



Rising Up: Fall Mortality Rates in Minnesota

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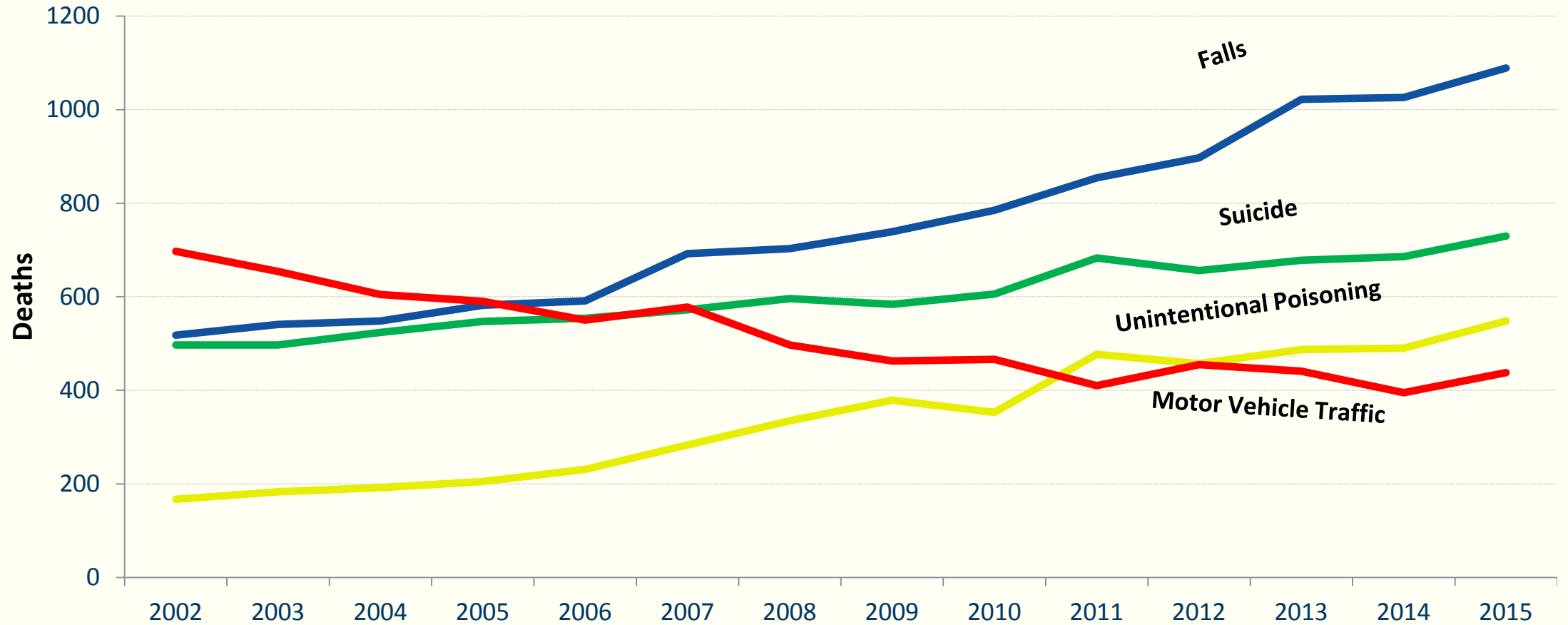
November 30, 2017



Injury and Violence Prevention Section

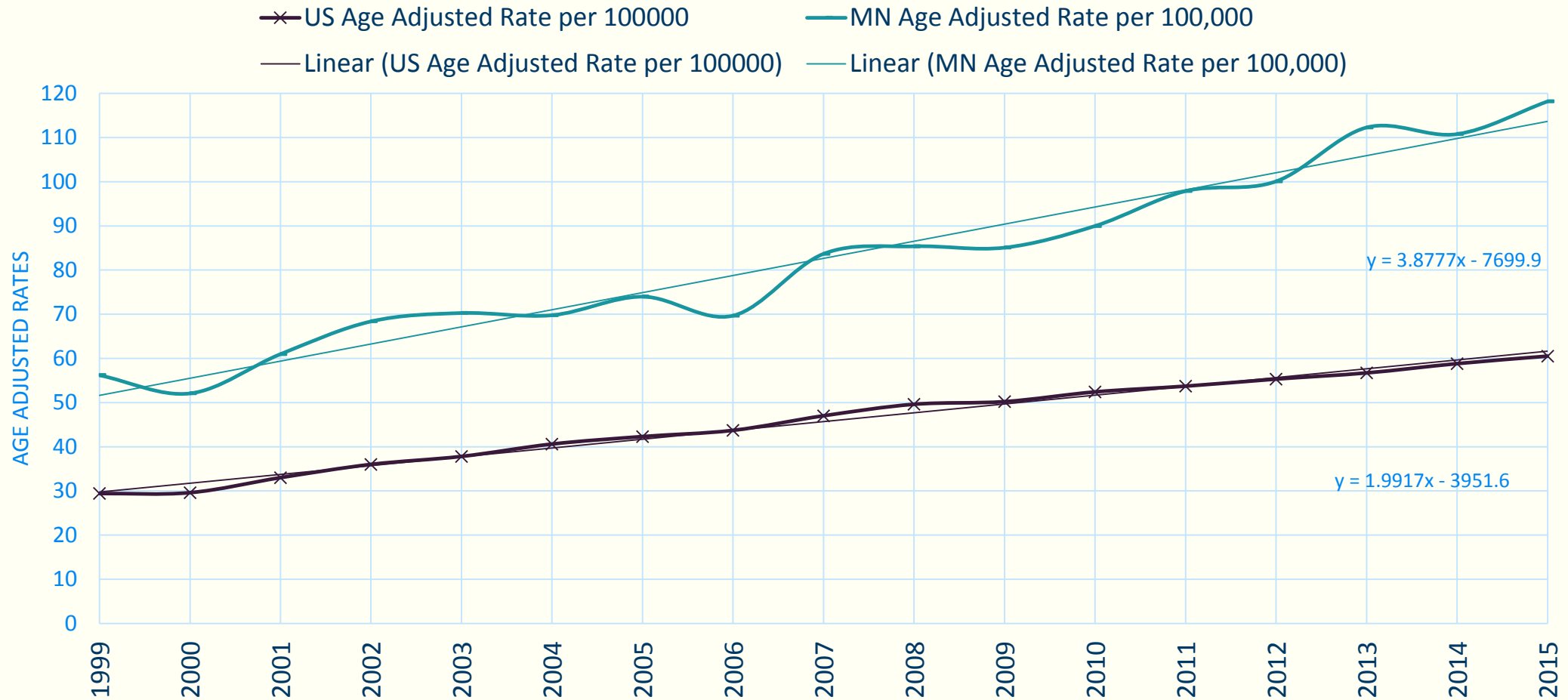
Leading Causes of Injury Mortality

Minnesota 2002-2015

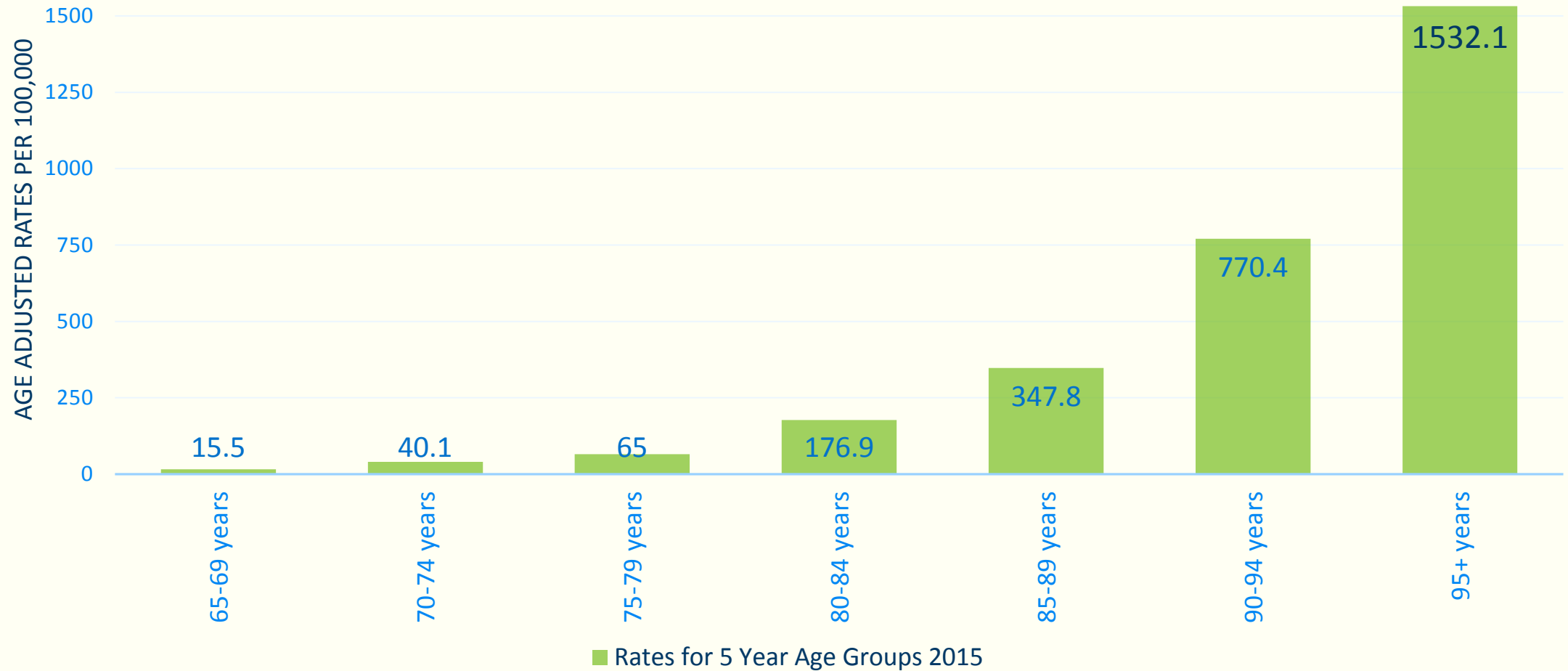


Minnesota Annual Death Certificates Files

Minnesota v. US overall Age Adjusted Rates 65+



Minnesota Rates Increase with Age



Why are
elders in
Minnesota
falling at
these rates?

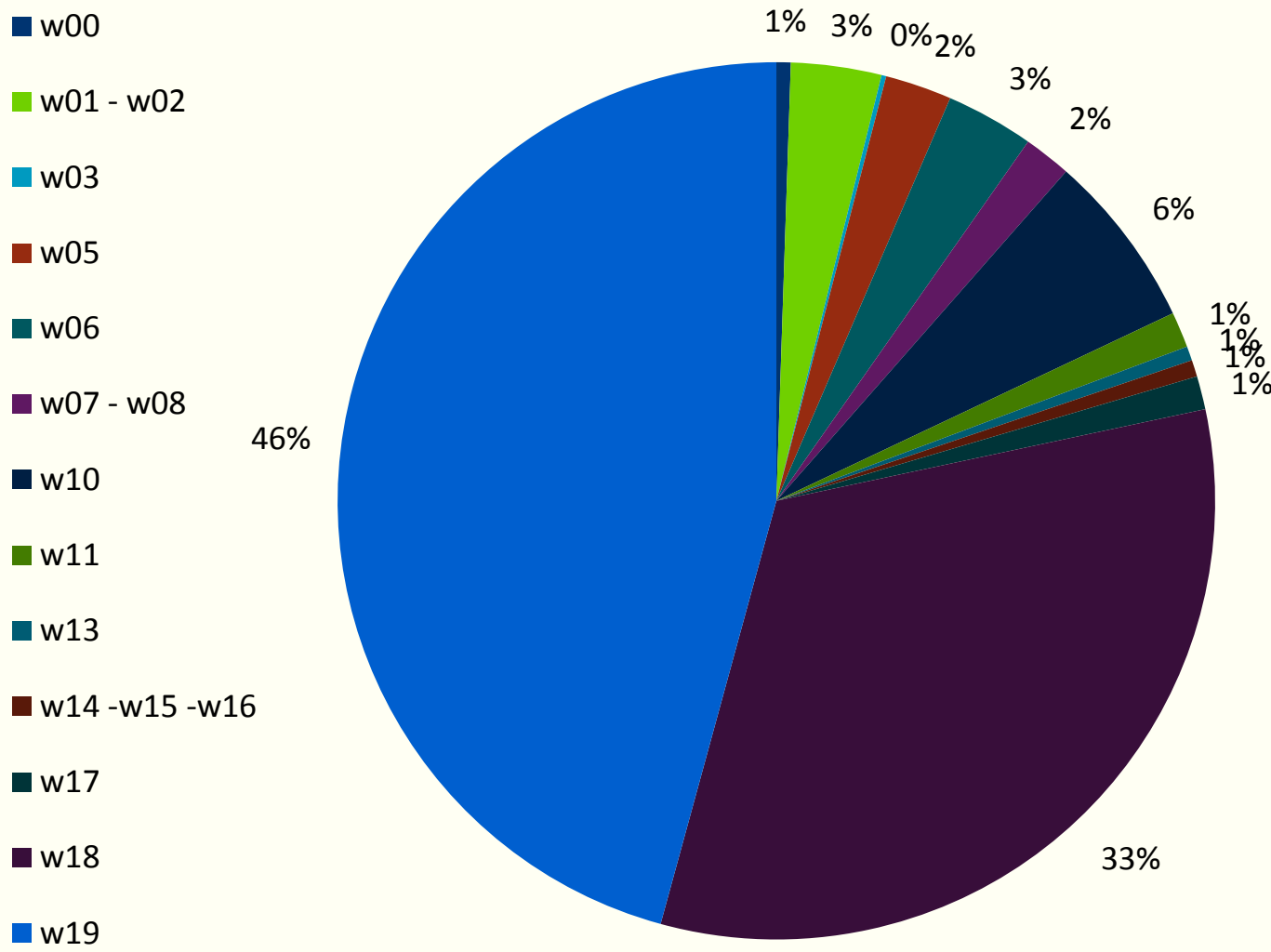


Spoiler: It's
not the ice
and snow.

Associations analyzed with fall mortality rates in Minnesota

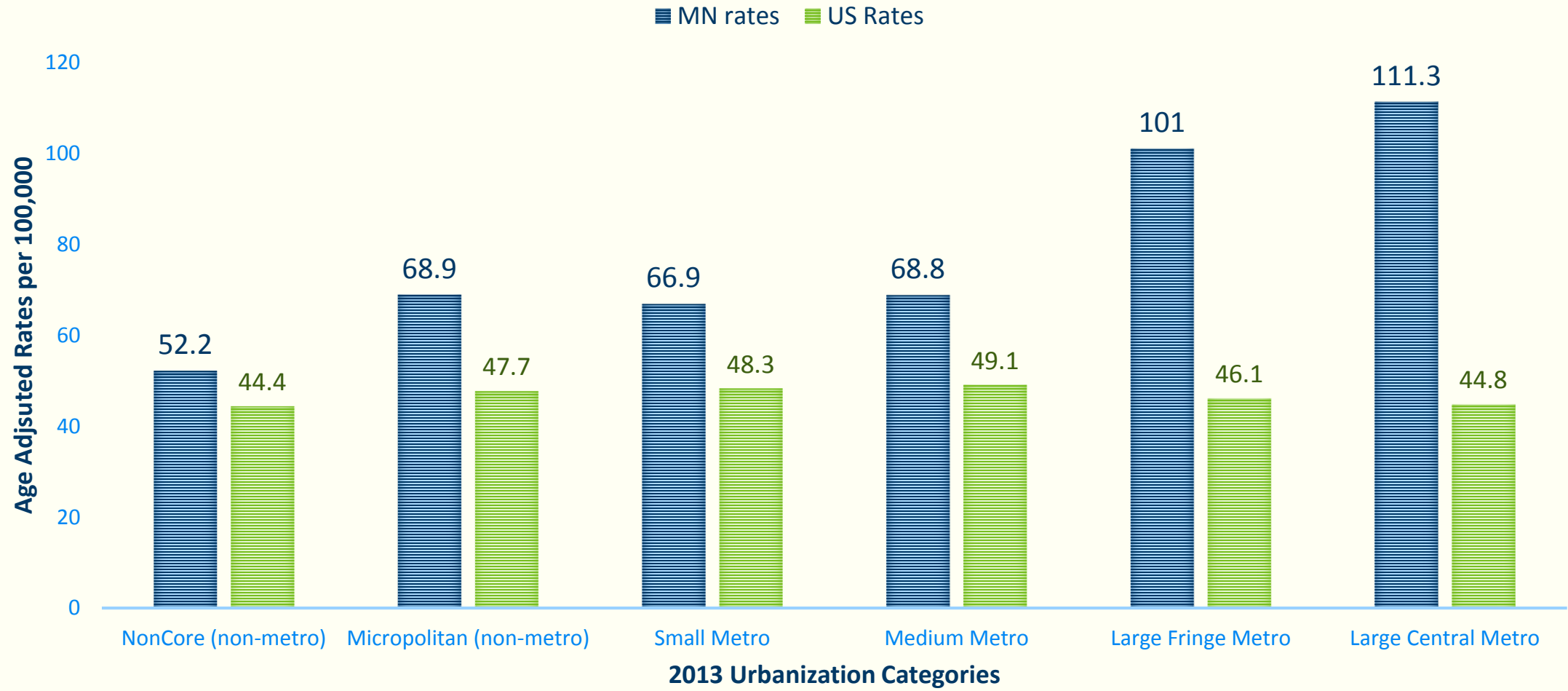
- Seasonal patterns were absent
- No strong individual comorbidity correlations found
 - Cardiovascular Disease – Cancer – Diabetes - Dementia
 - Combined comorbidity from hospital data <-> frailty -> fall rates increase
- No correlation with BRFSS self-reported fall questions on a state level
- CVD deaths decreased led to rising fall mortality indicated
- Rates are slightly higher for men but not significantly.
- Any arresting associations?

ICD-10 distribution for Minnesota's fatal falls in 2015

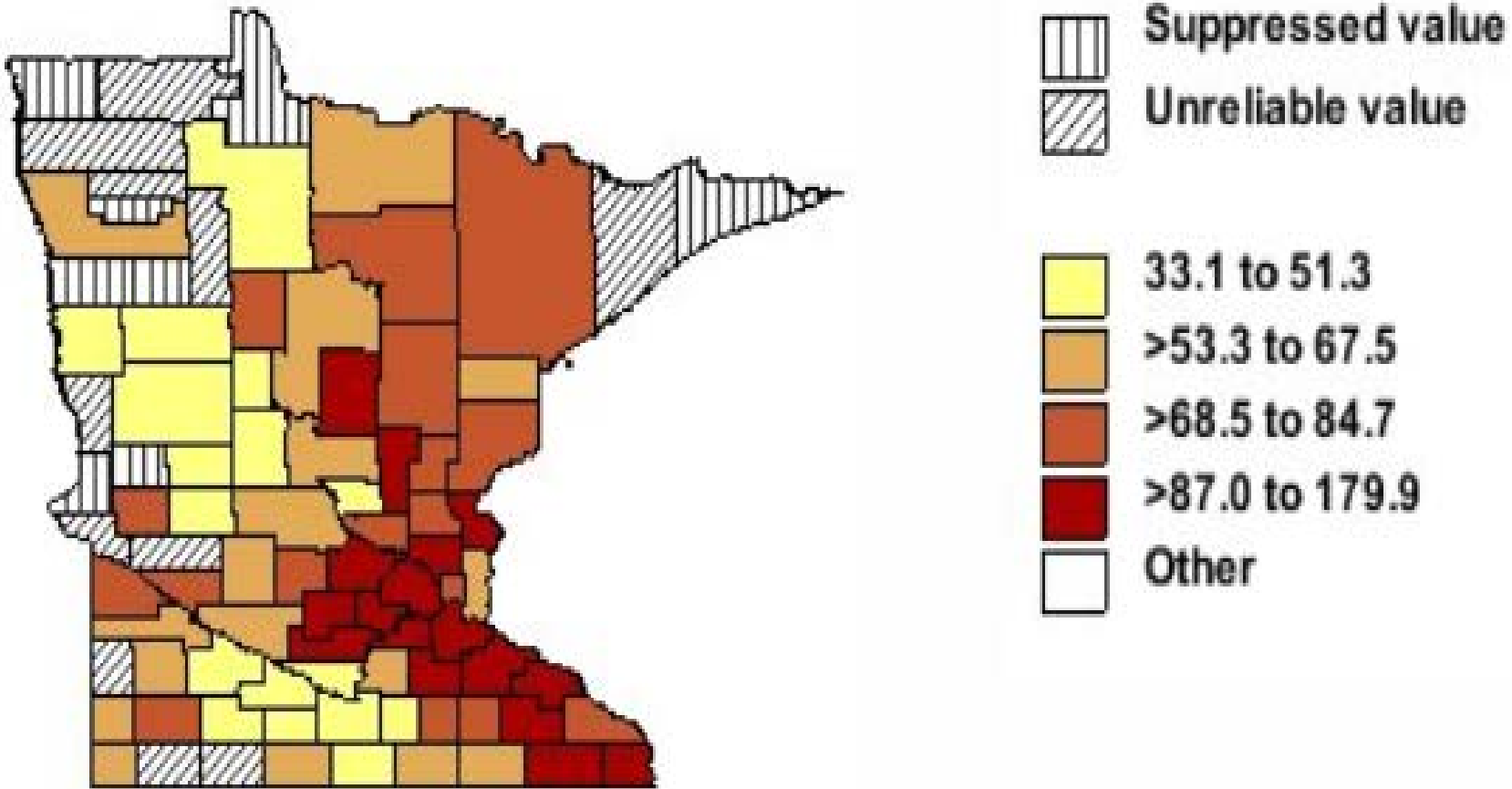


- W00-Fall on same level involving ice/snow
- W01-Fall on same level from slipping, tripping, stumbling
- W02-Fall involving ice skates, skis, roller skates and skateboards
- W03-Fall on same level due to collision with / pushing by another
- W04-fall while being carried/supported by another person
- W05-Fall involving wheelchair
- W06-Fall involving bed
- W07-Fall involving chair
- W09-Fall involving other furniture
- W09-Fall involving playground equipment
- W10-Fall on and from stairs and steps
- W11-Fall on and from ladder
- W12-Fall on and from scaffolding
- W13-Fall from, out of or through building or structure
- W14-Fall from tree
- W15-Fall from cliff
- W16-Diving or jumping into water
- W17-Other fall from one level to another
- W18-Other falls on the same level
- W19-Unspecified fall

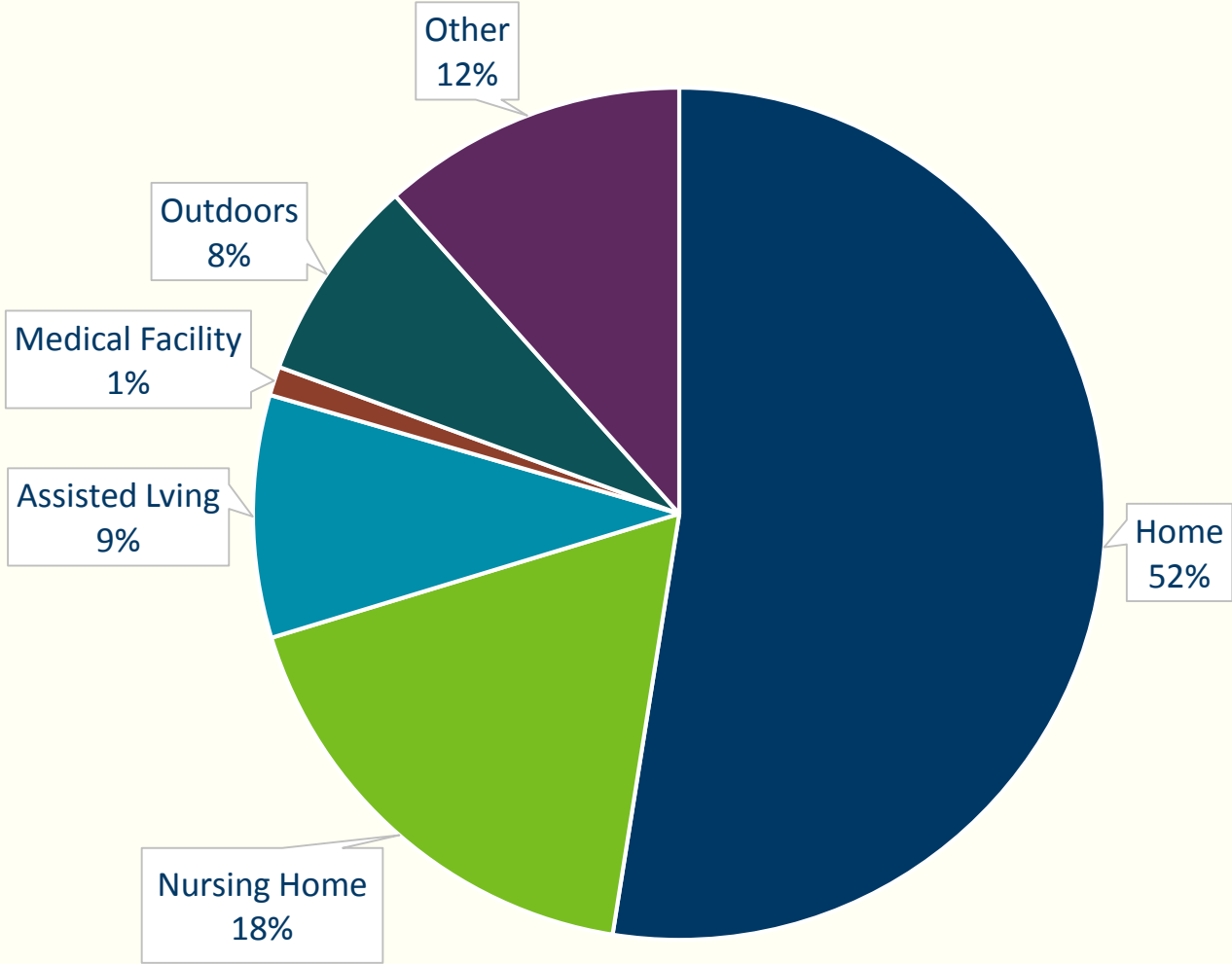
Age Adjusted Rates by 2013 Urbanization for MN and US 1999 - 2015



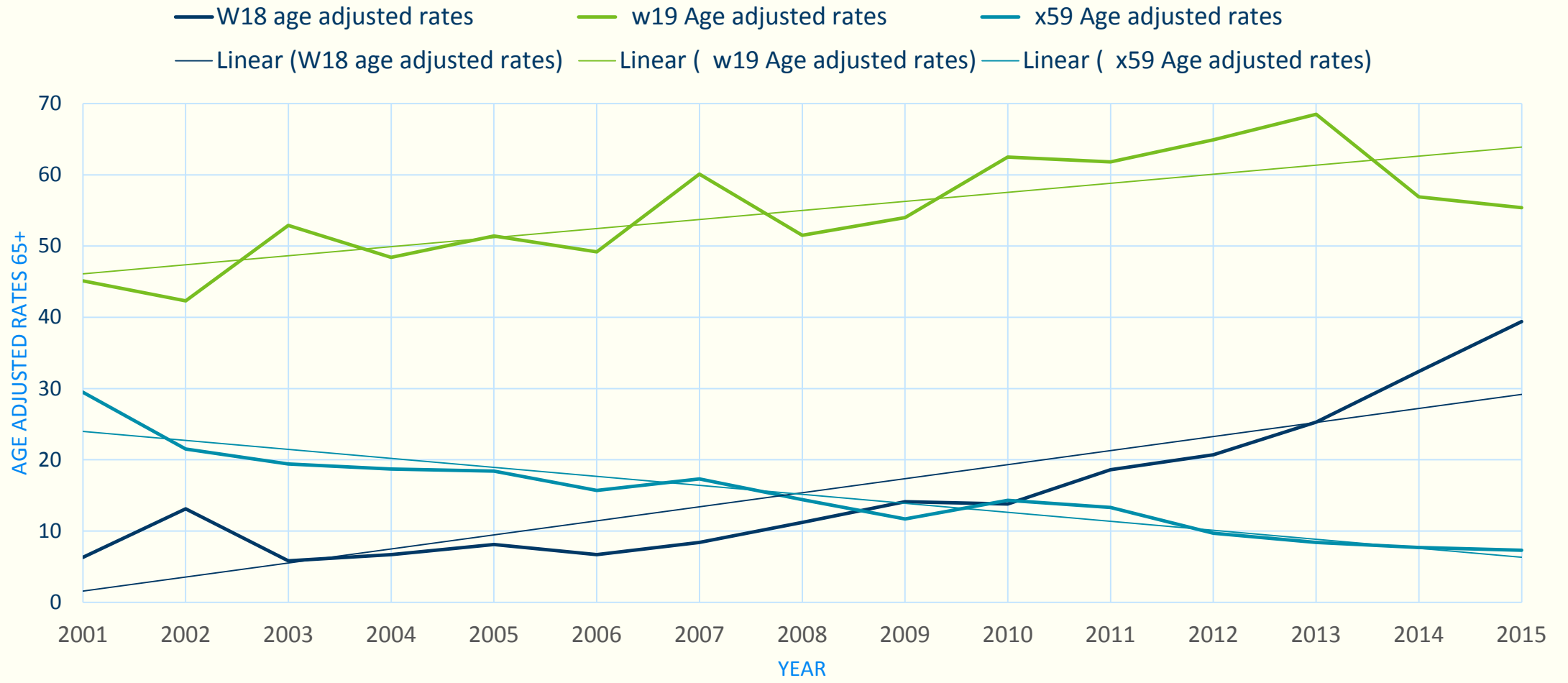
Fall mortality rates by County 2015



Fall mortality rates by Injury Place of Occurrence 2015



Rates for codes W18 , W19 and X59 in Minnesota



Summing up

- Age adjusted fall fatality rates are high in Minnesota compared to the US as a whole and compared to individual states. We don't know why.
- The fall mortality rate distribution mirrors that of a chronic disease
- Reporting differences on death certificates may explain some of the disparity.
- Rates are associated with age, geographic location and place of occurrence.
- Rates are unrelated to individual chronic conditions, seasons and self-reported falls.
- More details on Death Certificates might lead to more specific fall codes which could provide needed details.

First step:
Level out the
fall fatality
rate in MN.



Looking ahead – future steps

- Speak with prevention partners about what data may be helpful to them.
- Are Minnesota's high rates meaningful? Does the variation of reporting between states mean comparisons are counterproductive?
- Are non-specific codes in heavy use in the other states?
- Since all death certificates are coded on the national level, what can be done to increase the occurrence of more specific fall codes in Minnesota?
- Can we definitively show that part of the increase in fall mortality is due to a decrease in CVD mortality?

Thank you

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