Suicide, Falls, Overdose, Motor Vehicle Traffic, and Violence

Oregon Injury Data and Trends 2000-2012

Fall 2013 Publication

Oregon Injury & Violence Prevention Program

OREGON HEALTH AUTHORITY

PUBLIC HEALTH DIVISION

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EXECUTIVE SUMMARY

Injury is caused by acute exposure to physical agents such as mechanical energy, heat, electricity, chemicals (including drugs), and ionizing radiation that interact with the body in amounts or at rates that exceed the threshold of tolerance. In some cases (drowning and frostbite), injuries result from the sudden lack of essential agents such as oxygen or heat. About three-fourths of all injuries, including most vehicle crashes, falls, sports, and shootings, are caused by mechanical energy.

Injuries are also classified by intent- unintentional, suicide, homicide, and undetermined. Unintentional injuries are often thought of as "accidents" – such as falls, car crashes, drug overdose, drowning, while intentional injuries are often thought of as violence toward oneself (suicide) or another (homicide, assault, child maltreatment, intimate partner violence).

Because it is possible to predict many of the circumstances and risks that cause injuries, many injuries are preventable. Oregon's injury prevention program monitors the incidence and prevalence of injuries using death certificate data, hospitalization data, and data from emergency department visits. This report provides an overview of the data on all causes of injury combined and includes sections on the leading causes of injury. Key findings below highlight the leading causes of injury. In 2012:

- 2,469 Oregonians died as a result of injury (63 per 100,000).
- 18,837 Oregonians were hospitalized as a result of injuries (483 per 100,000).
- 344,340 Oregonians were treated at emergency departments (8,925 per 100,000)[1].
- 696 Oregonians died by suicide (18 per 100,000) and 2,170 Oregonians were hospitalized after suicide attempts (56 per 100,000). Suicide occurs predominantly among males and veterans.
- 585 Oregonians died after an unintentional fall (15 deaths per 100,000) and 8,455 Oregonians were hospitalized due to a fall (217 hospitalizations per 100,000). Falls occur predominately among seniors.
- 399 Oregonians died due to unintentional poisoning (9.1 per 100,000) and 1,657 Oregonians were hospitalized due to unintentional poisoning (37.5 per 100,000). Unintentional poisonings occur predominantly due to drug overdose. Drug overdose has increased faster than any other type of injury.

[1] Note for emergency department visits only paid insurance claims are reported and self-pay and no pay are not reported. This is a best estimate to better understand emergency department visits.

- 302 Oregonians died in motor vehicle traffic crashes (7.7 per 100,000) and 1,907 Oregonians were hospitalized (45.6 per 100,000). The category motor vehicle traffic injury includes occupants of vehicles, pedestrians, motorcyclists, and pedal cyclists involved in crashes on public streets and highway.

- There were 803 deaths among Oregonians associated with traumatic brain injury (21 per 100,000). These injuries occurred most frequently due to falls and motor vehicle Crashes. The highest rates occur among males aged 85 years of age and older (242 per 100,000). Traumatic brain injury (TBI) rates among males were three times higher than the rate among females (31 vs. 10 per 100,000). Over 2,830 Oregonians were hospitalized with a TBI (73 per 100,000).

- The morbidity and mortality experienced by Oregonians as a result of all injuries (caused variously by accidents (unintentional injury), suicide, homicide, undetermined, and legal intervention) is responsible for more years of potential life lost in Oregon than cancer, heart disease, or stroke. Unintentional injury is the leading cause of death among Oregonians 1-44 years of age.

- The combined cost of medical care and work lost due to injury deaths in 2012 (2005 dollars not accounting for inflation) is estimated to be over $2 billion.

- The combined cost of medical care and work lost due to nonfatal hospitalized injuries in 2012 (2005 dollars not accounting for inflation) is estimated to be over $1.1 billion.

Oregon can take steps to minimize the risks of injury by modifying environments, products, policies, social norms, and behaviors. Making injury a top public health priority will reduce the burden of injury over time.

INTRODUCTION

When all manners of injury are combined, injury is the third leading cause of death in Oregon, behind all causes of cancer and all types of heart disease. Injury is also among the leading causes of hospitalization. While some causes of death—cancer, heart disease, stroke—affect mainly older Oregonians, everyone is affected by injury, regardless of age, sex, or race. Over 2,400 Oregonians died in 2012 as a result of injury; about half of these occurred unintentionally (accidents).

The Oregon Health Authority, Public Health Division, in cooperation with the Centers for Disease Control and Prevention (CDC), implemented statewide injury surveillance and prevention to reduce the burden of injury among Oregonians. Injury related deaths and hospitalizations are tracked over time to understand the impact and causes of injury. That knowledge is used to promote efforts to prevent injuries in communities.

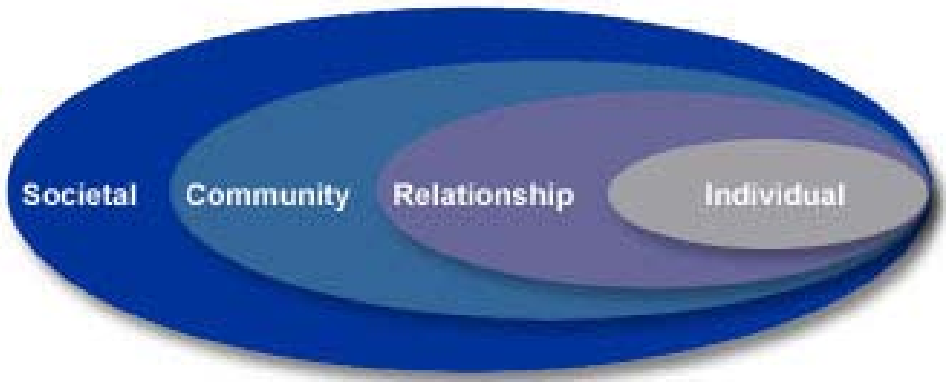
DEFINING INJURY

Injury is caused by acute exposure to physical agents such as mechanical energy, heat, electricity, chemicals, and ionizing radiation that interact with the body in amounts or at rates that exceed the threshold of tolerance. In some cases (drowning and frostbite), injuries result from the sudden lack of essential agents such as oxygen or heat. About three-fourths of all injuries, including most vehicle crashes, falls, sports, and shootings, are caused by mechanical energy.

The mechanism (or cause) typifies how the injury occurred—for instance, by motor vehicle, firearm, struck by an object, by falling, etc. Intent (also known as “manner of injury”) is classified as unintentional or intentional or undetermined or legal intervention). Unintentional injuries are often thought of as “accidents” while intentional injuries are often thought of as violence toward oneself (suicide/self-harm) or another (homicide/assault). The recommended framework for presenting injury mortality and morbidity data can be found in Appendix B. This report does not include injuries sustained as a result of adverse effects of surgical or medical procedures.

INJURY AS A PUBLIC HEALTH ISSUE

Primary prevention (upstream prevention) is a population based approach aimed at reducing harm and increasing health and safety primarily at the community, institutional, and social policy levels.



Sometimes, prevention at the community level involves changing the environment in which injuries occur—for example: installing traffic signals at intersections, or requiring certain products to be fire safe. At other times, prevention at the community level involves education—such as informing school sports programs about how to use evidence based concussion screening to guide back to play decisions and brain injury assessment referral decisions, or providing information to guide changes in health policies or laws like prohibiting texting while driving. Although the public health workforce may not always directly provide prevention services, public health agencies identify the important conditions and patterns that contribute to injury and violence at the community level, and identify, develop interventions, and leverage collaborative solutions through community partnerships to promote upstream or “primary” prevention.

A public health approach to injury prevention uses data as a first step - to identify and define the problem and to identify risk and protective factors, then develops and tests prevention strategies, and promotes widespread adoption of effective strategies.

INJURY AND VIOLENCE PREVENTION PROGRAM

This annual report was written by the Injury and Violence Prevention Program (IVPP), located within the Public Health Division of the Oregon Health Authority. The IVPP mission is to improve the health and safety of Oregonians through the reduction of the burden of injuries.

The Injury and Violence Prevention Program monitors injury events (deaths, hospitalizations, etc.), and utilizes information about injury occurrence to update and carry out the state injury prevention plan. The state injury prevention plan is a roadmap of how to reduce injury in Oregon, which includes goals and objectives, actions and tasks, and measures of success to determine when goals and objectives have been reached. The state injury prevention plan can be found online at:
http://public.health.oregon.gov/diseasesconditions/injuryfatalitydata/pages/reports.aspx.

Suicide and family violence are established as top priorities in the Oregon Public Health Division Strategic Plan which can be found online at:
http://public.health.oregon.gov/about/documents/phd-strategic-plan.pdf

DATA LIMITATIONS, TECHNICAL ISSUES

This report focuses on data from 2012, which is the most recent mortality data available at the time of this report. Some data are aggregated over a five year period when the number of events is too low to calculate a reliable rate, or when an aggregated rate better reflects occurrences in some age groups. In this case, the average number of cases by year (per 100,000 population) is the rate shown. This is known as the average annual rate, and uses the midpoint population as the rate denominator.

The primary sources of data are mortality data obtained from the Oregon Center for Health Statistics, and hospitalization data obtained from all non-federal Oregon acute-care inpatient facilities. Hospitalization data relies on the International Classification of Diseases version 9 (ICD-9). This report uses the most current data available at the time of this writing. However, state vital statistics records are sometimes updated as changes in some death certificates may occur.

The external cause rather than the injury diagnosis is always selected as the underlying cause because public health efforts are generally directed at preventing the incident that led to the death (e.g., motor vehicle traffic crash) rather than toward the injury diagnosis (e.g., skull fracture). For example, for a death resulting from a skull fracture sustained in a motor vehicle traffic crash, the underlying cause would be classified as a motor vehicle traffic crash rather than as the skull fracture. The completed E-code completion rate in 2012 was 93% for all hospitalized injuries. *See Appendix B* for the recommended framework for displaying injury morbidity and mortality data.

THE BURDEN OF INJURY IN OREGON: AN OVERVIEW

Death certificate data from 2011 show injury as the third leading cause of death overall following cancer and heart disease (Table 1).

TABLE 1. LEADING CAUSES OF DEATH IN OREGON, 2011

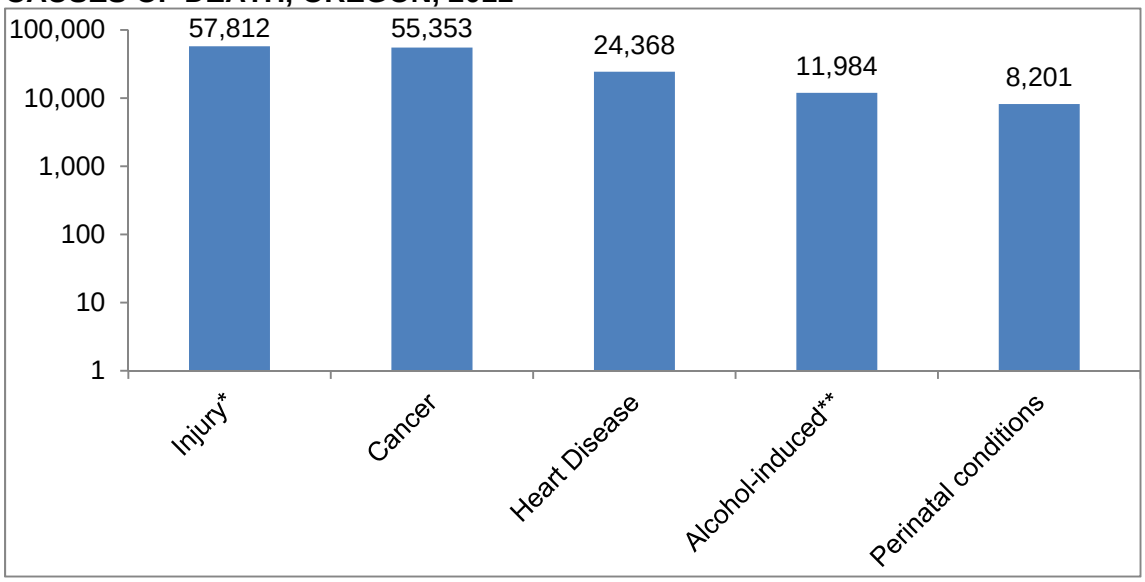
Cause of Death	*Number of deaths*
Cancer (all types)	7,768
Heart Disease (all types)	6,215
Injury (all types)	2,868

Source: Oregon Center for Health Statistics

Injury is the leading cause of death among Oregonians 1 to 44 years of age from 2007-2010 using the latest NCHS (National Center for Health Statistics) and CDC (Center for Disease Control and Prevention) information. After age 44, the mortality burden greatly shifts to causes such as cancer (malignant neoplasm), heart disease, stroke, and chronic respiratory disease (Table 2 below). As a leading cause of death for younger age groups, injury has a substantial impact on the population of the state. Among aging Oregonians falls reduce mobility and independence, and lead to costly hospitalizations and early entry into long-term care and death.

The impact of injury cannot be viewed solely in terms of rates and counts alone. In order to fully understand the burden of injury on communities, the years of potential life lost—a measure of the number of the years of potential life lost due to premature death assuming a person should live to an average life expectancy of age 75. Even though While injury accounts for less than half the number of deaths each year, the total years of life lost due to injury is highest, showing the burden of injury among younger age groups (Figure 1).

FIGURE 1. YEARS OF POTENTIAL LIFE LOST (YPLL) BEFORE AGE 75 FOR LEADING CAUSES OF DEATH, OREGON, 2011



Source: Oregon Center for Health Statistics Annual Report 2011

*Injury includes unintentional, suicide, homicide, and undetermined intent

TABLE 2. TEN LEADING CAUSES OF DEATH BY AGE GROUP IN YEARS, OREGON, 2007-2010

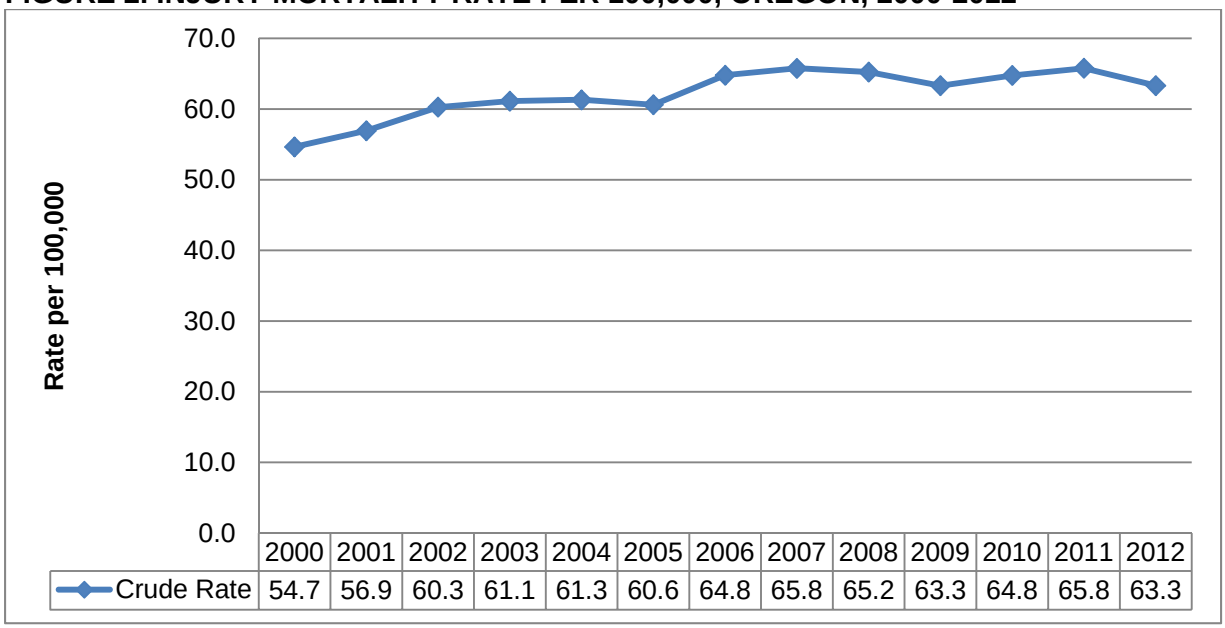
Rank	Age Groups (Years)										
	<1	**1-4**	**5-9**	**10-14**	**15-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65+**	**Total**
1	Congenital Anomalies 215	**Unintentional Injury 57**	**Unintentional Injury 35**	**Unintentional Injury 48**	**Unintentional Injury 606**	**Unintentional Injury 628**	**Unintentional Injury 709**	Malignant Neoplasms 2,284	Malignant Neoplasms 5,555	Heart Disease 21,473	Malignant Neoplasms ---
2	Short Gestation 131	Malignant Neoplasms 20	Malignant Neoplasms 21	Malignant Neoplasms 24	**Suicide 231**	**Suicide 329**	Malignant Neoplasms 516	Heart Disease 1,200	Heart Disease 2,460	Malignant Neoplasms 21,366	Heart Disease 25,634
3	SIDS 115	Congenital Anomalies 11	***Homicide 11***	Congenital Anomalies ---	Malignant Neoplasms 73	Malignant Neoplasms 136	**Suicide 450**	**Unintentional Injury 999**	Chronic Low. Respiratory Disease 875	Chronic Low. Respiratory Disease 6,574	Chronic Low. Respiratory Disease 7,757
4	Placenta Cord Membranes 68	***Homicide 11***	Congenital Anomalies ---	**Suicide ---**	***Homicide 71***	Heart Disease 109	Heart Disease 328	**Suicide 587**	**Unintentional Injury 724**	Cerebro-vascular 6,568	Cerebro-vascular 7,439
5	Maternal Pregnancy Comp. 61	Heart Disease ---	Influenza & Pneumonia ---	Influenza & Pneumonia ---	Heart Disease 42	***Homicide 80***	Liver Disease 155	Liver Disease 551	Diabetes Mellitus 692	Alzheimer's Disease 4,954	**Unintentional Injury 6,484**
6	**Unintentional Injury 54**	Septicemia ---	Heart Disease ---	Benign Neoplasms ---	Congenital Anomalies 14	Diabetes Mellitus 26	Diabetes Mellitus 106	Diabetes Mellitus 339	Liver Disease 624	Diabetes Mellitus 3,092	Alzheimer's Disease 5,014
7	Neonatal Hemorrhage 26	Influenza & Pneumonia ---	Eleven Tied ---	Heart Disease ---	Influenza & Pneumonia ---	Liver Disease 26	Cerebro-vascular 66	Cerebro-vascular 272	Cerebro-vascular 510	**Unintentional Injury 2,624**	Diabetes Mellitus 4,263
8	Necrotizing Enterocolitis 19	Five Tied ---	Eleven Tied ---	***Homicide ---***	Diabetes Mellitus ---	Influenza & Pneumonia 22	***Homicide 59***	Viral Hepatitis 257	**Suicide 447**	Influenza & Pneumonia 1,626	**Suicide 2,495**
9	Bacterial Sepsis 16	Five Tied ---	Eleven Tied ---	Chronic Low. Respiratory Disease ---	Cerebro-vascular ---	Congenital Anomalies 21	HIV 50	Chronic Low. Respiratory Disease 249	Viral Hepatitis 327	Nephritis 1,412	Liver Disease 1,948
10	Respiratory Distress 16	Five Tied ---	Eleven Tied ---	Two Tied ---	Pneumonitis ---	Complicated Pregnancy 14	Chronic Low. Respiratory Disease 44	Influenza & Pneumonia 87	Hypertension 174	Parkinson's Disease 1,356	Influenza & Pneumonia 1,918

Source: National Center for Health Statistics (NCHS), National Vital Statistics System- latest year national data was available

INJURY MORTALITY AND MORBIDITY TRENDS

The overall rate of all injury mortality has increased by 14% since 2000, from 55 per 100,000 in 2000 to 63 per 100,000 in 2012 (Figure 2). Recent years show a flat trend.

FIGURE 2. INJURY MORTALITY RATE PER 100,000, OREGON, 2000-2012

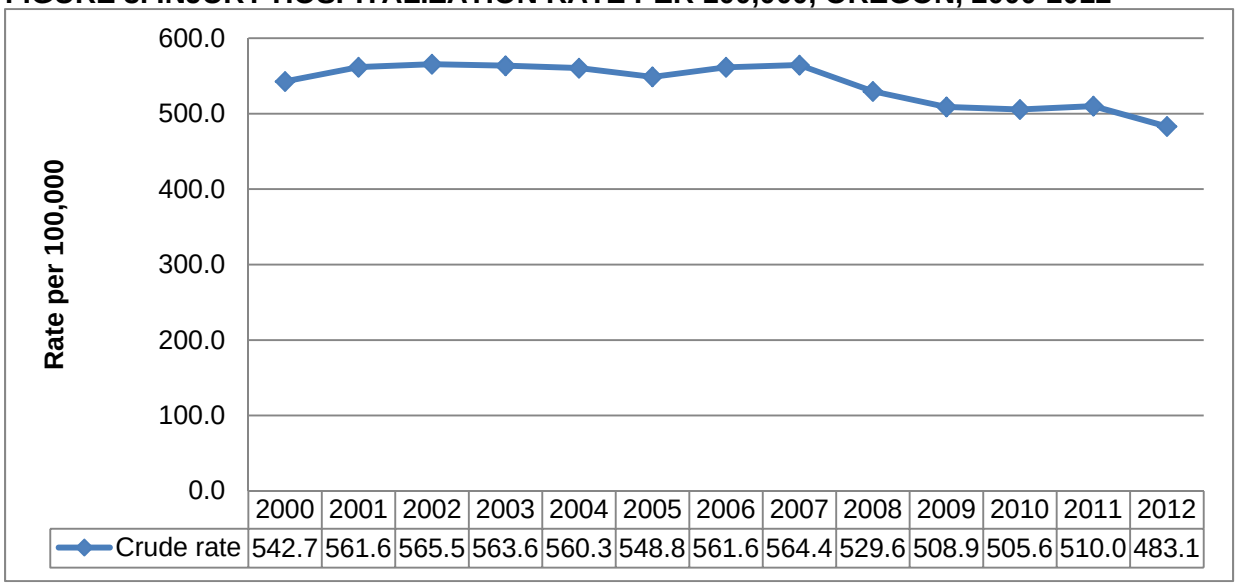


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Crude Rate	54.7	56.9	60.3	61.1	61.3	60.6	64.8	65.8	65.2	63.3	64.8	65.8	63.3

Source: Oregon Center for Health Statistics

The hospitalization rate for injuries of all mechanisms and intents has decreased 11% since 2000, from 543 per 100,000 in 2000 to 483 per 100,000 in 2012 (Figure 2).

FIGURE 3. INJURY HOSPITALIZATION RATE PER 100,000, OREGON, 2000-2012



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Crude rate	542.7	561.6	565.5	563.6	560.3	548.8	561.6	564.4	529.6	508.9	505.6	510.0	483.1

Source: Oregon Hospital Discharge Index

Emergency department data are an important source of injury data. In 2012, 344,340 were treated at emergency departments (8,925 per 100,000)[2].

[2] Note for emergency department visits only paid insurance claims are reported and self-pay and no pay are not reported. This is a best estimate to better understand emergency department visits.

LEADING CAUSES OF INJURY DEATH

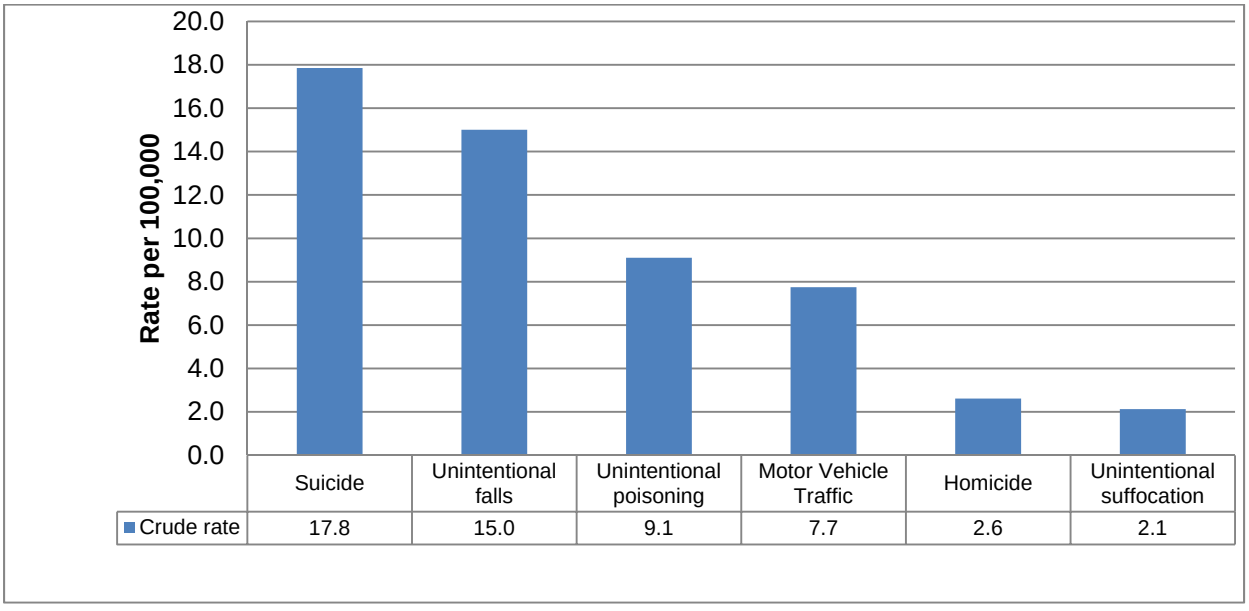
In 2012, the four leading causes of injury mortality were:

- suicide (predominantly among white males and veterans),
- unintentional falls (predominantly among seniors),
- unintentional poisoning (predominantly prescription drug overdose),
- motor vehicle traffic fatalities (MVT),
- homicide and,
- unintentional suffocation (mostly young children)

See Figure 4 and the sections below focus specifically on leading causes of injury with an additional section on traumatic brain injury.

The rate of death due to suicide was 17.8 per 100,000 population in 2012 and the rate of deaths due to various causes was as follows: falls, 15.0 per 100,000, unintentional poisoning, 9.1 per 100,000, MVT injury, 7.7 per 100,000, homicide, 2.6 per 100,000 and unintentional suffocation, 2.1 per 100,000.

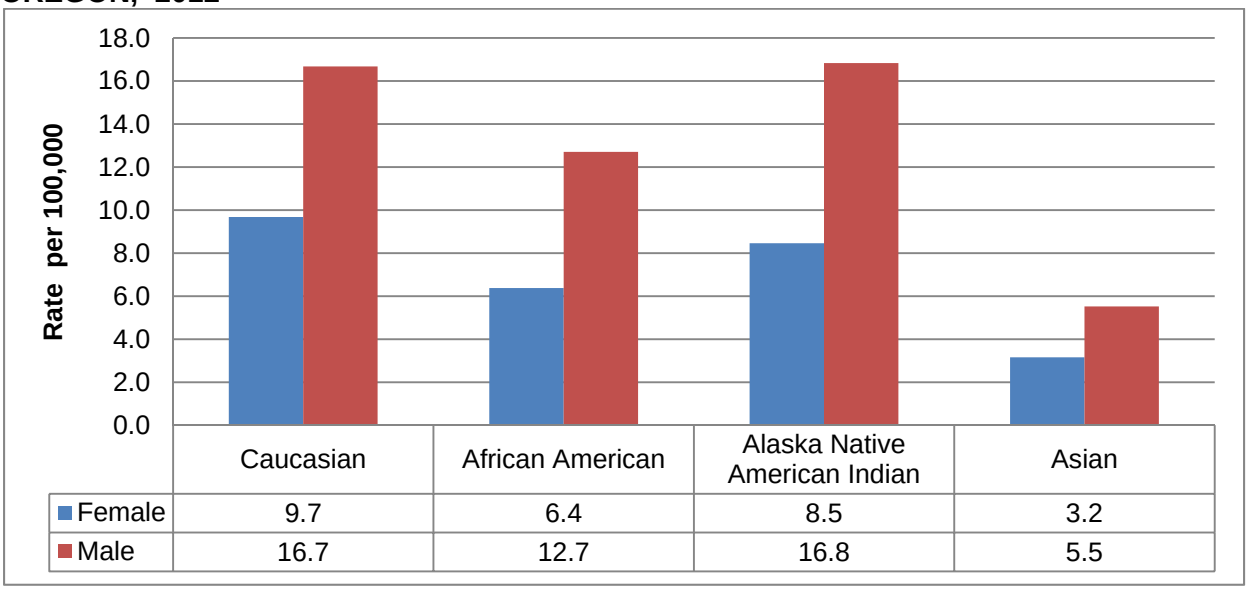
FIGURE 4. INJURY MORTALITY RATES PER 100,000 BY LEADING CAUSES, OREGON, 2012



Source: Oregon Center for Health Statistics

Figure 5 shows Caucasian and Alaska Native/American Indian males have the highest rates for injury related death.

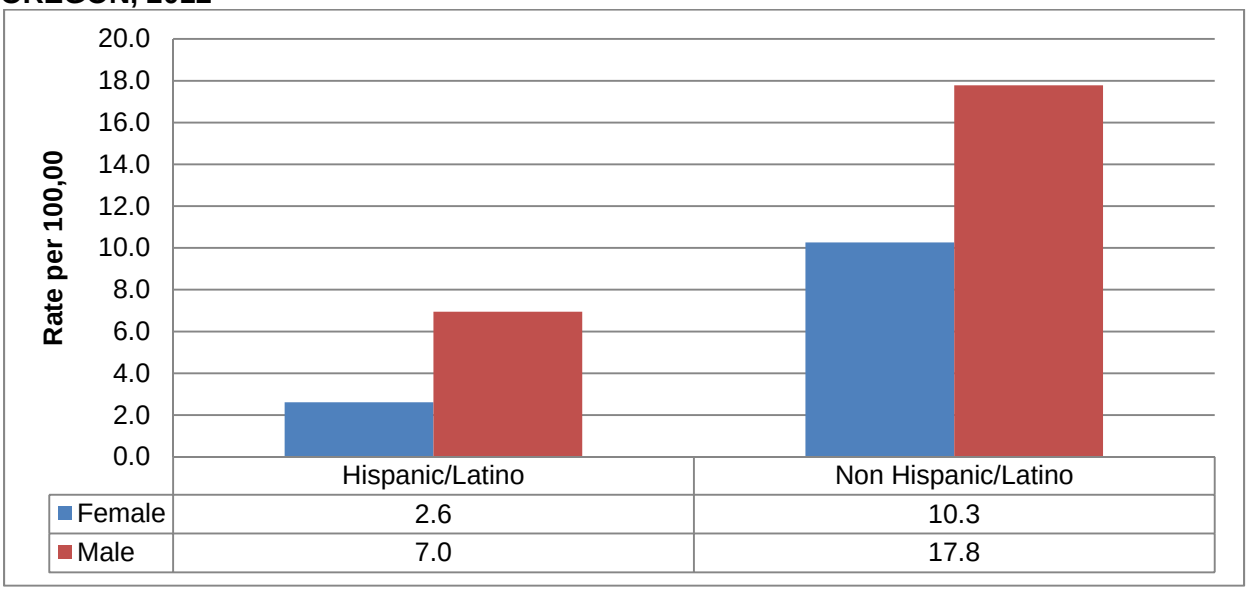
FIGURE 5. INJURY DEATH RATES PER 100,000 BY REPORTED RACE AND SEX, OREGON, 2012



	Caucasian	African American	Alaska Native American Indian	Asian
Female	9.7	6.4	8.5	3.2
Male	16.7	12.7	16.8	5.5

Figure 6 shows the non-Latino/Hispanic population has higher death rates compared to Latino/Hispanic populations.

FIGURE 6. INJURY DEATH RATES PER 100,000 BY REPORTED ETHNICITY AND SEX, OREGON, 2012



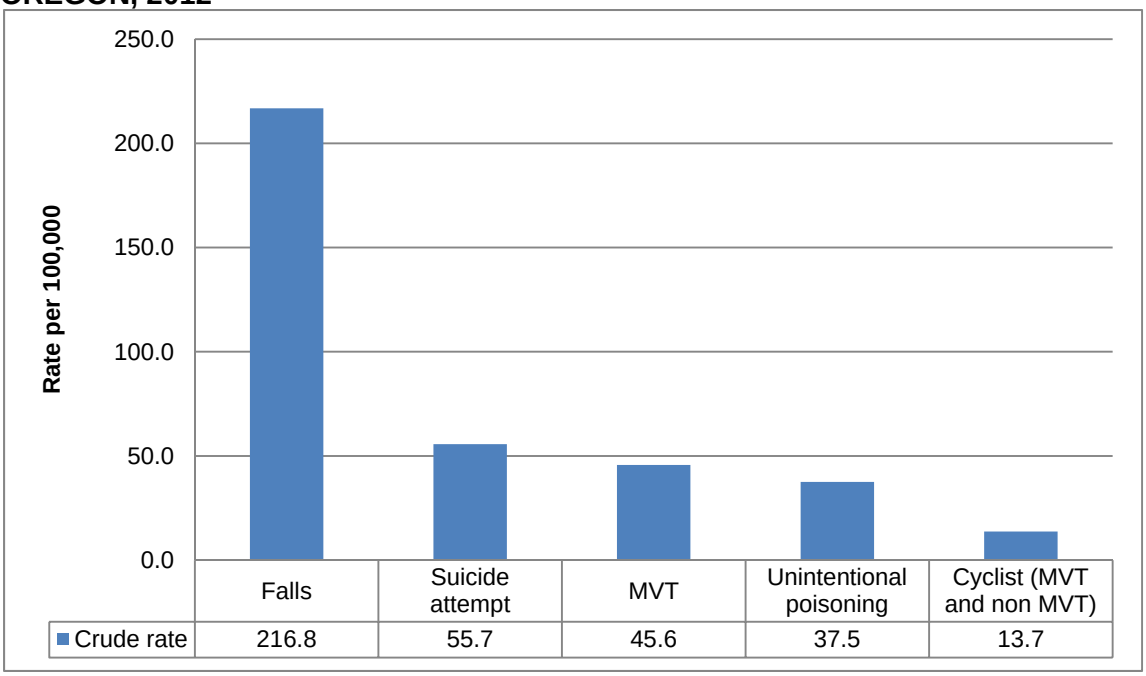
	Hispanic/Latino	Non Hispanic/Latino
Female	2.6	10.3
Male	7.0	17.8

LEADING CAUSES OF INJURY HOSPITALIZATIONS

Although suicide leads injury deaths in 2012, the leading cause of hospitalization in Oregon was falls (Figure 7). There were more hospitalizations due to falls than there were for suicide attempt, motor vehicle traffic injury, and unintentional poisoning combined. In 2012, there were 216.8 per 100,000 hospitalizations due to falls, 55.7 suicide attempt hospitalizations per 100,000 population, 45.6 motor vehicle traffic (MVT) hospitalizations per 100,000, and 37.5 hospitalizations per 100,000 due to unintentional poisonings.

Cyclist injuries are increasing and now among the top 5 of injury related hospitalizations at 13.7 per 100,000.

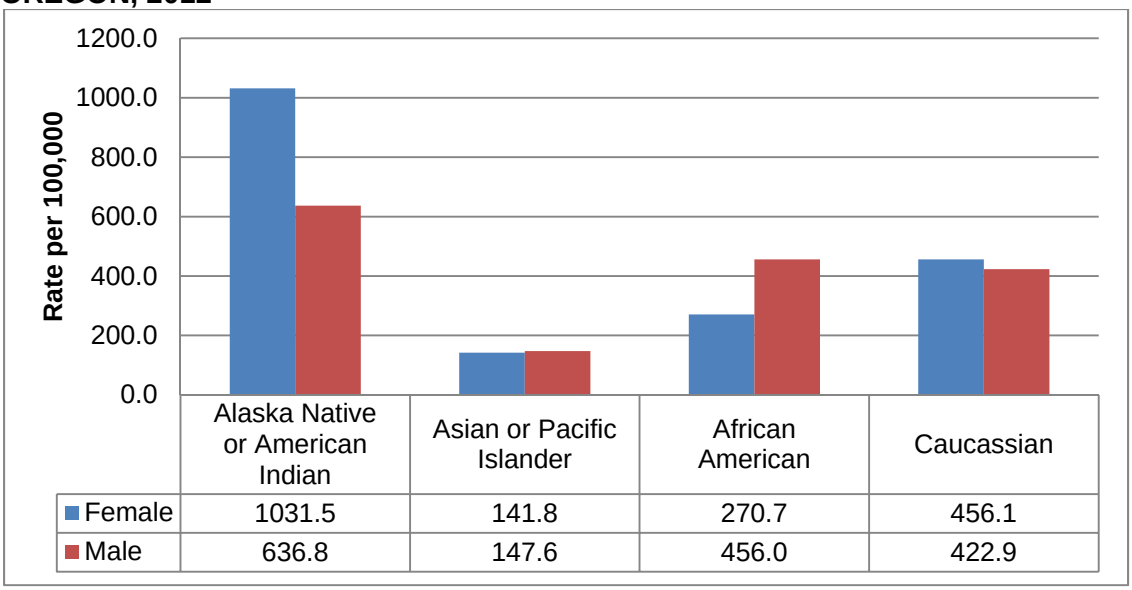
FIGURE 7. INJURY HOSPITALIZATION RATES PER 100,000, BY LEADING CAUSES, OREGON, 2012



Source: Oregon Hospital Discharge Index

Hospitalization rates vary by race. The highest rates of hospitalization due to injury are observed among Alaskan Native and American Indian population. Most striking is the rate of injury hospitalization among Alaskan Native and American Indian females is nearly 4 times the rate for Caucasian females and higher than males of all races. Data on race were missing in 2000 cases, reported as either refused, unknown or other.

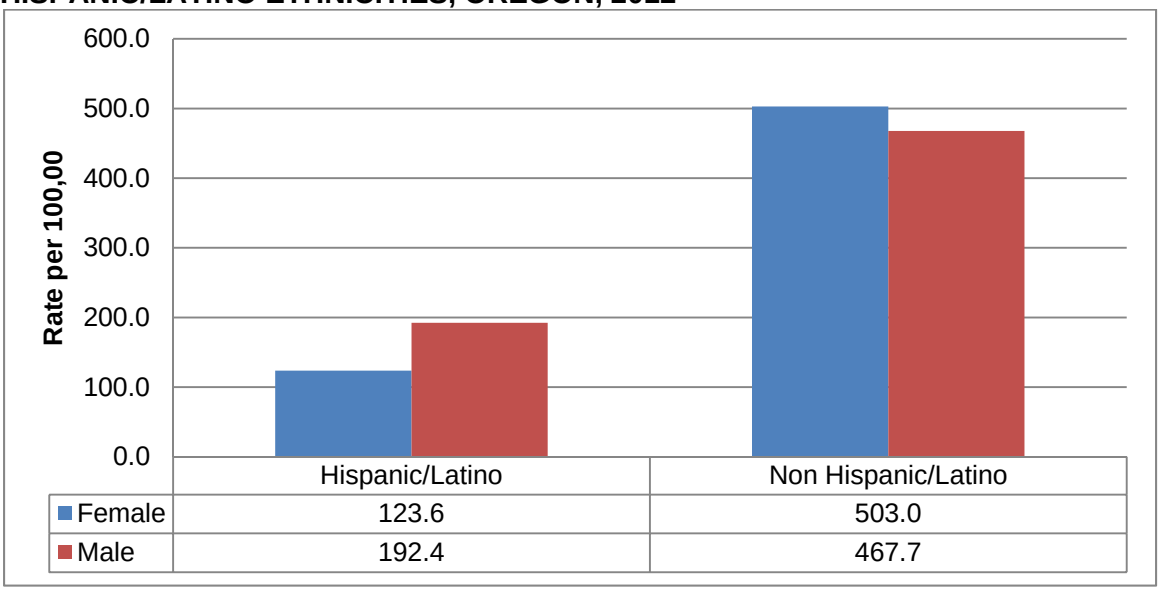
FIGURE 8. INJURY HOSPITALIZATION RATES PER 100,000 BY REPORTED RACE, OREGON, 2012



	Alaska Native or American Indian	Asian or Pacific Islander	African American	Caucassian
Female	1031.5	141.8	270.7	456.1
Male	636.8	147.6	456.0	422.9

Hospitalization due to injury is significantly higher among the non-Hispanic/Latino population during 2012. Ethnicity codes were missing in 1,446 cases.

FIGURE 9. INJURY HOSPITALIZATION RATES PER 100,000 BY REPORTED HISPANIC/LATINO ETHNICITIES, OREGON, 2012

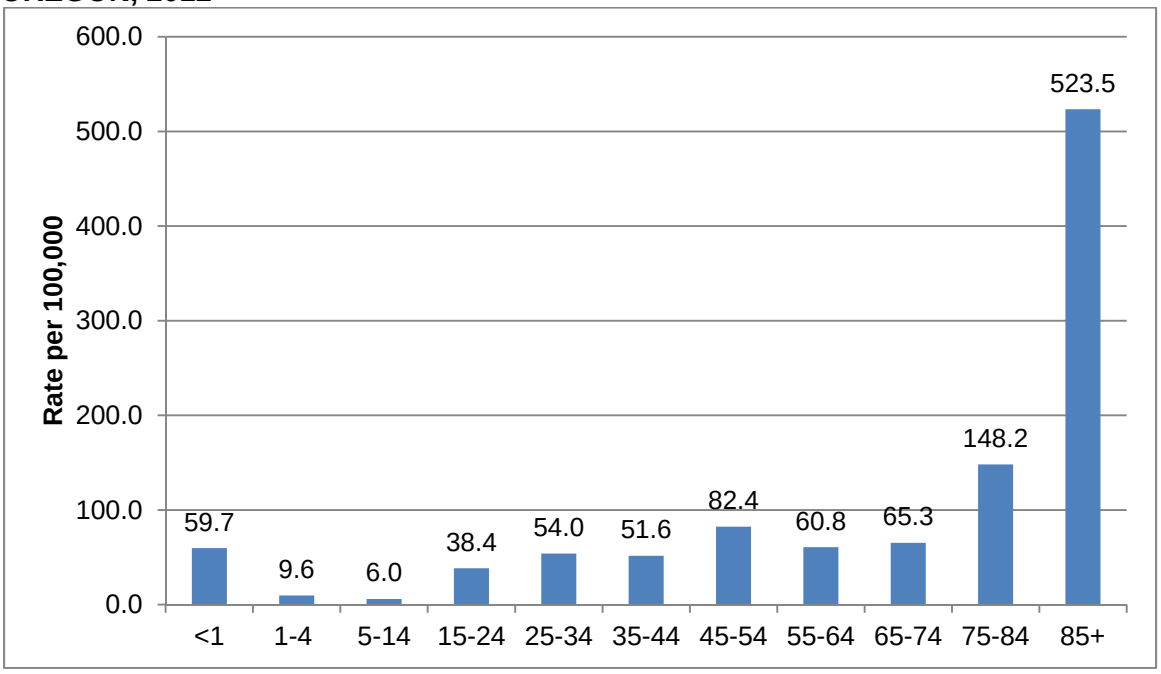


	Hispanic/Latino	Non Hispanic/Latino
Female	123.6	503.0
Male	192.4	467.7

INJURY RATES BY AGE GROUP

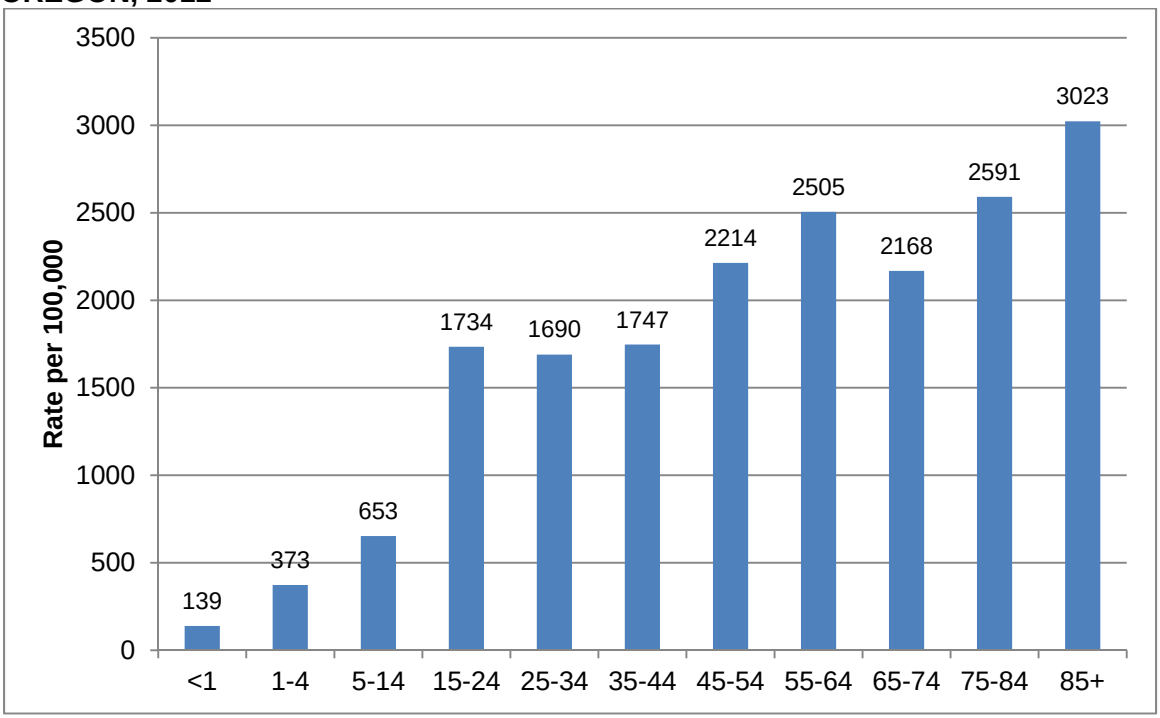
Although injuries are the leading cause of death among persons 1 to 44 years of age, the highest rates of injury occur among older persons, mainly due physical frailty that often increases with age. Since the population of the older age groups in Oregon is proportionally smaller than most other age groups, the highest mortality and hospitalization rates occur in the older age groups—particularly among those 85 years of age and older. The rate of injury mortality increases with age after age 14 years, with two peaks at age 75 years and 85 years and older (Figure 11).

FIGURE 10. INJURY MORTALITY RATES PER 100,000 BY AGE GROUP IN YEARS, OREGON, 2012



Source: Oregon Center for Health Statistics

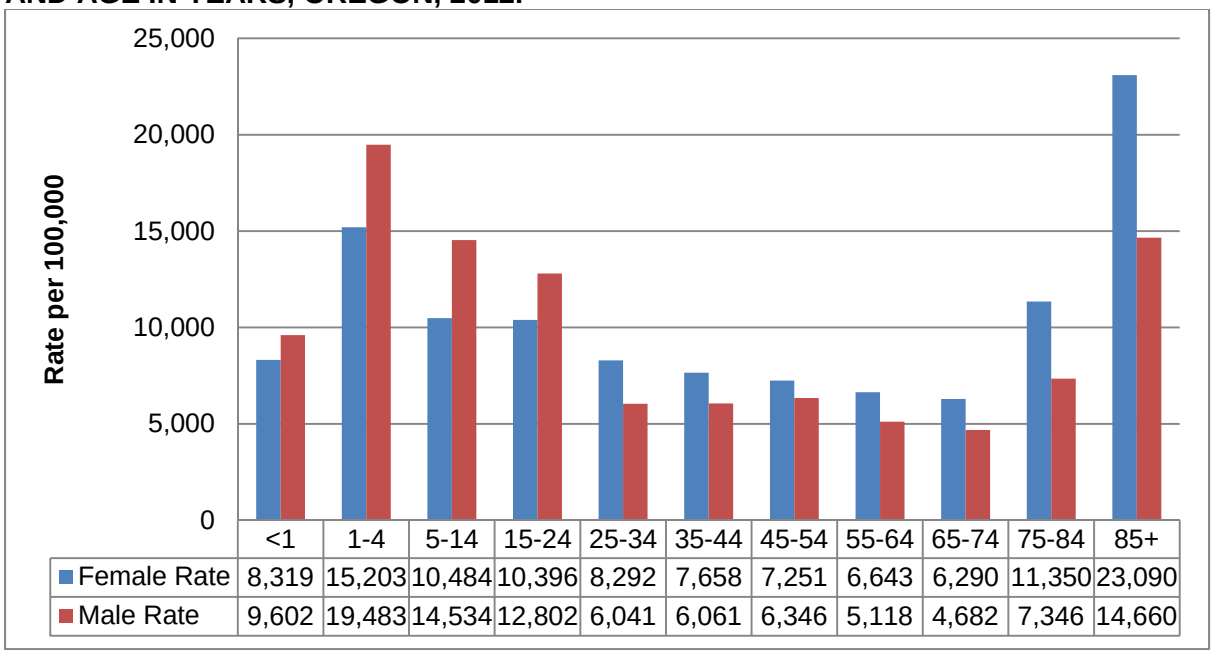
FIGURE 11. INJURY HOSPITALIZATION RATES PER 100,000 BY AGE GROUP IN YEARS, OREGON, 2012



Source: Oregon Hospital Discharge Index

Rates of emergency department (ED) related visits vary by age (Figure 12).

FIGURE 12. EMERGENCY DEPARTMENT VISITS PER 100,000 DUE TO INJURY BY SEX AND AGE IN YEARS, OREGON, 2012.



	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Female Rate	8,319	15,203	10,484	10,396	8,292	7,658	7,251	6,643	6,290	11,350	23,090
Male Rate	9,602	19,483	14,534	12,802	6,041	6,061	6,346	5,118	4,682	7,346	14,660

Source: Oregon All Payer All Claims data

INJURY RATES BY SEX AND AGE GROUP

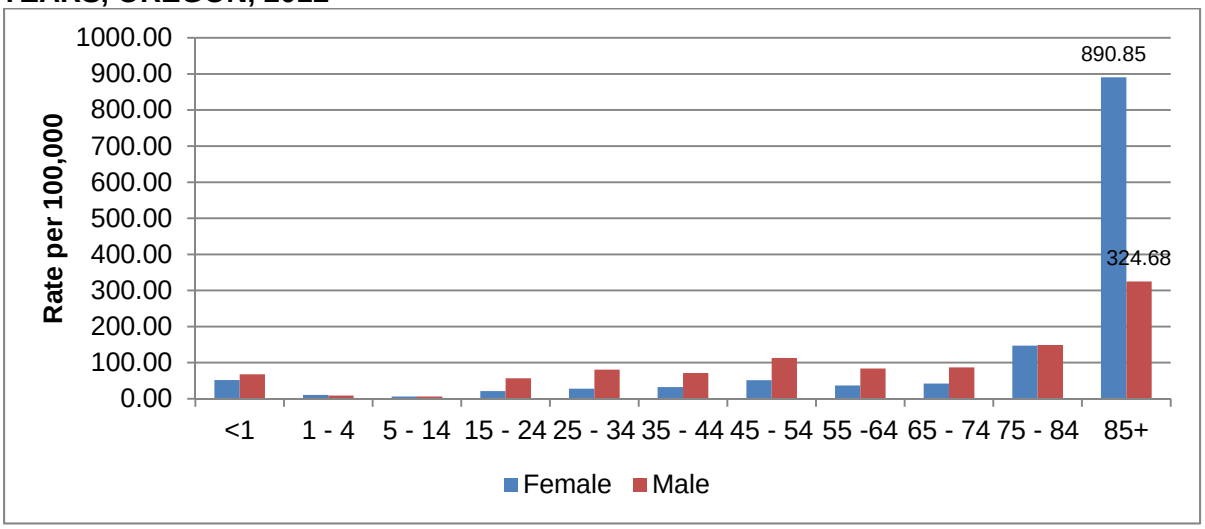
There are observable differences in total injury mortality rates between males and females – rates among males are almost two times higher than the rates among females (87.3 vs. 45.2 per 100,000, Table 3). However, the same pattern is not in evidence when assessing hospitalization rates, as females have higher age-specific rates of hospitalization compared to males after age 64—a pattern that continues through the oldest age group.

TABLE 3. NUMBER OF DEATHS DUE TO INJURY AND INJURY DEATH RATES PER 100,000 BY AGE GROUP IN YEARS AND SEX, OREGON, 2012

Age group in years	Number of deaths			Death rates per 100,000		
	Females	Males	Total	Females	Males	All
<1	12	15	27	51.9	67.8	59.7
1-4	10	8	18	10.4	8.8	9.6
5-14	15	14	29	6.1	6.0	6.0
15-24	55	142	197	21.0	56.6	38.4
25-34	75	213	288	27.8	80.8	54.0
35-44	83	178	261	32.4	71.4	51.6
45-54	132	297	429	51.3	112.9	82.4
55-64	95	229	324	36.7	83.6	60.8
65-74	67	149	216	42.2	86.6	65.3
75-84	110	140	250	147.2	148.9	148.2
85+	257	173	430	890.8	324.7	523.5
Total	911	1,558	2,469	47.2	79.1	63.3

Source: Oregon Center for Health Statistics

FIGURE 13. INJURY MORTALITY RATE PER 100,000 BY SEX AND AGE GROUP IN YEARS, OREGON, 2012



Source: Oregon Center for Health Statistics

THE COST OF INJURY DEATH AND DISABILITY

In the last decade researchers have developed models for estimating the cost of injury in the United States. Tables 4 and 5 below provide cost estimates for medical costs, work lost costs, and combined costs by various types of injuries. The cost of injury report application used to generate these tables can be found at: **http://www.cdc.gov/injury/wisqars/cost/cost-learn-more.html**

TABLE 4. ESTIMATED AVERAGE COST OF MEDICAL AND WORK LOSS AND TOTAL COST DUE TO INJURY MORTALITY BY INTENT OF INJURY, OREGON 2012. REPORTED IN 2005 U.S. PRICES UNADJUSTED FOR INFLATION.

Deaths and Type of Cost		Intent			
		Unintentional	Suicide	Homicide	Total
Deaths	--	1,531	696	102	2,329
Medical Cost	Average	$11,420	$2,039	$5,042	$8,409
	Total	$17,484,020	$1,419,144	$514,284	$19,584,561
Work Loss Cost	Average	$777,360	$970,648	$1,239,343	$863,402
	Total	$1,190,138,160	$675,571,008	$126,412,986	$2,010,863,258
Comb-ined Cost	Average	$788,780	$972,687	$1,244,385	$871,810
	Total	$1,207,622,180	$676,990,152	$126,927,270	$2,030,447,819

TABLE 5. ESTIMATED AVERAGE COST OF MEDICAL AND WORK LOSS AND TOTAL COST DUE TO NONFATAL HOSPITALIZED INJURIES BY INTENT OF INJURY, OREGON 2012. REPORTED IN 2005 U.S. PRICES UNADJUSTED FOR INFLATION.

Deaths and Type of Cost		Intent			
		Unintentional	Self Harm	Assault	Total
Number Hospitalized	--	14,565	2,170	530	16,735
Medical Cost	Average	$21,996	$8,183	$20,385	$20,174
	Total	$320,371,740	$17,757,110	$10,804,050	$337,611,890
Work Loss Cost	Average	$47,781	$17,012	$84,366	$46,005
	Total	$695,930,265	$36,916,040	$44,713,980	$769,893,675
Combined Cost	Average	$69,777	$25,194	$104,751	$66,179
	Total	$1,016,302,005	$54,673,150	$55,518,030	$1,107,505,565

Data Source: NCHS Vital Statistics System for numbers of deaths, Oregon Hospital Discharge Index, . NEISS All Injury Program operated by the U.S. Consumer Product Safety

In addition just looking at the hospital charges in Oregon for 2012, injury related hospitalization produced charges of $675,838,000 with a median charge per incident of $24,000 plus.

The sections below are organized by injury mechanism and intent. Each section provides additional data on the leading injury problems in Oregon. An additional section on traumatic brain injury is included below. Tables of injury data displayed by mechanism and intent are provided in the Appendix below. Tables of injury rates by mechanism and intent can be found on the website with this report.

SUICIDE

Suicide is among the leading causes of death in Oregon, and is a major public health issue nationally. In 2012, there were 696 suicide deaths with a rate of 17.8 per 100,000 among Oregonians, and more than 2,170 hospitalizations due to suicide attempts with a rate of 5 per 100,000.

Rates of suicide increase with age. Among men, this pattern is apparent, as rates nearly double between persons 45-54 years of age and those 75 years of age and older.

Men were almost four times more likely to die from suicide than women, and women attempted suicide three times more often than men. In Oregon in 2012, there were over six times more suicides than homicides and over two times more suicides than motor vehicle traffic deaths. Among Oregonians 15-54 years old, suicide ranks among the top five causes of death. Among Oregonians aged 15-34 years, suicide is the second leading cause of death. Women have a higher rate of hospitalization due to suicide attempt across age groups except for women 85 years and older. Similar to deaths due to suicide, hospitalizations due to suicide attempts are highest among persons aged 15-54 years.

Suicide Quick Information:

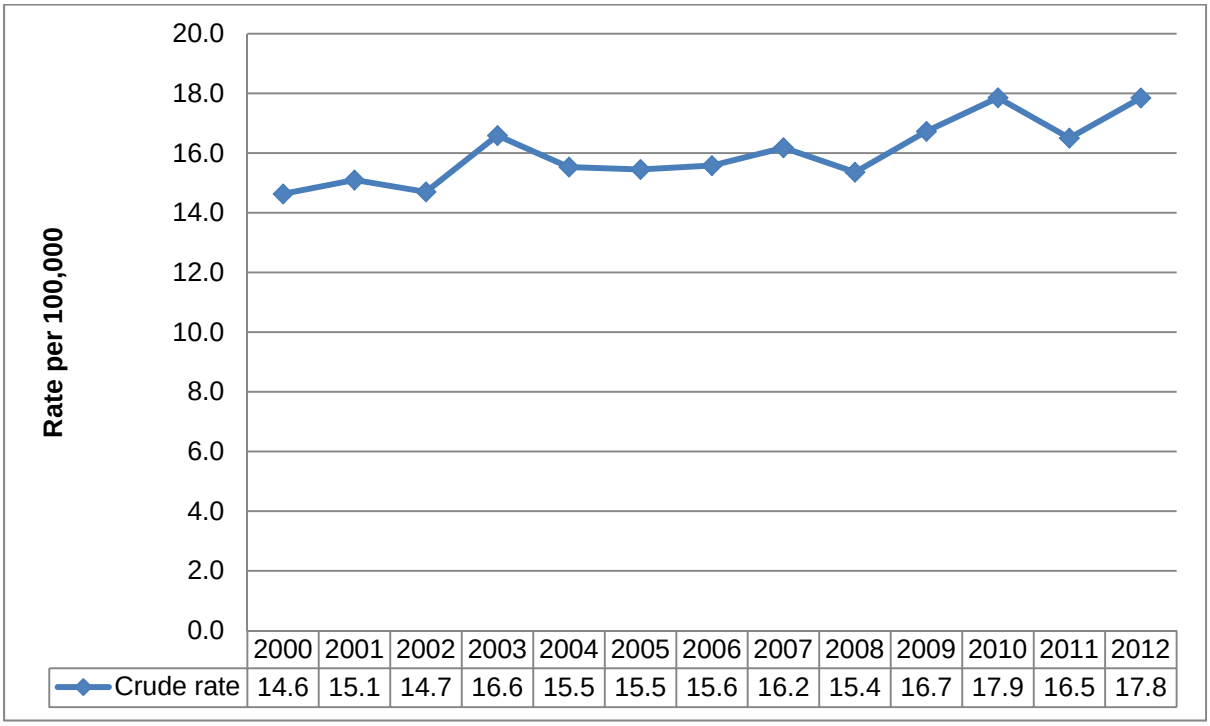
- There were 696 suicides among Oregonians in 2012*.
- Men were almost four times more likely to die by suicide than women.
- Suicide mortality risk increases with age, and is highest among older males.
- There were six times more suicide deaths than homicide deaths.
- During 2012, hospitalization due to suicide attempts resulted in $46,997,000 charges with a median charge of $12,700 per incident.

DEATHS

The rate of death due to suicide has increased 21.9% between 2000 and 2012. In 2000, the rate of suicide was 14.6 per 100,000 residents, while in 2012 the rate was 17.8.

*Note the full year of reporting was not complete and there might be additional suicides

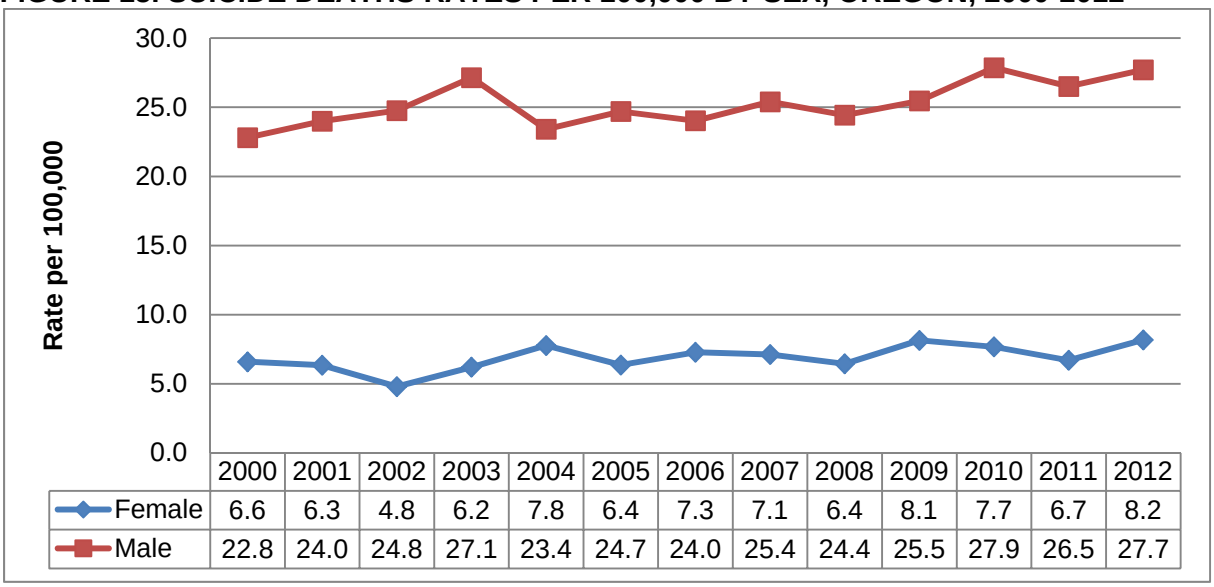
FIGURE 14. SUICIDE DEATH RATES PER 100,000, OREGON, 2000-2012



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Crude rate	14.6	15.1	14.7	16.6	15.5	15.5	15.6	16.2	15.4	16.7	17.9	16.5	17.8

Source: Oregon Center for Health Statistics

FIGURE 15. SUICIDE DEATHS RATES PER 100,000 BY SEX, OREGON, 2000-2012

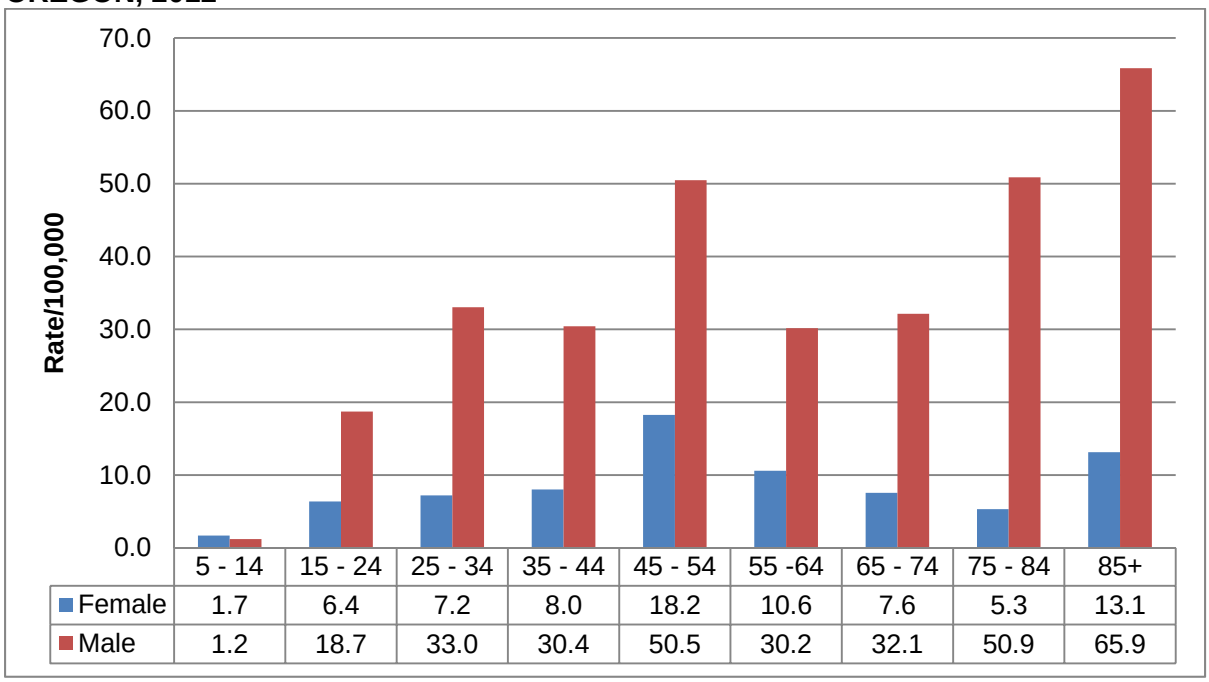


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Female	6.6	6.3	4.8	6.2	7.8	6.4	7.3	7.1	6.4	8.1	7.7	6.7	8.2
Male	22.8	24.0	24.8	27.1	23.4	24.7	24.0	25.4	24.4	25.5	27.9	26.5	27.7

Source: Oregon Center for Health Statistics

Figure 16 shows one peak for males and females ages 45-64 years. The highest rates though are shown for males ages 85 years and older.

FIGURE 16. SUICIDE DEATHS RATES PER 100,000 BY AGE GROUP IN YEARS AND SEX, OREGON, 2012

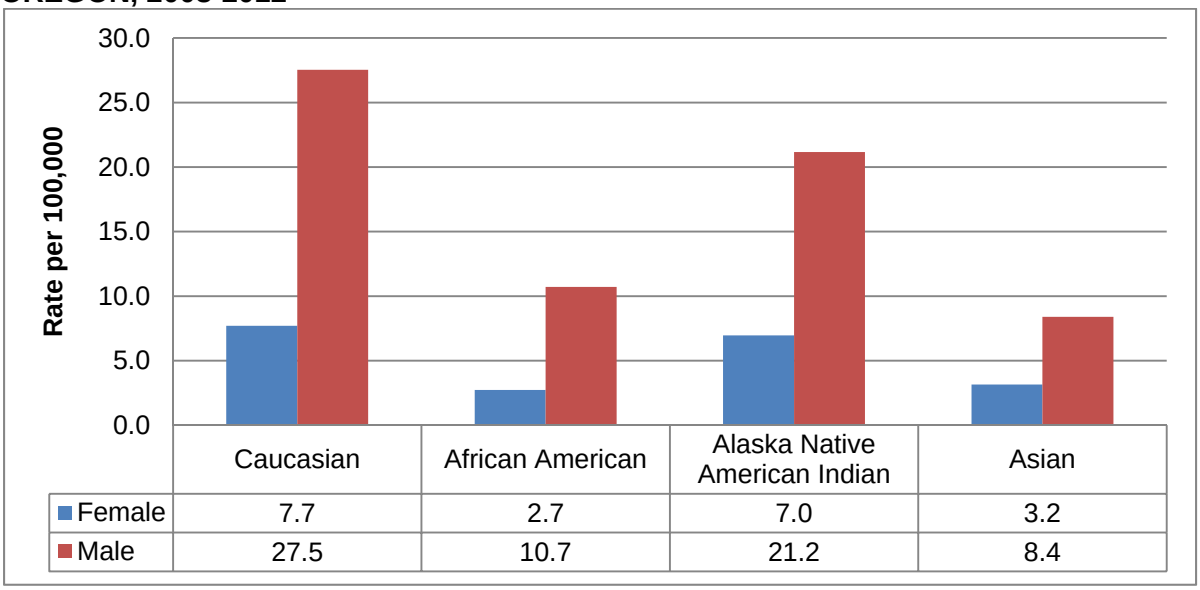


	5 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 -64	65 - 74	75 - 84	85+
Female	1.7	6.4	7.2	8.0	18.2	10.6	7.6	5.3	13.1
Male	1.2	18.7	33.0	30.4	50.5	30.2	32.1	50.9	65.9

Source: Oregon Center for Health Statistics

Both Caucasian and Alaskan Native/American Indian show the highest average suicide rates. Caucasians males have the highest rate of suicide (27.5/100,000).

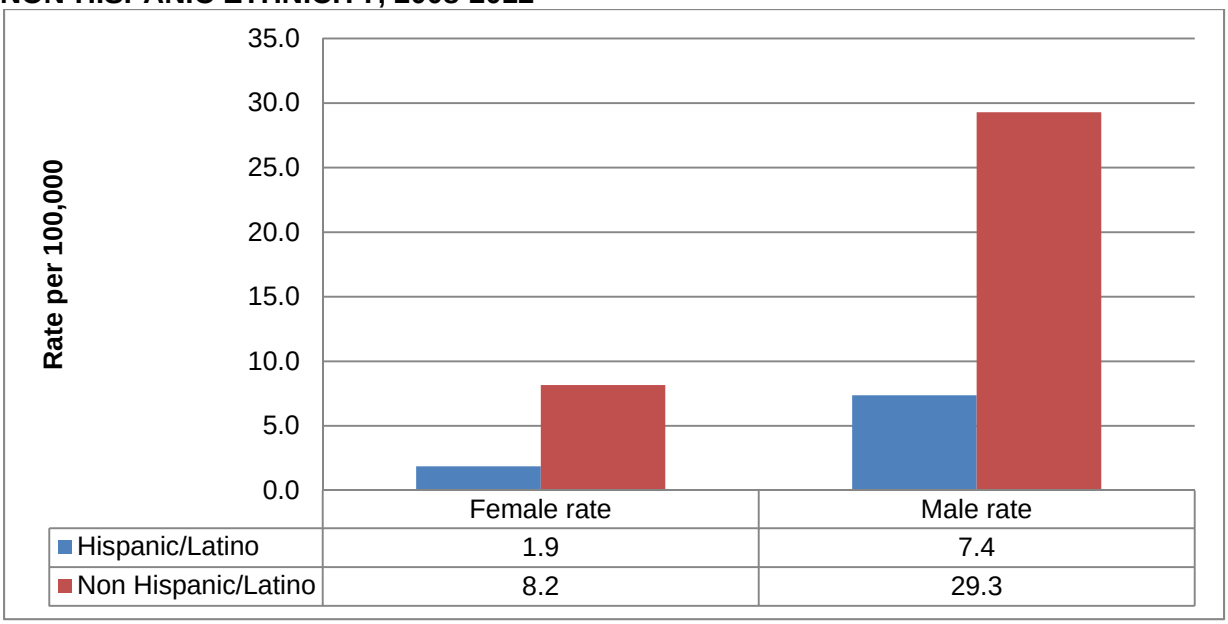
FIGURE 17. AVERAGE SUICIDE RATES RATE PER 100,000 BY SEX AND RACE, OREGON, 2008-2012



	Caucasian	African American	Alaska Native American Indian	Asian
Female	7.7	2.7	7.0	3.2
Male	27.5	10.7	21.2	8.4

The non Hispanic/Latino population for 2008-2012 have the highest rates (nearly 4 times that of the Latino/Hispanic population).

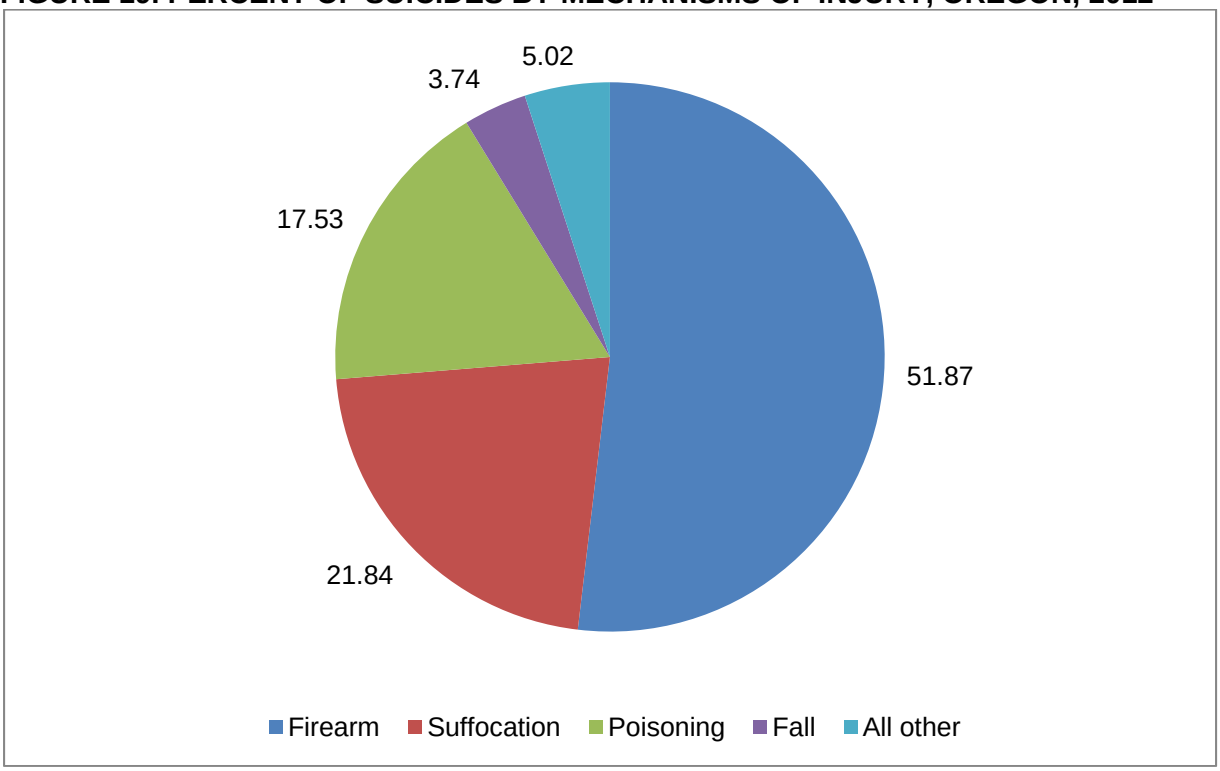
FIGURE 18. AVERAGE SUICIDE DEATH RATES PER 100,000 BY SEX AND HISPANIC AND NON-HISPANIC ETHNICITY, 2008-2012



	Female rate	Male rate
Hispanic/Latino	1.9	7.4
Non Hispanic/Latino	8.2	29.3

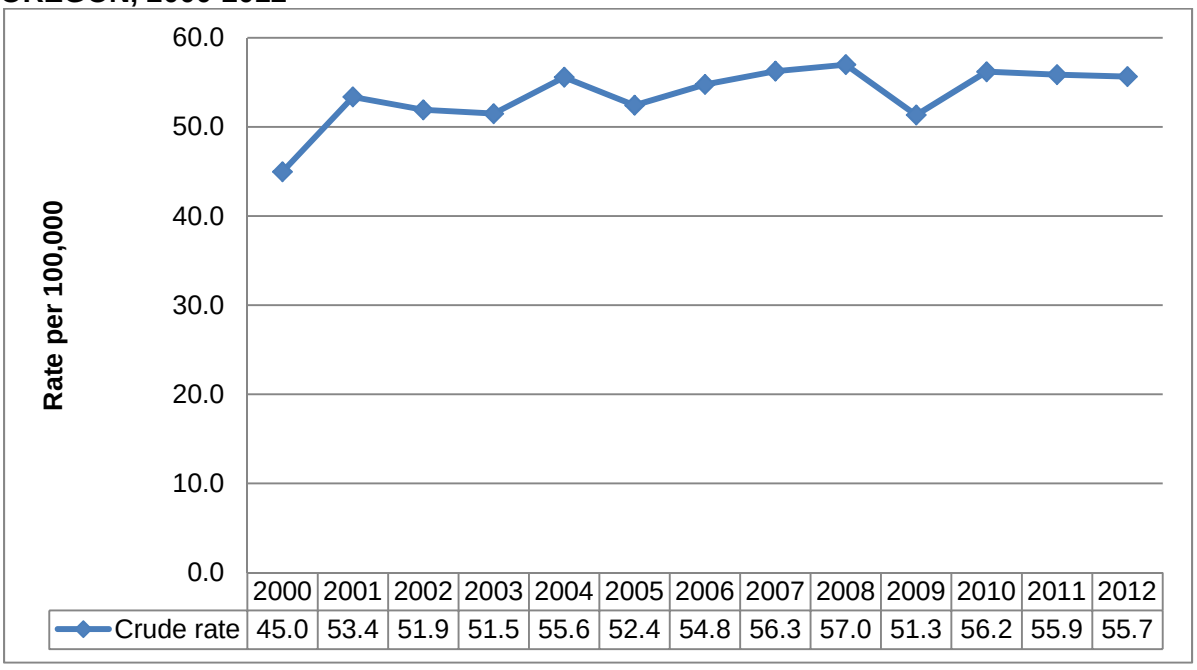
Source: Oregon Center for Health Statistics

FIGURE 19. PERCENT OF SUICIDES BY MECHANISMS OF INJURY, OREGON, 2012



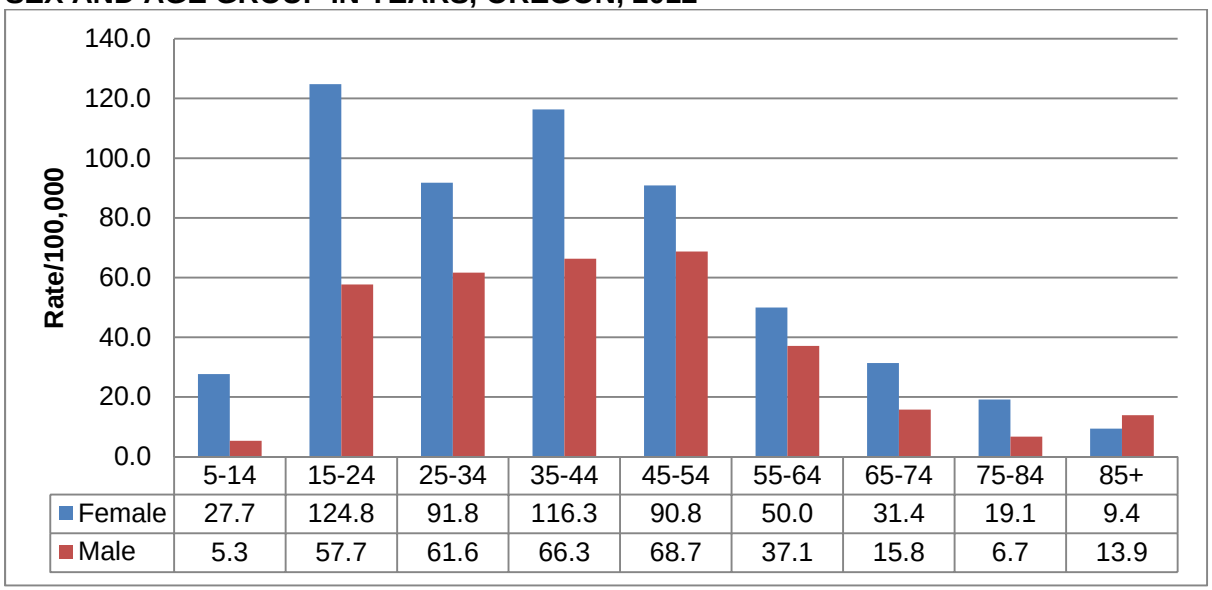
Source: Oregon Center for Health Statistics

FIGURE 20. SELF HARM/SUICIDE ATTEMPT HOSPITALIZATIONS RATE PER 100,000, OREGON, 2000-2012



Source: Oregon Hospital Discharge Index

FIGURE 21. SELF HARM/SUICIDE ATTEMPT HOSPITALIZATION RATE PER 100,000 BY SEX AND AGE GROUP IN YEARS, OREGON, 2012



	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Female	27.7	124.8	91.8	116.3	90.8	50.0	31.4	19.1	9.4
Male	5.3	57.7	61.6	66.3	68.7	37.1	15.8	6.7	13.9

Source: Oregon Hospital Discharge Index

FALLS

Fall injuries[3] are one of the leading causes of injury hospitalization in Oregon, and among the leading causes of injury-related death for older adults. More hospitalizations are due to falls than any other single injury-related cause. In 2012, 585 deaths and 8,455 hospitalizations in Oregon were due to falls. A fall injury is defined as an injury received when a person descends abruptly due to the force of gravity and strikes a surface at the same or lower level.

Falls are a major injury issue for older adults in Oregon, as the rates of both hospitalization and death due to falls are vastly greater in the older age groups, and increase with age. Falls occur more frequently with age and have more severe outcomes, including death, especially for those aged 85 years and older.

Falls- Quick Information:

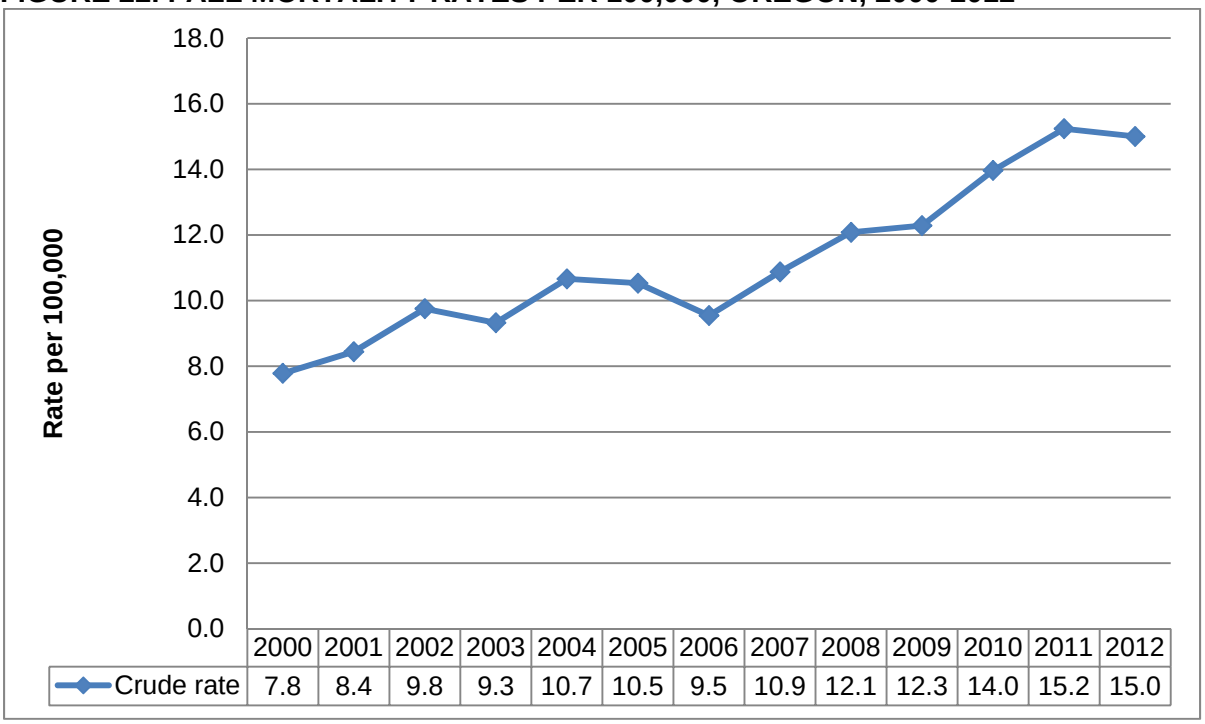
- Falls are the overall leading cause of injury hospitalization in Oregon.
- The rate of death due to falls has increased nearly two fold (92.3%) since 2000.
- The hospital charges alone for fall hospitalization (age 65+) during 2012 were $198,944,000 with a median charge of $30,467.

DEATHS

In the general population of Oregon, the fall death rate has increased between 2000 and 2012 (Figure 35). The fall death rate in 2012—15.0 per 100,000—is nearly two times higher than the 2000 rate of 7.8 per 100,000. The observed upward trend of fall deaths may be partially the result of improved reports of the underlying cause of death among older frail adults who succumb to an infectious disease after being weakened by a fall. This trend will be exacerbated as an active, independent baby-boom population ages.

[3] Only unintentional falls are described in this section.

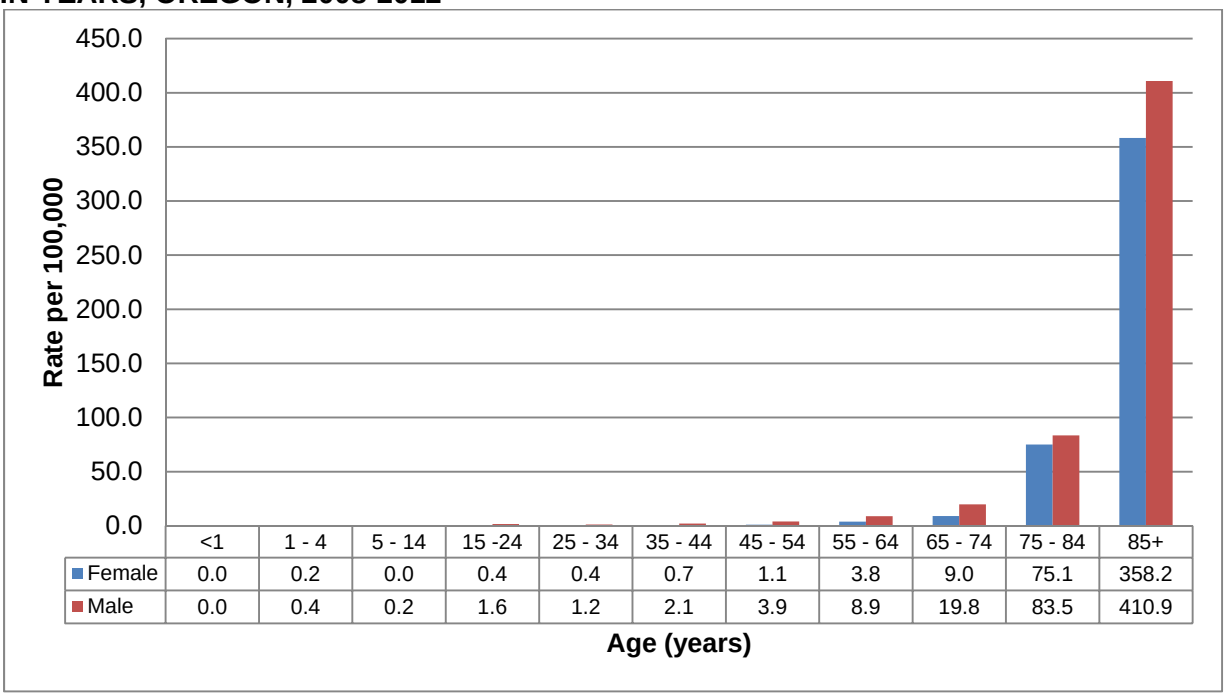
FIGURE 22. FALL MORTALITY RATES PER 100,000, OREGON, 2000-2012



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Crude rate	7.8	8.4	9.8	9.3	10.7	10.5	9.5	10.9	12.1	12.3	14.0	15.2	15.0

Source: Oregon Center for Health Statistics

FIGURE 23. AVERAGE FALL MORTALITY RATES PER 100,000 BY SEX AND AGE GROUP IN YEARS, OREGON, 2008-2012

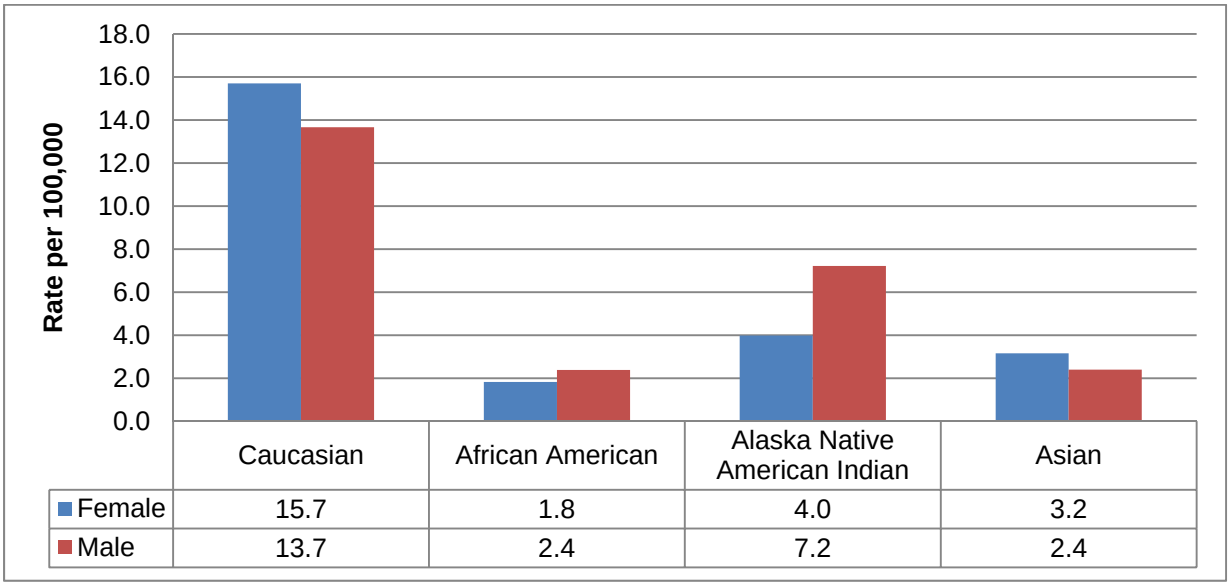


	<1	1 - 4	5 - 14	15 -24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 - 84	85+
Female	0.0	0.2	0.0	0.4	0.4	0.7	1.1	3.8	9.0	75.1	358.2
Male	0.0	0.4	0.2	1.6	1.2	2.1	3.9	8.9	19.8	83.5	410.9

Source: Oregon Center for Health Statistics

For unintentional fall related deaths, the Caucasian population leads the next highest group (Alaskan Native/American Indian) by nearly 4 times for females and 2 times for males.

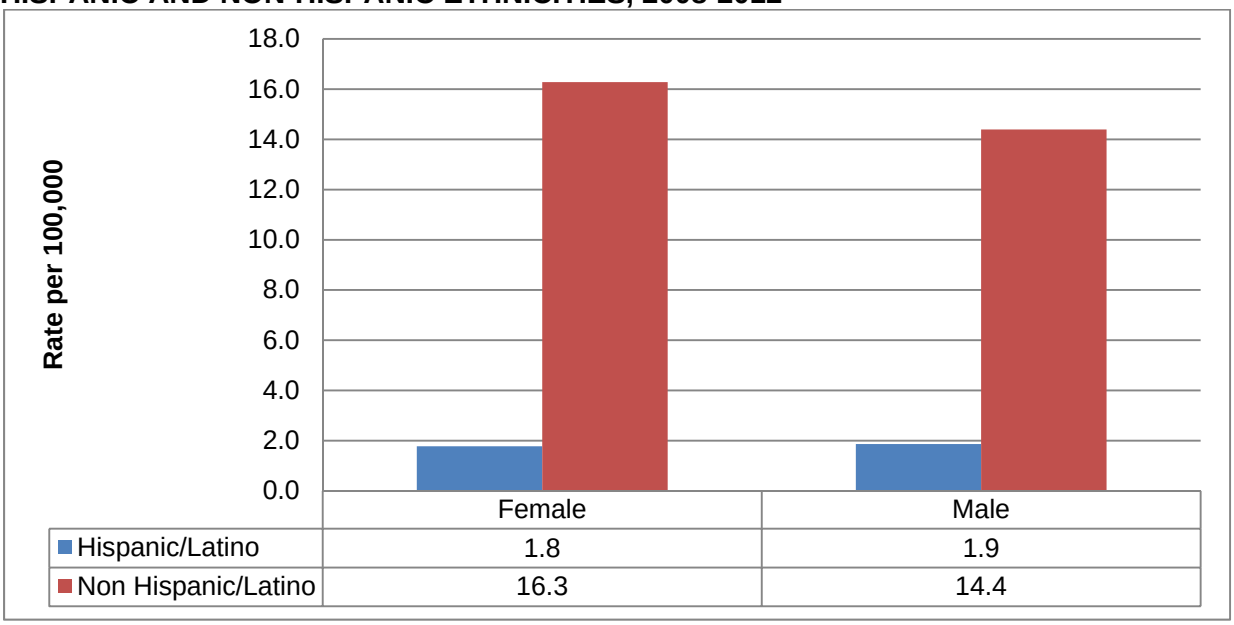
FIGURE 24. AVERAGE FALL MORTALITY RATES PER 100,000 BY SEX AND RACE, 2008-2012



	Caucasian	African American	Alaska Native American Indian	Asian
Female	15.7	1.8	4.0	3.2
Male	13.7	2.4	7.2	2.4

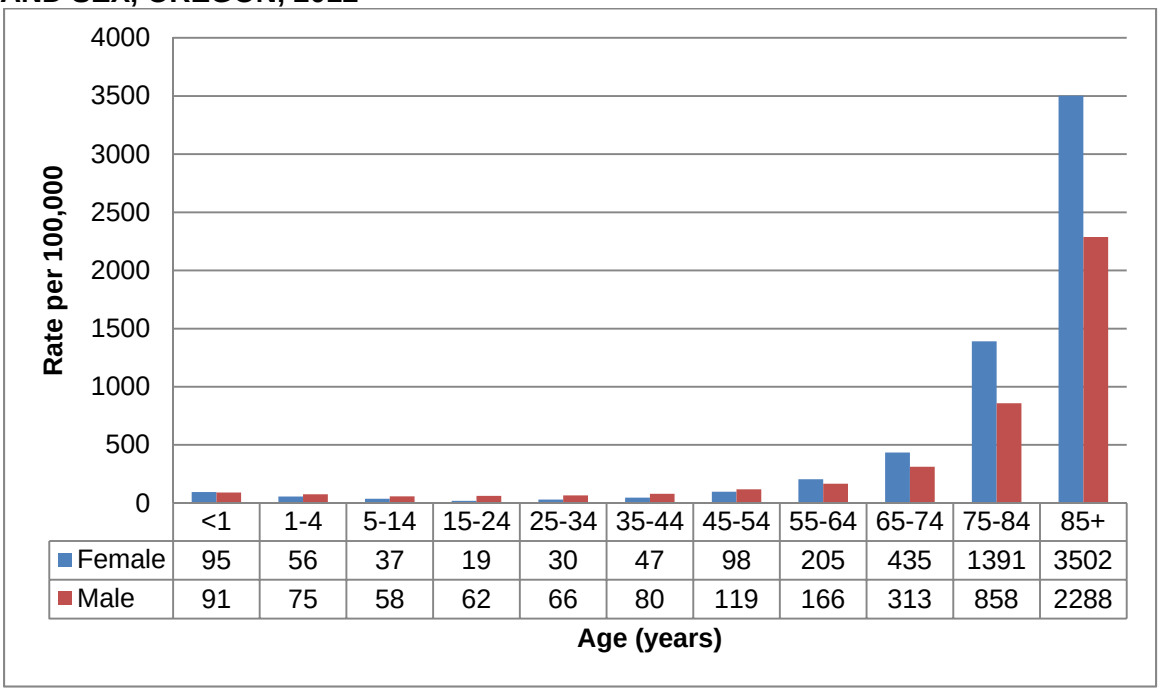
The death rates due to falls among non Hispanic/Latino population are nearly 8 times higher compared to Hispanic/Latino females and 7 times higher compared to Hispanic/Latino males.

FIGURE 25. AVERAGE FALL RELATED MORTALITY RATES PER 100,000 BY SEX AND HISPANIC AND NON-HISPANIC ETHNICITIES, 2008-2012



	Female	Male
Hispanic/Latino	1.8	1.9
Non Hispanic/Latino	16.3	14.4

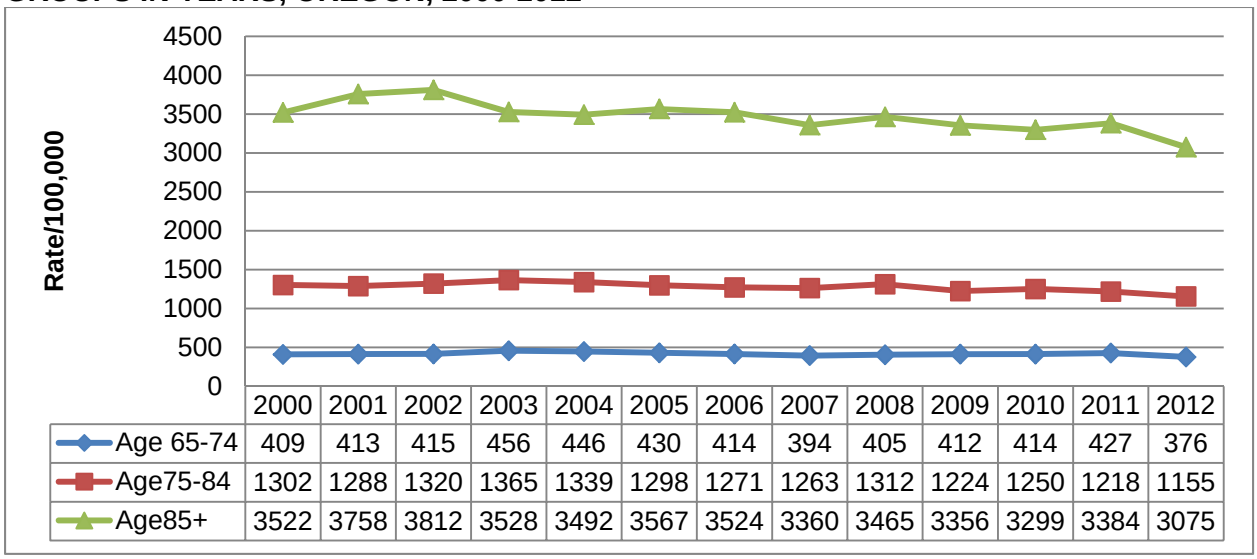
FIGURE 26. FALL HOSPITALIZATION RATES PER 100,000 BY AGE GROUP IN YEARS AND SEX, OREGON, 2012



	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Female	95	56	37	19	30	47	98	205	435	1391	3502
Male	91	75	58	62	66	80	119	166	313	858	2288

Source: Oregon Hospital Discharge Index

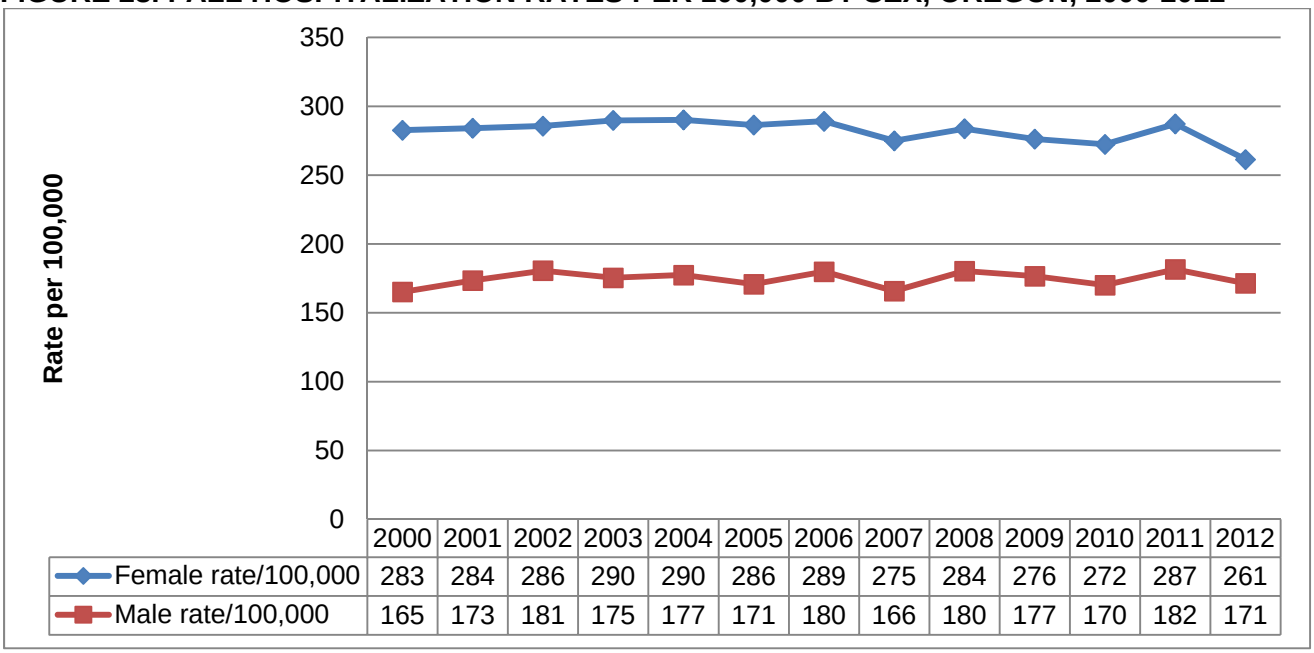
FIGURE 27. FALL HOSPITALIZATION RATES PER 100,000 IN THREE OLDER ADULT AGE GROUPS IN YEARS, OREGON, 2000-2012



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Age 65-74	409	413	415	456	446	430	414	394	405	412	414	427	376
Age75-84	1302	1288	1320	1365	1339	1298	1271	1263	1312	1224	1250	1218	1155
Age85+	3522	3758	3812	3528	3492	3567	3524	3360	3465	3356	3299	3384	3075

Source: Oregon Hospital Discharge Index

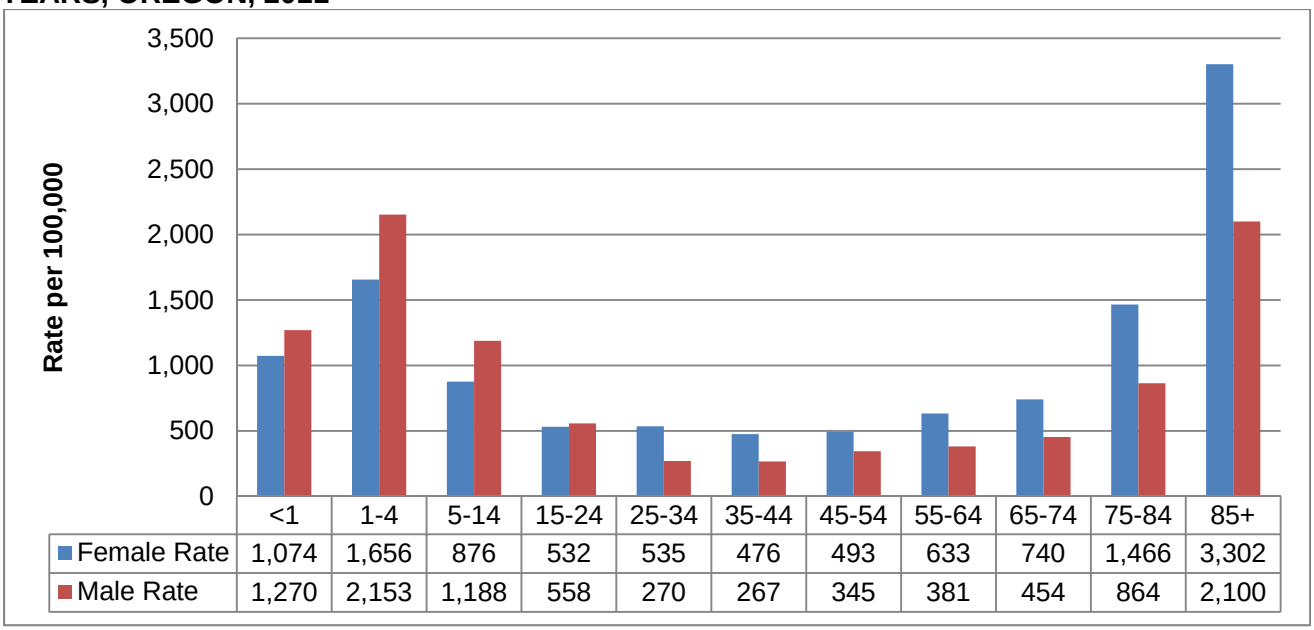
FIGURE 28. FALL HOSPITALIZATION RATES PER 100,000 BY SEX, OREGON, 2000-2012



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Female rate/100,000	283	284	286	290	290	286	289	275	284	276	272	287	261
Male rate/100,000	165	173	181	175	177	171	180	166	180	177	170	182	171

Source: Oregon Hospital Discharge Index

FIGURE 29 FALL HOSPITALIZATION RATES PER 100,000 BY SEX AND AGE GROUP IN YEARS, OREGON, 2011



	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Female Rate	1,074	1,656	876	532	535	476	493	633	740	1,466	3,302
Male Rate	1,270	2,153	1,188	558	270	267	345	381	454	864	2,100

UNINTENTIONAL and UNDETERMINED POISONING

Unintentional and undetermined poisonings accounted for 396 deaths in 2012 with a rate of 10.2 per 100,000. There were 1,657 hospitalizations in 2012 with a rate of 42.5 per 100,000. In 2007, the number of unintentional and undetermined poisonings among persons 25-64 years old surpassed the number of deaths attributable to motor vehicle traffic – overall poisoning deaths continue to outnumber motor vehicle traffic deaths in 2012.

Unintentional and Undetermined Intent Poisoning- Quick Information:

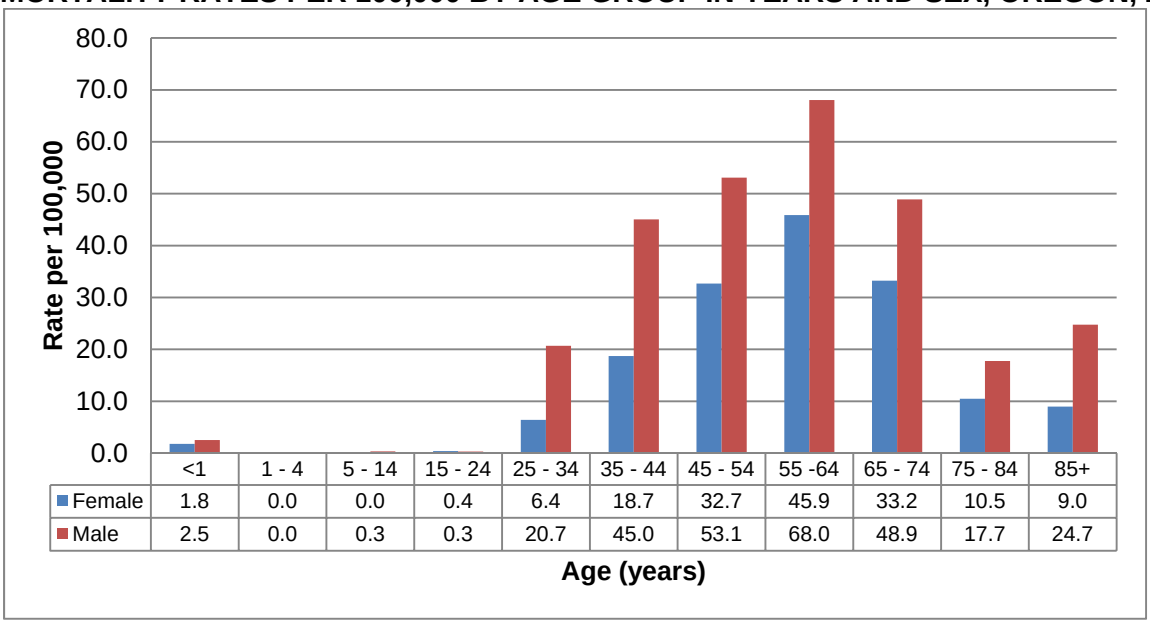
- There is a consistent and long term unintentional and undetermined intent poisoning increase from 2000 to 2012.
- The rate of poisoning hospitalization increased 91.4% between 2000 and 2012 from 22.2 per 100,000 in 2000 to 42.5 per 100,000 in 2012.
- Overall unintentional poisoning deaths surpassed motor vehicle crash deaths in 2009.
- Males have higher rates of death and females higher rates of hospitalization.
- Prescription drugs, primarily opioids, are the leading cause of hospitalizations and overdose related death.
- The poisoning mortality rate is highest among those 45-54 years of age.
- The hospital charges in 2012 for unintentional poisoning were $31,050,000 with a median charge of $12,932.

Unintentional and undetermined poisonings involve a variety of substances, although the single greatest cause of unintentional poisoning deaths both in Oregon and nationally are drugs/medicines.[4] However, unintentional and undetermined poisoning includes non-opioid analgesics, psychotherapeutic drugs, narcotics and hallucinogens, drugs acting on the central nervous system, alcohol, organic solvents and halogenated hydrocarbons, carbon monoxide and other gases, pesticides, and other or unspecified chemicals or drugs. Although the rate of

[4] Centers for Disease Control and Prevention. Unintentional Poisoning Deaths—United States, 1999-2004. MMWR, 2007; 56(05): 93-96.

poisoning due to chemical, gases and various solids has changed little over recent years, poisoning due to prescription drug has increased steadily.

FIGURE 30. AVERAGE UNINTENTIONAL AND UNDETERMINED INTENT POISONING MORTALITY RATES PER 100,000 BY AGE GROUP IN YEARS AND SEX, OREGON, 2012

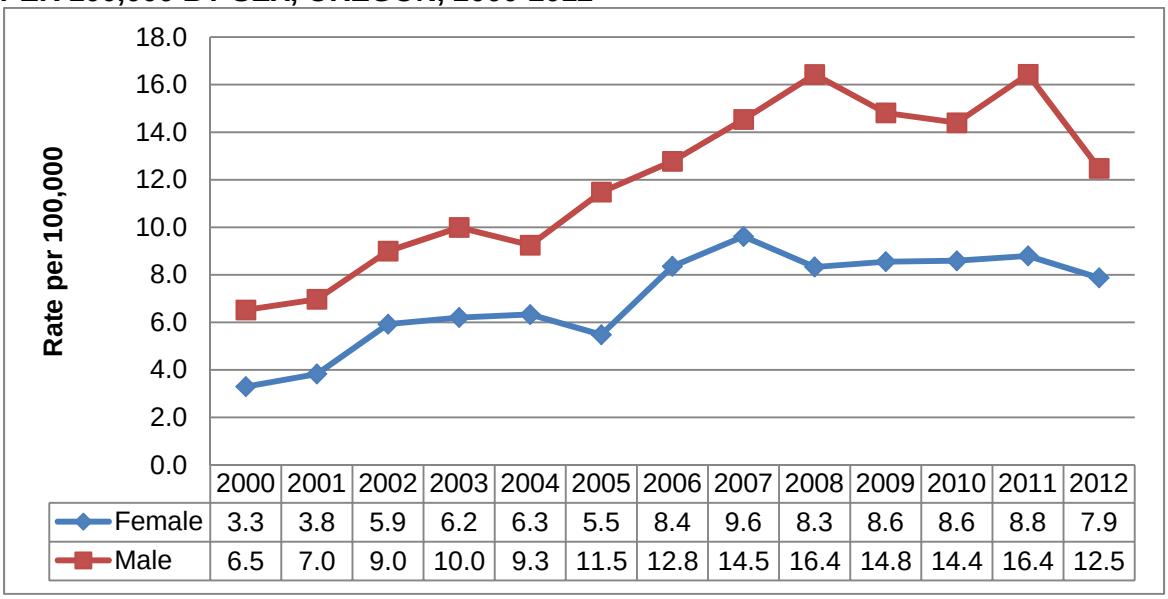


	<1	1 - 4	5 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 -64	65 - 74	75 - 84	85+
Female	1.8	0.0	0.0	0.4	6.4	18.7	32.7	45.9	33.2	10.5	9.0
Male	2.5	0.0	0.3	0.3	20.7	45.0	53.1	68.0	48.9	17.7	24.7

Source: Oregon Center for Health Statistics

Mortality due to unintentional poisoning has increased substantially in Oregon between 2000 and 2012 (Figure 31 below).

FIGURE 31. UNINTENTIONAL AND UNDETERMINED INTENT POISONING DEATH RATES PER 100,000 BY SEX, OREGON, 2000-2012

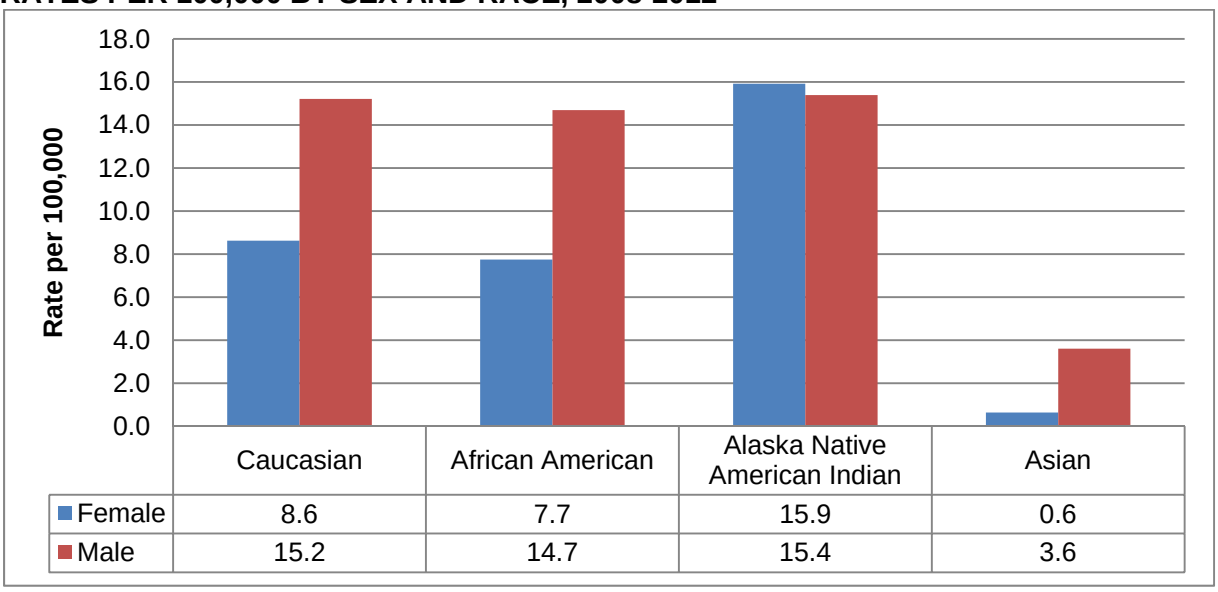


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Female	3.3	3.8	5.9	6.2	6.3	5.5	8.4	9.6	8.3	8.6	8.6	8.8	7.9
Male	6.5	7.0	9.0	10.0	9.3	11.5	12.8	14.5	16.4	14.8	14.4	16.4	12.5

Source: Oregon Center for Health Statistics

Figure 32 shows nearly similar rates across race groups for males except for Asian males that are less than 8 times the rate (African American). There is a strikingly high rate of poisoning mortality among Alaska Native/American Indian females compared to females of other race categories.

FIGURE 32. AVERAGE UNINTENTIONAL AND UNDETERMINED INTENT MORTALITY RATES PER 100,000 BY SEX AND RACE, 2008-2012

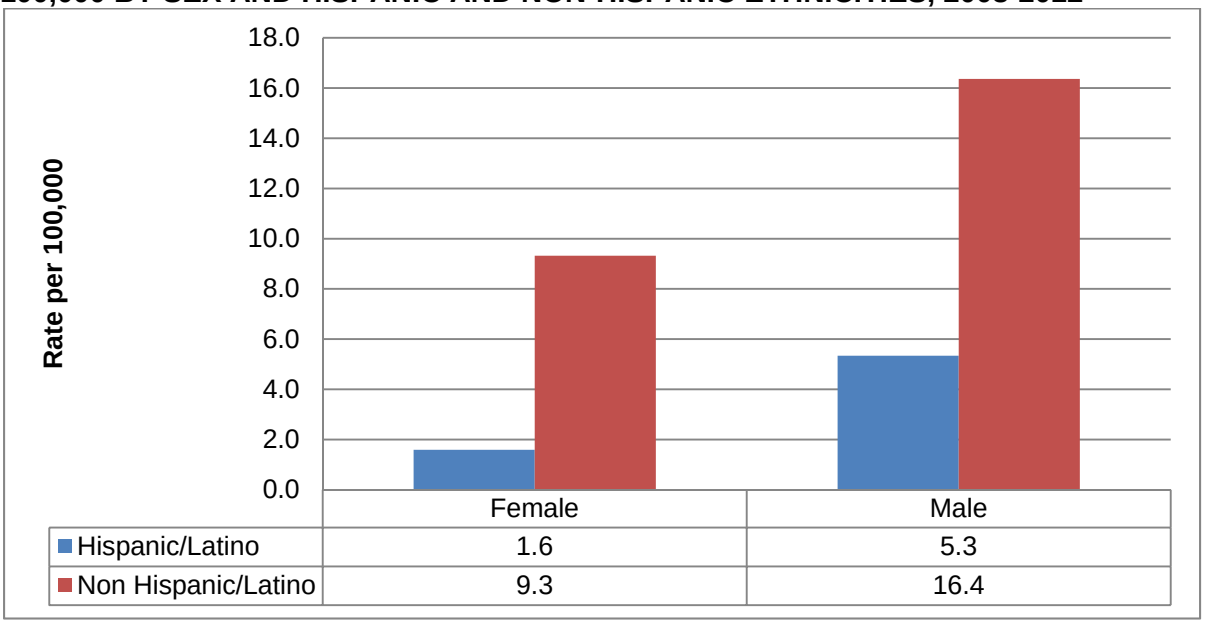


	Caucasian	African American	Alaska Native American Indian	Asian
Female	8.6	7.7	15.9	0.6
Male	15.2	14.7	15.4	3.6

Source: Oregon Center for Health Statistics

The death rate among non-Hispanic/Latinos was nearly six times higher among females and over three times higher among males compared to female and male Latino/Hispanics.

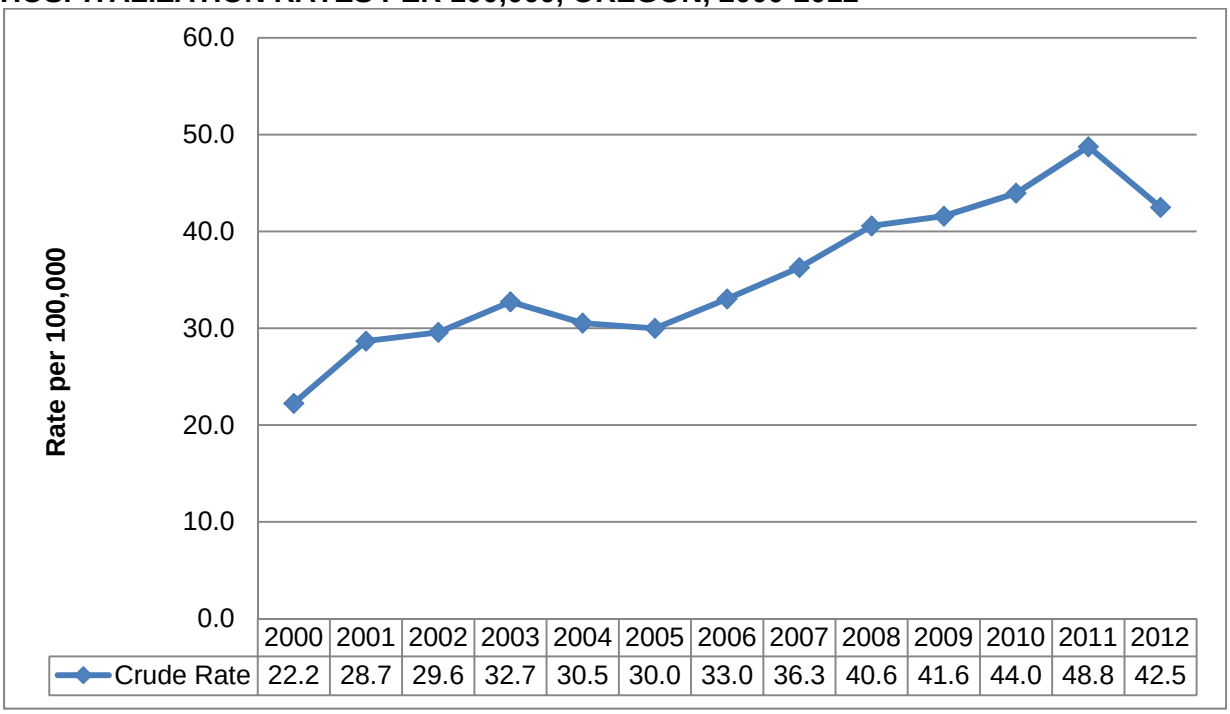
FIGURE 33. AVERAGE UNINTENTIONAL AND UNDETERMINED MORTALITY RATES PER 100,000 BY SEX AND HISPANIC AND NON-HISPANIC ETHNICITIES, 2008-2012



	Female	Male
Hispanic/Latino	1.6	5.3
Non Hispanic/Latino	9.3	16.4

Source: Oregon Center for Health Statistics

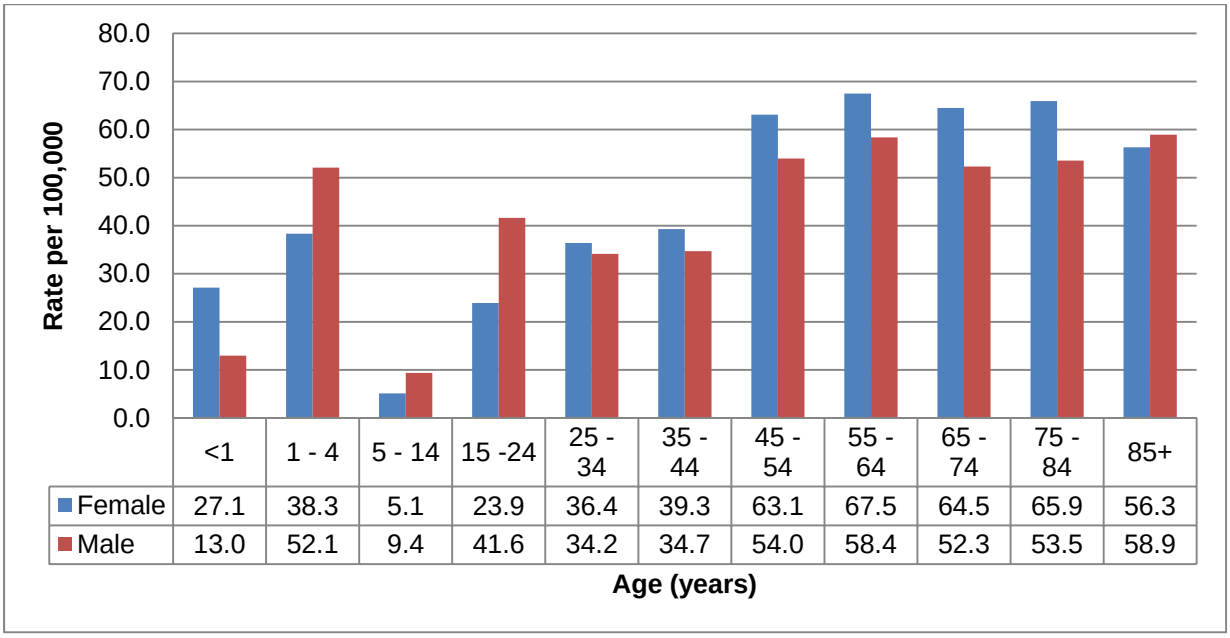
FIGURE 34. UNINTENTIONAL AND UNDETERMINED INTENT POISONING HOSPITALIZATION RATES PER 100,000, OREGON, 2000-2012



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Crude Rate	22.2	28.7	29.6	32.7	30.5	30.0	33.0	36.3	40.6	41.6	44.0	48.8	42.5

Source: Oregon Hospital Discharge Index

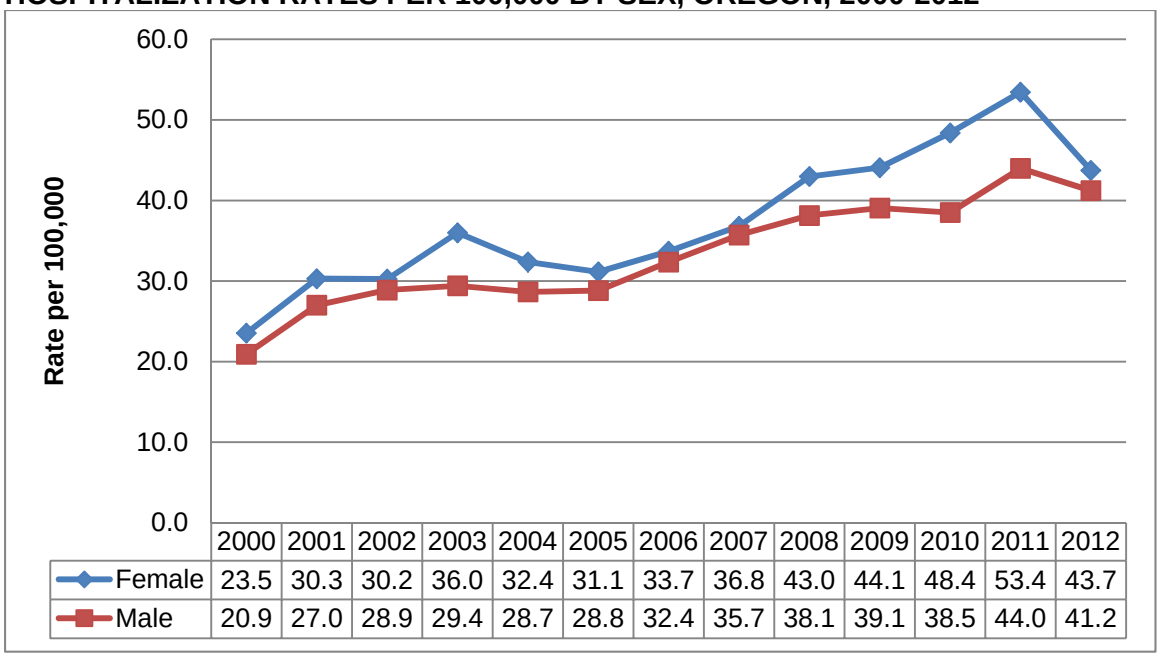
FIGURE 35. UNINTENTIONAL AND UNDETERMINED INTENT POISONING HOSPITALIZATION RATES PER 100,000 BY AGE GROUP IN YEARS AND SEX, OREGON, 2012



	<1	1 - 4	5 - 14	15 -24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 - 84	85+
Female	27.1	38.3	5.1	23.9	36.4	39.3	63.1	67.5	64.5	65.9	56.3
Male	13.0	52.1	9.4	41.6	34.2	34.7	54.0	58.4	52.3	53.5	58.9

Source: Oregon Hospital Discharge Index

FIGURE 36. UNINTENTIONAL AND UNDETERMINED INTENT POISONING HOSPITALIZATION RATES PER 100,000 BY SEX, OREGON, 2000-2012

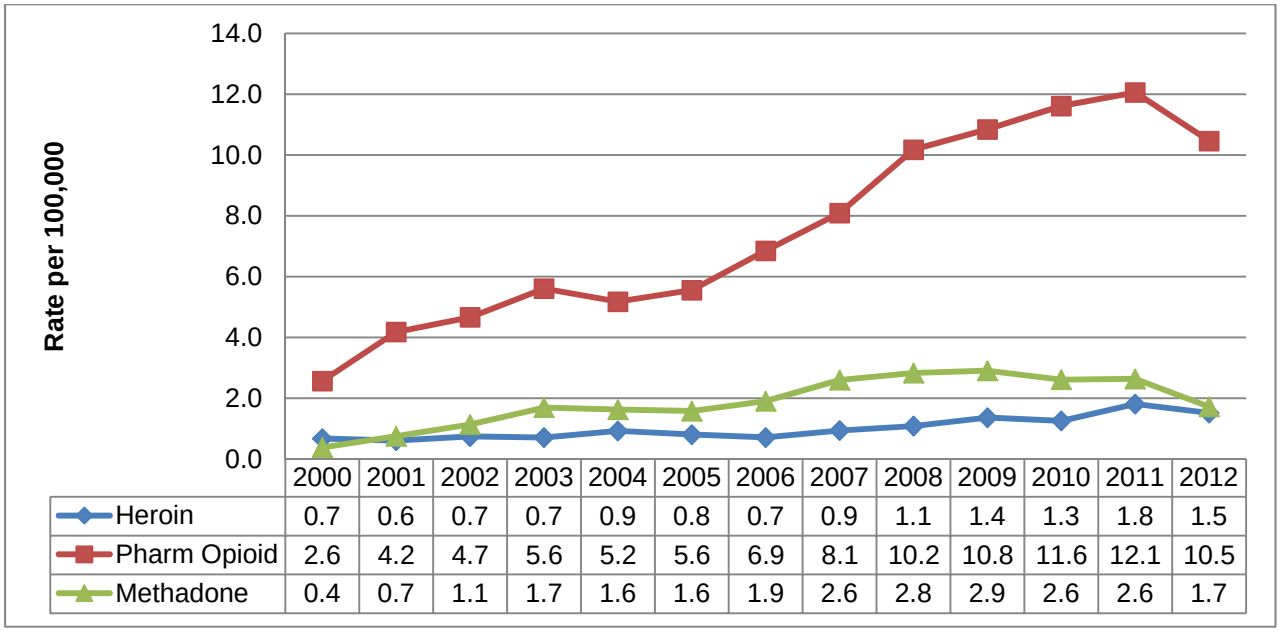


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Female	23.5	30.3	30.2	36.0	32.4	31.1	33.7	36.8	43.0	44.1	48.4	53.4	43.7
Male	20.9	27.0	28.9	29.4	28.7	28.8	32.4	35.7	38.1	39.1	38.5	44.0	41.2

Source: Oregon Hospital Discharge Index

Figure 37 shows significant increases in prescription opioid related hospitalizations between 2000 and 2012. The rate of hospitalization for pharmaceutical opioid overdose climbed from 2.6 per 100,000 to 10.5 per 100,000 between 2000 and 2012.

FIGURE 37. UNINTENTIONAL AND UNDETERMINED INTENT OVERDOSE HOSPITALIZATION RATES PER 100,000 BY SELECTED PRIMARY DRUG, OREGON, 2000-2012



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Heroin	0.7	0.6	0.7	0.7	0.9	0.8	0.7	0.9	1.1	1.4	1.3	1.8	1.5
Pharm Opioid	2.6	4.2	4.7	5.6	5.2	5.6	6.9	8.1	10.2	10.8	11.6	12.1	10.5
Methadone	0.4	0.7	1.1	1.7	1.6	1.6	1.9	2.6	2.8	2.9	2.6	2.6	1.7

TABLE 6. NUMBER OF UNINTENTIONAL AND UNDETERMINED INTENT DRUG OVERDOSE DEATHS AND HOSPITALIZATIONS BY DRUG TYPE, OREGON, 2012

Drug Type	Deaths*	Hospital
Pharmaceutical opioids	164	408
Alcohol or ethanol	177	60
Heroin	115	59
Antiepileptic, sedative-hypnotic, ant-Parkinsonism, antidepressant, and other psychotropic drugs	100	545
Methadone	65	67
Psychostimulants with abuse potential	51	86
Benzodiazepines	23	149
Other unspecified narcotics	15	1618
Other unspecified drugs	75	387

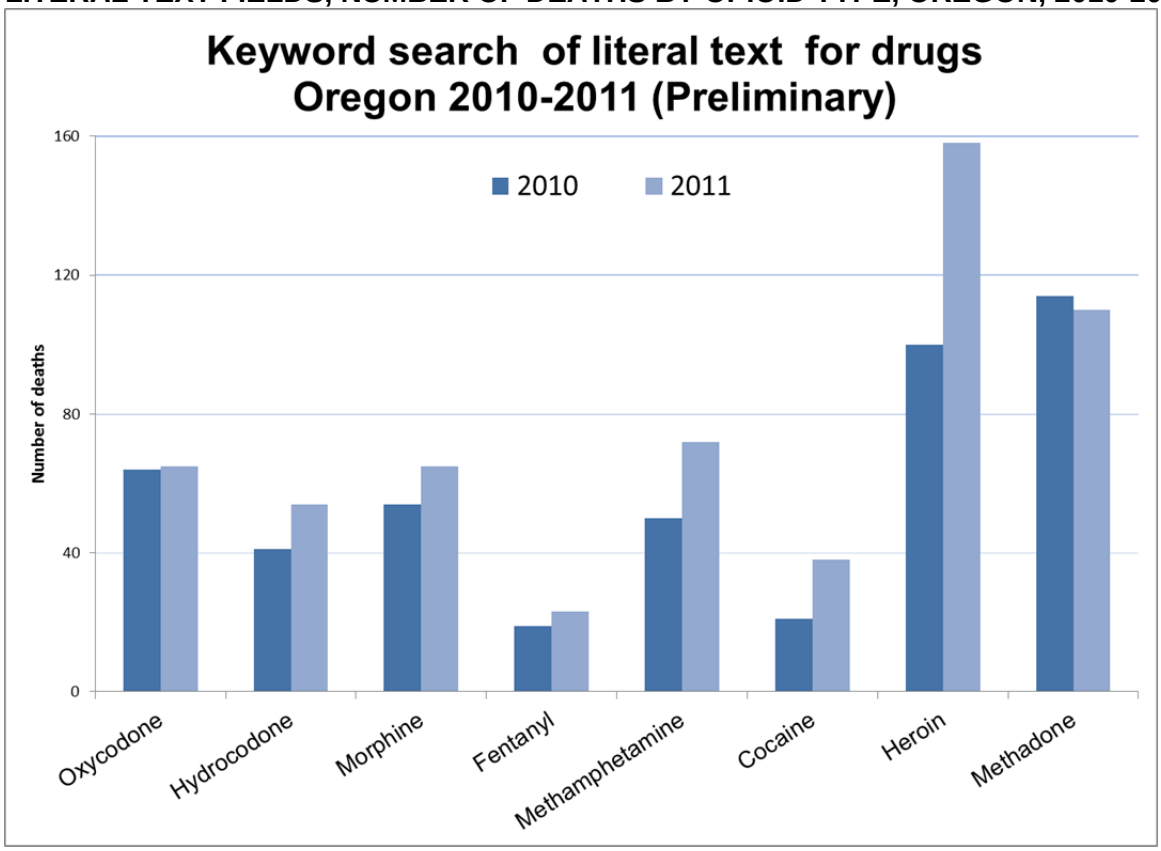
* Not a sum, a person can die with multiple drugs contributing to the death

Death codes using up to 20 underlying/contributing cause(s)

Hospitalization primary diagnosis and/or E-code

Additional review using text mining provides a greater level of specificity related to overdose deaths for 2010 and 2011.

FIGURE 38. PRESCRIPTION OPOIDS AND OTHER OPIOID RELATED MORTALITY IN THE LITERAL TEXT FIELDS, NUMBER OF DEATHS BY OPIOID TYPE, OREGON, 2010-2011.



MOTOR VEHICLE TRAFFIC

In 2012, 302 Oregonians were killed in motor vehicle traffic incidents with a rate of 7.7 per 100,000, and 1,907 Oregonians were hospitalized with a rate of 48.9 per 100,000.

The major categories of motor vehicle traffic injury (MVT) include vehicle occupants, motorcyclists, pedal cyclists, and pedestrians, depending specifically on the decedent's or patient's involvement.

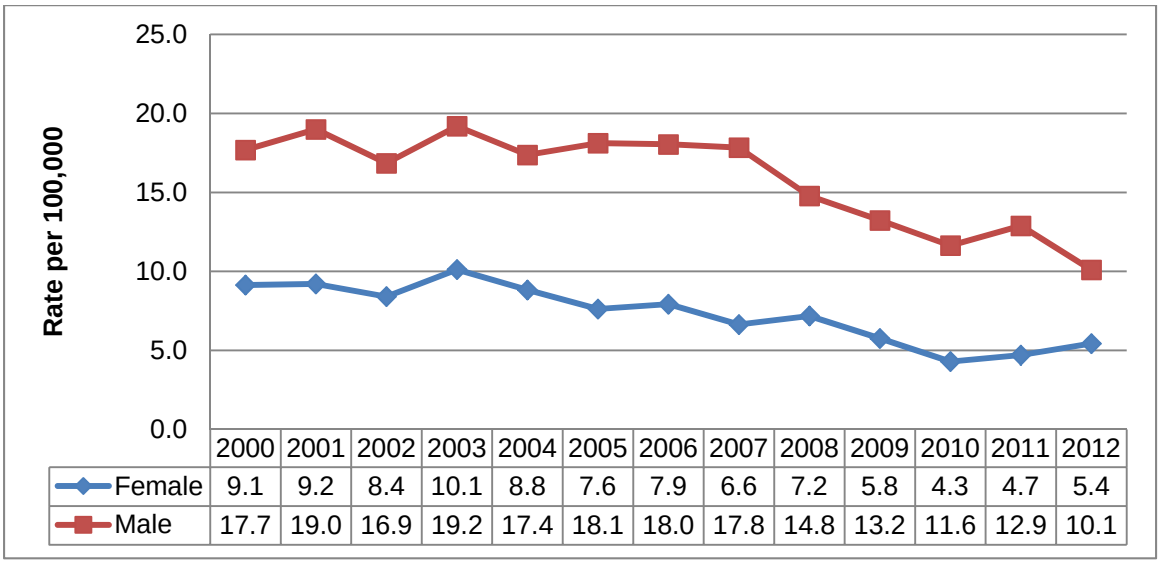
MVT QUICK INFORMATION

- Motor vehicle traffic death rates have 2 peaks, one among ages 15-34 years and another at ages 55 years and older.
- Motor vehicle traffic hospitalization rates are highest for ages 15-24 years followed closely by ages 65 years and older.
- The rate of motor vehicle traffic deaths and hospitalizations have declined dramatically since 2000, but motorcyclist, cyclist and pedestrian rates remained unchanged or were slightly increased.
- Bicycle related hospitalizations (motor vehicle and non motor vehicle related) were the 5th leading cause of hospitalization in 2012.
- Motor vehicle traffic hospitalization charges were over $126,890,000 in 2012 with a median cost at $36,207.

DEATHS

The motor vehicle traffic death rate in Oregon has decreased steadily since 2000 (Figure 39 and 40).

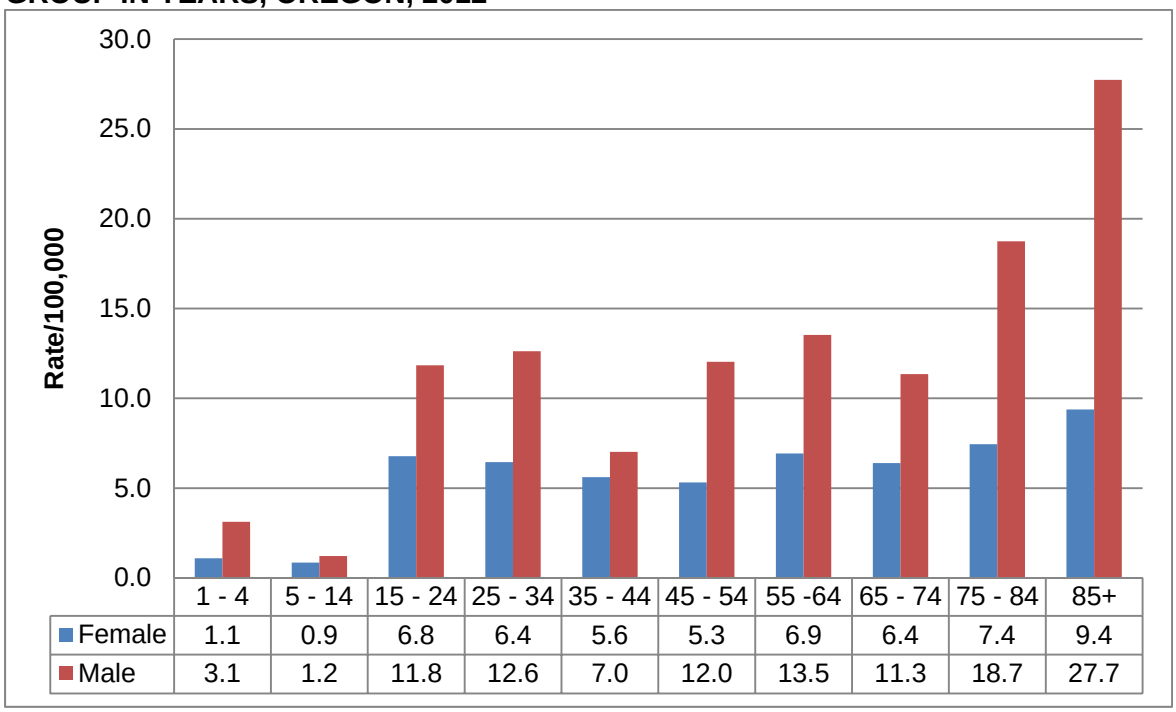
FIGURE 39. MOTOR VEHICLE TRAFFIC DEATH RATES PER 100,000 BY SEX, OREGON, 2000-2012



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Female	9.1	9.2	8.4	10.1	8.8	7.6	7.9	6.6	7.2	5.8	4.3	4.7	5.4
Male	17.7	19.0	16.9	19.2	17.4	18.1	18.0	17.8	14.8	13.2	11.6	12.9	10.1

Source: Oregon Center for Health Statistics

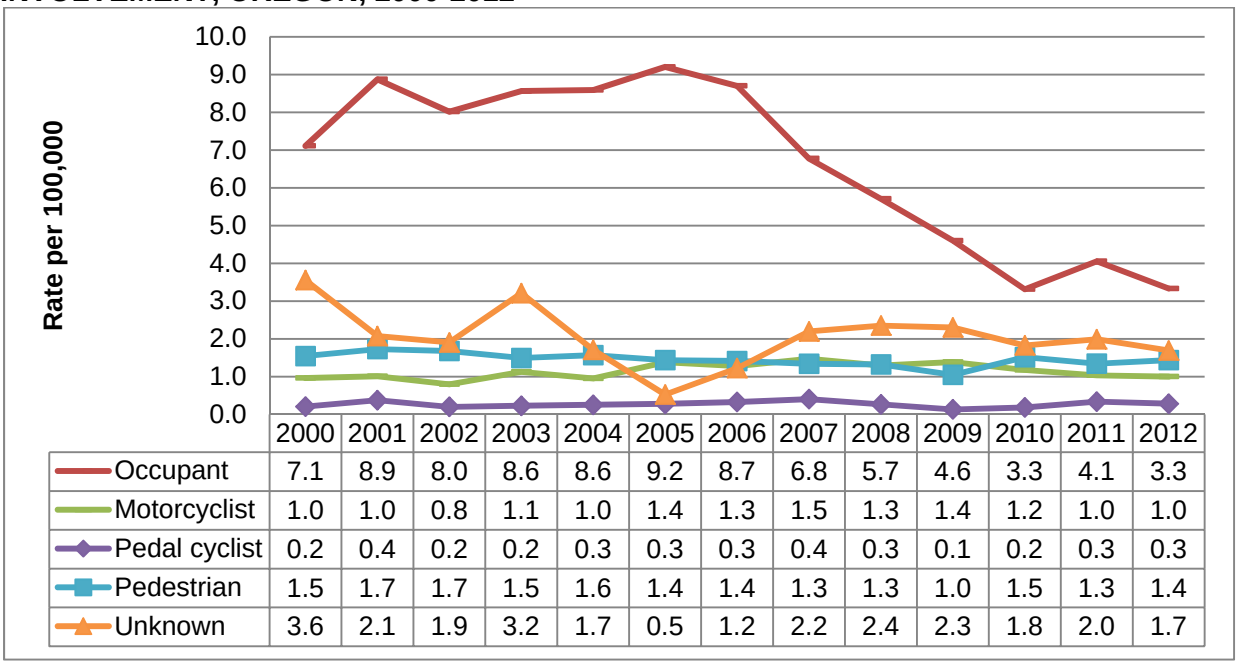
FIGURE 40. MOTOR VEHICLE TRAFFIC DEATH RATES PER 100,000 BY SEX AND AGE GROUP IN YEARS, OREGON, 2012



	1 - 4	5 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 -64	65 - 74	75 - 84	85+
Female	1.1	0.9	6.8	6.4	5.6	5.3	6.9	6.4	7.4	9.4
Male	3.1	1.2	11.8	12.6	7.0	12.0	13.5	11.3	18.7	27.7

Although MV occupant mortality rates have significantly declined since 2000, motorcyle, pedal cyclist related MV crashes and pedestrian MV crashes remained unchanged.

FIGURE 41. MOTOR VEHICLE TRAFFIC DEATH RATES PER 100,000 BY CATEGORY OF INVOLVEMENT, OREGON, 2000-2012

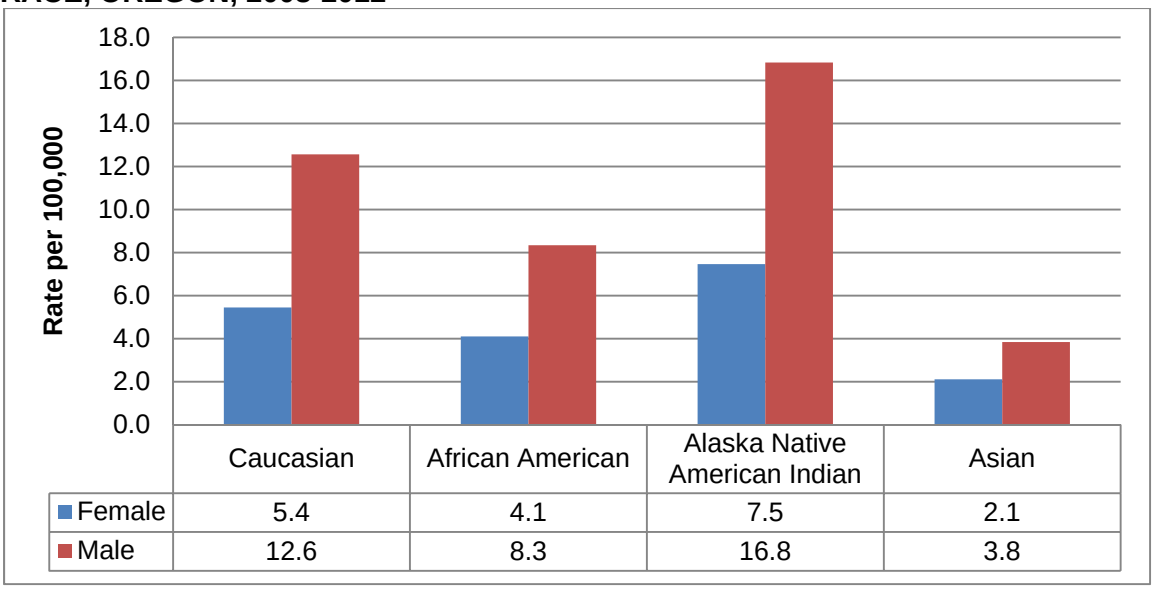


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Occupant	7.1	8.9	8.0	8.6	8.6	9.2	8.7	6.8	5.7	4.6	3.3	4.1	3.3
Motorcyclist	1.0	1.0	0.8	1.1	1.0	1.4	1.3	1.5	1.3	1.4	1.2	1.0	1.0
Pedal cyclist	0.2	0.4	0.2	0.2	0.3	0.3	0.3	0.4	0.3	0.1	0.2	0.3	0.3
Pedestrian	1.5	1.7	1.7	1.5	1.6	1.4	1.4	1.3	1.3	1.0	1.5	1.3	1.4
Unknown	3.6	2.1	1.9	3.2	1.7	0.5	1.2	2.2	2.4	2.3	1.8	2.0	1.7

Source: Oregon Center for Health Statistics

Figure 42 shows males overall have higher rates of motor vehicle crash fatalities.

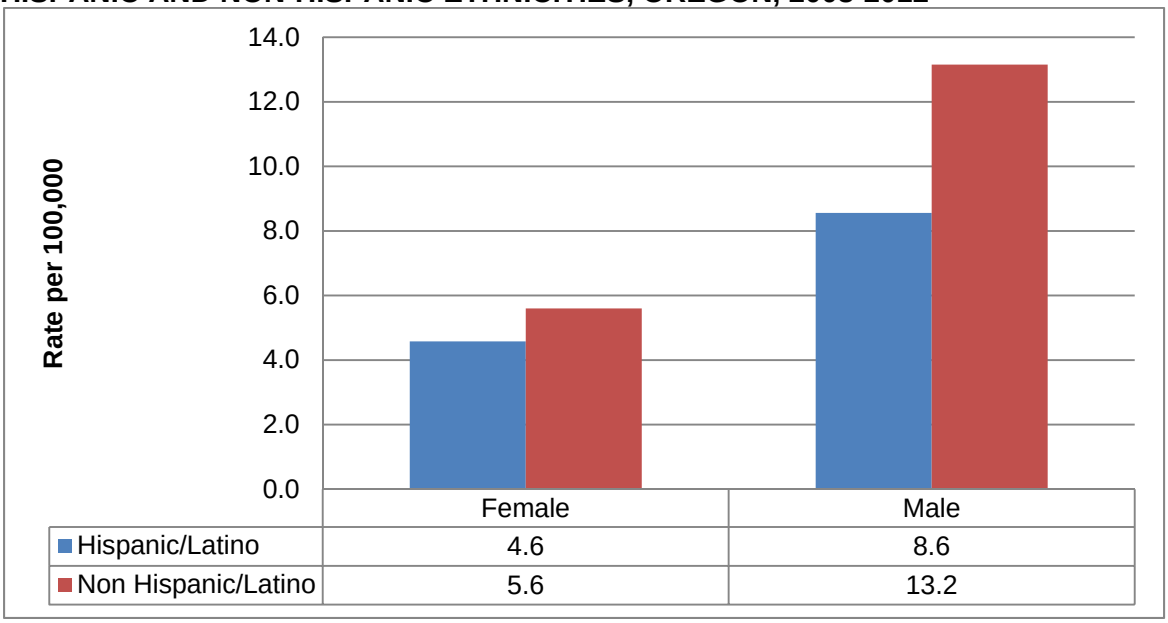
FIGURE 42. AVERAGE MOTOR VEHICLE MORTALITY RATES PER 100,000 BY SEX AND RACE, OREGON, 2008-2012



	Caucasian	African American	Alaska Native American Indian	Asian
Female	5.4	4.1	7.5	2.1
Male	12.6	8.3	16.8	3.8

Figure 43 shows the higher mortality rates for the non-Hispanic/Latino population.

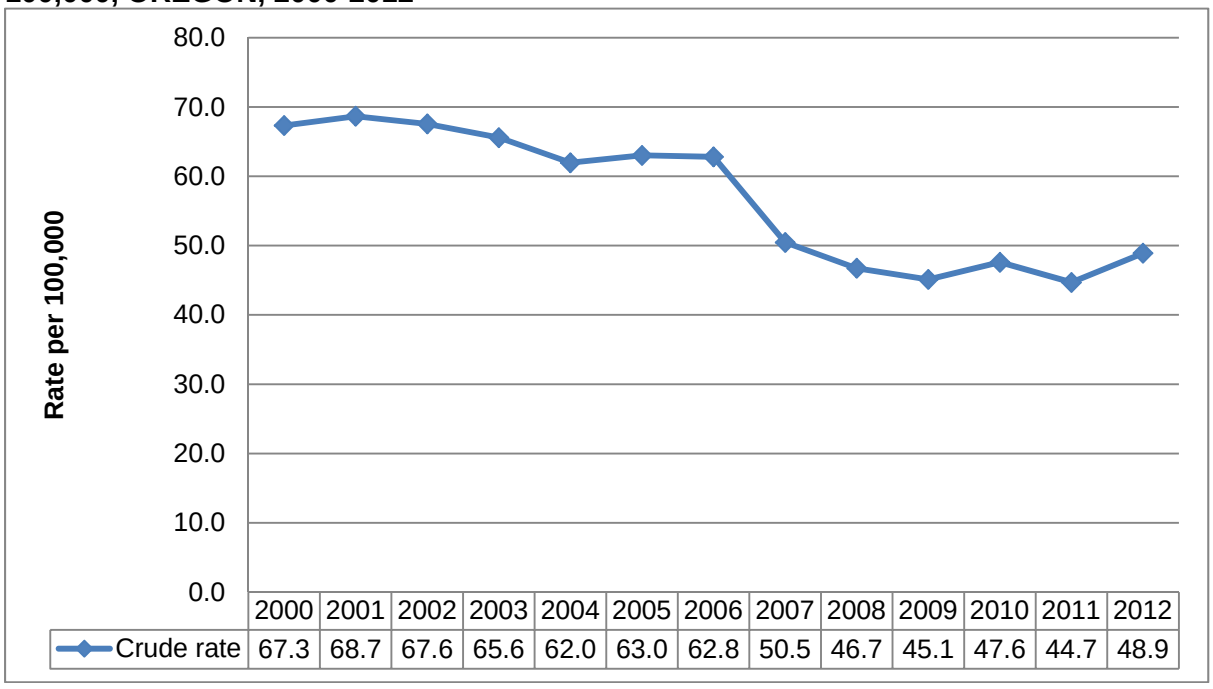
FIGURE 43. AVERAGE MOTOR VEHICLE MORTALITY RATES PER 100,000 BY SEX AND HISPANIC AND NON-HISPANIC ETHNICITIES, OREGON, 2008-2012



Source: Oregon Center for Health Statistics

There was a steady decline in hospitalization rates, although the reduction leveled off in 2007.

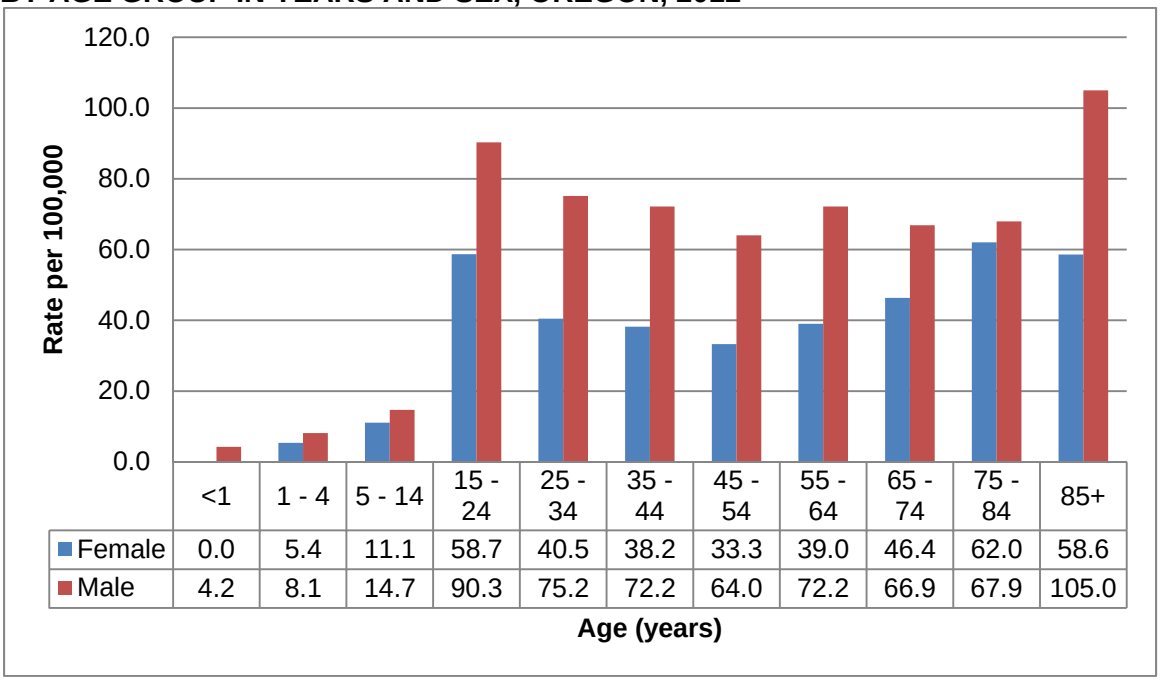
FIGURE 44. MOTOR VEHICLE TRAFFIC INJURY HOSPITALIZATIONS RATES PER 100,000, OREGON, 2000-2012



Source: Oregon Hospital Discharge Index

MVT crash hospitalizations increase significantly at age 15 and increase again at age 85. .

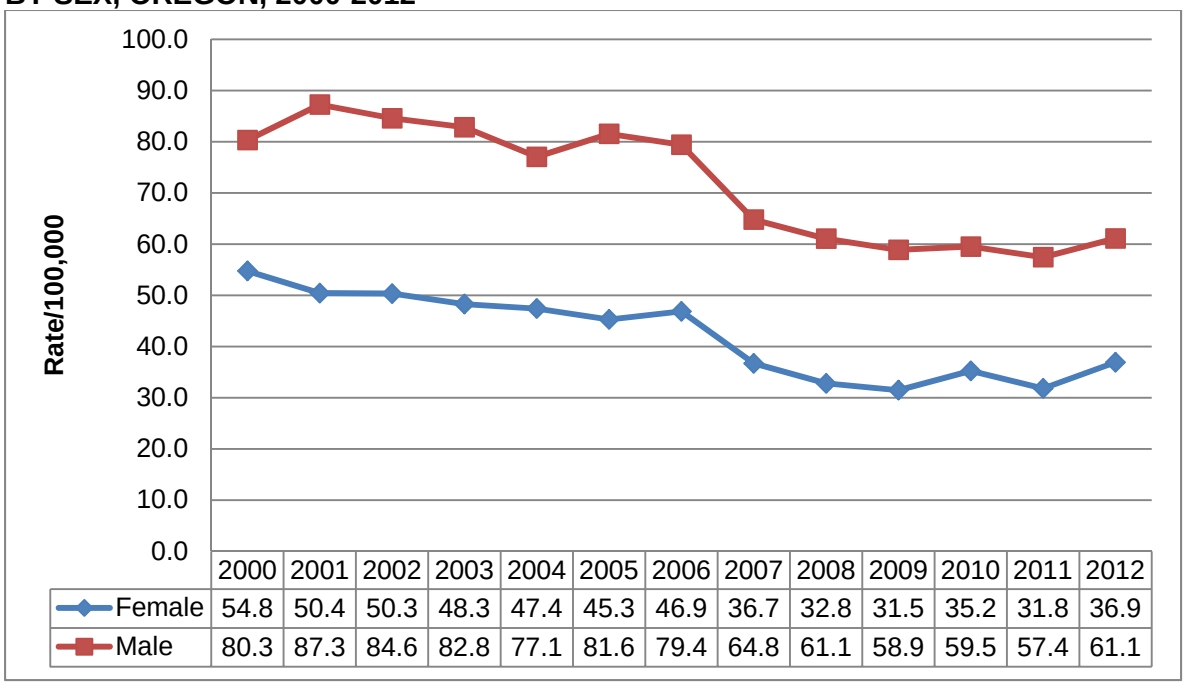
FIGURE 45. MOTOR VEHICLE TRAFFIC INJURY HOSPITALIZATION RATES PER 100,000 BY AGE GROUP IN YEARS AND SEX, OREGON, 2012



	<1	1 - 4	5 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75 - 84	85+
Female	0.0	5.4	11.1	58.7	40.5	38.2	33.3	39.0	46.4	62.0	58.6
Male	4.2	8.1	14.7	90.3	75.2	72.2	64.0	72.2	66.9	67.9	105.0

Source: Oregon Hospital Discharge Index

FIGURE 46. MOTOR VEHICLE TRAFFIC INJURY HOSPITALIZATION RATES PER 100,000 BY SEX, OREGON, 2000-2012

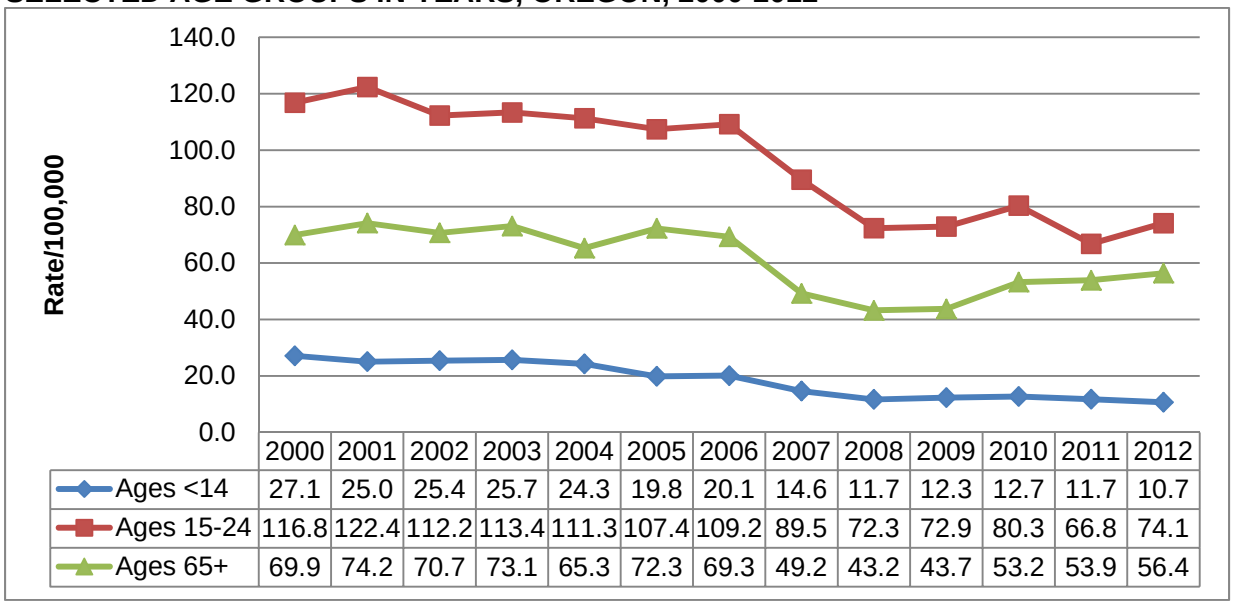


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Female	54.8	50.4	50.3	48.3	47.4	45.3	46.9	36.7	32.8	31.5	35.2	31.8	36.9
Male	80.3	87.3	84.6	82.8	77.1	81.6	79.4	64.8	61.1	58.9	59.5	57.4	61.1

Source: Oregon Hospital Discharge Index

Across age groups there has been a steady decrease from 2000.

FIGURE 47. MOTOR VEHICLE TRAFFIC HOSPITALIZATION RATES PER 100,000 IN SELECTED AGE GROUPS IN YEARS, OREGON, 2000-2012

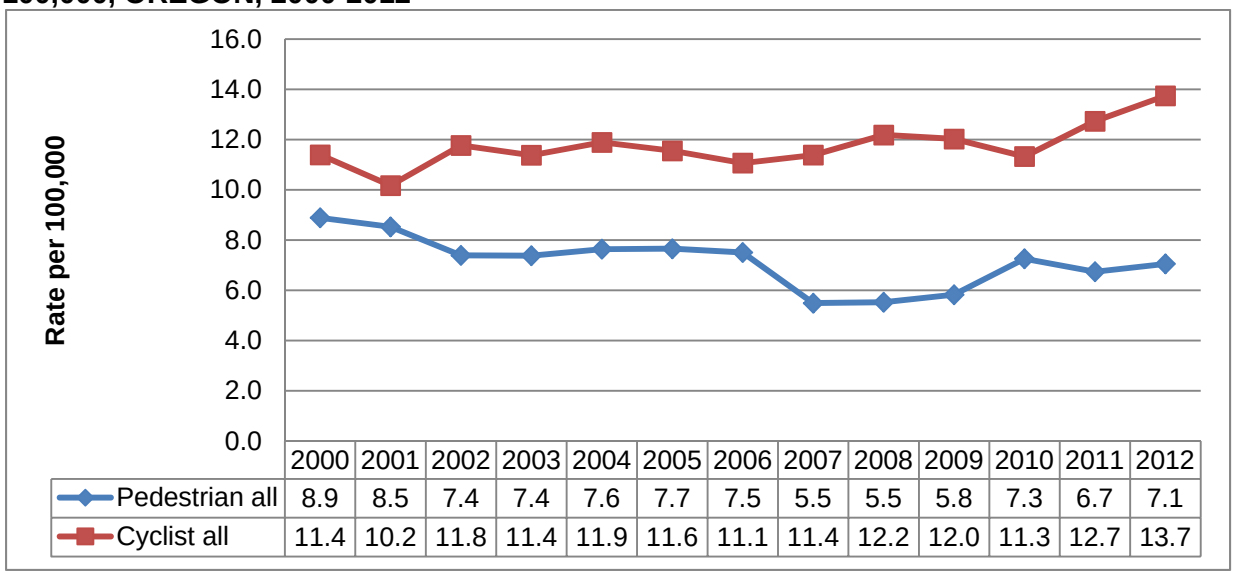


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Ages <14	27.1	25.0	25.4	25.7	24.3	19.8	20.1	14.6	11.7	12.3	12.7	11.7	10.7
Ages 15-24	116.8	122.4	112.2	113.4	111.3	107.4	109.2	89.5	72.3	72.9	80.3	66.8	74.1
Ages 65+	69.9	74.2	70.7	73.1	65.3	72.3	69.3	49.2	43.2	43.7	53.2	53.9	56.4

Source: Oregon Hospital Discharge Index

Overall pedestrian related hospitalizations have been relatively consistent since 2000, but cyclist related hospitalizations (both motor vehicle and non motor vehicle related) have shown a slight increase over the years, particularly between 2011 and 2012.

FIGURE 48. CYCLIST AND PEDESTRIAN INJURY HOSPITALIZATION RATES PER 100,000, OREGON, 2000-2012

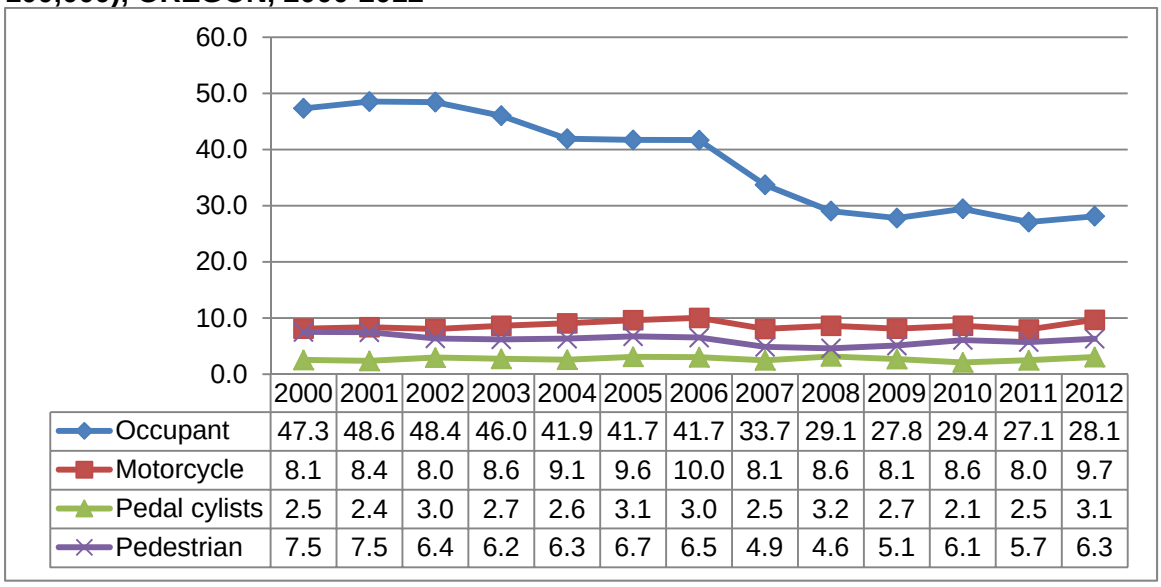


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Pedestrian all	8.9	8.5	7.4	7.4	7.6	7.7	7.5	5.5	5.5	5.8	7.3	6.7	7.1
Cyclist all	11.4	10.2	11.8	11.4	11.9	11.6	11.1	11.4	12.2	12.0	11.3	12.7	13.7

Source: Oregon Hospital Discharge Index

The decrease in occupant injury is a great success.

FIGURE 49. MOTOR VEHILCE INJURY TYPE - INJURY HOSPITALIZATIONS, (RATE PER 100,000), OREGON, 2000-2012



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Occupant	47.3	48.6	48.4	46.0	41.9	41.7	41.7	33.7	29.1	27.8	29.4	27.1	28.1
Motorcycle	8.1	8.4	8.0	8.6	9.1	9.6	10.0	8.1	8.6	8.1	8.6	8.0	9.7
Pedal cylists	2.5	2.4	3.0	2.7	2.6	3.1	3.0	2.5	3.2	2.7	2.1	2.5	3.1
Pedestrian	7.5	7.5	6.4	6.2	6.3	6.7	6.5	4.9	4.6	5.1	6.1	5.7	6.3

HOMICIDE AND ASSAULT

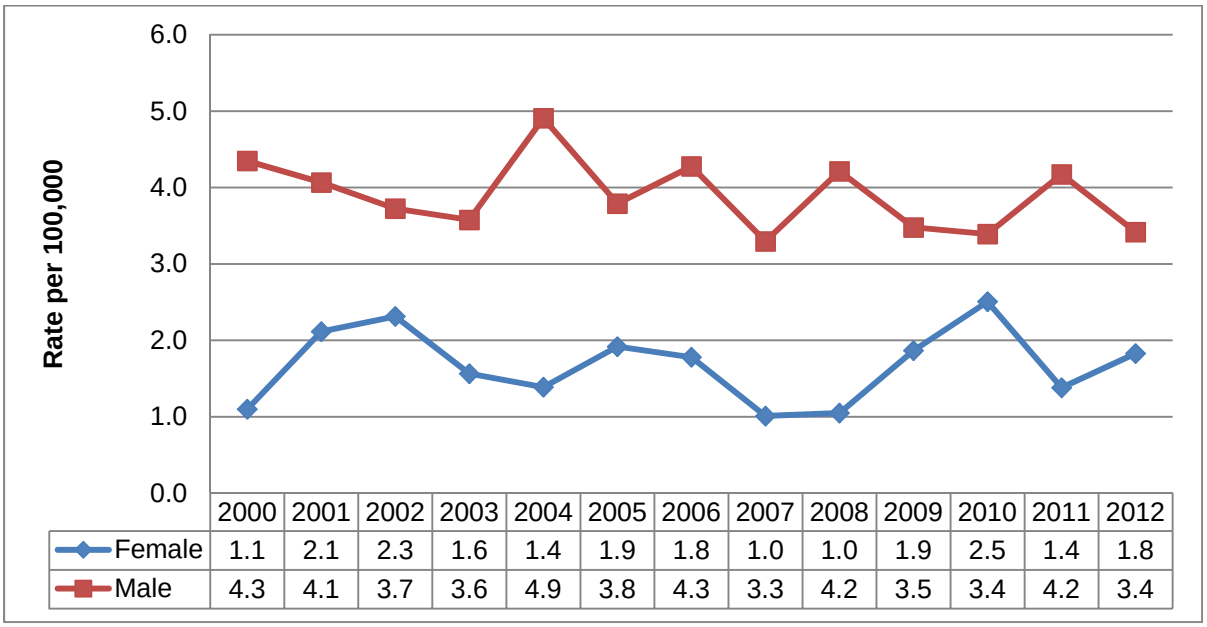
Homicide and assault were responsible for 102 deaths and over 530 hospitalizations in Oregon in 2011. Males have the highest rates of homicide and assault, especially among black males aged 15-34 years of age.

The rate of homicide in Oregon was 2.6 per 100,000 in 2012. Oregon's rate has historically been three times lower than the national rate.

HOMICIDE AND ASSAULT QUICK INFORMATION

- There are on average over 100 homicides per year in Oregon.
- There are more homicides and assault hospitalizations among males 15-34 years of age than any other age group.
- Homicide rates are highest among male African American and highest among the male Hispanic/Latino population
- Assault related hospitalization charges were over $25,267,700 in 2012 with a median cost at $24,800

FIGURE 50. MORTALITY RATES PER 100,000 DUE TO HOMICIDE BY SEX, OREGON, 2000-2012

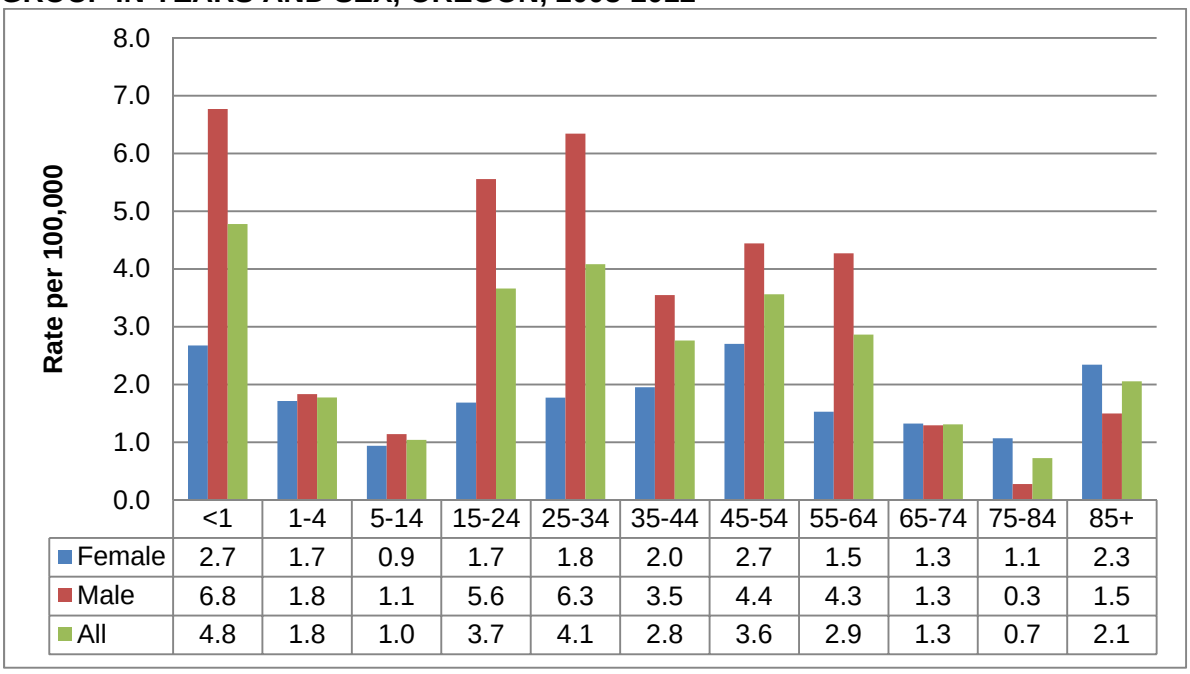


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Female	1.1	2.1	2.3	1.6	1.4	1.9	1.8	1.0	1.0	1.9	2.5	1.4	1.8
Male	4.3	4.1	3.7	3.6	4.9	3.8	4.3	3.3	4.2	3.5	3.4	4.2	3.4

Source: Oregon Center for Health Statistic

Breaking down average annual homicide rates by age groups there is a large peak in under age 1, between the ages 15-34 and 45-64 for both sexes (figure 50).

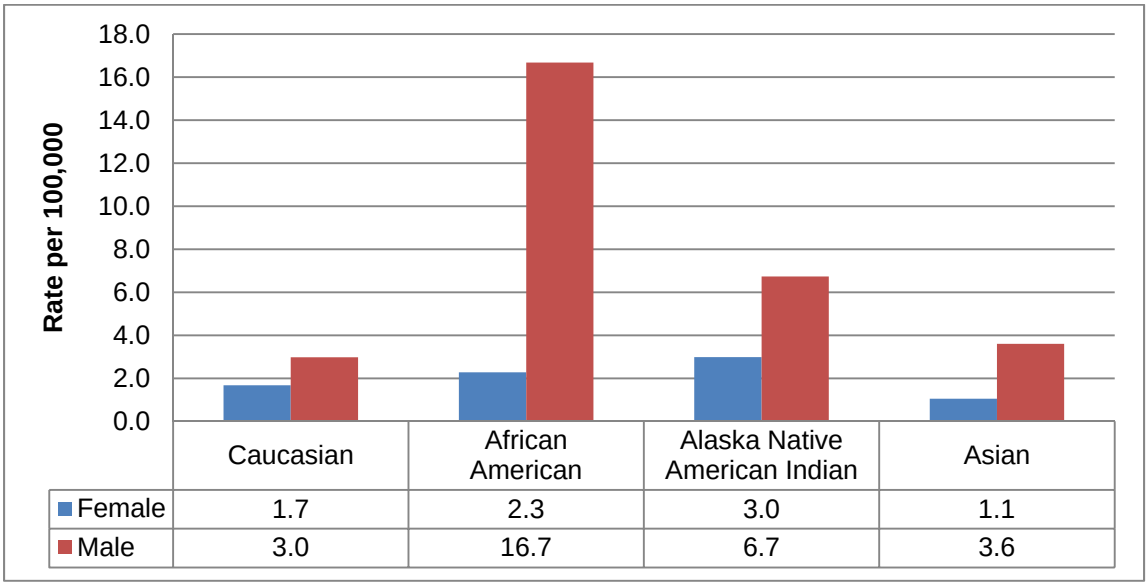
FIGURE 51. AVERAGE MORTALITY RATES PER 100,000 DUE TO HOMICIDE BY AGE GROUP IN YEARS AND SEX, OREGON, 2008-2012



	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Female	2.7	1.7	0.9	1.7	1.8	2.0	2.7	1.5	1.3	1.1	2.3
Male	6.8	1.8	1.1	5.6	6.3	3.5	4.4	4.3	1.3	0.3	1.5
All	4.8	1.8	1.0	3.7	4.1	2.8	3.6	2.9	1.3	0.7	2.1

The highest rates of homicide are observed among African American males (16.7 per 100,000) followed by American Indian/Native Alaskan males (6.7 per 100,000). Caucasians males had the lowest homicide rates. American Indian/Native Alaskan females experience the highest rates of homicide among all females at 3.0 per 100,000

FIGURE 52. AVERAGE HOMICIDE MORTALITY RATES PER 100,000 BY SEX AND RACE, 2008-2012

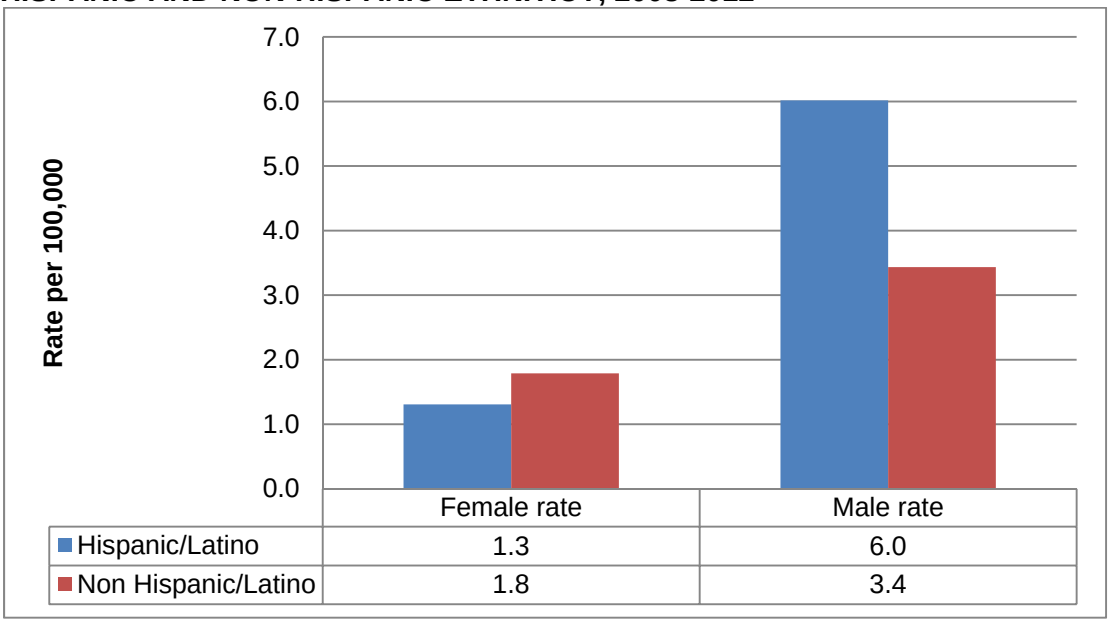


	Caucasian	African American	Alaska Native American Indian	Asian
Female	1.7	2.3	3.0	1.1
Male	3.0	16.7	6.7	3.6

Source: Oregon Center for Health Statistics

Hispanic/Latino males have nearly twice the rate of homicide compared to non-Hispanic/Latino males.

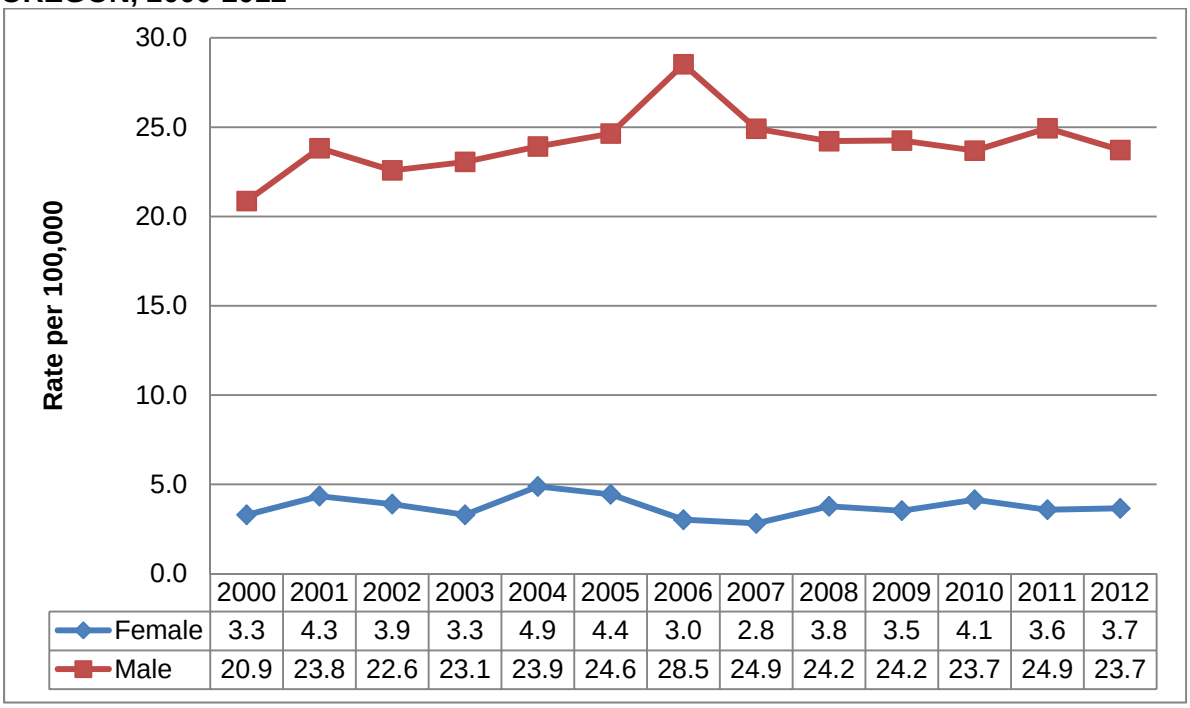
FIGURE 53. AVERAGE HOMICIDE MORTALITY RATES PER 100,000 BY SEX AND HISPANIC AND NON-HISPANIC ETHNITICY, 2008-2012



	Female rate	Male rate
Hispanic/Latino	1.3	6.0
Non Hispanic/Latino	1.8	3.4

Males are also more likely to show higher assault hospitalization rates, about 6 times greater compared to females since 2000.

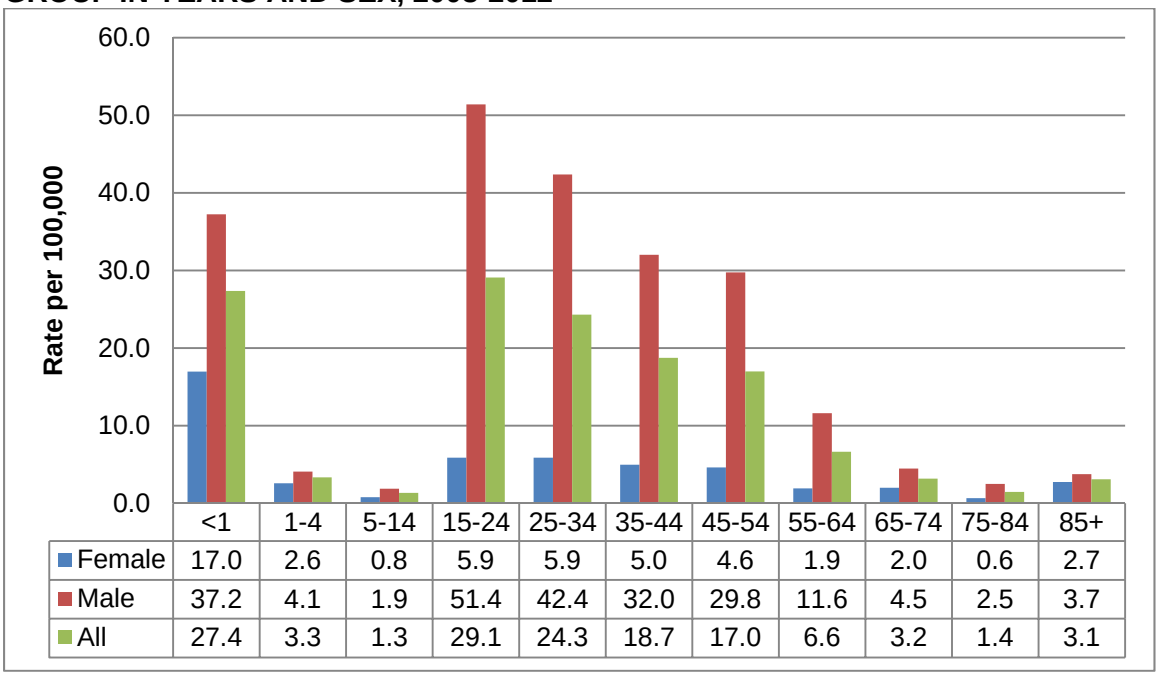
FIGURE 54. ASSAULT RELATED HOSPITALIZATION RATES PER 100,000 BY SEX, OREGON, 2000-2012



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Female	3.3	4.3	3.9	3.3	4.9	4.4	3.0	2.8	3.8	3.5	4.1	3.6	3.7
Male	20.9	23.8	22.6	23.1	23.9	24.6	28.5	24.9	24.2	24.2	23.7	24.9	23.7

Figure 55 shows the high rate of assault hospitalizations among persons aged less than 1 and for 15-54 year olds. Assault rates decrease for both males and females as age increases.

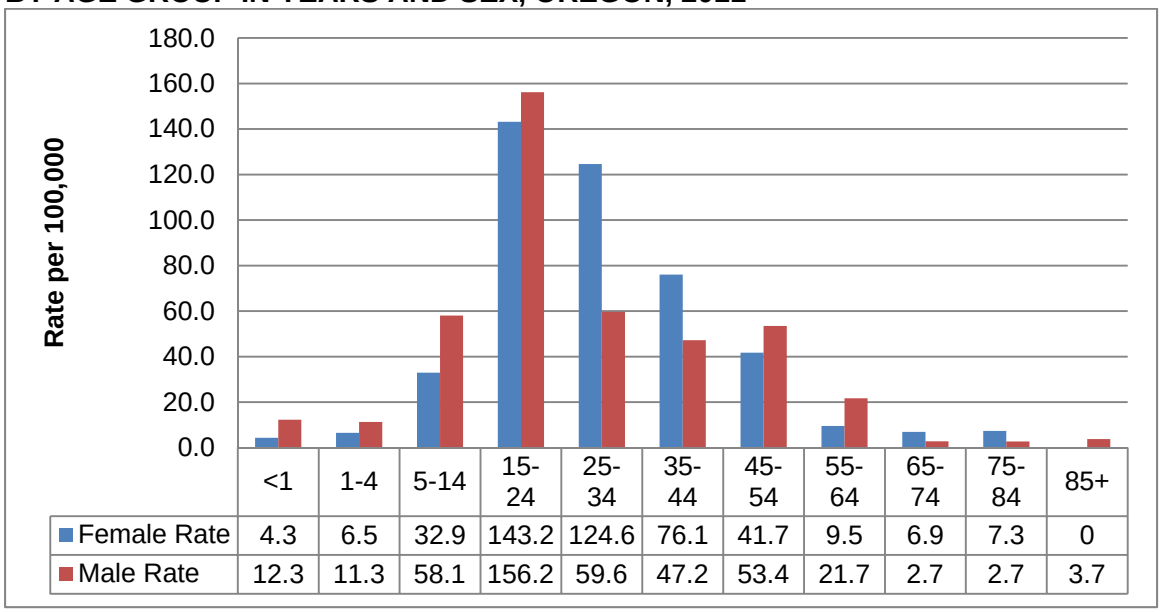
FIGURE 55. ASSAULT RELATED HOSPITALIZATION RATES PER 100,000 BY AGE GROUP IN YEARS AND SEX, 2008-2012



	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Female	17.0	2.6	0.8	5.9	5.9	5.0	4.6	1.9	2.0	0.6	2.7
Male	37.2	4.1	1.9	51.4	42.4	32.0	29.8	11.6	4.5	2.5	3.7
All	27.4	3.3	1.3	29.1	24.3	18.7	17.0	6.6	3.2	1.4	3.1

Emergency department visits for assault show a similar trend for persons ages 15-44 years, with males and females reporting similar rates in figure 55.

FIGURE 56. ASSAULT RELATED EMERGENCY DEPARTMENT VISIT RATES PER 100,000 BY AGE GROUP IN YEARS AND SEX, OREGON, 2011



	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Female Rate	4.3	6.5	32.9	143.2	124.6	76.1	41.7	9.5	6.9	7.3	0
Male Rate	12.3	11.3	58.1	156.2	59.6	47.2	53.4	21.7	2.7	2.7	3.7

Source: Oregon All Payer All Claims data

For more information on homicide contexts and circumstances refer to online reports at:

Titled: Violent Deaths in Oregon: 2011

https://public.health.oregon.gov/DiseasesConditions/InjuryFatalityData/Documents/NVDRS/AnnualDataReport.pdf

TRAUMATIC BRAIN INJURY

Traumatic brain injury (TBI) is defined as any jolt or blow to the head, or a head penetrating injury, disrupting brain functioning. The CDC estimates that nationally 50,000 people die each year as a result of TBI, 235,000 are hospitalized, and 1.1 million are treated and released from emergency departments.[5] Nationally, the leading causes of TBI are falls, motor vehicle traffic crashes, struck by/against objects or persons, and assault.

TBI is a considerable injury problem in public health because of the individual and social impacts resulting from TBI. It is estimated that 5.3 million persons in the US require either life-long or long-term assistance in performing activities in daily living due to TBI, and the direct and indirect medical costs of TBI were estimated at $76.5 billion in 2000.[6]

Generally, TBIs are considered a contributing cause of death where injury deaths are concerned, and therefore TBI deaths are associated with some of the leading causes of injury death in Oregon (i.e. MVT, falls). In terms of hospitalizations, TBI is determined through assessing all diagnostic codes listed in hospital discharge data.

TBI Quick Information:

- There were over 803 deaths in Oregon associated with TBI in 2012. Most TBI related deaths are due to suicides using firearms followed by unintentional falls.
- There were over 2,830 hospitalizations associated with TBI in 2012. Most TBI's are due to falls followed by motor vehicle related crashes (includes motorcycles, cyclists, pedestrians)
- Males have higher rates of TBI associated death and hospitalization.
- Firearms followed by falls are the most frequent cause of TBI death.
- Falls followed by poisoning are the most frequent cause of TBI hospitalization.
- TBI related hospitalization charges were over $150,127,000 in 2012 with a median cost at $27,000

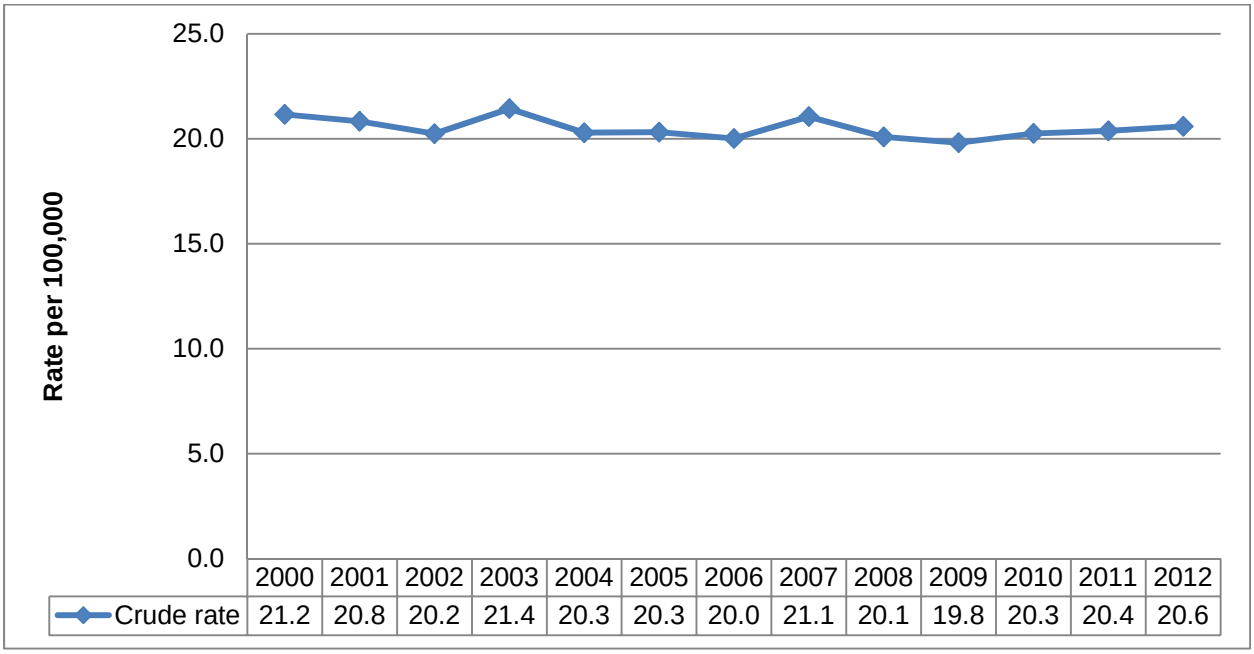
As a result of these two conditions, TBI is not represented in this report as an independent cause of death or hospitalization, but rather, is associated with the particular mechanism (i.e. MVT, fall, drowning/submersion, etc.) or intent (i.e. unintentional, suicide, homicide) that led to

[5] Centers for Disease Control, TBI Statistics, http://www.cdc.gov/traumaticbraininjury/statistics.html

[6] Ibid.

the injury. Therefore, deaths and hospitalizations reported in this section are also reported in other sections of this report. Death and hospitalization rates associated with TBI have remained stable in recent years.

FIGURE 57. TRAUMATIC BRAIN INJURY MORTALITY RATES PER 100,000, OREGON, 2000-2012

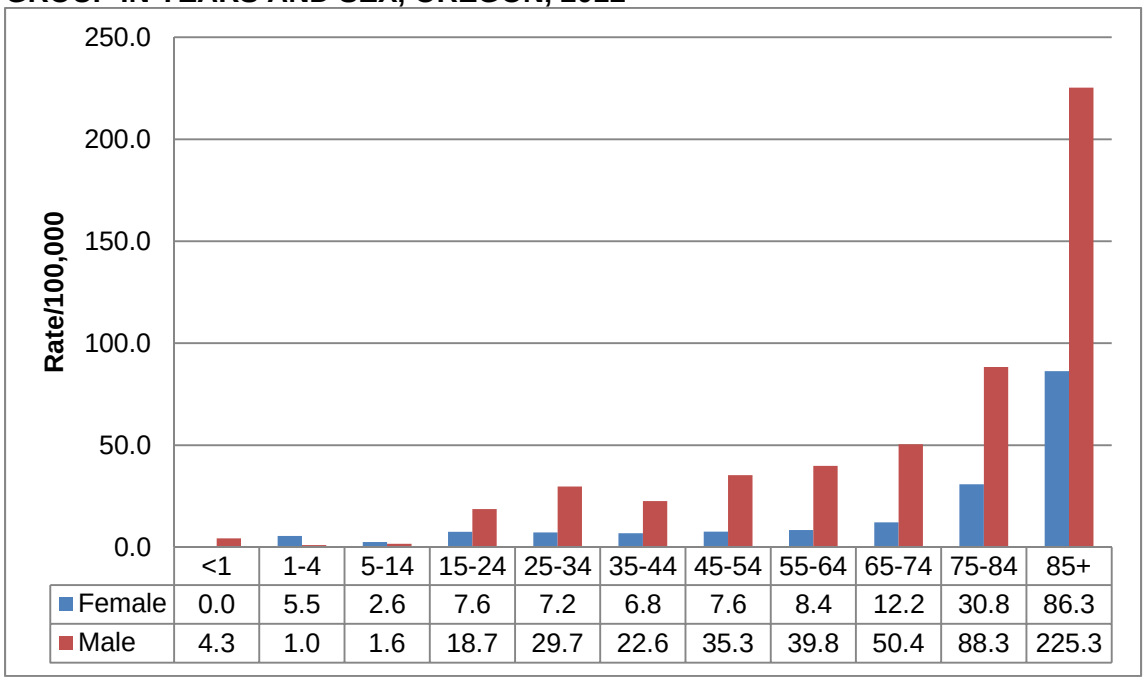


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Crude rate	21.2	20.8	20.2	21.4	20.3	20.3	20.0	21.1	20.1	19.8	20.3	20.4	20.6

Source: Oregon Center for Health Statistics

Death rates from TBI related injury significantly increase after age 75 years.

FIGURE 58. TRAUMATIC BRAIN INJURY MORTALITY RATES PER 100,000 BY AGE GROUP IN YEARS AND SEX, OREGON, 2012

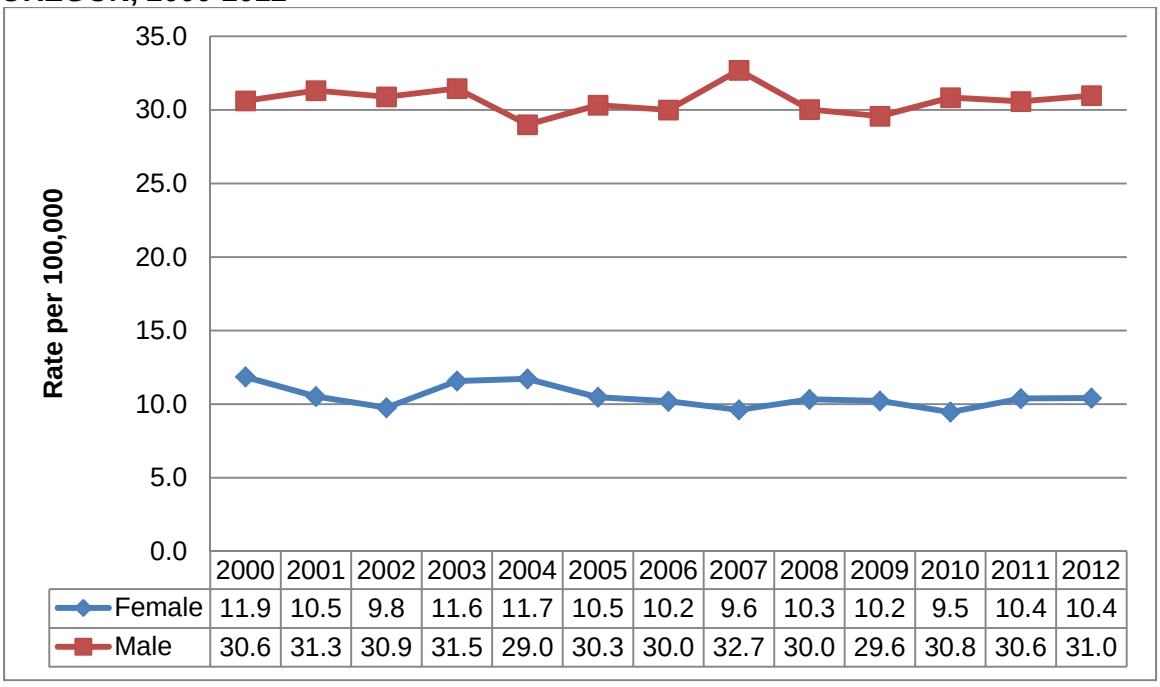


	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Female	0.0	5.5	2.6	7.6	7.2	6.8	7.6	8.4	12.2	30.8	86.3
Male	4.3	1.0	1.6	18.7	29.7	22.6	35.3	39.8	50.4	88.3	225.3

Source: Oregon Center for Health Statistics

Males have significantly higher TBI related mortality rates.

FIGURE 59. TRAUMATIC BRAIN INJURY MORTALITY RATES PER 100,000 BY SEX, OREGON, 2000-2012

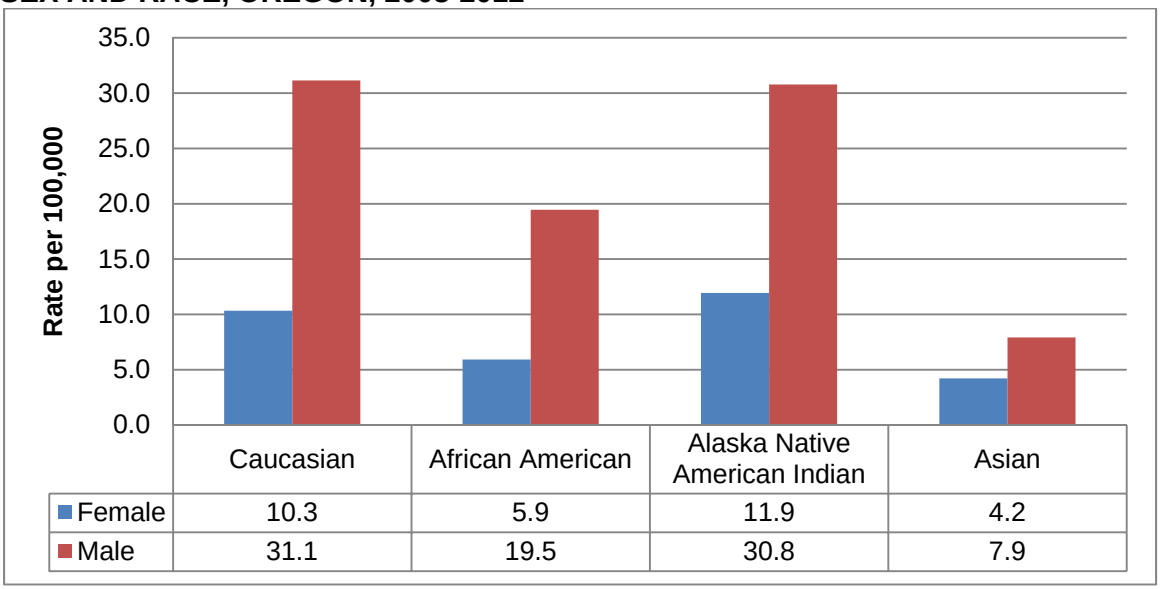


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Female	11.9	10.5	9.8	11.6	11.7	10.5	10.2	9.6	10.3	10.2	9.5	10.4	10.4
Male	30.6	31.3	30.9	31.5	29.0	30.3	30.0	32.7	30.0	29.6	30.8	30.6	31.0

Source: Oregon Center for Health Statistics

Both Caucasian and Alaska Native/American Indian males have the highest mortalities, nearly three times that of females. The rate of mortality among African American males was nearly four times the rate of females.

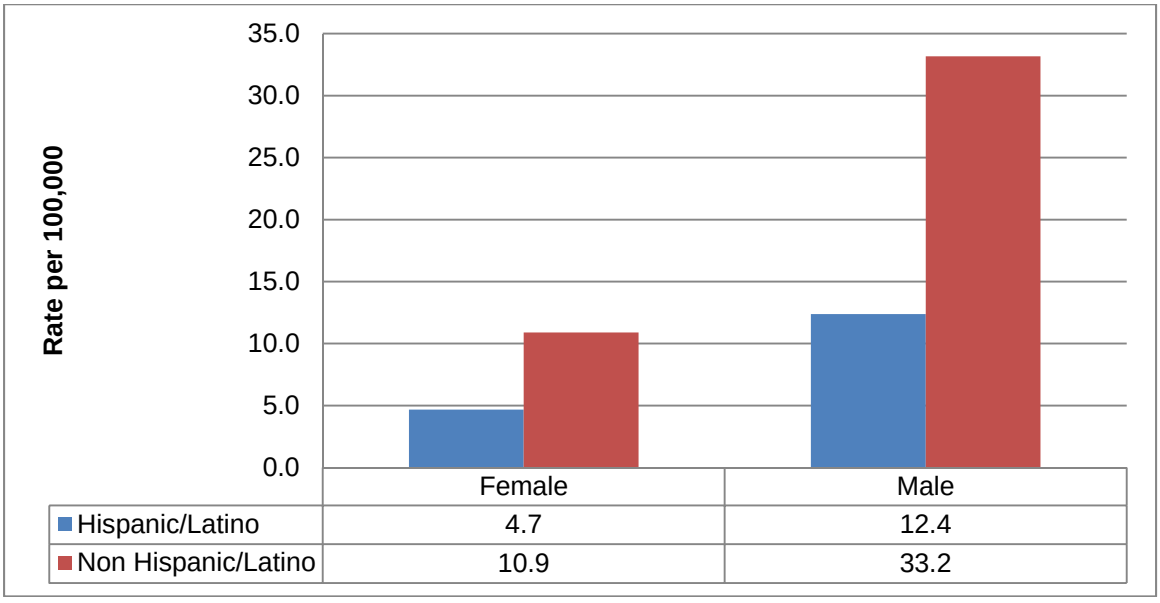
FIGURE 60. AVERAGE TRAUMATIC BRAIN INJURY MORTALITY RATES PER 100,000 SEX AND RACE, OREGON, 2008-2012



	Caucasian	African American	Alaska Native American Indian	Asian
Female	10.3	5.9	11.9	4.2
Male	31.1	19.5	30.8	7.9

Higher rates of TBI mortality are observed among Non Hispanic/Latino's.

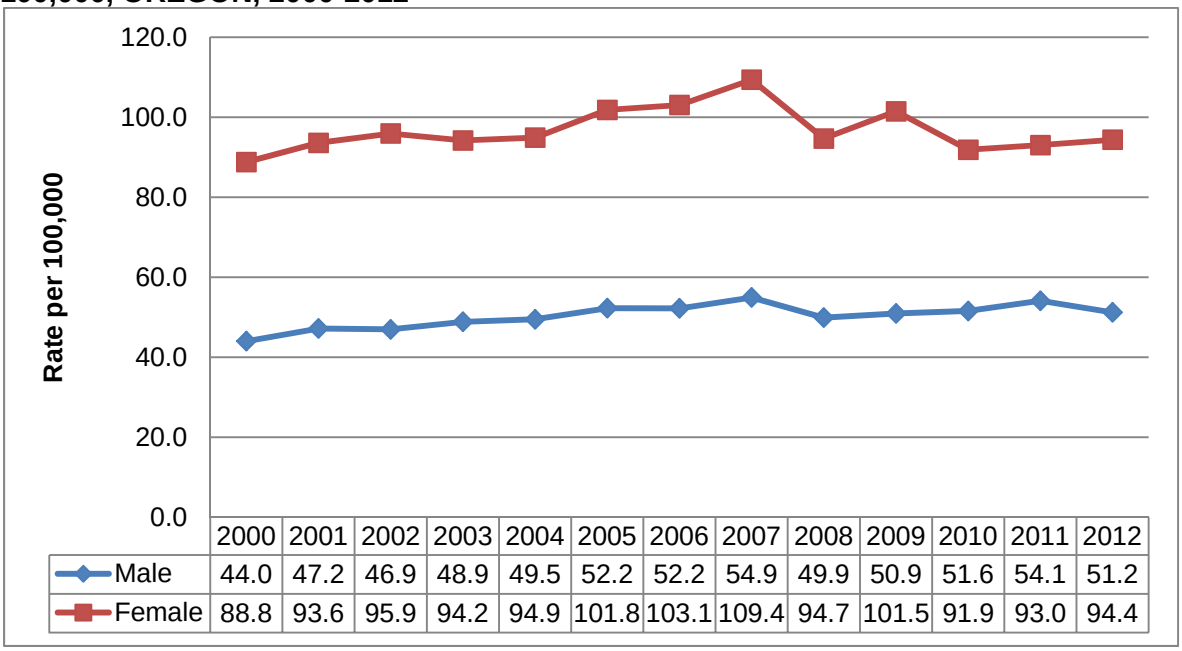
FIGURE 61. AVERAGE TBI MORTALITY RATES PER 100,000 BY SEX AND HISPANIC AND NON-HISPANIC ETHNICITIES, 2008-2012



	Female	Male
Hispanic/Latino	4.7	12.4
Non Hispanic/Latino	10.9	33.2

Males experience nearly double the rate of female for a TBI related hospitalization.

FIGURE 62. HOSPITALIZATION FOR TRAUMATIC BRAIN INJURY BY SEX, RATES PER 100,000, OREGON, 2000-2012

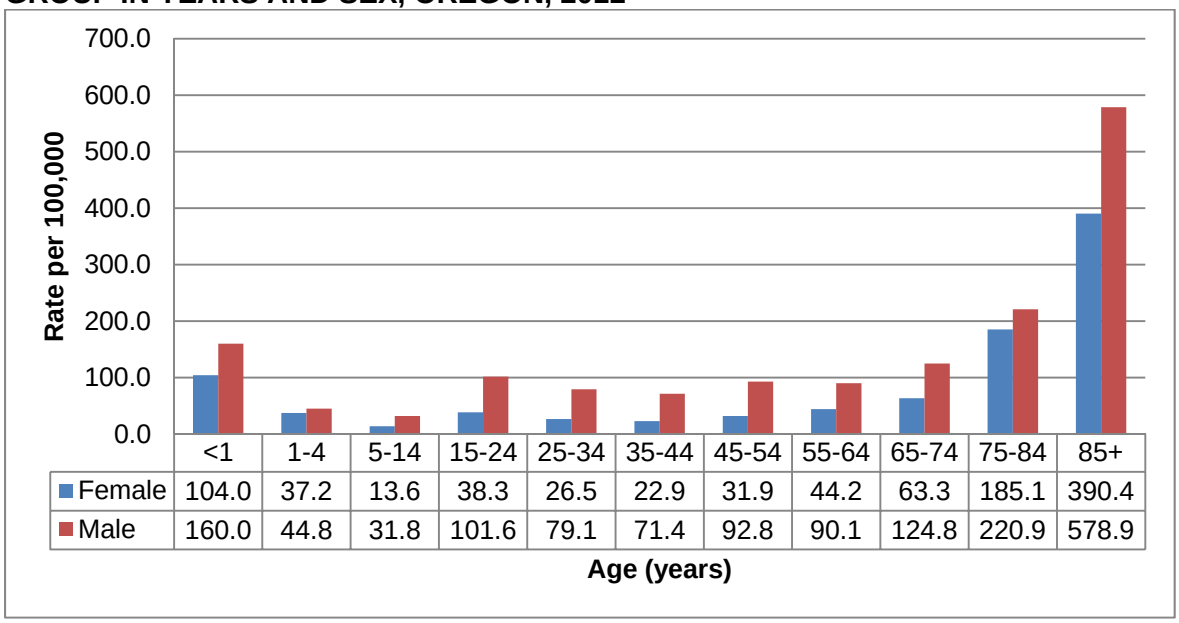


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Male	44.0	47.2	46.9	48.9	49.5	52.2	52.2	54.9	49.9	50.9	51.6	54.1	51.2
Female	88.8	93.6	95.9	94.2	94.9	101.8	103.1	109.4	94.7	101.5	91.9	93.0	94.4

Source: Oregon Hospital Discharge Index

Infants and persons over 65 years of age show increased TBI related hospital admission rates.

FIGURE 63. TRAUMATIC BRAIN INJURY HOSPITALIZATION RATES PER 100,000 BY AGE GROUP IN YEARS AND SEX, OREGON, 2012

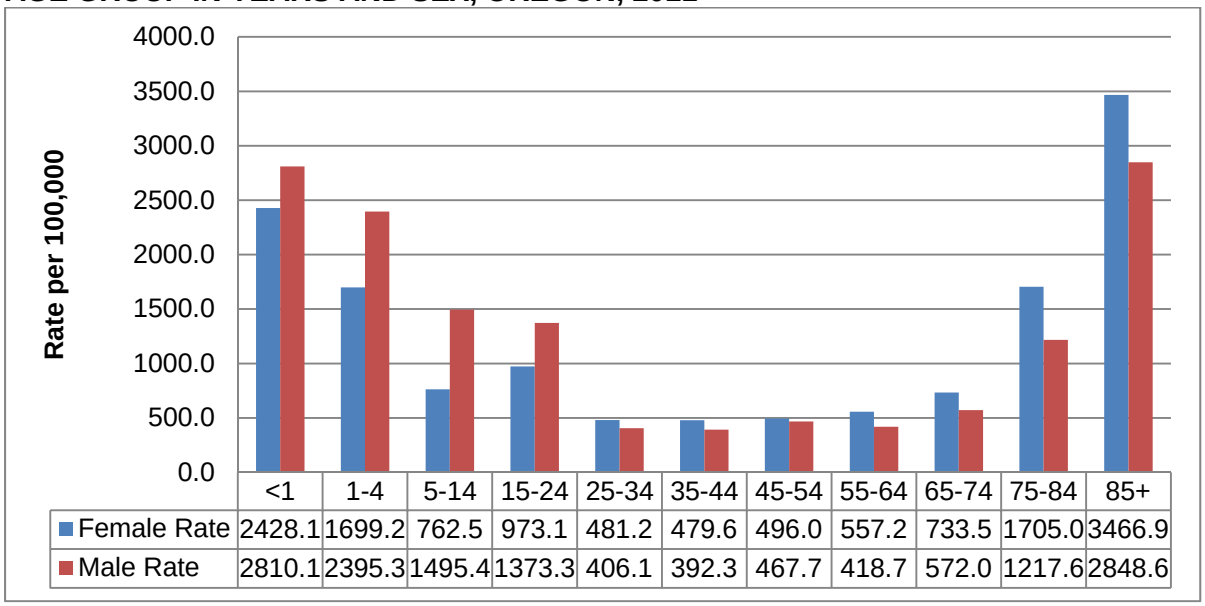


	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Female	104.0	37.2	13.6	38.3	26.5	22.9	31.9	44.2	63.3	185.1	390.4
Male	160.0	44.8	31.8	101.6	79.1	71.4	92.8	90.1	124.8	220.9	578.9

Source: Oregon Hospital Discharge Index

A different trend is reported for emergency department visits with younger persons ages 4 and older persons aged 85 and older experiencing higher rates of care for TBI in an emergency department.

FIGURE 64. TRAUMATIC BRAIN INJURY EMERGENCY VISIT RATES PER 100,000 BY AGE GROUP IN YEARS AND SEX, OREGON, 2011



	<1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85+
Female Rate	2428.1	1699.2	762.5	973.1	481.2	479.6	496.0	557.2	733.5	1705.0	3466.9
Male Rate	2810.1	2395.3	1495.4	1373.3	406.1	392.3	467.7	418.7	572.0	1217.6	2848.6

Source: Oregon All Payer All Claims data

FOR FURTHER INFORMATION ON INJURY AND INJURY PREVENTION

- Injury and Violence Prevention Program, Oregon Health Authority: http://public.health.oregon.gov/PHD/ODPE/IPE/Pages/index.aspx
- Oregon Public Health Division Strategic Plan: http://public.health.oregon.gov/about/documents/phd-strategic-plan.pdf
- Centers for Disease Control and Prevention, National Center for Injury Prevention and Control: www.cdc.gov/ncipc/
- Safe States Alliance: http://www.safestates.org/index.cfm
- Suicide Prevention Resource Center: www.sprc.org
- National Strategy for Suicide Prevention: http://www.surgeongeneral.gov/library/reports/national-strategy-suicide-prevention/full_report-rev.pdf
- Fall Prevention Center of Excellence: http://www.stopfalls.org/
- National Council on Aging: http://www.ncoa.org/improve-health/center-for-healthy-aging/falls-prevention/
- Oregon Department of Transportation, Safety Division: http://www.oregon.gov/odot/ts/pages/index.aspx
- Oregon Trauma Registry: http://public.health.oregon.gov/ProviderPartnerResources/EMSTraumaSystems/TraumaSystems/Pages/registry.aspx
- Oregon Violent Death Reporting System: http://public.health.oregon.gov/DiseasesConditions/InjuryFatalityData/Pages/nvdrs.aspx
- Oregon Office of the State Medical Examiner: http://www.oregon.gov/OSP/SME/pages/index.aspx
- Alliance for Community Traffic Safety: http://www.actsoregon.org/
- Oregon SafeKids: www.oregon.gov/DHS/ph/safekids/index.shtml and www.safekidsoregon.org

- National SafeKids: www.safekids.org
- Oregon Public Health Blueprint on Safe and Nurturing Environments
- Oregon Coalition Against Domestic and Sexual Violence: http://www.ocadsv.com/
- Attorney General's Task Force on Sexual Assault: www.oregonsatf.org
- American Academy of Pediatrics: www.aap.org/default.htm
- Office of Children and Family Services: http://www.oregon.gov/DHS/aboutdhs/pages/structure/caf.aspx
- United States Consumer Product Safety Commission: www.cpsc.gov/
- Partnership Against Violence Network: www.pavnet.org/
- Society for the Advancement of Violence and Injury Research: www.savirweb.org
- Brain Injury Association of Oregon: www.biaoregon.org
- Seniors and People with Disabilities: http://www.oregon.gov/DHS/spwpd/pages/index.aspx
- Oregon Geriatric Education Center: http://www.ohsu.edu/xd/education/schools/school-of-nursing/about/centers/oregon-geriatric-education/index.cfm/
- Tai Chi Moving for Better Balance: http://www.ori.org/Public/physical/AdultPhysicalActivity.html
- Stepping On: http://www.steppingon.com/
- Otago Fall Prevention: http://www.acc.co.nz/PRD_EXT_CSMP/groups/external_providers/documents/publications_promotion/prd_ctrb118334.pdf
- STEADI: https://apha.confex.com/apha/140am/webprogram/Paper260622.html
- Matter of Balance: http://www.mmc.org/mh_body.cfm?id=432
- PAXIS Institute: http://www.paxis.org/Default.aspx?AspxAutoDetectCookieSupport=1
- Oregon Prescription Drug Monitoring Program: http://www.orpdmp.com/

- Lines for Life Drug Take Back: http://www.linesforlife.org/
- Association of Community Mental Health Programs: http://www.aocmhp.org/
- Additions and Mental Health Services: http://www.oregon.gov/OHA/amh/pages/index.aspx
- Conference of Local Health Officials: http://www.oregonclho.org/
- Maternal Child Health Programs: http://public.health.oregon.gov/PHD/Directory/Pages/program.aspx?pid=25

APPENDICES

- Appendix A: Statewide death frequency data tables and hospitalization frequency data tables by Manner/Intent and Cause/Mechanism of injury for 2012. Table data are displayed by Matrix of E-code Groupings – see web tables for rates and County specific data tables

- Appendix B: Recommended framework of E-code groupings for presenting injury mortality and morbidity data (August 10, 2011)

APPENDIX A

Unintentional Injury Hospitalizations, By Age Group in Years, Oregon, 2012

	<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75-84		85+		All
Cause	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	
Motor vehicle	0	1	5	8	26	36	146	233	103	197	93	183	91	169	101	179	70	93	58	49	30	28	1899
Firearm	0	0	0	1	0	1	1	16	1	14	1	8	2	6	0	9	0	3	0	1	0	0	64
Poisoning	6	3	35	49	10	19	47	94	84	75	78	78	141	122	167	136	104	75	58	36	28	17	1462
Falls	21	21	51	72	86	142	48	162	80	177	117	204	258	306	561	429	749	496	1308	641	1866	660	8455
Suffocation	6	0	3	3	0	1	0	1	0	1	0	2	1	2	1	7	1	6	3	4	5	6	53
Drowning	0	1	1	4	1	2	0	4	0	1	0	1	1	1	0	1	0	1	0	0	0	0	19
Fire/burn	3	3	13	10	1	7	5	13	3	9	7	20	6	13	10	13	3	8	3	4	3	2	159
Cut/Pierce	0	0	4	5	1	8	2	12	5	22	3	25	0	19	2	9	1	11	1	4	0	2	136
Struck by/Against	0	2	9	7	9	30	12	51	2	49	5	27	5	38	8	27	10	22	15	17	12	6	363
Machinery	0	0	0	0	0	3	1	11	0	16	0	15	0	23	2	9	0	12	0	6	1	0	99
Other pedal cyclist	0	0	0	2	11	52	3	39	17	44	15	39	9	60	22	51	11	27	3	8	0	4	417
Other pedestrian	0	0	3	1	2	0	2	6	1	1	2	1	1	1	3	1	0	2	1	1	0	0	29
Other transport	0	0	0	8	12	22	18	54	19	44	27	43	44	60	55	51	14	24	11	6	10	6	528
Othr Natural envrn	2	2	5	7	6	8	6	4	6	10	4	11	24	9	16	20	11	10	8	5	6	6	186
Overexertion	0	0	0	0	4	3	4	11	8	11	6	6	13	14	21	14	20	11	22	10	10	3	191
Other specified	5	4	12	13	9	17	4	12	11	18	10	16	12	28	13	22	8	14	7	7	2	1	245
Not elsewhere specified	1	2	0	1	0	3	1	3	0	4	2	7	2	5	9	6	2	5	5	0	4	4	66
Not specified	6	4	3	1	0	3	3	7	3	2	3	10	17	15	14	6	16	15	20	9	19	15	191
Total	50	43	144	192	178	357	303	733	343	695	373	696	627	891	1005	990	1020	835	1523	808	1996	760	14562

Self Harm/Suicide Attempt Hospitalizations, By Age Group in Years, Oregon, 2012																			
	5-14		15-24		25-34		35-44		45-54		55-64		65-74		75-84		85+		All
Cause	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	
Motor vehicle	0	0	0	1	2	0	1	0	0	1	1	0	0	0	0	0	0	0	6
Firearm	0	0	0	7	0	3	3	2	3	7	3	4	2	4	0	0	1	0	39
Poisoning	63	12	301	125	234	134	277	150	226	155	128	80	50	19	18	4	4	4	1984
Falls	0	0	3	6	2	4	1	3	4	3	1	0	1	0	0	0	0	0	28
Suffocation	1	1	1	1	0	3	0	4	0	3	1	0	0	1	0	0	0	0	16
Drowning	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Fire/burn	0	0	0	0	0	2	1	2	0	0	0	1	0	0	0	0	0	0	6
Cut/Pierce	1	0	2	8	3	16	4	8	5	5	3	10	1	1	0	1	0	0	68
Other specified	0	0	2	2	0	0	0	1	1	1	0	0	0	0	0	0	0	0	7
Not elsewhere specified	0	0	4	1	1	4	3	0	0	1	0	1	0	0	0	0	0	0	15
Total	65	13	313	151	242	166	290	170	239	177	137	96	54	25	18	5	5	4	2170

Assault/Homicide Hospitalizations, By Age Group in Years, Oregon, 2012																					
	<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75-84		All
Cause	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	
Motor vehicle	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Firearm	0	0	0	0	0	0	2	12	3	14	0	6	1	9	1	4	0	1	0	0	53
Poisoning	0	0	0	0	0	0	1	0	2	0	0	0	0	1	0	0	0	0	0	0	4
Fire/burn	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2
Cut/Pierce	0	0	0	0	0	1	4	26	4	34	1	19	1	11	1	7	0	1	0	0	110
Struck by/Against	1	1	2	1	3	2	5	55	4	49	2	49	5	49	3	18	1	3	0	1	254
Other specified	0	0	1	0	0	0	0	3	2	1	2	2	0	0	0	0	0	0	0	0	11
Not elsewhere specified	3	1	0	0	0	0	0	1	1	1	0	2	3	5	0	1	2	1	0	1	22
Not specified	0	12	3	4	0	0	0	13	3	6	1	10	2	13	1	2	1	1	0	0	72
Total	4	14	6	5	3	3	12	110	19	108	6	89	12	88	6	32	4	7	0	2	530

Unintentional Deaths, By Age Group in Years, Oregon, 2012																							
	<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75-84		85+		All
Cause	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	
Drowning	0	0	3	3	3	4	0	9	0	6	2	4	0	8	0	4	1	4	1	0	0	0	52
Fall	0	0	0	0	0	0	1	3	0	1	1	4	3	11	5	33	23	38	77	66	204	115	585
Fire/flame	0	0	0	0	0	0	0	0	1	0	1	3	0	2	3	3	3	3	2	1	0	2	24
Firearm	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	0	0	0	0	0	0	4
Machinery	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0	2	0	0	7
Motor Vehicle traffic	0	0	1	3	2	3	17	31	17	34	14	18	14	31	19	35	11	18	7	14	5	8	302
Pedal cyclist, other	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	4
Pedestrian, other	0	0	1	1	0	1	0	0	0	1	0	0	0	1	0	0	0	2	0	1	1	1	10
Transport (land), other	0	0	0	0	0	1	0	2	0	1	0	4	0	0	0	3	0	1	0	1	0	1	14
Transport, other	0	0	0	0	0	0	1	1	0	3	1	6	1	4	0	0	0	3	0	0	0	0	20
Natural/environmental	1	0	0	0	0	0	0	0	0	1	0	1	1	1	0	3	0	1	1	2	1	1	14
Poisoning	0	0	0	0	1	0	9	25	25	39	31	47	40	69	18	31	3	8	3	2	2	2	355
Struck by/against	0	0	0	0	0	0	0	0	0	3	0	2	0	1	0	0	0	2	0	0	1	2	11
Suffocation	8	13	2	0	0	0	0	0	1	3	2	0	7	3	1	4	3	5	6	5	10	10	83
Other specified, classifiable	0	0	0	0	1	0	1	0	0	2	0	2	1	1	1	3	0	2	1	0	1	0	16
Other specified, not elsewhere classifiable	0	0	0	0	0	0	1	0	0	0	1	0	2	2	1	5	1	3	2	2	3	1	24
Not specified	0	0	0	0	0	0	1	0	0	0	2	1	1	2	3	3	3	1	4	4	22	11	58
Total	9	13	5	4	4	5	31	62	44	90	54	88	70	130	52	127	47	89	103	100	250	154	1531

Suicide Deaths, Oregon, By Age Group in Years, 2012																							
	<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75-84		85+		All
Cause	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	
Cut/pierce	0	0	0	0	0	0	0	0	0	4	0	1	0	5	0	1	0	0	1	0	0	0	12
Drowning	0	0	0	0	0	0	0	0	0	2	0	1	3	2	0	2	1	0	0	0	0	0	11
Fall	0	0	0	0	0	0	1	1	0	4	0	1	3	9	1	4	0	0	0	1	1	0	26
Firearm	0	0	0	0	1	1	7	25	7	52	5	38	13	66	9	43	3	42	0	32	2	15	361
Transport (land), other	0	0	0	0	0	0	0	1	1	1	0	1	1	1	0	1	0	0	0	0	0	0	7
Poisoning	0	0	0	0	0	0	0	1	8	7	9	10	21	19	15	12	6	4	3	2	3	2	122
Suffocation	0	0	0	0	3	2	8	21	2	19	6	26	7	25	4	14	3	5	1	3	1	2	152
Other specified, classifiable	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
Other specified, not elsewhere classifiable	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	2
Total	0	0	0	0	4	3	16	49	19	89	20	78	48	130	29	78	13	51	5	38	7	19	696

Homicide Deaths, By Age Group in Years, Oregon, 2012																							
	<1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65-74		75-84		85+		All
Cause	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Cut/pierce	0	0	0	0	0	0	3	1	1	2	2	2	0	4	1	4	0	0	0	0	0	0	20
Drowning	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Firearm	0	0	2	0	1	1	1	9	3	15	1	2	4	5	2	2	1	2	1	0	0	2	52
Struck by/against	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Suffocation	1	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	4
Other specified, classifiable	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Other specified, not elsewhere classifiable	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Not specified	0	1	0	1	0	0	1	2	2	1	1	0	1	6	1	1	1	1	0	1	0	0	21
Total	1	1	2	1	3	2	5	13	8	19	4	4	6	15	4	7	2	3	1	1	0	0	102

APPENDIX B

Recommended framework of E-code groupings for presenting injury mortality and morbidity data (August 10, 2011)

This matrix contains the ICD-9 external-cause-of-injury codes used for coding of injury mortality data and additional ICD-9-CM external-cause-of-injury codes, designated in bold, **only** used for coding of injury morbidity data. In addition, a list of ICD-9-CM external-cause-of-injury codes that have been added since 1994 along with their descriptors is appended to the matrix. Accessed at: http://www.cdc.gov/injury/wisqars/ecode_matrix.html

Mechanism/Cause	**Manner/Intent**				
	Unintentional	**Self-inflicted**	**Assault**	**Undetermined**	**Other**[1]
Cut/pierce	E920.0-.9	E956	E966	E986	E974**. E995.2**
Drowning/submersion	E830.0-.9, E832.0-.9 E910.0-.9	E954	E964	E984	**E995.4**
Fall	E880.0-E886.9, E888	E957.0-.9	E968.1	E987.0-.9	
Fire/burn3	E890.0-E899, E924.0-.9	E958.1,.2,.7	E961, E968.0,.3, **E979.3**	E988.1,.2,.7	
Fire/flame3	E890.0-E899	E958.1	E968.0, **E979.3**	E988.1	
Hot object/substance	E924.0-.9	E958.2,.7	E961, E968.3	E988.2,.7	
Firearm3	E922.0-.3,.8, .9	E955.0-.4	E965.0-4, **E979.4**	E985.0-.4	E970
Machinery	E919 (.0-.9)				
Motor vehicle traffic2,3	E810-E819 (.0-.9)	E958.5	**E968.5**	E988.5	
Occupant	E810-E819 (.0,.1)				
Motorcyclist	E810-E819 (.2,.3)				

Pedal cyclist	E810-E819 (.6)				
Pedestrian	E810-E819 (.7)				
Unspecified	E810-E819 (.9)				
Pedal cyclist, other	E800-E807 (.3) E820-E825 (.6), E826.1,.9 E827-E829(.1)				
Pedestrian, other	E800-807(.2) E820-E825(.7) E826-E829(.0)				
Transport, other	E800-E807 (.0,.1,.8,.9) E820-E825 (.0-.5,.8,.9) E826.2-.8 E827-E829 (.2-.9), E831.0-.9, E833.0- E845.9	E958.6		E988.6	
Natural/environmental	E900.0-E909, E928.0-.2	E958.3		E988.3	
Bites and stings3	E905.0-.6,.9 E906.0-.4,**.5**,.9				
Overexertion	E927**.0-.4,.8-.9**				
Poisoning	E850.0-E869.9	E950.0- E952.9	E962.0-.9**, E979.6,.7**	E980.0-E982.9	E972
Struck by, against	E916-E917.9		E960.0; E968.2		E973, E975, **E995 (.0,.1)**
Suffocation	E911-E913.9	E953.0-.9	E963	E983.0-.9	**E995.3**
Other specified and classifiable3,**4**	E846-E848, E914-E915 E918, E921.0-.9, **E922.4,.5** E923.0-.9, E925.0- E926.9 **E928(.3-.7)**, E929.0-.5	E955.5,**.6**,.7,.9 E958.0,.4	E960.1, E965.5-.9 E967.0-.9, E968.4,**.6, .7** **E979 (.0-.2,.5,.8,.9)**	E985.5,**.6,.7** E988.0,.4	E971, E978, E990-E994, E996 E997.0-.2

Other specified, not elsewhere classifiable	E928.8, E929.8	E958.8, E959	E968.8, E969,E999.1	E988.8, E989	E977, E995 **(.8,.9)**, E997.8 E998, E999.0
Unspecified	E887, E928.9, E929.9	E958.9	E968.9	E988.9	E976, E997.9
All injury3	E800-E869, E880-E929	E950-E959	E960-E969, **E979**,E999.1	E980-E989	E970-E978, E990-E999.0
Adverse effects					E870-E879 E930.0-E949.9
Medical care					E870-E879
Drugs					E930.0-E949.9
All external causes					E800-E999

[1]Includes legal intervention (E970-E978) and operations of war (E990-E999).

[2]Three 4th-digit codes (.4 [occupant of streetcar], .5 [rider of animal], .8 [other specified person]) are not presented separately because of small numbers. However, because they are included in the overall motor vehicle traffic category, the sum of these categories can be derived by subtraction.

[3]Codes in bold are for morbidity coding only. For details see table 2.

[4]E849 (place of occurrence) has been excluded from the matrix. For mortality coding, an ICD-9 E849 code does not exist. For morbidity coding, an ICD-9-CM E849 code should never be first-listed E code and should only appear as an additional code to specify the place of occurrence of the injury incident.

Note: ICD-9 E codes for coding underlying cause of death apply to injury-related death data from 1979 through 1998. Then there is a new ICD-10 external cause of injury matrix that applies to death data from 1999 and after. This can be found on the National Center for Health Statistics website.