

## INJURY - A MAJOR PUBLIC HEALTH PROBLEM IN HAWAII

Injuries are responsible for more deaths of children and young adults in Hawaii from age one through age 40 years than all other causes combined, including heart disease, stroke and cancer. Among residents of all ages, injury is the fourth leading cause of death, behind only heart disease and cancer, but ahead of cerebrovascular disease, influenza and pneumonia, and diabetes. Although the greatest impact of injury is in human suffering, the financial cost is staggering – in 2019, medical treatment for injuries generated nearly \$670 million in hospital charges in Hawaii.

Mortality statistics do not convey the full extent of the injury problem, however. Fatal injuries represent less than 1% of all injuries requiring medical attention. Although fatal injuries are the most severe, the great majority of injuries are non-fatal, and in some respects, have much greater public health implications. On an average week in Hawaii 16 residents die from an injury, another 97 are hospitalized and another 1,805 are treated in emergency departments.

Injuries, however, are not accidents. They are neither random nor uncontrollable. Injuries are understandable, predictable and preventable. The first step in understanding and preventing injuries is to collect and analyze data. Answers to questions like “How serious is the problem?”, “Who has the problem?” and “What are the circumstances under which it occurs?” help determine the answers to questions such as “What causes it?” and “What can we do about it?”

### Ten leading causes of death among Hawaii residents, by age group, 2015-2019

	<1 (492 total)	1-14y (174)	15-24y (460)	25-34y (870)	35-44y (1,379)	45-54y (2,995)	55-64y (6,717)	65+y (42,340)	all ages (55,442)
1	Perinatal conditions 262	Unintentional injuries 40	Unintentional injuries 163	Unintentional injuries 277	Unintentional injuries 290	Malignant neoplasm 720	Malignant neoplasm 2,083	Heart disease 10,001	Heart disease 12,525
2	Congenital anomalies 77	Malignant neoplasm 30	Suicide 136	Suicide 198	Malignant neoplasm 235	Heart disease 645	Heart disease 1,532	Malignant neoplasm 8,819	Malignant neoplasm 11,991
3	Sudden infant death synd. 23	Congenital anomalies 14	Malignant neoplasm 37	Heart disease 81	Heart disease 223	Unintentional injuries 433	Unintentional injuries 519	CVD 3,140	CVD 3,716
4	Unintentional injuries 17	Suicide <10	Homicide 20	Malignant neoplasm 64	Suicide 154	Suicide 148	CVD 339	Influenza and pneumonia 2,327	Unintentional injuries 2,898
5	Heart disease 11	Homicide <10	Heart disease 20	Homicide 27	CVD 56	CVD 147	Diabetes mellitus 233	Alzheimer's disease 2,256	Influenza and pneumonia 2,597
6	Other resp. diseases <10	Heart disease <10	Influenza and pneumonia <10	Injuries of unk. intent 21	Homicide 40	Liver disease and cirrhosis 107	Chronic lower resp. diseases 199	Chronic lower resp. diseases 1,542	Alzheimer's disease 2,270
7	Septicemia <10	Oth. infectious diseases <10	Injuries of unk. intent <10	Liver disease and cirrhosis 18	Liver disease and cirrhosis 38	Diabetes mellitus 87	Liver disease and cirrhosis 185	Unintentional injuries 1,158	Chronic lower resp. diseases 1,787
8	CVD <10	Septicemia <10	Congenital anomalies <10	CVD 17	Diabetes mellitus 26	Influenza and pneumonia 63	Influenza and pneumonia 159	Diabetes mellitus 1,092	Diabetes mellitus 1,456
9	Homicide <10	Perinatal conditions <10	CVD <10	Diabetes mellitus 13	Injuries of unk. intent 23	Nephritis, nephrotic synd 44	Suicide 157	Nephritis, nephrotic synd 840	Nephritis, nephrotic synd 1,015
10	Influenza and pneumonia <10	CVD <10	Diabetes mellitus <10	Influenza and pneumonia 11	Influenza and pneumonia 22	Homicide 39	Nephritis, nephrotic synd 108	Parkinson's disease 732	Suicide 974

Deaths grouped as per by National Center for Health Statistics ([http://www.cdc.gov/nchs/data/nvsr/nvsr53/nvsr53\\_15.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr53/nvsr53_15.pdf)).

**Ten leading causes of injury-related deaths among Hawaii residents,  
by age group, 2015-2019**

	<b>infant-14y (82 deaths)</b>	<b>15-24y (325)</b>	<b>25-34y (534)</b>	<b>35-44y (511)</b>	<b>45-64y (1,369)</b>	<b>65+y (1,366)</b>	<b>all ages (4,188)</b>
<b>1</b>	Suffocation 17	Suicide 136	Suicide 197	Suicide 154	Poisoning 535	Falls 665	Suicide 973
<b>2</b>	Drowning 15	MVC, occupant 62	Poisoning 91	Poisoning 152	Suicide 305	Suicide 173	Poisoning 887
<b>3</b>	Homicide 12	Poisoning 31	MVC, occupant 59	Homicide 40	Falls 94	Suffocation 117	Falls 794
<b>4</b>	MVC, pedestrian 12	Homicide 20	MVC, motorcyclist 43	MVC, occupant 33	Drowning 85	Poisoning 76	MVC, occupant 257
<b>5</b>	Suicide <10	MVC, motorcyclist 18	Drowning 28	Drowning 25	Homicide 57	MVC, pedestrian 58	Drowning 221
<b>6</b>	Injuries of unk. intent <10	Drowning 16	Homicide 27	Injuries of unk. intent 23	MVC, pedestrian 51	MVC, occupant 54	Homicide 177
<b>7</b>	MVC, occupant <10	MVC, pedestrian 14	Injuries of unk. intent 21	MVC, pedestrian 21	Injuries of unk. intent 46	Drowning 53	Suffocation 169
<b>8</b>	Fires/burns <10	Falls 11	Aircraft crashes 16	MVC, motorcyclist 16	MVC, occupant 44	Homicide 21	MVC, pedestrian 166
<b>9</b>	Poisoning <10	Injuries of unk. intent <10	Falls 11	Falls 12	MVC, motorcyclist 37	Fires/burns 19	MVC, motorcyclist 123
<b>10</b>	Falls <10	Aircraft crashes <10	MVC, pedestrian 10	Aircraft crashes <10	Suffocation 28	Injuries of unk. intent 15	Injuries of unk. intent 116

Table notes: MVC is abbreviation for motor vehicle crash. All injury categories are unintentional in terms of intent, except for Homicide, Suicide, and Injuries of unknown intent. The all ages column includes 1 death for which decedent age was not known.

**Leading Causes of Injury Mortality and Morbidity among Hawaii residents<sup>1</sup>,**  
(Average annual counts over the 2015-2019 period for fatal, and the 2016-2019 period for non-fatal injuries.)

	Death Certificates (fatal)			Hospital Admission Records (non-fatal)			Emergency Department Records (non-fatal)		
	Cause <sup>2</sup>	num. <sup>3</sup>	per.	Cause <sup>2</sup>	num. <sup>4</sup>	per.	Cause <sup>2</sup>	num. <sup>4</sup>	per.
1	Suicide	195	23%	Falls	2,606	54%	Falls	26,599	32%
2	Poisoning	177	21%	Suicide	328	7%	Striking <sup>5</sup>	13,140	16%
3	Falls	159	19%	Car occupant	313	7%	Cut/pierce	7,425	9%
4	Car occupant	51	6%	Assault	277	6%	Overexertion <sup>6</sup>	4,670	6%
5	Drowning	44	5%	Poisoning	252	5%	Natural/ Environmental <sup>7</sup>	4,210	5%
6	Homicide	35	4%	Motorcyclist	214	4%	Assault	4,131	5%
7	Suffocation	34	4%	Striking <sup>5</sup>	150	3%	Car occupant	3,707	4%
8	Pedestrian	33	4%	Pedestrian	106	2%	Poisoning	1,275	2%
9	Motorcyclist	25	3%	Bicyclist	91	2%	Bicyclist	1,065	1%
10	Injuries of undet. Intent	23	3%	Fire/burn	69	1%	Fire/burn	1,058	1%
	<i>all other</i>	61	7%	<i>all other</i>	377	8%	<i>all other</i>	15,890	19%
	<b>Annual total</b>	838		<b>Annual total</b>	5,039		<b>Annual total</b>	93,879	

<sup>1</sup> Non-residents comprised 10% of the victims killed by injuries in the state, 9% of those hospitalized, and 9% of those treated in emergency departments.

<sup>2</sup> All injury causes are unintentional or “accidental” in intent, except for those labelled suicide, assault, and undetermined intent.

<sup>3</sup> Average annual number of deaths, from 2015-2019 death certificates. For underlying cause of death in the ICD-10 code series: V01-Y36, Y85-Y87, Y89, and U01-U03.

<sup>4</sup> Average annual number of injury-related hospitalizations, from 2016-2019 records. For principle diagnosis in the ICD-10CM series S through T79 (with some exceptions). Annual totals include 5% of admission records and 11% of ED records that did not have external cause of injury codes.

<sup>5</sup> Most of these injuries were from “striking against or struck by...” objects (81%) or persons (15%).

<sup>6</sup> Most (69%) of these injuries were related to overexertion from “strenuous movements or loads”.

<sup>7</sup> Nearly all of these visits were related to the bites or venom of animals, most specifically (in order): dog bites, centipedes, bee and wasp stings, cats, and venomous marine animals.