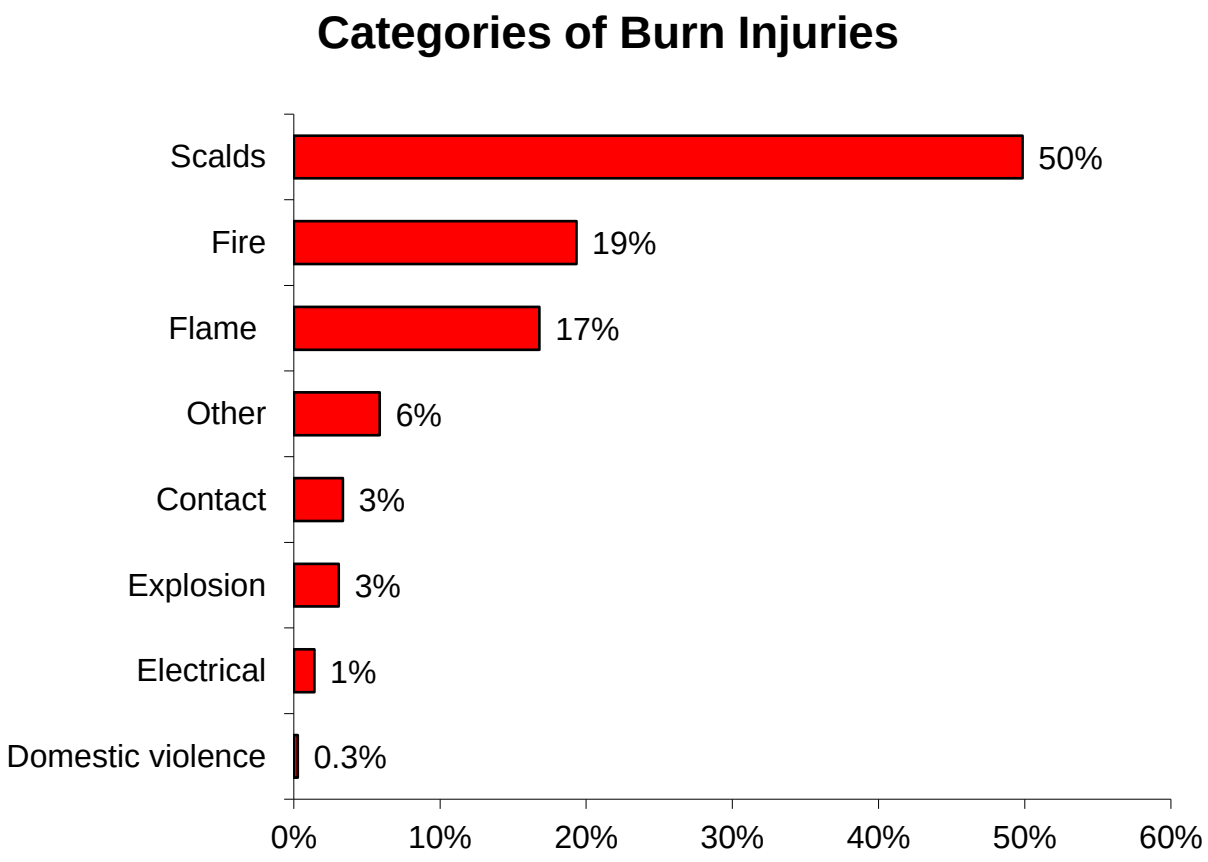
Burns from Fires Cause the 2nd Most Burn Injuries
Burn injuries from fires were the second highest cause of burn injuries in 2017, accounting for 19%. Camp or bon fires caused 46% of all burn injuries from fires. Flame burns caused 17% of the 2017 burn injuries. Ignitable liquids caused 25% of these flame burns in 2017.

Over 2/3 of Burns Occurred in the Victim's Home
Of the 359 burn injuries reported to M-BIRS in 2017, 244, or 68%, occurred in the victim's home or surrounding yard. Over half, or 56% of these burn injuries were scalds. Four (4), or 2%, of the home-related burn injuries resulted in the victim succumbing to his or her injuries.

Causes of Burn Injuries

In this report, we look at burn injuries in two different ways. In the first section, we look at the type of incident that caused the burn. Was the burn caused by a fire, a flame[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.

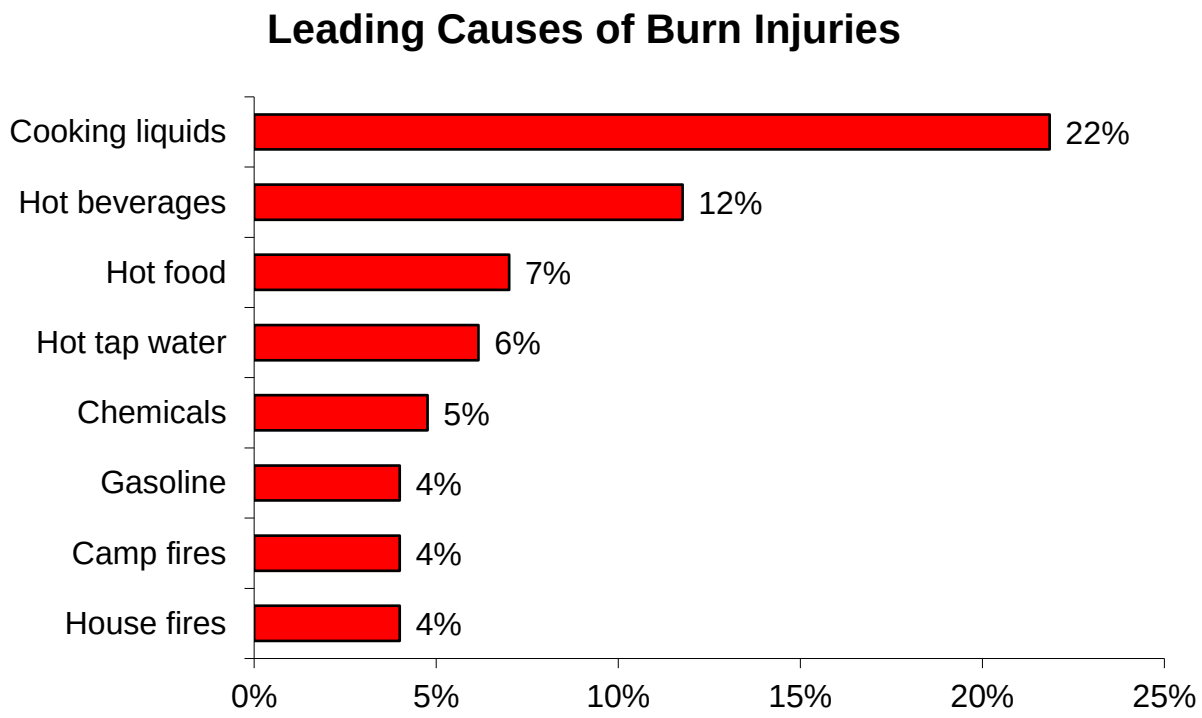
Half of All Burn Victims Never Come Near a Flame
Scalds from cooking liquids, hot liquids, tap water, food and steam caused 50% of the 359 burn injuries reported in 2017. Nineteen percent (19%) were caused by burns from fires. Flame burns caused 17% of the burns.



[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. Twenty-two percent (22%) of the 359 burn injuries reported in 2017 were scalds from cooking liquids. Twelve percent (12%) of the burns were caused by hot beverages. Hot food caused 7% of total burns. For more information, please refer to the table *Specific Causes of Burn Injuries* in the Appendix.



Burn Injuries Caused by Scalds

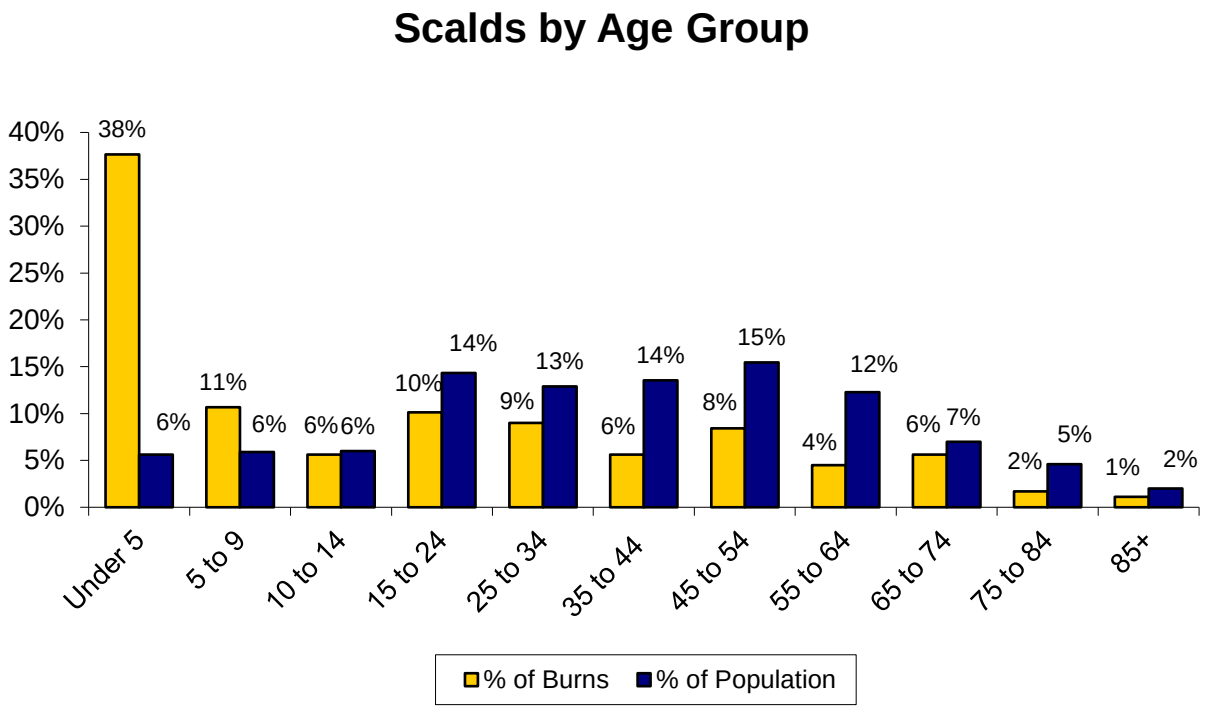
Scalds Have Been the Leading Cause of Burn Injuries Every Year
Scalds have been the leading cause of burn injuries every year since the inception of M-BIRS. The percentage of total burns has ranged from a high of 50% this year and in 1998 to a low of 35% in 2005. The 10-year average from 2008 through 2017 is 45% of total annual reported burns.

Scalds Caused Half of All Burns
One hundred and seventy-eight (178), or 50%, of the 359 reported burns were scalds. Thirteen (13), or 7%, of the 178 scalds occurred while the victim was working. Ninety-nine (99), or 56%, of the 178 scald victims were male and 79, or 44%, were female.

Gender	# of Burns	% of Scalds
Female	79	44%
Male	99	56%
Total	178	100%

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 comprise 6% of the Massachusetts population. However that same age group accounted for 38% of all scald burns in 2017. Forty-seven (47), or 26%, were infants one year old or younger. Children aged five to nine accounted for 11% of scald burn injuries.



When the gold shaded bar of the graph representing the percent of scald burns is higher than the blue shaded bar representing percent of population, higher than expected risk of this type of injury exists. Pre-schoolers were scalded at a disproportionate rate; they were 6.7 more likely to suffer a scald burn and children five to nine were 1.8 times as likely to suffer from a scald burn.

Cooking Liquids Caused 40% of All Scald Burns

Scald burns from cooking liquids were the leading cause of scald burns, accounting for 40% of all scald burns in 2017. Scalds from hot beverages were the second leading cause of scald burns, causing 24% of the 178 scald burns.

Description	# of Burns	% of Scalds	% of All Burns
Cooking Liquids	72	40%	20.1%
Hot Beverages	42	24%	11.7%
Hot Food	25	14%	7.0%
Hot Tap Water	22	12%	6.1%
Car Radiator	3	2%	0.8%
Pressure Cooker	3	2%	0.8%
Machine	2	1%	0.6%
Oil	2	1%	0.6%
Steam	2	1%	0.6%
Car Part	1	1%	0.3%
Clothes Iron	1	1%	0.3%
Cooking	1	1%	0.3%
Heater	1	1%	0.3%
Hot Water Bottle	1	1%	0.3%
Total	178	100%	49.6%

From the beginning of M-BIRS in 1984, hot beverages has been the leading cause of scalds. However, this was not the case in 1999 or from 2005 through 2008[2]. Since 2010 cooking liquids has been the leading cause of scalds.

29-Year Old Scalded in Bath
On April 4, 2017, a 29-year old woman was scalded by hot water in a bath. She was burned over 20% of her body surface area.

45-Year Old Woman Receives Scald from Pressure Cooker
On January 8, 2017, a 45-year old woman received burns to 13% of her body surface area when she was scalded by hot water and steam from a pressure cooker.

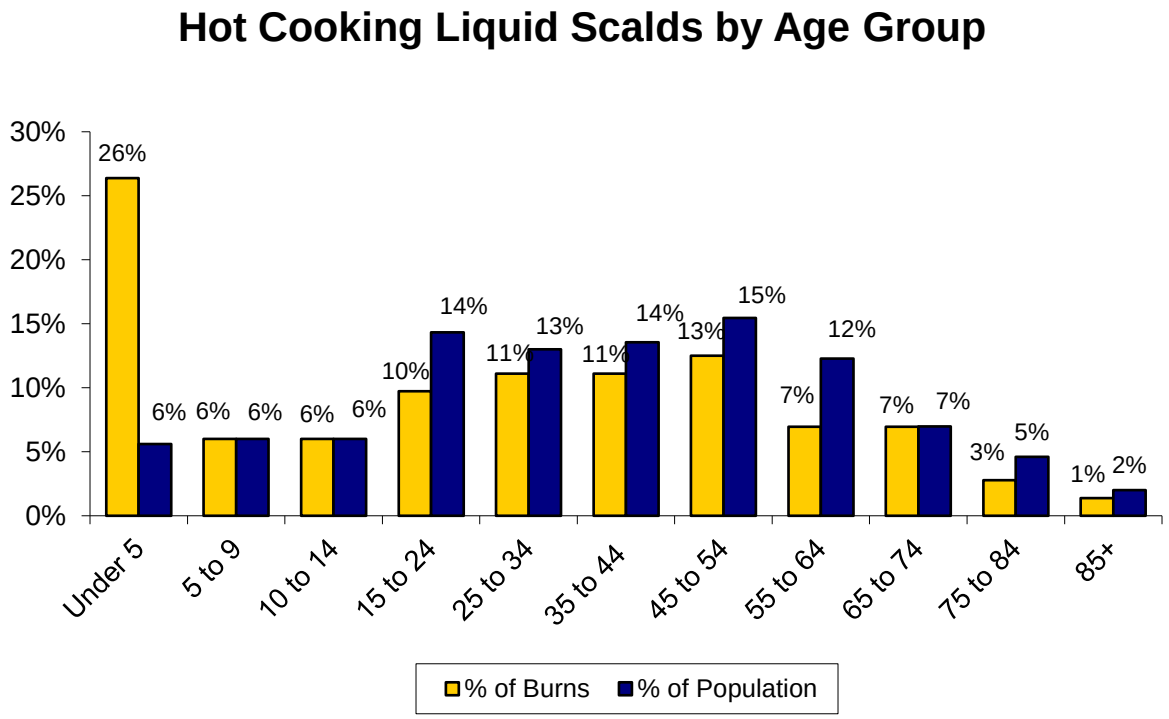
Hot Cooking Liquids

Hot Cooking Liquids Caused 40% of Scalds, 20% 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 72, or 40%, of the 178 scald burns and 20% of the 359 total burn injuries reported in 2017. Thirty-nine percent (39%) of the victims were female and 61% were male. Hot cooking liquids scalded eight people while they were at work, seven victims were men and one was a woman.

26% 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 2017, 26% of the cooking liquid scald victims were under five years old. They

[3]In 1999, and from 2005 – 2008 and 2010 – 2017, cooking liquids were the leading cause of scald burns. From 1984 – 1998, 2000 – 2004 and in 2009, hot beverage scalds were the leading cause.

were 4.7 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.



1-Year Old Boy Scalded by Cooking Liquids at Home
On February 19, 2017, a 1-year old boy was scalded when his mother accidentally spilled a pot of boiling water on him. He received burns to approximately 22% of his body surface area.

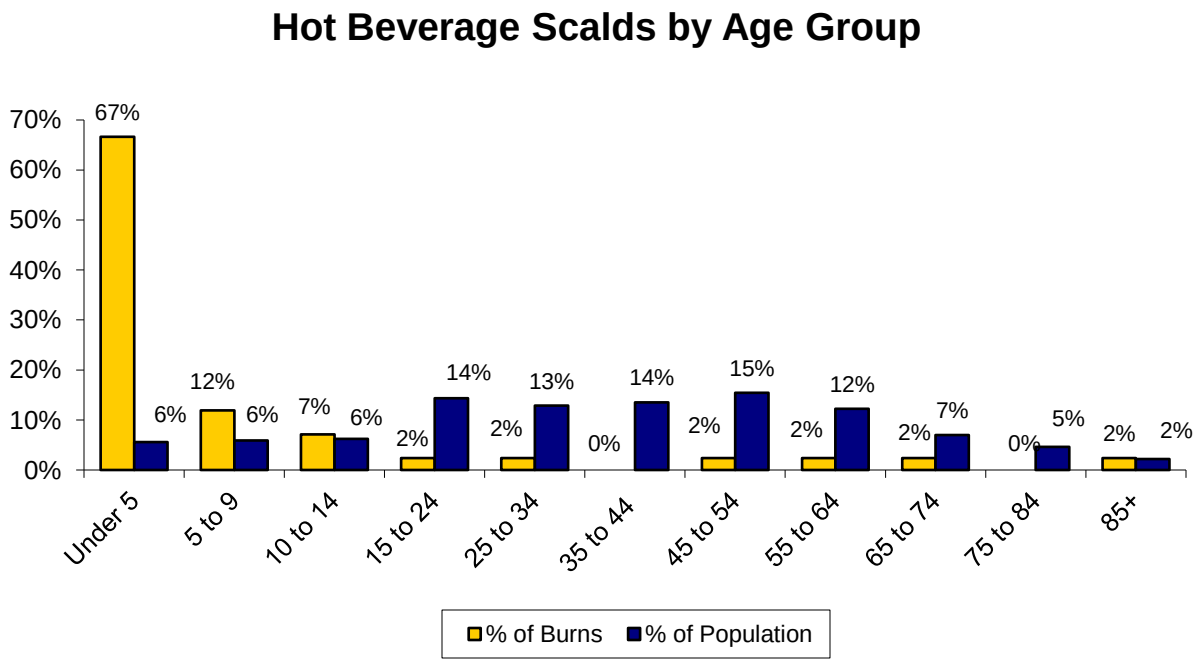
86-Year Old Woman Scalded by Cooking Liquids
On August 9, 2017, an 86-year old woman was scalded at home when she tripped while carrying a pot of boiling water. She received burns to approximately 20% of her body surface area.

Hot Beverages

Hot Beverages Caused 24% of All Scalds
Forty-two (42), or 24%, of the 178 scald burns were caused by hot beverages. They accounted for 12% of the 359 total burn injuries.

Fifty-two percent (52%) of the hot beverage scald victims were male and 48% were female. In 2017, there were no reported hot beverage scalds while working.

67% of the Hot Beverage Scald Victims Were Under 5
Twenty-eight (28), or 67%, of all hot beverage scald victims were under five years old.



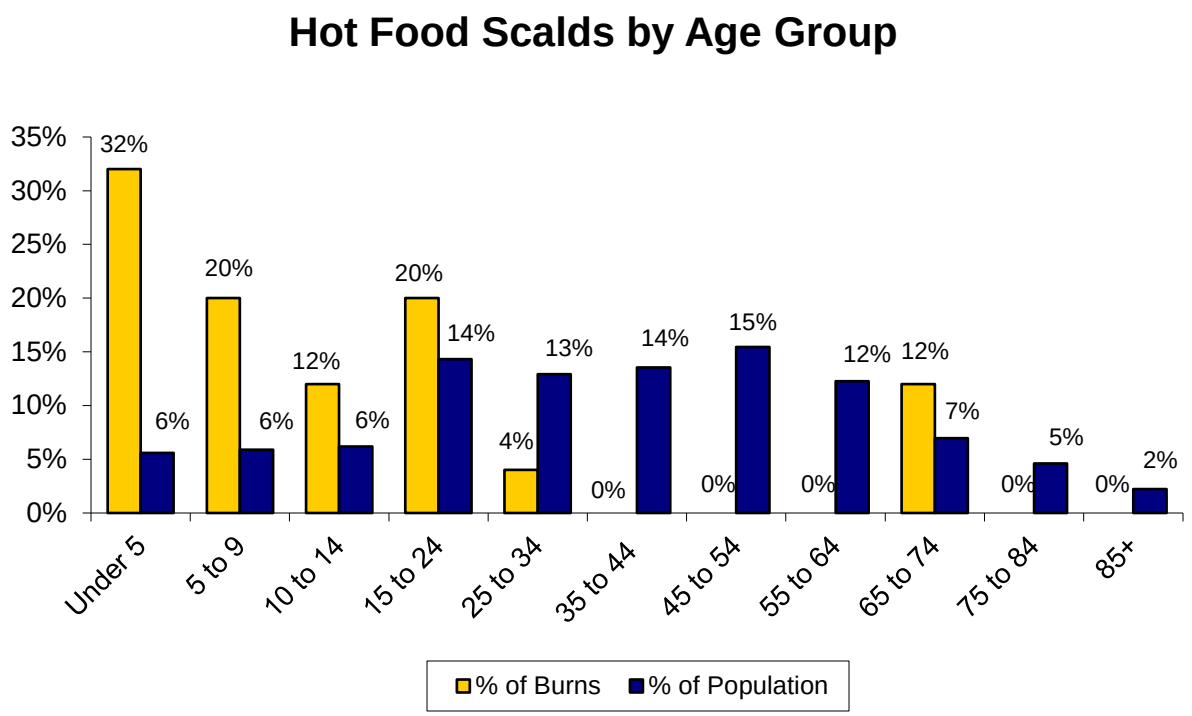
9-Month Old Scalded by Beverage
On May 27, 2017, a 9-month old girl grabbed the cup of tea her grandfather was carrying and spilled it on herself. She received scald burns to 12% of her body surface area.

2-Year Old Boy Scalded by Beverage
On August 28, 2017, a 2-year old boy was burned when he pulled a hot pot of coffee onto himself. He received scald burns to approximately 18% of his body surface area.

Hot Food

Hot Food Caused 14% of Scalds, 7% of All Burns
Hot food caused 25, or 14%, of the 178 scald burns and 7% of the 359 total burn injuries reported in 2017. Fifty-two percent (52%) of the victims were female and 48% were male. There were two work-related hot food scalds reported in 2017, one was a man and the other a woman.

52% of Hot Food Scald Victims Were Under 10
Of the 25 reported scald victims from hot food in 2017, 13, or 52%, were under the age of ten. Eight (8), or 32%, were under five years old and five victims, or 20%, were between five and nine.



2-Year Old Girl Received Scald Burns from Food
On February 11, 2017, a 2-year old girl received scald burns to 15% of her body surface area when hot soup was spilled on her.

68-Year Old Man Suffers Scald Burns from Food
On July 22, 2017, a 68-year old man suffered scald burns to 15% of his body surface area when he accidentally spilled hot chicken soup on himself.

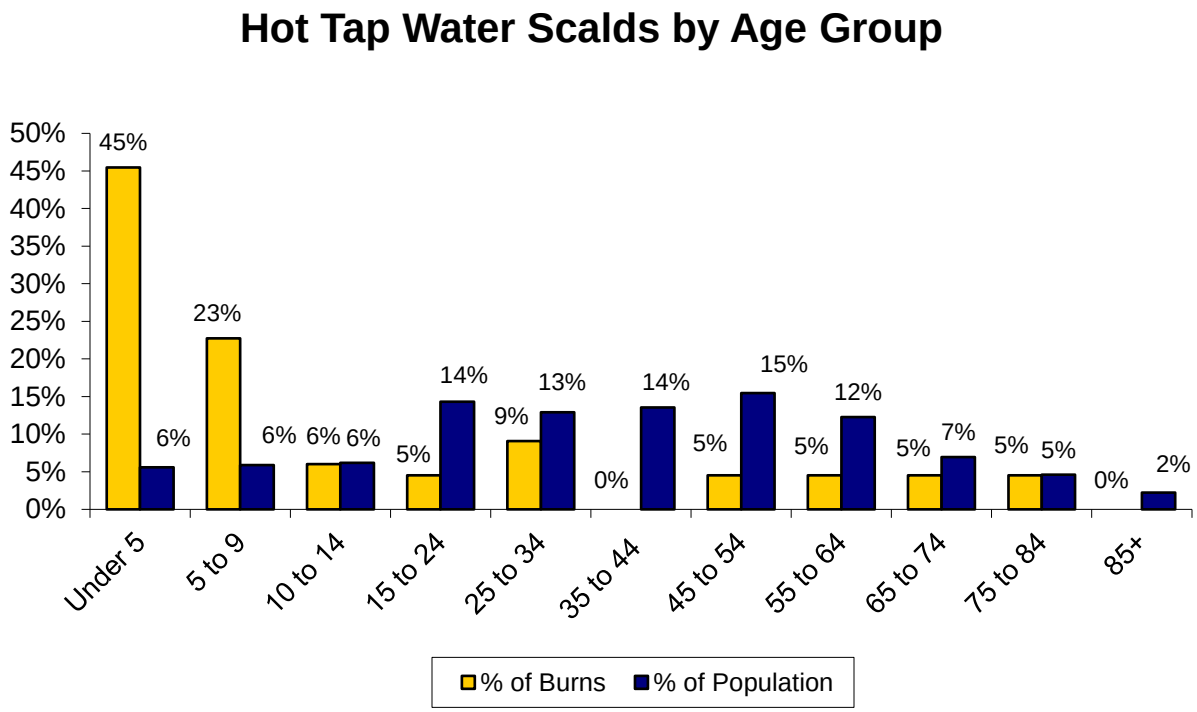
Hot Tap Water

Hot Tap Water Caused 12% of All Scalds & 6% of All Burns
Excessively hot tap water caused 22, or 12%, of the 178 scald burns and 6% of the 359 total burn injuries reported to M-BIRS in 2017. 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 130ºF 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 155ºF it takes only one second to sustain a third degree burn. At 130ºF it takes thirty seconds. At 120ºF it can take a full five minutes to sustain a third degree burn.[3] 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.

[3] Source: Knapp Burn Foundation

In 2017, 50% of the victims were male and 50% were female. There were no work-related hot tap water scald burns in 2017.

Over 1/2 of Tap Water Scald Victims Were Under the Age of 5
Forty-five percent (45%), or 10 of the 22 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.



10-Month Old Boy Scalded by Hot Tap Water
On June 2, 2017, a 10-month old boy received burns to 10% of his body surface area when he was scalded by hot tap water.

48-Year Old Scalded by Tap Water
On March 29, 2017, a 48-year old man was scalded on his left lower extremities by hot tap water during a shower.

Burn Injuries Caused by Fires

Fires Caused 19% of All Burn Injuries
Sixty-nine (69), or 19% of the 359 burn injuries reported in 2017 were caused by fires. This is a 17% increase from the 59 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 fire at The Station nightclub who were treated in Massachusetts.

Seventy-one percent (71%) of the 69 victims were male and 29% were female; and the gender of one victim was unknown. Analysis of data from the Massachusetts Fire Incident Reporting System (MFIRS) 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[4].

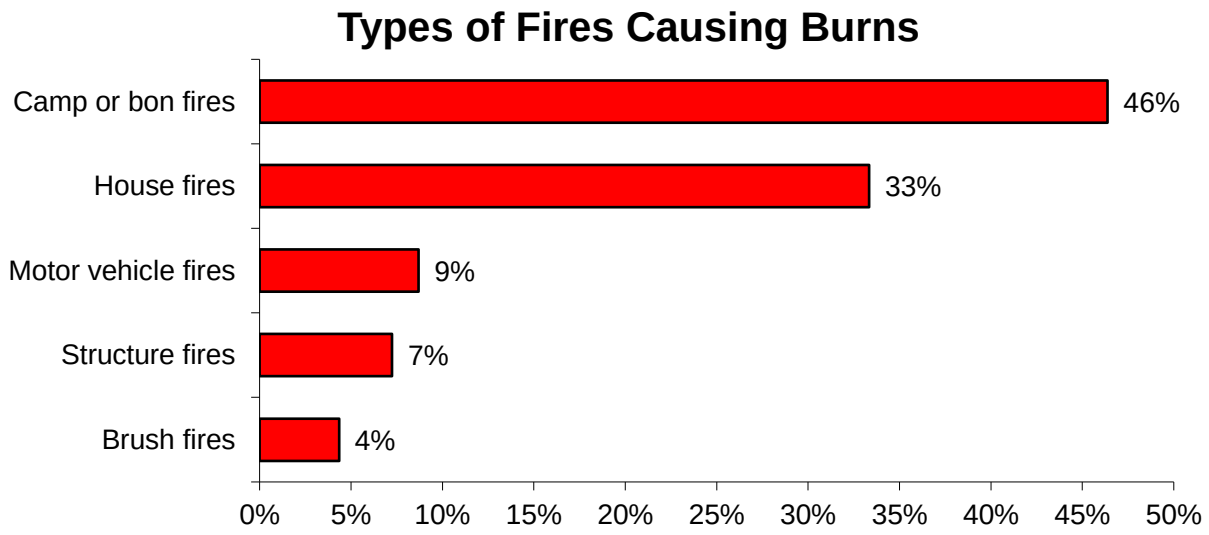
46% of Fire Burn Injuries Occurred at Camp or Bonfires

Camp or bonfires caused 32, or 46% of the 69 fire burn injuries reported in 2017. House fires caused 23, or 33%.

Fire Type	Description of Burn	# of Burns	% of Total
House fire	House fire	15	21%
House fire	Cooking	2	3%
House fire	Smoking	2	3%
House fire	Battery	1	1%
House fire	Candle	1	1%
House fire	Self-immolation	1	1%
House fire	Smoking on oxygen	1	1%
House fire		23	33%
Structure fire	Flammables	2	3%
Structure fire	Gasoline	1	1%
Structure fire	Tent fire	1	1%
Structure fire	Unknown	1	1%
Structure fire		5	7%
MV fire	Car fire	2	3%
MV fire	MVA	2	3%
MV fire	Boat fire	1	1%
MV fire	Gasoline	1	1%
MV fire		6	9%

Fire Type	Description of Burn	# of Burns	% of Total
Brush fire	Brush fire	1	1%
Brush fire	Gasoline	1	1%
Brush fire	Not reported	1	1%
Brush fire		3	4%
Camp or bon fire	Camp fire	15	22%
Camp or bon fire	Gasoline	5	7%
Camp or bon fire	Aerosol	3	4%
Camp or bon fire	Clothes	3	4%
Camp or bon fire	Ignitable liquids	3	4%
Camp or bon fire	Bonfire	2	3%
Camp or bon fire	Ignitable gas	1	1%
Camp or bon fire		32	46%
Total Fires		69	100%

[4] 2017 Annual Report of the Massachusetts Fire Incident Reporting System, MA Dept. of Fire Services, pg. 111.

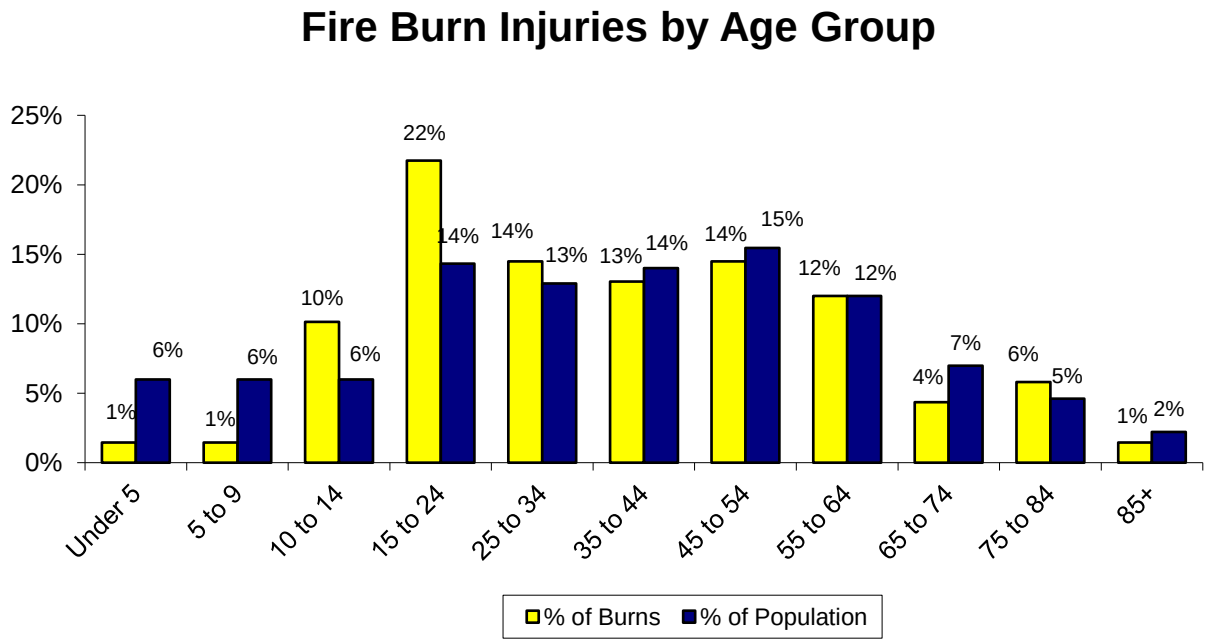


Young Adults Most Likely to Be Burned in Fires

Young adults between the ages of 15 and 24 years old and adults between the ages of 25 and 34 and 45 to 54-years old had the most reported burns from fires. These age groups had 15, 10 and 10 burn injuries respectively from fires.

Children between the ages of 10 and 14 were almost twice (1.7) as likely to be burned in fires. Young adults between 15 and 24 and adults between 25 and 34 were more likely (1.5 and 1.1 times) to be burned in a fire. Older adults between the ages of 75 and 84 were 1.3 times as likely to be burned in a fire in 2017.

Age	# of Burns	% of Burns	% of Population
Under 5	1	1%	6%
5 to 9	1	1%	6%
10 to 14	7	10%	6%
15 to 24	15	22%	14%
25 to 34	10	14%	13%
35 to 44	9	13%	14%
45 to 54	10	14%	15%
55 to 64	8	12%	12%
65 to 74	3	4%	7%
75 to 84	4	6%	5%
85+	1	1%	2%
Total Known	69	100%	100%



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 alarms and quick-response residential sprinklers could prevent many of the injuries caused by fires. Alarms 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.

4 Fire Deaths Recorded in M-BIRS

Four (4) of the victims that were reported to have received their burn injuries from fires died as a result of their injuries. All four of the victims were Massachusetts residents and died in residential fires.

50-Year Old Woman Killed in House Fire
On February 10, 2017, a 50-year old Fall River woman was killed in a house fire. She had burns to multiple parts of her body. She was transported to a local hospital where she succumbed to her injuries.

81-Year Old Man Dies in House Fire
On February 15, 2017, an 81-year old Malden man died in a house fire. He had burns to 70% of his body surface area. He was rescued by firefighters and transported to a local hospital where he succumbed to his injuries.

68-Year Old Man Dies in House Fire
On March 18, 2017, a 68-year old Winthrop man sustained life-threatening burn injuries to his entire body. He was transported to a local hospital where he succumbed to his injuries.

58-Year Old Man Killed in House Fire
On November 28, 2017, a 58-year old Fitchburg man was burned over 90% of his body surface area when he set his home on fire and stayed inside the home. He was transported to a local hospital where he succumbed to his injuries.

32-Year Old Man Injured in Boat Fire
On July 11, 2017, a 32-year old man from New York received burns to 20% of his body when he awoke to his boat on fire while he slept on it in Falmouth Harbor.

25-Year Old Man Injured in Outside Fire
On July 8, 2017, a 25-year old man was injured when he fell into his fire pit on the beach. He received severe burns to 40% of his body surface area.

12-Year Old Boy Injured in Outside Fire
On July 6, 2017, a 12-year old boy was injured when he threw an aerosol can into a camp fire. It exploded and he received burns to approximately 10% of his body surface area.

Flame Burn Injuries

Flames Caused 17% of Reported Burn Injuries
There were 60 reported flame burn injuries. These 60 injuries accounted for 17% of the 359 burn injuries reported in 2017. A burn is said to result from flame when the fire is confined to the victim or the victim's clothing. When a wider area burns, the cause of the injury is considered a fire. Burns caused by self-immolation, smoking in bed or burning clothing usually result from flames.

Seventy-three percent (73%) of the flame burn casualties were male and 27% were female; and one victim's gender was not reported. Five (5), or 8%, of the flame burns occurred during work-related activities; three of the victims were men and two were women.

Ignitable Liquids & Cooking Were the Leading Cause of Flame Burns

Ignitable liquids and cooking were tied as the leading cause of flame burn injuries in 2017. Both caused 15, or 25%, of all flame burns. Candles were the third leading cause of flame burns causing six, or 10%, of these burn injuries.

Description	# of Burns	% of Flame Burns
Ignitable liquids	15	25%
Ignitable liquids	8	13%
Gasoline	7	12%
Cooking	15	25%
Cooking liquids	5	8%
Barbeque	3	5%
Stove	4	7%
Barbeque gas	2	3%
Cooking	1	2%
Candle	6	10%
Smoking	5	8%
Cigarette	3	5%
Smoke oxygen	1	2%
Smoking	1	2%
Battery	2	3%
Propane	2	3%

Description	# of Burns	% of Flame Burns
Self-Immolation	2	3%
Heater	2	3%
Heater	1	2%
Woodstove	1	2%
Aerosol	1	2%
Alcohol	1	2%
Assault	1	2%
Child w/matches	1	2%
Clothes	1	2%
Engine	1	2%
Incinerator	1	2%
Machine	1	2%
Metal	1	2%
Oil	1	2%
Wax	1	2%
Total	60	100%

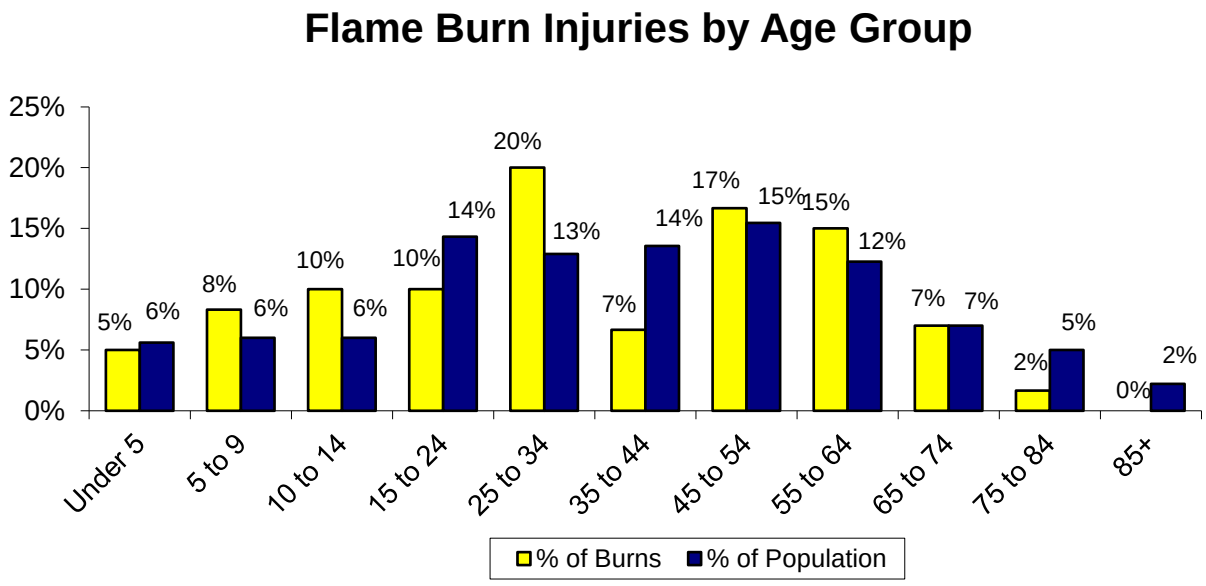
Adults 25 to 34 & 45 to 54 Had Most Flame Burns

Adults between the ages of 25 to 34 had 12 reported flame burn injuries and adults between 45 and 54 had 10 reported flame burn injuries.

Age	# of Burns	% of Burns	% of Population
Under 5	3	5%	6%
5 to 9	5	8%	6%
10 to 14	6	10%	6%
15 to 24	6	10%	14%
25 to 34	12	20%	13%
35 to 44	4	7%	14%
45 to 54	10	17%	15%
55 to 64	9	15%	12%
65 to 74	4	7%	7%
75 to 84	1	2%	5%
85+	0	0%	2%
Total	60	100%	100%

Children 5 to 14 Faced Higher Risk of Flame Burns

Five (5) groups were at a higher risk for burns from flames. Children between five and nine (1.4 times); children between 10 and 14 (1.7 times); adults between the ages of 25 to 34 (1.5 times); adults between 45 and 54 (1.1 times); and adults between the ages of 55 to 64 (1.2 times) were all more likely to receive a flame burn injury.



51-Year Old Man Burned by Incinerator at Work
On March 15, 2017, a 51-year old Springfield DPW worker received flame burn injuries to approximately 65% of his body surface area when he accidentally fell into an incinerator at work.

24-Year Old Man Burned in Suicide Attempt
On April 10, 2017, a 24-year old man received life-threatening burns when he doused himself in gasoline and ignited it. He received burns to 70% of his body surface area.

6-Year Old Girl's Clothes Caught Fire
On July 30, 2017, a 6-year old girl was severely burned when her clothes ignited from either a candle or the fireplace. She received flame burn injuries to half her body surface area.

81-Year Old Woman Burned by a Cooking Fire
On June 9, 2017, an 81-year old woman was burned when a cooking grease fire ignited her clothing. She received flame burn injuries to 17% of her body surface area.

Clothing Ignitions

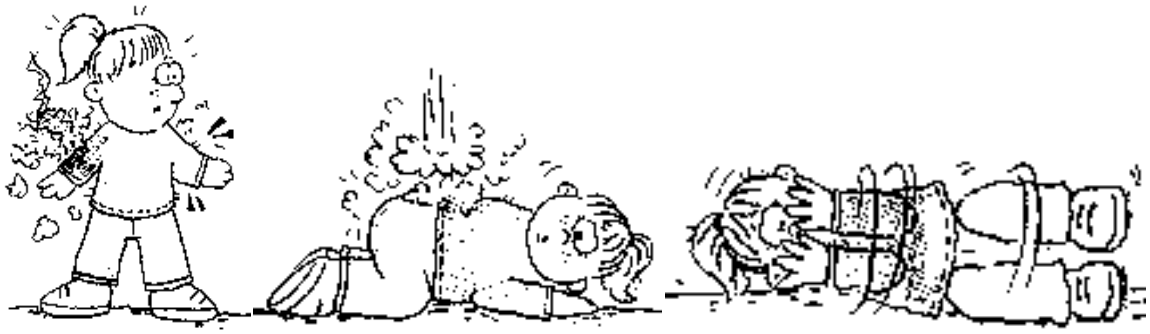
Clothing Ignitions Account for 10% of Flame Burn Injuries
There were six clothing ignitions resulting in flame burn injuries that accounted for 10% of all flame burn injuries. An unspecified clothing burn was the only primary cause. Candles were the leading cause of clothing ignitions with two reported in 2017.

Clothing Ignitions	# of Flame Burns	% of All Flame Burns
Candle	2	3%
Ignitable liquids	1	2%
Cooking	1	2%
Clothes Unspec.	1	2%
Metal	1	2%
Total	6	10%

64-Year Old Man Severely Burned by Clothing Ignition
On September 13, 2017, a 64-year old man was burned when a candle accidentally ignited his clothes. He received severe burns to approximately 20% of his body surface area.

ALWAYS REMEMBER TO:

STOP DROP COVER & ROLL



Other Types of Burn Injuries

***Other* Type Burns Cause 21 Injuries**
In 2017, there were 21 burn injuries that were characterized as *Other*. These 21 injuries caused 6% of all 2017 burn injuries. Seventeen (17) *Other* burns, or 81%, were attributed to exposure to chemicals. Sunburns caused the other four, or 19%, of *Other* burns.

Description	Total # of Burns	% of Other Burns
Chemical	17	81%
Sunburn	4	19%
Total Other Burns	21	100%

Thirteen (13), or 62%, of the 21 victims were male, and eight, or 38%, were female. Health care facilities reported that three, or 14% of the 21 *Other* burn victims were working when injured. Exposure to chemicals caused all three of the work-related injuries.

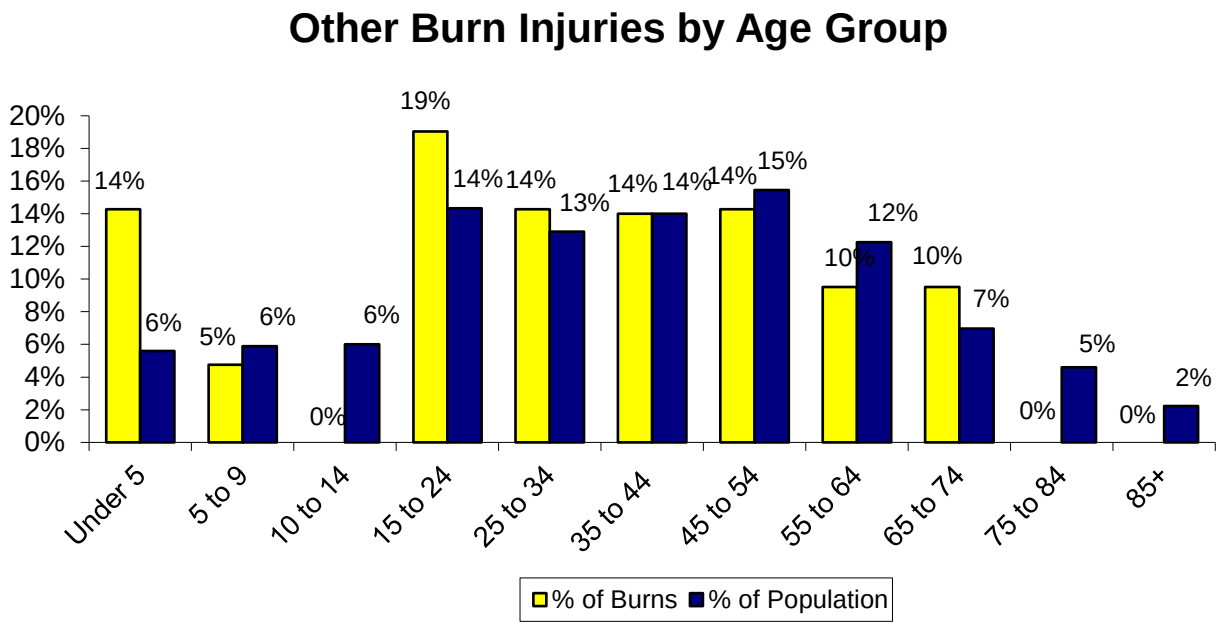
Adults Were the Majority of *Other* Burn Victims

In 2017 61% of the victims were between the ages of 15 and 54 years old.

Age	# of Burns	% of Burns	% of Population
Under 5	3	14%	6%
5 to 9	1	5%	7%
10 to 14	0	0%	7%
15 to 24	4	19%	13%
25 to 34	3	14%	15%
35 to 44	3	14%	17%
45 to 54	3	14%	14%
55 to 64	2	10%	9%
65 to 74	2	10%	7%
75 to 84	0	0%	5%
85+	0	0%	2%
Total	21	100%	100%

Young Adults & Older Adults at Higher Risk

In 2017 there were eight age groups that reported an *Other* type burn injury. Four (4) age groups were at a higher risk for these types of burns: Under five (2.5 times), 15 to 24 (1.3 times), 25 to 34 (1.1 times) and 65 to 74 (1.4 times).



52-Year Old Man Burned by a Chemical
On August 30, 2017 a 52-year old man received chemical burns to approximately 10% of his body surface area when he was accidentally sprayed by battery acid.

78-Year Old Woman Gets Chemical Burn
On April 12, 2017 a 78-year old woman suffered chemical burns to approximately 30% of her body surface area when she added hot water to bleach.

Contact Burn Injuries

Contact with Hot Objects Caused 3% of Reported Burn Injuries
Twelve (12), or 3%, of the 359 burn injuries reported in 2017 were caused by contact with hot objects. Eighty-three percent (83%) of the burn victims were male and 17% were female. There were two reports of contact burns that occurred at work in 2017. Both of the victims were male.

Cooking & Heating Were the Leading Cause of Contact Burns
Contact with cooking appliances and heating appliances each caused three, or 25%, of the contact burns in 2017. Clothes irons were the third leading cause of contact burn injuries with two.

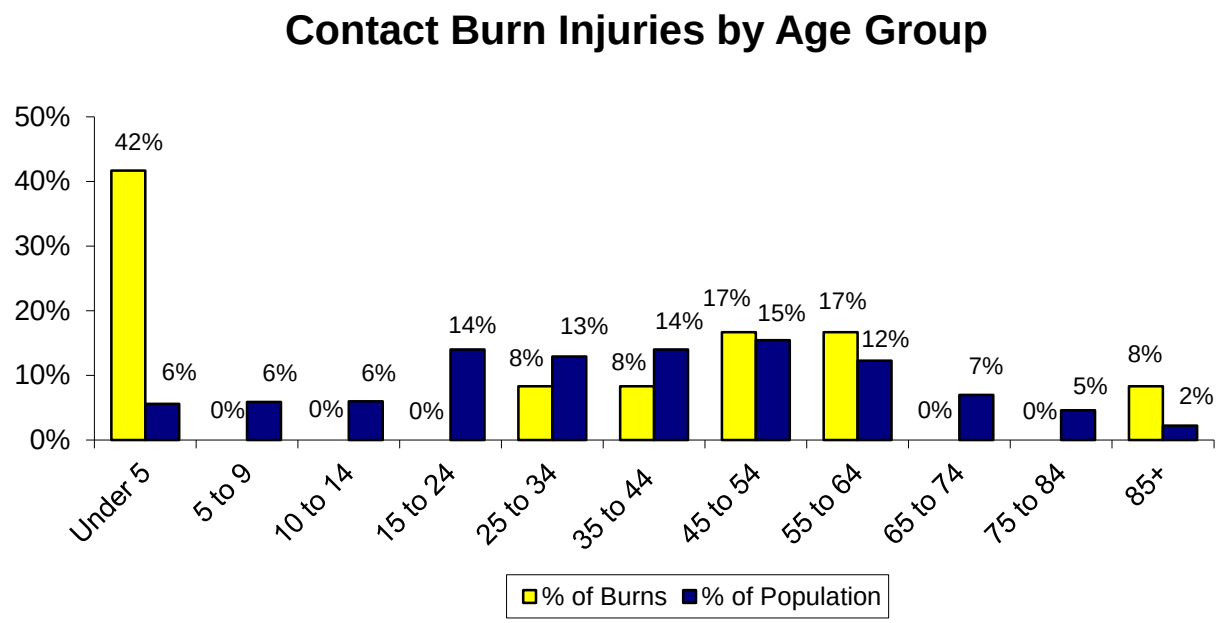
Description	# of Burns	% of Contact burns
Cooking	3	25%
Stove	2	17%
Hot plate	1	8%
Heating	3	25%
Radiator	2	17%
Space heater	1	8%

Description	# of Burns	% of Contact burns
Clothes iron	2	17%
Asphalt	1	8%
Embers	1	8%
Metal	1	8%
Motorcycle	1	8%
Total	12	100%

43% of Contact Burns Were to Children Under 5
Children under the age of five accounted for five, or 42%, of all contact burns.

Age	# of Burns	% of Burns	% of Population
Under 5	5	42%	6%
5 to 9	0	0%	6%
10 to 14	0	0%	6%
15 to 24	0	0%	14%
25 to 34	1	8%	13%
35 to 44	1	8%	14%
45 to 54	2	17%	15%
55 to 64	2	17%	12%
65 to 74	0	0%	7%
75 to 84	0	0%	5%
85+	1	8%	2%
Total	12	100%	100%

Pre-schoolers faced 7.4 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.



8-Month Old Burned by Clothes Iron
On September 18, 2017, an 8-month old boy was burned when he came into contact with a hot clothes iron. He received burns to approximately 18% of his body surface area.

39-Year Old Gets Contact Burns from Motorcycle
On July 1, 2017, a 39-year old man received contact burns to his right lower extremities when he his skin came into contact with the hot tailpipe of his motorcycle.

Burn Injuries Caused by Explosions

Explosions Caused 3% of Reported Burn Injuries
Eleven (11), or 3%, of the 359 burn injuries reported in 2017 were caused by explosions. Ninety-one percent (91%) of the explosion burn victims were male and 9% were female.

One (1) burn, or 9%, occurred during work-related activities. This victim was a man.

Propane and Cooking Were the Leading Cause of Explosion Burn Injuries
Propane caused five explosion related burn injuries and cooking equipment accounted for five of the explosion-related burn injuries in 2017.

Description	# of Burns	% of Explosion
Propane	5	45%
Cooking	5	45%
Barbeque Gas	4	36%
Stove	1	9%
Cigarette	1	9%
Total	11	100%

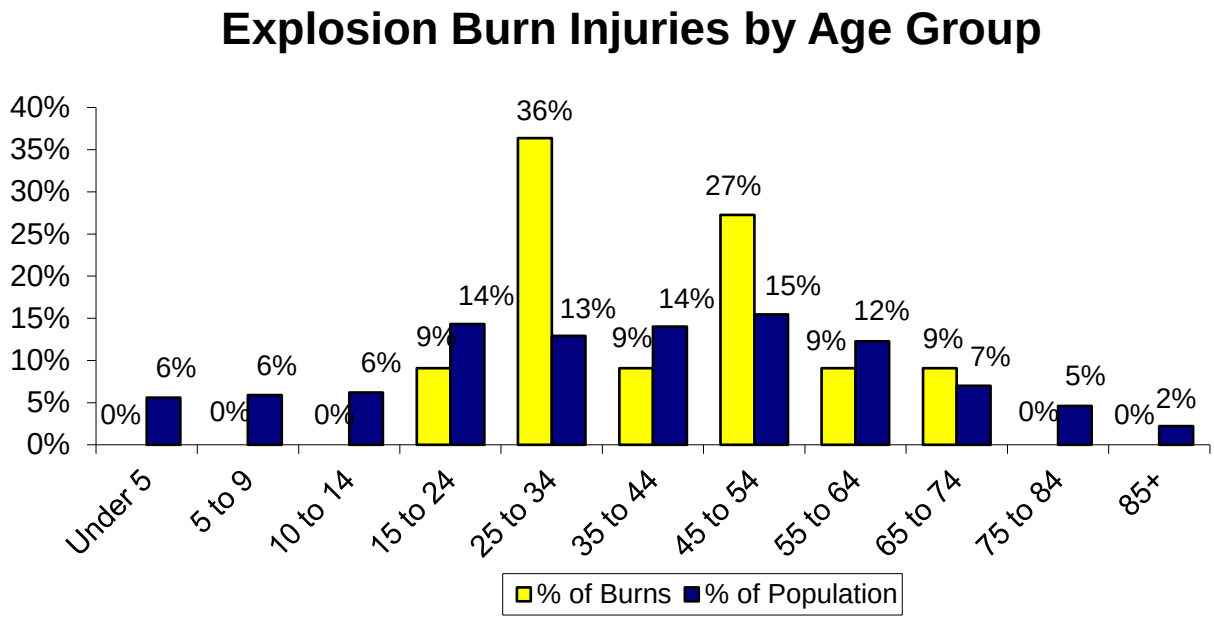
Adults Have Most Explosion Burns

Adults between the ages of 25 and 34 had the most explosion-related burn injuries with four and accounted for 36%. Adults between the ages of 45 and 54 had the second most burn injuries from explosions with three, accounting for 27%.

Age	# of Burns	% of Burns	% of Population
Under 5	0	0%	6%
5 to 9	0	0%	6%
10 to 14	0	0%	6%
15 to 24	1	9%	14%
25 to 34	4	36%	13%
35 to 44	1	9%	14%
45 to 54	3	27%	15%
55 to 64	1	9%	12%
65 to 74	1	9%	7%
75 to 84	0	0%	5%
85+	0	0%	2%
Total	11	100%	100%

Adults Face Greatest Risk of Explosion Burns

Adults between 25 and 34 (2.8 times), between the ages of 45 and 54 (1.8 times) and 65 and 74 (1.3 times) were more likely to be burned in an explosion in 2017.



26-Year Old Man Injured by Stove Explosion
On June 14, 2017, a 26-year old man was injured when his stove exploded. He received burns to 10% of his body surface area.

34-Year Old Man Injured in Explosion
On August 1, 2017, a 34-year old man was burned when he caused an explosion smoking while using naphtha. He received burns to approximately 22% of his body surface area.

35-Year Old Injured by Gas Grill
On July 4, 2017, a 35-year old man received burns to approximately 80% of his body surface area when the gas grill he was using exploded.

47-Year Old Man Injured by Propane Explosion
On August 27, 2017, a 47-year old man received burns to 65% of his body surface area when there was an explosion as he was changing the propane tanks at home.

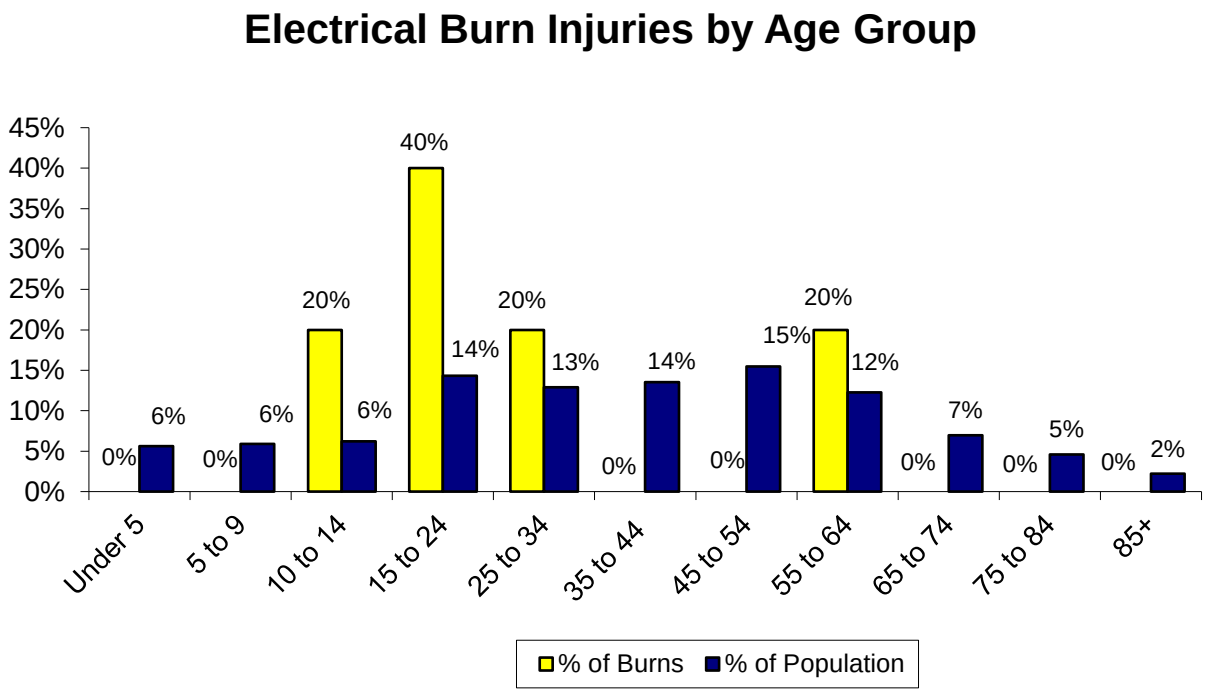
Electrical Burn Injuries

5 Electrical Incidents
Five (5), or 1%, of the 359 burn injuries reported in 2017 were caused by electrical accidents. Four (4) of the electrical burn victim were men and the other was a woman. One (1) of these burns occurred during work-related activities, and the victim was a man.

4 Electrical Burns Were Electrocutions
Four (4) of the 2017 electrical burns were caused by electrocution and one was caused by an unspecified electrical burn.

Description	# of Burns	% of Electrical Burns
Electrocution	4	80%
Electrical	1	20%
Total Electrical Burns	5	100%

Adults 25 to 34 Had Most Electrical Burn Victims
In 2017 there were no electrical burn victims under 14-years old. One (1) victim was between 10 and 14; two victims were between 15 and 24; one victim was between 25 and 34, and one victim was between 55 and 64 years old.



58-Year Old Man Burned by 5,000 Watt Amplifier
On April 2, 2017, a 58-year old man received electrical burns to his right arm and hand when he was working on his 5,000 watt amplifier.

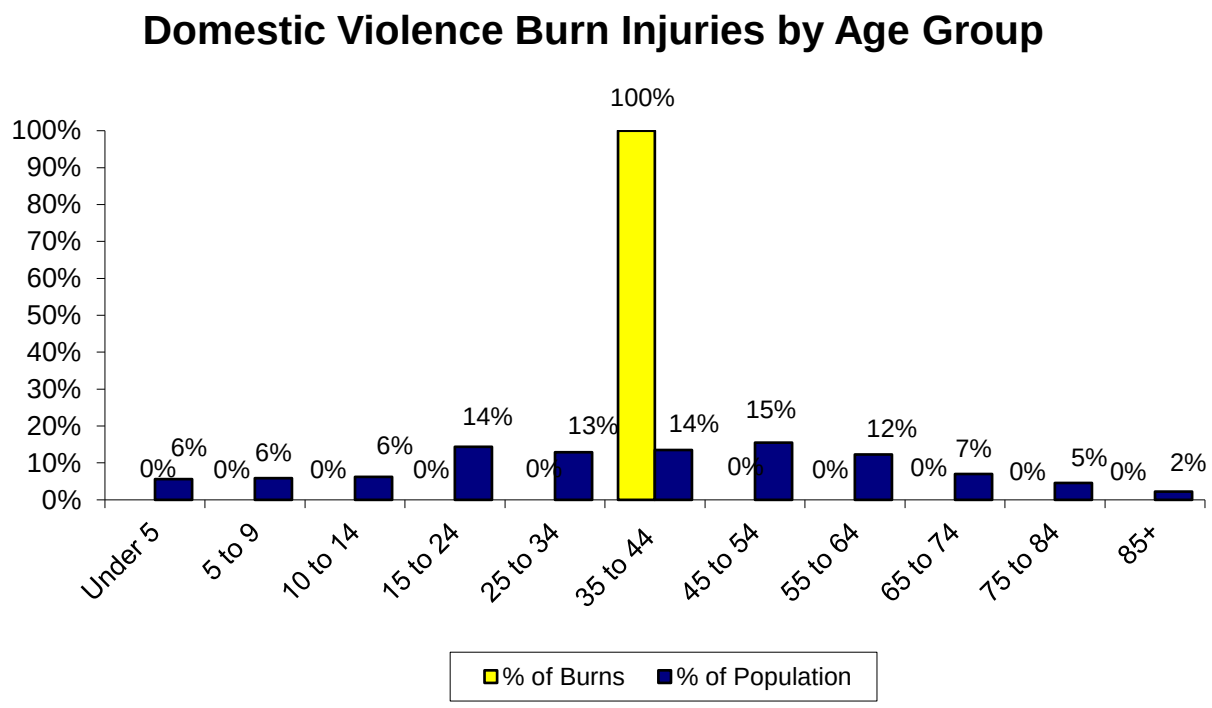
27-Year Old Man Electrocuted at Work
On August 10, 2017, a 27-year old man received life-threatening electrical burns to his chest, arms and face when he came into contact with a live transformer at work.

Burn Injuries from Domestic Violence

1 Burn Injury from Domestic Violence Incidents
One (1), or 0.3%, of the 359 burn injuries reported in 2017 was caused by domestic violence. This victim was a 36-year old woman. The single burn from domestic violence involved cooking liquids.

Description	# of Burns	% of Electrical Burns
Cooking Liquids	1	100%
Total Domestic Violence Burns	1	100%

1 Burn Victim Was 59-Years Old
In 2017 there was only one domestic violence victim. She was 36-years old, and so was in the age group between 35 and 54 years old.



36-Year Old Woman Involved in Domestic Dispute
On June 18, 2017, a 36-year old woman's significant other threw hot cooking liquids on her. She received burns to 6% of her body surface area.

Gasoline Related Burn Injuries

Gasoline Involved in 5% of Reported Burn Injuries
Gasoline was involved in 19, or 5%, of the 359 burns reported to M-BIRS in 2017. Gasoline was the primary cause in 15 of these injuries.

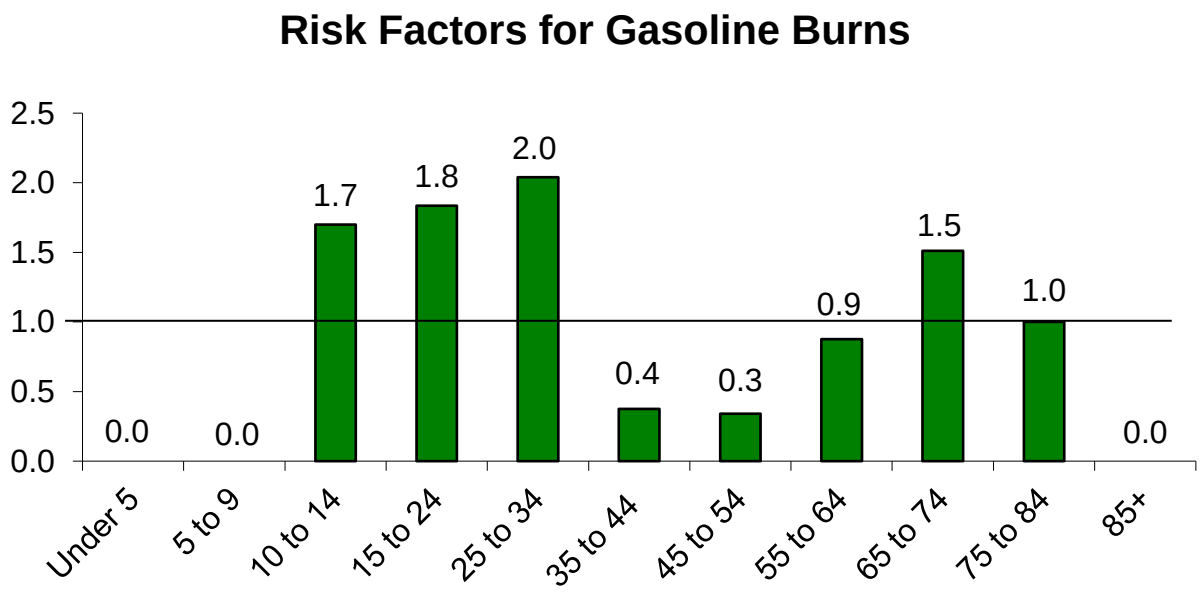
Eleven (11), or 58%, of the burn injuries involving gasoline were flame burn injuries. Eight (8), or 42%, of the gasoline related burn injuries were caused by fires.

Burn Type	# of Burns	% of Gasoline Burns
Flame	11	58%
Fires	8	42%
Total Gasoline	19	100%

52% of Gasoline-Related Burn Victims Were Between the Ages of 15 & 34
No one under the age of 11 in 2017 was the victim of a burn injury involving gasoline. Five (5), or 26%, of the victims were between 15 and 24, and another five, or 26%, were between 25 and 34. One (1), or 5%, of the injuries occurred during work-related activities. Four (4), or 21%, of the gasoline burn injuries in 2017 were to children under the age of 18; 12, or 63%, of these injuries occurred to adults; and three, or 16%, happened to older adults. Seventeen (17), or 89%, of the 19 gasoline related burn victims in 2017 were men, and two, or 11% were women. The youngest victim was an 11-year old boy and the oldest victim was an 81-year old man.

Age	# of Burns	% of Burns	% of Population	Risk Factor
Under 5	0	0%	6%	0.0
5 to 9	0	0%	6%	0.0
10 to 14	2	11%	6%	1.7
15 to 24	5	26%	14%	1.8
25 to 34	5	26%	13%	2.0
35 to 44	1	5%	14%	0.4
45 to 54	1	5%	15%	0.3
55 to 64	2	11%	12%	0.9
65 to 74	2	11%	7%	1.5
75 to 84	1	5%	5%	1.0
85+	0	0%	2%	0.0
Total	19	100%	100%	

Young Adults 25 to 34 Have Highest Risk for Gasoline Burns
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. Members of the age group 25 to 34 had the highest risk of getting a gasoline burn. In 2017, young adults between the ages of 15 to 24 had the second highest risk of getting a burn involving gasoline.



66-Year Old Man Burned by Gasoline
On November 30, 2017, a 66-year old man received flame burn injuries from gasoline to approximately 40% of his body surface area.

49-Year Old Man Burned Using Gasoline as an Accelerant
On August 26, 2017, a 49-year old man was burned when he was using gasoline as an accelerant. He received flame burn injuries to 14% 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 Over 1/3 of Reported Burn Injuries
Cooking activities caused 127, or 36% of the 359 total burn injuries reported to the Massachusetts Burn Injury Reporting System in 2017. Cooking activities were the primary cause of the injury in all 127 of these injuries.

Seventy-four (74), or 58%, of the 126 victims were male and 53, or 42%, were female. Eleven (11), or 9%, of the people burned by cooking activities were working when injured. Eight (8) were men and three were woman.

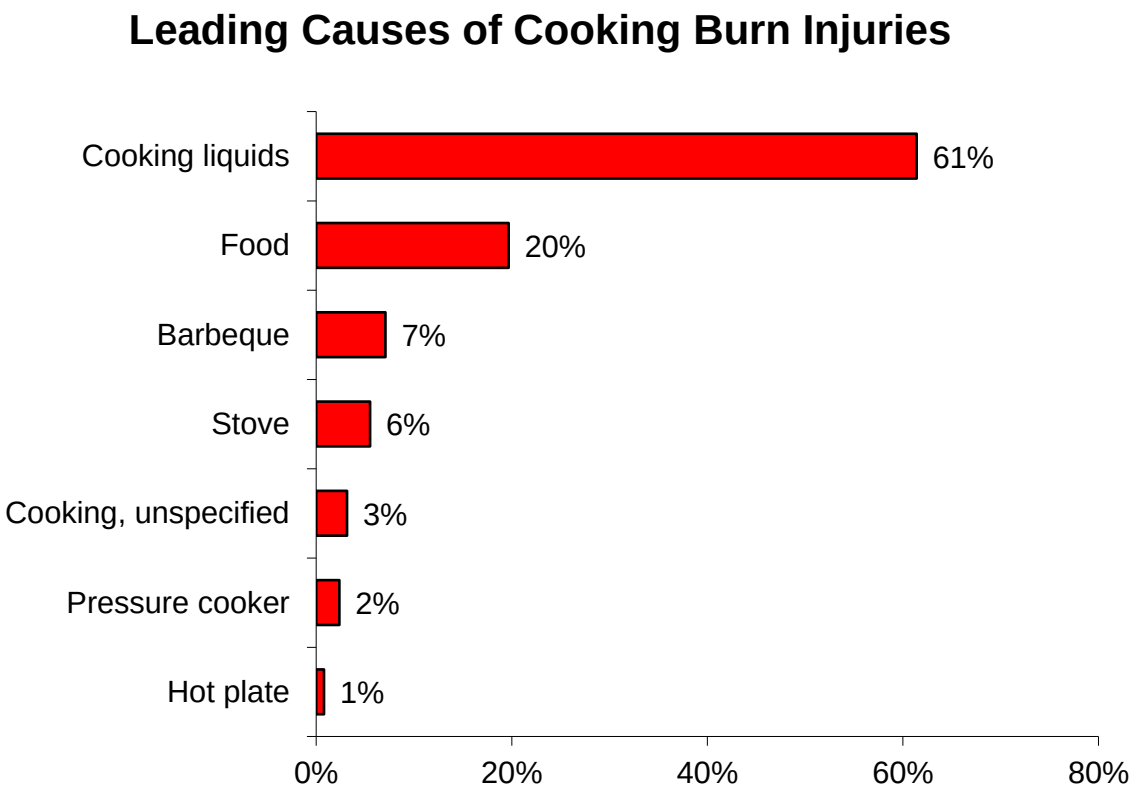
Scalds Cause 80% of Cooking-Related Burn Injuries

One hundred and one (101), or 80%, of the 126 burn injuries caused by cooking were scalds. Fifteen (15), or 12%, were flame burn injuries.

Burn Type	# of Burns	% of Cooking Burns
Scalds	101	80%
Flame	15	12%
Explosion	5	4%
Contact	3	2%
Fire	2	2%
Domestic Violence	1	1%
Total	127	100%

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 2017. These burns accounted for 78, or 61% of all cooking-related burn injuries.



Children Under 5 Almost 4 1/2 Times as Likely to be Burned by Cooking Activities
Thirty-one (31), or 24%, of the cooking-related burn victims were under age five. This age group was 4.4 times more likely to be burned by cooking related activities.

Age	# of Burns	% of Burns	% of Population	Risk
Under 5	31	24%	6%	4.4
5 to 9	10	8%	6%	1.3
10 to 14	8	6%	6%	1.0
15 to 24	16	13%	14%	0.9
25 to 34	15	12%	13%	0.9
35 to 44	11	9%	14%	0.6
45 to 54	15	12%	15%	0.8
55 to 64	9	7%	12%	0.6
65 to 74	8	6%	7%	0.9
75 to 84	3	2%	5%	0.5
85+	2	1%	2%	0.4
Total	127	100%	100%	

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 at least three feet away from the stove and food preparation areas while they are cooking.

1 Clothing Ignition while Cooking
Loose-fitting sleeves can easily come into contact with burners and catch fire. In 2017 there was only one reported clothing ignition while cooking: a 40-year old man got too close to a stove. In 2016 there were nine reported clothing ignitions while cooking.

According to data collected by the Massachusetts Fire Incident Reporting System (MFIRS), unattended and other unsafe cooking practices caused 12,331 fires in 2017. These fires caused two civilian deaths, 78 civilian injuries, 28 fire service injuries along with $9.7 million in losses. Many of these people also suffered from smoke inhalation[5].

Serious Burns from Cooking
- On February 14, 2017, a 24-year old man received scald burns to approximately 45% of his body surface area when he spilled boiling water on himself as he was going down some stairs.
- On March 14, 2017, a 22-year old woman received scald burns to her face, chest, arms and shoulders when the pressure cooker she was using exploded.
- On April 9, 2017, a 55-year old man was grilling at home when he added lighter fluid causing the fire to grow significantly. He received flame burn injuries to his face, torso, hands and arms.
- On July 31, 2017, a 51-year old woman received scald burns to 22% of here body surface area when she spilled boiling water on herself.

[5] 2017 Annual Report of the Massachusetts Fire Incident Reporting System; MA Dept. of Fire Services; pg. 130.

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, as we saw this year.

Burn Injuries by Age Group

Three (3) age groups of our population were at a greater than average risk of a burn injury in 2017. Although burn injuries were reported in all age groups, very young children suffer more than their share and are five times more likely to be burned. Children under the age of five were 4.0 times more likely to suffer a burn injury in Massachusetts. Children aged five to nine were at a slightly higher risk, at 1.2 times more likely to receive a burn injury; and children between the ages of 10 and 14 were 1.1 times more likely to receive a burn injury in 2017.

Twenty-two percent (22%) of all burn victims were children under the age of five. Eighty (80) children under age five were seriously burned in 2017.

Age	# of Burns	% of Burns	% of Population	Risk
Under 5	80	22%	6%	4.0
5 to 9	26	7%	6%	1.2
10 to 14	24	7%	6%	1.1
15 to 24	46	13%	14%	0.9
25 to 34	47	13%	13%	1.0
35 to 44	29	8%	14%	0.6
45 to 54	43	12%	15%	0.8
55 to 64	31	9%	12%	0.7
65 to 74	20	6%	7%	0.8
75 to 84	8	2%	5%	0.5
85+	5	1%	2%	0.6
Total	359	100%	100%	

Scald 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 people between 0 and 54, 65 to 74 and over the age of 85. Flame burns were the leading cause of burns to the age group between 55 and 64 and burns from fires were the leading cause of burns to older adults between 75 and 84.

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-five percent (35%) of the burns incurred by these young children were scalds caused by hot beverages, 24% were caused by cooking liquids, and 10% were caused by scalds from hot food. Cooking liquids, 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 how to cook safely, procedures to follow when a car overheats and the proper uses of gasoline. To be effective, burn prevention educators must develop strategies that address the risk faced by each age group.

Age	Males	Females	Total
Under 5	52	28	80
5 to 9	11	14	26
10 to 14	16	7	24
15 to 24	28	18	46
25 to 34	34	13	47
35 to 44	19	10	29
45 to 54	29	14	43
55 to 64	20	11	31
65 to 74	13	7	20
75 to 84	5	3	8
85+	1	4	5
Total Known	228	129	357

Except for the age groups of children between the ages of five and nine, males were burned more frequently than females. In 2017, 228, or 64% of the 359 burn victims were male, and 129, or 36%, were female. There were two victims where the gender was not reported.

Children Under 5

22% of Reported Burns Incurred by Children Under 5
Eighty (80), or 22%, of the burn injuries reported to M-BIRS in 2017 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 4.0 times more likely to be burned than were members of the general population. No other age group faced a risk this high. Sixty-five percent (65%) of burned pre-schoolers were boys and 35% were girls.

Scalds Caused 84% of Burns to Pre-Schoolers
Scalds caused 67, or 84%, of the burn injuries incurred by children under five. Contact burns caused five burns. Flame burns and *Other* type burns each caused three injuries to this age group. Burns from fires caused one burn to a child under five in 2017. There was another burn to a child in this age group but the burn type was not reported.

Children Ages 5 to 9

7% of Reported Burn Injuries Incurred by Children 5-9 Years of Age
Twenty-six (26), or 7%, of the burn injuries reported in 2017 were incurred by children between five and nine years of age. Fourteen (14), or 54%, of the burn victims were girls, and 11, or 42%, were boys, and the gender of one child, or 4%, was not reported.. Children in this age bracket accounted for 6% of the population of Massachusetts and 7% of the burn injuries in 2017.

Burns from Scalds Were the Leading Cause to Children 5-9
The leading cause of burn injuries to children aged five to nine were scalds. Scalds caused 19, or 73%, of the burn injuries incurred by children aged five to nine in 2017. Flame burns caused five

of these injuries and burns from fires and a chemical each caused one burn injury to this age group.

Children Ages 10 to 14

7% of Reported Burns Incurred by Children 10-14 Years of Age
Children between the ages of 10 and 14 suffered 24, or 7% of the burn injuries reported in 2017. Sixteen (16), or 70%, were boys and seven, or 30%, were girls. Children in this age bracket accounted for 6% of the population in the Commonwealth of Massachusetts and 7% 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.

Scalds Were the Leading Cause of Burns to Children 10-14
Scalds caused 10, or 42% of the burns incurred by children aged 10 to 14. Burns from fires caused seven injuries, and flame burns caused six. Electrical burns caused one burn injury to this age group.

Ages 15 to 24

13% of Reported Burn Victims Between 15-24 Years of Age
Teens and young adults between the ages of 15 and 24 incurred 46, or 13% of the burn injuries reported in 2017. Twenty-eight (28), or 61%, were male and 18, or 39%, were female. Young adults aged 15 to 24 accounted for 14% of the population of Massachusetts and 13% of the burn injuries in 2017. Seven (7), or 15%, of the burn injuries incurred by this age group were work-related: five were male and two were female.

39% of Burns Were Scalds
Eighteen (18), or 39%, of the burn injuries to people 15 to 24 years of age were from scalds. Burns from fires caused 15 injuries. Flame burns caused six injuries. *Other* types of burn injuries caused four injuries. Two (2) injuries to this age group were electrical burns, and explosions caused one burn injury to this age group.

Ages 25 to 34

13% of Burns Were to Adults 25-34 Years of Age
Forty-seven (47), or 13% of the burn injuries reported in 2017 were incurred by people between 25 and 34 years of age. Thirty-four (34), or 72% of the victims were men and 13, or 28% were women. Nine (9), or 19% of the burn injuries suffered by this age group were work-related; eight of the nine were men. People between the ages of 25 and 34 accounted for 13% of the population of Massachusetts while accounting for 13% of the total number of burn injuries reported in 2017.

Scald Burns Caused 34% of Burn Injuries
Scalds accounted for 16 burns, or 34% of the burn injuries for this age group. Flame burns caused 12 burns and 10 more injuries came from fires. Explosions caused four of these injuries.

Other type burns caused three of the burn injuries. Contact burns and electrical burns each caused one burn injury to this age group.

Ages 35 to 44

8% of Reported Burn Victims Were Between 35-44 Years of Age
Twenty-nine (29), or 8%, of the burn injuries reported in 2017 occurred to people between the ages of 35 and 44. Nineteen (19), or 66% of the victims were men and 10, or 34% of the victims were women. Adults between the ages of 35 and 44 accounted for 14% of the Massachusetts population but 8% of the reported burns in 2017. Two (2), or 7%, of the burn injuries incurred by this age group were work-related. Both of these victims were men.

Burns from Scalds Were the Leading Cause of Injuries to 35-44 Years of Age
Scalds accounted for 10, or 34%, of the burn injuries to this age group. Fires caused nine of these injuries. Flame burns caused four injuries and *Other* burn injuries caused three burn injuries. Contact with hot objects, domestic violence and an explosion each caused one burn injury to this age group.

Ages 45 to 54

12% of Reported Burn Injuries Were Between 45-54 Years of Age
People between the ages of 45 and 54 incurred 43, or 12%, of the reported burns in 2017. Twenty-nine (29) or 67% of the victims were male, and 14, or 33%, were female. Nine (9) of the 43 burn victims aged 45 to 54, or 12%, were burned while at work; four of them were men and one was a woman. This age group represents 15% of the population of Massachusetts but only 12% of the burn injuries in 2017.

Scalds Burns Were the Leading Cause of Burns
Scalds were incurred by 15, or 35% of the burn victims between the ages of 45 and 54. Burns from fires and flame burns each caused 10 of these injuries. Explosions and *Other* burns each caused three burn injuries to this age group, and contact with hot objects caused two injuries to this age group.

Ages 55 to 64

9% of Burn Victims Were Between 55-64 Years Old
Thirty-one (31), or 9% of the burns reported in 2017 were incurred by people between the ages of 55 and 64. Twenty (20), or 65% of the victims were men, and 11, or 35% were women. Three (3), or 10%, of the 31 burn injuries incurred by people between 55 and 64 years old were work-related; all three were men. People of this age group represent 12% of the total population of Massachusetts but only received 9% of the burns in 2017.

Flame Burns Were the Leading Causes of Burns
Flame burns caused nine injuries to people between the ages of 55 and 64 years of age in 2017, accounting for 29% of these injuries. Burns from fires and scalds each caused eight of these

injuries. Contact with hot objects and *Other* burns each caused two of these injuries. An explosion and an electrical burn each caused one burn injury to members of this age group.

Over 65 – Older Adults

33 Burn Victims Over 65 Years Old
Thirty-three (33), or 9%, of the burn victims in 2017 were over 65 years old. Twenty (20) were between 65 and 74; eight were between 75 and 84; and one was 85 years old or older. Nineteen (19), or 58% of the victims were men, and 14, or 42%, were women. Older adults represent 14% of the total Massachusetts population but only 9% of the burn injuries in 2017, which means that in 2017 they were proportionately less likely to receive a burn injury. No one in this age group received a work-related burn.

Scalds Were Leading Cause of Burns to Older Adults
Scalds caused 15, or 45%, of the burn injuries to people over the age of 65. Burns from fire caused eight of these burns. Flame burns caused five and *Other* burns caused two of these injuries. Contact with hot objects and an explosion each caused one of these injuries to older adults. There was another burn injury in this age group where the Burn Type was not reported.

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.

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, Cover & 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 alarms in the immediate vicinity.

Work-Related Burn Injuries

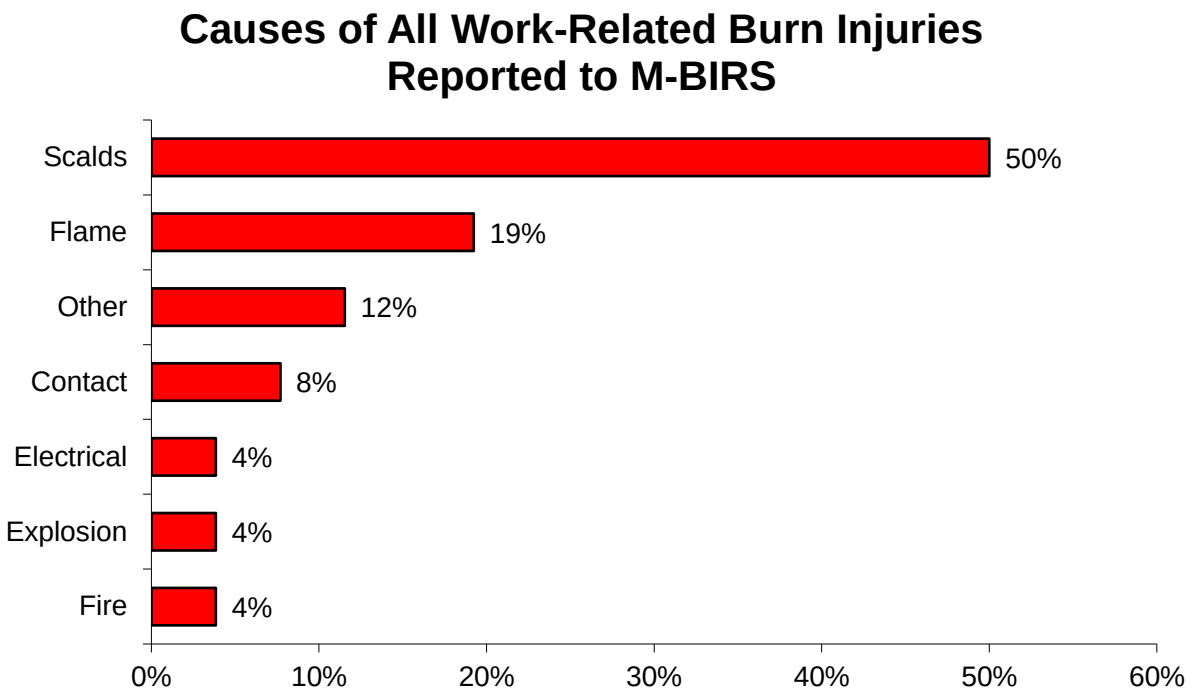
7% of Reported Burns Occurred at Work
Massachusetts hospitals indicated that 26, or 7%, of the 359 burn injuries reported in 2017 occurred while the victim was at work. Men were much more likely to be burned while working than women. Twenty-two (22) men, or 85%, and four women, or 15%, were burned at work in 2017.

62% of Work-Related Burns Incurred by People Between 15 and 34
No one under the age of 19 received a work-related burn in 2017. The age groups 15 to 24 and 25 to 34 years had the most work-related burns injuries with seven and nine respectively. The youngest person to receive treatment for a work-related burn in Massachusetts in 2017 was a 19-year old man who received a burn from a propane explosion. The oldest victim to receive a work-related burn was a 61-year old man who received a chemical burn.

Age	# of Burns	% of Burns	% of Population
Under 5	0	0%	6%
5 to 9	0	0%	6%
10 to 14	0	0%	6%
15 to 24	7	27%	14%
25 to 34	9	35%	13%
35 to 44	2	8%	14%
45 to 54	5	19%	15%
55 to 64	3	12%	12%
65 to 74	0	0%	7%
75 to 84	0	0%	5%
85+	0	0%	2%
Total	26	100%	100%

Scalds Caused 1/2 of Work-Related Burns
Scalds were the leading cause of work-related burns in 2017. These 13 burn injuries accounted for 50% of work-related burns. Five (5) of these injuries were flame burns. *Other* burns, all from chemicals, caused three of these injuries. Contact with hot objects caused two injuries. An explosion, electrical burn and a gasoline fire each caused one work-related burn injury.

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.



85% 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. Twenty-two (22), or 85%, of the 26 work-related burns reported to M-BIRS in 2017 occurred in Massachusetts. Two (2) work-related burns reported to M-BIRS occurred in New Hampshire; one occurred in Vermont; and it was unknown where the other of these burns occurred.

Intervention and Prevention Efforts
The MA Department of Public Health 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. In 2017, 19 burn injuries were referred to OSHA and one case to the Department of Labor for public sector cases that met their criteria.

0 Work-related Fatalities Due to Burn Injuries
In 2017 there were no work-related injuries that led to the victim's death. There were two work-related injuries that were reported as life-threatening.

Burn Injuries in the Home

Over 2/3 of Burn Injuries Occur in the Home
The home is the most common place for burn injuries to occur. In 2017, 244 people, or 68%, of all the reported burn injuries took place in the victim's home or surrounding yard. Men sustained

the majority of burns occurring at home. One hundred and fifty-one (151) men, or 62%, and 92 women, or 38% were burned at home in 2017.

Over 1/2 of All Home Burns Are Scalds

One hundred and thirty-six (136), or 56%, of the burn injuries that occurred in the home in 2017 were scalds.

Burn Type	# of Burns	% of Home Burns
Scalds	136	56%
Flame	38	16%
Fires	37	15%
Other	11	5%
Contact	10	4%
Explosions	9	4%
Domestic Violence	1	0.4%
Electrical	1	0.4%
Not Reported	1	0.4%
Total	244	100%

Cooking Caused 40% of Burn in Homes

In 2017, cooking activities, including hot food, caused the most overall burns regardless of burn type. Burns from cooking caused 98, or 40% of burns in Massachusetts homes.

Cause of Burn	# of Burns	% of Home Burns
Cooking	98	40%
Hot Beverages	31	13%
Hot Tap Water	18	7%
House fires	16	7%
Camp or bon fires	14	6%
Gasoline	9	4%

Just Over 1/4 of Home Burns Were to Children Under 5

Twenty-seven percent (27%) of the 244 victims that received their burns at home were less than five years old. These children were 4.8 times more likely to be burned at home. This age group has the greatest risk of being burned at home.

Age	# of Home Burns	% of Home Burns	% of Population	Risk
Under 5	65	27%	6%	4.8
5 to 9	20	8%	6%	1.4
10 to 14	15	6%	6%	1.0
15 to 24	22	9%	14%	0.6
25 to 34	28	11%	13%	0.9
35 to 44	15	6%	14%	0.5
45 to 54	28	11%	15%	0.7
55 to 64	21	9%	12%	0.7
65 to 74	17	7%	7%	1.0
75 to 84	8	3%	5%	0.7
85+	5	2%	2%	1.0
Total	244	100%	100%	

4 of the Home Burns Resulted in Death
Four (4), or 2%, of the 244 reported burn injuries that occurred in homes in 2017 resulted in death for the victim. Three (3) of these deaths were men and one was a woman. Three of the four died in house fires and one died while smoking on oxygen.

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

Thirty-five (35) out of the 97 acute care health care facilities in Massachusetts submitted a total of 396 burn injury reports for 359 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.

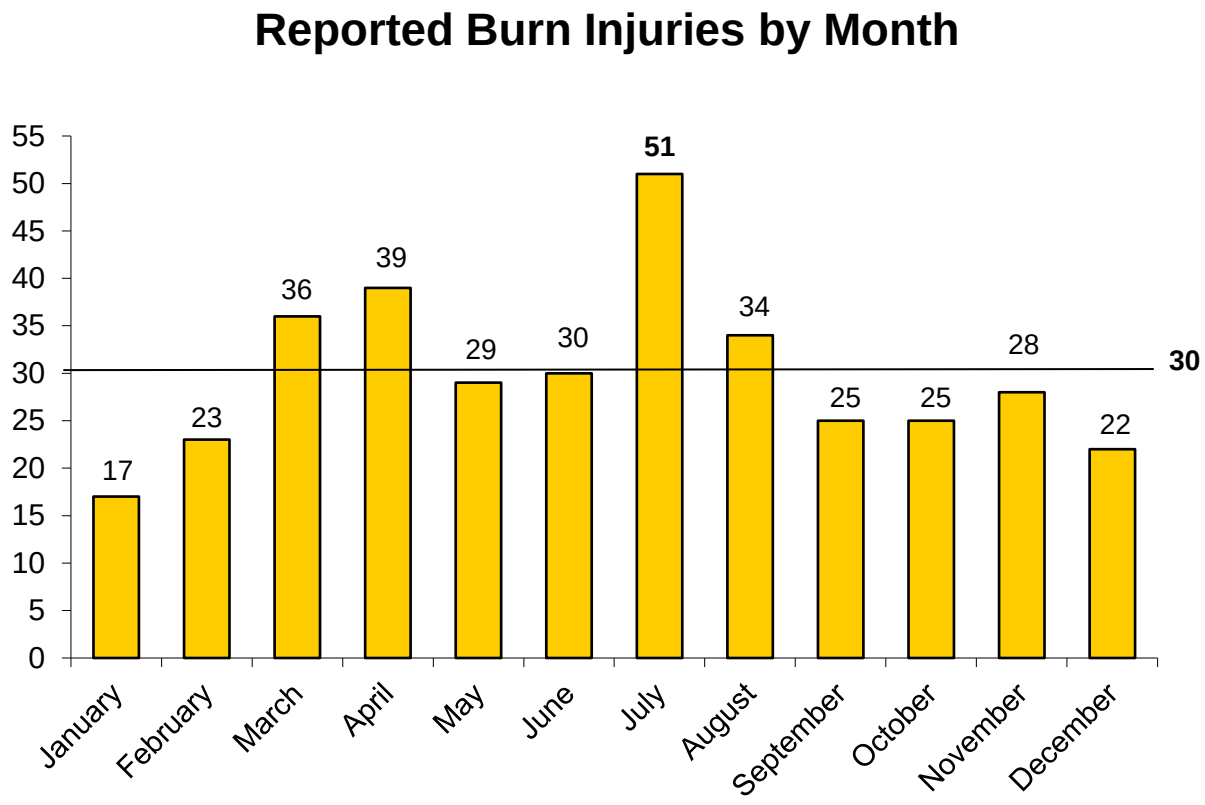
Although M-BIRS was instituted under the Department of Public Safety in June of 1984, Massachusetts hospitals have been required to report burn injuries to a government agency since 1973. M-BIRS, along with the Office of the State Fire Marshal, was carried over to the newly created Department of Fire 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 attempted 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 2017, from a low of 17 in January to a high of 51 in July. It is below the 5-year (2013-2017) average of 32 burns per month and below the 10-year (2007-2017) average of 33 burns per month.

Scalds caused the most burn injuries during all 12 months of the year.



July Was the Peak Month for Burns

July was the peak month for burns in 2017. Fifty-one (51) burn injuries were reported to M-BIRS during July. Scalds accounted for 19, or 37% of these burns during this month.

Burn Type	# of Burns	% of July Burns
Scalds	19	37%
Fire	14	27%
Flame	9	18%
Other	4	8%
Contact	2	4%
Explosion	2	4%
Electrical	1	2%
Total	51	100%

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

Geographical Demographics

Massachusetts Burn Victims from 117 Cities and Towns
Massachusetts medical facilities treated 274 residents of 107 Massachusetts cities and towns. Burn victims came from 13 of 14 counties in the Commonwealth in 2017. The largest numbers of reported burn injuries were incurred by residents of Essex, Suffolk and Middlesex counties. It appears that some large Boston hospitals (Suffolk County) may have under reported the burns they treated.

Eighty-two (82) 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 availability of specialized treatment of burn injuries.

County	# of Burns
Essex	49
Suffolk	49
Middlesex	44
Hampden	36
Plymouth	25
Norfolk	20
Worcester	14
Barnstable	11
Bristol	11
Berkshire	10
Hampshire	3
Nantucket	3
Franklin	2
Dukes	0
Out of State	82
Total	359
Total MA	277

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, Lawrence & Springfield had the Most Reported Burn Injuries
Boston was home to the most burn injury victims with 35 burn injuries in 2017. Lawrence and Springfield were tied for second, each had 21 burn injuries and Brockton had 10 injury reports.

Burns Per 10,000 Population
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.

The map on page 43, *2017 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 not shaded did not have a reported burn injury in 2017.

Savoy had the highest rate of burn injuries per 10,000 population at 28.90. Next highest was Tolland with 20.62 burn injuries per 10,000 population; Becket had 11.24; Cheshire had 6.18; Ashburnham had 3.29; and Berkley had 3.12 burn injuries per 10,000 population[6].

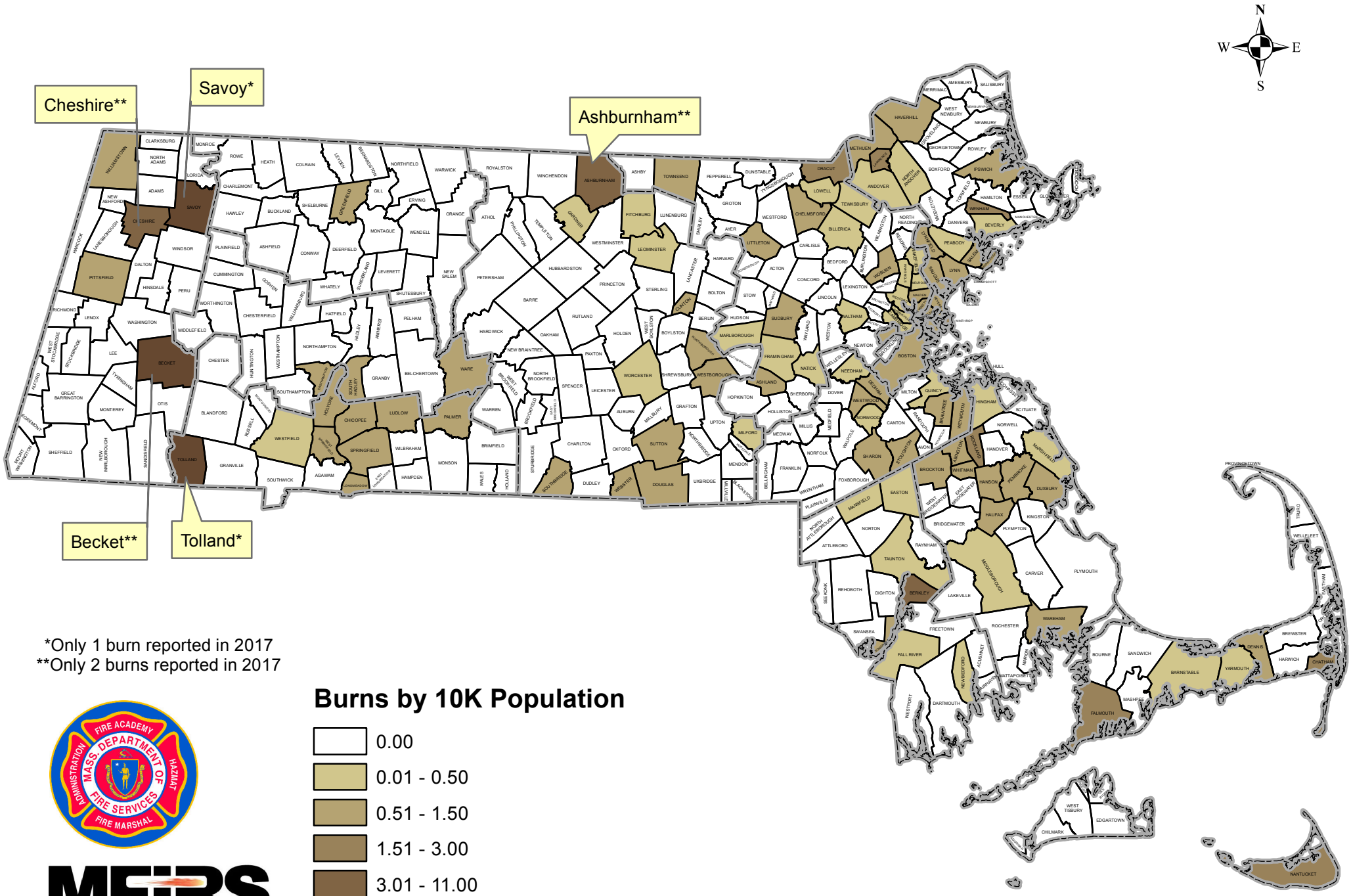
Scalds Per 10,000 Population

The map on page 44, *2017 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 2017.

Manchester-by-the-Sea had the highest rate of 9.74 scald burn injuries per 10,000 population. Next highest was Becket with 5.62 scald burn injuries per 10,000 population; Cheshire had 3.09; Wenham had 2.05; and Nantucket had 1.97 scald burn injuries per 10,000 population[7].

[6] All these towns except Tolland (1) each only had 2 reported burn injuries in 2017.
[7] All these towns except Manchester (5) and Nantucket (2) each had only 1 reported scald burn injury in 2017.

2017 MA Burns by 10K Population



*Only 1 burn reported in 2017
**Only 2 burns reported in 2017

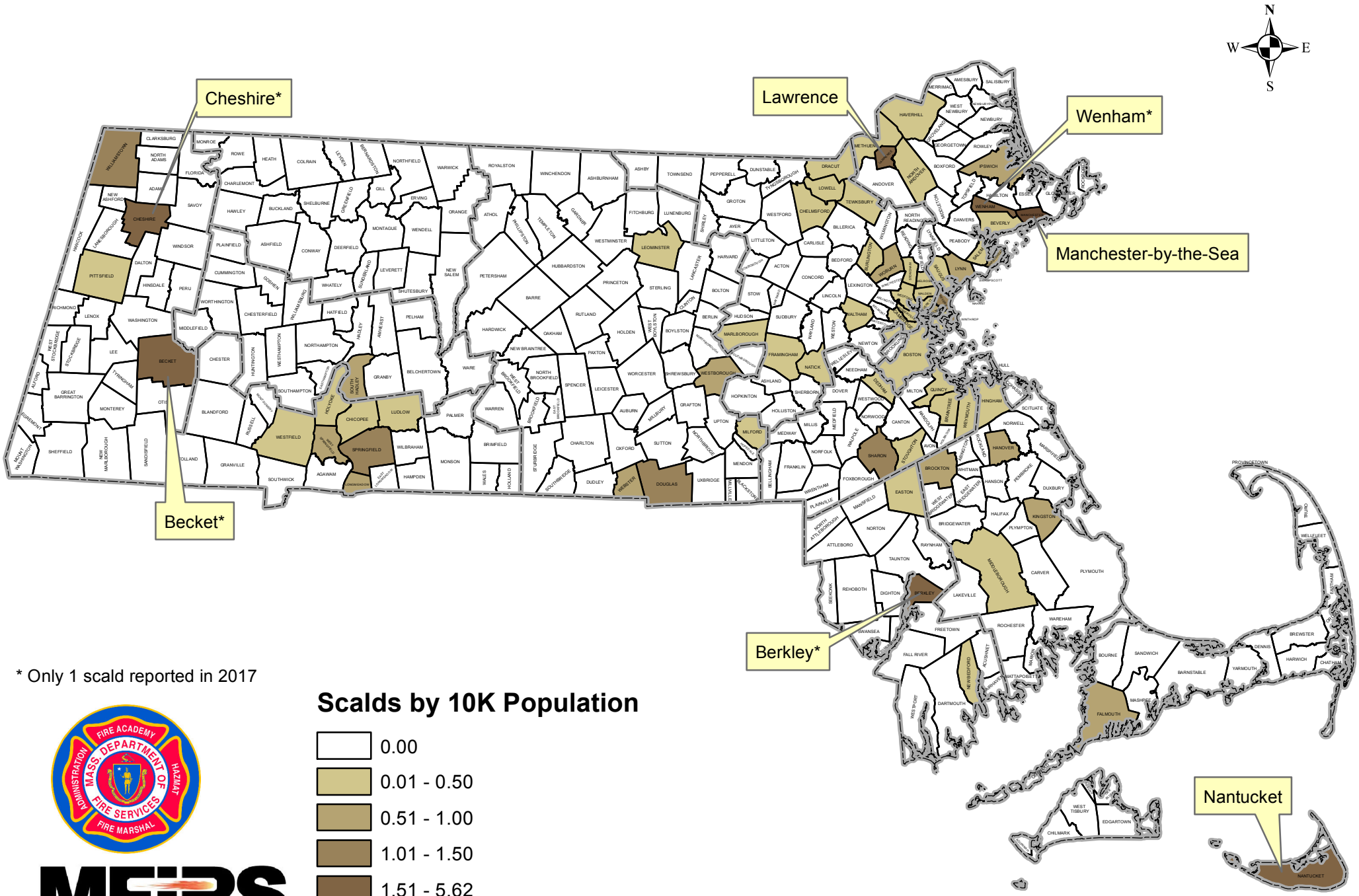
Burns by 10K Population

0.00
0.01 - 0.50
0.51 - 1.50
1.51 - 3.00
3.01 - 11.00
11.01 - 28.90

Miles
0 5 10 20 30 40

MFIRS
Massachusetts Fire Incident Reporting System

2017 MA Scalds by 10K Population



* Only 1 scald reported in 2017

MFIRS
Massachusetts Fire Incident Reporting System

2017 Appendix

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

Specific Causes of Burn Injuries

Cause	# of Burns	% of Burns
Scalds	**178**	**49.9%**
Cooking	101	28.3%
Cooking Liquids	*72*	*20.2%*
Hot Food	*25*	*7.0%*
Pressure Cooker	*3*	*0.8%*
Cooking Unspec.	*1*	*0.3%*
Hot Beverages	42	11.8%
Hot Tap Water	22	6.2%
Car Radiator	3	0.8%
Machine	2	0.6%
Oil	2	0.6%
Steam	2	0.6%
Car Part	1	0.3%
Clothes Iron	1	0.3%
Heater	1	0.3%
Hot Water Bottle	1	0.3%
Fires	**69**	**19.3%**
Camp or Bon Fire	32	9.0%
Camp Fire	*15*	*4.2%*
Gasoline	*5*	*1.4%*
Aerosol	*3*	*0.8%*
Clothes	*3*	*0.8%*
Ignitable Liquids	*3*	*0.8%*
Bonfire	*2*	*0.6%*
Ignitable Gas	*1*	*0.3%*
House Fire	23	6.4%
House Fire	*15*	*4.2%*
Cooking Unspec.	*2*	*0.6%*
Smoking Unspec.	*2*	*0.6%*
Battery	*1*	*0.3%*
Candle	*1*	*0.3%*
Self-Immolation	*1*	*0.3%*
Smoking on Oxygen	*1*	*0.3%*
MV Fire	6	1.7%
Car Fire	*2*	*0.6%*
MVA	*2*	*0.6%*
Boat Fire	*1*	*0.3%*
Gasoline	*1*	*0.3%*
Structure Fire	5	1.4%
Flammables	*2*	*0.6%*
Gasoline	*1*	*0.3%*
Tent Fire	*1*	*0.3%*
Unknown	*1*	*0.3%*

Cause	# of Burns	% of Burns
Fires (Con't)		
Brush Fire	3	0.8%
Brush Fire	*2*	*0.6%*
Gasoline	*1*	*0.3%*
Flame Burns	**60**	**16.7%**
Ignitable Liquids	15	4.2%
Ignitable Liquids	*8*	*2.2%*
Gasoline	*7*	*1.9%*
Cooking	15	4.2%
Cooking Liquids	*5*	*1.4%*
Barbeque	*3*	*0.8%*
Stove	*4*	*1.1%*
Barbeque Gas	*2*	*0.6%*
Cooking Unspec.	*1*	*0.3%*
Candle	6	1.7%
Smoking	5	1.4%
Cigarette	*3*	*0.8%*
Smoking on Oxygen	*1*	*0.3%*
Smoking Unspec.	*1*	*0.3%*
Battery	2	0.6%
Propane	2	0.6%
Self-Immolation	2	0.6%
Heater	2	0.6%
Heater	*1*	*0.3%*
Woodstove	*1*	*0.3%*
Aerosol	1	0.3%
Alcohol	1	0.3%
Assault	1	0.3%
Child w/Matches	1	0.3%
Clothes	1	0.3%
Engine	1	0.3%
Incinerator	1	0.3%
Machine	1	0.3%
Metal	1	0.3%
Oil	1	0.3%
Wax	1	0.3%
Other Burns	**21**	**5.9%**
Chemical	17	4.8%
Sunburn	4	1.1%

Cause	# of Burns	% of Burns
Contact Burns	**12**	**3.4%**
Cooking	3	0.8%
Stove	*2*	*0.6%*
Hot Plate	*1*	*0.3%*
Heating	3	0.8%
Radiator	*2*	*0.6%*
Space Heater	*1*	*0.3%*
Clothes Iron	2	0.6%
Asphalt	1	0.3%
Embers	1	0.3%
Metal	1	0.3%
Motorcycle	1	0.3%
Explosions	**11**	**3.1%**
Propane	5	1.4%
Cooking	5	1.4%
Barbeque Gas	*4*	*1.1%*
Stove	*1*	*0.3%*
Cigarette	1	0.3%

Cause	# of Burns	% of Burns
Electrical Burns	**5**	**1.4%**
Electrocution	4	1.1%
Electrical	1	0.3%
Domestic Violence	**1**	**0.3%**
Cooking Liquids	1	0.3%
Not Reported	**2**	**0.6%**
Not Reported	2	0.6%

Causes of Burn Injuries by Age

Under 5	**80**	**22.3%**
Cause	**# of Burns**	**% by Age**
Scalds	**67**	**83.8%**
Hot Beverages	28	35.0%
Cooking	27	33.8%
Cooking Liquids	*19*	*23.8%*
Hot Food	*8*	*10.0%*
Hot Tap Water	10	12.5%
Clothes Iron	1	1.3%
Machine	1	1.3%
Contact	**5**	**6.3%**
Clothes	1	1.3%
Clothes Iron	1	1.3%
Hot Plate	1	1.3%
Space Heater	1	1.3%
Stove	1	1.3%
Other	**3**	**3.8%**
Chemical	3	3.8%
Flame	**3**	**3.8%**
Child w/Matches	1	1.3%
Cooking Liquids	1	1.3%
Heater	1	1.3%
Fires	**1**	**1.3%**
Cooking	1	1.3%
Not Reported	**1**	**1.3%**
Unknown	1	1.3%

Ages 5 to 9	**26**	**7.2%**
Cause	**# of Burns**	**% by Age**
Scalds	**19**	**73.1%**
Cooking	9	34.6%
Hot Food	*5*	*19.2%*
Cooking Liquids	*4*	*15.4%*
Hot Beverages	5	19.2%
Hot Tap Water	5	19.2%
Flame	**5**	**19.2%**
Ignitable Liquids	2	7.7%
Aerosol	1	3.8%
Clothes	1	3.8%
Cooking Liquids	1	3.8%
Other	**1**	**3.8%**
Chemical	1	3.8%
Fires	**1**	**3.8%**
Camp Fire	1	3.8%

Ages 10 to 14	**24**	**6.7%**
Cause	**# of Burns**	**% by Age**
Scalds	**10**	**41.7%**
Cooking	7	29.2%
Cooking Liquids	*4*	*16.7%*
Hot Food	*3*	*12.5%*
Hot Beverages	3	12.5%
Fires	**7**	**29.2%**
Camp Fire	3	12.5%
Aerosol	2	8.3%
Candle	1	4.2%
Unknown	1	4.2%
Flame	**6**	**25.0%**
Ignitable Liquids	2	8.3%
Gasoline	*1*	*4.2%*
Ignitable Liquids	*1*	*4.2%*
Alcohol	1	4.2%
Assault	1	4.2%
Candle	1	4.2%
Cooking	1	4.2%
Electrical	**1**	**4.2%**
Electrocution	1	4.2%

Ages 15 to 24	**46**	**12.8%**
Cause	**# of Burns**	**% by Age**
Scalds	**18**	**39.1%**
Cooking	14	30.4%
Cooking Liquids	*7*	*15.2%*
Hot Food	*5*	*10.9%*
Pressure Cooker	*2*	*4.3%*
Hot Beverages	1	2.2%
Car Radiator	1	2.2%
Oil	1	2.2%
Hot Tap Water	1	2.2%
Fires	**15**	**32.6%**
Ignitable Liquids	5	10.9%
Gasoline	*3*	*6.5%*
Ignitable Liquids	*2*	*4.3%*
Camp Fire	2	4.3%
Clothes	2	4.3%
Flammables	2	4.3%
House Fire	2	4.3%
Cooking	1	2.2%
MVA	1	2.2%
Flame	**6**	**13.0%**
Engine	1	2.2%
Gasoline	1	2.2%
Metal	1	2.2%
Propane	1	2.2%
Self-Immolation	1	2.2%
Stove	1	2.2%
Other	**4**	**8.7%**
Chemical	3	6.5%
Sunburn	1	2.2%
Electrical	**2**	**4.3%**
Electrocution	2	4.3%
Explosion	**1**	**2.2%**
Propane	1	2.2%

Ages 25 to 34	**47**	**13.1%**
Cause	**# of Burns**	**% by Age**
Scald	**16**	**34.0%**
Cooking	9	19.1%
Cooking Liquids	*8*	*17.0%*
Hot Food	*1*	*2.1%*
Car Radiator	2	4.3%
Hot Tap Water	2	4.3%
Hot Beverages	1	2.1%
Car Part	1	2.1%
Hot Water Bottle	1	2.1%
Flame	**12**	**25.5%**
Cooking	3	6.4%
Barbeque Gas	*1*	*2.1%*
Cooking Liquids	*1*	*2.1%*
Stove	*1*	*2.1%*
Ignitable Liquids	3	6.4%
Ignitable Liquids	*2*	*4.3%*
Gasoline	*1*	*2.1%*
Smoking	3	6.4%
Cigarette	*2*	*4.3%*
Smoking Unspec.	*1*	*2.1%*
Candle	1	2.1%
Oil	1	2.1%
Wax	1	2.1%
Fire	**10**	**21.3%**
Gasoline	3	6.4%
Camp Fire	2	4.3%
Aerosol	1	2.1%
Boat Fire	1	2.1%
House Fire	1	2.1%
MVA	1	2.1%
Tent Fire	1	2.1%
Explosion	**4**	**8.5%**
Cooking	3	6.4%
Barbeque Gas	*2*	*4.3%*
Stove	*1*	*2.1%*
Cigarette	1	2.1%
Other	**3**	**6.4%**
Chemical	2	4.3%
Sunburn	1	2.1%
Contact	**1**	**2.1%**
Metal	1	2.1%
Electrical	**1**	**2.1%**
Electrocution	1	2.1%

Ages 35 to 44	**29**	**8.1%**
Cause	**# of Burns**	**% by Age**
Scald	**10**	**34.5%**
Cooking Liquids	8	27.6%
Machine	1	3.4%
Steam	1	3.4%
Fire	**9**	**31.0%**
Camp Fire	2	6.9%
Car Fire	2	6.9%
House Fire	2	6.9%
Bonfire	1	3.4%
Clothes	1	3.4%
Not Reported	1	3.4%
Flame	**4**	**13.8%**
Battery	1	3.4%
Gasoline	1	3.4%
Propane	1	3.4%
Stove	1	3.4%
Other	**3**	**10.3%**
Chemical	2	6.9%
Sunburn	1	3.4%
Contact	**1**	**3.4%**
Motorcycle	1	3.4%
Domestic Violence	**1**	**3.4%**
Cooking Liquids	1	3.4%
Explosion	**1**	**3.4%**
Barbeque Gas	1	3.4%

Ages 45 to 54	**43**	**12.0%**
Cause	**# of Burns**	**% by Age**
Scald	**15**	**34.9%**
Cooking	11	25.6%
Cooking Liquids	*9*	*20.9%*
Cooking	*1*	*2.3%*
Pressure Cooker	*1*	*2.3%*
Hot Beverages	1	2.3%
Hot Tap Water	1	2.3%
Oil	1	2.3%
Steam	1	2.3%
Fire	**10**	**23.3%**
House Fire	3	7.0%
Camp Fire	2	4.7%
Battery	1	2.3%
Bonfire	1	2.3%
Brush Fire	1	2.3%
Ignitable Gas	1	2.3%
Ignitable Liquids	1	2.3%
Flame	**10**	**23.3%**
Cooking	3	7.0%
Barbeque	*2*	*4.7%*
Cooking Liquids	*1*	*2.3%*
Ignitable Liquids	2	4.7%
Gasoline	*1*	*2.3%*
Ignitable Liquids	*1*	*2.3%*
Candle	1	2.3%
Cigarette	1	2.3%
Incinerator	1	2.3%
Self-Immolation	1	2.3%
Woodstove	1	2.3%
Explosion	**3**	**7.0%**
Propane	2	4.7%
Barbeque Gas	1	2.3%
Other	**3**	**7.0%**
Chemical	3	7.0%
Contact	**2**	**4.7%**
Embers	1	2.3%
Radiator	1	2.3%

Ages 55 to 64	**31**	**8.6%**
Cause	**# of Burns**	**% by Age**
Flame	**9**	**29.0%**
Cooking	3	9.7%
Barbeque	*1*	*3.2%*
Barbeque Gas	*1*	*3.2%*
Stove	*1*	*3.2%*
Candle	2	6.5%
Ignitable Liquids	2	6.5%
Gasoline	*1*	*3.2%*
Ignitable Liquids	*1*	*3.2%*
Battery	1	3.2%
Machine	1	3.2%
Fire	**8**	**25.8%**
Camp Fire	3	9.7%
House Fire	2	6.5%
Self-Immolation	1	3.2%
Smoke On Oxygen	1	3.2%
Smoking Unspec.	1	3.2%
Scald	**8**	**25.8%**
Cooking Liquids	5	16.1%
Hot Beverages	1	3.2%
Heater	1	3.2%
Hot Tap Water	1	3.2%
Contact	**2**	**6.5%**
Asphalt	1	3.2%
Stove	1	3.2%
Other	**2**	**6.5%**
Chemical	1	3.2%
Sunburn	1	3.2%
Explosion	**1**	**3.2%**
Propane	1	3.2%
Electrical	**1**	**3.2%**
Electrical	1	3.2%

Ages 65+	**33**	**9.2%**
Cause	**# of Burns**	**% by Age**
Scald	**15**	**45.5%**
Cooking	11	33.3%
Cooking Liquids	*8*	*24.2%*
Hot Food	*3*	*9.1%*
Hot Beverages	2	6.1%
Hot Tap Water	2	6.1%
Fire	**8**	**24.2%**
House Fire	5	15.2%
Gasoline	2	6.1%
Smoking	1	3.0%
Flame	**5**	**15.2%**
Ignitable Liquids	2	6.1%
Gasoline	*1*	*3.0%*
Ignitable Liquids	*1*	*3.0%*
Candle	1	3.0%
Cooking Liquids	1	3.0%
Smoking on Oxygen	1	3.0%
Other	**2**	**6.1%**
Chemical	2	6.1%
Contact	**1**	**3.0%**
Radiator	1	3.0%
Explosion	**1**	**3.0%**
Propane	1	3.0%
Not Reported	**1**	**3.0%**
Unknown	1	3.0%

Causes of Work-Related Burns

Cause	# of Burns	% of Work-related
Scald	**13**	**50%**
Cooking Liquids	8	31%
Food	2	8%
Car Radiator	1	4%
Machine	1	4%
Steam	1	4%
Flame	**5**	**19%**
Ignitable Liquids	2	8%
Barbeque	1	4%
Incinerator	1	4%
Propane	1	4%
Other	**3**	**12%**
Chemical	3	12%
Contact	**2**	**8%**
Asphalt	1	4%
Embers	1	4%
Explosion	**1**	**4%**
Propane	1	4%
Fire	**1**	**4%**
Gasoline	1	4%
Electrical	**1**	**4%**
Electrocution	1	4%
Total	**26**	**100%**

Number of Reported Burns per Hospital

Baystate - Franklin Medical Center	3
Baystate Medical Center	34
Baystate - Noble Hospital	1
Baystate - Wing Hospital	1
Berkshire Medical Center	2
Beth Israel Deaconess - Plymouth	1
Beverly Hospital	1
Brigham & Women's Faulkner Hospital	1
Brigham & Women's Hospital	37
Brockton Hospital	2
Cape Cod Hospital	1
Charlton Memorial Hospital	1
Children's Hospital	4
East Boston Health Center	1
Emerson Hospital	2
Falmouth Hospital	8
Good Samaritan Medical Center	6
Harrington Memorial Hospital	2
Lawrence General Hospital	24
Lawrence Memorial Hospital	2
Lowell General Hospital	3
MetroWest Medical Center	1
Massachusetts General Hospital	135
Milford Regional Medical Center	2
Morton Hospital	1
North Adams Regional Hospital	1
Nantucket Cottage Hospital	3
North Shore Medical Center	1
Norwood Hospital	1
Shriners Hospital for Children	89
South Shore Medical Center	15
St. Anne's Hospital	2
St. Elizabeth's Hospital	1
Sturdy Memorial Medical Center	1
Tobey Hospital	1
UMass Medical Center - Clinton	1
UMass Medical Center - University	5

Causes of Burn Injuries by Month

January	**17**	**4.5%**
Cause	**# of Burns**	**% by Month**
Scald	**8**	**47.1%**
Cooking	6	35.3%
Cooking Liquids	*4*	*23.5%*
Hot Food	*1*	*5.9%*
Pressure Cooker	*1*	*5.9%*
Hot Tap Water	2	11.8%
Flame	**5**	**29.4%**
Cooking Liquids	2	11.8%
Cigarette	1	5.9%
Ignitable Liquids	1	5.9%
Self-Immolation	1	5.9%
Fire	**3**	**17.6%**
House Fire	2	11.8%
Gasoline	1	5.9%
Contact	**1**	**5.9%**
Clothes Iron	1	5.9%

0 Deaths

February	**23**	**6.1%**
Cause	**# of Burns**	**% by Month**
Scald	**16**	**69.6%**
Cooking	11	47.8%
Cooking Liquids	*6*	*26.1%*
Hot Food	*4*	*17.4%*
Cooking Unspec.	*1*	*4.3%*
Hot Beverages	3	13.0%
Steam	1	4.3%
Hot Tap Water	1	4.3%
Fire	**6**	**26.1%**
Cooking	2	8.7%
House Fire	2	8.7%
Gasoline	1	4.3%
Smoking	1	4.3%
Other	**1**	**4.3%**
Chemical	1	4.3%

2 Deaths

March	**36**	**9.6%**
Cause	**# of Burns**	**% by Month**
Scald	**21**	**58.3%**
Cooking	11	30.6%
Cooking Liquids	*6*	*16.7%*
Hot Food	*3*	*8.3%*
Pressure Cooker	*2*	*5.6%*
Hot Tap Water	5	13.9%
Hot Beverages	3	8.3%
Oil	1	2.8%
Steam	1	2.8%
Fire	**9**	**25.0%**
House Fire	3	8.3%
Flammables	2	5.6%
Battery	1	2.8%
Clothes	1	2.8%
Gasoline	1	2.8%
Smoking on Oxygen	1	2.8%
Flame	**3**	**8.3%**
Gasoline	1	2.8%
Incinerator	1	2.8%
Metal	1	2.8%
Other	**2**	**5.6%**
Chemical	2	5.6%
Contact	**1**	**2.8%**
Embers	1	2.8%

1 Death

April	**39**	**10.4%**
Cause	**# of Burns**	**% by Month**
Scald	**23**	**59.0%**
Cooking	10	25.6%
Cooking Liquids	*8*	*20.5%*
Hot Food	*2*	*5.1%*
Hot Beverages	8	20.5%
Hot Tap Water	2	5.1%
Car Radiator	1	2.6%
Hot Water Bottle	1	2.6%
Machine	1	2.6%
Flame	**8**	**20.5%**
Cooking	4	10.3%
Barbeque	*2*	*5.1%*
Cooking Unspec.	*1*	*2.6%*
Stove	*1*	*2.6%*
Candle	1	2.6%
Heater	1	2.6%
Ignitable Liquids	1	2.6%
Self-Immolation	1	2.6%
Fire	**5**	**12.8%**
Camp Fire	3	7.7%
House Fire	1	2.6%
Not Reported	1	2.6%
Contact	**1**	**2.6%**
Metal	1	2.6%
Electrical	**1**	**2.6%**
Electrical	1	2.6%
Other	**1**	**2.6%**
Chemical	1	2.6%

0 Deaths

May	**29**	**7.7%**
Cause	**# of Burns**	**% by Month**
Scald	**9**	**31.0%**
Cooking Liquids	5	17.2%
Hot Beverages	4	13.8%
Flame	**7**	**24.1%**
Ignitable Liquids	4	13.8%
Ignitable Liquids	*3*	*10.3%*
Gasoline	*1*	*3.4%*
Assault	1	3.4%
Cigarette	1	3.4%
Propane	1	3.4%
Fire	**6**	**20.7%**
Camp Fire	3	10.3%
Bonfire	1	3.4%
Tent Fire	1	3.4%
Unknown	1	3.4%
Explosion	**2**	**6.9%**
Propane	2	6.9%
Other	**2**	**6.9%**
Chemical	2	6.9%
Not Reported	**2**	**6.9%**
Unknown	2	6.9%
Contact	**1**	**3.4%**
Hot Plate	1	3.4%

0 Deaths

June	**30**	**8.0%**
Cause	**# of Burns**	**% by Month**
Scald	**14**	**46.7%**
Cooking	7	23.3%
Cooking Liquids	*5*	*16.7%*
Hot Food	*2*	*6.7%*
Hot Beverages	3	10.0%
Hot Tap Water	3	10.0%
Oil	1	3.3%
Other	**6**	**20.0%**
Chemical	4	13.3%
Sunburn	2	6.7%
Fire	**5**	**16.7%**
Car Fire	2	6.7%
Aerosol	1	3.3%
Brush Fire	1	3.3%
Smoking	1	3.3%
Flame	**3**	**10.0%**
Cooking Liquids	1	3.3%
Engine	1	3.3%
Oil	1	3.3%
Domestic Violence	**1**	**3.3%**
Cooking Liquids	1	3.3%
Explosion	**1**	**3.3%**
Stove	1	3.3%

0 Deaths

July	**51**	**13.6%**
Cause	**# of Burns**	**% by Month**
Scald	**19**	**37.3%**
Cooking	11	21.6%
Cooking Liquids	*8*	*15.7%*
Hot Food	*3*	*5.9%*
Hot Beverages	6	11.8%
Machine	1	2.0%
Hot Tap Water	1	2.0%
Fire	**14**	**27.5%**
Camp Fire	4	7.8%
Aerosol	2	3.9%
Clothes	2	3.9%
MVA	2	3.9%
Boat Fire	1	2.0%
Gasoline	1	2.0%
Ignitable Gas	1	2.0%
Ignitable Liquids	1	2.0%
Flame	**9**	**17.6%**
Ignitable Liquids	3	5.9%
Ignitable Liquids	*2*	*3.9%*
Gasoline	*1*	*2.0%*
Barbeque Gas	1	2.0%
Candle	1	2.0%
Child w/Matches	1	2.0%
Clothes	1	2.0%
Machine	1	2.0%
Smoking	1	2.0%
Other	**4**	**7.8%**
Chemical	2	3.9%
Sunburn	2	3.9%
Explosion	**2**	**3.9%**
Barbeque Gas	2	3.9%
Contact	**2**	**3.9%**
Asphalt	1	2.0%
Motorcycle	1	2.0%
Electrical	**1**	**2.0%**
Electrocution	1	2.0%

0 Deaths

August	**34**	**9.1%**
Cause	**# of Burns**	**% by Month**
Scald	**14**	**41.2%**
Cooking	9	26.5%
Cooking Liquids	*7*	*20.6%*
Hot Food	*2*	*5.9%*
Hot Beverages	3	8.8%
Clothes Iron	1	2.9%
Hot Tap Water	1	2.9%
Flame	**7**	**20.6%**
Ignitable Liquids	2	5.9%
Gasoline	*1*	*2.9%*
Ignitable Liquids	*1*	*2.9%*
Aerosol	1	2.9%
Battery	1	2.9%
Candle	1	2.9%
Cigarette	1	2.9%
Wax	1	2.9%
Fire	**5**	**14.7%**
Camp Fire	3	8.8%
House Fire	1	2.9%
Ignitable Liquids	1	2.9%
Explosion	**4**	**11.8%**
Ignitable Gases	3	8.8%
Barbeque Gas	*2*	*5.9%*
Propane	*1*	*2.9%*
Cigarette	1	2.9%
Electrical	**2**	**5.9%**
Electrocution	2	5.9%
Other	**2**	**5.9%**
Chemical	2	5.9%

0 Deaths

September	**25**	**6.7%**
Cause	**# of Burns**	**% by Month**
Scald	**12**	**63.2%**
Cooking	10	40.0%
Cooking Liquids	*8*	*32.0%*
Hot Food	*2*	*8.0%*
Hot Beverages	5	20.0%
Car Part	1	4.0%
Flame	**5**	**20.0%**
Candle	2	8.0%
Cooking	2	8.0%
Cooking Liquids	*1*	*4.0%*
Stove	*1*	*4.0%*
Battery	1	4.0%
Fire	**2**	**8.0%**
Bonfire	1	4.0%
House Fire	1	4.0%
Contact	**1**	**4.0%**
Clothes	1	4.0%
Electrical	**1**	**4.0%**
Electrocution	1	4.0%

1 Death

October	**25**	**6.7%**
Cause	**# of Burns**	**% by Month**
Scald	**11**	**44.0%**
Cooking	5	20.0%
Cooking Liquids	*4*	*16.0%*
Hot Food	*1*	*4.0%*
Hot Beverages	3	12.0%
Hot Tap Water	3	12.0%
Flame	**5**	**20.0%**
Cooking	3	12.0%
Barbeque	*1*	*4.0%*
Barbeque Gas	*1*	*4.0%*
Cooking Liquids	*1*	*4.0%*
Gasoline	1	4.0%
Propane	1	4.0%
Fire	**4**	**16.0%**
Camp Fire	1	4.0%
Candle	1	4.0%
House Fire	1	4.0%
Ignitable Liquids	1	4.0%
Explosion	**2**	**8.0%**
Propane	2	8.0%
Contact	**2**	**8.0%**
Radiator	1	4.0%
Stove	1	4.0%
Other	**1**	**4.0%**
Chemical	1	4.0%

0 Deaths

November	**28**	**7.5%**
Cause	**# of Burns**	**% by Month**
Scald	**13**	**46.4%**
Cooking	8	28.6%
Cooking Liquids	*4*	*14.3%*
Hot Food	*4*	*14.3%*
Hot Beverages	2	7.1%
Hot Tap Water	2	7.1%
Car Radiator	1	3.6%
Fire	**8**	**28.6%**
Gasoline	4	14.3%
House Fire	2	7.1%
Camp Fire	1	3.6%
Self-Immolation	1	3.6%
Flame	**4**	**14.3%**
Gasoline	2	7.1%
Stove	1	3.6%
Woodstove	1	3.6%
Contact	**2**	**7.1%**
Heating	2	7.1%
Radiator	*1*	*3.6%*
Space Heater	*1*	*3.6%*
Other	**1**	**3.6%**
Chemical	1	3.6%

1 Death

December	**22**	**5.9%**
Cause	**# of Burns**	**% by Month**
Scald	**14**	**63.6%**
Cooking	8	36.4%
Cooking Liquids	*7*	*31.8%*
Hot Food	*1*	*4.5%*
Hot Beverages	2	9.1%
Hot Tap Water	2	9.1%
Car Radiator	1	4.5%
Heater	1	4.5%
Flame	**4**	**18.2%**
Alcohol	1	4.5%
Candle	1	4.5%
Smoking on Oxygen	1	4.5%
Stove	1	4.5%
Fire	**2**	**9.1%**
House Fire	2	9.1%
Contact	**1**	**4.5%**
Stove	1	4.5%
Other	**1**	**4.5%**
Chemical	1	4.5%

1 Death

Burn Injuries by Victim's Community

County	# of Burns
BARNSTABLE	**11**
Falmouth	6
Barnstable	2
Chatham	1
Dennis	1
Yarmouth	1
BERKSHIRE	**10**
Pittsfield	3
Becket	2
Cheshire	2
Savoy	2
Williamstown	1
BRISTOL	**11**
Berkley	2
Fall River	2
New Bedford	2
Easton	1
Mansfield	1
North Attleboro	1
Somerset	1
Taunton	1
ESSEX	**47**
Lawrence	21
Lynn	6
Haverhill	4
Methuen	4
Salem	3
Peabody	2
Saugus	2
Andover	1
Beverly	1
Ipswich	1
Lynnfield	1
Marblehead	1

County	# of Burns
ESSEX (con't)	
North Andover	1
Wenham	1
FRANKLIN	**2**
Greenfield	1
Montague	1
HAMPDEN	**36**
Springfield	21
Holyoke	4
Chicopee	3
Ludlow	2
West Springfield	2
Longmeadow	1
Palmer	1
Tolland	1
Westfield	1
HAMPSHIRE	**3**
Easthampton	1
South Hadley	1
Ware	1
MIDDLESEX	**44**
Dracut	6
Lowell	5
Malden	4
Cambridge	3
Everett	3
Woburn	3
Chelmsford	2
Framingham	2
Medford	2
Somerville	2
Ashland	1
Billerica	1

County	# of Burns
MIDDLESEX (con't)	
Littleton	1
Marlborough	1
Melrose	1
Natick	1
Stoneham	1
Sudbury	1
Tewksbury	1
Townsend	1
Wakefield	1
Waltham	1
NANTUCKET	**3**
Nantucket	3
NORFOLK	**20**
Quincy	4
Weymouth	4
Braintree	3
Dedham	3
Stoughton	2
Needham	1
Norwood	1
Sharon	1
Westwood	1
PLYMOUTH	**25**
Brockton	10
Rockland	3
Abington	2

County	# of Burns
PLYMOUTH (con't)	
Wareham	2
Duxbury	1
Halifax	1
Hanson	1
Hingham	1
Marshfield	1
Middleborough	1
Pembroke	1
Whitman	1
SUFFOLK	**49**
Boston	35
Revere	7
Winthrop	4
Chelsea	3
WORCESTER	**14**
Ashburnham	2
Clinton	1
Douglas	1
Fitchburg	1
Gardner	1
Leominster	1
Milford	1
Northborough	1
Southbridge	1
Sutton	1
Webster	1
Westborough	1
Worcester	1