

Deaths due to falls among Minnesota adults aged 65 years and older

1999-2021

Falls became the leading cause of injury mortality among older adults in Minnesota in 2005 and have continued to climb ever since. In 2015, for the first time ever, there were more than 1,000 falls resulting in death among Minnesota residents 65 years and older (N=1,013). The number of annual fall fatalities among this age group has continued to be over 1,000 since 2015.

The risk of death due to falls increases steeply with age.

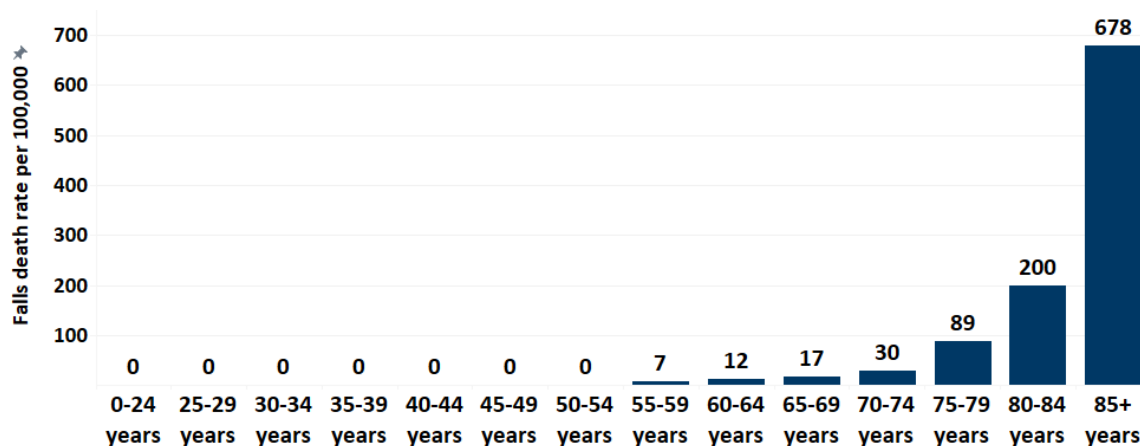


Figure 1: Minnesota Fatal Fall Mortality Rates for 2021 by Age Group

In 2021, there were a record number of fall deaths (N= 1,230) for Minnesota residents 65 years and older. Figure 1 shows that the rate of fall mortality for those under 65 is much lower than that for older adults. After age 65, the rate starts doubling every five-year age group. Those aged 85 years and older have the highest rate of fall mortality within their small population (N= 678 deaths; population = 109,903).

The risk of fall-related death among older Minnesotans is consistently almost double the national rate.

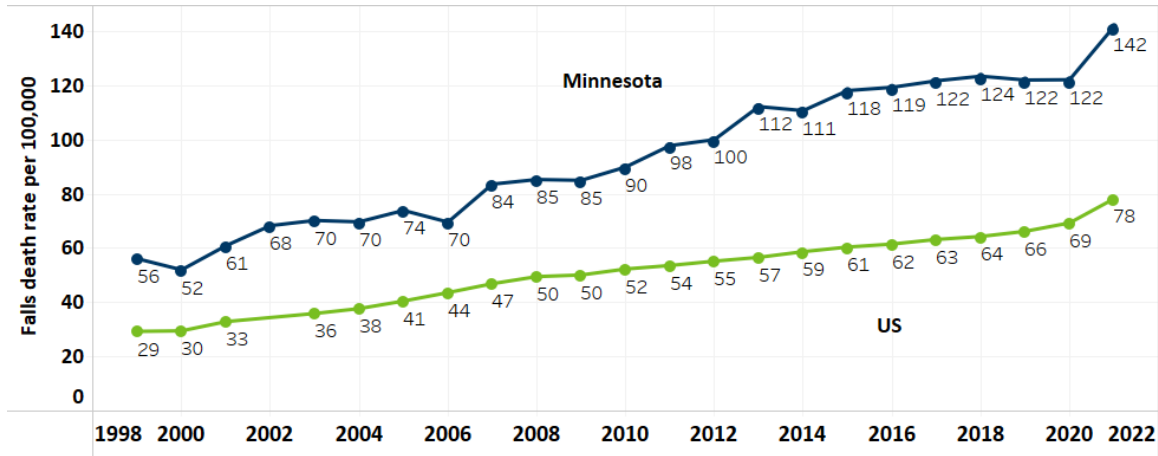


Figure 2: Fatal Fall Mortality Trends for US and MN for 65+ Age Group

The age-adjusted rate of fall mortality among individuals aged 65 and older increased steadily in Minnesota and the U.S. through 2017, then increased more steeply in 2021 after having flattened out from 2017 to 2020. While the rate of fatal falls is climbing faster in Minnesota (an average of 3.74/year) than in the U.S. (2.13/year), it has more than doubled for both from 2000 to 2021.

In 2021, the age-adjusted fall mortality rate among Minnesotans 65 and older was almost double the U.S. rate. It is not clear why Minnesota’s rate (142 deaths per 100,000) is so much higher than that of the U.S. (78 deaths per 100,000). Minnesota had the second highest rate of falls deaths among all U.S. states, with Wisconsin having the highest rate (177 deaths per 100,000) in 2021. Minnesota’s rate is almost six times that of Alabama (31 deaths per 100,000), the state with the lowest rate.

Falls are the leading cause of injury death for Minnesotans 65 years and older.

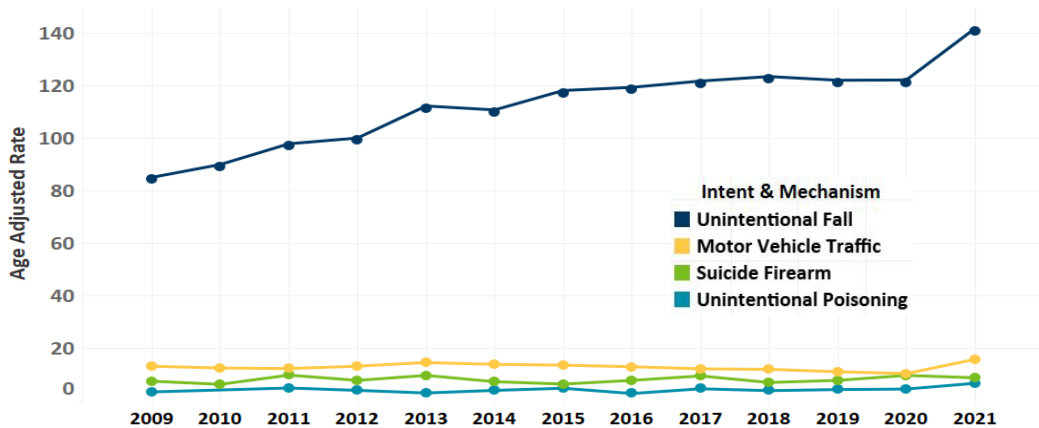


Figure 3: Leading Causes of Injury Death for 65+ Minnesotans

Falls are by far the leading cause of injury death for Minnesotans aged 65 and older. The age-adjusted rate for falls is 4.5 times higher than the next three leading causes (unintentional motor vehicle traffic, suicide firearm and unintentional poisoning) combined.

In Minnesota, the rates for fall-related deaths are highest in Metro areas.

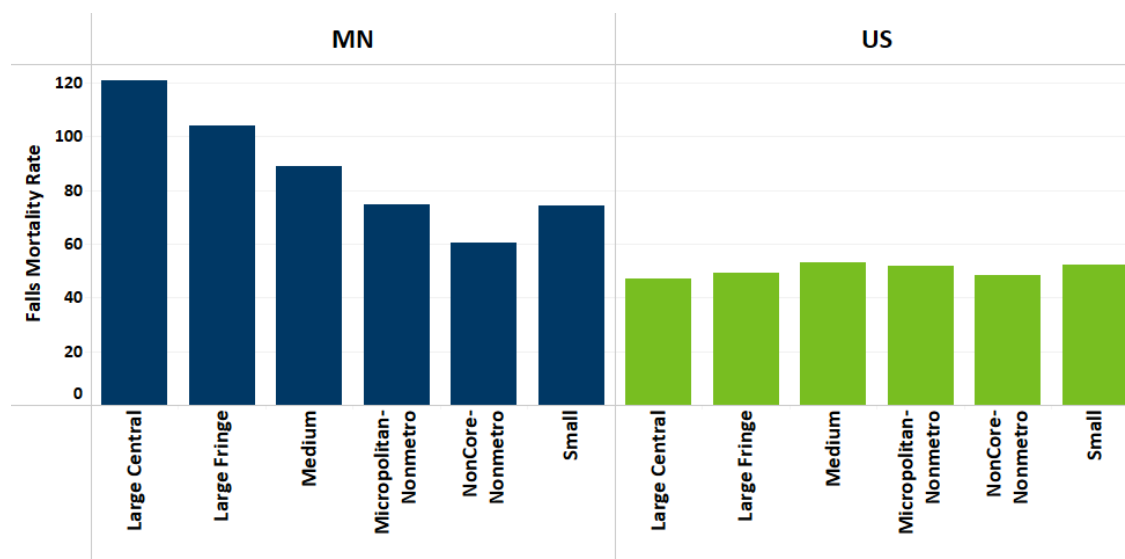


Figure 4: 1999-2021 MN & US Age Adjusted Fall Mortality Rates 65 and Older

In the U.S., there are only small differences between metro (counties designated as Large Central and Large Fringe) and non-metro age adjusted fall mortality rates.¹ This is not the case for Minnesota where the metro areas have more than twice the rate of falls deaths when compared to U.S. metro rates. There is not a ready explanation for this disparity and could be worth further study.

Discussion

Minnesota is considered a healthy state with good access to medical care, yet the fall mortality rate is much higher and has been increasing at an even faster pace than the national rate. The increase in Minnesota’s fall mortality rates may be due in part to increasing frailty among elders—because of Minnesota’s excellent medical care many older adults may not be dying from heart disease, diabetes, or other chronic diseases, but are living longer with these conditions and becoming increasingly frail as they grow older.³ This is significant as frailty is highly predictive of fall injury.⁴

Some of the increase in the fall death rate among older Americans may also be due to improved quality of documenting fall deaths by medical examiners.² While this is possible, it is also likely that when aging Minnesotans fall at older ages, they succumb to the fall-related sequelae and thus the deaths are deemed to be due to a fall.

The age distribution of fall mortality rates does not follow the typical age distribution pattern for most injuries, such as motor vehicle crash deaths or accidental drug poisoning where younger and middle-aged adults have higher rates. Rather, like a chronic disease, fall mortality increases with age. Falls among older adults occur due to several factors or circumstances, and an older adult's susceptibility for a fall is often attributed to multiple risk factors or conditions.

The good news is that deaths due to falls among older adults can be prevented. For information on preventing falls and fall-related injuries, visit the [Minnesota Board on Aging](https://mn.gov/board-on-aging/connect-to-services/healthy-aging/falls-prevention.jsp) (<https://mn.gov/board-on-aging/connect-to-services/healthy-aging/falls-prevention.jsp>).

Method

A descriptive epidemiologic study of fall mortality was conducted, using data spanning 1999-2021 for Minnesota and the U.S. for decedents aged 65 and older via the CDC WONDER Online Database - Multiple Cause of Death Files.⁵

References

1. Ingram DD, Franco SJ. 2013 NCHS urban–rural classification scheme for counties. National Center for Health Statistics. Vital Health Stat 2(166). 2014.
2. Hu G, Baker SP. An explanation for the recent increase in the fall death rate among older Americans: a subgroup analysis. Public Health Rep 2012. May-Jun; 127(3):275-281
3. Onizuka N, Gaichas A, Roesler J: Hospital-treated falls and comorbidities among older adults in Minnesota, 2010-2014. Minn Med 2017 Mar-Apr; 100(2):40-44.
4. Mulasso A, Roppolo M, Gobbens RJ, Rabaglietti E. Mobility, balance and frailty in community-dwelling older adults: What is the best 1-year predictor of falls? Geriatr Gerontol Int. Sep 29, 2016.
5. Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Mortality 2018-2021 on CDC WONDER Online Database, released in 2023. Data are from the Multiple Cause of Death Files, 2018-2021, Accessed at <http://wonder.cdc.gov/mcd-icd10-expanded.html> on Mar 13, 2023

Suggested Citation

Anderson K, Han W, Roesler J, Gloppen K. Deaths due to falls among Minnesota adults aged 65 years and older, 1999-2021. Saint Paul, MN: Minnesota Department of Health, September 2023.

Minnesota Department of Health
Injury and Violence Prevention Section
injury@state.mn.us
www.health.state.mn.us

9/12/2023