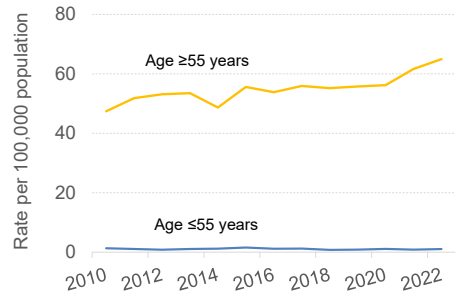


ENSURING A SAFE AND HEALTHY "AUTUMN OF ONE'S YEARS": FALL-RELATED INJURIES, DEATHS, AND PREVENTION

If you fall, I will always be there to catch you. The Floor

Unintentional falls* (hereinafter referred to as falls) account for approximately two-thirds (9,230 in 2022) of all injury hospitalizations in Oregon. Moreover, falls are second only to drug overdoses among injury deaths in Oregon. The rate of falls for Oregon adults ≥55 years of age rose from 47 per 100,000 population (/100k) in 2010 (n=498) to 65/100k in 2022 (n=872). In contrast, the rate for those <55 years of age changed little during that time, hovering around 1/100k (Figure 1). The people at highest risk for fall-related fatal injuries were those ≥85 years of age during 2020–2022, with women accounting for 60% of deaths (by count) in this age group (Figure 2). An age adjustment for the years 2018–2022, shows a higher death rate in this same age group for men vs. women indicating that the higher count in women is likely due, in part, to factors associated with women living longer. This same age-adjustment analysis showed that women were more likely to visit the emergency department (ED) and be hospitalized due to a fall (Table 1).

Figure 1. Fall-related crude death rate by age, Oregon, 2010–2022

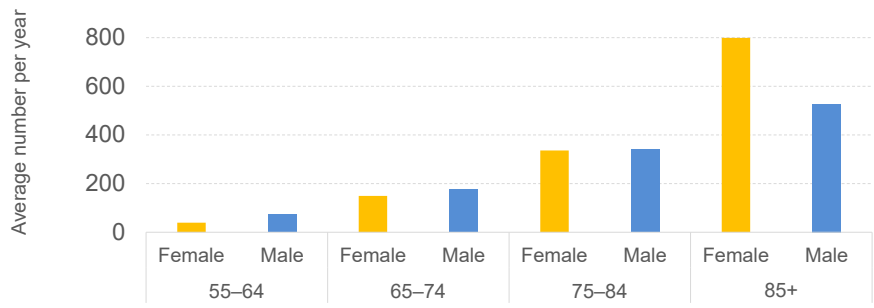


*Intentional falls occur where people try to harm themselves or others.

TABLE 1. Fall-related age-adjusted rates of deaths, hospitalizations, and emergency department visits by sex per 100,000 population ≥65 years of age

		2018	2019	2020	2021	2022
Male	Deaths	108	124	119	123	144
	Hospitalizations	1271	823	834	846	868
	ED visits	3662	4959	4551	5261	5779
Female	Deaths	92	88	97	110	109
	Hospitalizations	765	1068	1005	1042	1071
	ED visits	4402	6406	5770	6665	7365

Figure 2. Average fall-related deaths by age and sex in Oregon, 2020–2022



OREGON vs. U.S.

Oregon consistently outpaces the United States in terms of fall-related mortality in this age group (Figure 3).^{1,2} One of the most serious fall-related injuries is a hip fracture. Estimates vary, but a large U.S. study found a 21% one-year mortality rate after surgical repair of hip fracture in adults >60 years of age.³

In 2020, 14 million people ≥65 years of age (28% of the population in that age bracket) in the United States reported at least one fall during the previous year. In 2021, 38,742 (78/100k) adults ≥65 years of age died as the result of falls.¹ The U.S. population ≥85 years of age is projected to more than double — from 6.6 million in 2019 to 14.4 million in 2040.⁴ This means that a much larger population will be highly vulnerable to fall-related injuries.

From 2015 to 2020, the Oregon Behavioral Risk Factor Surveillance System showed that approximately a third of people ≥65 years of age in Oregon reported falling at least once in the past year (roughly the same percent for each race/ethnicity as well), with approximately 8% reporting

Figure 3. Fall-related crude death rate Oregon and United States, adults ≥85 years of age, 2015–2020

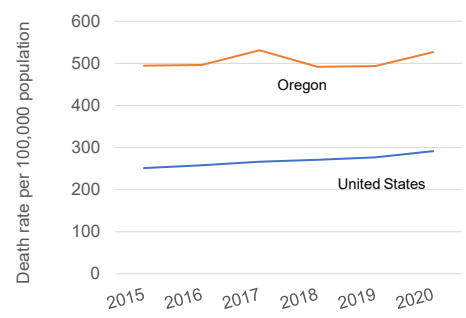


Table 2. Fall-related crude rates of deaths, hospitalizations and ED visits by race/ethnicity+ in Oregon residents ≥55 years of age, 2020–2022

Race/Ethnicity	Rates per 100,000		
	Deaths	Hospitalizations	ED Visits
AN/AI	36	309	3,154
Asian/NHPI	25	204	1,516
Black	22	230	2,936
Hispanic	24	234	2,378
White	63	580	3,899

having fallen at least three times. Among those who reported a fall, approximately a third reported a resulting injury that limited regular activities for at least a day or led them to seek care.

RACE AND ETHNICITY

In Oregon, the fall-injury crude death rate in adults ≥55 years of age by race and ethnicity+ during 2020–2022 was highest in White people (63/100k), followed by American Indian/Alaska Native (AI/AN, 36/100k), Asian and Native Hawaiian/Pacific Islander (NH/PI, 25/100k), Hispanic (24/100k), and Black (22/100k) (Figure 4). The disparity by race and ethnicity for hospitalizations is similar for deaths. However, the disparity is slightly blunted for ED visits (Table 2). Both U.S.¹ and Oregon data show race/ethnicity disparities in fall-related deaths, with White people having the highest burden. Reported falls by White people for the U.S. and Oregon do not match that burden disparity¹, suggesting that other determinants might contribute to death following a fall. An age adjustment for the year 2022 among those ≥65 years of age in Oregon shows a similar trend for deaths by race/ethnicity. For hospitalizations, age adjustment

showed a different trend with Black people most likely to be hospitalized for a fall (1,630/100k), followed by White (925/100k), AI/AN (567/100k), Hispanic (473/100k), and Asian/NHPI (415/100k).

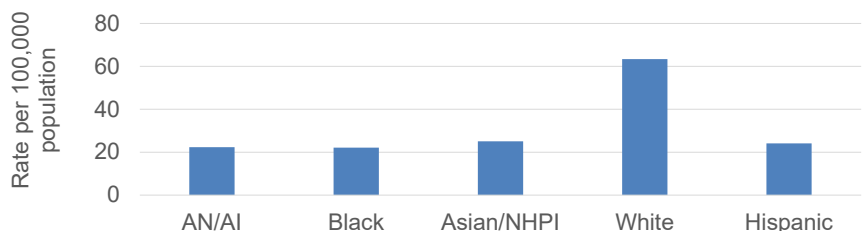
COUNTY DATA

Fatal falls in older adults during 2020–2022 were highest in Lane (n=306) and Multnomah counties (n=286). The death rates were highest in Deschutes and Crook counties and lowest in Malheur County. Jefferson and Curry counties had the highest rates of ED visits for falls. Lane and Multnomah counties also had the highest counts of hip-injury hospitalizations. These and other county-specific data are available in Table 3, *infra*.

ECONOMIC BURDEN

In Oregon, charges for fall-related hospitalizations of residents ≥55 years of age during 2022 were \$370 million with a median charge of \$48,303 and a maximum of \$1,306,550. The charges were mainly to Medicare (83%) followed by commercial (6.3%), other payers (5.5%), Medicaid (4.5%), and uninsured (0.7%). ED visits by residents of this age in 2022 incurred charges of \$371 million, with a median charge of \$4,316 and a maximum of \$390,530. The charges

Figure 4. Fall-related crude death rates by race/ethnicity+ for Oregon residents, ≥55 years of age, 2020–2022



+When multiple races were reported for a person, we chose the least common (rarest) race identified. Previously, when multiple races were reported, none were chosen. For Table 2 and Figure 4, the only difference was in AN/AI that changed from 22/100k to 36/100k

were mainly to Medicare (75%), followed by commercial (11%), Medicaid (7%), other payers (6%), and uninsured (1%). These costs do not account for the long-term effects of these injuries, such as disability, dependence on others, lost time from work and household duties, and reduced quality of life.

RISK FACTORS FOR FALLS

Risk factors for falling include lower body weakness, vitamin D deficiency, a history of falls, a history of hypotension, a history of low or unstable blood sugar, excessive use of alcohol or other drugs, difficulty with walking and balance, use of prescription or over-the-counter medications that may increase the risk of dizziness or sleepiness, pain or poor footwear, and home or outdoor hazards such as rugs, clutter, furniture, and steps.

In Oregon in 2022, most falls resulting in death in those ≥55 years of age were at home (67%) or at a residential institution (16%), such as a long-term care facility, nursing facility, or similar housing. The good news is these risks can be reduced, and clinical intervention can help.

HOW CAN CLINICIANS HELP PREVENT FALLS?

The risk factors for falls can develop slowly as people age, but falls do not have to be a natural part of aging. Clinicians play an important role in fall prevention by evaluating older adults for functional and mobility status, collecting a history of recent falls, reviewing their medications (including over-the-counter), and checking their vision and hearing. Clinicians can also highlight the importance of fall prevention, educate about bone health and calcium and vitamin D status, prescribe strength and balance practices (e.g., Tai Chi), and provide advice on how to make the home safer. Assessments can be performed at a patient's home to evaluate for trip hazards, adequate lighting, and railings and grab bars as appropriate. The Oregon Health Plan covers five evidence-based programs as a benefit. These include Tai Ji Quan, Stepping On, Otago, Walk with Ease, and OHSU's "Matter of Balance".⁵

The Centers for Disease Control and Prevention (CDC) Stopping

TABLE 3. Fall-related counts and crude rates of deaths, hospitalizations, and ED visits by county in Oregon residents ≥55 years of age, 2020–2022

County	Deaths	Death Rate/100k	Hospitalizations	Hospitalization Rate/100k	Hip fracture hospitalizations	Hip fracture hospitalizations Rate 100/k	ED Visits	ED Visits Rate/100k
Baker	11	53.2	75	362.6	30	145.0	986	4,766.7
Benton	69	87.1	284	358.4	84	106.0	2,179	2,749.7
Clackamas	217	52.5	2,285	552.8	995	240.7	15,243	3,687.7
Clatsop	25	52.9	342	724.1	145	307	2,496	5,284.6
Columbia	12	21.6	199	358.4	55	99.1	1,281	2,307.1
Coos	43	51.5	529	633.7	245	293.5	4,279	5,126.3
Crook	36	116.5	174	563.3	73	236.3	1,725	5,584.2
Curry	12	32	179	477.4	89	237.4	2,567	6,846.4
Deschutes	260	125	1,158	556.6	386	185.5	5,794	2,784.8
Douglas	85	61.3	960	692.9	562	405.6	5,800	4,186.2
Gilliam	1 to 4	112	14	522.6	11	410.6	78	2,911.5
Grant	9	89.3	44	436.5	18	178.6	526	5,218.3
Harney	1 to 4	34.3	40	456.8	20	228.4	462	5,275.8
Hood River	14	66.5	128	608.4	62	294.7	896	4,258.8
Jackson	101	41.6	1,816	748.3	893	368	9,017	3,715.6
Jefferson	15	59.9	188	750.5	67	267.5	1,686	6,730.5
Josephine	58	52.6	863	782	427	386.9	4,362	3,952.7
Klamath	29	39.4	445	604.3	225	305.5	2,490	3,381.1
Lake	7	71.4	57	581.8	51	520.5	303	3,092.5
Lane	306	80.3	2,714	711.8	1,264	331.5	15,216	3,990.6
Lincoln	62	86.1	427	592.9	184	255.5	3,601	5,000.3
Linn	104	81.1	672	524	249	194.2	6,477	5,050.5
Malheur	1 to 4	3.8	117	449.7	57	219.1	1,040	3,997.5
Marion	211	71.3	1,881	635.4	951	321.3	14,250	4,813.9
Morrow	1 to 4	9.7	33	320	23	223.1	495	4,800.7
Multnomah	286	46.1	3,414	550.5	1,330	214.5	22,780	3,673.4
Polk	79	99.5	532	670.3	264	332.7	4,061	5,117.1
Sherman	1 to 4	89	27	1,201.6	14	623.1	87	3,871.8
Tillamook	15	42.5	258	731	122	345.7	1,648	4,669.2
Umatilla	33	50.7	288	442.4	149	228.9	2,975	4,569.9
Union	5	18.5	115	424.4	76	280.5	1,485	5,480.5
Wallowa	1 to 4	30.4	65	659	24	243.3	505	5,119.6
Wasco	17	62.1	248	905.3	109	397.9	1,409	5,143.6
Washington	247	53.3	2,306	497.2	759	163.7	16,653	3,590.9
Wheeler	1 to 4	43.7	15	656.2	1 to 9	262.5	88	3,849.5
Yamhill	55	54.9	686	684.5	311	310.3	5,312	5,300.1

Elderly Accidents, Deaths and Injuries (STEADI) initiative⁶ provides useful tools to assess and reduce fall risk among older adults. Further, CDC recommends that healthcare providers as well as state, tribal, and local health departments and organizations working with older adults help older adults self-screen for their risk of falling, using the online “Falls Free CheckUp”⁷ and encourage them to speak to their healthcare provider.

As a result of being injured or traumatized by a fall, individuals can develop fear of repeat falling. This can progress to decreased activity and changes in gait patterns and balance, which can increase the risk of repeat falling.⁸

It is important to realize that older adults who have been injured in a fall may need emotional support, empowerment, support for daily living and social-related activities, and medical attention.

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