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# TEXAS COMMISSION ON FIRE PROTECTION INJURY REPORT

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January 1, 2018 to December 31, 2018



TEXAS COMMISSION ON FIRE PROTECTION

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## Executive Summary

This report includes the abstract, mission, reports, information and data collected by the Texas Commission on Fire Protection's injury reporting program. The report includes fire fighter injuries reported to the Texas Commission on Fire Protection in 2018, with charts and graphs depicting the collected information. The report also compares Texas fire fighter injury statistics with statistics gathered by the National Fire Protection Association (NFPA) in 2017.

Under Texas Government Code §419.048, the Texas Commission on Fire Protection is charged with developing and establishing criteria to receive and analyze injury information pertaining to Texas fire fighters. The commission reviews this information to develop recommendations to help reduce fire protection personnel injuries. The commission provides this information to the State Fire Marshal's Office (SFMO) by September 1 of each year for inclusion in the SFMO's annual Firefighter Fatality Investigations Report. The commission has enacted rules about reporting injuries in the Texas Administrative Code (TAC) Title 37, Chapter 435, and has established the criteria and policies for reporting and analyzing the information.

The commission originally built the data systems necessary to gather this information in 2010. In 2017 the data systems were then migrated from a Microsoft Access database structure to a new system which was developed in-house and designed specifically to meet the information resource needs of the Texas Commission on Fire Protection. Fine-tuning of this new system is ongoing as we receive feedback from stakeholders. The reporting process is accomplished online. Fire departments regulated by the commission have been notified of the requirement to report. Several volunteer departments, which are not regulated by the commission, are also participating voluntarily.

This report concludes with recommendations from the commission to help reduce the number of fire fighter injuries in Texas and to improve the injury reporting program.

# Abstract

This report contains data submitted by regulated and non-regulated entities. The data collected in 2018 was the eighth full year of reporting.

## *Grand Totals - 2018*

Total number of incidents (injury reports) submitted: 3,519

Total number of individuals who sustained an injury or exposure: 3,881\*

Total number of injuries reported: 3,078

Total number of exposures reported: 884

*\*Note that an individual could have more than one injury or could have an injury and an exposure. This explains why the total number of individuals who sustained an injury is less than the total number of injuries + total number of exposures. ( $3,881 < 3,078 + 884$ )*

Because the injury reporting system was reconfigured in 2018, the information collected by the TCFP has evolved. It's important to note that one incident report can have multiple individuals involved, and each of those individuals can have one or more injuries. For example:

- Joe and Bob were burned in a fire while on duty. This resulted in:
  - One incident (one injury report), with
  - Two individuals who...
  - Sustained three injuries
    - Joe was burned on the hand and arm (two injuries)
    - Bob was burned on the leg (one injury)

Texas fire departments reported 3,078 injuries to the Texas Commission on Fire Protection in calendar year 2018. Of these, 799 occurred during fire suppression activities, representing 26 percent of the total reported injuries (see Table 1).

Injuries from emergency medical services (EMS) activities surpassed injuries from fire suppression activities in 2018. EMS activities accounted for 1027 of the 3,078 total reported injuries, or 33 percent of the total injuries.

After EMS and fire suppression, the next highest number of injuries reported in 2018 occurred in the performance of station duties, with 639, or 21 percent, of the total reported injuries.

Wellness/fitness and skills training again rounded out the top five activities: 417 wellness/fitness injuries (14 percent of the total) and 400 skills training injuries (13 percent of the total).

The total number of injuries reported in station duties, wellness/fitness activities, and skills training (which are all non-emergency activities) represented nearly half (47 percent) of the total injuries reported in 2018.

### **NOTE: Exposures**

In addition to the 3,078 injuries reported by Texas fire departments, TCFP also received reports of 884 exposures. Exposures, in the new injury reporting application, are not counted as injuries; rather, they are now their own (separate) category.

# Mission

The commission shall gather and evaluate data on fire protection personnel injuries and develop recommendations for reducing injuries.

## Why we are collecting injury data

Under Texas Government Code §419.048, the Texas Legislature charged the commission with gathering and evaluating data on injuries. The rules requiring regulated entities to report injuries to the commission are in Texas Administrative Code §435.23. The commission encourages volunteer entities to report injuries so that it can gain as accurate a picture as possible concerning injury trends in the Texas fire service. The injury reporting program began in March 2010.

## Information the commission collects

- Minor, serious, and fatal injuries
- Activities where fire personnel are injured
- Types of injuries (burns, strain-sprains, wounds, etc.)
- Body parts being injured
- Tasks performed at the time of injury
- Missed time
- Work assignment after injury
- Malfunctions/failures of personal protective equipment (PPE), self-contained breathing apparatus (SCBA), personal alert safety systems (PASS devices) and standard operating procedures (SOPs)

## How this will help the fire service

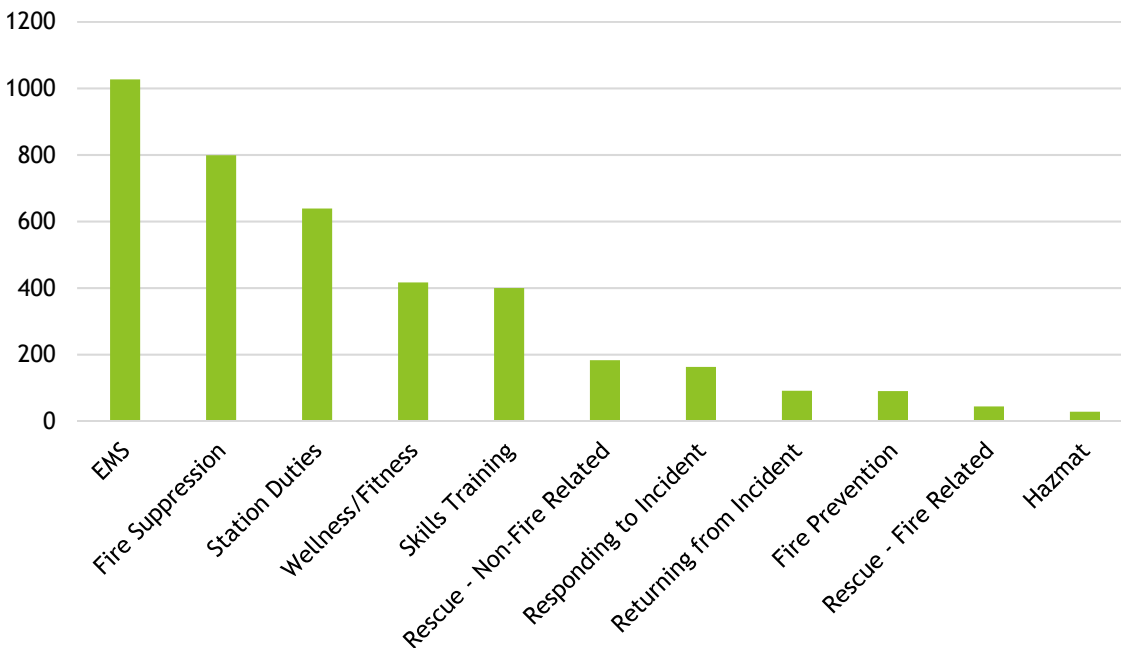
- Identify common injuries
- Identify trends in injuries
- Identify needed training
- Evaluate and find improvements in procedures
- Track lost time injuries (requested by user community)

# Fire Protection Personnel Injuries

*Table 1: Total Injured or Exposed Individuals by Activity and Severity, 2018*

Activity	Minor	Serious	Fatal	Total
EMS	843	184	0	1027
Fire Suppression	607	191	1	799
Station Duties	437	201	1	639
Wellness/Fitness	286	131	0	417
Skills Training	277	123	0	400
Rescue - Non-Fire Related	157	26	0	183
Responding to Incident	99	64	0	163
Returning from Incident	57	34	0	91
Fire Prevention	69	21	0	90
Rescue - Fire Related	39	5	0	44
Hazmat	27	1	0	28
<b>Total</b>	<b>2898</b>	<b>981</b>	<b>2</b>	<b>3881</b>

*Figure 1: Total Injured or Exposed Individuals by Activity, 2018*



## Injuries by Activity

EMS activities resulted in the highest number of minor injuries for 2018 (see Table 2). The total number of serious fire suppression injuries is down significantly, compared with previous years. (See Table 3. The commission defines a serious injury as one which results in the employee missing one or more full duty shifts.)

<i>Definitions</i>	
<i>Minor</i> = Injury that does <u>not</u> result in the employee missing a full duty period.	
<i>Serious</i> = Injury that results in the employee missing one or more full duty periods.	
<i>Fatal</i> = The injured individual did not survive.	

*Table 2: Minor Injury Activities, 2014 - 2018*

Activity	2014		2015		2016		2017		2018	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
EMS	900	28.03%	792	28.24%	882	27.89%	929	28.99%	843	29.09%
Fire Suppression	808	25.16%	618	22.03%	866	27.39%	662	20.66%	607	20.95%
Station Duties	465	14.48%	396	14.12%	434	13.73%	481	15.01%	437	15.08%
Skills Training	365	11.37%	288	10.27%	311	9.84%	291	9.08%	277	9.56%
Wellness/Fitness	254	7.91%	278	9.91%	252	7.97%	254	7.93%	286	9.87%
Rescue - Non-Fire	206	6.42%	204	7.27%	161	5.09%	206	6.43%	157	5.42%
Responding to Incident	105	3.27%	122	4.35%	117	3.70%	156	4.87%	99	3.42%
Rescue - Fire Related	11	0.34%	22	0.78%	20	0.63%	113	3.53%	39	1.35%
Fire Prevention	43	1.34%	41	1.46%	47	1.49%	50	1.56%	69	2.38%
Returning from Incident	42	1.31%	33	1.18%	37	1.17%	42	1.31%	57	1.97%
Hazmat	12	0.37%	11	0.39%	35	1.11%	21	0.66%	27	0.93%
<b>Total</b>	<b>3211</b>	<b>100.00%</b>	<b>2805</b>	<b>100.00%</b>	<b>3162</b>	<b>100.00%</b>	<b>3205</b>	<b>100.00%</b>	<b>2898</b>	<b>100.00%</b>



*Table 3: Serious Injury Activities, 2014 - 2018*

Activity	2014		2015		2016		2017		2018	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Station Duties	160	19.42%	174	19.31%	172	18.76%	185	21.29%	201	20.49%
Fire Suppression	177	21.48%	160	17.76%	179	19.52%	157	18.07%	191	19.47%
EMS	164	19.90%	185	20.53%	158	17.23%	147	16.92%	184	18.76%
Wellness/Fitness	127	15.41%	125	13.87%	146	15.92%	129	14.84%	131	13.35%
Skills Training	104	12.62%	126	13.98%	141	15.38%	120	13.81%	123	12.54%
Responding to Incident	16	1.94%	44	4.88%	36	3.93%	53	6.10%	64	6.52%
Returning from Incident	19	2.31%	13	1.44%	18	1.96%	28	3.22%	34	3.47%
Rescue - Non-Fire	38	4.61%	46	5.11%	52	5.67%	27	3.11%	26	2.65%
Fire Prevention	11	1.33%	12	1.33%	11	1.20%	15	1.73%	21	2.14%
Rescue - Fire Related	3	0.36%	12	1.33%	3	0.33%	7	0.81%	5	0.51%
Hazmat	5	0.61%	4	0.44%	1	0.11%	1	0.12%	1	0.10%
<b>Total</b>	<b>824</b>	<b>100.00%</b>	<b>901</b>	<b>100.00%</b>	<b>917</b>	<b>100.00%</b>	<b>869</b>	<b>100.00%</b>	<b>981</b>	<b>100.00%</b>

*Table 4: Number of Individuals Who Sustained Fatal Injuries, 2018*

Activity	Count	Percent
Fire Suppression	1	50.00%
Station Duties	1	50.00%
<b>Total</b>	<b>2</b>	<b>100.00%</b>

# Emergency vs. Non-Emergency Injuries

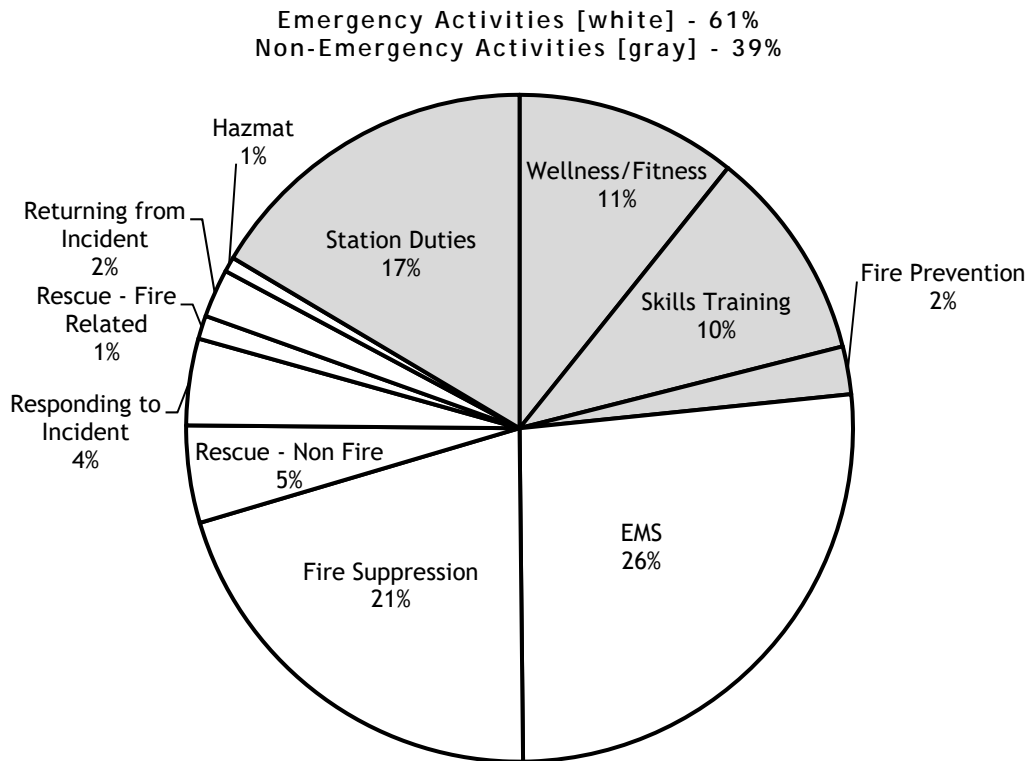
*Table 5: Number of Injured Individuals by Emergency Activity and Severity, 2018*

Activity	Minor	Serious	Fatal	Total
EMS	843	184	0	1027
Fire Suppression	607	191	1	799
Rescue - Non-Fire	157	26	0	183
Responding to Incident	99	64	0	163
Rescue - Fire Related	39	5	0	44
Returning from Incident	57	34	0	91
Hazmat	27	1	0	28
<b>Total</b>	<b>1829</b>	<b>505</b>	<b>1</b>	<b>2335</b>

*Table 6: Number of Injured Individuals by Non-Emergency Activity and Severity, 2018*

Activity	Minor	Serious	Fatal	Total
Station Duties	437	201	1	639
Skills Training	277	123	0	400
Wellness/Fitness	286	131	0	417
Fire Prevention	69	21	0	90
<b>Total</b>	<b>1069</b>	<b>476</b>	<b>1</b>	<b>1546</b>

*Figure 2: Percent of Injured Individuals in Emergency and Non-Emergency Activities, 2018*

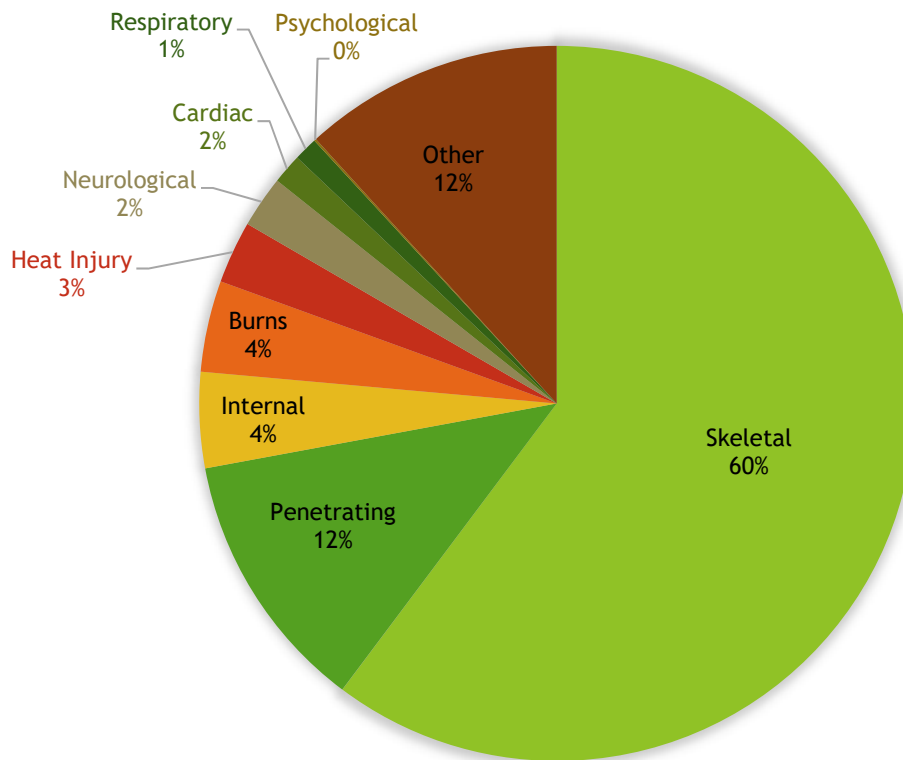


# Types of Injuries

*Table 7: Types of Injury, 2018*

Type of Injury	2018	
	Count	Percent
Skeletal	1854	60.23%
Penetrating	365	11.86%
Internal	133	4.32%
Burns	127	4.13%
Heat Injury	87	2.83%
Neurological	72	2.34%
Cardiac	42	1.36%
Respiratory	33	1.07%
Psychological	3	0.10%
Other	362	11.76%
<b>Total</b>	<b>3078</b>	<b>100.00%</b>

*Figure 3: Types of Injuries, 2018*

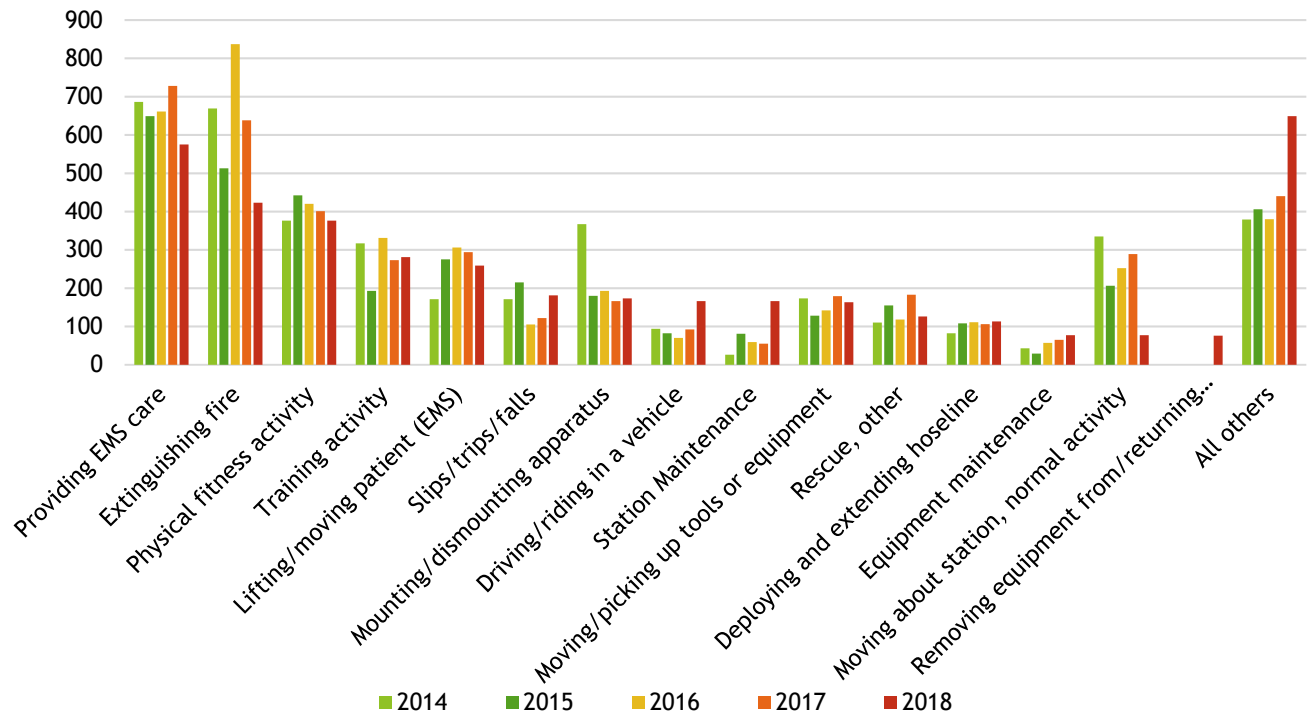


# Task at Time of Injury

Table 8: Top 15 Tasks at Time of Injury, 2014 - 2018 (ordered by 2018, descending)

Task	2014	2015	2016	2017	2018
Providing EMS care	686	649	661	728	575
Extinguishing fire	669	513	837	638	423
Physical fitness activity	376	442	420	401	376
Training activity	317	193	331	273	281
Lifting/moving patient (EMS)	171	275	306	294	259
Slips/trips/falls	171	215	105	122	181
Mounting/dismounting apparatus	367	180	193	166	173
Driving/riding in a vehicle	94	82	70	92	166
Station Maintenance	26	81	59	55	166
Moving/picking up tools or equipment	173	128	142	179	163
Rescue, other	110	155	118	183	126
Deploying and extending hose line	82	108	111	106	113
Equipment maintenance	43	29	57	65	77
Moving about station, normal activity	335	206	252	289	77
Removing equipment from/returning equipment to storage	n/a	n/a	n/a	n/a	76
All others	379	406	380	440	649
<b>Total</b>	<b>4055</b>	<b>3721</b>	<b>4097</b>	<b>4090</b>	<b>3881</b>

Figure 4: Top 15 Tasks at Time of Injury, 2014 - 2018



## Injuries by Body Part

*Table 9: Injuries by Body Part, 2014 - 2017 (ordered by 2017, descending)*

Body Part	2014	2015	2016	2017
Multiple body parts, whole body	901	659	1007	1064
Hand and fingers	345	328	359	365
Knee	367	369	376	315
Hip, lower back, or buttocks	244	316	283	292
Back, except spine	372	207	244	248
Shoulder	230	241	238	221
Ankle	177	202	192	179
Multiple Parts	160	180	124	151
Face	118	140	116	127
Arm, lower, not including elbow or wrist	94	84	109	121
Leg, lower	86	117	132	113
Foot and toes	79	71	85	87
Head	73	69	82	78
Ear	52	60	74	76
Chest	64	40	82	76
Eye	98	75	70	73
Multiple body parts, upper body	27	52	61	73
Elbow	66	51	47	72
Wrist	68	48	74	56
Other body parts injured	265	500	342	303
Total	3886	3809	4097	4090

Because TCFP migrated to a new data management system in 2017, the data collected in 2018 was categorized differently than it had been in the past. This is why Table 9 only goes through 2017, and we now have new tables (10 & 11) for 2018 data.

*Table 10: Injuries by Body Part Type, 2018*

Body Part by Type	2018
Upper Extremities	864
Lower Extremities	810
Back	490
Multiple Parts	318
Head	300
Internal	105
Chest	104
Neck	64
Hip	23
Total	3078

*Table 11: Injuries by Body Part Sub-Type, 2018*

Body Part by Sub-Type	2018
Back: Back	198
Back: Buttocks	1
Back: Lower Back	282
Back: Neck	4
Back: Spine	5
Chest: Abdomen	5
Chest: Abdominal Area	10
Chest: Chest	89
Head: Cheek	5
Head: Chin	7
Head: Ear	77
Head: Eye	64
Head: Face	111
Head: Jaw	1
Head: Mouth	15
Head: Nose	20
Hip: Groin	9
Hip: Hip	13
Hip: Pelvis	1
Internal: Genito-urinary	4
Internal: Heart	5
Internal: Internal	66
Internal: Intestinal tract	5
Internal: Lungs	9
Internal: Stomach	15
Internal: Trachea	1
Lower Extremities: Ankle	206
Lower Extremities: Foot	93
Lower Extremities: Knee	347
Lower Extremities: Lower leg	111
Lower Extremities: Toes	15
Lower Extremities: Upper Leg	38
Multiple Parts: Lower Body	26
Multiple Parts: Unknown	26
Multiple Parts: Upper Body	74
Multiple Parts: Whole Body	192
Neck: Neck	59
Neck: Throat	5
Upper Extremities: Elbow	68
Upper Extremities: Hands	361
Upper Extremities: Lower Arm	10
Upper Extremities: Shoulder	234
Upper Extremities: Upper Arm	112
Upper Extremities: Wrist	79
<b>Total</b>	<b>3078</b>

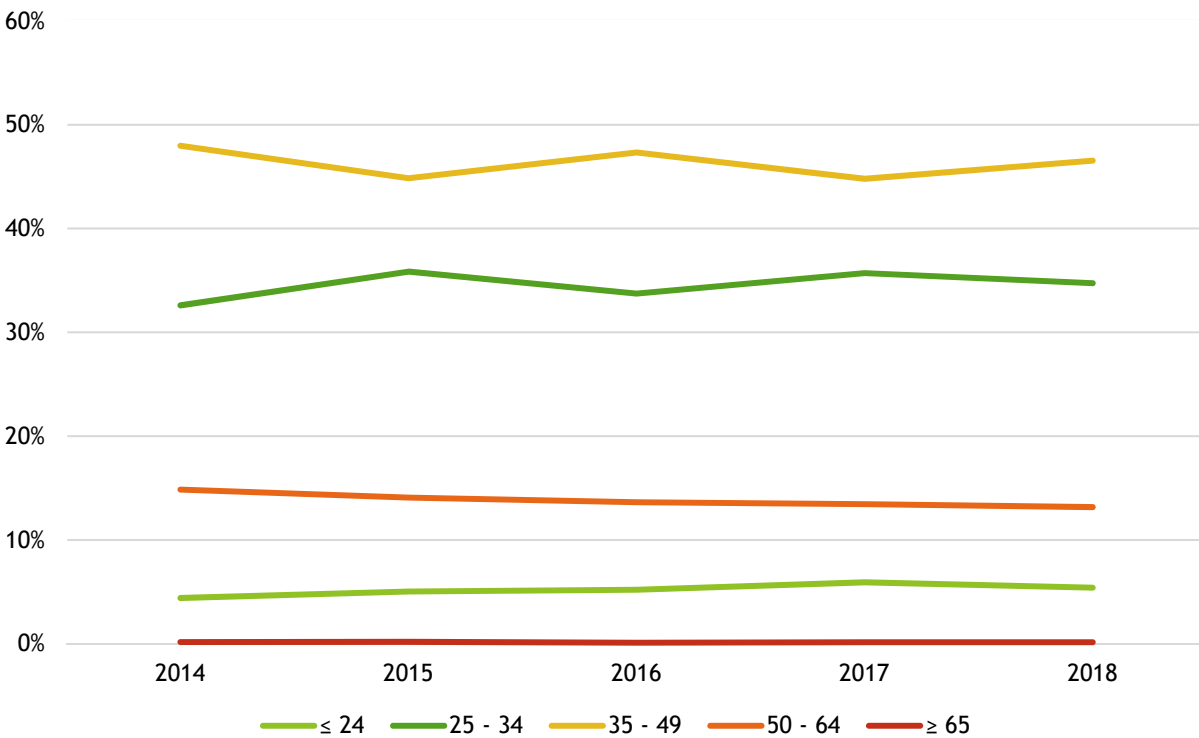
## Individuals by Age Group

*Table 12: Individuals by Age Group\*, 2014 - 2018*

Age Group	2014		2015		2016		2017		2018	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
≤ 24	179	4.41%	187	5.03%	213	5.20%	242	5.92%	210	5.41%
25 - 34	1322	32.60%	1334	35.85%	1382	33.73%	1460	35.70%	1348	34.73%
35 - 49	1945	47.97%	1669	44.85%	1939	47.33%	1832	44.79%	1806	46.53%
50 - 64	602	14.85%	524	14.08%	559	13.64%	550	13.45%	511	13.17%
≥ 65	7	0.17%	7	0.19%	4	0.10%	6	0.15%	6	0.15%
Totals	4055	100.00%	3721	100.00%	4097	100.00%	4090	100.00%	3881	100.00%

\*Includes injured individuals and individuals with exposures.

*Figure 5: Individuals by Age Group, percentages, 2014 - 2018*



## Injury Activities Resulting in Lost Time

*Table 13: Activities Individuals Were Doing that Resulted in Lost Time, Totals, 2018*

Activity	Count	Days Missed	
		Average	Sum
EMS	118	39	4687
Fire Suppression	116	33	3878
Station Duties	118	28	3345
Wellness/Fitness	80	32	2621
Skills Training	73	34	2545
Returning from Incident	24	53	1284
Responding to Incident	37	33	1242
Rescue - Non-Fire	16	32	525
Fire Prevention	15	30	455
Rescue - Fire Related	3	8	24
Hazmat	1	13	13
<b>Total</b>	<b>601</b>	<b>30</b>	<b>20619</b>

*Table 14: Activities Individuals Were Doing that Resulted in Lost Time, 2018, between 1 and 30 days*

Activity	Count	Days Missed	
		Average	Sum
Fire Suppression	87	11	1042
Station Duties	88	10	949
EMS	70	11	771
Wellness/Fitness	56	12	685
Skills Training	49	10	519
Responding to Incident	23	7	183
Returning from Incident	13	14	182
Fire Prevention	10	12	125
Rescue - Non-Fire	11	8	96
Rescue - Fire Related	3	8	24
Hazmat	1	13	13
<b>Total</b>	<b>411</b>	<b>11</b>	<b>4589</b>



*Table 15: Activities Individuals Were Doing that Resulted in Lost Time, 2018, between 31 and 90 days*

Activity	Count	Days Missed	
		Average	Sum
EMS	34	52	1779
Skills Training	17	61	1046
Station Duties	20	51	1024
Fire Suppression	16	57	920
Responding to Incident	12	70	841
Wellness/Fitness	17	47	812
Returning from Incident	6	61	368
Fire Prevention	4	56	225
Rescue - Non-Fire	3	60	180
<b>Total</b>	<b>129</b>	<b>57</b>	<b>7195</b>

*Table 16: Activities Individuals Were Doing that Resulted in Lost Time, 2018, 91+ days*

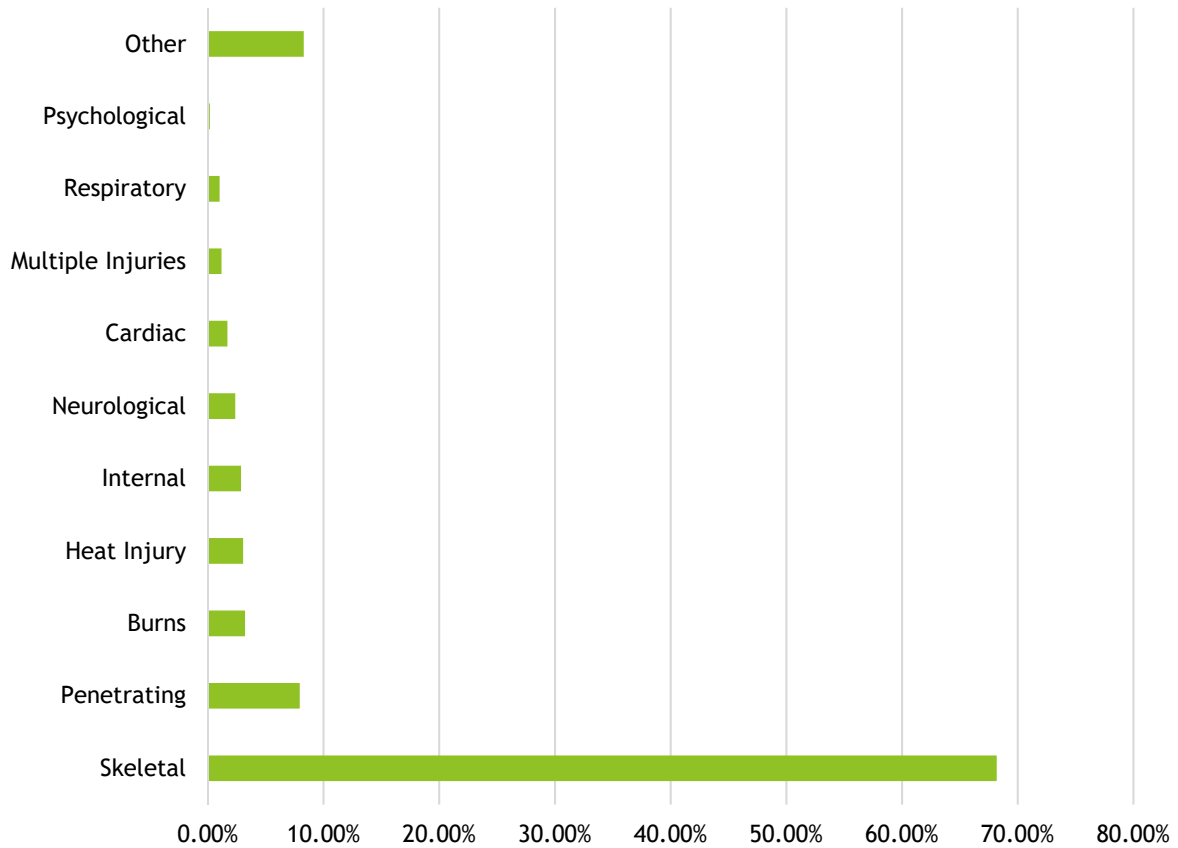
Activity	Count	Days Missed	
		Average	Sum
EMS	14	152	2137
Fire Suppression	13	147	1916
Station Duties	10	137	1372
Wellness/Fitness	7	160	1124
Skills Training	7	140	980
Returning from Incident	5	146	734
Rescue - Non-Fire	2	124	249
Responding to Incident	2	109	218
Fire Prevention	1	105	105
<b>Total</b>	<b>47</b>	<b>136</b>	<b>8835</b>

# Types of Injuries with Lost Time

Table 17: Types of Injuries Resulting in Lost Time, 2018

Type of Injury	Count
Skeletal	403
Penetrating	47
Burns	19
Heat Injury	18
Internal	17
Neurological	14
Cardiac	10
Multiple Injuries	7
Respiratory	6
Psychological	1
Other	49
<b>Totals</b>	<b>591</b>

Figure 6: Types of Injuries Resulting in Lost Time, 2018



## Burn Injuries

*Table 18: All Burns, 2014 - 2018*

All Burns - Types	2014	2015	2016	2017	2018
Thermal (Heat/Fire)	76	85	92	96	108
Scald or Steam	33	10	9	13	12
Chemical	2	0	3	4	6
Electrical	2	0	2	0	1
Totals	113	95	106	113	127

*Table 19: Burns by Body Part Sub-Type, 2018*

Body Part Sub-Type	Count
Back: Back	1
Back: Buttocks	0
Back: Lower Back	0
Back: Neck	0
Back: Spine	0
Chest: Abdomen	0
Chest: Abdominal Area	0
Chest: Chest	2
Head: Cheek	2
Head: Chin	2
Head: Ear	17
Head: Eye	4
Head: Face	9
Head: Jaw	0
Head: Mouth	0
Head: Nose	1
Hip: Groin	0
Hip: Hip	0
Hip: Pelvis	0
Internal: Genito-urinary	0
Internal: Heart	0
Internal: Internal	0
Internal: Intestinal tract	0
Internal: Lungs	0
Internal: Stomach	0
Internal: Trachea	0
Lower Extremities: Ankle	0
Lower Extremities: Foot	6
Lower Extremities: Knee	0
Lower Extremities: Lower leg	8
Lower Extremities: Toes	0
Lower Extremities: Upper Leg	0
Multiple Parts: Lower Body	0
Multiple Parts: Unknown	0

Multiple Parts: Upper Body	10
Multiple Parts: Whole Body	5
Neck: Neck	2
Neck: Throat	0
Upper Extremities: Elbow	0
Upper Extremities: Hands	30
Upper Extremities: Lower Back	0
Upper Extremities: Shoulder	9
Upper Extremities: Upper Arm	11
Upper Extremities: Wrist	8
<b>Total</b>	<b>127</b>

*Table 20: Burns by Body Part, 2014 - 2017, Historical data*

Body Part	2014	2015	2016	2017	2018
Hand and fingers	18	14	27	22	30
Ear	13	22	14	16	17
Face	13	12	16	9	14
Arm, upper, not including elbow or shoulder	2	2	1	2	11
Multiple body parts, upper body	4	5	8	4	10
Shoulder	5	5	3	6	9
Lower extremities	2	1	2	0	8
Wrist	5	4	9	7	8
Foot and toes	2	1	3	1	6
Multiple parts	16	8	4	12	5
Eye	1	0	0	0	4
Chest	0	0	1	1	2
Neck	9	6	4	7	2
Back, except spine	2	0	0	2	1
Elbow	0	0	0	1	0
Hip, lower back, or buttocks	1	0	1	0	0
Knee	0	0	1	2	0
Pelvis or groin	0	0	0	2	0
Throat	0	0	0	0	0
Arm, lower, not including elbow or wrist	9	3	2	12	n/a
Leg, lower	1	6	3	3	n/a
Head	3	4	2	1	n/a
Upper extremities	6	2	2	0	n/a
Neck and shoulders	1	0	0	1	n/a
Undetermined	0	0	3	2	n/a
<b>Total</b>	<b>113</b>	<b>95</b>	<b>106</b>	<b>113</b>	<b>127</b>

For Table 20 above, the 2018 column (shaded in gray) was pieced together from the data in Table 19 in order to view trends and patterns.

## Exposures

Due to the change in our information management system, the exposure data collected in 2018 is less specific than the exposure data collected in previous years. This is why we currently have “historical data” in separate charts and figures than that for 2018.

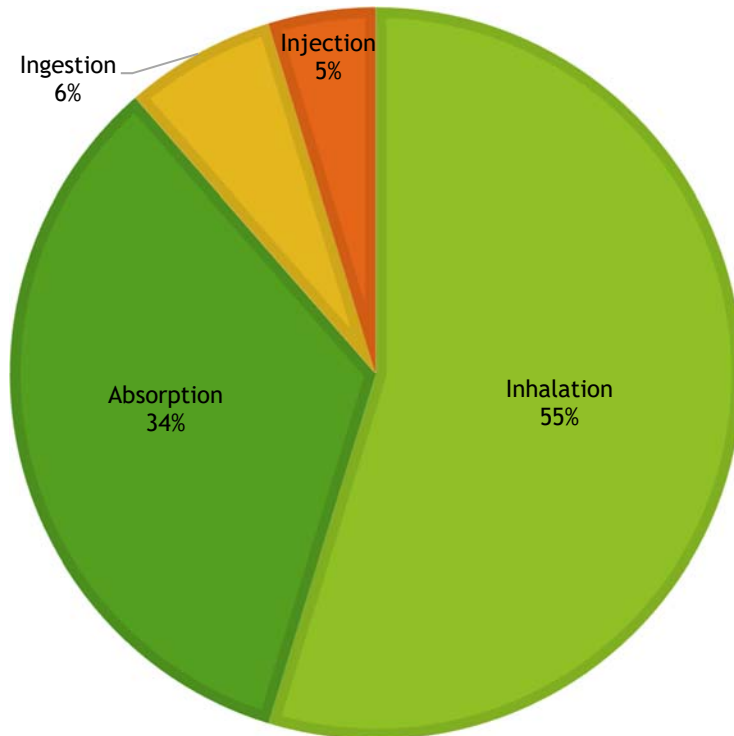
*Table 21: Exposure by Sub-Type, 2018*

Exposure + Sub-Type	Count
Chemical: Ammonia	1
Chemical: Benzene	2
Chemical: Bleach	1
Chemical: Not listed	151
Chemical: Unidentified	73
Physical: Animal venom	6
Physical: Meningitis	38
Physical: Not listed	138
Physical: Plant toxin	27
Physical: Unidentified	87
Respiratory: Blood	69
Respiratory: Influenza	4
Respiratory: Not listed	108
Respiratory: Saliva	24
Respiratory: Tuberculosis	98
Respiratory: Unidentified	50
Respiratory: Vomit	7
Total	884

*Table 22: Exposure by Route, 2018*

Route	Count
Absorption	299
Ingestion	59
Inhalation	484
Injection/Puncture	42
Total	884

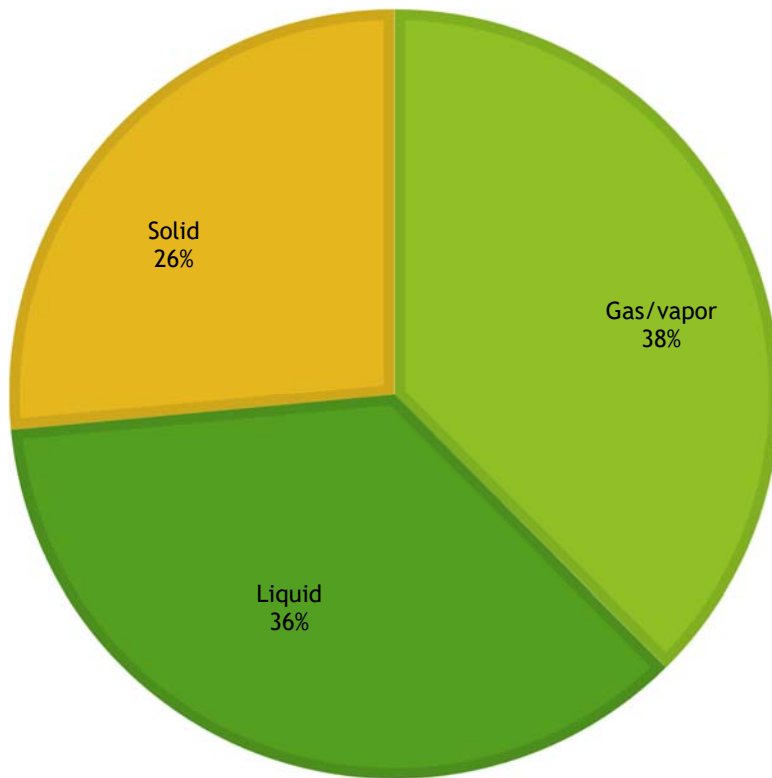
*Figure 7: Exposure by Route, 2018, percentages*



**Table 23: Exposure by Substance, 2018**

<u>Substance</u>	<u>Count</u>
Gas/vapor	332
Liquid	318
Solid	234
<b>Total</b>	<b>884</b>

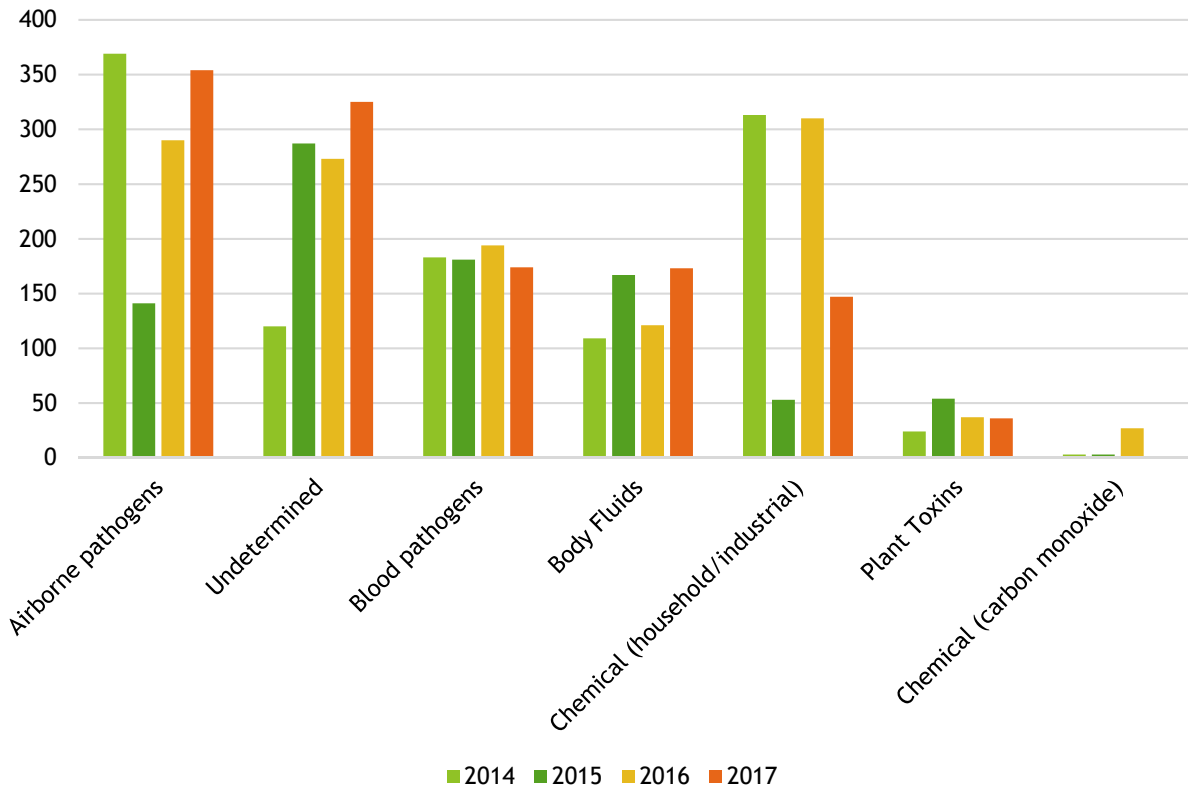
*Figure 8: Exposure by Substance, 2018, percentages*



*Table 24: Routes of Exposure, 2014 - 2017, Historical data (ordered by 2017, descending)*

Exposure Routes	2014	2015	2016	2017
Airborne pathogens	369	141	290	354
Undetermined	120	287	273	325
Blood pathogens	183	181	194	174
Body Fluids	109	167	121	173
Chemical (household/industrial)	313	53	310	147
Plant Toxins	24	54	37	36
Chemical (carbon monoxide)	3	3	27	1
<b>Total</b>	<b>1121</b>	<b>886</b>	<b>1252</b>	<b>1210</b>

*Figure 9: Routes of Exposure, 2014 - 2017, Historical data*





*Table 25: Exposure description, 2014 - 2017, Historical data (ordered by 2017, descending)*

Exposure description	2014	2015	2016	2017
Unknown	103	256	148	290
Blood	177	167	161	153
Chemicals/household/industrial	89	36	310	122
Asbestos	384	51	51	112
Tuberculosis	93	73	128	109
Body fluids	109	92	91	101
Meningitis	65	91	62	104
Animals or wildlife	63	75	90	58
Sickness, other	60	21	24	49
Poison plants	24	61	37	37
Vomit	16	19	14	17
Chlorine	0	4	1	14
Mold	0	4	26	10
Airborne, other	15	7	40	7
Staph	0	3	0	7
Carbon monoxide	6	8	26	5
HIV	0	11	4	4
Scabies	9	4	21	4
Hepatitis C	6	10	14	3
MRSA	4	0	14	3
Bacterial pneumonia	0	1	0	1
Explosive residue	0	0	0	0
Influenza	8	0	0	0
Lice	0	0	0	0
Strep	0	0	1	0
<b>Total</b>	<b>1231</b>	<b>994</b>	<b>1263</b>	<b>1210</b>

# Cancer

The commission received only nine reports of cancer diagnoses from fire departments in 2018:

**Thyroid - 3**  
(Males, 36, 45, 53)

**Skin - 2**  
(Males, 43, 45)

**Testicular - 2**  
(Males, 37, 47)

**Lymphoma - 1**  
(Male, 65)

**Unidentified - 1**  
(Male, 45)

## A Reminder for Fire Departments

ALL injuries to fire protection personnel, including cancer diagnoses, that are reported to the Texas Worker's Compensation Commission must be reported to the Texas Commission on Fire Protection.

The commission strongly encourages fire departments to report cancer diagnoses; the commission recognizes that the number of job-related cancers reported during this time-period represents only a small fraction of the cases that Texas fire departments are currently managing. There is a growing awareness of the impact that cancer is having on fire protection personnel nationwide, and the commission urges departments to use this reporting tool to help contribute to the education and awareness of the issue in Texas.

In June of 2019, the Governor of Texas signed Senate Bill 2551 (SB 2551) which expanded the scope of the law in which firefighters and EMTs who suffer from cancer are presumed to have developed the condition during the course and scope of their employment. The types of cancer this law addresses include:

- cancers that originate at the stomach, colon, rectum, skin, prostate, testis or brain
- non-Hodgkin's lymphoma
- multiple myeloma
- malignant melanoma
- renal cell carcinoma

## SOP Issues

In 2018 there were 30 injuries attributed to failures of fire protection personnel to follow their departments' standard operating procedures (SOPs). All but a few were instances where the individuals were not wearing their provided PPE/SCBA gear in an environment or situation in which they should have been.

In its compliance inspections, the Texas Commission on Fire Protection verifies that fire departments have written SOPs that cover the appropriate subject matter.

*Table 26: Injuries Attributed to SOP Issues, 2018*

Activity	Minor	Serious	Total
Fire Suppression	10	9	19
EMS	7	2	9
Skills Training	2	0	2
Responding to Incident	0	1	1
Station Duties	0	1	1
<b>Totals</b>	<b>19</b>	<b>13</b>	<b>32</b>

*Table 27: Injuries Attributed to PPE & PASS Failures*

Activity	Minor	Serious	Total
Fire Suppression	7	1	8
Rescue - Non-Fire	2	0	2
Skills Training	2	0	2
EMS	1	0	1
Rescue - Fire Related	1	0	1
<b>Totals</b>	<b>13</b>	<b>1</b>	<b>14</b>

## Fatalities

The commission's 2018 injury report includes **two fatalities**. Fatalities listed in this report include only those reported to the Texas Commission on Fire Protection (TCFP) by the entities it regulates.

The State Fire Marshal's Office conducted nine Texas fire fighter fatality incident investigations between September 1, 2017 and August 31, 2018. Comprehensive information about the investigations may be found on their website at the following web address: <https://www.tdi.texas.gov/fire/fmloddannuals.html>

## State of Texas vs. NFPA

### Comparison between the State of Texas (2018) and National Fire Protection Association (NFPA), U.S. Firefighter Injuries - 2017

For the purposes of comparison, the commission has mapped its categories to the NFPA categories as follows:

- “Fireground” includes the commission’s Fire Suppression and Rescue - Fire Related categories.
- “Non-Fire” includes Rescue Non-Fire, EMS and Hazmat.
- “Other On-Duty” includes Fire Prevention, Station Duties and Wellness/Fitness.

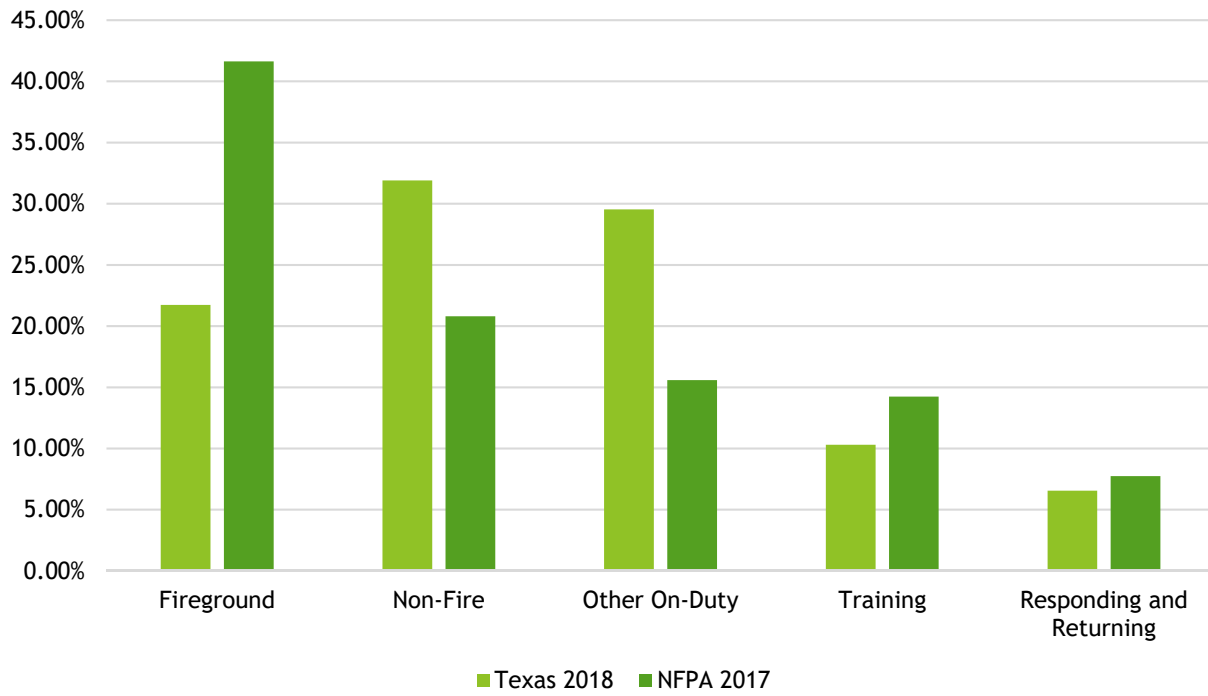
The NFPA’s “Responding and Returning” and “Training” categories appear to correspond closely to the commission’s categories. (The NFPA numbers include Texas statistics, although the reporting populations may not be the same.)

*Table 28: Comparison of Texas 2018 and NFPA 2017*

Category	Texas 2018		NFPA 2017	
	Count	Percent	Count	Percent
Fireground	843	21.72%	24495	41.63%
Non-Fire	1238	31.90%	12240	20.80%
Other On-Duty	1146	29.53%	9165	15.58%
Training	400	10.31%	8380	14.24%
Responding and Returning	254	6.54%	4555	7.74%
Total	3881	100.00%	58835	100.00%

*\*NFPA data is from [U.S. Firefighter Injuries in 2017](#), copyright ©2018 National Fire Protection Association, Quincy, MA.*

Figure 10: Injuries by Activity Percentages - Comparing Texas 2018 and NFPA 2017



# Recommendations

The commission would like to thank Texas fire departments for their ongoing participation in reporting fire protection personnel injuries. This report would not be possible without their efforts.

Based on their review of the data contained within this report, the commission offers the following recommendations:

## *Recommendations for Program Improvement*

1. Create more categories for the types of exposures that can be reported.
2. Notify all fire departments that reporting cancer diagnoses is now mandatory.

## *Recommendations for the Texas Fire Service*

1. Focus on reducing strains and sprains:
  - Stretching
  - EMS equipment review/patient moving
  - Equipment deployment/apparatus design
2. Focus on reducing weight lifting injuries:
  - Clarify the purpose of weightlifting (functional fitness vs. body sculpting)
  - Review types of exercise routines
3. Increase cancer reporting and prevention activities:
  - Consider early detection testing
  - Review the Health and Wellness Committee's March 2019 [presentation](#)
  - Read *The Lavender Ribbon Report* (download a copy [here](#))
  - Clean everything often
4. Reduce fire ground injuries through prevention:
  - Fire risk analysis
  - Familiarity walk through
  - Pre-planning with focus on firefighter safety and injury prevention

## Commission-adopted standards

The commission has adopted several NFPA and other nationally recognized standards to help keep Texas fire protection personnel safe. This list summarizes the relationships between some of the Texas laws and national standards and is not intended to be all-inclusive:

### Texas Government Code

[§419.040, Protective Clothing](#)

[§419.041, Self-Contained Breathing Apparatus](#)

[§419.042, Personal Alert Safety Systems](#)

[§419.043, Applicable National Fire Protection Association Standard](#)

[§419.044, Incident Management System](#)

[§419.045, Personnel Accountability System](#)

[§419.046, Fire Protection Personnel Operating at Emergency Incidents](#)

[§419.047, Commission Enforcement](#)

### Texas Administrative Code

[CHAPTER 425 FIRE SERVICE INSTRUCTORS](#)

[§443.9 National Fire Protection Association Standard](#)

[CHAPTER 435 FIRE FIGHTER SAFETY](#)

[§435.21 Fire Service Joint Labor Management Wellness-Fitness Initiative](#)

[§435.23 Fire Fighter Injuries](#)

[§435.25 Courage to be Safe So Everyone Goes Home Program](#)

[§435.27 Live Fire Training Structure Evolutions](#)

[CHAPTER 451 FIRE OFFICER](#)



## CHAPTER 457 INCIDENT SAFETY OFFICER CERTIFICATION

See also the commission's web page: [NFPA Standards adopted by the commission.](#)