Massachusetts Burn Injury Reporting System

2018 Annual Report

Department of Fire Services
Division of Fire Safety

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Massachusetts Burn Injury Reporting System

2018 Annual Report

33 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 2018, the 33rd full year of the Massachusetts Burn Injury Reporting System (M-BIRS), 36 acute care hospitals and other health care facilities reported 345 victims of burns. Thirty-two (32) of these 345 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 2018, 13 burn injuries were referred to OSHA and one case to the Department of Labor for public sector cases that met their criteria.

Scalds Caused Almost Half of Reported Burn Injuries
Scalds have been the leading cause of burn injuries for the past 33 years. In 2018, scalds caused 156, or 45%, 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 2018, young children were the most frequent victims of scald burns. Forty-six percent (46%) of the 156 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*.

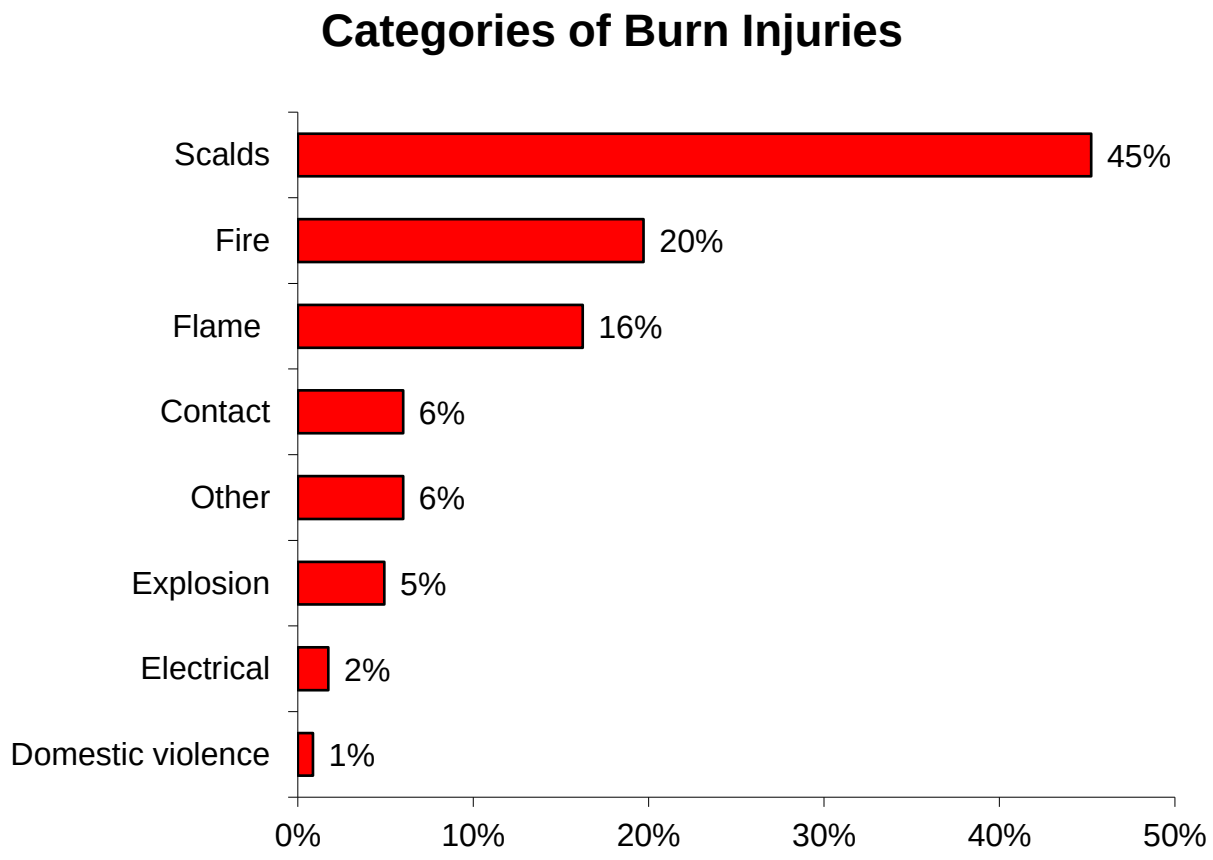
Burns from Fires Cause the 2nd Most Burn Injuries
Burn injuries from fires were the second highest cause of burn injuries in 2018, accounting for 20%. Camp or bon fires caused 44% of all burn injuries from fires. Flame burns caused 16% of the 2018 burn injuries. Cooking caused 27% of these flame burns in 2018.

Almost 2/3 of Burns Occurred in the Victim's Home
Of the 345 burn injuries reported to M-BIRS in 2018, 244, or 65%, occurred in the victim's home or surrounding yard. Over half, or 56% of these burn injuries were scalds. Six (6), or 3%, 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.

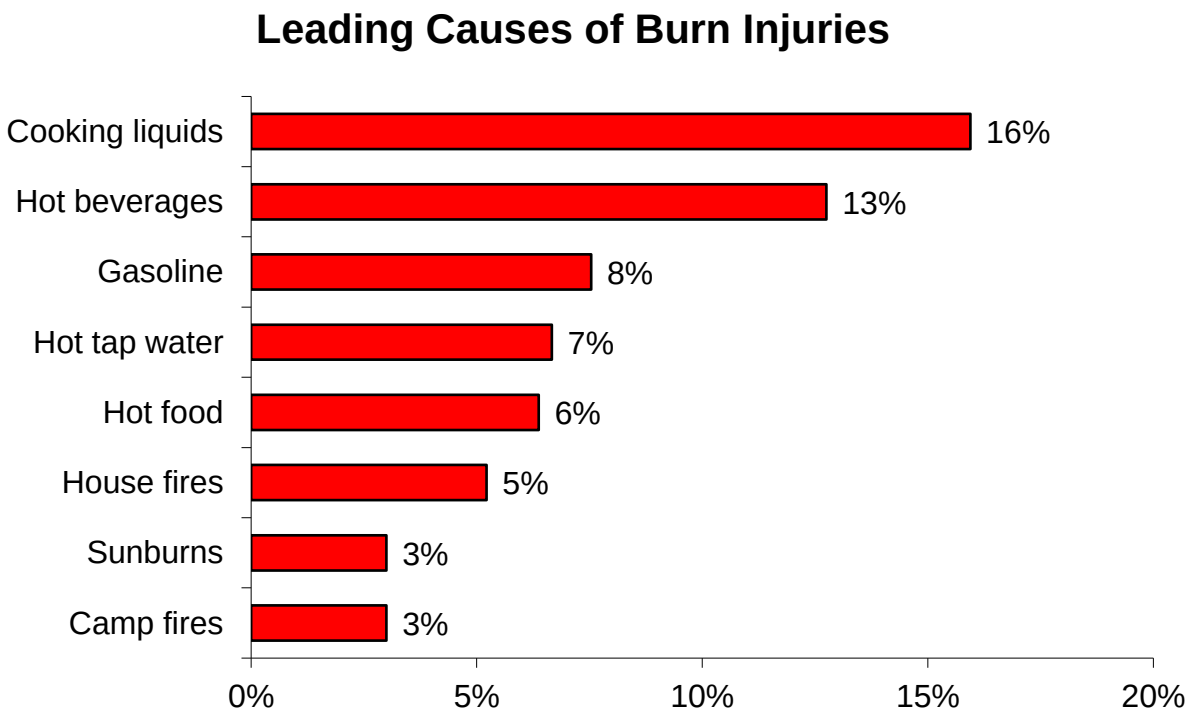
Half of All Burn Victims Never Come Near a Flame
Scalds from cooking liquids, hot liquids, tap water, food and steam caused 45% of the 345 burn injuries reported in 2018. Twenty percent (20%) were caused by burns from fires. Flame burns caused 16% of the burns.



[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. Sixteen percent (16%) of the 345 burn injuries reported in 2018 were from cooking liquids. Thirteen percent (13%) of the burns were caused by hot beverages. Gasoline caused 8% of total burns. For more information, please refer to the table *Specific Causes of Burn Injuries* in the Appendix.



Burn Injuries Caused by Scalds

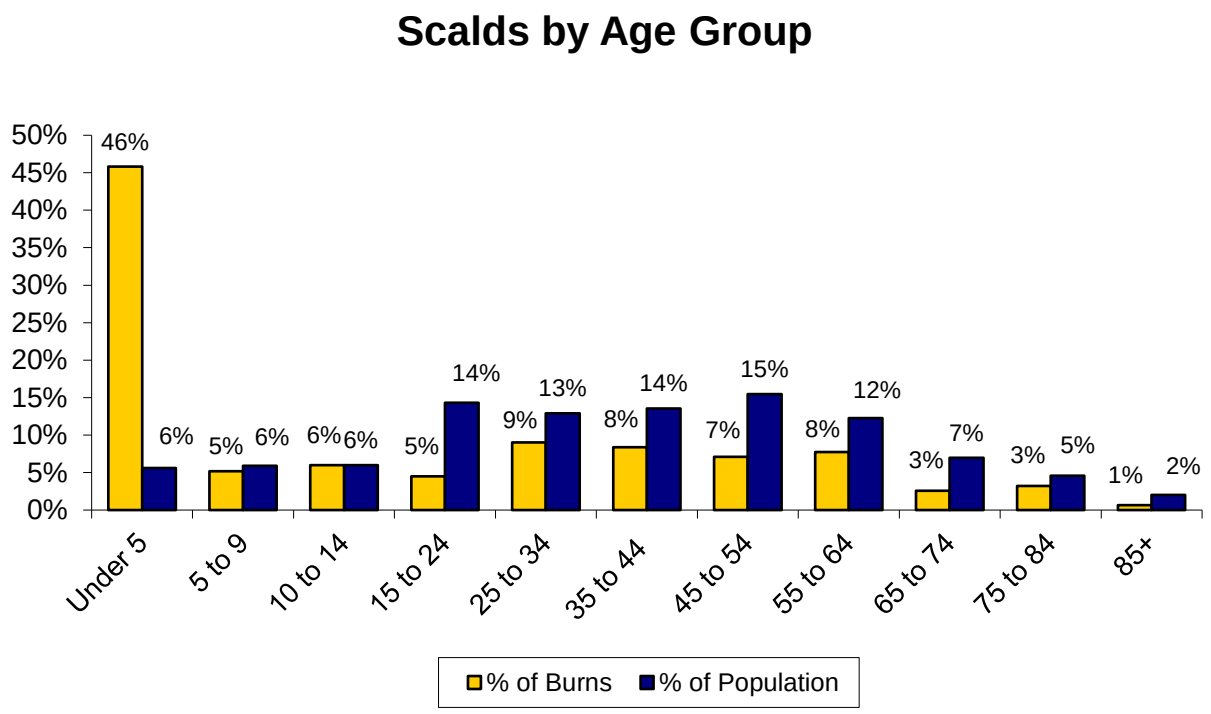
Scalds Have Been the Leading Cause of Burn Injuries Every Year
Scalds have been the leading cause of burn injuries every year since the inception of M-BIRS. The percentage of total burns has ranged from a high of 50% in 2017 to a low of 35% in 2005. The 10-year average from 2009 through 2018 is 46% of total annual reported burns.

Scalds Caused Nearly Half of All Burns
One hundred and fifty-six (156), or 45%, of the 345 reported burns were scalds. Twelve (12), or 8%, of the 156 scalds occurred while the victim was working. Seventy-six (76), or 49%, of the 156 scald victims were male and 80, or 51%, were female.

Gender	# of Burns	% of Scalds
Female	80	51%
Male	76	49%
Total	156	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 46% of all scald burns in 2018. Fifty (50), or 32%, were infants one year old or younger. Children aged five to nine accounted for 5% of scald burn injuries.



When the gold shaded (left) 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 8.2 times more likely to suffer a scald burn and children five to nine were 0.9 times as likely to suffer from a scald burn.

Cooking Liquids Caused 31% of All Scald Burns

Scald burns from cooking liquids were the leading cause of scald burns, accounting for 31% of all scald burns in 2018. Scalds from hot beverages were the second leading cause of scald burns, causing 28% of the 156 scald burns.

Description	# of Burns	% of Scald Burns	% of All Burns
Cooking	73	47%	21.2%
Cooking Liquids	*49*	*31%*	*14.2%*
Hot Food	*22*	*14%*	*6.4%*
Pressure Cooker	*2*	*1%*	*0.6%*
Hot Beverages	44	28%	12.8%
Hot Tap Water	23	15%	6.7%
Car Radiator	6	4%	1.7%
Steam	2	1%	0.6%
Appliance	1	1%	0.3%
Heater	1	1%	0.3%
Hot Water Bottle	1	1%	0.3%
Melted	1	1%	0.3%
Natural Spring	1	1%	0.3%
Oil	1	1%	0.3%
Pipe	1	1%	0.3%
Not Reported	1	1%	0.3%
Total	156	100%	45.2%

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.

54-Year Old Scalded at Work
On May 6, 2018, a 54-year old man was scalded while he was working by a burst steam pipe. He was burned over 15% of his body surface area.

20-Year Old Woman Receives Scald from Car Radiator
On August 27, 2018, a 20-year old woman received burns to 15% of her body surface area when she was took the cap off of her car radiator.

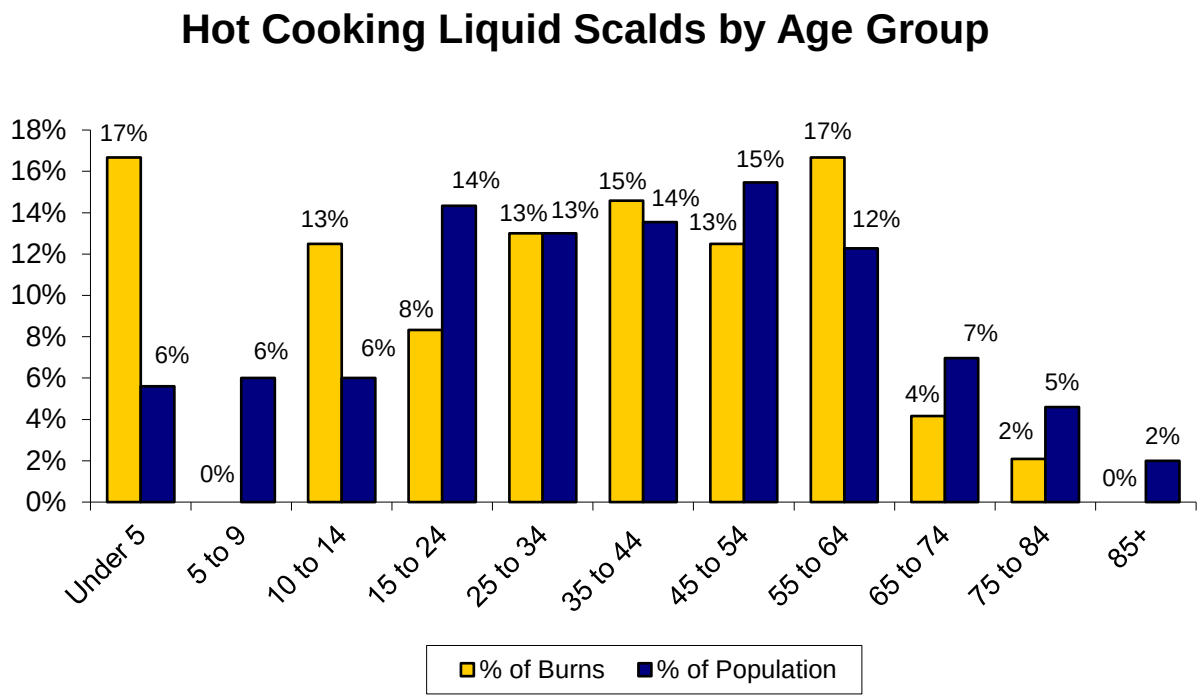
Hot Cooking Liquids

Hot Cooking Liquids Caused 31% of Scalds, 14% 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 49, or 31%, of the 156 scald burns and 14% of the 345 total burn injuries reported in 2018. Forty-nine percent (49%) of the victims were female and 51% were male. Hot cooking liquids scalded four people while they were at work, three victims were men and one was a woman.

[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.

17% 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 2018, 17% of the cooking liquid scald victims were under five years old. They were three 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 "3-Foot No Zone" in the kitchen and putting toddlers safely in high chairs or playpens during meal preparation can reduce these injuries.

Adults between the ages of 55 and 64 also represented 17% of cooking liquid scalds. They were 1.4 times more likely to be victims of this type of burn injury.



3-Year Old Girl Scalded by Cooking Liquids at Home
On September 23, 2018, a 3-year old girl was scalded when she pulled a pot of boiling water onto herself. She received burns to her arms, legs, chest and back.

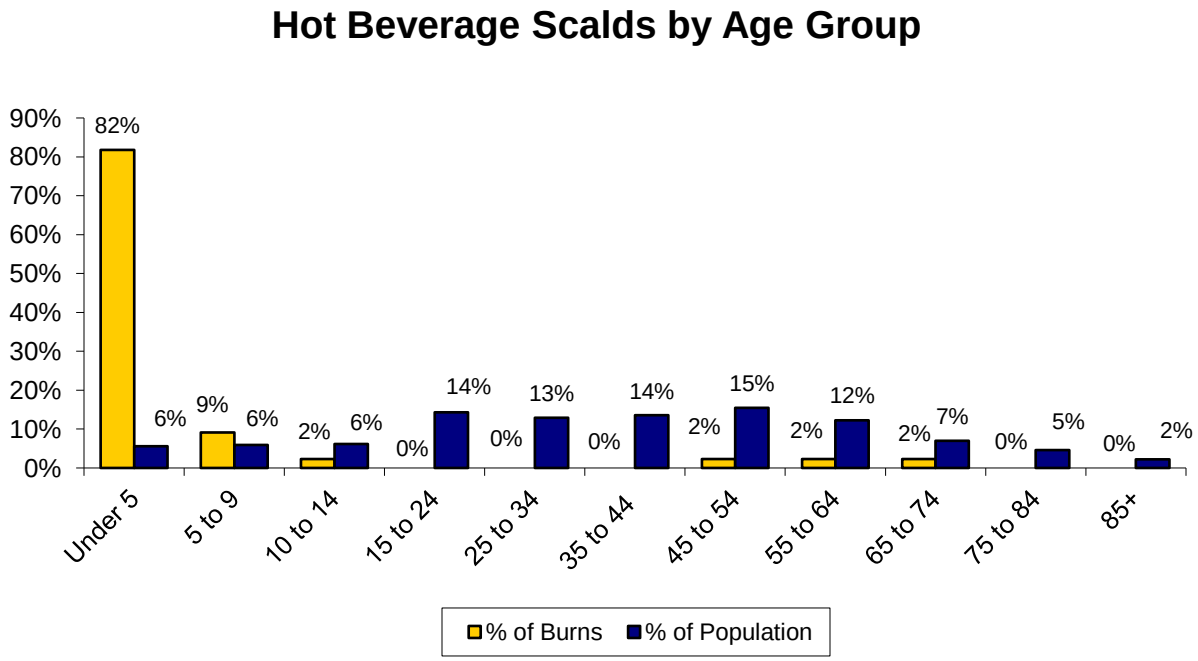
68-Year Old Woman Scalded by Cooking Liquids
On October 18, 2018, a 68-year old woman was scalded at home by a pot of boiling water. She received burns to her face, neck, chest, hands, arms and groin.

Hot Beverages

Hot Beverages Caused 28% of All Scalds
Forty-four (44), or 28%, of the 156 scald burns were caused by hot beverages. They accounted for 13% of the 345 total burn injuries.

Fifty-two percent (52%) of the hot beverage scald victims were male and 48% were female. In 2018, there were no reported hot beverage scalds while working.

82% of the Hot Beverage Scald Victims Were Under 5
Thirty-six (36), or 82%, of all hot beverage scald victims were under five years old.



1-Year Old Scalded by Beverage
On August 4, 2018, a one-year old boy pulled a large cup of coffee and spilled it on himself. He received second degree scald burns to 20% of his body surface area.

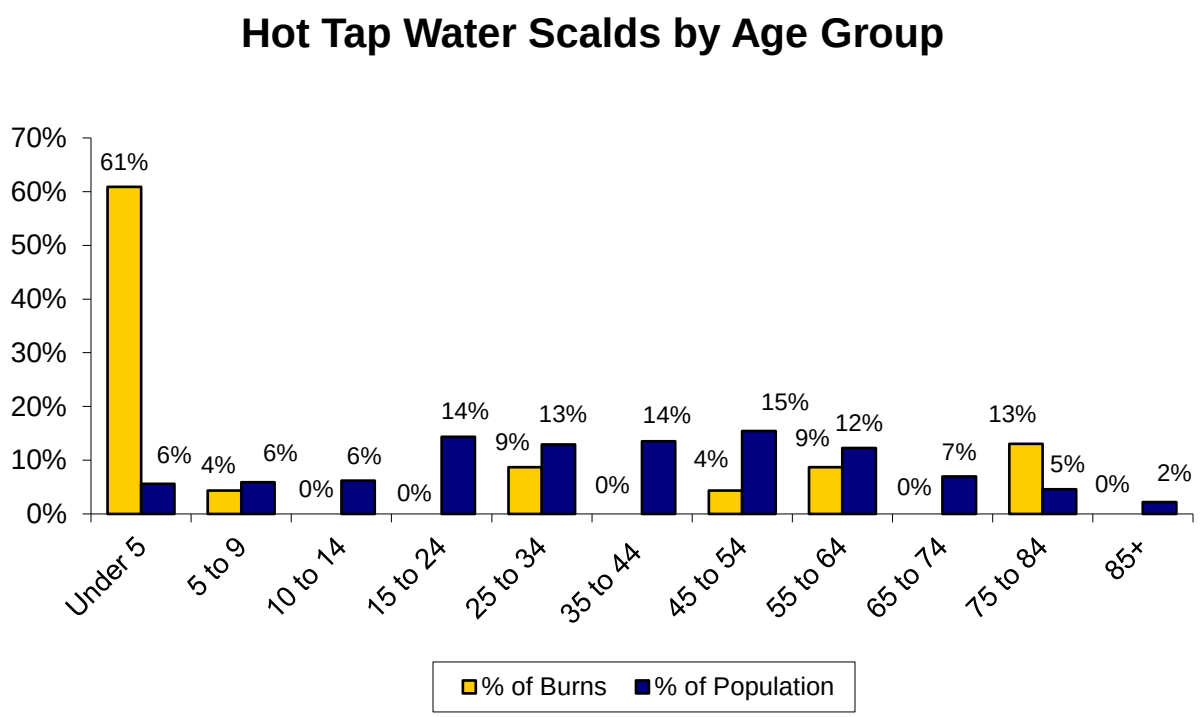
11-Month Old Girl Scalded by Beverage
On June 26, 2018, an 11-month old girl was burned by spilled coffee. She received scald burns to approximately 12% of her body surface area.

Hot Tap Water

Hot Tap Water Caused 15% of All Scalds & 7% of All Burns
Excessively hot tap water caused 23, or 15%, of the 156 scald burns and 7% of the 345 total burn injuries reported to M-BIRS in 2018. 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.

In 2018, 52% of the victims were male and 48% were female. There were three work-related hot tap water scald burns in 2018, two were men and one was a woman.

61% of Tap Water Scald Victims Were Under the Age of 5
Sixty-one percent (61%), or 14 of the 23 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.



[3] Source: Knapp Burn Foundation

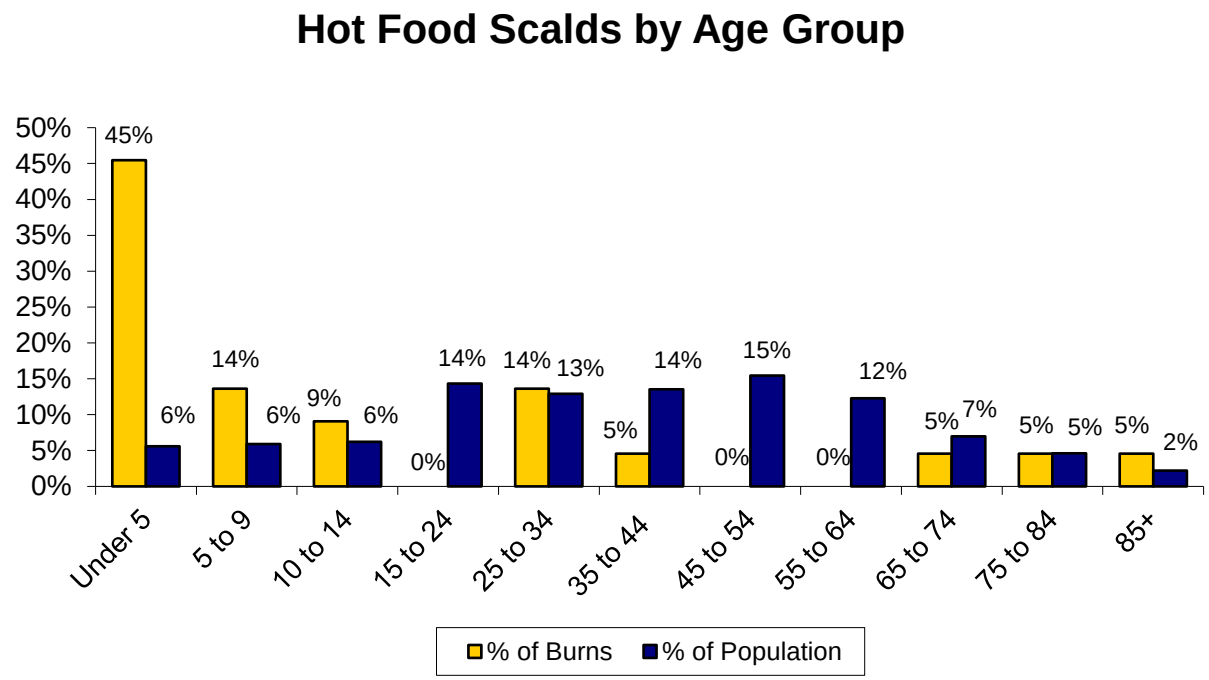
2-Month Old Girls Scalded by Hot Tap Water
On July 13, 2018, a 2-month old girl received burns to 25% of her body surface area when she was scalded by hot tap water.

84-Year Old Scalded by Tap Water
On October 30, 2018, an 84-year old man was scalded on his chest, back, arm, neck and groin by hot tap water after he fell in the shower.

Hot Food

Hot Food Caused 14% of Scalds, 6% of All Burns
Hot food caused 22, or 14%, of the 156 scald burns and 6% of the 345 total burn injuries reported in 2018. Sixty-four percent (64%) of the victims were female and 36% were male. There were three work-related hot food scalds reported in 2018, one was a man and the other two were women.

59% of Hot Food Scald Victims Were Under 10
Of the 22 reported scald victims from hot food in 2018, 13, or 59%, were under the age of ten. Ten (10), or 45%, were under five years old and three victims, or 14%, were between five and nine.



1-Year Old Boy Received Scald Burns from Food
On November 27, 2018, a 1-year old boy received scald burns to his neck, chest and left arm when he pulled hot soup onto himself.

66-Year Old Woman Suffers Scald Burns from Food
On August 10, 2018, a 66-year old woman suffered scald burns to over 15% of her body surface area when she accidentally spilled hot soup on herself.

Burn Injuries Caused by Fires

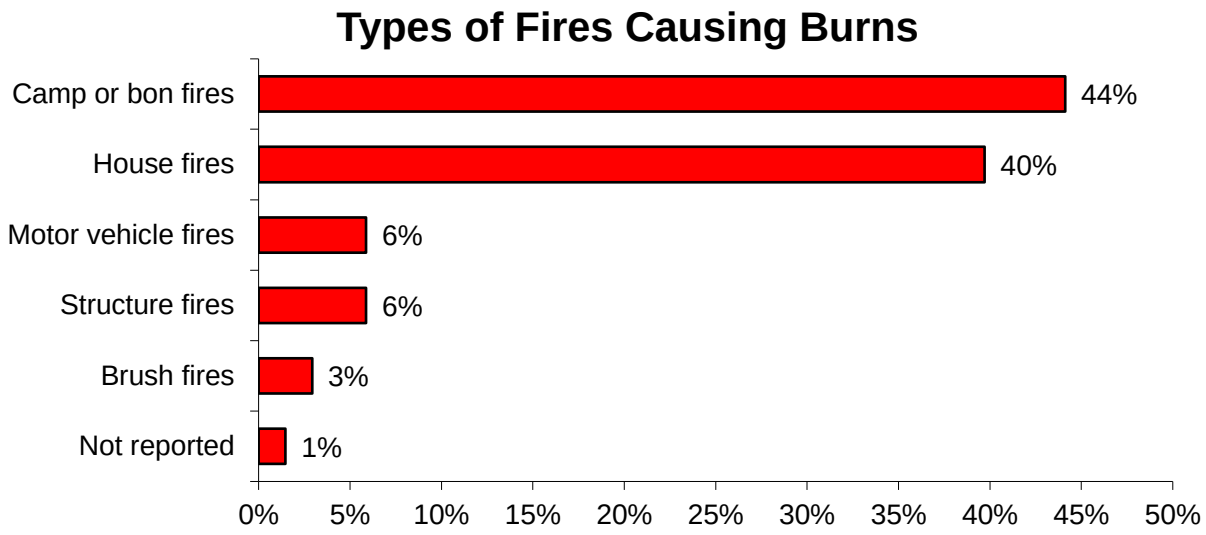
Fires Caused 20% of All Burn Injuries
Sixty-eight (68), or 20% of the 345 burn injuries reported in 2018 were caused by fires. This is a 1% decrease from the 69 fire burns reported the previous year. The highest number of burn injuries from a fire were the 96 burn injuries in 2003, excluding the 26 burn victims from the fire at The Station nightclub who were treated in Massachusetts.

Sixty-five percent (65%) of the 68 victims were male and 35% were female. 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].

44% of Fire Burn Injuries Occurred at Camp or Bonfires
Camp or bonfires caused 30, or 44% of the 68 fire burn injuries reported in 2018. House fires caused 27, or 40%.

Fire Type	Description Of Burn	# of Burns	% of Total
House Fire	House Fire	18	26%
House Fire	Smoking	3	4%
House Fire	Cooking	1	1%
House Fire	Electrical	1	1%
House Fire	Fire Control	1	1%
House Fire	Fireworks	1	1%
House Fire	Gasoline	1	1%
House Fire	Propane	1	1%
House Fire		27	40%
Structure Fire	Gasoline	2	3%
Structure Fire	Candle	1	1%
Structure Fire	Tent Fire	1	1%
Structure Fire		4	7%
MV Fire	MVA	2	3%
MV Fire	Car Fire	1	1%
MV Fire	Gasoline	1	1%
MV Fire		4	6%
Brush Fire	Gasoline	2	3%
Brush Fire		2	3%
Camp Or Bon Fire	Gasoline	12	18%
Camp Or Bon Fire	Camp Fire	12	18%
Camp Or Bon Fire	Bonfire	3	4%
Camp Or Bon Fire	Ignitable Liquids	2	3%
Camp Or Bon Fire	Alcohol	1	1%
Camp Or Bon Fire		30	44%
Not Reported	Unknown	1	1%
Not Reported	Unknown	1	1%
Total Fires		68	100%

[4] 2018 Annual Report of the Massachusetts Fire Incident Reporting System, MA Dept. of Fire Services, pg. 111.



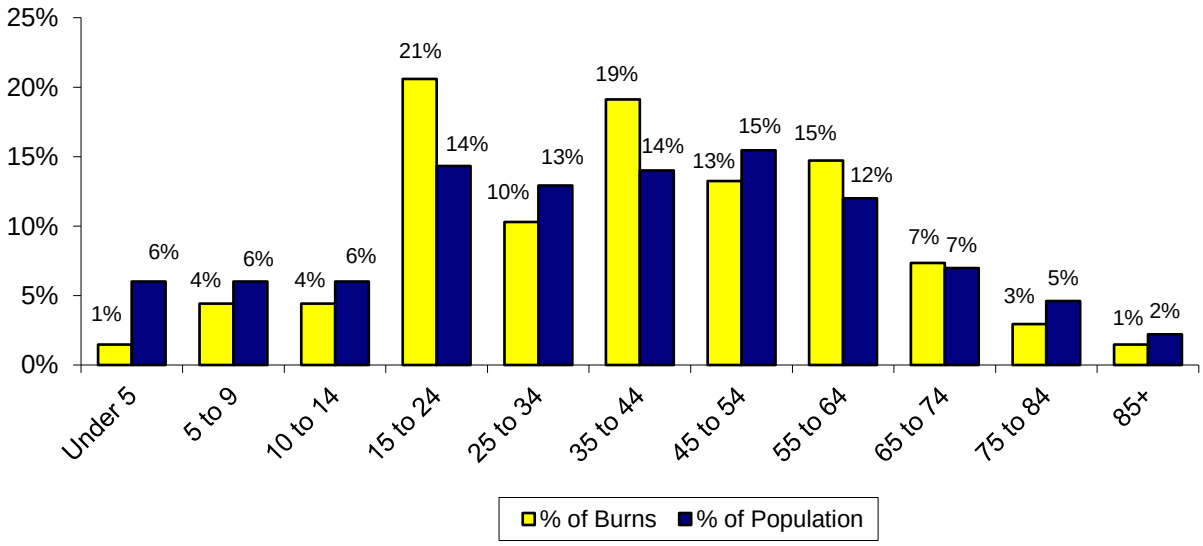
Young Adults Most Likely to Be Burned in Fires

Young adults between the ages of 15 and 24 years old and adults between the ages of 35 and 44 and 55 to 64-years old had the most reported burns from fires. These age groups had 14, 13 and 10 burn injuries respectively from fires.

Young adults between 15 and 24 and adults between 35 and 44 were more likely (1.4 times) to be burned in a fire. Adults between 55 and 64 (1.2 times) and older adults between the ages of 65 and 74 were 1.1 times as likely to be burned in a fire in 2018.

Age	# of Burns	% of Burns	% of Population
Under 5	1	1%	6%
5 to 9	3	4%	6%
10 to 14	3	4%	6%
15 to 24	14	21%	14%
25 to 34	7	10%	13%
35 to 44	13	19%	14%
45 to 54	9	13%	15%
55 to 64	10	15%	12%
65 to 74	5	7%	7%
75 to 84	2	3%	5%
85+	1	1%	2%
Total Known	68	100%	100%

Fire Burn Injuries by Age Group



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.

7 Fire Deaths Recorded in M-BIRS
Seven (7) of the victims that were reported to have received their burn injuries from fires died as a result of their injuries. All seven of the victims were Massachusetts residents and died in residential fires.

79-Year Old Man Killed in House Fire
On January 7, 2018, a 79-year old Boston man was killed in a house fire. He had burns to over 70% of his body surface area. He was transported to a local hospital where he succumbed to his injuries.

56-Year Old Woman Dies in House Fire
On January 17, 2018, a 56-year old New Bedford woman was burned in a smoking fire at home. She received life-threatening burns to her back and head. She was transported to a local hospital where she succumbed to her injuries.

84-Year Old Man Killed in House Fire
On March 8, 2018, an 85-year old Andover man was killed in a house fire. He was smoking while using home oxygen and that started the fire. He had burns to over 90% of his body surface area. He was transported to a local hospital where he succumbed to his injuries.

54-Year Old Woman Dies in House Fire
On March 25, 2018, a 54-year old Quincy woman died in a house fire. She had burns to approximately 90% of her body surface area. She was rescued by firefighters and transported to a local hospital where she succumbed to her injuries.

88-Year Old Woman Dies in House Fire
On July 31, 2018, an 88-year old Weston woman sustained life-threatening burn injuries to 40% of her body surface area. She was transported to a local hospital where she succumbed to her injuries.

57-Year Old Woman Killed in House Fire
On November 8, 2018, a 57-year old Amherst woman was burned over 70% of her body surface area when the improper disposal of smoking materials started the fire in her apartment. She was transported to a local hospital and then transferred to a Boston hospital where she succumbed to her injuries.

67-Year Old Man Killed in House Fire
On December 16, 2018, a 67-year old Fall River man was killed in a house fire. He received life-threatening burns to over half of his body surface area. He was transported to a local hospital where he succumbed to his injuries.

27-Year Old Man Injured in Car Fire
On October 13, 2018, a 27-year old man received life-threatening burns to 4% of his body while he was driving in his car. The man had a gas powered trimmer in the passenger seat that was leaking gas. He lit a cigarette and that started the fire.

19-Year Old Man Injured in Tent Fire
On August 5, 2018, a 19-year old homeless man was injured when the tent he was sleeping in caught fire. He received life-threatening burns to 20% of his body surface area.

69-Year Old Man Injured in Outside Fire
On August 4, 2018, a 69-year old man was injured when he poured gasoline onto an outside fire. He received burns to approximately 15% of his body surface area.

Flame Burn Injuries

Flames Caused 16% of Reported Burn Injuries
There were 56 reported flame burn injuries. These 56 injuries accounted for 16% of the 345 burn injuries reported in 2018. 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.

Fifty-seven percent (57%) of the flame burn casualties were male and 43% were female. Seven (7), or 13%, of the flame burns occurred during work-related activities; six of the victims were men and one was a woman.

Cooking & Ignitable Liquids Were the Leading Cause of Flame Burns
Cooking was the leading cause of flame burn injuries in 2018. Cooking caused 15, or 27%, of all flame burns. Ignitable liquids was the second leading cause with 10 injuries and 18%. Smoking was the third leading cause of flame burns causing seven, or 13%, of these burn injuries.

Description	# of Burns	% of Flame Burns
Cooking	15	27%
Cooking Liquids	4	7%
Cooking Unspec.	4	7%
Barbeque	3	5%
Oven	2	4%
Barbeque Gas	1	2%
Stove	1	2%
Ignitable Liquids	10	18%
Ignitable Liquids	5	9%
Gasoline	5	9%
Smoking	7	13%
Smoking on Oxygen	4	7%
Smoking Unspec.	3	5%
Candle	6	11%

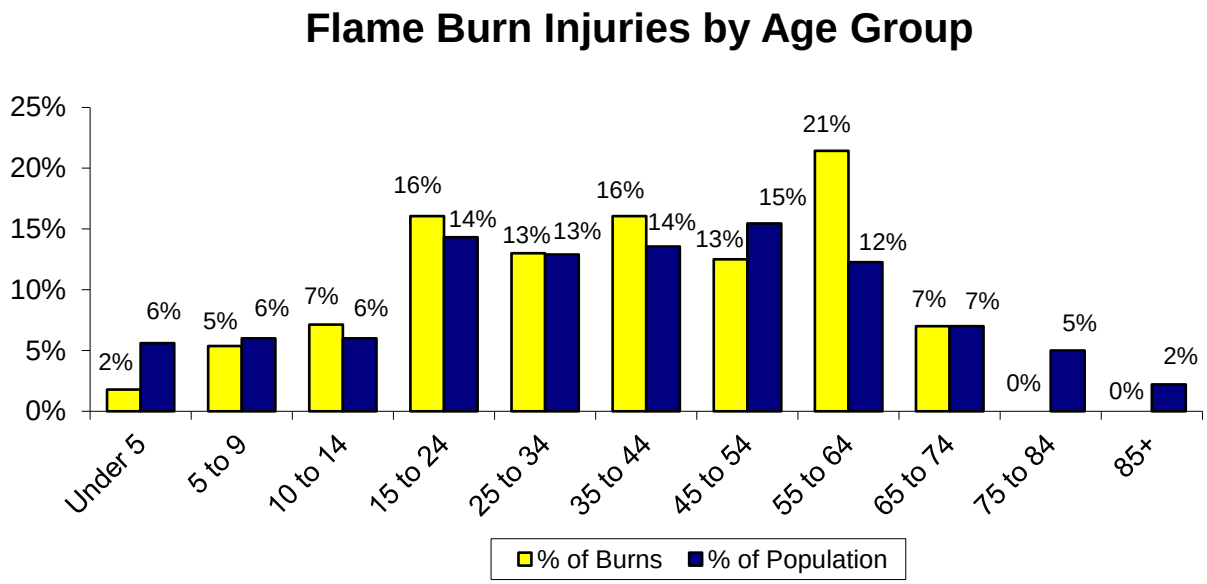
Description	# of Burns	% of Flame Burns
Self-Immolation	4	7%
Heater	4	7%
Heater	3	5%
Woodstove	1	2%
Aerosol	1	2%
Alcohol	1	2%
Arson	1	2%
Bomb Making	1	2%
Child w/Lighter	1	2%
Fireworks	1	2%
Flammables	1	2%
Lighter	1	2%
Wax	1	2%
Welding	1	2%
Total	56	100%

Adults 55 to 64 Had Most Flame Burns
Adults between the ages of 55 to 64 had 12 reported flame burn injuries.

Age	# of Burns	% of Burns	% of Population
Under 5	1	2%	6%
5 to 9	3	5%	6%
10 to 14	4	7%	6%
15 to 24	9	16%	14%
25 to 34	7	13%	13%
35 to 44	9	16%	14%
45 to 54	7	13%	15%
55 to 64	12	21%	12%
65 to 74	4	7%	7%
75 to 84	0	0%	5%
85+	0	0%	2%
Total	56	100%	100%

Adults 55 to 64 Faced Higher Risk of Flame Burns

Four (4) groups were at a higher risk for burns from flames. Children between 10 and 14 (1.2 times); young adults between 15 and 24 (1.1 times); adults between the ages of 35 to 44 (1.2 times); and adults between the ages of 55 to 64 (1.7 times) were all more likely to receive a flame burn injury.



24-Year Old Man Burned by Welding

On May 8, 2018, a 24-year old man received flame burn injuries to approximately 10% of his body surface area when he ignited his sweatshirt by cutting and welding metal.

44-Year Old Man Burned by Woodstove

On January 25, 2018, a 44-year old man received flame burn injuries to approximately 20% of his body surface area when he was lighting a wood stove and used gasoline as an accelerant.

24-Year Old Man Burned in Suicide Attempt
On May 5, 2018, a 24-year old man received life-threatening burns when he doused himself in gasoline while at work at a gas station and ignited it. He received life-threatening burns to 70% of his body surface area.

64-Year Old Woman Burned While Smoking on Oxygen
On November 23, 2018, a 64-year old woman was burned when she was smoking while using supplemental oxygen at home. She received flame burn injuries to her face and compromised her airway.

Clothing Ignitions

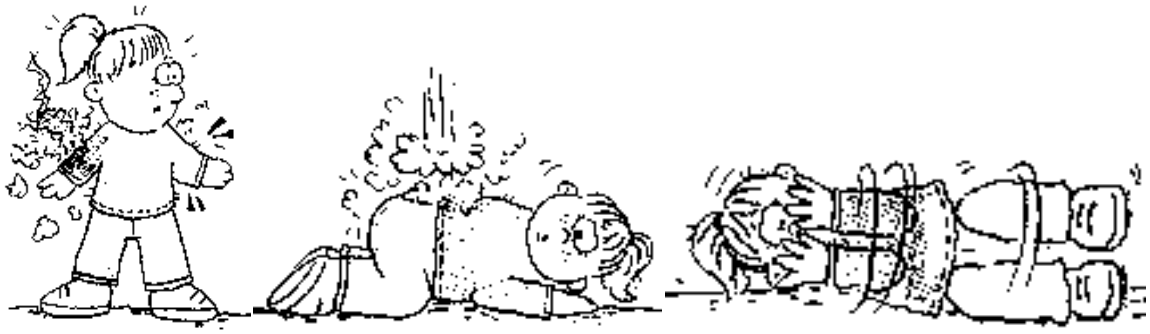
Clothing Ignitions Account for 13% of Flame Burn Injuries
There were seven clothing ignitions resulting in flame burn injuries that accounted for 13% of all flame burn injuries. Cooking was the leading cause of clothing ignitions with two reported in 2018.

Clothing Ignitions	# of Flame Burns	% of All Flame Burns
Cooking	2	4%
Candle	1	2%
Gasoline	1	2%
Heater	1	2%
Smoking	1	2%
Welding	1	2%
Total	7	13%

69-Year Old Woman's Clothes Caught Fire
On December 16, 2018, a 69-year old woman was burned when her clothes ignited while cooking. She received flame burn injuries to approximately 15% of her body surface area.

ALWAYS REMEMBER TO:

STOP DROP COVER & ROLL



Contact Burn Injuries

Contact with Hot Objects Caused 6% of Reported Burn Injuries
Twenty (20), or 6%, of the 345 burn injuries reported in 2018 were caused by contact with hot objects. Seventy percent (70%) of the burn victims were male and 30% were female. There were three reports of contact burns that occurred at work in 2018. All of the victims were male.

Heating Was the Leading Cause of Contact Burns
Contact with heating appliances caused five, or 25%, of the contact burns in 2018. Concrete, pavement burns, stoves and hot wax were all tied as the second leading cause of contact burn injuries with two.

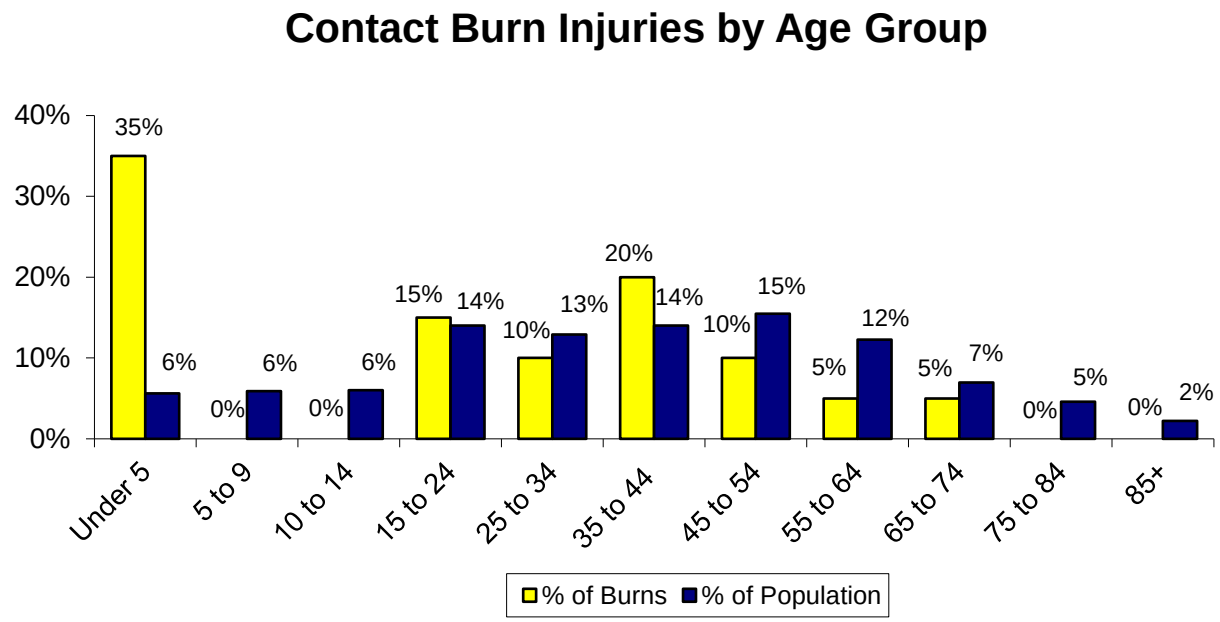
Description	# of Burns	% of Contact burns
Heating	5	25%
Heater	3	15%
Radiator	1	5%
Woodstove	1	5%
Concrete	2	10%
Pavement Burns	2	10%
Stove	2	10%
Wax	2	10%

Description	# of Burns	% of Contact burns
Asphalt	1	5%
Curling-Iron	1	5%
Embers	1	5%
Metal	1	5%
MVA	1	5%
Pipe	1	5%
Not Reported	1	5%
Total	20	100%

35% of Contact Burns Were to Children Under 5
Children under the age of five accounted for seven, or 35%, of all contact burns.

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

Pre-schoolers faced 6.2 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.



3-Year Old Burned by Embers
On July 26, 2018, a 3-year old boy was burned when he fell and the embers from a charcoal grill fell on him. He received burns to approximately 17% of his body surface area.

44-Year Old Gets Contact Burns from Radiator
On December 16, 2018, a 44-year old man received contact burns to the left side of his body when he was laying against a radiator in his apartment.

Other Types of Burn Injuries

***Other* Type Burns Cause 19 Injuries**
In 2018, there were 19 burn injuries that were characterized as *Other*. These 19 injuries caused 6% of all 2018 burn injuries. Sunburns caused 12, or 63%, of *Other* burns. Chemicals caused six *Other* burns, or 32%, and one, or 5%, was attributed to inhalant abuse.

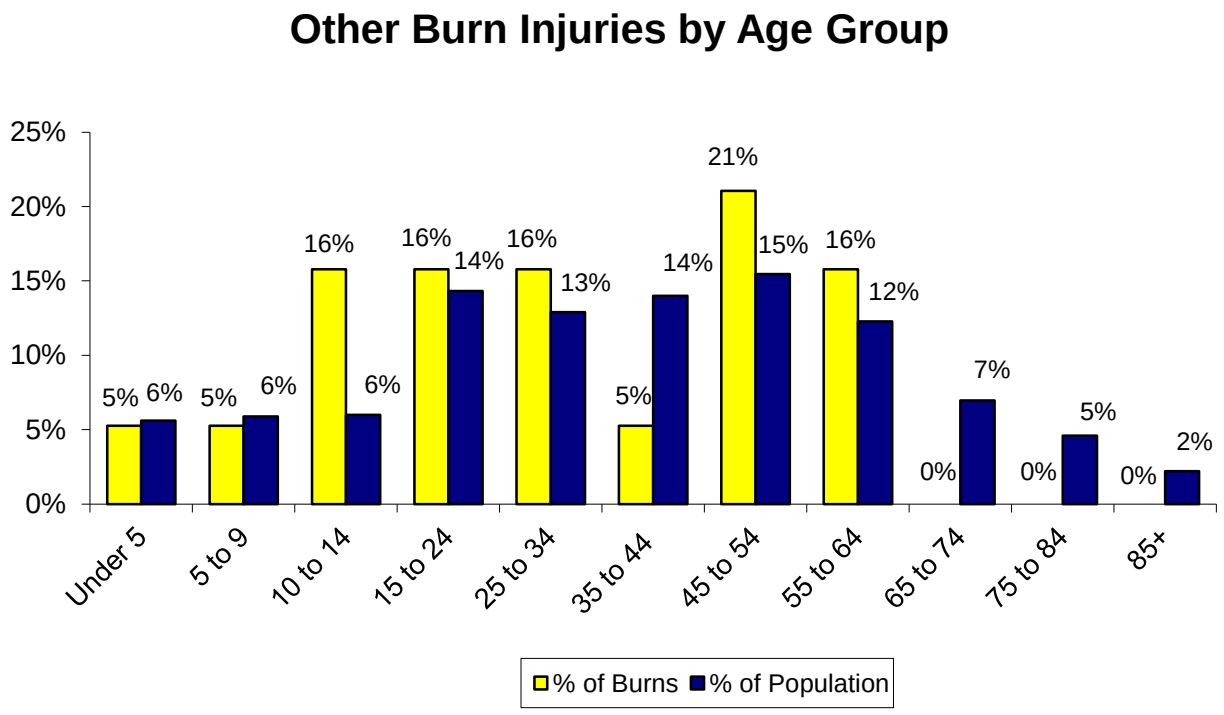
Description	Total # of Burns	% of Other Burns
Sunburn	12	63%
Chemical	6	32%
Inhalant Abuse	1	5%
Total Other Burns	19	100%

Twelve (12), or 63%, of the 19 victims were male, and seven, or 37%, were female. Health care facilities reported that three, or 14% of the 19 *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 2018, 58% of the victims were between the ages of 15 and 54 years old.

Age	# of Burns	% of Burns	% of Population
Under 5	1	5%	6%
5 to 9	1	5%	7%
10 to 14	3	16%	7%
15 to 24	3	16%	13%
25 to 34	3	16%	15%
35 to 44	1	5%	17%
45 to 54	4	21%	14%
55 to 64	3	16%	9%
65 to 74	0	0%	7%
75 to 84	0	0%	5%
85+	0	0%	2%
Total	19	100%	100%

Young Adults & Older Adults at Higher Risk
In 2018, there were eight age groups that reported an *Other* type burn injury. Five (5) age groups were at a higher risk for these types of burns: Ages 10 to 14 (2.6 times), 15 to 24 (1.1 times), 25 to 34 (1.2 times), 45 to 54 (1.4 times), and 55 to 64 (1.3 times).



47-Year Old Man Burned by Inhalant Abuse
On February 2, 2018 a 47-year old man received burns to approximately 12% of his body surface area while he was abusing inhalants.

54-Year Old Woman Gets Sunburn
On May 24, 2018 a 54-year old woman suffered a sunburn to approximately 27% of her body surface area.

Burn Injuries Caused by Explosions

Explosions Caused 5% of Reported Burn Injuries
Sixteen (16), or 5%, of the 345 burn injuries reported in 2018 were caused by explosions. Eighty-one percent (81%) of the explosion burn victims were male and 19% were female.

Six (6) burns, or 38%, occurred during work-related activities. All six victims were men.

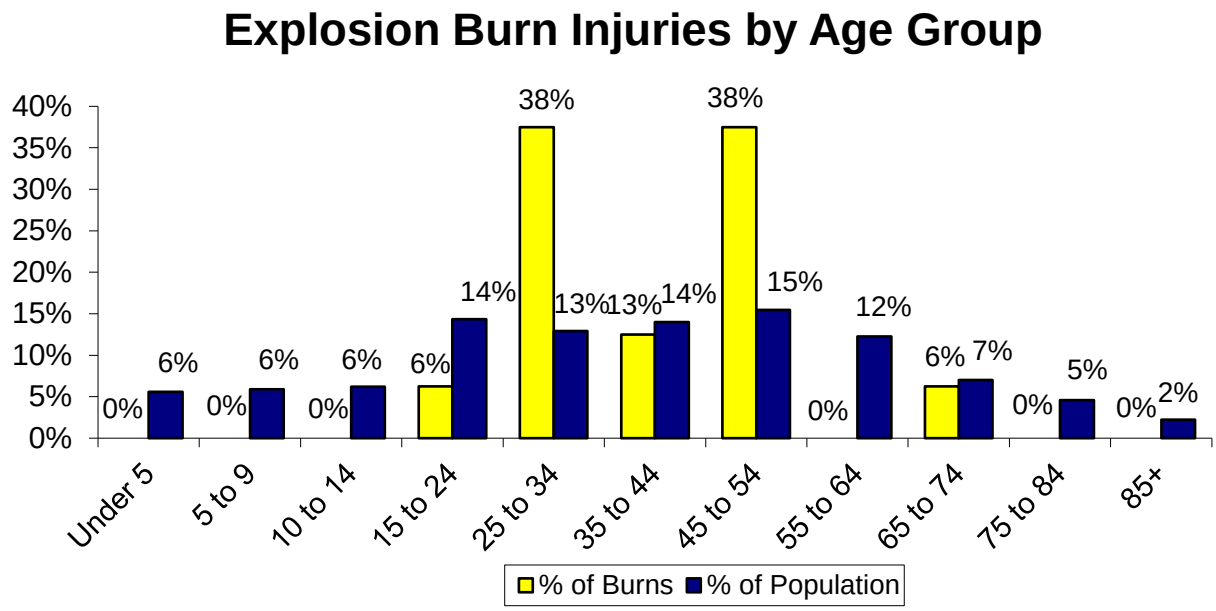
Cooking Was the Leading Cause of Explosion Burn Injuries
Cooking caused four explosion related burn injuries and gasoline and propane each accounted for three of the explosion-related burn injuries in 2018.

Description	# of Burns	% of Explosion
Cooking	4	25%
Stove	*2*	*13%*
Barbeque	*1*	*6%*
Pressure Cooker	*1*	*6%*
Gasoline	3	19%
Propane	3	19%
E-Cigarette	2	13%
Battery	2	13%
Steam	1	6%
Explosives	1	6%
Total	16	100%

Adults Have Most Explosion Burns
Adults between the ages of 25 and 34 and 45 and 54 had the most explosion-related burn injuries, each with six and accounting for 38%. Adults between the ages of 35 and 44 had the second most burn injuries from explosions with two, accounting for 13%.

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	6%	14%
25 to 34	6	38%	13%
35 to 44	2	13%	14%
45 to 54	6	38%	15%
55 to 64	0	0%	12%
65 to 74	1	6%	7%
75 to 84	0	0%	5%
85+	0	0%	2%
Total	16	100%	100%

Adults Face Greatest Risk of Explosion Burns
Adults between 25 and 34 (2.9 times) and between the ages of 45 and 54 (2.4 times) were more likely to be burned in an explosion in 2018.



46-Year Old Man Killed in Steam Pipe Explosion
On July 18, 2018, a 46-year old man was killed in an industrial accident at Emerson Hospital. He was working in a crawl space on the boiler at the hospital when a steam pipe exploded. He received burns to approximately 90% of his body surface area.

28-Year Old Man Injured by Propane Explosion
On June 18, 2018, a 28-year old man was injured when a propane tank exploded while he was at work. He received life-threatening burns to 16% of his body surface area.

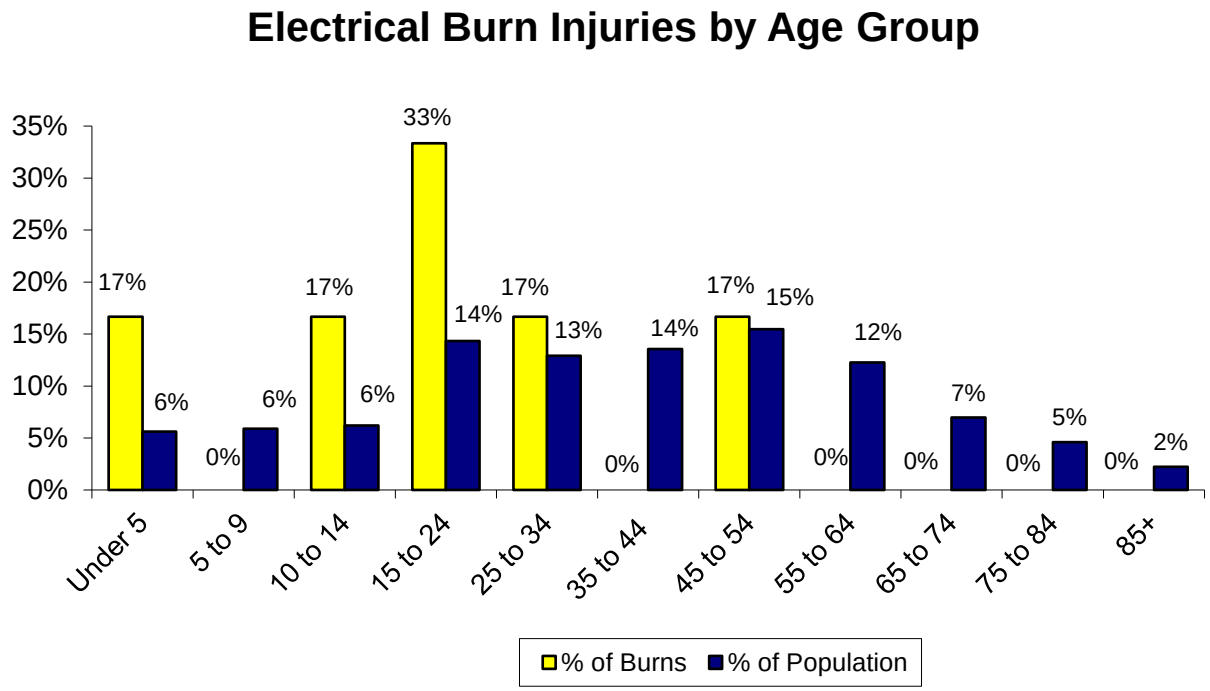
Electrical Burn Injuries

6 Electrical Incidents
Six (6), or 2%, of the 345 burn injuries reported in 2018 were caused by electrical accidents. All six of the electrical burn victims were men. Three (3) of these burns occurred during work-related activities.

4 Electrical Burns Were Electrocutions
Four (4) of the 2018 electrical burns were caused by electrocution and two were caused by unspecified electrical burns.

Description	# of Burns	% of Electrical Burns
Electrocution	4	67%
Electrical	2	33%
Total Electrical Burns	6	100%

Young Adults 15 to 24 Had Most Electrical Burn Victims
In 2018, the youngest electrical burn victim was 4-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 45 and 54 years old.



25-Year Old Man Burned by Generator
On August 9, 2018, a 25-year old man received electrical burns to his chest, upper extremities and face when he was painting too close to a running generator while at work.

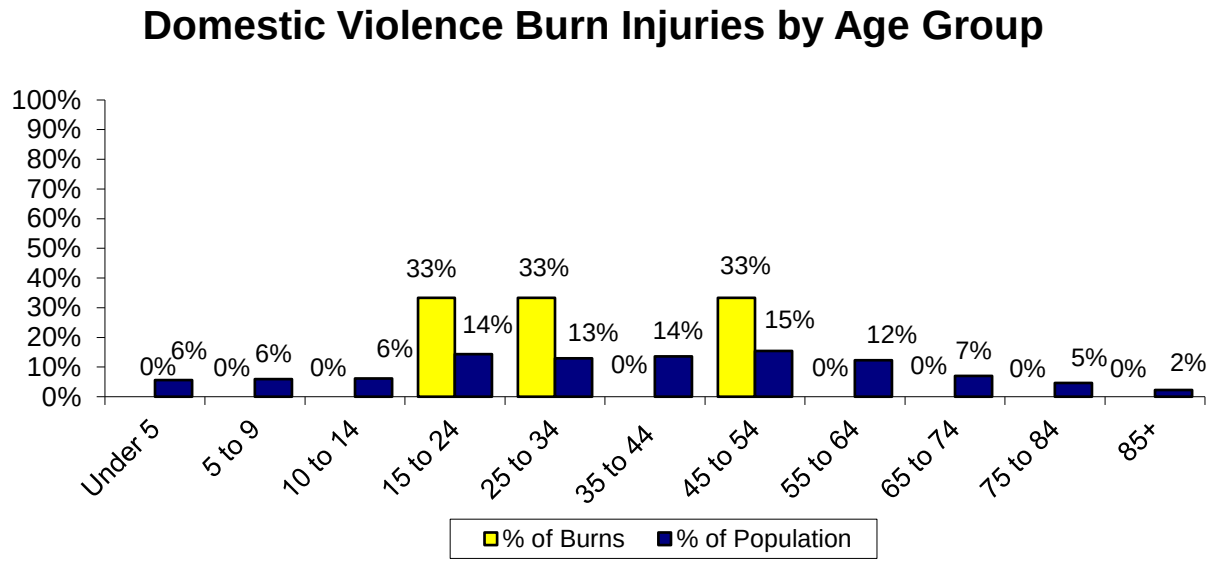
52-Year Old Man Electrocuted at Work
On October 24, 2018, a 52-year old man received electrical burns to approximately 25% of his body surface area while at work.

Burn Injuries from Domestic Violence

3 Burn Injuries from Domestic Violence Incidents
Three (3), or 1%, of the 345 burn injuries reported in 2018 were caused by domestic violence. Two (2) of the victims were men and one was a woman. Two (2) of the burns from domestic violence involved cooking liquids and the other was an assault.

Description	# of Burns	% of Electrical Burns
Cooking Liquids	2	6%
Assault	1	33%
Total Domestic Violence Burns	1	100%

3 Burn Victims Were Adults
In 2018, there were three domestic violence victims. One was a 17-year old woman, the other two were a 31-year old man and a 45-year old man.



45-Year Old Man Burned
On March 15, 2018, a 45-year old man was burned when he attempted to assault his girlfriend with cooking liquids. He received burns to a hand, forearm and buttocks.

31-Year Old Man Burned
On April 19, 2018, a 31-year old man was burned when his significant other tossed cooking liquids at him. He suffered severe burns to multiple areas of his body.

Gasoline Related Burn Injuries

Gasoline Involved in 9% of Reported Burn Injuries
Gasoline was involved in 31, or 9%, of the 345 burns reported to M-BIRS in 2018. Gasoline was the primary cause in 26 of these injuries, and the secondary cause in five of the 31 injuries.

Nineteen (19), or 61%, of the burn injuries involving gasoline caused by fires. Nine (9), or 29%, of the gasoline related burn injuries were flame burn injuries; and three, or 10%, were explosions.

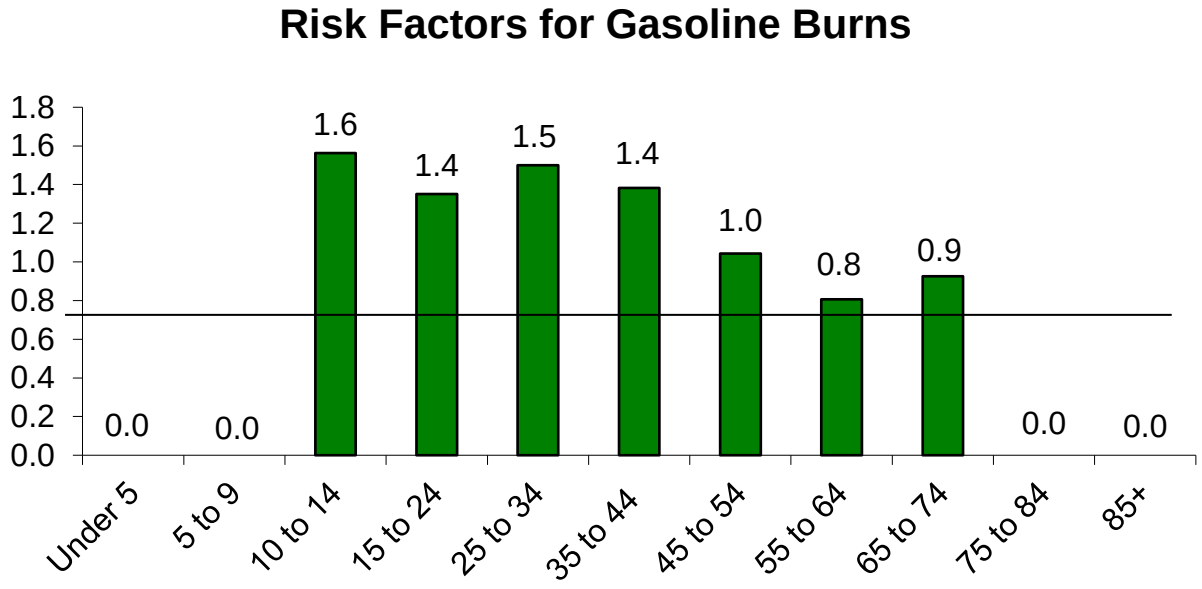
Burn Type	# of Burns	% of Gasoline Burns
Fire	19	61%
Flame	9	29%
Explosion	3	10%
Total Gasoline	31	100%

74% of Gasoline-Related Burn Victims Were Between the Ages of 15 & 34
No one under the age of 13 in 2018 was the victim of a burn injury involving gasoline. Six (6), or 19%, of the victims were between 15 and 24, six, or 19%, were between 25 and 34, and another six, or 19%, were between 35 and 44. Six (6), or 19%, of the gasoline burn injuries in 2018 were to children under the age of 18; 23, or 74%, of these injuries occurred to adults; and two, or 6%, happened to older adults. Four (4), or 13%, of the injuries occurred during work-related activities. Twenty-five (25), or 81%, of the 31 gasoline related burn victims in 2018 were men, and six, or 19% were women. The youngest victim was a 14-year old boy and the oldest victim was a 69-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	3	10%	6%	1.6
15 to 24	6	19%	14%	1.4
25 to 34	6	19%	13%	1.5
35 to 44	6	19%	14%	1.4
45 to 54	5	16%	15%	1.0
55 to 64	3	10%	12%	0.8
65 to 74	2	6%	7%	0.9
75 to 84	0	0%	5%	0.0
85+	0	0%	2%	0.0
Total	31	100%	100%	

Older Children 10 to 14 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 10 to 14 had the highest risk of getting a gasoline burn. In 2018, adults between the ages of 25 to 34 had the second highest risk of getting a burn involving gasoline.



15-Year Old Girl Burned by Gasoline

On June 22, 2018, a 15-year old girl received life-threatening flame burn injuries from gasoline to approximately 90% of her body surface area. She doused herself in gasoline in an attempted suicide.

30-Year Old Man Burned Using Gasoline
On July 31, 2018, a 30-year old man was burned when he was using gasoline to fix his motorcycle. He received flame burn injuries to 20% 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

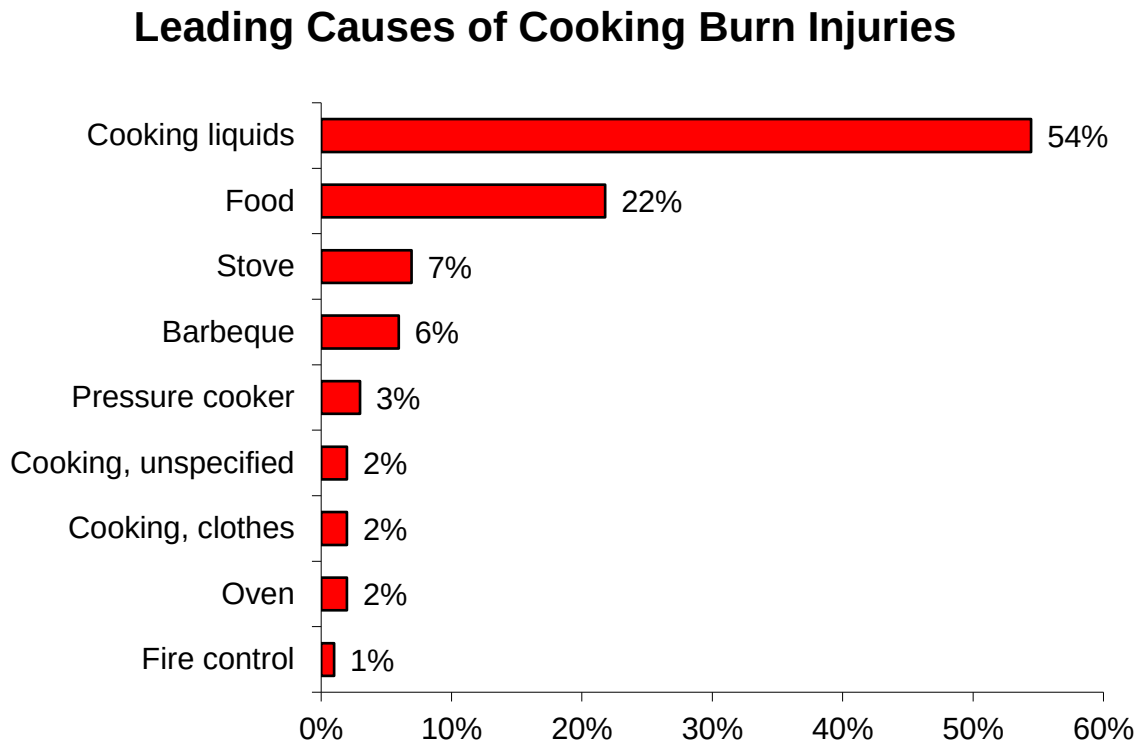
Cooking Activities Caused 29% of Reported Burn Injuries
Cooking activities caused 101, or 29% of the 345 total burn injuries reported to the Massachusetts Burn Injury Reporting System in 2018. Cooking activities were the primary cause of the injury in 98 of these injuries.

Forty-five (45), or 45%, of the 101 victims were male and 56, or 55%, were female. Six (6), or 6%, of the people burned by cooking activities were working when injured. Four (4) were men and two were women.

Scalds Caused 72% of Cooking-Related Burn Injuries
Seventy-three (73), or 80%, of the 101 burn injuries caused by cooking were scalds. Seventeen (17), or 17%, were flame burn injuries.

Burn Type	# of Burns	% of Cooking Burns
Scalds	73	72%
Flame	17	17%
Explosion	4	4%
Contact	3	3%
Fire	2	2%
Domestic Violence	2	2%
Total	101	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 2018. These burns accounted for 55, or 54% of all cooking-related burn injuries.



Children Under 5 Over 3 1/2 Times as Likely to be Burned by Cooking Activities
Twenty (20), or 20%, of the cooking-related burn victims were under age five. This age group was 3.6 times more likely to be burned by cooking related activities.

Age	# of Burns	% of Burns	% of Population	Risk
Under 5	20	20%	6%	3.6
5 to 9	3	3%	6%	0.5
10 to 14	9	9%	6%	1.5
15 to 24	5	5%	14%	0.3
25 to 34	14	14%	13%	1.1
35 to 44	16	16%	14%	1.2
45 to 54	11	11%	15%	0.7
55 to 64	14	14%	12%	1.2
65 to 74	5	5%	7%	0.7
75 to 84	2	2%	5%	0.4
85+	1	1%	2%	0.5
Total	100	100%	100%	
Not reported	1			
Total	101			

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.

2 Clothing Ignitions while Cooking
Loose-fitting sleeves can easily come into contact with burners and catch fire. In 2018 there were two reported clothing ignitions while cooking: a 29-year old woman and a 69-year old woman. In 2017 there was one reported clothing ignition while cooking.

According to data collected by the Massachusetts Fire Incident Reporting System (MFIRS), unattended and other unsafe cooking practices caused 11,465 fires in 2018. These fires caused one civilian death, 58 civilian injuries, 31 fire service injuries along with $6.9 million in losses. Many of these people also suffered from smoke inhalation[5].

Serious Burns from Cooking

- On July 3, 2018, a 37-year old man received flame burns to 18% of his body surface area when he was trying to light a grill.
- On August 9, 2018, a 55-year old woman received flame burns to her chest, abdomen, face and arm from a flash fire while cooking.
- On August 31, 2018, a 33-year old woman received burns to 35% of her body surface area when the gas stove she was using exploded.
- On October 15, 2018, a 66-year old man was burned as he attempted to put out a cooking fire in on his stove. He received flame burn injuries to his face, hands and chest.

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.

[5] 2018 Annual Report of the Massachusetts Fire Incident Reporting System; MA Dept. of Fire Services; pg. 130.

- ✓ 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.

Burn Injuries by Age Group

Only one age group of our population was at a greater than average risk of a burn injury in 2018. 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 4.2 times more likely to suffer a burn injury in Massachusetts.

Twenty-four percent (24%) of all burn victims were children under the age of five. Eighty-two (82) children under age five were seriously burned in 2018.

Age	# of Burns	% of Burns	% of Population	Risk
Under 5	82	24%	6%	4.2
5 to 9	15	4%	6%	0.7
10 to 14	20	6%	6%	0.9
15 to 24	40	12%	14%	0.8
25 to 34	41	12%	13%	0.9
35 to 44	42	12%	14%	0.9
45 to 54	41	12%	15%	0.8
55 to 64	38	11%	12%	0.9
65 to 74	16	5%	7%	0.7
75 to 84	7	2%	5%	0.4
85+	2	1%	2%	0.3
Total Known	344	100%	100%	
Not reported	1	0.3%		
Total	345	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 or tied for the leading cause of burn injuries to most age groups. Scalds were the lead cause of burn injuries to people between 0 and 14, 25 to 34, 45 to 54 and 75 to 84. Scalds were tied with burns from fires as the leading cause to people between 35 and 44 and over 85. Scalds tied with flame burns to the age group 55 to 64. Burns from fires were the leading cause of burns to young adults between 15 and 24 and to older adults between 65 and 74.

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. Forty-four percent (44%) of the burns incurred by these young children were scalds caused by hot beverages, 17% were caused by hot tap water, and 12% 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	Difference
Under 5	41	41	82	0
5 to 9	8	7	15	1
10 to 14	13	7	20	6
15 to 24	23	17	40	6
25 to 34	28	13	41	15
35 to 44	28	14	42	14
45 to 54	25	16	41	9
55 to 64	19	19	38	0
65 to 74	8	8	16	0
75 to 84	6	1	7	5
85+	0	2	2	-2
Total Known	199	145	344	56
Not reported	1	0	1	1
Total	200	145	345	

Except for the age groups of children under five, adults between 55 and 74 and older adults over 85, males were burned more frequently than females. In 2018, 200, or 58% of the 345 burn victims were male, and 145, or 42%, were female.

Children Under 5

24% of Reported Burns Incurred by Children Under 5
Eighty-two (82), or 24%, of the burn injuries reported to M-BIRS in 2018 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 4.2 times more likely to be burned than were members of the general population. No other age group faced a risk this high. Fifty percent (50%) of burned preschoolers were boys and 50% were girls.

Scalds Caused 87% of Burns to Pre-Schoolers
Scalds caused 71, or 87%, of the burn injuries incurred by children under five. Contact burns caused seven burns. Electrical burns, flame burns, burns from fires and *Other* type burns each caused one injury to this age group.

Children Ages 5 to 9

4% of Reported Burn Injuries Incurred by Children 5-9 Years of Age
Fifteen (15), or 4%, of the burn injuries reported in 2018 were incurred by children between five and nine years of age. Seven (7), or 47%, of the burn victims were girls, and eight, or 53%, were boys. Children in this age bracket accounted for 6% of the population of Massachusetts and 4% of the burn injuries in 2018.

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 eight, or 53%, of the burn injuries incurred by children aged five to nine in 2018. Burns from fires and flame burns each caused three of these injuries and a sunburn caused one burn injury to this age group.

Children Ages 10 to 14

6% of Reported Burns Incurred by Children 10-14 Years of Age
Children between the ages of 10 and 14 suffered 20, or 6% of the burn injuries reported in 2018. Thirteen (13), or 65%, were boys and seven, or 35%, were girls. Children in this age bracket accounted for 6% of the population in the Commonwealth of Massachusetts and 6% 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 nine, or 45% of the burns incurred by children aged 10 to 14. Flame burns caused four injuries, and burns from fires and *Other* type burns each caused three injuries. Electrical burns caused one burn injury to this age group.

Ages 15 to 24

12% of Reported Burn Victims Between 15-24 Years of Age
Teens and young adults between the ages of 15 and 24 incurred 40, or 12% of the burn injuries reported in 2018. Twenty-three (23), or 58%, were male and 17, or 43%, were female. Young adults aged 15 to 24 accounted for 14% of the population of Massachusetts and 12% of the burn injuries in 2018. Six (6), or 15%, of the burn injuries incurred by this age group were work-related: all six were male.

35% of Burns Were from Fires
Burns from fires caused 14, or 35%, of the burn injuries to people 15 to 24 years of age. Flame burns caused nine injuries. Scalds caused seven injuries. Contact burns and *Other* types of burn

injuries each caused three injuries. Two (2) injuries to this age group were electrical burns, and explosions and domestic violence each caused one burn injury to this age group.

Ages 25 to 34

12% of Burns Were to Adults 25-34 Years of Age
Forty-one (41), or 12% of the burn injuries reported in 2018 were incurred by people between 25 and 34 years of age. Twenty-eight (28), or 68% of the victims were men and 13, or 32% were women. Eleven (11), or 27% of the burn injuries suffered by this age group were work-related; all 11 were men. 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 2018.

Scald Burns Caused 34% of Burn Injuries
Scalds accounted for 14 burns, or 34% of the burn injuries for this age group. Burns from fire and flame burns each caused seven burns. Explosions caused six of these injuries. *Other* type burns caused three of the burn injuries. Contact burns caused two and electrical burns and domestic violence each caused one burn injury to this age group.

Ages 35 to 44

12% of Reported Burn Victims Were Between 35-44 Years of Age
Forty-two (42), or 12%, of the burn injuries reported in 2018 occurred to people between the ages of 35 and 44. Twenty-eight (28), or 67% of the victims were men and 14, or 33% of the victims were women. Adults between the ages of 35 and 44 accounted for 14% of the Massachusetts population but 12% of the reported burns in 2018. Four (4), or 10%, of the burn injuries incurred by this age group were work-related. Three (3) of these victims were men and one was a woman.

Burns from Scalds & Fires Were the Leading Cause of Injuries to 35-44 Years of Age
Scalds and burns from fires each accounted for 13, or 31%, of the burn injuries to this age group. Flame burns caused nine injuries, contact burns caused four injuries and explosions caused two burn injuries. *Other* burns 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 41, or 12%, of the reported burns in 2018. Twenty-five (25) or 61% of the victims were male, and 16, or 39%, were female. Eleven (11) of the 41 burn victims aged 45 to 54, or 27%, were burned while at work; nine of them were men and two were women. This age group represents 15% of the population of Massachusetts but only 12% of the burn injuries in 2018.

Scalds Burns Were the Leading Cause of Burns
Scalds were incurred by 11, or 27% of the burn victims between the ages of 45 and 54. Burns from fires caused nine of these injuries and flame burns caused seven injuries. Explosions caused

six injuries and *Other* burns caused four burn injuries to this age group. Contact with hot objects caused two injuries, and domestic violence and an electrical burn each caused one burn injury to this age group.

Ages 55 to 64

11% of Burn Victims Were Between 55-64 Years Old
Thirty-eight (38), or 11% of the burns reported in 2018 were incurred by people between the ages of 55 and 64. Nineteen (19), or 50% of the victims were men, and 19, or 50% were women. Three (3), or 10%, of the 31 burn injuries incurred by people between 55 and 64 years old were work-related; two were men and one was a woman. People of this age group represent 12% of the total population of Massachusetts but only received 11% of the burns in 2018.

Flame Burns & Scalds Were the Leading Causes of Burns
Flame burns and scalds each caused 12 injuries to people between the ages of 55 and 64 years of age in 2018, each accounting for 32% of these injuries. Burns from fires caused 10 of these injuries. *Other* burns caused two of these injuries. Contact with a hot object caused one burn injury to members of this age group.

Over 65 – Older Adults

25 Burn Victims Over 65 Years Old
Twenty-five (25), or 7%, of the burn victims in 2018 were over 65 years old. Sixteen (16) were between 65 and 74; seven were between 75 and 84; and two were 85 years old or older. Fourteen (14), or 56% of the victims were men, and 11, or 44%, were women. Older adults represent 14% of the total Massachusetts population but only 7% of the burn injuries in 2018, which means that in 2018 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 10, or 40%, of the burn injuries to people over the age of 65. Burns from fire caused eight of these burns. Flame burns caused four and burns from explosions caused two of these injuries. Contact with hot objects caused one of these injuries to older adults.

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

10% of Reported Burns Occurred at Work

Massachusetts hospitals indicated that 35, or 10%, of the 345 burn injuries reported in 2018 occurred while the victim was at work. Men were much more likely to be burned while working than women. Thirty-one (31) men, or 89%, and four women, or 11%, were burned at work in 2018.

Almost Half of Work-Related Burns Incurred by People Between 15 and 34

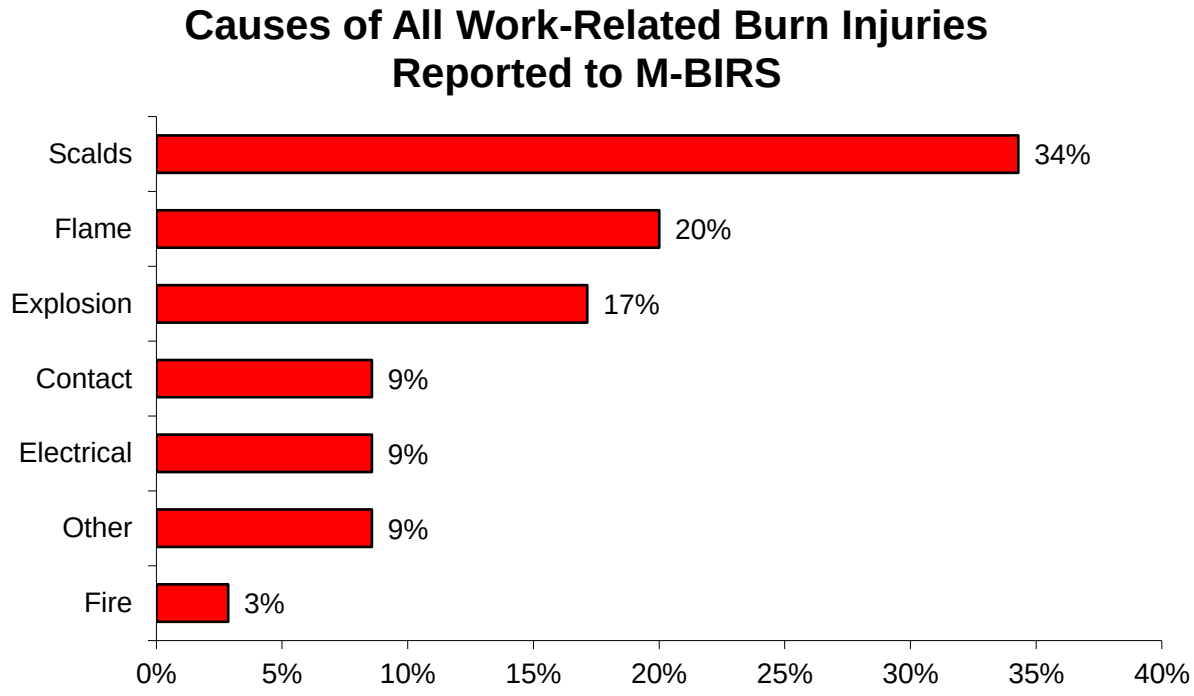
No one under the age of 19 received a work-related burn in 2018. The age groups 25 to 34 and 45 to 54 years had the most work-related burns injuries with 11 each. Almost half (48%) of the work-related burns were to people between the ages of 15 and 34. The youngest person to receive treatment for a work-related burn in Massachusetts in 2018 was a 19-year old man who received an electrical burn. The oldest victim to receive a work-related burn was a 54-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	6	17%	14%
25 to 34	11	31%	13%
35 to 44	4	11%	14%
45 to 54	11	31%	15%
55 to 64	3	9%	12%
65 to 74	0	0%	7%
75 to 84	0	0%	5%
85+	0	0%	2%
Total	26	100%	100%

Scalds Caused Over 1/3 of Work-Related Burns

Scalds were the leading cause of work-related burns in 2018. These 12 burn injuries accounted for 34% of work-related burns. Seven (7) of these injuries were flame burns. Explosions caused six burn injuries. Contact burns, electrical burns and *Other* burns, all from chemicals, each caused three of these injuries. A bonfire 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.



69% 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-four (24), or 69%, of the 35 work-related burns reported to M-BIRS in 2018 occurred in Massachusetts. Five (5) work-related burns reported to M-BIRS occurred in New Hampshire; and it was unknown where the other six 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 2018, 13 burn injuries were referred to OSHA.

1 Work-related Fatality Due to Burn Injuries
In 2018 there was on work-related injury that led to the victim's death. There were also two work-related injuries that were reported as life-threatening.

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 2018, 223 people, or 65%, of all the reported burn injuries took place in the victim's home or surrounding yard. Men sustained one more total burns than women at home. One hundred and twelve (112) men, or 50%, and 111 women, or 50% were burned at home in 2018.

Over 1/2 of All Home Burns Are Scalds

One hundred and twenty-five (125), or 56%, of the burn injuries that occurred in the home in 2018 were scalds.

Burn Type	# of Burns	% of Home Burns
Scalds	125	56%
Flame	37	17%
Fires	36	16%
Contact	11	5%
Explosions	7	3%
Other	4	2%
Electrical	3	1%
Total	223	100%

Cooking Caused 37% of Burn in Homes

In 2018, cooking activities, including hot food, caused the most overall burns regardless of burn type. Burns from cooking caused 82, or 37% of burns in Massachusetts homes.

Burn	# of Burns	% of Burns
Cooking	82	37%
Hot Beverages	35	16%
House fires	25	11%
Hot Tap Water	19	9%
Gasoline	13	6%
Camp or bon fires	8	4%

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

Thirty-two percent (32%) of the 223 victims that received their burns at home were less than five years old. These children were 5.8 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	72	32%	6%	5.8
5 to 9	10	5%	6%	0.8
10 to 14	15	7%	6%	1.1
15 to 24	17	8%	14%	0.5
25 to 34	19	9%	13%	0.7
35 to 44	22	10%	14%	0.7
45 to 54	20	9%	15%	0.6
55 to 64	25	11%	12%	0.9
65 to 74	14	6%	7%	0.9
75 to 84	6	3%	5%	0.6
85+	2	2%	2%	1.0
Total Known	222	100%	100%	
Not reported	1			
Total	223			

6 of the Home Burns Resulted in Death
Six (6), or 3%, of the 223 reported burn injuries that occurred in homes in 2018 resulted in death for the victim. Four (4) of these deaths were women and two were men. All six died in house fires.

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-six (36) out of the 97 acute care health care facilities in Massachusetts submitted a total of 377 burn injury reports for 345 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.

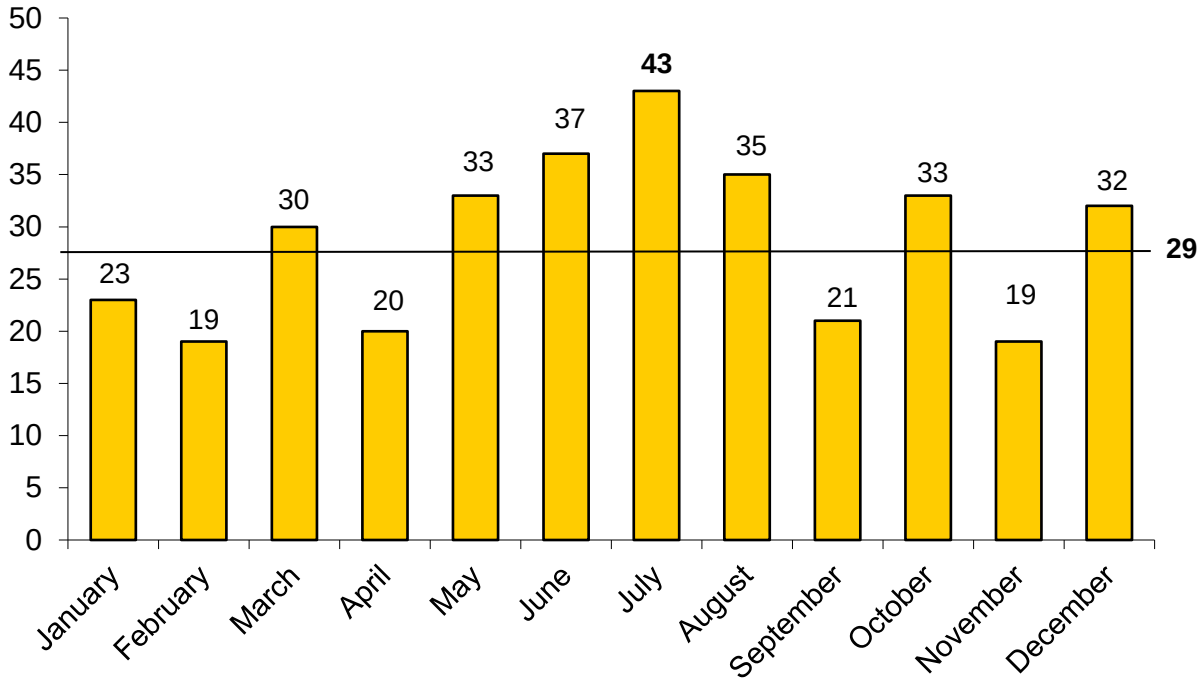
M-BIRS Has Two Main Purposes — Identifying Arsonists and Burn Prevention
Data collected by the Massachusetts Burn Injury Reporting System is used in several ways. Investigators use the data to determine if an arsonist was treated for a burn that resulted from an attempt to illegally burn a building or 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 29 Burns a Month
An average of 29 burns were reported during each month of 2018, from a low of 19 in February and November to a high of 43 in July. It is below the 5-year (2014-2018) average of 30 burns per month and below the 10-year (2009-2018) average of 32 burns per month.

Scalds caused the most burn injuries during all 12 months of the year except August where burns from fires were the leading cause of burn injuries.

Reported Burn Injuries by Month



July Was the Peak Month for Burns

July was the peak month for burns in 2018. Forty-three (43) burn injuries were reported to M-BIRS during July. Scalds accounted for 17, or 40% of these burns during this month.

Burn Type	# of Burns	% of July Burns
Scalds	17	40%
Flame	9	21%
Fire	8	19%
Explosion	5	12%
Other	3	7%
Contact	1	2%
Total	43	100%

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

Geographical Demographics

Massachusetts Burn Victims from 103 Cities and Towns
Massachusetts medical facilities treated 277 residents of 103 Massachusetts cities and towns. Burn victims came from 13 of 14 counties in the Commonwealth in 2018. The largest numbers of reported burn injuries were incurred by residents of Essex, Middlesex and Suffolk counties. It appears that some large Boston hospitals (Suffolk County) may have under reported the burns they treated.

Sixty-eight (68) 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	57
Middlesex	49
Suffolk	40
Hampden	28
Bristol	24
Barnstable	20
Plymouth	18
Norfolk	16
Worcester	11
Berkshire	6
Franklin	3
Hampshire	3
Dukes	2
Nantucket	0
Out of State	68
Total	345
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 & Lowell had the Most Reported Burn Injuries
Boston was home to the most burn injury victims with 33 burn injuries in 2018. Lawrence had the second most reported burns at 23 and Lowell had 13 burn 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, *2018 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 2018.

Monterey had the highest rate of burn injuries per 10,000 population at 10.41. Next highest was Egremont with 8.16 burn injuries per 10,000 population; Williamsburg had 4.03; West Tisbury had 3.65; Provincetown had 3.40; and Cheshire had 3.09 burn injuries per 10,000 population[6].

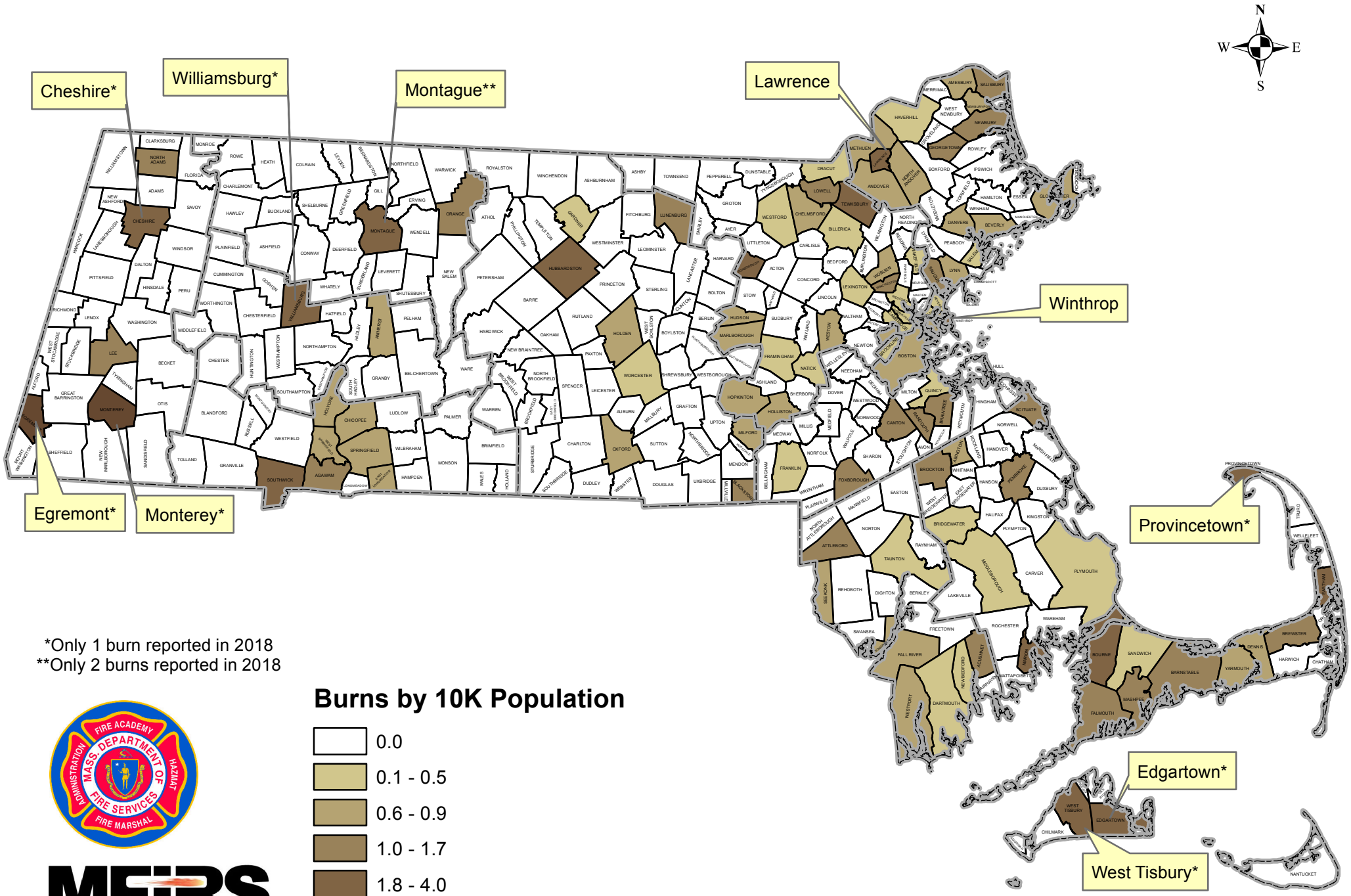
Scalds per 10,000 Population

The map on page 44, *2018 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 2018.

Egremont had the highest rate of 8.16 scald burn injuries per 10,000 population. Next highest was Williamsburg with 4.03 scald burn injuries per 10,000 population; Manchester-by-the-Sea had 3.89; Boxborough had 2.00; and Dover had 1.79 scald burn injuries per 10,000 population[7].

[6] All these towns only had 1 reported burn injury in 2018.
[7] All these towns except Manchester (2) had only 1 reported scald burn injury in 2018.

2018 MA Burns by 10K Population



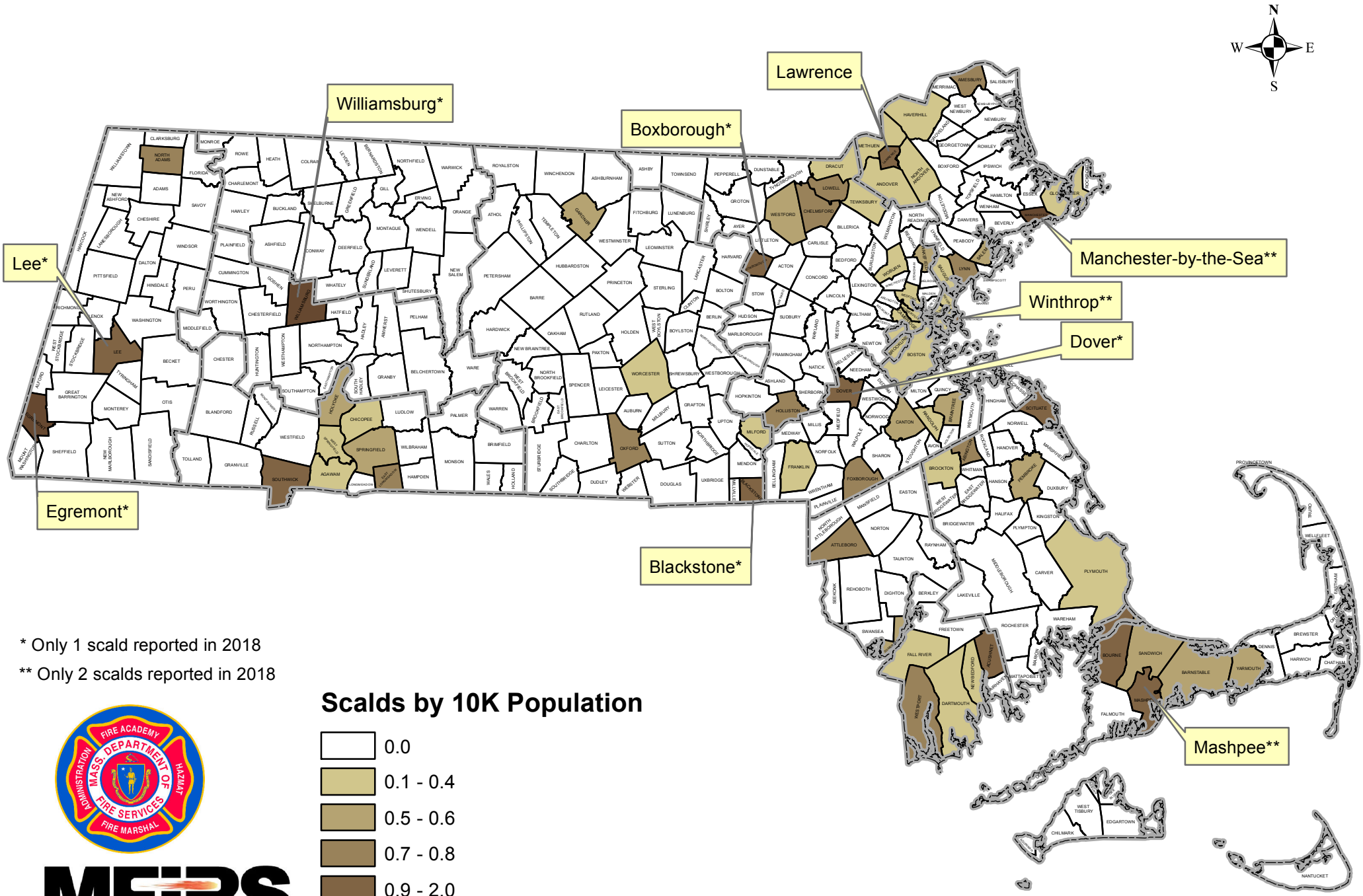
*Only 1 burn reported in 2018
**Only 2 burns reported in 2018

Burns by 10K Population

0.0
0.1 - 0.5
0.6 - 0.9
1.0 - 1.7
1.8 - 4.0
4.1 - 10.4

MFIRS
Massachusetts Fire Incident Reporting System

2018 MA Scalds by 10K Population



* Only 1 scald reported in 2018

** Only 2 scalds reported in 2018

MFIRS
Massachusetts Fire Incident Reporting System

2018 Appendix

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

Specific Causes of Burn Injuries

Cause	# of Burns	% of Burns
Scalds	**156**	**45.2%**
Cooking	73	21.2%
Cooking Liquids	*49*	*14.2%*
Hot Food	*22*	*6.4%*
Pressure Cooker	*2*	*0.6%*
Hot Beverages	44	12.8%
Hot Tap Water	23	6.7%
Car Radiator	6	1.7%
Steam	2	0.6%
Appliance	1	0.3%
Heater	1	0.3%
Hot Water Bottle	1	0.3%
Melted	1	0.3%
Natural Spring	1	0.3%
Oil	1	0.3%
Pipe	1	0.3%
Not Reported	1	0.3%
Fires	**68**	**19.7%**
Camp or Bonfire	30	9.3%
Gasoline	*12*	*3.5%*
Camp Fire	*12*	*3.5%*
Bonfire	*3*	*0.9%*
Ignitable Liquids	*2*	*0.6%*
Alcohol	*1*	*0.3%*
House Fire	27	7.8%
House Fire	*18*	*5.2%*
Smoking Unspec.	*3*	*0.9%*
Cooking Unspec.	*1*	*0.3%*
Electrical	*1*	*0.3%*
Fire Control	*1*	*0.3%*
Fireworks	*1*	*0.3%*
Gasoline	*1*	*0.3%*
Propane	*1*	*0.3%*
MV Fire	6	1.7%
MVA	*2*	*0.6%*
Car Fire	*1*	*0.3%*
Gasoline	*1*	*0.3%*
Structure Fire	4	1.2%
Gasoline	*2*	*0.6%*
Candle	*1*	*0.3%*
Tent Fire	*1*	*0.3%*
Brush Fire	2	0.6%
Gasoline	*2*	*0.6%*
Not Reported	1	0.3%

Cause	# of Burns	% of Burns
Flame	**56**	**16.2%**
Cooking	15	4.3%
Cooking Liquids	*4*	*1.2%*
Cooking Unspec.	*4*	*1.2%*
Barbeque	*3*	*0.9%*
Oven	*2*	*0.6%*
Barbeque Gas	*1*	*0.3%*
Stove	*1*	*0.3%*
Ignitable Liquids	10	2.9%
Ignitable Liquids	*5*	*1.4%*
Gasoline	*5*	*1.4%*
Smoking	7	2.0%
Smoke Oxygen	*4*	*1.2%*
Smoking Unspec.	*3*	*0.9%*
Candle	6	1.7%
Self-Immolation	4	1.2%
Heater	4	1.2%
Heater	*3*	*0.9%*
Woodstove	*1*	*0.3%*
Aerosol	1	0.3%
Alcohol	1	0.3%
Arson	1	0.3%
Explosives	2	0.6%
Bomb Making	*1*	*0.3%*
Fireworks	*1*	*0.3%*
Lighter	2	0.6%
Child w/Lighter	*1*	*0.3%*
Lighter	*1*	*0.3%*
Flammables	1	0.3%
Wax	1	0.3%
Welding	1	0.3%
Contact	**20**	**5.8%**
Heating	5	1.4%
Heater	3	0.9%
Radiator	*1*	*0.3%*
Woodstove	*1*	*0.3%*
Concrete	2	0.6%
Pavement Burns	2	0.6%
Stove	2	0.6%
Wax	2	0.6%
Asphalt	1	0.3%
Curling-Iron	1	0.3%
Embers	1	0.3%
Metal	1	0.3%

Cause	# of Burns	% of Burns
Contact (con't)		
MVA	1	0.3%
Pipe	1	0.3%
Not Reported	1	0.3%
Other Burns	**19**	**5.5%**
Sunburn	12	3.5%
Chemical	6	1.7%
Inhalant Abuse	1	0.3%
Explosions	**16**	**4.6%**
Propane	3	0.9%
Cooking	4	1.2%
Stove	*2*	*0.6%*
Barbeque	*1*	*0.3%*
Pressure Cooker	*1*	*0.3%*

Cause	# of Burns	% of Burns
Explosions (con't)		
Gasoline	3	0.9%
E-Cigarette	2	0.6%
Battery	2	0.6%
Steam	1	0.3%
Explosives	1	0.3%
Electrical	**6**	**1.7%**
Electrocution	4	1.2%
Electrical	2	0.6%
Domestic Violence	**3**	**0.9%**
Cooking Liquids	2	0.6%
Assault	1	0.3%

Causes of Burn Injuries by Age

Under 5	**82**	**23.8%**
Cause	**# of Burns**	**% by Age**
Scalds	**71**	**86.6%**
Hot Beverages	36	43.9%
Cooking	18	22.0%
Hot Food	*10*	*12.2%*
Cooking Liquids	*8*	*9.8%*
Hot Tap Water	14	17.1%
Appliance	1	1.2%
Oil	1	1.2%
Not Reported	1	1.2%
Contact	**7**	**8.5%**
Curling - Iron	1	1.2%
Embers	1	1.2%
Heater	1	1.2%
Metal	1	1.2%
Pipe	1	1.2%
Stove	1	1.2%
Not Reported	1	1.2%
Electrical	**1**	**1.2%**
Electrical	1	1.2%
Fires	**1**	**1.2%**
House Fire	1	1.2%
Flame	**1**	**1.2%**
Candle	1	1.2%
Other	**1**	**1.2%**
Sunburn	1	1.2%

Ages 5 to 9	**15**	**4.4%**
Cause	**# of Burns**	**% by Age**
Scalds	**8**	**53.3%**
Hot Beverages	4	26.7%
Hot Food	3	20.0%
Hot Tap Water	1	6.7%
Fires	**3**	**20.0%**
Camp Fire	1	6.7%
Ignitable Liquids	1	6.7%
House Fire	1	6.7%
Flame	**3**	**20.0%**
Candle	1	6.7%
Child w/Lighter	1	6.7%
Heater	1	6.7%
Other	**1**	**6.7%**
Sunburn	1	6.7%

Ages 10 to 14	**20**	**5.8%**
Cause	**# of Burns**	**% by Age**
Scalds	**9**	**45.0%**
Cooking	8	40.0%
Cooking Liquids	*6*	*30.0%*
Hot Food	*2*	*10.0%*
Hot Beverages	1	5.0%
Flame	**4**	**20.0%**
Gasoline	2	10.0%
Bomb Making	1	5.0%
Candle	1	5.0%
Other	**3**	**15.0%**
Sunburn	3	15.0%
Fires	**3**	**15.0%**
Electrical	1	5.0%
Gasoline	1	5.0%
Propane	1	5.0%
Electrical	**1**	**5.0%**
Electrocution	1	5.0%

Ages 15 to 24	**40**	**11.6%**
Cause	**# of Burns**	**% by Age**
Fires	**14**	**35.0**
Gasoline	4	10.0%
House Fire	3	7.5%
Bonfire	2	5.0%
Camp Fire	2	5.0%
Alcohol	1	2.5%
Fireworks	1	2.5%
Tent Fire	1	2.5%
Flame	**9**	**22.5%**
Self-Immolation	3	7.5%
Alcohol	1	2.5%
Fireworks	1	2.5%
Ignitable Liquids	1	2.5%
Smoking	1	2.5%
Wax	1	2.5%
Welding	1	2.5%
Scalds	**7**	**17.5%**
Cooking Liquids	4	10.0%
Car Radiator	1	2.5%
Melted	1	2.5%
Natural Spring	1	2.5%
Other	**3**	**7.5%**
Sunburn	3	7.5%
Contact	**3**	**7.5%**
Wax	2	5.0%
Pavement Burns	1	2.5%
Electrical	**2**	**5.0%**
Electrical	1	2.5%
Electrocution	1	2.5%
Domestic Violence	1	**2.5%**
Assault	1	2.5%
Explosion	1	**2.5%**
Stove	1	2.5%

Ages 25 to 34	**41**	**11.9%**
Cause	**# of Burns**	**% by Age**
Scald	**14**	**34.1%**
Cooking	10	24.4%
Cooking Liquids	*6*	*14.6%*
Hot Food	*3*	*7.3%*
Pressure Cooker	*1*	*2.4%*
Car Radiator	2	4.9%
Hot Tap Water	2	4.9%
Fires	**7**	**17.1%**
Gasoline	3	7.3%
Camp Fire	2	4.9%
House Fire	2	4.9%
Flame	**7**	**17.1%**
Candle	2	4.9%
Cooking	2	4.9%
Barbeque	*1*	*2.4%*
Cooking	*1*	*2.4%*
Aerosol	1	2.4%
Flammables	1	2.4%
Gasoline	1	2.4%
Explosion	**6**	**14.6%**
Gasoline	2	4.9%
Battery	1	2.4%
Explosives	1	2.4%
Propane	1	2.4%
Stove	1	2.4%
Other	**3**	**7.3%**
Chemical	2	4.9%
Sunburn	1	2.4%
Contact	**2**	**4.9%**
Concrete	2	4.9%
Domestic Violence	**1**	**2.4%**
Cooking Liquids	1	2.4%
Electrical	**1**	**2.4%**
Electrical	1	2.4%

Ages 35 to 44	**42**	**12.2%**
Cause	**# of Burns**	**% by Age**
Scald	**13**	**31.0%**
Cooking	9	21.4%
Cooking Liquids	*7*	*16.7%*
Hot Food	*1*	*2.4%*
Pressure Cooker	*1*	*2.4%*
Car Radiator	1	2.4%
Hot Water Bottle	1	2.4%
Pipe	1	2.4%
Steam	1	2.4%
Fire	**13**	**31.0%**
Gasoline	4	9.5%
Camp Fire	3	7.1%
Bonfire	1	2.4%
Candle	1	2.4%
Car Fire	1	2.4%
House Fire	1	2.4%
Ignitable Liquids	1	2.4%
MVA	1	2.4%
Flame	**9**	**21.4%**
Cooking	5	11.9%
Cooking Liquids	*2*	*4.8%*
Oven	*2*	*4.8%*
Barbeque	*1*	*2.4%*
Smoking	2	4.8%
Ignitable Liquids	1	2.4%
Woodstove	1	2.4%
Explosion	**2**	**4.8%**
Cooking	2	4.8%
Barbeque	*1*	*2.4%*
Pressure Cooker	*1*	*2.4%*
Contact	**4**	**9.5%**
Heating	2	4.8%
Heater	*1*	*2.4%*
Radiator	*1*	*2.4%*
MVA	1	2.4%
Pavement Burns	1	2.4%
Other	**1**	**2.4%**
Chemical	1	2.4%

Ages 45 to 54	**41**	**11.9%**
Cause	**# of Burns**	**% by Age**
Scald	**11**	**26.8%**
Cooking Liquids	6	14.6%
Car Radiator	2	4.9%
Hot Beverages	1	2.4%
Steam	1	2.4%
Hot Tap Water	1	2.4%
Fire	**9**	**22.0%**
Gasoline	3	7.3%
House Fire	3	7.3%
Camp Fire	2	4.9%
Not Reported	1	2.4%
Flame	**7**	**17.1%**
Cooking	3	7.3%
Cooking Liquids	*2*	*4.9%*
Barbeque	*1*	*2.4%*
Ignitable Liquids	2	4.9%
Gasoline	*1*	2.4%
Ignitable Liquids	*1*	2.4%
Arson	1	2.4%
Heater	1	2.4%
Explosion	**6**	**14.6%**
E-Cigarette	2	4.9%
Battery	1	2.4%
Gasoline	1	2.4%
Propane	1	2.4%
Steam	1	2.4%
Contact	**2**	**4.9%**
Asphalt	1	2.4%
Heater	1	2.4%
Other	**4**	**9.8%**
Sunburn	2	4.9%
Chemical	1	2.4%
Inhalant Abuse	1	2.4%
Domestic Violence	**1**	**2.4%**
Cooking Liquids	1	2.4%
Electrical	**1**	**2.4%**
Electrical	1	2.4%

Ages 55 to 64	**38**	**11.0%**
Cause	**# of Burns**	**% by Age**
Scald	**12**	**31.6%**
Cooking Liquids	8	21.1%
Hot Tap Water	2	5.3%
Hot Beverages	1	2.6%
Heater	1	2.6%
Flame	**12**	**31.6%**
Cooking	3	7.9%
Barbeque Gas	*1*	*2.6%*
Cooking	*1*	*2.6%*
Stove	*1*	*2.6%*
Ignitable Liquids	3	7.9%
Ignitable Liquids	*2*	*5.3%*
Gasoline	*1*	*2.6%*
Smoking on Oxygen	2	5.3%
Candle	1	2.6%
Heater	1	2.6%
Lighter	1	2.6%
Self-Immolation	1	2.6%
Fire	**10**	**26.3%**
Camp Fire	2	5.3%
House Fire	2	5.3%
Smoking	2	5.3%
Cooking	1	2.6%
Fire Control	1	2.6%
Gasoline	1	2.6%
MVA	1	2.6%
Other	**3**	**7.9%**
Chemical	2	5.3%
Sunburn	1	2.6%
Contact	**1**	**2.6%**
Stove	1	2.6%

Ages 65+	**25**	**7.3%**
Cause	**# of Burns**	**% by Age**
Scald	**10**	**40.0%**
Cooking	6	24.0%
Cooking Liquids	*3*	*12.0%*
Hot Food	*3*	*12.0%*
Hot Tap Water	3	12.0%
Hot Beverages	1	4.0%
Fire	**8**	**32.0%**
House Fire	5	20.0%
Gasoline	2	8.0%
Smoking	1	4.0%
Flame	**4**	**16.0%**
Cooking Unspec.	2	8.0%
Smoking on Oxygen	2	8.0%
Explosion	**2**	**8.0%**
Propane	2	8.0%
Contact	**1**	**4.0%**
Woodstove	1	4.0%

Causes of Work-Related Burns

Cause	# of Burns	% of Work-related
Scald	**12**	**34%**
Cooking Liquids	4	11%
Hot Tap Water	3	9%
Car Radiator	2	6%
Steam	2	6%
Pipe	1	3%
Flame	**7**	**20%**
Oven	2	6%
Aerosol	1	3%
Alcohol	1	3%
Flammables	1	3%
Gasoline	1	3%
Self-Immolation	1	3%

Cause	# of Burns	% of Work-related
Explosion	**6**	**17%**
Gasoline	2	6%
Propane	2	6%
E-Cigarette	1	3%
Steam	1	3%
Contact	**3**	**9%**
Concrete	2	6%
Asphalt	1	3%
Fire	**1**	**3%**
Bonfire	1	3%
Electrical	**3**	**9%**
Electrical	3	9%
Other	**3**	**9%**
Chemical	3	9%
Total	**35**	**100%**

Number of Reported Burns per Hospital

Addison Gilbert Hospital	1	Martha's Vineyard Hospital	1
Anna Jacques Hospital	3	Mercy Medical Center	5
Athol Memorial	1	MetroWest Medical Center	1
Brigham & Women's Hospital	26	Massachusetts General Hospital	116
Baystate Medical Center	25	Milford Regional Medical Center	5
Berkshire Medical Center	3	Morton Hospital	1
Brockton Hospital	1	North Shore Medical Center	2
Cape Cod Hospital	2	North Shore Medical Center - Union	1
Carney Hospital	1	Norwood Hospital	1
Charlton Memorial Hospital	1	Shriners Hospital for Children	78
Children's Hospital	8	South Shore Medical Center	5
Emerson Hospital	4	St. Anne's Hospital	8
Fairview Hospital	3	St. Elizabeth's Hospital	2
Falmouth Hospital	12	St. Luke's Hospital	1
Good Samaritan Medical Center	3	Sturdy Memorial Medical Center	8
Holyoke Medical Center	2	Tobey Hospital	2
Lawrence General Hospital	31	UMass Medical Center - University	3
Lowell General Hospital	9	Winchester Hospital	1

Causes of Burn Injuries by Month

January	**23**	**6.7%**
Cause	**# of Burns**	**% by Month**
Scald	**16**	**69.6%**
Hot Tap Water	6	26.1%
Hot Beverages	3	13.0%
Cooking	3	13.0%
Cooking Liquids	*2*	*8.7%*
Hot Food	*1*	*4.3%*
Hot Water Bottle	1	4.3%
Fire	**5**	**21.7%**
House Fire	3	13.0%
Candle	1	4.3%
Smoking	1	4.3%
Flame	**3**	**13.0%**
Candle	1	4.3%
Lighter	1	4.3%
Woodstove	1	4.3%
Contact	**1**	**4.3%**
Wax	1	4.3%
Explosion	**1**	**4.3%**
Propane	1	4.3%

2 Deaths

February	**19**	**5.5%**
Cause	**# of Burns**	**% by Month**
Scald	**11**	**57.9%**
Hot Beverages	5	26.3%
Cooking	3	15.8%
Cooking Liquids	*2*	*10.5%*
Hot Food	*1*	*5.3%*
Hot Tap Water	2	10.5%
Melted	1	5.3%
Flame	**4**	**21.1%**
Ignitable Liquids	2	10.5%
Gasoline	*1*	*5.3%*
Ignitable Liquids	*1*	*5.3%*
Cooking	2	10.5%
Oven	*1*	*5.3%*
Stove	*1*	*5.3%*
Fire	**2**	**10.5%**
House Fire	2	10.5%
Contact	**1**	**5.3%**
Pipe	1	5.3%
Other	**1**	**5.3%**
Inhalant Abuse	1	5.3%

0 Deaths

March	**30**	**8.7%**
Cause	**# of Burns**	**% by Month**
Scald	**14**	**46.7%**
Cooking	5	16.7%
Cooking Liquids	*4*	*13.3%*
Pressure Cooker	*1*	*3.3%*
Hot Beverages	4	13.3%
Hot Tap Water	3	10.0%
Appliance	1	3.3%
Steam	1	3.3%
Fire	**7**	**23.3%**
House Fire	4	13.3%
Fire Control	1	3.3%
Propane	1	3.3%
Smoking	1	3.3%
Flame	**4**	**13.3%**
Bomb Making	1	3.3%
Candle	1	3.3%
Cooking Liquids	1	3.3%
Heater	1	3.3%
Contact	**2**	**6.7%**
Heater	1	3.3%
Not Reported	1	3.3%
Explosion	**1**	**3.3%**
E-Cigarette	1	3.3%

2 Deaths

April	**20**	**5.8%**
Cause	**# of Burns**	**% by Month**
Scald	**11**	**55.0%**
Cooking	7	30.0%
Cooking Liquids	*5*	*20.0%*
Hot Food	*1*	*5.0%*
Pressure Cooker	*1*	*5.0%*
Hot Beverages	4	25.0%
Flame	**3**	**15.0%**
Smoking	2	10.0%
Gasoline	1	5.0%
Fire	**3**	**15.0%**
Gasoline	2	10.0%
Fireworks	1	5.0%
Domestic Violence	**2**	**10.0%**
Cooking Liquids	2	10.0%
Contact	**1**	**5.0%**
Pavement Burns	1	5.0%

0 Deaths

May	**33**	**9.6%**
Cause	**# of Burns**	**% by Month**
Scald	**12**	**36.4%**
Cooking	9	27.3%
Cooking Liquids	*6*	*18.2%*
Hot Food	*3*	*9.1%*
Hot Beverages	1	3.0%
Oil	1	3.0%
Hot Tap Water	1	3.0%
Fire	**10**	**30.3%**
Gasoline	5	15.2%
House Fire	2	6.1%
Camp Fire	1	3.0%
Electrical	1	3.0%
Not Reported	1	3.0%
Flame	**8**	**24.2%**
Cooking	3	9.1%
Barbeque	*1*	*3.0%*
Cooking Unspec.	*1*	*3.0%*
Cooking Liquids	*1*	*3.0%*
Candle	1	3.0%
Ignitable Liquids	1	3.0%
Self-Immolation	1	3.0%
Smoking on Oxygen	1	3.0%
Welding	1	3.0%
Contact	**1**	**3.0%**
Stove	1	3.0%
Explosion	**1**	**3.0%**
Barbeque	1	3.0%
Other	**1**	**3.0%**
Sunburn	1	3.0%

0 Deaths

June	**37**	**10.7%**
Cause	**# of Burns**	**% by Month**
Scald	**16**	**43.2%**
Cooking	8	21.6%
Cooking Liquids	*4*	*10.8%*
Hot Food	*4*	*10.8%*
Car Radiator	4	10.8%
Hot Beverages	2	5.4%
Steam	1	2.7%
Hot Tap Water	1	2.7%
Other	**10**	**27.0%**
Sunburn	8	21.6%
Chemical	2	5.4%
Fire	**5**	**13.5%**
Camp Fire	3	8.1%
Gasoline	2	5.4%
Flame	**3**	**8.1%**
Flammables	1	2.7%
Self-Immolation	1	2.7%
Smoking	1	2.7%
Explosion	**2**	**5.4%**
Propane	2	5.4%
Contact	**1**	**2.7%**
MVA	1	2.7%

0 Deaths

July	**43**	**12.5%**
Cause	**# of Burns**	**% by Month**
Scald	**17**	**39.5%**
Cooking	9	20.9%
Cooking Liquids	*8*	*18.6%*
Hot Food	*1*	*2.3%*
Hot Beverages	5	11.6%
Hot Tap Water	3	7.0%
Flame	**9**	**20.9%**
Ignitable Liquids	3	7.0%
Gasoline	*2*	*4.7%*
Ignitable Liquids	*1*	*2.3%*
Cooking	2	4.7%
Barbeque	*1*	*2.3%*
Oven	*1*	*2.3%*
Alcohol	1	2.3%
Candle	1	2.3%
Fireworks	1	2.3%
Self-Immolation	1	2.3%
Fire	**8**	**18.6%**
Camp Fire	3	7.0%
Bonfire	2	4.7%
Cooking	1	2.3%
Gasoline	1	2.3%
House Fire	1	2.3%
Explosion	**5**	**11.6%**
Battery	2	4.7%
Explosives	1	2.3%
Propane	1	2.3%
Steam	1	2.3%
Other	**3**	**7.0%**
Sunburn	2	4.7%
Chemical	1	2.3%
Contact	**1**	**2.3%**
Metal	1	2.3%

2 Deaths

August	**35**	**10.1%**
Cause	**# of Burns**	**% by Month**
Fire	**11**	**31.4%**
Gasoline	4	11.4%
Camp Fire	2	5.7%
Ignitable Liquids	2	5.7%
Bonfire	1	2.9%
Car Fire	1	2.9%
Tent Fire	1	2.9%
Scald	**9**	**25.7%**
Cooking	5	14.3%
Hot Food	*3*	*8.6%*
Cooking Liquids	*2*	*5.7%*
Hot Beverages	1	2.9%
Car Radiator	1	2.9%
Pipe	1	2.9%
Hot Tap Water	1	2.9%
Contact	**6**	**17.1%**
Concrete	2	5.7%
Asphalt	1	2.9%
Curling-Iron	1	2.9%
Embers	1	2.9%
Wax	1	2.9%
Explosion	**3**	**8.6%**
Cooking	2	5.7%
Pressure Cooker	*1*	*2.9%*
Stove	*1*	*2.9%*
Gasoline	1	2.9%
Flame	**3**	**8.6%**
Cooking	3	8.6%
Barbeque	*1*	*2.9%*
Barbeque Gas	*1*	*2.9%*
Cooking Unspec.	*1*	*2.9%*
Other	**2**	**5.7%**
Chemical	1	2.9%
Sunburn	1	2.9%
Electrical	**1**	**2.9%**
Electrical	1	2.9%

0 Deaths

September	**21**	**6.1%**
Cause	**# of Burns**	**% by Month**
Scald	**11**	**52.4%**
Cooking	7	33.3%
Hot Food	*4*	*19.0%*
Cooking Liquids	*3*	*14.3%*
Hot Beverages	3	14.3%
Not Reported	1	4.8%
Fire	**4**	**19.0%**
Camp Fire	2	9.5%
Gasoline	2	9.5%
Flame	**4**	**19.0%**
Aerosol	1	4.8%
Child w/Lighter	1	4.8%
Cooking Liquids	1	4.8%
Ignitable Liquids	1	4.8%
Contact	**1**	**4.8%**
Pavement Burns	1	4.8%
Explosion	**1**	**4.8%**
Gasoline	1	4.8%

0 Deaths

October	**33**	**9.6%**
Cause	**# of Burns**	**% by Month**
Scald	**18**	**54.5%**
Cooking	8	24.2%
Cooking Liquids	*6*	*18.2%*
Hot Food	*2*	*6.1%*
Hot Beverages	6	18.2%
Hot Tap Water	4	12.1%
Fire	**4**	**12.1%**
Gasoline	2	6.1%
House Fire	1	3.0%
MVA	1	3.0%
Flame	**4**	**12.1%**
Ignitable Liquids	2	6.0%
Gasoline	*1*	*3.0%*
Ignitable Liquids	*1*	*3.0%*
Cooking	1	3.0%
Heater	1	3.0%
Electrical	**3**	**9.1%**
Electrical	3	9.1%
Contact	**2**	**6.1%**
Heater	2	6.1%
Explosion	**1**	**3.0%**
Stove	1	3.0%
Other	**1**	**3.0%**
Chemical	1	3.0%

0 Deaths

November	**19**	**5.5%**
Cause	**# of Burns**	**% by Month**
Scald	**8**	**42.1%**
Cooking	5	26.3%
Cooking Liquids	*4*	*21.1%*
Hot Food	*1*	*5.3%*
Hot Beverages	1	5.3%
Heater	1	5.3%
Natural Spring	1	5.3%
Flame	**4**	**21.1%**
Smoking on Oxygen	2	10.5%
Candle	1	5.3%
Heater	1	5.3%
Electrical	**2**	**10.5%**
Electrocution	2	10.5%
Explosion	**2**	**10.5%**
E-Cigarette	1	5.3%
Gasoline	1	5.3%
Fire	**2**	**10.5%**
MVA	1	5.3%
Smoking	1	5.3%
Contact	**1**	**5.3%**
Woodstove	1	5.3%

1 Death

December	**32**	**9.3%**
Cause	**# of Burns**	**% by Month**
Scald	**16**	**50.0%**
Hot Beverages	9	28.1%
Cooking	4	12.5%
Cooking Liquids	*3*	*9.4%*
Hot Food	*1*	*3.1%*
Hot Tap Water	2	6.3%
Car Radiator	1	3.1%
Fire	**7**	**21.9%**
House Fire	5	15.6%
Alcohol	1	3.1%
Camp Fire	1	3.1%
Flame	**7**	**21.9%**
Cooking	2	6.3%
Cooking Unspec.	*1*	*3.1%*
Cooking Liquids	*1*	*3.1%*
Arson	1	3.1%
Candle	1	3.1%
Self-Immolation	1	3.1%
Smoking on Oxygen	1	3.1%
Wax	1	3.1%
Contact	**2**	**6.3%**
Radiator	1	3.1%
Stove	1	3.1%

1 Death

Burn Injuries by Victim's Community

County	# of Burns
BARNSTABLE	**20**
Barnstable	5
Bourne	4
Falmouth	3
Mashpee	2
Yarmouth	2
Brewster	1
Dennis	1
Provincetown	1
Sandwich	1
BERKSHIRE	**6**
North Adams	2
Cheshire	1
Egremont	1
Lee	1
Monterey	1
BRISTOL	**24**
Fall River	7
Attleboro	5
New Bedford	3
Taunton	2
Acushnet	1
Dartmouth	1
Easton	1
North Attleboro	1
Seekonk	1
Somerset	1
Westport	1
DUKES	**2**
Edgartown	1
West Tisbury	1

County	# of Burns
ESSEX	**57**
Lawrence	23
Lynn	8
Methuen	4
Haverhill	3
Saugus	3
Andover	2
Beverly	2
Danvers	2
Gloucester	2
North Andover	2
Amesbury	1
Georgetown	1
Newbury	1
Newburyport	1
Salem	1
Salisbury	1
FRANKLIN	**3**
Montague	2
Orange	1
HAMPDEN	**28**
Springfield	12
Agawam	4
Chicopee	4
Holyoke	3
Southwick	2
West Springfield	2
East Longmeadow	1
HAMPSHIRE	**3**
Amherst	2
Williamsburg	1

County	# of Burns
MIDDLESEX	**49**
Lowell	13
Tewksbury	6
Somerville	3
Billerica	2
Cambridge	2
Chelmsford	2
Marlborough	2
Medford	2
Winchester	2
Woburn	2
Boxborough	1
Dracut	1
Framingham	1
Hanscom AFB	1
Holliston	1
Hopkinton	1
Hudson	1
Lexington	1
Malden	1
Natick	1
Wakefield	1
Westford	1
Weston	1
NORFOLK	**16**
Braintree	4
Quincy	3
Randolph	3
Canton	2
Foxborough	2
Brookline	1
Franklin	1

County	# of Burns
PLYMOUTH	**18**
Brockton	9
Pembroke	3
Scituate	2
Abington	1
Bridgewater	1
Middleborough	1
Plymouth	1
SUFFOLK	**40**
Boston	33
Winthrop	4
Revere	2
Chelsea	1
WORCESTER	**11**
Worcester	3
Milford	2
Blackstone	1
Gardner	1
Holden	1
Hubbardston	1
Lunenburg	1
Oxford	1