

INJURIES, HOSPITALIZATIONS, AND DEATHS



Understanding disparities in risk factors and health outcomes, like injuries, can help community organizations and policy makers better identify contributing issues and target the response. It is evident that more investigation and analysis is needed into the risk factors and causes affecting disparities in injuries, hospitalizations, and deaths in Kitsap. In particular, qualitative data on injuries, hospitalizations, and deaths in Kitsap County is lacking.

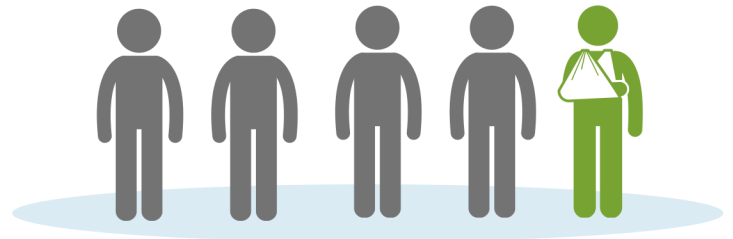
TOPIC OVERVIEW

In public health practice, injury is damage to the body resulting in harm or destruction of health. Injuries can result from motor vehicle crashes, falls, near drownings, burns, poisoning, and acts of violence against oneself or others, among other causes. Injuries sometimes result in hospitalizations and can potentially lead to lifelong disability or death.¹

In 2021, there was a 12% increase in preventable injury-related deaths in the U.S. compared to the previous year and a 159% increase over the past 29 years. In 2021, preventable injuries ranked as the third leading cause of death for the U.S. population (all ages), behind heart disease and cancer.

The number of non-fatal preventable injuries is much higher; about one in five U.S. residents sought medical treatment for an injury in 2021. Comparing 2021 to 2020, preventable injury deaths occurring at home increased 13%, those in motor vehicles increased 11%, those in public increased almost 11%, and those at work increased 9%.²

Accidents, or incidents that happen unintentionally, can also result in injury. In Kitsap, accidents increased from the fifth leading cause of death in 2020 to the fourth in 2021. From 2017 to 2021, accidents were the leading cause of death for residents aged 18 to 34 and in the top three causes for those born to 17 and 35 to 64. Accidents contributed to more years of potential life lost* than any other cause in Kitsap — more than 1,800 years lost in 2021.



About one-in-five U.S. residents sought medical attention for an injury in 2021.

Accidents have also been in the top ten leading causes of hospitalization in Kitsap from 2016 to 2019.

This chapter discusses the leading causes of hospitalization and death in Kitsap County, as well as injuries like falls and motor vehicle traffic accidents. Injury prevention often includes substance use overdose prevention and suicide. These topics are discussed in more detail in the Health Behaviors and Wellbeing chapters respectively.

Cancer, heart disease, COVID-19, and accidents were all identified in the top five causes of death and premature death in Kitsap, as well as in the top five causes of years of potential life lost* before age 65. Suicide also ranked high in the leading causes of premature death and years of potential life lost. Accidents almost exclusively included substance use poisoning, fall injury, and motor vehicle traffic-related injury.

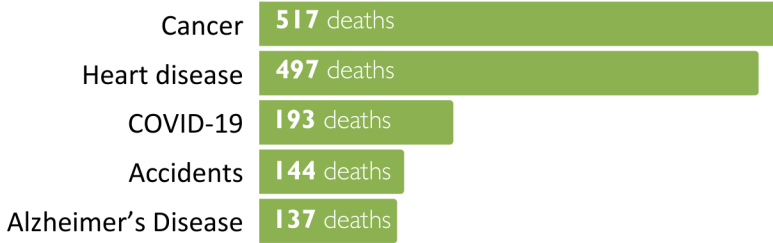
**Years of potential life lost are the hypothetical number of years of life a person would have lived if they had not died early, assuming they would have lived to age 65.*

KEY FINDINGS

The main findings from this chapter are based on the leading causes of hospitalization and death, which give insight into the most important areas to address in preventing hospitalization and death. These data are specific to Kitsap County.

Top causes of death

The top five causes of death in Kitsap in 2021 were:



Accidental deaths

The top three causes of accidental death in Kitsap in 2021 were:



Premature death

The top causes of premature death (deaths among people younger than 65) in Kitsap in 2021 were:



KEY DISPARITIES

While the findings from this report provide evidence of disparities in Kitsap County across multiple indicators, the following were identified as the most significant and are not a complete list of all disparities:

Disparities by sex

- Life expectancy was shorter in males compared to females from 2016 to 2020.
- The premature death rate (deaths before age 65) was higher in males compared to females from 2017 to 2021.

Disparities by geographic region

- From 2016 to 2020, life expectancy was higher in Bainbridge Island compared to all other sub-county geographies.

Disparities by race/ethnicity

- From 2016 to 2020, life expectancy was shortest in Native Hawaiian or Pacific Islanders, American Indian or Alaska Natives, and Black or African Americans. It was highest among Asian or Asian Americans and Hispanic or Latinos.
- Premature death rates in Black or African American residents and Native Hawaiian or Pacific Islander residents were higher than rates in white residents and Hispanic or Latino residents. These were, in turn, higher than rates in Asian or Asian American residents.

LEADING CAUSES OF HOSPITALIZATION AND DEATH

Hospitalizations and deaths occur due to a wide array of health issues; injuries come about intentionally (such as through self-harm) or unintentionally (such as an auto accident). Understanding the main issues that lead to hospitalization and death are crucial to prioritizing how we allocate resources, what types of actions we undertake, and where we focus resources to help our population live longer, healthier lives.

Life expectancy

Life expectancy is the average number of years a person at birth can expect to live given current death rates for each age group. Life expectancy can be used to evaluate mortality trends over time to help determine when excessive death is occurring in a population to identify prevention actions that will help people live longer, healthier lives.

There are many factors during an individual’s lifetime that affect mortality, and therefore life expectancy, such as childhood conditions, environmental and material living conditions, education level, and income. Behavioral risk factors, such as substance use, nutrition and exercise, and factors that affect an individual’s ability to influence those risk factors all contribute to life expectancy.³ Social and economic determinants of health are discussed in more detail in the **Demographics and Social Determinants of Health** chapter.

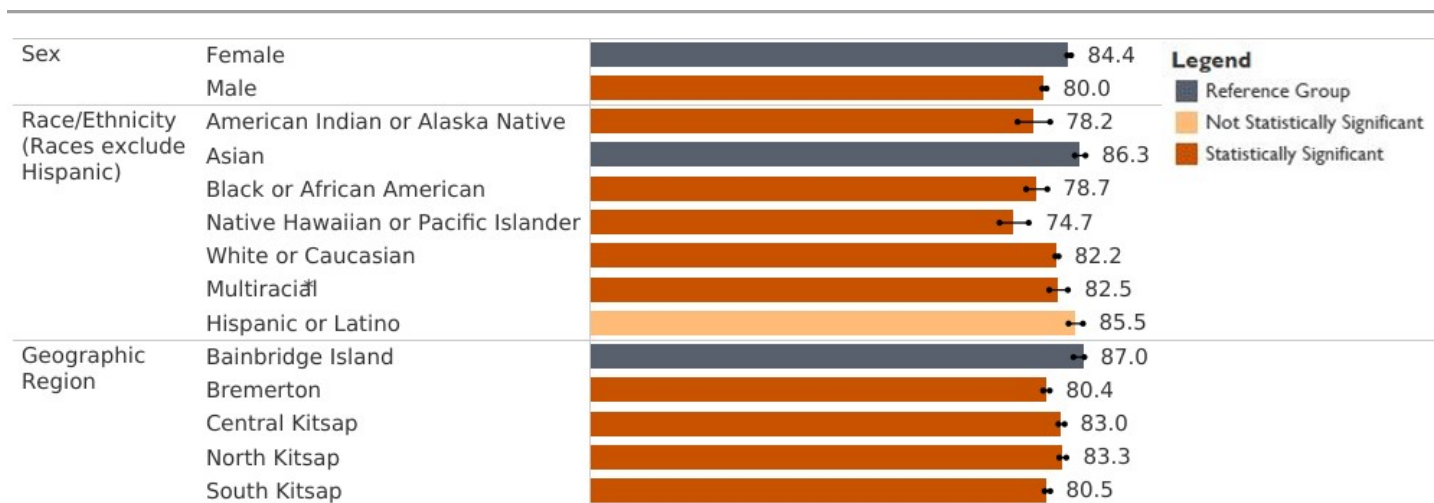


Figure 1. Kitsap County life expectancy in years by sex, race/ethnicity and geographic region, 2016-20

Data source: Washington State Department of Health, Linked Birth & Death Certificate Data

Notes: It appears that, for persons who have died that identified as multiple races, death rates are biased low and life expectancy is biased high. Still, the Center for Health Statistics recommends against using multiple race deaths data until further notice. Additionally, geographic region is based on ZIP Code rollup.

Life expectancy has been increasing statistically significantly in Kitsap County since at least 2000. In Kitsap, based on current death rates, a baby born in 2020 can expect to live about 83 years. However, some populations within Kitsap County have statistically significantly lower life expectancies when compared to other populations (Figure 1). Men have

lower life expectancies than women by more than four years. This difference is present in Kitsap and similar differences by sex are seen nationally and in many other countries around the world.^{4 5}

Life expectancy also varies by race and ethnicity and geographic area of residence. Native Hawaiian and Pacific Islanders have the lowest life expectancies in Kitsap, followed by American Indian and Alaska Natives, and Black and African Americans. Residents of Bremerton and South Kitsap (80.5 years) have statistically significantly shorter life expectancies than residents of Bainbridge Island (87 years).

All-cause death rate

The rate of death for Kitsap residents has been statistically significantly decreasing from 2010 to 2021, after adjusting for age (Figure 2). See the **Methods** chapter for more information about adjusting for age.

Although there was an increase in death rate from 2020 to 2021, this increase was not statistically significant. In 2021, there were an estimated 706 deaths in Kitsap County for every 100,000 residents. This rate was statistically significantly lower than Washington’s rate.

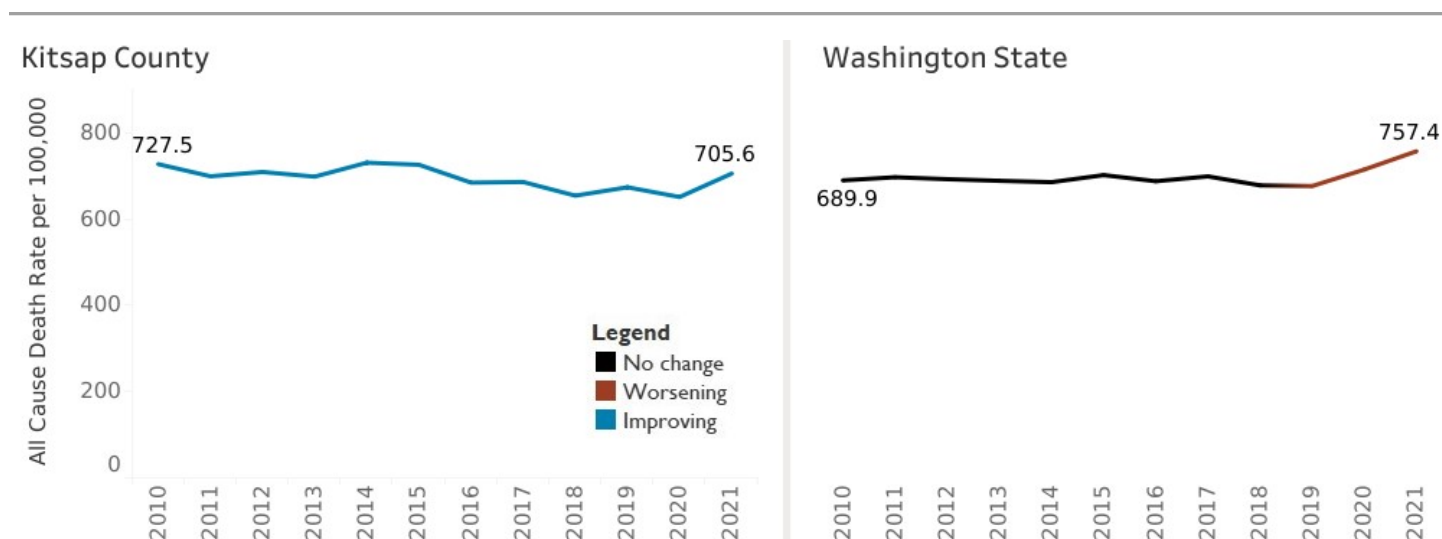


Figure 2. All-cause death rate per 100,000 population (age-adjusted)

Data source: Washington State Department of Health, Death Certificate Data

In 2021, the death rate in Kitsap by age was higher with each increasing age group (Figure 3). The death rate in males (826 per 100,000) was higher than in females (598 per 100,000). Disparities were also seen across races and ethnicities. Kitsap residents who identified as American Indian or Alaska Native (1,552 per 100,000) and as Native Hawaiian or Pacific Islander (1,417 per 100,000) had statistically significantly higher rates than those who identified as white (701 per 100,000) and Asian or Asian American (574 per 100,000).

Similar to life expectancy, social, economic, and environmental factors, such as income, housing, education and safety, are associated with differences in death rates across racial and ethnic subgroups.^{6 7 8}

For more information about these factors, see the chapter on **Demographics and Social Determinants of Health**.

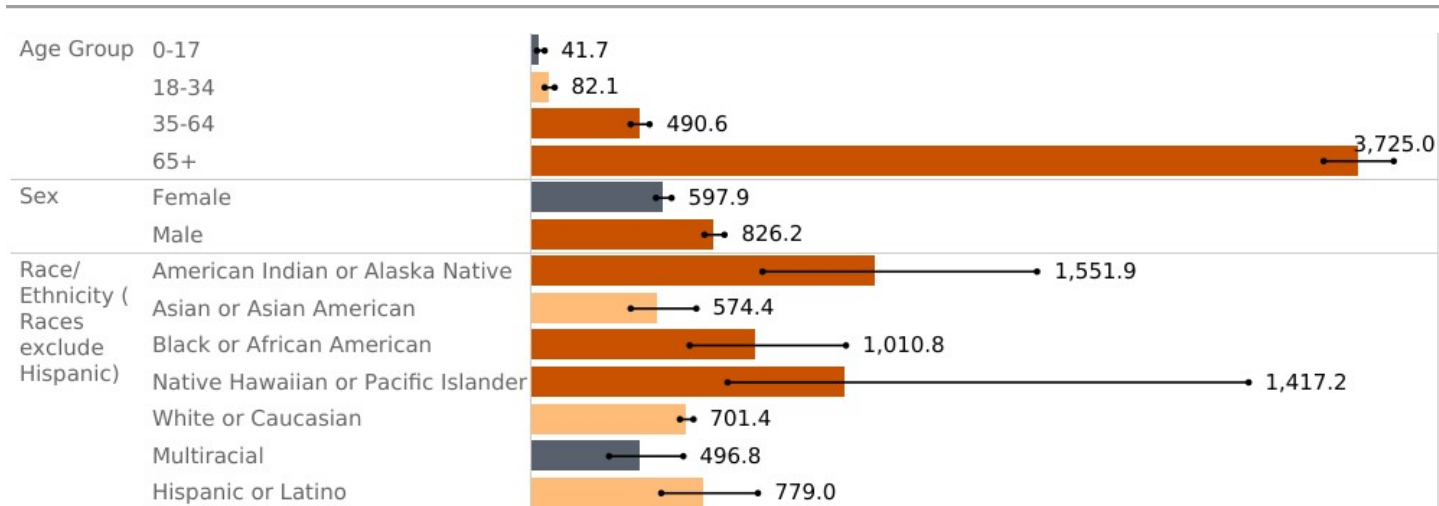


Figure 3: Kitsap County all-cause death rate per 100,000 population by subgroup, 2021 (age-adjusted)

Data source: Washington State Department of Health, Death Certificate Data

Note: Age group data is age-specific and not age-adjusted.



Leading causes of death

Over the past century, Americans have been living longer due to improvements in many areas of healthcare, such as the availability of vaccinations and antibiotics. During this same time, the leading causes of death have been increasingly chronic health conditions (cancer, heart disease and cerebrovascular diseases, like stroke).

Cancer was the leading cause of death in 2021 in Kitsap County, with 186 deaths for every 100,000 people (Figure 4). Heart disease was the second leading cause and the only other cause with a rate above 150 deaths per 100,000 residents (179 deaths per 100,000). There is a large decrease in the number of deaths from the second cause to the third, COVID-19. COVID-19 accounted for 70 deaths per 100,000 residents in 2021, after being the tenth leading cause in 2020 (17 per 100,000).

Accidents, Alzheimer’s disease, and cerebrovascular disease all had about 50 deaths per 100,000. Chronic lower respiratory disease was seventh and diabetes mellitus was eighth. Chronic liver disease and suicide were ninth and tenth respectively.

From 2017 to 2021, leading causes of death were very similar between the sexes, with cancer and heart disease being the first and second leading causes for both males and females (Figure 5). The third leading cause was accidents for males and Alzheimer’s disease for females. During the same period, the top two causes of death were cancer and heart disease for all racial and ethnic groups. Cancer was the leading cause for Native Hawaiian or Pacific Islander, white, multiracial, and Hispanic or Latino residents, followed by heart disease. For American Indian or Alaska Native, Asian or Asian American, and Black or African American residents, heart disease was the leading cause, followed by cancer.

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	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Rank (#)
Cancer	185.2	179.7	191.9	186.1	204.2	190.9	181.0	175.4	185.2	190.0	176.3	186.2	1
Heart Disease	143.0	129.5	133.2	140.1	141.9	150.9	172.7	165.5	167.3	172.7	165.5	179.0	2
COVID-19											17.1	69.5	3
Accidents	34.8	35.2	31.2	31.2	42.1	43.5	41.4	43.9	42.1	45.7	42.8	51.9	4
Alzheimer's disease	60.6	64.2	73.7	63.5	64.9	50.4	51.2	52.2	53.3	52.6	51.2	49.3	5
Cerebrovascular diseases	31.2	35.6	35.9	35.6	41.4	34.5	54.4	59.1	48.3	49.3	51.5	47.5	6
Chronic lower respiratory diseases	47.2	48.6	43.9	41.4	47.9	45.0	42.8	45.7	42.1	39.5	42.8	36.4	7
Diabetes mellitus	24.3	23.6	22.1	21.8	22.1	22.1	21.8	20.0	18.5	22.5	26.5	34.2	8
Chronic liver disease & cirrhosis	14.5	12.7	13.1	14.5	18.9	16.3	16.3	12.0	9.4	16.0	18.9	19.1	9
Suicide	14.5	11.6	13.1	12.0	13.4	20.0	16.0	16.3	14.9	21.4	19.2	17.6	10
Parkinson's disease	8.0	8.0	8.7	9.1	7.6	10.5	9.4	9.4	8.3	17.4			

Figure 4. Leading causes of death for Kitsap County, rate per 100,000

Data source: Washington State Department of Health, Death Certificate Data

Notes: Leading causes are based on the NCHS 113 selected leading causes of death. These rates are not age-adjusted in order to show the biggest causes of death in Kitsap regardless of age.

Accidents were the third leading cause of death for American Indian, Black, multiracial and Hispanic subgroups. Alzheimer's disease was the third leading cause for whites, cerebrovascular disease (stroke) for Asians, and diabetes for those who identified as Native Hawaiian or Pacific Islander.

Leading causes of death were very different by age group (Figure 5). The top leading causes of death for children under the age of 18 were perinatal conditions. Congenital and chromosomal abnormalities (such as Down syndrome, cerebral palsy and heart defects) and accidents (unintentional injuries) tied for second in this age group. Accidents were the first leading cause for those aged 18 to 34 and the third leading cause for those 35 to 64. Suicide was the second leading cause of death among those aged 18 to 34. Cancer and heart disease are the top two leading causes for both those aged 35 to 64 and 65 and older.

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Figure 5. Leading causes of death for Kitsap County by sex, race/ethnicity and age group, rate per 100,000 population, 2017-21

Data source: Washington State Department of Health, Death Certificate Data

Notes: Leading causes are based on the NCHS 113 selected leading causes of death. These rates are not age-adjusted in order to show the biggest causes of death in Kitsap regardless of age.

Premature death

Premature death is the number of deaths that occur prior to the deceased’s 65th birthday out of every 100,000 residents in Kitsap. After adjusting for age, there were approximately 216 premature deaths of Kitsap residents for every 100,000 residents in 2021. There has been no statistically significant change in this rate since at least 2010, and Kitsap’s rate is lower than Washington state’s rate overall of 241 deaths per 100,000.

Differences are seen by subgroups in Kitsap from 2017 to 2021 (Figure 7). The rate of premature death in males (231 per 100,000) was statistically significantly higher than in females (154 per 100,000). Premature death rates in Black or African American residents and Native Hawaiian or Pacific Islander residents were statistically significantly higher than rates in white residents and Hispanic or Latino residents. In turn, these rates were statistically significantly higher than rates in Asian or Asian American residents.

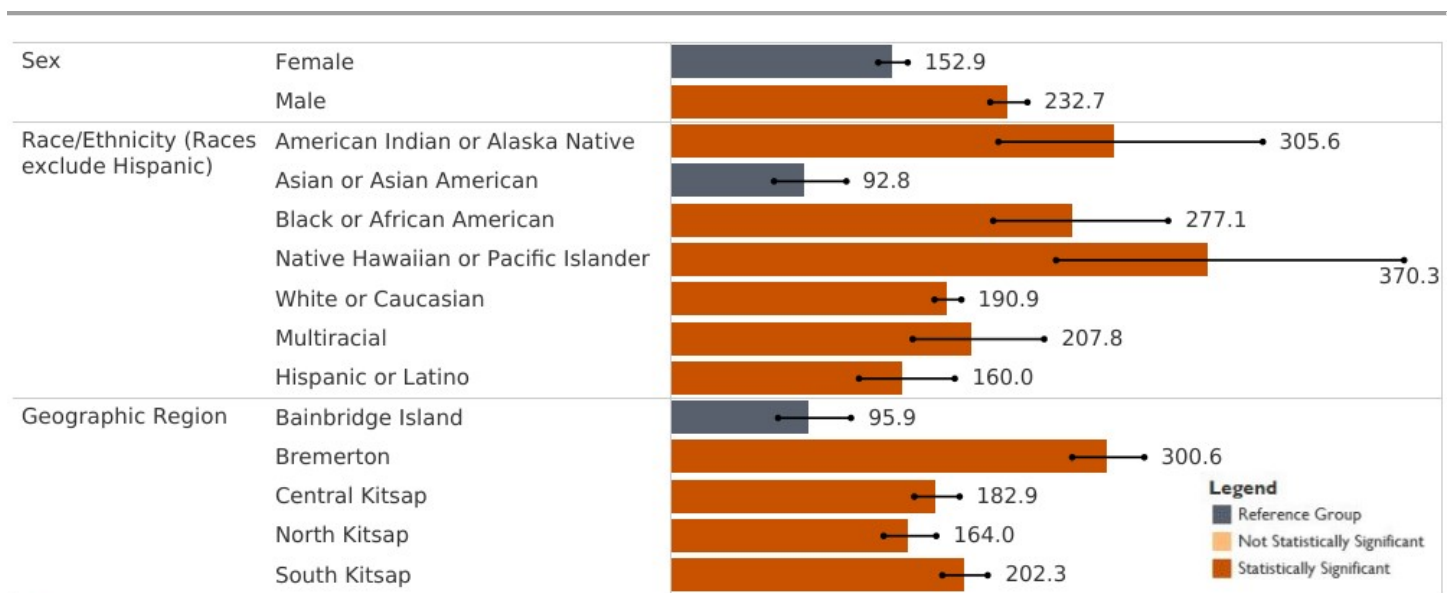


Figure 6. Kitsap County premature death rate per 100,000 by sex and race/ethnicity, 2017-21 (age-adjusted)

Data source: Washington State Department of Health, Death Certificate Data

Note: Geographic regions are based on school districts.

The top three leading causes of premature death in 2021 were cancer, accidents, and heart disease. In 2021, accidents replaced heart disease as the second leading cause of premature death, and COVID-19 replaced suicide as the fourth leading cause. Suicide and chronic liver disease/cirrhosis both had the same rate and ranking as the fifth leading cause.

Years of potential life lost before the age of 65

Years of potential life lost, or YPLL, is the hypothetical number of years of life that a person would have had if they had not died early (assuming they would have lived to age 65). It is calculated by subtracting the age at death from 65 for each person. The YPLL adds up all the lost years, divided by the total number of residents and multiplied by 100,000; this is the number of years lost for every 100,000 residents.

The causes that accumulated the most life years lost for Kitsap residents in 2021 were accidents (824 years lost per 100,000), cancer (427 years lost per 100,000) and suicide (404 years lost per 100,000). Heart disease (255 years lost per 100,000) was the fourth leading cause and COVID-19 (254 years lost per 100,000) replaced chronic liver disease as the fifth leading cause of years of potential life lost before the age of 65 in Kitsap in 2021.

There has been some variation in the ranking of the causes in the past five years, but accidents, cancer, suicide and heart disease have remained the top four causes in Kitsap since 2015.

UNINTENTIONAL INJURIES

Accidental injury was the fourth leading cause of death in the U.S. in 2021⁹, with about 68 deaths for every 100,000 people. It was also the fourth leading cause of death in Kitsap County in 2021, with 52 deaths for every 100,000 residents. Accidents were the leading cause of death among those 18 to 34 from 2017 to 2021 in Kitsap, and the second and third leading cause of death among those 0 to 17 and 35 to 64, respectively.

The three major types of accidents causing death in Kitsap County in 2021 were drug and substance use poisoning (37% of all accidental deaths), falls (37%), and motor-vehicle traffic-related accidents (10%).

Drug and substance use, including substance use poisoning, are addressed in **the Health Behaviors** chapter.



Figure 7. Leading causes of unintentional injury deaths by sex, race/ethnicity, and age, 2017-21

Data source: Washington State Department of Health, Death Certificate Data

Notes: Data are not age adjusted. Causes with less than 10 deaths are ranked, but the rate is not shown. Care should be taken in interpreting the rankings because of the very small numbers. When two causes have the same number of deaths, they will have the same ranking.

Deaths due to accidental falls

Falls were the leading cause of accidental deaths from 2010 to 2019. Accidental falls dropped to the second leading cause of accidental death in Kitsap in 2020 and were tied with substance use poisoning as the leading causes of accidental death in Kitsap residents in 2021, causing 53 deaths.

Falls are the leading cause of accidental death in residents who identify as white and Asian or Asian American. They are the third leading cause of accidental death in American Indian or Alaska Natives, Black or African Americans and Hispanic or Latinos. Falls are the leading cause of accidental death for those 65 and older (all genders) and for females in Kitsap. They are the second leading cause of accidental death in males.

There were approximately 96 fall-related accidental deaths for every 100,000 residents aged 65 and older in Kitsap in 2021 after adjusting for age (Figure 8). Although there was an increase from 2020 to 2021, Kitsap’s rate has been statistically significantly decreasing from 2014 to 2021. Kitsap’s rate in 2021 was about the same as Washington’s rate (105 per 100,000).

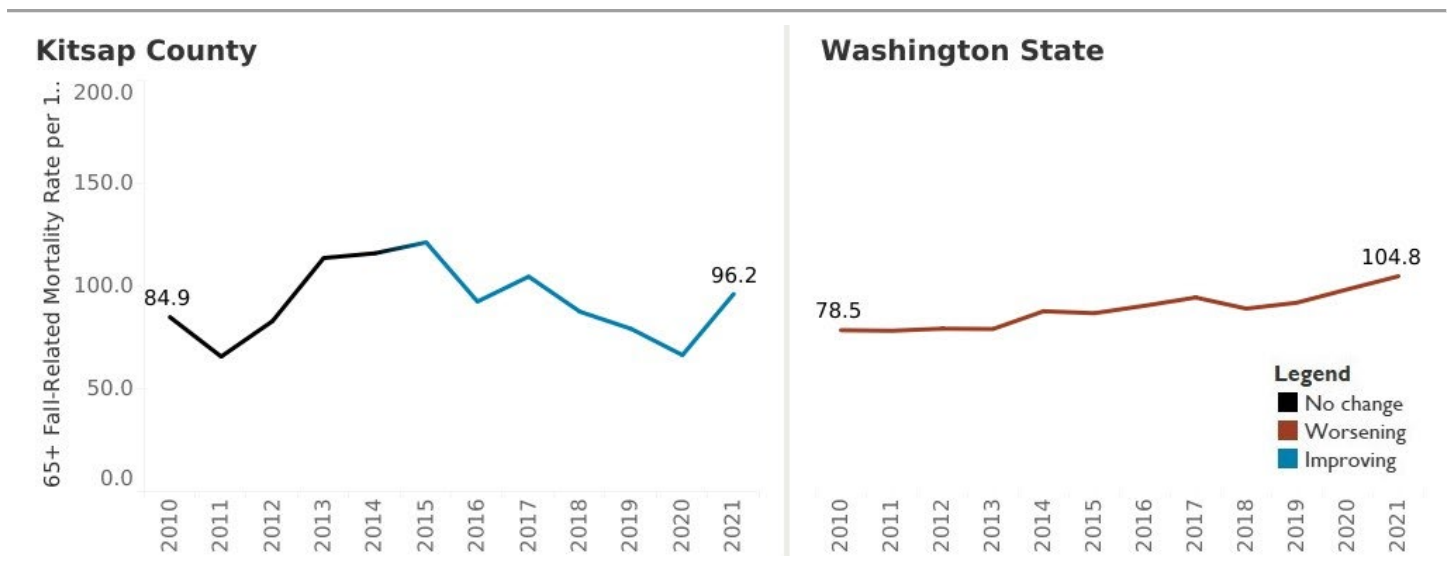


Figure 8. 65 years and older fall-related death rate per 100,000 (age-adjusted)

Data source: Washington State Department of Health, Death Certificate Data

Adults over the age of 85 have a statistically significantly higher fall rate (389 per 100,000) than those 65 to 74 (83 per 100,000) and those 75 to 84 (85 per 100,000). There is no statistically significant difference between males and females.

Although accidental deaths due to falls occurred in populations 65 and older in all racial and ethnic groupings in Kitsap from 2017 to 2021, the only race or ethnicity with 10 or more accidental deaths due to falls in those aged 65 and older was white (88 per 100,000). Because of this, differences by race and ethnicity were unable to be evaluated.

Fall-related hospitalizations in older adults (age 65 and older)

The rate of falls resulting in hospitalizations is age-adjusted to account for differences in the age distribution between Kitsap and Washington.

There were 1,152 fall-related hospitalizations in Kitsap for every 100,000 residents aged 65 and older in 2019 (Figure 9). This rate remained stable from 2016 to 2019 and was lower than Washington’s rate overall in 2019. Residents in Bainbridge Island (1,410 per 100,000) and South Kitsap (1,419 per 100,000) had higher rates of fall-related hospitalizations among those aged 65 and older, compared to North Kitsap (1,127 per 100,000).

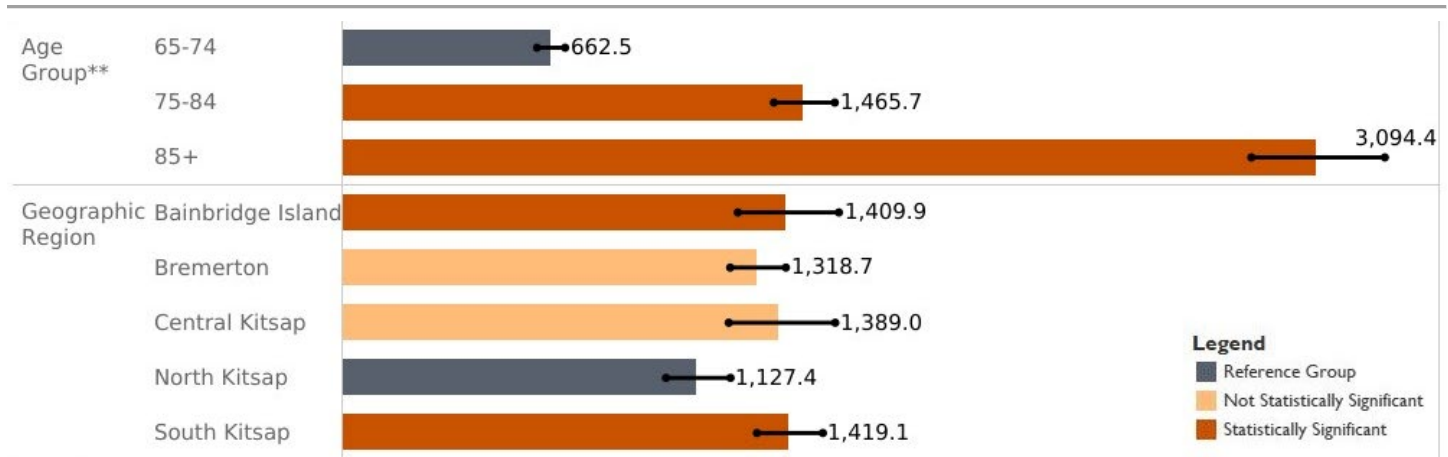


Figure 9. 65 years and older fall-related hospitalization rate per 100,000, 2016-19 (data by region are age-adjusted)

Data sources: Washington Hospital Discharge Data, Comprehensive Hospitalization Abstract Reporting System (CHARS), Washington State Department of Health; Washington State Department of Health, Center for Health Statistics, Community Health Assessment Tool (CHAT); Health Care Authority (HCA) Medicaid Enrollment and Claims Data

Note: Age-specific rate, not age-adjusted.

Motor vehicle injury-related hospitalizations

This indicator is the annual number of motor vehicle traffic-related hospitalizations for every 100,000 residents in Kitsap. It is based on the residence of the injured person, not the location of the injury or hospitalization. The rate is age-adjusted to account for differences in age distribution between Kitsap and Washington residents. It includes fatal and nonfatal hospitalization discharges.

After adjusting for age, there were approximately 42 motor vehicle traffic-related hospitalizations for every 100,000 Kitsap residents in 2019. This rate is not statistically different from Washington’s rate and there was no statistically significant trend identified from 2016 to 2019. During the same period, males had a statistically significantly higher rate (59 per 100,000) than females (28 per 100,000).

Children ages 0 to 17 had the lowest rate (11 per 100,000). Young adults aged 18 to 34 (61 per 100,000) had the highest rate by age. The rate decreased slightly with each increasing adult age group. Among county regions, South Kitsap had the highest rate (56 per 100,000), statistically significantly higher than residents of Central Kitsap, who had the lowest rate (31 per 100,000).

COMMUNITY ASSETS

There are many community members and organizations working to improve prevent injuries, hospitalizations and deaths:

[Kitsap Brain Injury](#) support groups are open to anyone with a brain injury, their caregivers, family members, and loved ones.

[Kitsap Division Aging and Long-Term Care](#) and the YMCA of Kitsap and Pierce Counties have partnered to provide Enhance Fitness fall prevention classes.

Community and senior centers, such as [Bainbridge Island Senior Center](#), [Bremerton Senior Center](#), and [Village Green Community Center](#), offer physical activity programs for seniors.

[Northwest Region EMS and Trauma Care Council](#) works in collaboration with agencies in the region to provide injury prevention resources.

[Safe Kids Washington](#) implements evidence-based programs, such as car-seat checkups, safety workshops and sports clinics, that help parents and caregivers prevent childhood injuries.

[Harborview Injury Prevention and Research Center](#) conducts research, trains scientists, educates public health practitioners, and implements prevention programs to achieve injury-related health equity across the lifespan.

Washington State Department of Health's [Older Adult Falls Prevention Program](#) implements a state action plan to address fall prevention, shared informational resources and programs like the self-directed [Walk With Ease](#) program, and partners with the National Council on Aging to coordinate the Washington State Falls Prevention Coalition.

[ThinkFirst National Injury Prevention Foundation](#) has award-winning evidence-based programs to help people learn to reduce their risk for injury.

ENDNOTES

¹ Washington Department of Health, Injury and Violence Prevention, <https://doh.wa.gov/you-and-your-family/injury-and-violence-prevention>

² National Safety Council, Injury Facts, All Injuries, <https://injuryfacts.nsc.org/all-injuries/overview/#:~:text=The%20number%20of%20nonfatal%20preventable,record%2C%2034.0%20per%20100%2C00>

³ Machenback JP, Valverde JR, Bopp M, Bronnum-Hansen H, Deboosere P, Kalediene R, et. al. Determinants of inequalities in life expectancy: an international comparative study of eight risk factors. *The Lancet*. 2019 Oct;4(10):E529-E537. doi: [https://doi.org/10.1016/S2468-2667\(19\)30147-1](https://doi.org/10.1016/S2468-2667(19)30147-1), [https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(19\)30147-1/fulltext](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(19)30147-1/fulltext)

⁴ Global Change Data Lab, Our World in Data, Life Expectancy: females versus males, 2021, <https://ourworldindata.org/grapher/life-expectancy-of-women-vs-life-expectancy-of-men>

⁵ QuickStats: Life Expectancy at Birth, by Sex — National Vital Statistics System, United States, 2019–2021. *MMWR Morb Mortal Wkly Rep* 2023;72:775. DOI: <http://dx.doi.org/10.15585/mmwr.mm7228a5>, <https://www.cdc.gov/mmwr/volumes/72/wr/mm7228a5.htm#:~:text=For%20males%2C%20life%20expectancy%20declined,to%205.8%20years%20in%202021.&text=Reported%20by%3A%20Jiaquan%20Xu%2C%20MD,gov%3B%20Arialdi%20Minino%2C%20MPH>

⁶ Bundy, JD, Mills KT, He H, LaVeist TA, Ferdinand KC, Chen J, et. al. Social determinants of health and premature death among adults in the USA from 1999 to 2018: a national cohort study. *The Lancet*, 2023 Jun; 8(6):E422-E431. doi: [https://doi.org/10.1016/S2468-2667\(23\)00081-6](https://doi.org/10.1016/S2468-2667(23)00081-6), [https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667\(23\)00081-6/fulltext#:~:text=Our%20results%20suggest%20that%20unfavourable,causes%20of%20racial%20health%20disparities](https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(23)00081-6/fulltext#:~:text=Our%20results%20suggest%20that%20unfavourable,causes%20of%20racial%20health%20disparities)

⁷ Johns Hopkins University of Medicine, Social Determinants of Health Are Important Contributors to Mortality Disparities in U.S., Study Finds, <https://www.hopkinsmedicine.org/news/newsroom/news-releases/social-determinants-of-health-are-important-contributors-to-mortality-disparities-in-us-study-finds>

⁸ Singh GK, Daus GP, Allender M, Ramey CT, Martin EK, Perry C, Reyes AAL, Vedamuthu IP. Social Determinants of Health in the United States: Addressing Major Health Inequality Trends for the Nation, 1935-2016. *Int J MCH AIDS*. 2017;6(2):139-164. doi: 10.21106/ijma.236. PMID: 29367890; PMCID: PMC5777389., <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5777389/>

⁹ Centers for Disease Control and Prevention (CDC), Accidents or Unintentional Injuries, <https://www.cdc.gov/nchs/fastats/accidental-injury.htm>

DATA SOURCES

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- Washington State Department of Health, Center for Health Statistics, Death Certificate Data, Community Health Assessment Tool (CHAT), April 2023
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- Washington State Population Interim Estimates (PIE), December 2022