Massachusetts Burn Injury Reporting System

2019 Annual Report

Department of Fire Services
Division of Fire Safety

Charles D. Baker, Governor
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Peter J. Ostroskey, State Fire Marshal

Massachusetts Burn Injury Reporting System

2019 Annual Report

34 Years

Helping Prevent Burn Injuries

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Executive Summary

The Massachusetts Burn Injury Reporting System (M-BIRS) was established in the Office of the State Fire Marshal 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 2019, the 34th full year of the Massachusetts Burn Injury Reporting System (M-BIRS), 35 acute care hospitals and other health care facilities reported 330 victims of burns. Forty-six (46) of these 330 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 2019, 12 burn injuries were referred to OSHA and two cases 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 34 years. In 2019, scalds caused 151, or 46%, 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 2019, young children were the most frequent victims of scald burns. Forty-two percent (42%) of the 151 scald victims were under five years old, and most were less than one year. Children under five years of age were almost 7.6 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*.

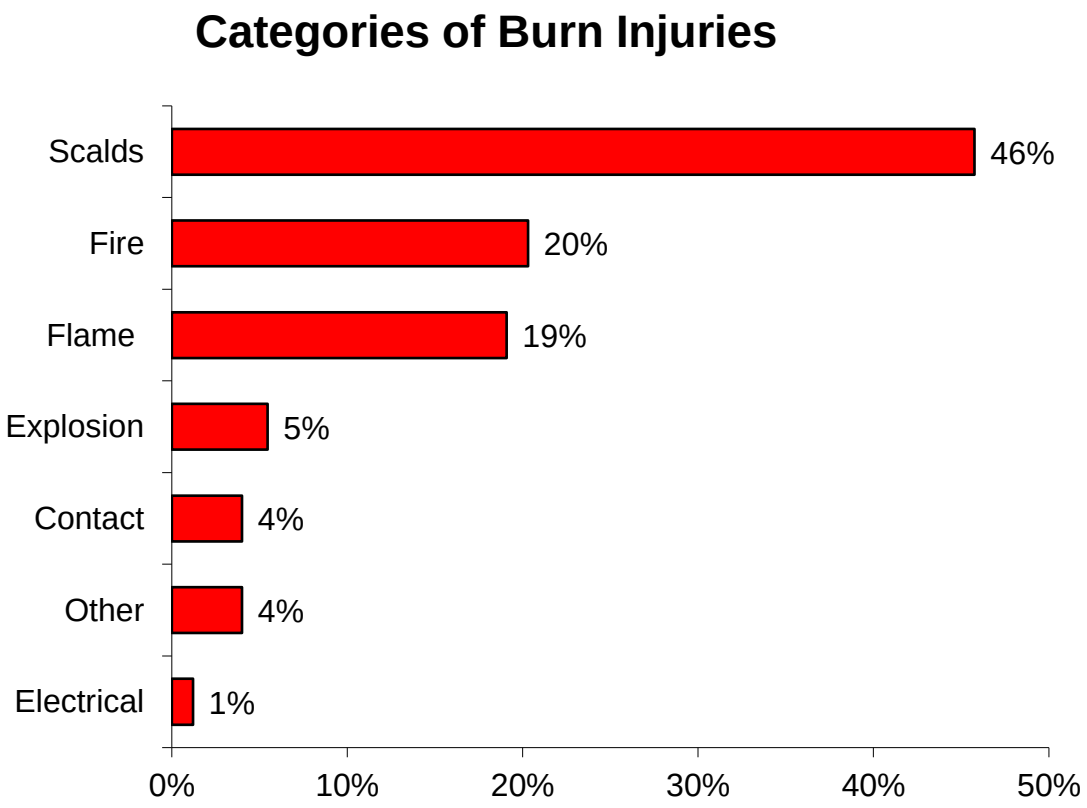
Burns from Fires Cause the 2nd Most Burn Injuries
Burn injuries from fires were the second highest cause of burn injuries in 2019, accounting for 20%. Camp or bon fires caused 46% of all burn injuries from fires. Flame burns caused 19% of the 2019 burn injuries. Cooking caused 29% of these flame burns in 2019.

70% of Burns Occurred in the Victim's Home
Of the 330 burn injuries reported to M-BIRS in 2019, 230, or 70%, occurred in the victim's home or surrounding yard. Over half, or 54% of these burn injuries were scalds. Five (5), or 2%, of the home-related burn injuries resulted in the victim succumbing to his or her injuries.

Causes of Burn Injuries

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

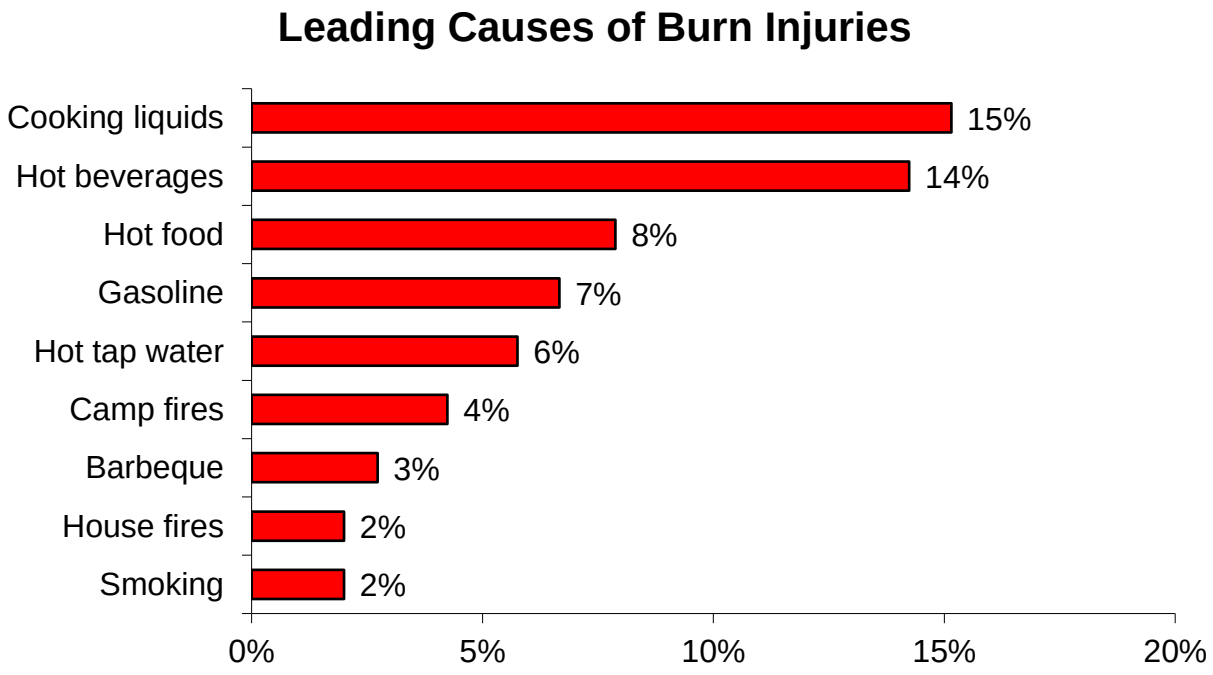
Half of All Burn Victims Never Come Near a Flame
Scalds from cooking liquids, hot liquids, tap water, food and steam caused 46% of the 330 burn injuries reported in 2019. Twenty percent (20%) were caused by burns from fires. Flame burns caused 19% of the burns.



[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. Fifteen percent (15%) of the 330 burn injuries reported in 2019 were from cooking liquids regardless of the type of burn. Fourteen percent (14%) of the burns were caused by hot beverages. Hot food caused 8% and gasoline caused 7% of total burns. For more information, please refer to the table *Specific Causes of Burn Injuries* in the Appendix.



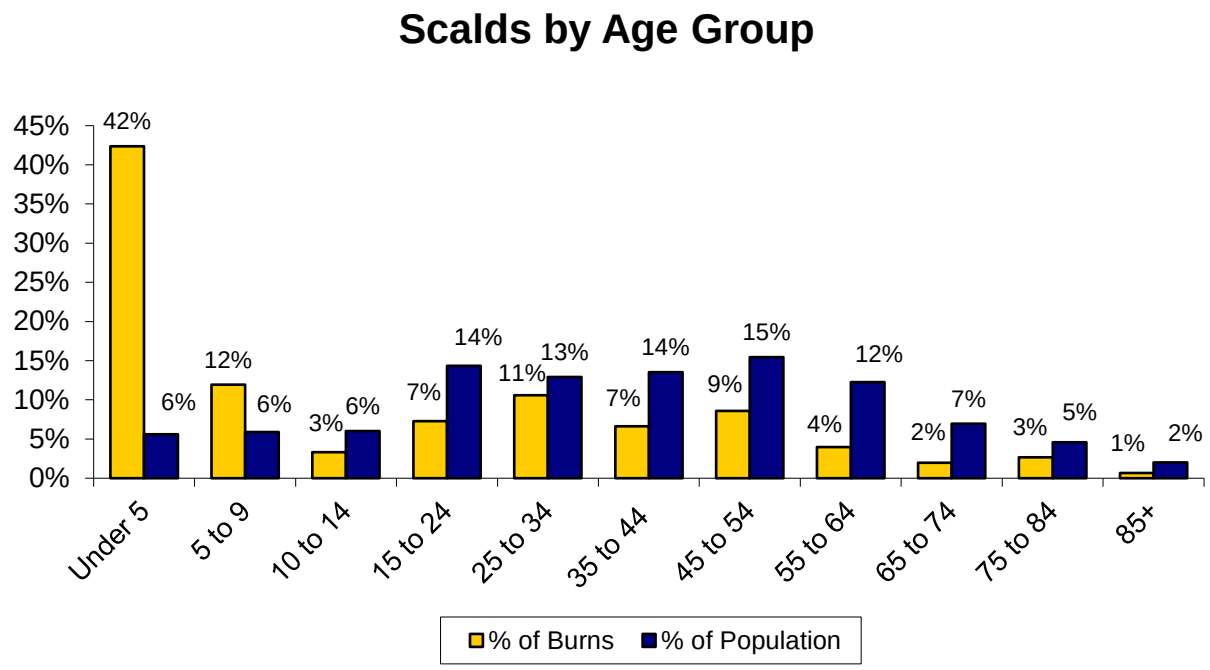
Burn Injuries Caused by Scalds

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% in 2017 to a low of 35% in 2005. The 10-year average from 2010 through 2019 is 46% of total annual reported burns.

Scalds Caused Nearly Half of All Burns
One hundred and fifty-one (151), or 46%, of the 330 reported burns were scalds. Eleven (11), or 7%, of the 151 scalds occurred while the victim was working. Seventy-one (71), or 47%, of the 151 scald victims were male and 80, or 53%, were female.

Gender	# of Burns	% of Scalds
Female	80	53%
Male	71	47%
Total	151	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 42% of all scald burns in 2019. Forty-eight (48), or 32%, were infants one year old or younger. Children aged five to nine accounted for 12% 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 7.6 times more likely to suffer a scald burn and children five to nine were 2.0 times as likely to suffer from a scald burn.

Cooking Liquids & Hot Beverages Each Caused 31% of All Scald Burns
Scald burns from cooking liquids and hot beverages were each the leading cause of scald burns, each accounting for 31% of all scald burns in 2019. Scalds from hot food caused 17% of the 151 scald burns.

Description	# of Burns	% of Scald Burns	% of All Burns
Cooking	76	50%	23.0%
Cooking Liquids	47	31%	14.2%
Hot Food	26	17%	7.9%
Pressure Cooker	3	2%	0.9%
Hot Beverages	47	31%	14.2%
Hot Tap Water	19	13%	5.8%
Car Radiator	5	3%	1.5%
Heating	2	1%	0.6%
Heater	1	1%	0.3%
Boiler	1	1%	0.3%
Pipe	1	1%	0.3%
Vaporizer	1	1%	0.3%
Total	151	100%	45.8%

From the beginning of M-BIRS in 1984, hot beverages have 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.

6-Month Old Scalded by Tap Water
On August 11, 2019, a 6-month old boy incurred scald burns to approximately 25% of his body surface area while he was being bathed in the sink.

52-Year Old Scalded at Home
On September 9, 2019, a 52-year old woman was scalded by boiling water while cooking pasta. She received severe burns to 8% of her body surface area.

50-Year Old Woman Receives Scald from Pressure Cooker
On May 11, 2019, a 50-year old woman received scald burns to 35% of her body surface area when the contents of her pressure cooker exploded on her.

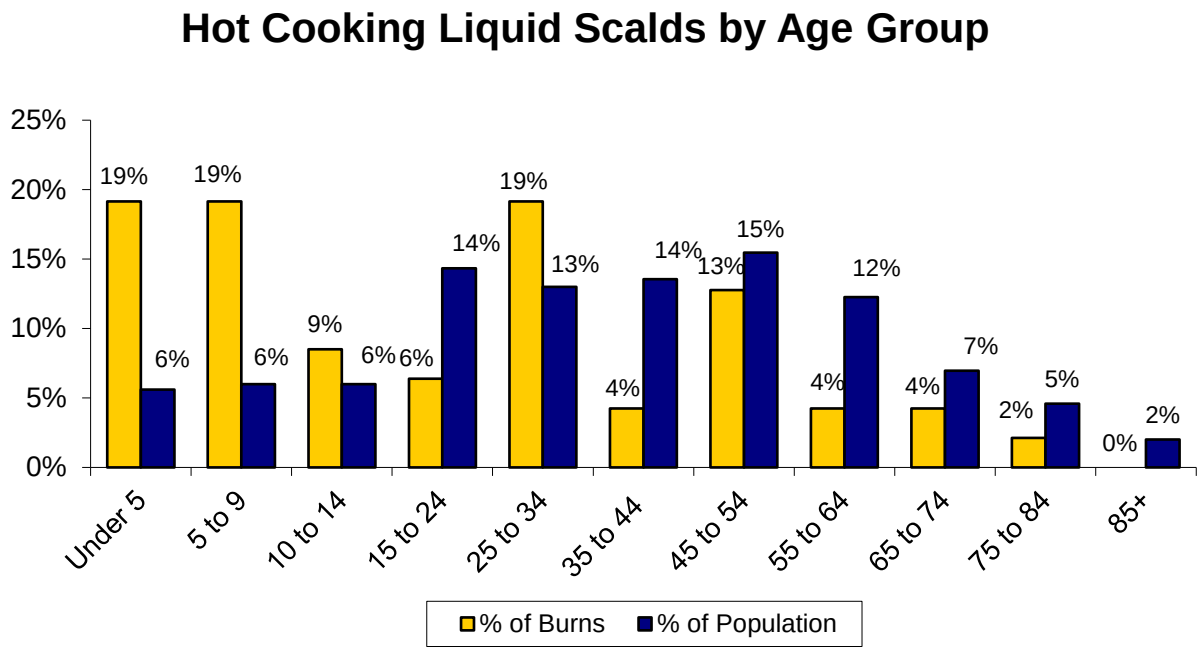
Hot Cooking Liquids

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 47, or 31%, of the 151 scald burns and 14% of the 330 total burn injuries reported in 2019. Sixty-four percent (64%) of the victims were female and 36% were male. Hot cooking liquids scalded five people while they were at work, three victims were women and two were men.

[2]In 1999, and from 2005 – 2008 and 2010 – 2018, cooking liquids were the leading cause of scald burns. From 1984 – 1998, 2000 – 2004 and in 2009, hot beverage scalds were the leading cause.

19% 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 2019, 19% of the cooking liquid scald victims were under five years old. They were 3.4 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.

Children between five and nine and adults between the ages of 25 and 34 also represented 19% of cooking liquid scalds. They were 3.2 times and 1.5 times more likely to be victims of this type of burn injury.



1-Year Old Girl Scalded by Cooking Liquids at Home
On October 27, 2019, a 1-year old girl was scalded when she pulled a pot of boiling water onto herself. She received severe burns to over 60% of her body surface area.

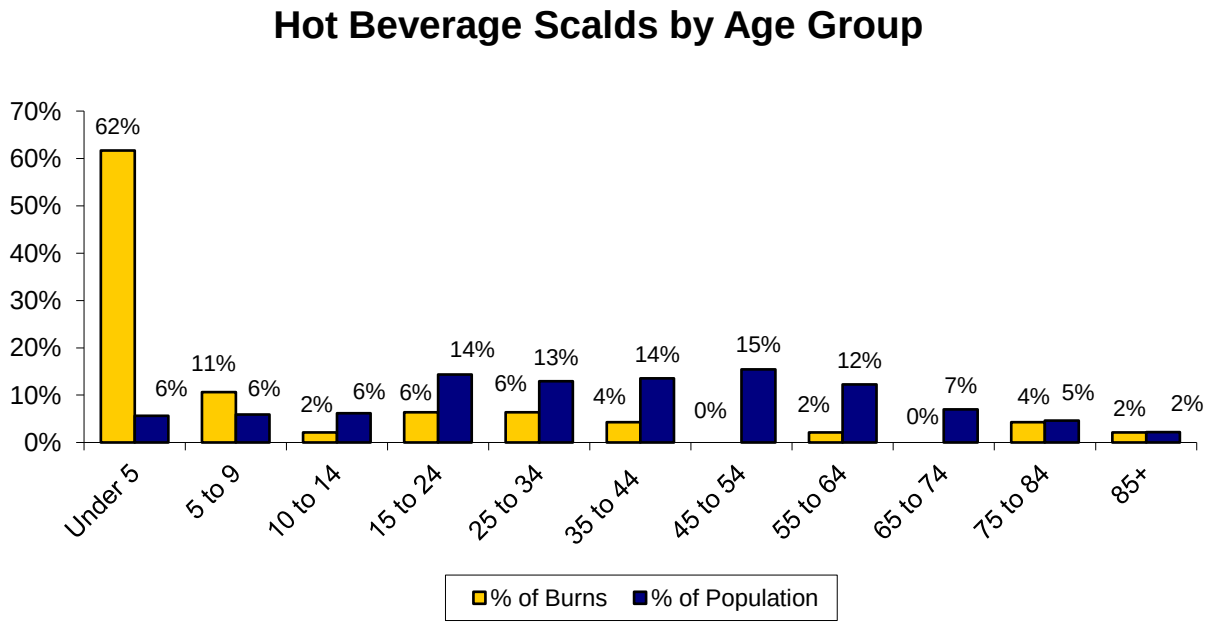
15-Year Old Boy Scalded by Cooking Liquids
On December 15, 2019, a 15-year old boy was scalded at home from a pot of boiling water. He received severe burns to 36% of his body surface area.

Hot Beverages

Hot Beverages Caused 31% of All Scalds
Forty-seven (47), or 31%, of the 151 scald burns were also caused by hot beverages. They accounted for 14% of the 330 total burn injuries.

Sixty percent (60%) of the hot beverage scald victims were female and 40% were male. In 2019, there were no reported hot beverage scalds while working.

62% of the Hot Beverage Scald Victims Were Under 5
Twenty-nine (29), or 62%, of all hot beverage scald victims were under five years old.



1-Year Old Scalded by Beverage
On April 12, 2019, a one-year old boy spilled tea on himself. He received severe scald burns to over 30% of his body surface area.

7-Year Old Boy Scalded by Beverage
On August 30, 2019, a 7-year old boy was burned by spilled tea. He received severe scald burns to approximately 10% of his body surface area.

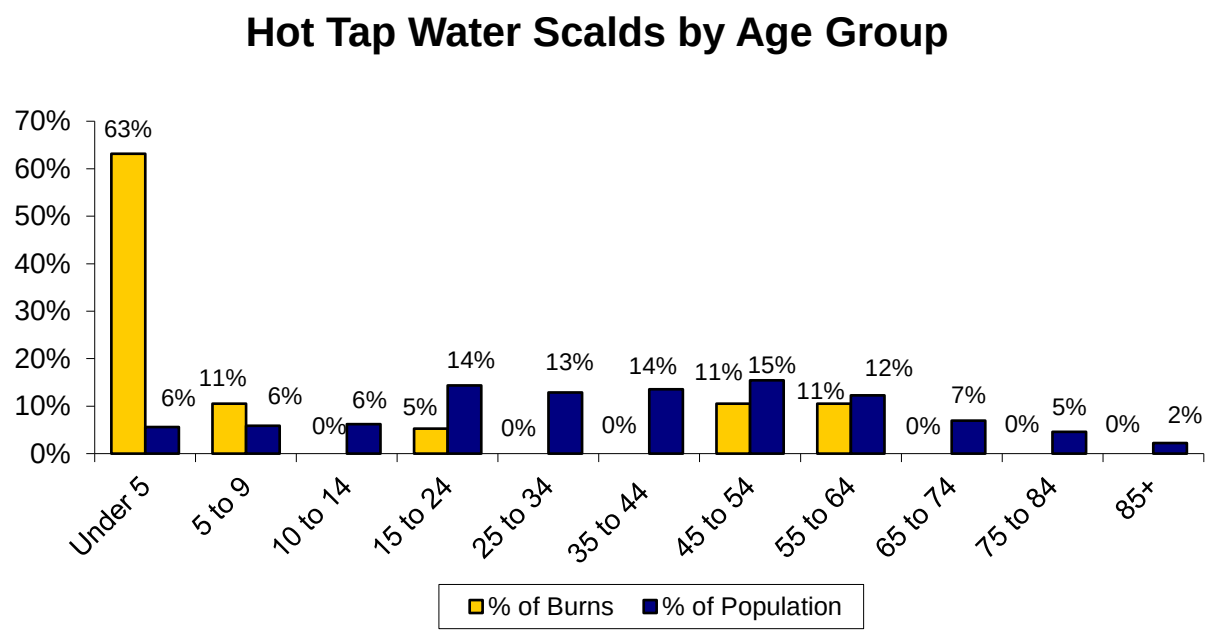
Hot Tap Water

Hot Tap Water Caused 13% of All Scalds & 6% of All Burns
Excessively hot tap water caused 19, or 1%, of the 151 scald burns and 6% of the 330 total burn injuries reported to M-BIRS in 2019. 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 2019, 58% of the victims were male and 42% were female. There was one work-related hot tap water scald burns to a man in 2019.

63% of Tap Water Scald Victims Were Under the Age of 5
Sixty-three percent (63%), or 12 of the 19 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.



5-Year Old Girl Scalded by Hot Tap Water
On January 7, 2019, a 5-year old girl received severe burns to 25% of her body surface area when she was scalded by hot tap water.

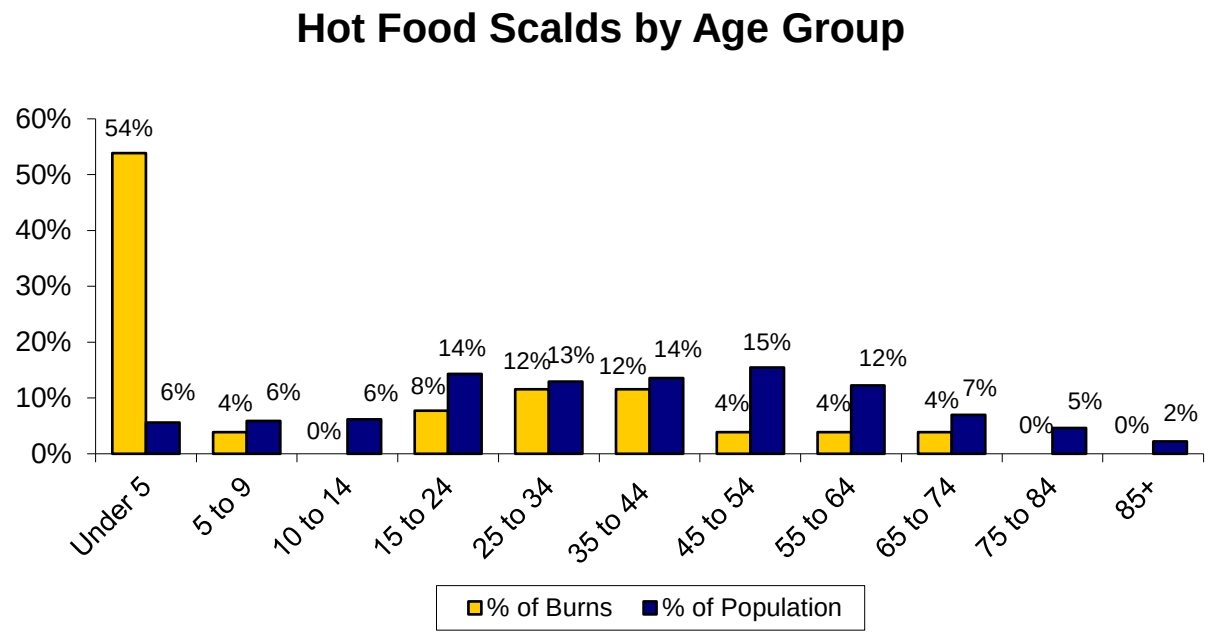
56-Year Old Scalded by Tap Water
On June 28, 2019, a 56-year old man received scald burns to over 7% of his body surface area by hot tap water.

[3] Source: Knapp Burn Foundation

Hot Food

Hot Food Caused 17% of Scalds, 8% of All Burns
Hot food caused 26, or 17%, of the 151 scald burns and 8% of the 330 total burn injuries reported in 2019. Forty-six percent (46%) of the victims were female and 54% were male. There were three work-related hot food scalds reported in 2019, one was a woman and the other two were men.

59% of Hot Food Scald Victims Were Under 10
Of the 26 reported scald victims from hot food in 2019, 15, or 58%, were under the age of ten. Fourteen (14), or 54%, were under five years old and one victim, or 4%, was between five and nine.



1-Year Old Boy Received Scald Burns from Food
On August 8, 2019, a 1-year old boy received moderate to severe scald burns to over 30% of his body surface area when hot macaroni and cheese spilled on him.

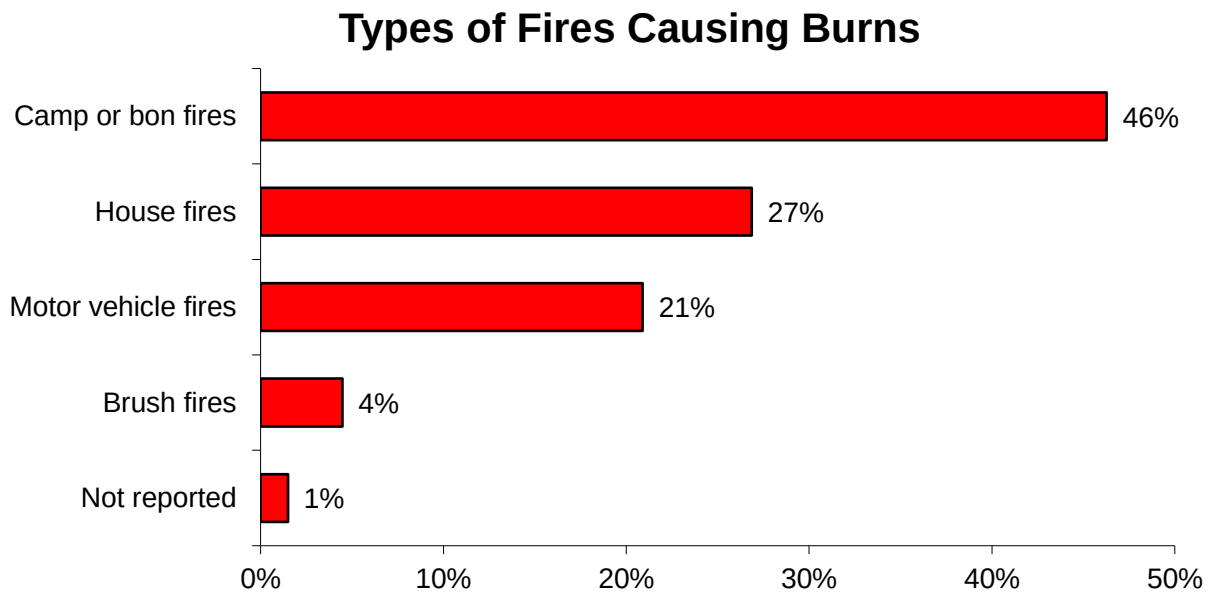
67-Year Old Woman Suffers Scald Burns from Food
On March 13, 2019, a 67-year old woman suffered severe scald burns to over 9% of her body surface area when she spilled hot soup on herself.

Burn Injuries Caused by Fires

Fires Caused 20% of All Burn Injuries
Sixty-seven (67), or 20% of the 330 burn injuries reported in 2019 were caused by fires. This is a 1% decrease from the 68 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-seven percent (67%) of the 67 victims were male and 33% 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].

46% of Fire Burn Injuries Occurred at Camp or Bonfires
Camp or bonfires caused 31, or 46% of the 67 fire burn injuries reported in 2019. House fires caused 18, or 27%.



[4] 2019 Annual Report of the Massachusetts Fire Incident Reporting System, MA Dept. of Fire Services, pg. 111.

Fire Type	Description of Burn	# of Burns	% of Fire	% of All Burns
House fire	House Fire	8	12%	2.4%
House fire	Gas Stove	3	4%	0.9%
House fire	Electrical	2	3%	0.6%
House fire	Cigarette	1	1%	0.3%
House fire	Cooking	1	1%	0.3%
House fire	Self-Immolation	1	1%	0.3%
House fire	Smoking In Bed	1	1%	0.3%
House fire	Stove	1	1%	0.3%
House fire		18	27%	5.5%
MV fire	Boat Fire	4	6%	1.2%
MV fire	MVA	3	4%	0.9%
MV fire	Car Part	2	3%	0.6%
MV fire	Smoking	2	3%	0.6%
MV fire	Car Fire	1	1%	0.3%
MV fire	Motorcycle	1	1%	0.3%
MV fire	Self-Immolation	1	1%	0.3%
MV fire		14	21%	4.2%

Fire Type	Description of Burn	# of Burns	% of Fire	% of All Burns
Brush fire	Brush/Clothes	1	1%	0.3%
Brush fire	Brush Fire	1	1%	0.3%
Brush fire	Gasoline	1	1%	0.3%
Brush fire		3	4%	0.9%
Camp or bon fire	Camp Fire	14	21%	4.2%
Camp or bon fire	Gasoline	12	18%	3.6%
Camp or bon fire	Bonfire	3	4%	0.9%
Camp or bon fire	Battery	1	1%	0.3%
Camp or bon fire	Ignitable Liquids	1	1%	0.3%
Camp or bon fire		31	46%	9.4%
Not Reported	Gasoline	1	1%	0.3%
Not Reported		1	1%	0.3%
Total Fires		67	100%	20.3%

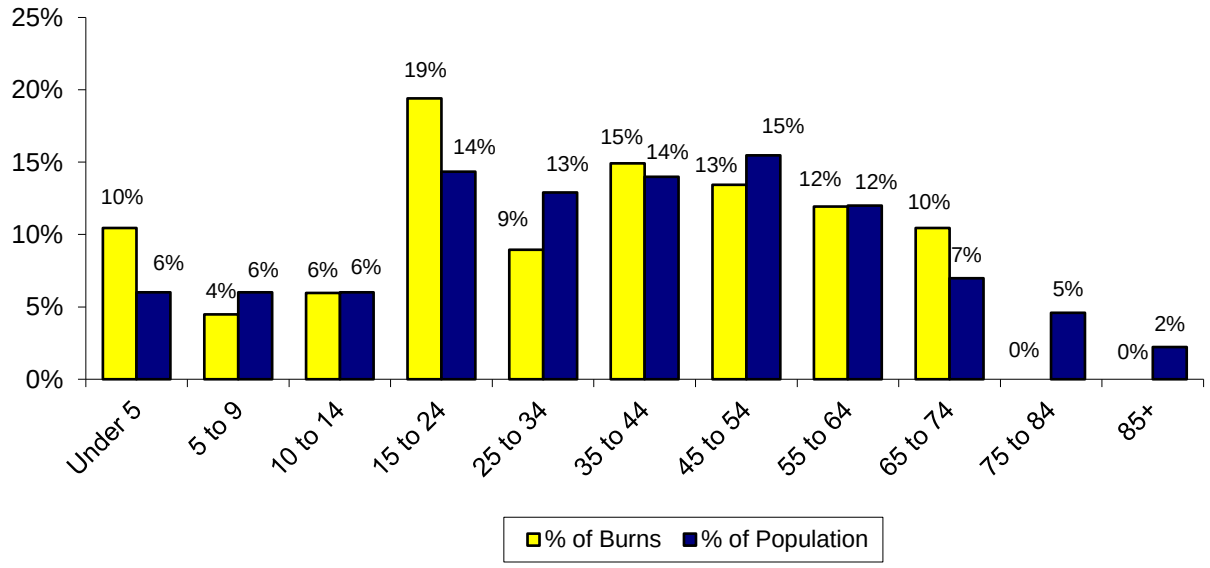
Young Adults 15-24 Had Most Burns from Fires

Young adults between 15 and 24, adults between the ages of 35 and 44 and 45 to 54-years old had the most reported burns from fires. These age groups had 13, 10 and nine burn injuries respectively from fires.

Children under five (1.7 times) and older adults between 65 and 74 were more likely (1.5 times) to be burned in a fire. Young adults between 15 and 24 (1.4 times) and adults between the ages of 35 and 44 were 1.1 times as likely to be burned in a fire in 2019.

Age	# of Burns	% of Burns	% of Population
Under 5	7	10%	6%
5 to 9	3	4%	6%
10 to 14	4	6%	6%
15 to 24	13	19%	14%
25 to 34	6	9%	13%
35 to 44	10	15%	14%
45 to 54	9	13%	15%
55 to 64	8	12%	12%
65 to 74	7	10%	7%
75 to 84	0	0%	5%
85+	0	0%	2%
Total Known	67	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.

3 Fire Deaths Recorded in M-BIRS
Three (3) of the victims that were reported to have received their burn injuries from fires died as a result of their injuries. All three of the victims were Massachusetts residents and died in residential fires.

66-Year Old Man Killed from House Fire
On February 9, 2019, a 66-year old Fairhaven man was killed in a house fire. He had life-threatening burns to over 10% of his body surface area. He was transported to a local hospital where he succumbed to his injuries.

71-Year Old Woman Killed from House Fire
On March 9, 2019, a 71-year old Springfield woman was killed in a house fire. The stove ignited the clothing she was wearing. She had burns to over 58% of her body surface area. She was transported to a local hospital and then transferred to a Boston hospital where she succumbed to her injuries.

56-Year Old Man Dies in House Fire
On September 25, 2019, a 56-year old Brimfield man died after setting fire to his home. He received burns to his upper torso and extremities. He was transported to a local hospital where he succumbed to his injuries. This was a death by suicide.

34-Year Old Man Injured in Car Fire
On September 27, 2019, a 34-year old man received severe burns to over 32% of his body surface area. He was involved in a motor vehicle crash with ensuing fire. He was able to extricate himself from the vehicle and wait for first responders.

44-Year Old Man Injured in Brush Fire
On March 28, 2019, a 44-year old man was injured when he was sleeping in The Fens, a public park in Boston. While he was sleeping, a brush fire started and he received severe burns to 30% of his body surface area.

2 People Injured at Bonfire
On March 27, 2019, a 24-year old man and a 21-year old woman incurred life-threatening burns when someone poured gasoline onto an outside bonfire. The man received burns to over 40% of his body surface area and the woman received burns to 30% of her body surface area. Two (2) other onlookers also received burns.

Flame Burn Injuries

Flames Caused 19% of Reported Burn Injuries
There were 63 reported flame burn injuries. These 63 injuries accounted for 19% of the 330 burn injuries reported in 2019. 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.

Sixty percent (60%) of the flame burn casualties were male and 40% were female. Seven (7), or 11%, of the flame burns occurred during work-related activities; all six were men.

Cooking & Ignitable Liquids Were the Leading Cause of Flame Burns

Cooking was the leading cause of flame burn injuries in 2019. Cooking caused 18, or 29%, of all flame burns. Ignitable liquids and smoking tied as the second leading cause with 12 injuries a piece, or 19%, of these burn injuries.

Description	# of Burns	% of Flame	% of All Burns
Cooking	18	29%	5.5%
Cooking Unspec.	8	13%	2.4%
Barbeque	4	6%	1.2%
Cooking Liquids	3	5%	0.9%
Stove	3	5%	0.9%
Ignitable Liquids	12	19%	3.6%
Gasoline	7	11%	2.1%
Ignitable Liquids	5	8%	1.5%
Smoking	12	19%	3.6%
Smoking Unspec.	6	10%	1.8%
Cigarette	3	5%	0.9%
Smoking on Oxygen	3	5%	0.9%

Description	# of Burns	% of Flame	% of All Burns
Clothes	7	11%	2.1%
Candle	5	8%	1.5%
Huffing	2	3%	0.6%
Assault	1	2%	0.3%
Car Part	1	2%	0.3%
Child w/Lighter	1	2%	0.3%
Electrical	1	2%	0.3%
Natural Gas	1	2%	0.3%
Self-Immolation	1	2%	0.3%
Welding	1	2%	0.3%
Total	63	100%	19.1%

Adults 25 to 34 Had Most Flame Burns

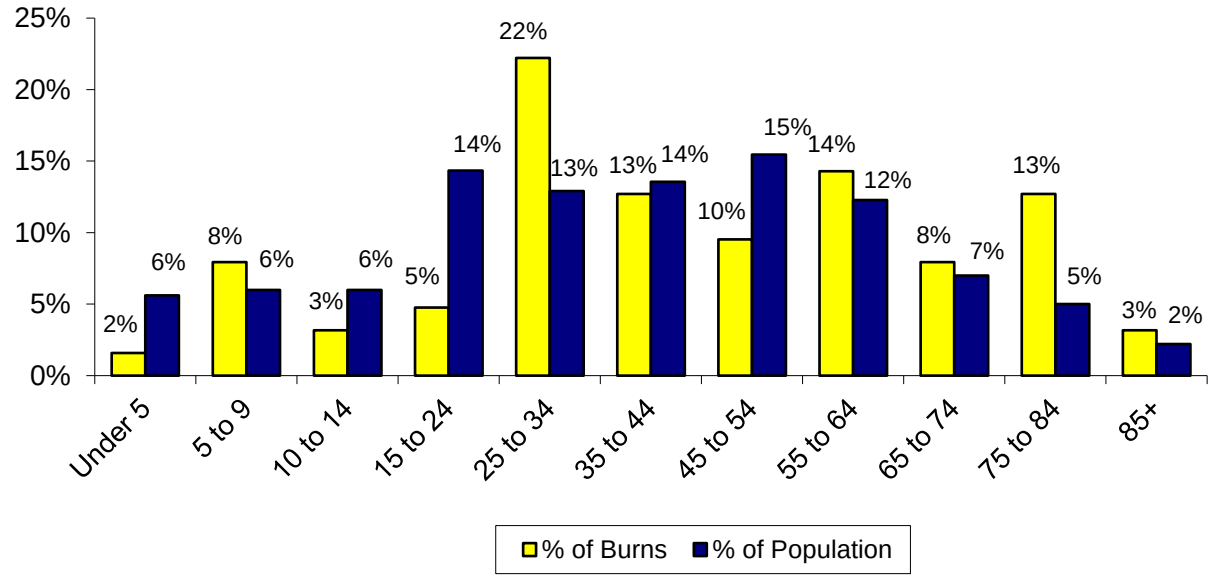
Adults between the ages of 25 to 34 had 14 reported flame burn injuries, the most of any age group.

Age	# of Burns	% of Burns	% of Population
Under 5	1	2%	6%
5 to 9	5	8%	6%
10 to 14	2	3%	6%
15 to 24	3	5%	14%
25 to 34	14	22%	13%
35 to 44	8	13%	14%
45 to 54	6	10%	15%
55 to 64	9	14%	12%
65 to 74	5	8%	7%
75 to 84	8	13%	5%
85+	2	3%	2%
Total	63	100%	100%

Older Adults 65 to 74 Faced Highest Risk of Flame Burns

Five (5) groups were at a higher risk for burns from flames. Children five to nine (1.3 times); adults between 25 and 34 (1.7 times); adults between the ages of 55 to 64 (1.2 times); older adults between the ages of 65 to 74 (1.1 times); and older adults between the ages of 75 and 84 (2.5 times) were all more likely to receive a flame burn injury.

Flame Burn Injuries by Age Group



72-Year Old Woman Burned While Smoking on Oxygen
On December 5, 2019, a 72-year old woman incurred life-threatening flame burn injuries to approximately 18% of her body surface area when she was smoking while using home oxygen. She was transitioned to hospice where she succumbed to her injuries.

62-Year Old Man Burned by Gasoline
On October 6, 2019, a 62-year old man received life-threatening flame burn injuries to approximately half of his body surface area when his clothes ignited from using gasoline as he worked in his garage.

62-Year Old Woman Burned While Smoking on Oxygen
On June 12, 2019, a 62-year old woman received life-threatening flame burn injuries to approximately 10% of her body surface area when she was smoking while using home oxygen.

32-Year Old Man Burned in Assault
On September 30, 2019, a 32-year old man received burns during a home invasion and assault. He received life-threatening burns to 60% of his body surface area.

75-Year Old Woman Burned While Smoking on Oxygen
On October 25, 2019, a 75-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 33% of Flame Burn Injuries
There were 21 clothing ignitions resulting in flame burn injuries that accounted for 33% of all flame burn injuries. Cooking was the leading cause of clothing ignitions with seven reported in 2019.

Clothing Ignitions	# of Flame Burns	% of All Flame Burns
Cooking	7	11%
Candle	3	5%
Gasoline	2	3%
Ignitable Liquids	1	2%
Smoking	2	3%
Unspecified	6	10%
Total	21	33%

82-Year Old Woman's Clothes Caught Fire While Smoking
On March 21, 2019, an 82-year old woman was burned when her clothes ignited while she was smoking. She received severe flame burn injuries to approximately 18% of her body surface area.

68-Year Old Woman's Clothes Caught Fire While Cooking
On December 8, 2019, a 68-year old woman was burned when her clothes ignited while she was cooking. She received severe flame burn injuries to approximately 19% of her body surface area.

72-Year Old Woman's Clothes Caught Fire from Candle
On January 16, 2019, a 72-year old woman was burned when her nightgown was ignited by a candle. She received severe flame burn injuries to approximately 26% of her body surface area.

ALWAYS REMEMBER TO:

STOP DROP COVER & ROLL

Burn Injuries Caused by Explosions

Explosions Caused 5% of Reported Burn Injuries
Eighteen (18), or 5%, of the 330 burn injuries reported in 2019 were caused by explosions. Ninety-four percent (94%) of the explosion burn victims were male and 6% were female.

Five (5) burns, or 28%, occurred during work-related activities. All five victims were men.

Cooking Was the Leading Cause of Explosion Burn Injuries
Cooking caused five explosion related burn injuries and fireworks accounted for four of the explosion-related burn injuries in 2019.

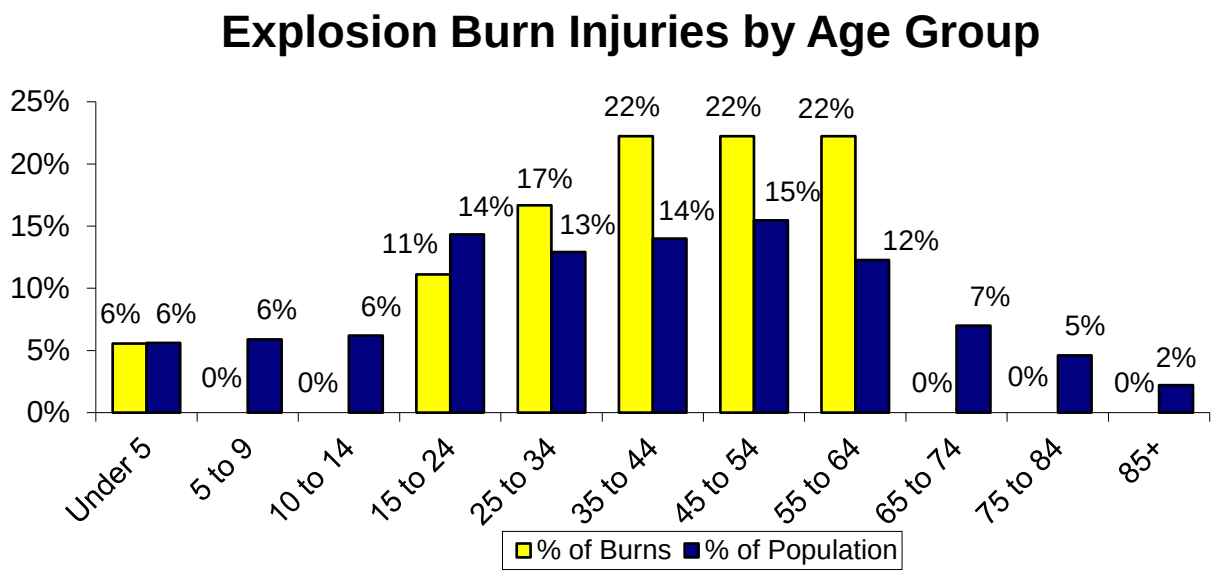
Description	# of Burns	% of Explosion	% of All Burns
Cooking	5	28%	1.5%
Barbeque	4	22%	1.2%
Barbeque Gas	1	6%	0.3%
Fireworks	4	22%	1.2%
Ignitable Gases	3	17%	0.9%
Natural Gas	2	11%	0.6%
Propane	1	6%	0.3%

Description	# of Burns	% of Explosion	% of All Burns
E-Cigarette	2	11%	0.6%
Welding	2	11%	0.6%
Boiler	1	6%	0.3%
Gasoline	1	6%	0.3%
Total	18	100%	5.5%

Adults Have Most Explosion Burns
Adults between the ages of 35 and 44, 45 and 54 and 55 and 64 had the most explosion-related burn injuries, each with four and accounting for 22%. Adults between the ages of 25 and 34 had the next most burn injuries from explosions with three, accounting for 17%.

Age	# of Burns	% of Burns	% of Population
Under 5	1	6%	6%
5 to 9	0	0%	6%
10 to 14	0	0%	6%
15 to 24	2	11%	14%
25 to 34	3	17%	13%
35 to 44	4	22%	14%
45 to 54	4	22%	15%
55 to 64	4	22%	12%
65 to 74	0	0%	7%
75 to 84	0	0%	5%
85+	0	0%	2%
Total	18	100%	100%

Adults Face Greatest Risk of Explosion Burns
Adults between 25 and 34 (1.3 times), 35 and 44 (1.6 times), 45 and 54 (1.4 times) and between the ages of 55 and 64 (1.8 times) were more likely to be burned in an explosion in 2019.



31-Year Old Man Burned by E-Cigarette
On May 28, 2019, a 31-year old man was severely burned when the battery from his e-cigarette exploded in his pants pocket. He received burns to 30% of his body surface area.

54-Year Old Man Injured by Explosion
On October 14, 2019, a 54-year old man was injured while at work when the barrel he was welding still had some brake cleaner in it and it exploded. He received severe burns to 22% of his body surface area.

Contact Burn Injuries

Contact with Hot Objects Caused 4% of Reported Burn Injuries
Fourteen (14), or 4%, of the 330 burn injuries reported in 2019 were caused by contact with hot objects. Half, or 50% of the burn victims were male and 50% were female. There were two reports of contact burns that occurred at work in 2019. Both of the victims were male.

Cooking Was the Leading Cause of Contact Burns
Contact with cooking appliances caused five, or 36%, of the contact burns in 2019. Contact with heating equipment caused three, or 21%, of these burns. Contact with asphalt, was the third leading cause of burn injuries from contact with a hot object. A clothes iron, a curling iron, a hair dryer and hot wax all caused one burn injury each.

Description	# of Burns	% of Contact	% of All Burns
Cooking	5	36%	1.5%
Stove	4	29%	1.2%
Barbeque	1	7%	0.3%
Heating	3	21%	0.9%
Heater	2	14%	0.6%
Radiator	1	7%	0.3%

Description	# of Burns	% of Contact	% of All Burns
Asphalt	2	14%	0.6%
Clothes Iron	1	7%	0.3%
Curling Iron	1	7%	0.3%
Hair Dryer	1	7%	0.3%
Hot Wax	1	7%	0.3%
Total	14	100%	4.2%

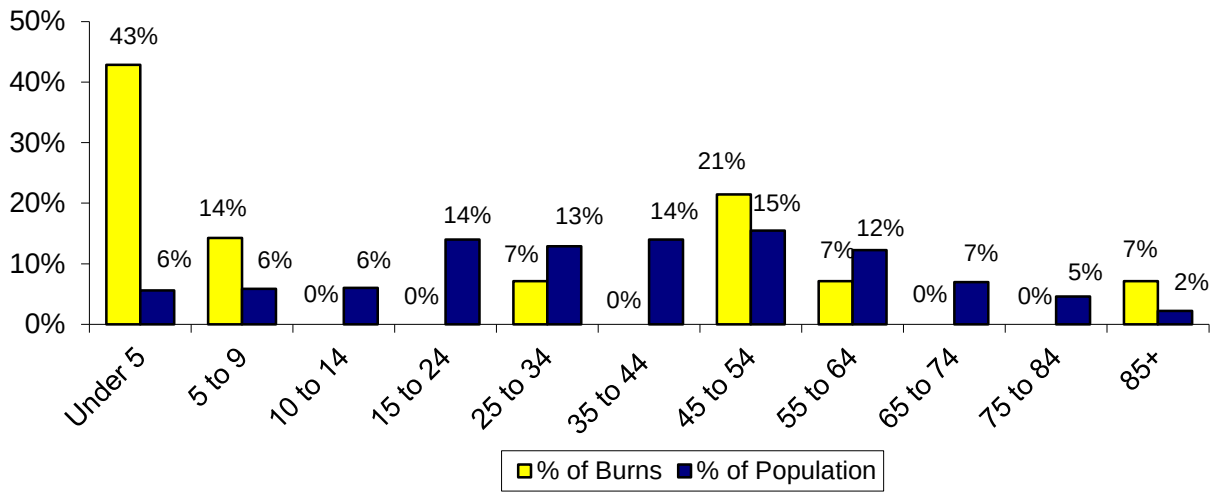
43% of Contact Burns Were to Children Under 5

Children under the age of five accounted for six, or 43%, of all contact burns.

Age	# of Burns	% of Burns	% of Population
Under 5	6	43%	6%
5 to 9	2	14%	6%
10 to 14	0	0%	6%
15 to 24	0	0%	14%
25 to 34	1	7%	13%
35 to 44	0	0%	14%
45 to 54	3	21%	15%
55 to 64	1	7%	12%
65 to 74	0	0%	7%
75 to 84	0	0%	5%
85+	1	7%	2%
Total	14	100%	100%

Pre-schoolers faced 7.6 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. Children five to nine, adults 45 to 54 and older adults over the age of 85 were also a disproportionate risk of getting a contact burn in 2019.

Contact Burn Injuries by Age Group



11-Month Old Burned by Oven
On November 9, 2019, an 11-month old boy was burned when he put his hand up against the glass portion of a gas stove. He received severe burns to his left hand.

11-Month Old Burned by Heater
On November 10, 2019, an 11-month old boy was burned when he fell onto a baseboard heater. He received severe burns to his extremities.

46-Year Old Gets Contact Burns from Hot Asphalt
On September 23, 2019, a 46-year old man received life-threatening contact burns to approximately 29% of his body surface area when he passed out and fell onto hot asphalt during a paving job.

Other Types of Burn Injuries

***Other* Type Burns Cause 13 Injuries**
In 2019, there were 13 burn injuries that were characterized as *Other*. These 13 injuries caused 4% of all 2019 burn injuries. Sunburns caused 6, or 46%, of *Other* burns. Chemicals also caused six *Other* burns, or 46%, and one, or 8%, was attributed to ignitable liquids.

Description	Total # of Burns	% of Other Burns
Sunburn	6	46%
Chemical	6	46%
Ignitable Liquids	1	8%
Total Other Burns	13	100%

Twelve (12), or 92%, of the 13 victims were male, and one, or 8%, was a female. Health care facilities reported that three, or 23% of the 13 *Other* burn victims were working when injured. Exposure to chemicals caused all three of the work-related injuries. All three were men.

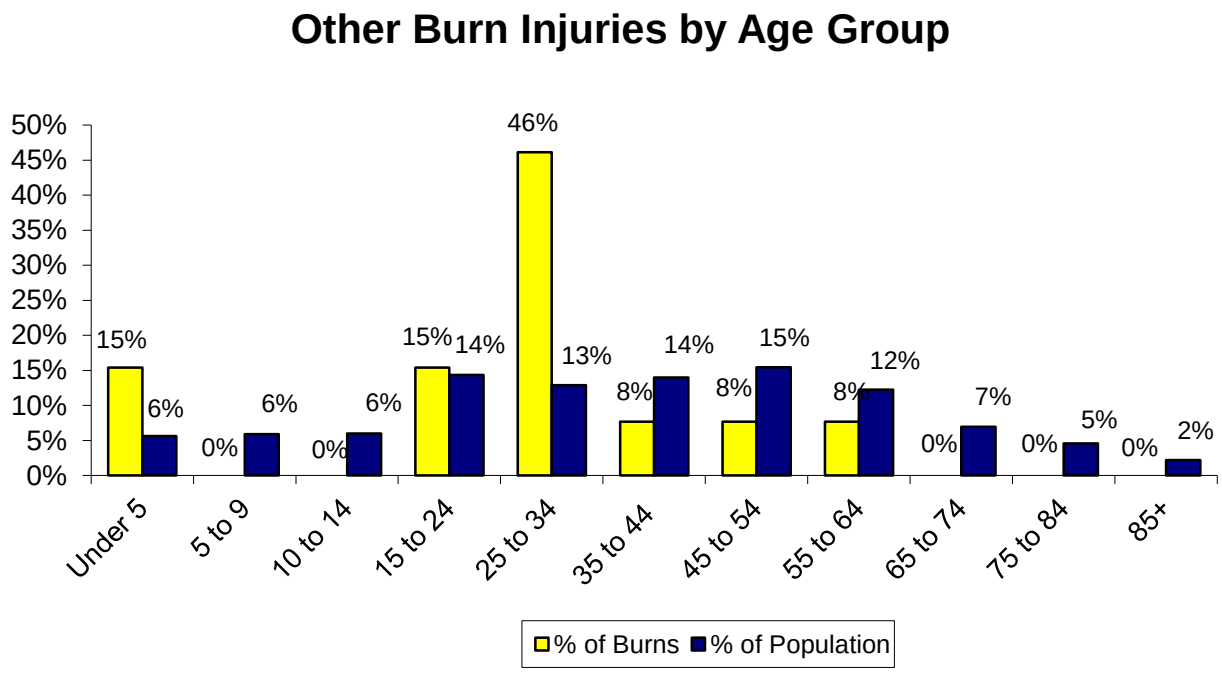
Adults Were the Majority of *Other* Burn Victims

In 2019, 77% of the victims were between the ages of 15 and 54 years old.

Age	# of Burns	% of Burns	% of Population
Under 5	2	15%	6%
5 to 9	0	0%	6%
10 to 14	0	0%	6%
15 to 24	2	15%	14%
25 to 34	6	46%	13%
35 to 44	1	8%	14%
45 to 54	1	8%	15%
55 to 64	1	8%	12%
65 to 74	0	0%	7%
75 to 84	0	0%	5%
85+	0	0%	2%
Total	13	100%	100%

Young Children & Adults at Higher Risk

In 2019, there were six age groups that reported an *Other* type burn injury. Three (3) age groups were at a higher risk for these types of burns: Children Under 5 (2.7 times), young adults 15 to 24 (1.1 times) and adults 25 to 34 (3.6 times).



30-Year Old Man Burned by Chemical
On May 1, 2019 a 30-year old man received chemical burns to multiple parts of his body while he was cleaning out a pipe with a caustic chemical at work.

30-Year Old Man Gets Chemical Burn
On June 10, 2019 a 30-year old man suffered chemical burns to his right arm and left leg from brake cleaner working on his car.

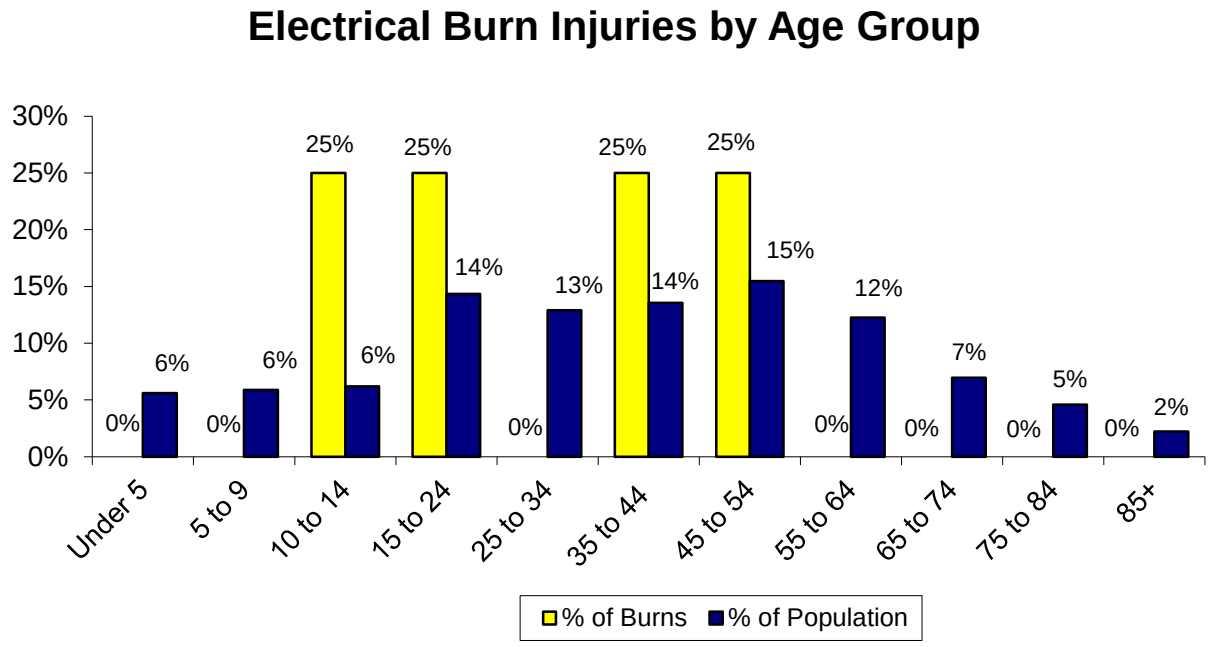
Electrical Burn Injuries

4 Electrical Incidents
Four (4), or 1%, of the 330 burn injuries reported in 2019 were caused by electrical accidents. Seventy-five percent (75%) of the electrical burn victims were men and 25% were women. Two (2) of these burns occurred during work-related activities. Both were men.

Half Electrical Burns Were Electrocutions
Two (2) of the 2019 electrical burns were caused by electrocution. One was caused by an unspecified electrical event and the other was caused by an electrical flash burn.

Description	# of Burns	% of Electrical Burns
Electrocution	2	50%
Electrical	1	25%
Flash Burn	1	25%
Total Electrical Burns	4	100%

4 Age Groups Each Had 1 Electrical Burn Victim
In 2019, the youngest electrical burn victim was 11-years old. One (1) victim was between 10 and 14; one victim was between 15 and 24; one victim was between 35 and 34; and one victim was between 45 and 54 years old.



54-Year Old Man Burned by Generator
On June 30, 2019, a 54-year old man received electrical flash burns to his hand as a result of an explosion while performing maintenance on a transformer.

40-Year Old Man Electrocuted at Work
On August 23, 2019, a 40-year old man received electrical burns to approximately 18% of his body surface area while at work at an electrical jobsite.

Burn Injuries from Domestic Violence

0 Burn Injuries from Domestic Violence Incidents

There were no reported burn injuries in 2019 from domestic violence incidents.

Gasoline Related Burn Injuries

Gasoline Involved in 7% of Reported Burn Injuries
Gasoline was involved in 24, or 7%, of the 330 burns reported to M-BIRS in 2019. Gasoline was the primary cause in 22 of these injuries, and the secondary cause in two of the 24 injuries.

Fourteen (14), or 58%, of the burn injuries involving gasoline were caused by fires. Nine (9), or 38%, of the gasoline related burn injuries were flame burn injuries; and one, or 4%, was caused by an explosion.

Burn Type	# of Burns	% of Gasoline Burns
Fire	14	58%
Flame	9	38%
Explosion	1	4%
Total Gasoline	24	100%

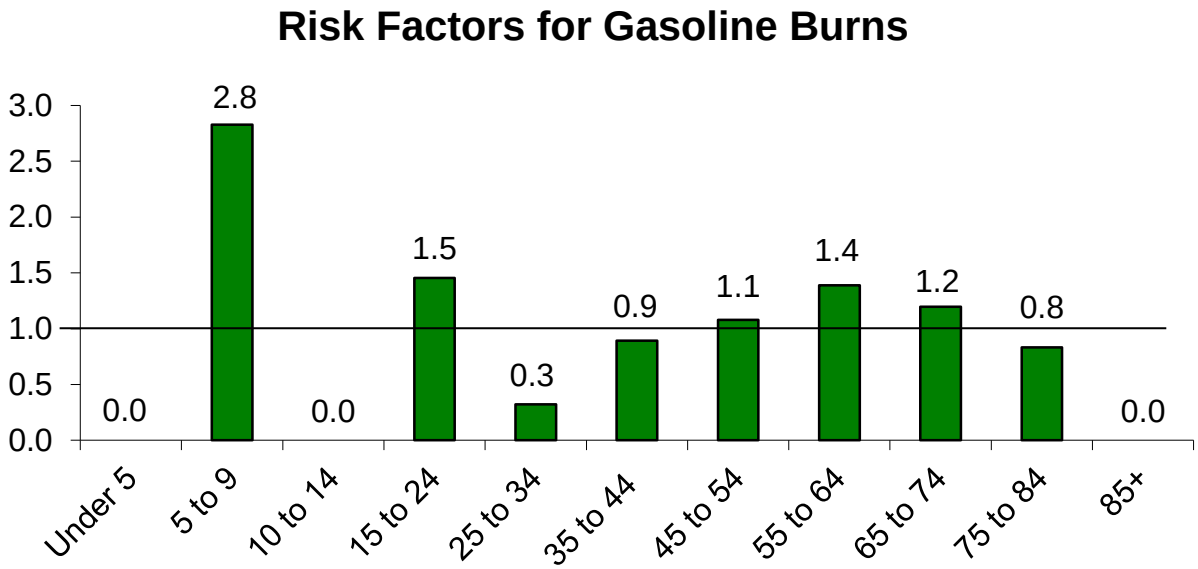
46% of Gasoline-Related Burn Victims Were Between the Ages of 35 & 64

No one under the age of six in 2019 was the victim of a burn injury involving gasoline. Four, or 17%, of the victims were children five to nine. Five (5), or 21%, of the victims were between 15 and 24, one, or 4%, were between 25 and 34, three, or 13%, were between 35 and 44, four, or 17% were between 45 and 54, four, or 17%, were between 55 and 64, two, or 8%, were between 65 and 74, and one, or 4%, were between 75 and 84 years old. Four (4), or 17%, of the gasoline burn injuries in 2019 were to children under the age of 18; 17, or 71%, of these injuries occurred to adults; and three, or 13%, happened to older adults. One (1), or 4%, of the injuries occurred during work-related activities. Nineteen (19), or 79%, of the 31 gasoline related burn victims in 2019 were men, and five, or 21% were women. The youngest victim was a six-year old boy and the oldest victim was a 77-year old man.

Age	# of Burns	% of Burns	% of Population	Risk Factor
Under 5	0	0%	6%	0.0
5 to 9	4	17%	6%	2.8
10 to 14	0	0%	6%	0.0
15 to 24	5	21%	14%	1.5
25 to 34	1	4%	13%	0.3
35 to 44	3	13%	14%	0.9
45 to 54	4	17%	15%	1.1
55 to 64	4	17%	12%	1.4
65 to 74	2	8%	7%	1.2
75 to 84	1	4%	5%	0.8
85+	0	0%	2%	0.0
Total	24	100%	100%	

Children 5 to 9 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. Children belonging to the age group five to nine had the highest risk of getting a gasoline burn. Young adults between the ages of 15 to 24 had the second highest risk of getting a burn involving gasoline.



68-Year Old Man Burned by Gasoline
On April 2, 2019, a 68-year old man received severe burn injuries from a bonfire when he added gasoline to it. He incurred burns to approximately half his body surface area.

61-Year Old Woman Burned Using Gasoline
On March 22, 2019, a 61-year old woman attempted suicide by pouring gasoline over herself and lighting it. She received life-threatening burn injuries to 40% of her 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

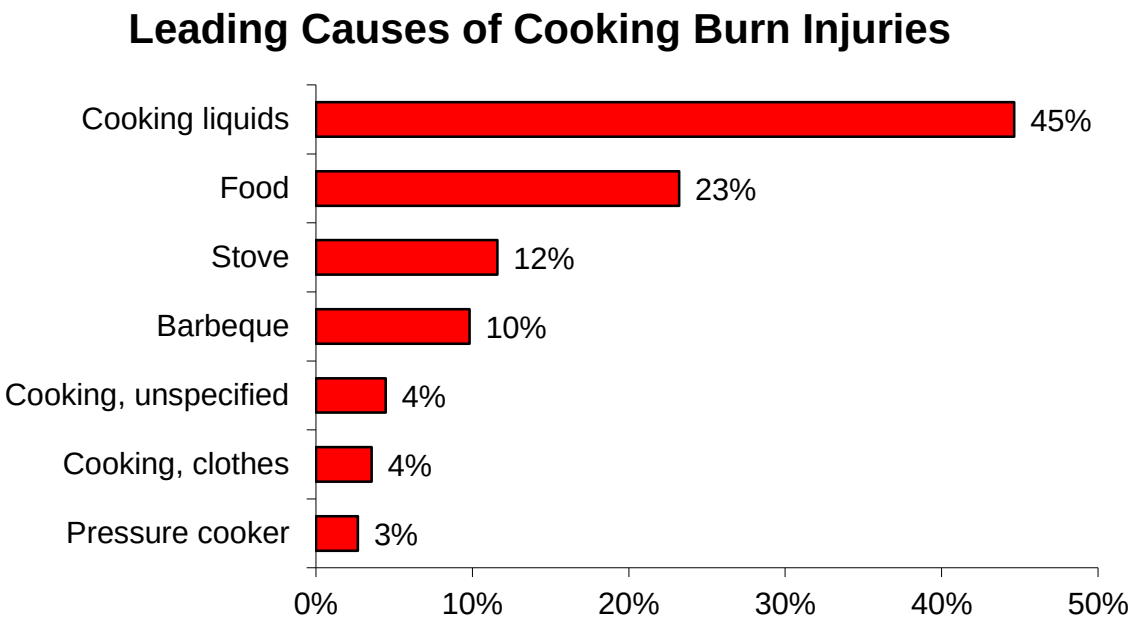
Cooking Activities Caused 34% of Reported Burn Injuries
Cooking activities caused 112, or 34% of the 330 total burn injuries reported to the Massachusetts Burn Injury Reporting System in 2019. Cooking activities were the primary cause in 109 of these injuries.

Forty-nine (49), or 44%, of the 101 victims were male and 63, or 56%, were female. Nine (9), or 8%, of the people burned by cooking activities were working when injured. Five (5) were men and four were women.

Scalds Caused 68% of Cooking-Related Burn Injuries
Seventy-six (76), or 68%, of the 112 burn injuries caused by cooking were scalds. Twenty (20), or 18%, were flame burn injuries.

Burn Type	# of Burns	% of Cooking Burns
Scalds	76	68%
Flame	20	18%
Explosion	6	5%
Contact	5	4%
Fire	5	4%
Total	112	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 2019. These burns accounted for 50, or 45% of all cooking-related burn injuries.



Children Under 5 Over 4 1/2 Times as Likely to be Burned by Cooking Activities
Twenty-nine (29), or 26%, of the cooking-related burn victims were under age five. This age group was 4.6 times more likely to be burned by cooking related activities.

Age	# of Burns	% of Burns	% of Population	Risk
Under 5	29	26%	6%	4.6
5 to 9	11	10%	6%	1.7
10 to 14	5	4%	6%	0.7
15 to 24	8	7%	14%	0.5
25 to 34	15	13%	13%	1.0
35 to 44	12	11%	14%	0.8
45 to 54	14	13%	15%	0.8
55 to 64	5	4%	12%	0.4
65 to 74	6	5%	7%	0.8
75 to 84	5	4%	5%	1.0
85+	2	2%	2%	0.8
Total	112	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.

8 Clothing Ignitions while Cooking

Loose-fitting sleeves can easily come into contact with burners and catch fire. In 2019 there were eight reported clothing ignitions while cooking: four involved stoves. In 2018 there were two reported clothing ignitions 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 9, 2019, an 83-year old woman received severe burns to her torso and right arm when her clothing ignited while cooking. She succumbed to her injuries days later.
- On February 17, 2019, a 65-year old woman received severe flame burns to 30% of her body surface area when the cooking spray she was spraying ignited.
- On August 12, 2019, a 51-year old woman received severe burns to her face and upper body from a cooking smoker.

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

Safety Measures

- ✓ Stand by your pan.
- 💣 Never leave cooking food unattended.
- ✓ 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 look down onto 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.

Burn Injuries by Age Group

Three (3) age groups of our population were at a greater than average risk of burn injuries in 2019. Although burn injuries were reported in all age groups, very young children suffer more than their share and are many times more likely to be burned. Children under the age of five were 4.4 times more likely to suffer a burn injury in Massachusetts. Children five to nine are 1.4 times more likely to be burned; and adults between 25 and 34 years old are 1.1 times more likely to be burned.

Twenty-five percent (25%) of all burn victims were children under the age of five. Eighty-one (81) children under age five were seriously burned in 2019.

Age	# of Burns	% of Burns	% of Population	Risk
Under 5	81	25%	6%	4.4
5 to 9	28	8%	6%	1.4
10 to 14	12	4%	6%	0.6
15 to 24	32	10%	14%	0.7
25 to 34	46	14%	13%	1.1
35 to 44	34	10%	14%	0.8
45 to 54	37	11%	15%	0.7
55 to 64	29	9%	12%	0.7
65 to 74	15	5%	7%	0.7
75 to 84	12	4%	5%	0.8
85+	4	1%	2%	0.5
Total	330	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 or tied for the leading cause of burn injuries to most age groups. Scalds were the leading cause of burn injuries to people between 0 and 14, 25 to 34, and 45 to 54. Scalds were tied with burns from fires as the leading cause to people between 35 and 44. Burns from fires were the leading cause of burns to young adults between 15 and 24 and to older adults between 65 and 74. Flame burns were the leading cause of burns to adults between the ages of 55 and 64 and adults over the age of 75.

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-six percent (36%) of the burns incurred by these young children were scalds caused by hot beverages, 17% were caused by hot food, and 15% were caused by scalds from hot tap water. Cooking liquids, gasoline and other ignitable liquids were frequent causes of burn injuries to older teens and young adults.

Parents of young children must learn 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	37	44	81	-7
5 to 9	15	13	28	2
10 to 14	8	4	12	4
15 to 24	21	11	32	10
25 to 34	31	15	46	16
35 to 44	24	10	34	14
45 to 54	25	12	37	13
55 to 64	18	11	29	7
65 to 74	8	7	15	1
75 to 84	4	8	12	-4
85+	2	2	4	0
Total	193	137	330	56

Except for the age groups of children under five and adults between 75 and 84, males were burned more frequently than females. In 2019, 193, or 58% of the 330 burn victims were male, and 137, or 42%, were female.

Children Under 5

25% of Reported Burns Incurred by Children Under 5
Eighty-one (81), or 25%, of the burn injuries reported to M-BIRS in 2019 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 4.4 times more likely to be burned than were members of the general population. No other age group faced a risk this high. Fifty-four percent (54%) of burned preschoolers were girls and 46% were boys.

Scalds Caused 79% of Burns to Pre-Schoolers
Scalds caused 64, or 79%, of the burn injuries incurred by children under five. Burns from fires caused seven burns, contact burns caused six burns and *Other* type burns caused two. Flame burns and burns from explosions each caused one injury to this age group.

Children Ages 5 to 9

8% of Reported Burn Injuries Incurred by Children 5-9 Years of Age
Twenty-eight (28), or 8%, of the burn injuries reported in 2019 were incurred by children between five and nine years of age. Thirteen (13), or 46%, of the burn victims were girls, and 15, or 54%, were boys. Children in this age bracket accounted for 6% of the population of Massachusetts and 8% of the burn injuries in 2019.

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 18, or 64%, of the burn injuries incurred by children aged five to nine in 2019. Flame burns caused five of these injuries, burns from fires caused three and contact burns caused two injuries to this age group.

Children Ages 10 to 14

4% of Reported Burns Incurred by Children 10-14 Years of Age
Children between the ages of 10 and 14 suffered 12, or 4% of the burn injuries reported in 2019. Eight (8), or 67%, were boys and four, or 33%, were girls. Children in this age bracket accounted for 6% of the population in the Commonwealth of Massachusetts and 4% 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 five, or 42% of the burns incurred by children aged 10 to 14. Burns from fires caused four injuries, flame burns caused two, and an electrical burn caused one injury.

Ages 15 to 24

10% of Reported Burn Victims Between 15-24 Years of Age
Teens and young adults between the ages of 15 and 24 incurred 32, or 10% of the burn injuries reported in 2019. Twenty-one (21), or 66%, were male and 11, or 34%, were female. Young adults aged 15 to 24 accounted for 14% of the population of Massachusetts and 10% of the burn injuries in 2019. Three (3), or 9%, of the burn injuries incurred by this age group were work-related: two were male and one was female.

41% of Burns Were from Fires
Burns from fires caused 13, or 41%, of the burn injuries to people 15 to 24 years of age. Scalds caused 11 injuries. Flame burns caused three injuries. Explosions and sunburns (*Other)* each caused two injuries. One (1) injury to this age group was an electrical burn.

Ages 25 to 34

14% of Burns Were to Adults 25-34 Years of Age
This age group had the most reported burns in 2019. Forty-six (46), or 14% of the burn injuries reported in 2019 were incurred by people between 25 and 34 years of age. Thirty-one (31), or 67% of the victims were men and 15, or 33% were women. Seven (7), or 15% of the burn injuries suffered by this age group were work-related; six were men and one was a woman. People between the ages of 25 and 34 accounted for 13% of the population of Massachusetts while accounting for 14% of the total number of burn injuries reported in 2019.

Scald Burns Caused 35% of Burn Injuries
Scalds accounted for 16 burns, or 35% of the burn injuries for this age group.
Flame burns caused 14 burns. Burns from fires and *Other* type burns each caused six of the burn injuries. Explosions caused three of these injuries. Contact burns caused one burn injury to this age group.

Ages 35 to 44

10% of Reported Burn Victims Were Between 35-44 Years of Age
Thirty-four (34), or 10%, of the burn injuries reported in 2019 occurred to people between the ages of 35 and 44. Twenty-four (24), or 71% of the victims were men and 10, or 29% of the victims were women. Adults between the ages of 35 and 44 accounted for 14% of the Massachusetts population but 10% of the reported burns in 2019. Four (4), or 12%, 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 10, or 29%, of the burn injuries to this age group. Flame burns caused eight injuries, and explosions caused four burn injuries. Electrical burns and a sunburn (*Other)* each caused one burn injury to this age group.

Ages 45 to 54

11% of Reported Burn Injuries Were Between 45-54 Years of Age
People between the ages of 45 and 54 incurred 37, or 11%, of the reported burns in 2019. Twenty-five (25) or 68% of the victims were male, and 12, or 32%, were female. Ten (10) of the 37 burn victims aged 45 to 54, or 27%, were burned while at work; all of them were men. This age group represents 15% of the population of Massachusetts but only 11% of the burn injuries in 2019.

Scalds Burns Were the Leading Cause of Burns
Scalds were incurred by 13, or 35% of the burn victims between the ages of 45 and 54. Burns from fires caused nine of these injuries and flame burns caused six injuries. Explosions caused four injuries. Contact with hot objects caused three injuries. Electrical burns and *Other* burns each caused one burn injury to this age group.

Ages 55 to 64

9% of Burn Victims Were Between 55-64 Years Old
Twenty-nine (29), or 9% of the burns reported in 2019 were incurred by people between the ages of 55 and 64. Eighteen (18), or 62% of the victims were men, and 11, or 38% were women. Five (5), or 17%, of the 29 burn injuries incurred by people between 55 and 64 years old were work-related; all were men. People of this age group represent 12% of the total population of Massachusetts but only received 9% of the burns in 2019.

Flame Burns Were the Leading Causes of Burns
Flame burns caused nine injuries to people between the ages of 55 and 64 in 2019, each accounting for 31% of these injuries. Burns from fires caused eight of these injuries. Scalds caused six burns. Explosion caused four injuries. Contact with a hot object and *Other* burns each caused one burn injury to members of this age group.

Over 65 – Older Adults

31 Burn Victims Over 65 Years Old
Thirty-one (31), or 9%, of the burn victims in 2019 were over 65 years old. Fifteen (15) were between 65 and 74; 12 were between 75 and 84; and four were 85 years old or older. Fourteen (14), or 45% of the victims were men, and 17, or 55%, were women. Older adults represent 14% of the total Massachusetts population but only 9% of the burn injuries in 2019, which means that in 2019 they were proportionately less likely to receive a burn injury. One (1) man in this age group received a work-related burn.

Flame Burns Were Leading Cause of Burns to Older Adults
Flame burns caused 15, or 48%, of the burn injuries to people over the age of 65. Scalds caused eight burns. Burns from fire caused seven of these burns. Contact with a 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

9% of Reported Burns Occurred at Work
Massachusetts hospitals indicated that 30, or 9%, of the 330 burn injuries reported in 2019 occurred while the victim was at work. Men were much more likely to be burned while working than women. Twenty-six (26) men, or 87%, and four women, or 13%, were burned at work in 2019.

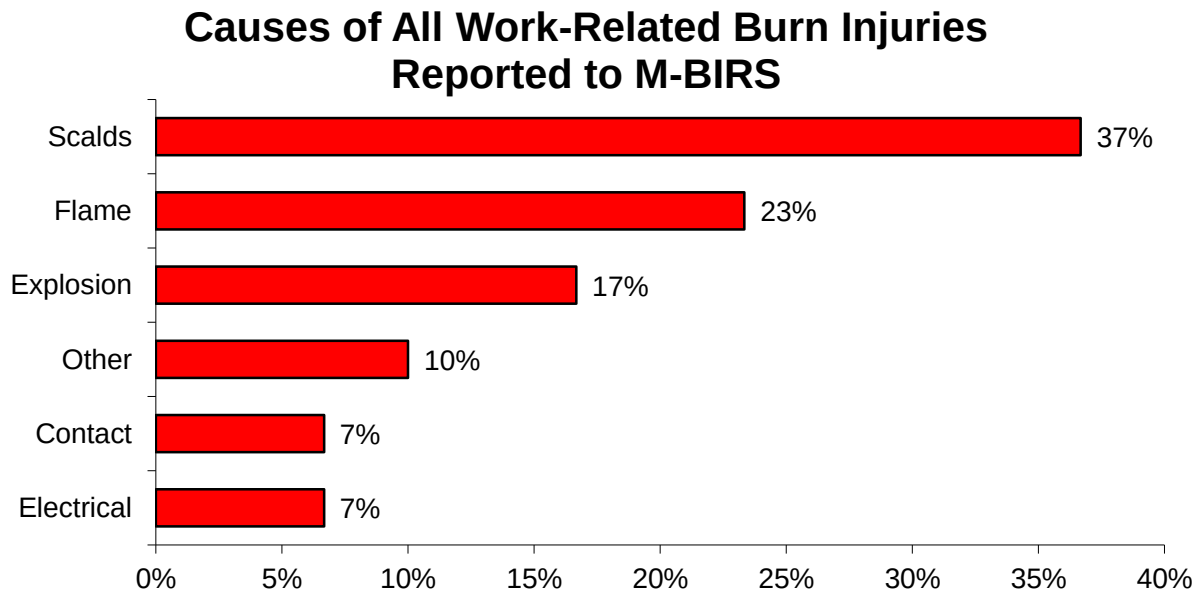
70% of Work-Related Burns Incurred by People Between 25 and 44

No one under the age of 19 received a work-related burn in 2019. The age groups 25 to 34 and 45 to 54 years had the most work-related burns injuries with seven and 10 respectively. Seventy percent (70%) of the work-related burns were to people between the ages of 25 and 54. The youngest person to receive treatment for a work-related burn in Massachusetts in 2019 was a 19-year old woman who received a scald from cooking liquids. The oldest victim to receive a work-related burn was a 66-year old man who also received a scald from cooking liquids.

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	3	10%	14%
25 to 34	7	23%	13%
35 to 44	4	13%	14%
45 to 54	10	33%	15%
55 to 64	5	17%	12%
65 to 74	1	3%	7%
75 to 84	0	0%	5%
85+	0	0%	2%
Total	30	100%	100%

Scalds Caused Over 1/3 of Work-Related Burns

Scalds were the leading cause of work-related burns in 2019. These 11 burn injuries accounted for 37% of work-related burns. Seven (7) of these injuries were flame burns. Explosions caused five burn injuries. *Other* burns, all from chemicals, caused three injuries. Contact burns and electrical burns each caused two of these injuries.



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

87% of Work-Related Burns Reported to M-BIRS Occurred in MA
Most, but not all of the work-related burn injuries treated in Massachusetts occurred in Massachusetts. Twenty-six (26), or 87%, of the 30 work-related burns reported to M-BIRS in 2019 occurred in Massachusetts. Two (2) work-related burns reported to M-BIRS occurred in New Hampshire; one occurred in Maine; and it was unknown where the other burn 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 2019, 12 burn injuries were referred to OSHA and two cases to the Department of Labor for public sector cases that met their criteria.

1 Work-related Fatality Due to Burn Injuries
In 2019 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

70% of Burn Injuries Occur in the Home
The home is the most common place for burn injuries to occur. In 2019, 230 people, or 70%, of all the reported burn injuries took place in the victim's home or surrounding yard. More men than women were burned at home. One hundred and twelve (121) men, or 53%, and 109 women, or 47% were burned at home in 2019.

Over 1/2 of All Home Burns Are Scalds
One hundred and twenty-four (124), or 54%, of the burn injuries that occurred in the home in 2019 were scalds.

Burn Type	# of Burns	% of Home Burns
Scalds	124	54%
Flame	45	20%
Fires	35	15%
Contact	11	5%
Explosions	10	4%
Other	4	2%
Electrical	1	0.4%
Total	230	100%

Cooking Caused 39% of Burn in Homes

In 2019, cooking activities, including hot food, caused the most overall burns regardless of burn type. Burns from cooking caused 90, or 39% of burns in Massachusetts homes.

Burn	# of Burns	% of Burns
Cooking	90	39%
Hot Beverages	43	19%
House fires	17	7%
Hot Tap Water	16	7%
Camp or bon fires	13	6%
Gasoline	8	3%

1/3 of Home Burns Were to Children Under 5

Thirty-three percent (33%) of the 230 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	75	33%	6%	5.8
5 to 9	25	11%	6%	1.8
10 to 14	9	4%	6%	0.7
15 to 24	15	7%	14%	0.5
25 to 34	25	11%	13%	0.8
35 to 44	15	7%	14%	0.5
45 to 54	19	8%	15%	0.5
55 to 64	20	9%	12%	0.7
65 to 74	11	5%	7%	0.7
75 to 84	12	5%	5%	1.1
85+	4	2%	2%	1.0
Total	230	100%	100%	

5 of the Home Burns Resulted in Death

Five (5), or 2%, of the 230 reported burn injuries that occurred in homes in 2019 resulted in death for the victims. Three (3) of these deaths were women and two were men. Three (3) died in house fires and two from flame burn injuries.

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) of the acute care health care facilities in Massachusetts submitted a total of 376 burn injury reports for 330 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.

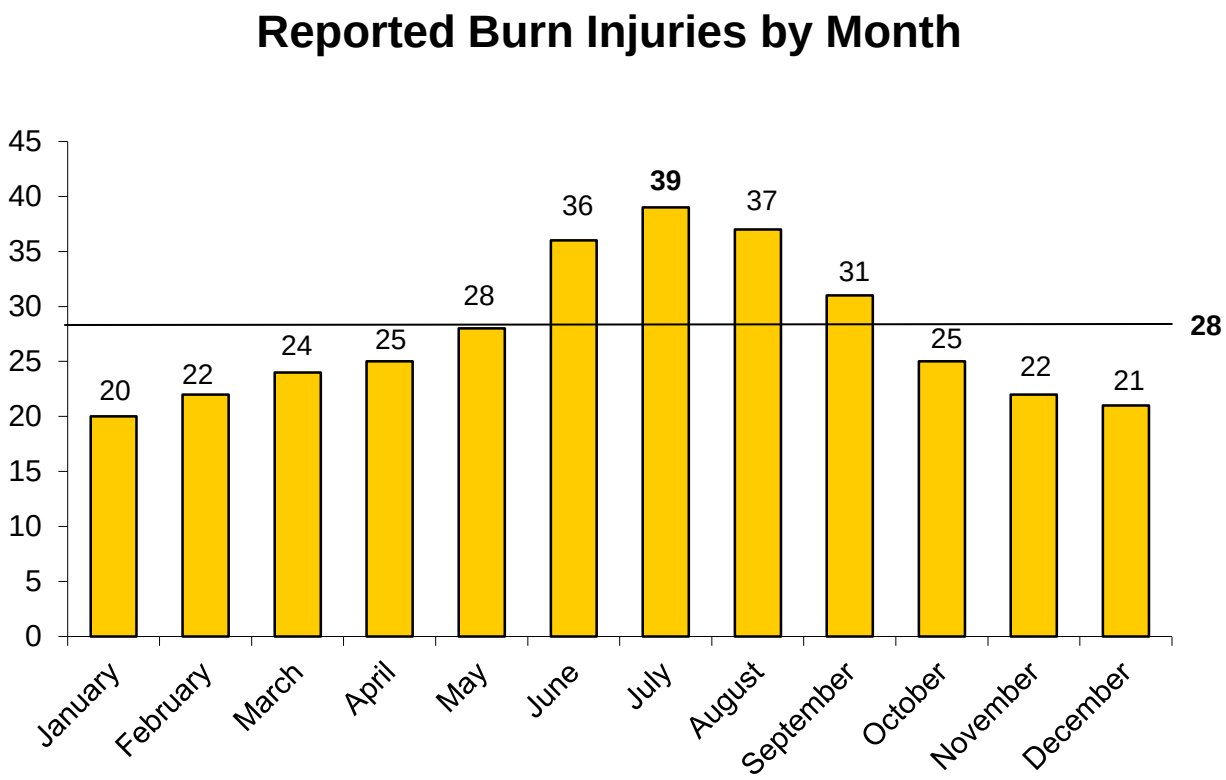
Although M-BIRS was instituted under the Office of the State Fire Marshal in June of 1984, Massachusetts hospitals have been required to report burn injuries to a government agency since 1973. M-BIRS, along with the Office of the State Fire Marshal, was carried over to the newly created Department of 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 28 Burns a Month
An average of 28 burns were reported during each month of 2019, from a low of 20 in January to a high of 39 in July. It is below the 5-year (2015-2019) average of 30 burns per month and below the 10-year (2010-2019) average of 32 burns per month.

Scalds caused the most burn injuries during all 12 months of the year except February where it tied with flame burns as the leading cause of burn injuries.



July Was the Peak Month for Burns
July was the peak month for burns in 2019. Thirty-nine (39) burn injuries were reported to M-BIRS during July. Scalds had the most, accounting for 15, or 38% of these burns during this month.

Burn Type	# of Burns	% of July Burns
Scalds	15	38%
Flame	9	23%
Fire	7	18%
Explosion	5	13%
Other	3	8%
Contact	0	0%
Electrical	0	0%
Total	39	100%

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

Geographical Demographics

Massachusetts Burn Victims from 114 Cities and Towns
Massachusetts medical facilities treated 260 residents of 114 Massachusetts cities and towns. Burn victims came from 13 of 14 counties in the Commonwealth in 2019. The largest numbers of reported burn injuries were incurred by residents of Essex, Middlesex and Plymouth counties. It appears that some large Boston hospitals (Suffolk County) may have under reported the burns they treated.

Seventy (70) 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	45
Middlesex	40
Plymouth	31
Suffolk	28
Hampden	26
Bristol	23
Norfolk	20
Worcester	18
Barnstable	14
Berkshire	7
Hampshire	5
Dukes	2
Franklin	1
Nantucket	0
Out Of State	70
Total	330
Total MA	260

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 20 burn injuries in 2019. Lawrence had the second most reported burns at 19 and Springfield had 18 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, *2019 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 2019.

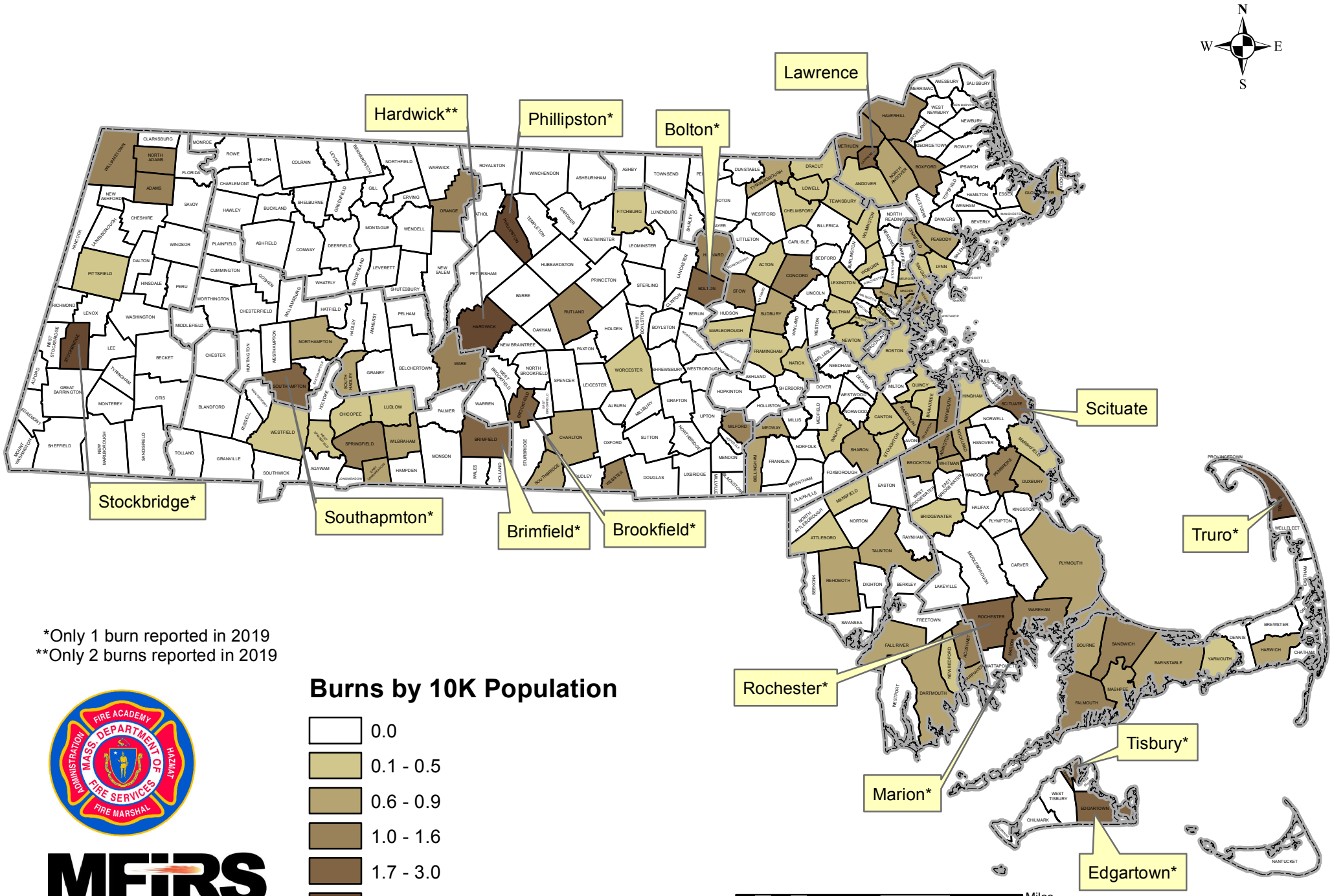
Hardwick had the highest rate of burn injuries per 10,000 population at 6.69. Next highest was Phillipston with 5.95 burn injuries per 10,000 population; Stockbridge had 5.14; Truro had 4.99; Brookfield had 2.95; and Brimfield had 2.77 burn injuries per 10,000 population[6].

Scalds per 10,000 Population
The map on page 44, *2019 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 2019.

Stockbridge had the highest rate of 5.14 scald burn injuries per 10,000 population. Next highest was Hardwick with 3.34 scald burn injuries per 10,000 population; Edgartown had 2.46; Lawrence had 1.83; and Harvard had 1.53 scald burn injuries per 10,000 population[7].

[6] All these towns only had 1 reported burn injury in 2019 except Hardwick had 2.
[7] All these towns except Lawrence (14) had only 1 reported scald burn injury in 2019.

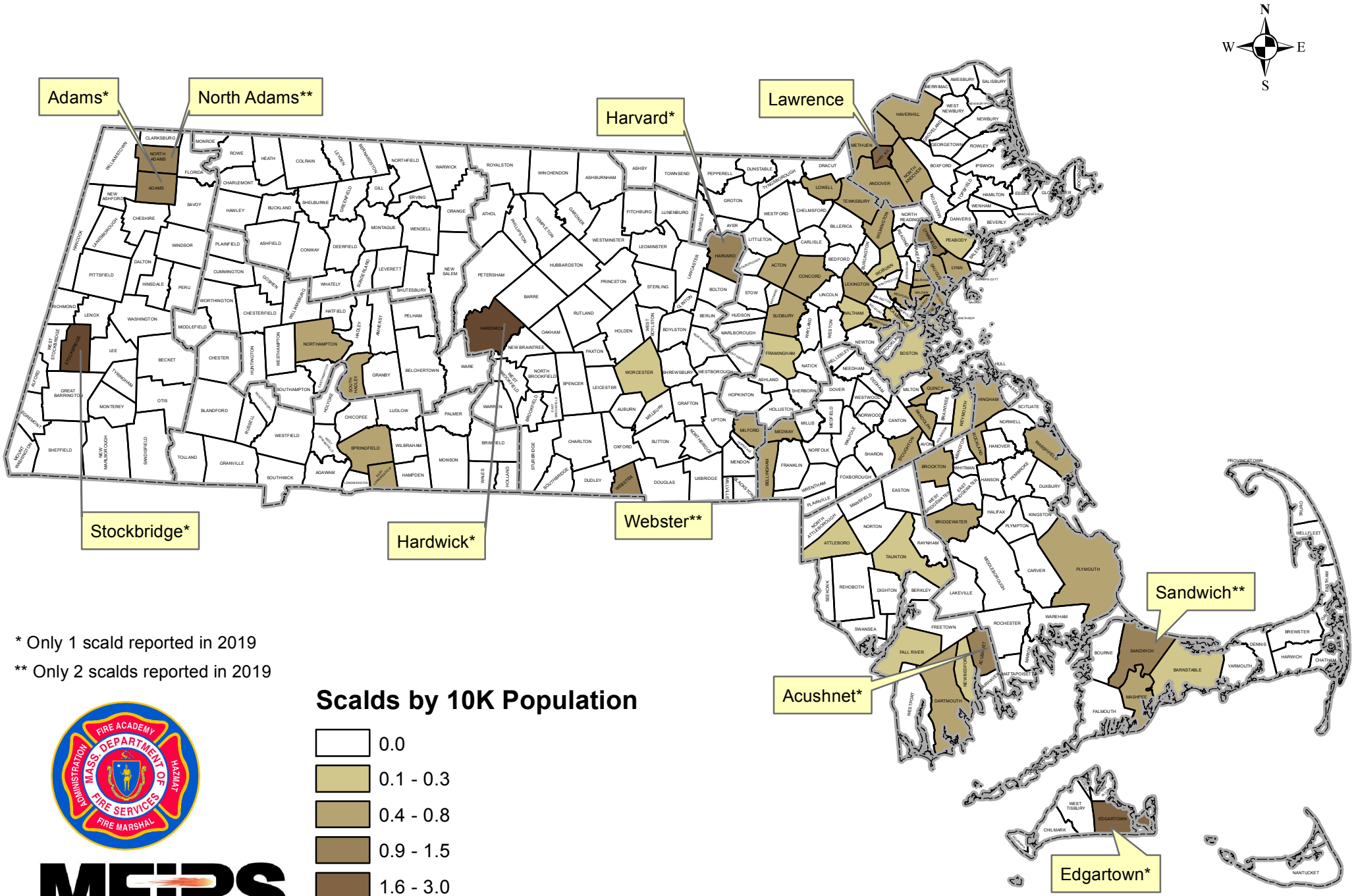
2019 MA Burns by 10K Population



*Only 1 burn reported in 2019
**Only 2 burns reported in 2019

MFIRS
Massachusetts Fire Incident Reporting System

2019 MA Scalds by 10K Population



* Only 1 scald reported in 2019

** Only 2 scalds reported in 2019

MFIRS
Massachusetts Fire Incident Reporting System

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2019 Appendix

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

Specific Causes of Burn Injuries

Cause	# of Burns	% of All Burns
Scalds	151	45.8%
Cooking	76	23.0%
Cooking Liquids	47	14.2%
Hot Food	26	7.9%
Pressure Cooker	3	0.9%
Hot Beverages	47	14.2%
Hot Tap Water	19	5.8%
Car Radiator	5	1.5%
Heating	2	0.6%
Boiler	1	0.3%
Heater	1	0.3%
Pipe	1	0.3%
Vaporizer	1	0.3%
Fires	**67**	**20.3%**
House Fire	18	5.5%
House Fire	*8*	*2.4%*
Gas Stove	*3*	*0.9%*
Electrical	*2*	*0.6%*
Cigarette	*1*	*0.3%*
Cooking	*1*	*0.3%*
Self-Immolation	*1*	*0.3%*
Smoking In Bed	*1*	*0.3%*
Stove	*1*	*0.3%*
MV Fire	14	4.2%
Boat Fire	*4*	*1.2%*
MVA	*3*	*0.9%*
Car Part	*2*	*0.6%*
Smoking	*2*	*0.6%*
Car Fire	*1*	*0.3%*
Motorcycle	*1*	*0.3%*
Self-Immolation	*1*	*0.3%*
Brush Fire	3	0.9%
Brush/Clothes	*1*	*0.3%*
Brush Fire	*1*	*0.3%*
Gasoline	*1*	*0.3%*
Camp Or Bon Fire	31	9.4%
Camp Fire	*14*	*4.2%*
Gasoline	*12*	*3.6%*
Bonfire	*3*	*0.9%*
Battery	*1*	*0.3%*

Cause	# of Burns	% of All Burns
Fires (Con't)		
Camp Or Bonfire (Con't)		
Ignitable Liquids	*1*	*0.3%*
Not Reported	1	0.3%
Gasoline	*1*	*0.3%*
Flame	**63**	**19.1%**
Cooking	18	5.5%
Cooking Unspec.	8	2.4%
Barbeque	4	1.2%
Cooking Liquids	3	0.9%
Stove	3	0.9%
Ignitable Liquids	12	3.6%
Gasoline	7	2.1%
Ignitable Liquids	5	1.5%
Smoking	12	3.6%
Smoking Unspec.	6	1.8%
Cigarette	3	0.9%
Smoking on Oxygen	3	0.9%
Clothes	7	2.1%
Candle	5	1.5%
Huffing	2	0.6%
Assault	1	0.3%
Car Part	1	0.3%
Child w/Lighter	1	0.3%
Electrical	1	0.3%
Natural Gas	1	0.3%
Self-Immolation	1	0.3%
Welding	1	0.3%
Explosions	**18**	**5.5%**
Cooking	5	1.5%
Barbeque	*4*	*1.2%*
Barbeque Gas	*1*	*0.3%*
Fireworks	4	1.2%
Ignitable Gases	3	0.9%
Natural GaS	*2*	*0.6%*
Propane	*1*	*0.3%*
E-Cigarette	2	0.6%
Welding	2	0.6%
Boiler	1	0.3%
Gasoline	1	0.3%

Cause	# of Burns	% of All Burns
Contact	**14**	**4.2%**
Cooking	5	1.5%
Stove	*4*	*1.2%*
Barbeque	*1*	*0.3%*
Heating	3	0.9%
Heater	*2*	*0.6%*
Radiator	*1*	*0.3%*
Asphalt	2	0.6%
Hot Wax	1	0.3%
Hair Dryer	1	0.3%
Curling Iron	1	0.3%
Clothes Iron	1	0.3%

Cause	# of Burns	% of All Burns
Other Burns	**13**	**3.9%**
Chemical	6	1.8%
Sunburn	6	1.8%
Ignitable Liquids	1	0.3%
Electrical	**4**	**1.2%**
Electrocution	2	0.6%
Flash Burn	1	0.3%
Electrical Unspec.	1	0.3%

Causes of Burn Injuries by Age

Under 5	**81**	**24.5%**
Cause	**# of Burns**	**% by Age**
Scalds	**64**	**79.0%**
Hot Beverages	29	35.8%
Cooking	23	28.4%
Hot Food	*14*	*17.3%*
Cooking Liquids	*9*	*11.1%*
Hot Tap Water	12	14.8%
Fires	**7**	**8.6%**
Gas Stove	2	2.5%
Boat Fire	1	1.2%
Brush/Clothes	1	1.2%
Camp Fire	1	1.2%
Electrical	1	1.2%
House Fire	1	1.2%
Contact	**6**	**7.4%**
Cooking	3	3.7%
Stove	*2*	*2.5%*
Barbeque	*1*	*1.2%*
Heating	2	2.5%
Heater	*1*	*1.2%*
Radiator	*1*	*1.2%*
Hot Wax	1	1.2%
Other	**2**	**2.5%**
Chemical	1	1.2%
Sunburn	1	1.2%
Explosion	**1**	**1.2%**
Fireworks	1	1.2%
Flame	**1**	**1.2%**
Stove	1	1.2%

Ages 5 to 9	**28**	**8.5%**
Cause	**# of Burns**	**% by Age**
Scalds	**18**	**64.3%**
Cooking	10	35.7%
Cooking Liquids	*9*	*32.1%*
Hot Food	*1*	*3.6%*
Hot Beverages	5	17.9%
Hot Tap Water	2	7.1%
Vaporizer	1	3.6%
Flame	**5**	**17.9%**
Candle	2	7.1%
Assault	1	3.6%
Clothes	1	3.6%
Gasoline	1	3.6%
Fires	**3**	**10.7%**
Gasoline	2	7.1%
Gas Stove	1	3.6%
Contact	**2**	**7.1%**
Clothes Iron	1	3.6%
Heater	1	3.6%

Ages 10 To 14	**12**	**3.6%**
Cause	**# of Burns**	**% by Age**
Scalds	**5**	**41.7%**
Cooking Liquids	4	33.3%
Hot Beverages	1	8.3%
Fires	**4**	**33.3%**
Boat Fire	1	8.3%
Camp Fire	1	8.3%
Car Part	1	8.3%
House Fire	1	8.3%
Flame	**2**	**16.7%**
Child w/Lighter	1	8.3%
Ignitable Liquids	1	8.3%
Electrical	**1**	**8.3%**
Electrocution	1	8.3%

Ages 15 to 24	**32**	**9.7%**
Cause	**# of Burns**	**% by Age**
Fires	**13**	**40.6%**
Gasoline	4	12.5%
House Fire	3	9.4%
Bonfire	2	6.3%
Camp Fire	1	3.1%
Car Fire	1	3.1%
Cooking	1	3.1%
MVA	1	3.1%
Scalds	**11**	**34.4%**
Cooking	5	15.6%
Cooking Liquids	*3*	*9.4%*
Hot Food	*2*	*6.3%*
Hot Beverages	3	9.4%
Car Radiator	2	6.3%
Hot Tap Water	1	3.1%
Flame	**3**	**9.4%**
Cooking	2	6.3%
Barbeque	*1*	*3.1%*
Cooking Liquids	*1*	*3.1%*
Gasoline	1	3.1%
Explosion	**2**	**6.3%**
Fireworks	2	6.3%
Other	**2**	**6.3%**
Sunburn	2	6.3%
Electrical	**1**	**3.1%**
Electrocution	1	3.1%

Ages 25 to 34	**46**	**13.9%**
Cause	**# of Burns**	**% by Age**
Scalds	**16**	**34.8%**
Cooking	12	26.1%
Cooking Liquids	*9*	*19.6%*
Hot Food	*3*	*6.5%*
Hot Beverages	3	6.5%
Car Radiator	1	2.2%
Flame	**14**	**30.4%**
Ignitable Liquids	4	8.7%
Ignitable Liquids	*3*	*6.5%*
Gasoline	*1*	*2.2%*
Barbeque	2	4.3%
Huffing	2	4.3%
Candle	1	2.2%
Car Part	1	2.2%
Cigarette	1	2.2%
Clothes	1	2.2%
Natural Gas	1	2.2%
Welding	1	2.2%
Fires	**6**	**13.0%**
Camp Fire	3	6.5%
Battery	1	2.2%
House Fire	1	2.2%
MVA	1	2.2%
Other	**6**	**13.0%**
Chemical	4	8.7%
Sunburn	2	4.3%
Explosion	**3**	**6.5%**
Boiler	1	2.2%
E-Cigarette	1	2.2%
Fireworks	1	2.2%
Contact	**1**	**2.2%**
Curling Iron	1	2.2%

Ages 35 to 44	**34**	**10.3%**
Cause	**# of Burns**	**% by Age**
Fires	**10**	**29.4%**
Gasoline	3	8.8%
Boat Fire	2	5.9%
Smoking	2	5.9%
Brushfire	1	2.9%
Camp Fire	1	2.9%
Self-Immolation	1	2.9%
Scalds	**10**	**29.4%**
Cooking	6	17.6%
Hot Food	*3*	*8.8%*
Cooking Liquids	*2*	*5.9%*
Pressure Cooker	*1*	*2.9%*
Hot Beverages	2	5.9%
Car Radiator	2	5.9%
Flame	**8**	**23.5%**
Cooking	3	8.8%
Barbeque	*1*	*2.9%*
Cooking Unspec.	*1*	*2.9%*
Cooking Liquids	*1*	*2.9%*
Smoking	3	8.8%
Cigarette	*2*	*5.9%*
Smoking Unspec.	*1*	*2.9%*
Candle	1	2.9%
Clothes	1	2.9%
Explosion	**4**	**11.8%**
Natural Gas	2	5.9%
Cooking	2	5.9%
Barbeque	*1*	*2.9%*
Barbeque Gas	*1*	*2.9%*
Electrical	**1**	**2.9%**
Electrical	1	2.9%
Other	**1**	**2.9%**
Sunburn	1	2.9%

Ages 45 to 54	**37**	**11.2%**
Cause	**# of Burns**	**% by Age**
Scalds	**13**	**35.1%**
Cooking	9	24.3%
Cooking Liquids	*6*	*16.2%*
Pressure Cooker	*2*	*5.4%*
Hot Food	*1*	*2.7%*
Hot Tap Water	2	5.4%
Boiler	1	2.7%
Pipe	1	2.7%
Fires	**9**	**24.3%**
Camp Fire	5	13.5%
Gasoline	2	5.4%
Motorcycle	1	2.7%
MVA	1	2.7%
Flame	**6**	**16.2%**
Cooking Unspec.	3	8.1%
Clothes	2	5.4%
Gasoline	1	2.7%
Explosion	**4**	**10.8%**
Barbeque	2	5.4%
Gasoline	1	2.7%
Welding	1	2.7%
Contact	**3**	**8.1%**
Asphalt	2	5.4%
Hair Dryer	1	2.7%
Electrical	**1**	**2.7%**
Flash Burn	1	2.7%
Other	**1**	**2.7%**
Ignitable Liquids	1	2.7%

Ages 55 to 64	**29**	**8.8%**
Cause	**# of Burns**	**% by Age**
Flame	**9**	**31.0%**
Smoking	4	13.8%
Smoking Unspec.	*3*	*10.3%*
Smoking on Oxygen	*1*	*3.4%*
Gasoline	2	6.9%
Clothes	1	3.4%
Electrical	1	3.4%
Self-Immolation	1	3.4%
Fires	**8**	**27.6%**
Bonfire	1	3.4%
Camp Fire	1	3.4%
Car Part	1	3.4%
Cigarette	1	3.4%
Electrical	1	3.4%
Gasoline	1	3.4%
Ignitable Liquids	1	3.4%
Self-Immolation	1	3.4%
Scalds	**6**	**20.7%**
Cooking	3	10.3%
Cooking Liquids	*2*	*6.9%*
Hot Food	*1*	*3.4%*
Hot Tap Water	2	6.9%
Hot Beverages	1	3.4%
Explosion	**4**	**13.8%**
Barbeque	1	3.4%
E-Cigarette	1	3.4%
Propane	1	3.4%
Welding	1	3.4%
Contact	**1**	**3.4%**
Stove	1	3.4%
Other	**1**	**3.4%**
Chemical	1	3.4%

Ages 65+	**31**	**8.6%**
Cause	**# of Burns**	**% by Age**
Flame	**15**	**48.4%**
Cooking	7	22.6%
Cooking Unspec.	*4*	*12.9%*
Stove	*2*	*6.5%*
Cooking Liquids	*1*	*3.2%*
Smoking	4	12.9%
Smoking on Oxygen	*2*	*6.5%*
Smoking Unspec.	*2*	*6.5%*
Ignitable Liquids	2	6.5%
Gasoline	*1*	*3.2%*
Ignitable Liquids	*1*	*3.2%*
Candle	1	3.2%
Clothes	1	3.2%
Scalds	**8**	**25.8%**
Cooking	4	12.9%
Cooking Liquids	*3*	*9.7%*
Hot Food	*1*	*3.2%*
Hot Beverages	3	9.7%
Heater	1	3.2%
Fires	**7**	**22.6%**
Gasoline	2	6.5%
House Fire	2	6.5%
Camp Fire	1	3.2%
Smoking in Bed	1	3.2%
Stove	1	3.2%
Contact	**1**	**3.2%**
Stove	1	3.2%

Causes of Work-Related Burns

Cause	# of Burns	% of Work-related
Scalds	**11**	**37%**
Cooking	8	27%
Cooking Liquids	5	17%
Hot Food	3	10%
Boiler	1	3%
Hot Tap Water	1	3%
Pipe	1	3%
Flame	**7**	**23%**
Clothes	2	7%
Ignitable Liquids	2	7%
Gasoline	1	3%
Ignitable Liquids	1	3%
Cooking Liquids	1	3%
Electrical	1	3%
Natural Gas	1	3%

Cause	# of Burns	% of Work-related
Explosion	**5**	**17%**
Welding	2	7%
Ignitable Gases	2	7%
Natural Gas	1	3%
Propane	1	3%
Boiler	1	3%
Contact	**2**	**7%**
Asphalt	2	7%
Electrical	**2**	**7%**
Electrical	1	3%
Flash Burn	1	3%
Other	**3**	**10%**
Chemical	3	10%
Total	**30**	**100%**

Number of Reported Burns per Hospital

Addison Gilbert Hospital	2
Athol Memorial	1
Brigham & Women's Hospital	42
Baystate Medical Center	27
Berkshire Medical Center	4
Brockton Hospital	0
Cape Cod Hospital	1
Charlton Memorial Hospital	4
Children's Hospital	7
Emerson Hospital	2
Falmouth Hospital	10
Good Samaritan Medical Center	3
Heywood Hospital	1
Harrington Hospital	4
Lawrence General Hospital	28
Lowell General Hospital	2
Martha's Vineyard Hospital	1
Melrose Wakefield Hospital	2
Mercy Medical Center	2
Massachusetts General Hospital	97
Milford Regional Medical Center	2
Morton Hospital	2
North Shore Medical Center - Salem	1
North Shore Medical Center - Union	0
Norwood Hospital	0
Shriners Hospital for Children	80
South Shore Medical Center	15
St. Anne's Hospital	2
St. Elizabeth's Hospital	0
St. Luke's Hospital	5
Sturdy Memorial Medical Center	4
Tobey Hospital	5
Tufts Medical Center	1
UMass Medical Center - University	12
Winchester Hospital	3

Causes of Burn Injuries by Month

January	**20**	**6.1%**
Cause	**# of Burns**	**% by Month**
Scalds	**8**	**40.0%**
Cooking Liquids	4	20.0%
Hot Beverages	2	10.0%
Hot Tap Water	2	10.0%
Flame	**7**	**35.0%**
Candle	2	10.0%
Clothes	1	5.0%
Cooking Liquids	1	5.0%
Natural Gas	1	5.0%
Gasoline	1	5.0%
Welding	1	5.0%
Fires	**3**	**15.0%**
Gasoline	2	10.0%
Cigarette	1	5.0%
Contact	**1**	**5.0%**
Stove	1	5.0%
Other	**1**	**5.0%**
Sunburn	1	5.0%

0 Deaths

February	**22**	**6.7%**
Cause	**# of Burns**	**% by Month**
Scalds	**8**	**36.4%**
Hot Beverages	3	13.6%
Hot Tap Water	3	13.6%
Cooking	2	9.1%
Cooking Liquids	*1*	*4.5%*
Hot Food	*1*	*4.5%*
Flame	**8**	**36.4%**
Clothes	3	13.6%
Cooking	2	9.1%
Cooking Unspec.	*1*	*4.5%*
Cooking Liquids	*1*	*4.5%*
Assault	1	4.5%
Candle	1	4.5%
Ignitable Liquids	1	4.5%
Fires	**5**	**22.7%**
House Fire	3	13.6%
Electrical	1	4.5%
MVA	1	4.5%
Other	**1**	**4.5%**
Sunburn	1	4.5%

1 Death

March	**24**	**7.3%**
Cause	**# of Burns**	**% by Month**
Scalds	**11**	**45.8%**
Cooking	8	33.3%
Cooking Liquids	*5*	*20.8%*
Hot Food	*2*	*8.3%*
Pressure Cooker	*1*	*4.2%*
Hot Beverages	1	4.2%
Boiler	1	4.2%
Car Radiator	1	4.2%
Fires	**7**	**29.2%**
Gasoline	3	12.5%
House Fire	2	8.3%
Brush Fire	1	4.2%
Stove	1	4.2%
Flame	**4**	**16.7%**
Clothes	1	4.2%
Self-Immolation	1	4.2%
Smoking Unspec.	1	4.2%
Stove	1	4.2%
Contact	**1**	**4.2%**
Heater	1	4.2%
Explosion	**1**	**4.2%**
Gasoline	1	4.2%

1 Death

April	**25**	**7.6%**
Cause	**# of Burns**	**% by Month**
Scalds	**13**	**52.0%**
Hot Beverages	8	32.0%
Cooking	4	16.0%
Cooking Liquids	*2*	*8.0%*
Hot Food	*1*	*4.0%*
Pressure Cooker	*1*	*4.0%*
Hot Tap Water	1	4.0%
Fires	**6**	**24.0%**
Camp Fire	3	12.0%
Car Part	1	4.0%
Gasoline	1	4.0%
House Fire	1	4.0%
Flame	**3**	**12.0%**
Car Part	1	4.0%
Clothes	1	4.0%
Cooking	1	4.0%
Other	**2**	**8.0%**
Chemical	1	4.0%
Ignitable Liquids	1	4.0%
Electrical	**1**	**4.0%**
Electrocution	1	4.0%

0 Deaths

May	**28**	**8.5%**
Cause	**# of Burns**	**% by Month**
Scalds	**11**	**39.3%**
Hot Beverages	5	17.9%
Cooking	4	14.3%
Cooking Liquids	*2*	*7.1%*
Hot Food	*1*	*3.6%*
Pressure Cooker	*1*	*3.6%*
Car Radiator	2	7.1%
Fires	**9**	**32.1%**
Camp Fire	4	14.3%
Bonfire	1	3.6%
Brush/Clothes	1	3.6%
Car Part	1	3.6%
Gasoline	1	3.6%
House Fire	1	3.6%
Flame	**3**	**10.7%**
Barbeque	2	7.1%
Cooking Unspec.	1	3.6%
Contact	**2**	**7.1%**
Radiator	1	3.6%
Stove	1	3.6%
Other	**2**	**7.1%**
Chemical	1	3.6%
Sunburn	1	3.6%
Explosion	**1**	**3.6%**
E-Cigarette	1	3.6%

0 Deaths

June	**36**	**10.9%**
Cause	**# of Burns**	**% by Month**
Scalds	**12**	**33.3%**
Hot Tap Water	5	13.9%
Cooking	5	13.9%
Hot Food	*3*	*8.3%*
Cooking Liquids	*2*	*5.6%*
Hot Beverages	2	5.6%
Fires	**10**	**27.8%**
Boat Fire	4	11.1%
Bonfire	2	5.6%
Camp Fire	2	5.6%
Electrical	1	2.8%
Gasoline	1	2.8%
Flame	**5**	**13.9%**
Smoking	2	5.6%
Smoking On Oxygen	*1*	*2.8%*
Smoking Unspec.	*1*	*2.8%*
Ignitable Liquids	2	5.6%
Gasoline	*1*	*2.8%*
Ignitable Liquids	*1*	*2.8%*
Cooking Unspec.	1	2.8%
Contact	**4**	**11.1%**
Barbeque	1	2.8%
Curling Iron	1	2.8%
Hair Dryer	1	2.8%
Hot Wax	1	2.8%
Explosion	**2**	**5.6%**
Barbeque	1	2.8%
Fireworks	1	2.8%
Other	**2**	**5.6%**
Chemical	1	2.8%
Sunburn	1	2.8%
Electrical	**1**	**2.8%**
Flash Burn	1	2.8%

0 Deaths

July	**39**	**11.8%**
Cause	**# of Burns**	**% by Month**
Scalds	**15**	**38.5%**
Cooking	7	17.9%
Cooking Liquids	*4*	*10.3%*
Hot Food	*3*	*7.7%*
Hot Beverages	6	15.4%
Car Radiator	1	2.6%
Hot Tap Water	1	2.6%
Flame	**9**	**23.1%**
Cooking	4	10.3%
Barbeque	*1*	*2.6%*
Cooking Unspec.	*1*	*2.6%*
Cooking Liquids	*1*	*2.6%*
Stove	*1*	*2.6%*
Ignitable Liquids	2	5.1%
Gasoline	*1*	*2.6%*
Ignitable Liquids	*1*	*2.6%*
Child w/Lighter	1	2.6%
Clothes	1	2.6%
Electrical	1	2.6%
Fires	**7**	**17.9%**
Gas Stove	3	7.7%
Gasoline	1	2.6%
House Fire	1	2.6%
Motorcycle	1	2.6%
Self-Immolation	1	2.6%
Explosion	**5**	**12.8%**
Fireworks	3	7.7%
Cooking	2	5.1%
Barbeque	*1*	*2.6%*
Barbeque Gas	*1*	*2.6%*
Other	**3**	**7.7%**
Sunburn	2	5.1%
Chemical	1	2.6%

1 Death

August	**37**	**11.2%**
Cause	**# of Burns**	**% by Month**
Scalds	**20**	**54.1%**
Cooking	9	24.3%
Hot Food	*5*	*13.5%*
Cooking Liquids	*4*	*10.8%*
Hot Beverages	8	21.6%
Hot Tap Water	2	5.4%
Car Radiator	1	2.7%
Fires	**6**	**16.2%**
Gasoline	3	8.1%
Smoking	2	5.4%
Camp Fire	1	2.7%
Flame	**6**	**16.2%**
Smoking Unspec.	2	5.4%
Cooking Unspec.	2	5.4%
Gasoline	1	2.7%
Huffing	1	2.7%
Explosion	**3**	**8.1%**
Natural Gas	2	5.4%
Barbeque	1	2.7%
Contact	**1**	**2.7%**
Asphalt	1	2.7%
Electrical	**1**	**2.7%**
Electrical	1	2.7%

0 Deaths

September	**31**	**9.4%**
Cause	**# of Burns**	**% by Month**
Scalds	**10**	**40.0%**
Cooking	7	28.0%
Cooking Liquids	*6*	*24.0%*
Hot Food	*1*	*4.0%*
Hot Beverages	3	12.0%
Fires	**9**	**36.0%**
Camp Fire	2	8.0%
MVA	2	8.0%
Cooking Unspec.	1	4.0%
Gasoline	1	4.0%
Ignitable Liquids	1	4.0%
Self-Immolation	1	4.0%
Smoking In Bed	1	4.0%
Flame	**7**	**28.0%**
Ignitable Liquids	4	16.0%
Gasoline	*2*	*8.0%*
Ignitable Liquids	*2*	*8.0%*
Barbeque	1	4.0%
Candle	1	4.0%
Cigarette	1	4.0%
Contact	**2**	**8.0%**
Asphalt	1	4.0%
Clothes Iron	1	4.0%
Explosion	**2**	**8.0%**
Propane	1	4.0%
Welding	1	4.0%
Other	**1**	**4.0%**
Chemical	1	4.0%

2 Deaths

October	**25**	**7.6%**
Cause	**# of Burns**	**% by Month**
Scalds	**15**	**60.0%**
Cooking	8	32.0%
Cooking Liquids	*6*	*24.0%*
Hot Food	*2*	*8.0%*
Hot Beverages	3	12.0%
Hot Tap Water	3	12.0%
Heater	1	4.0%
Flame	**4**	**16.0%**
Smoking	2	8.0%
Cigarette	*1*	*4.0%*
Smoking On Oxygen	*1*	*4.0%*
Gasoline	1	4.0%
Huffing	1	4.0%
Explosion	**3**	**12.0%**
Barbeque	1	4.0%
Boiler	1	4.0%
Welding	1	4.0%
Contact	**1**	**4.0%**
Stove	1	4.0%
Electrical	**1**	**4.0%**
Electrocution	1	4.0%
Fires	**1**	**4.0%**
Camp Fire	1	4.0%

0 Deaths

November	**22**	**6.7%**
Cause	**# of Burns**	**% by Month**
Scalds	**14**	**66.7%**
Cooking	8	38.1%
Cooking Liquids	*4*	*19.0%*
Hot Food	*4*	*19.0%*
Hot Beverages	2	9.5%
Hot Tap Water	2	9.5%
Pipe	1	4.8%
Vaporizer	1	4.8%
Fires	**3**	**14.3%**
Battery	1	4.8%
Car Fire	1	4.8%
Gasoline	1	4.8%
Contact	**2**	**9.5%**
Heater	1	4.8%
Stove	1	4.8%
Flame	**2**	**9.5%**
Candle	1	4.8%
Smoking	1	4.8%
Other	**1**	**4.8%**
Chemical	1	4.8%

0 Deaths

December	**21**	**6.4%**
Cause	**# of Burns**	**% by Month**
Scalds	**14**	**66.7%**
Cooking	10	47.6%
Cooking Liquids	*7*	*33.3%*
Hot Food	*3*	*14.3%*
Hot Beverages	4	19.0%
Flame	**5**	**23.8%**
Smoking	3	14.3%
Cigarette	*1*	*4.8%*
Smoking On Oxygen	*1*	*4.8%*
Smoking Unspec.	*1*	*4.8%*
Cooking	2	9.5%
Cooking	*1*	*4.8%*
Stove	*1*	*4.8%*
Fires	**1**	**4.8%**
Camp Fire	1	4.8%
Explosion	**1**	**4.8%**
E-Cigarette	1	4.8%

1 Death

Burn Injuries by Victim's Community

County	# of Burns
BARNSTABLE	**14**
Barnstable	3
Bourne	1
Falmouth	3
Harwich	1
Mashpee	1
Sandwich	3
Truro	1
Yarmouth	1
BERKSHIRE	**7**
Adams	1
North Adams	2
Pittsfield	2
Stockbridge	1
Williamstown	1
BRISTOL	**23**
Acushnet	1
Attleboro	2
Dartmouth	3
Fairhaven	1
Fall River	5
Mansfield	1
New Bedford	4
North Attleboro	2
Rehoboth	1
Taunton	3
DUKES	**2**
Edgartown	1
Tisbury	1
ESSEX	**45**
Andover	1
Boxford	1
Gloucester	2

County	# of Burns
ESSEX (con't)	
Haverhill	6
Lawrence	19
Lynn	4
Lynnfield	1
Methuen	5
North Andover	2
Peabody	3
Saugus	1
FRANKLIN	**1**
Orange	1
HAMPDEN	**26**
Brimfield	1
Chicopee	2
East Longmeadow	1
Ludlow	1
Springfield	18
West Springfield	1
Westfield	1
Wilbraham	1
HAMPSHIRE	**5**
Northampton	2
South Hadley	1
Southampton	1
Ware	1
MIDDLESEX	**40**
Acton	1
Cambridge	4
Chelmsford	1
Concord	2
Dracut	1
Everett	3
Framingham	3

County	# of Burns
MIDDLESEX (con't)	
Lexington	1
Lowell	5
Malden	3
Marlborough	1
Medford	4
Melrose	1
Natick	1
Newton	1
Stow	1
Sudbury	1
Tewksbury	1
Tyngsborough	1
Waltham	1
Watertown	1
Wilmington	1
Woburn	1
NORFOLK	**20**
Bellingham	1
Braintree	1
Canton	1
Holbrook	1
Medway	1
Quincy	4
Randolph	2
Sharon	1
Stoughton	1
Walpole	1
Weymouth	6
PLYMOUTH	**31**
Abington	2
Bridgewater	1

County	# of Burns
PLYMOUTH (con't)	
Brockton	6
Duxbury	1
Hingham	1
Hull	1
Marion	1
Marshfield	1
Pembroke	2
Plymouth	5
Rochester	1
Rockland	1
Scituate	4
Wareham	3
Whitman	1
SUFFOLK	**28**
Boston	20
Chelsea	4
Revere	3
Winthrop	1
WORCESTER	**18**
Bolton	1
Brookfield	1
Charlton	1
Fitchburg	1
Hardwick	2
Harvard	1
Milford	3
Phillipston	1
Rutland	1
Southbridge	1
Webster	2
Worcester	3

FP-84F
(Rev. 04-2010)

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

Post Office Box 1025 – Stow, Massachusetts 01775

TO: Massachusetts Burn Injury Reporting System

FROM: _____

Name of Hospital and Attending Physician

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

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

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

-OR-

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

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

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

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

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

Date of Burn _____ If Yes: Employer _____

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

Part of Body Injured or %BSA: _____

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

_____

Type of Burn: *(check one)*

☐ Flame ☐ Scald ☐ Domestic Violence

☐ Fire ☐ Electrical ☐ Other
☐ Sunburn
☐ Chemical

☐ Explosion ☐ Contact

Severity: *(check one)*

☐ Minor ☐ Life-threatening

☐ Moderate ☐ Dead

☐ Severe

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

NEW
Burn Hotline
1-800-475-3443

FAX Reporting Number
1-978-567-3199

Massachusetts General Law Chapter 112, Section 12A, Amended by the Acts of 1986 and 1996 (Excerpted)

"Every physician ... examining or treating a person with a burn injury affecting five per cent or more of the surface area of his body, or, whenever any such case is treated in a hospital, sanitarium or other institution, the manager, superintendent or other person in charge thereof, shall report such case... at once to the state fire marhsal and to the police in the community where the burn occurred...Whoever violates any provision of this section shall be punished by a fine of not less than fifty nor more than one hundred dollars."