The Demographic Effects of Eliminating Alzheimer's Disease, U.S. 2018

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INTRODUCTION

Alzheimer's disease is one of the leading causes of death among individuals age 65+ in the U.S. Yet, limited research has examined the contribution of Alzheimer's disease to the overall U.S. mortality schedule.

It is unclear what the effects of Alzheimer's disease are on life expectancy across the life course, as well as the number of people that may be affected. Moreover, spatial differences reflective of disparate age and sex structures may exist. Understanding the differences in mortality from Alzheimer's disease by age and geographical area can provide helpful insight on the number of people, age groups, and geographical areas disproportionately affected by Alzheimer's disease.

OBJECTIVES

Compute the predicted number of deaths averted and gains in life expectancy by age should Alzheimer's disease be eliminated as a potential cause of death. This allows me to assess the contribution of Alzheimer's disease to the current U.S. mortality schedule.

DATA

U.S. National Center for Health Statistics (NCHS) mortality statistics for 2018, aggregated into 5-year age groups by cause of death.

Total number of deaths in the U.S. in 2018 = 2,839,205. 266 deaths were excluded due to missing or suppressed age details, leaving 2,838,939 deaths for analysis.

Total deaths attributed to Alzheimer's disease in the U.S. in 2018 = 122,019. 420 deaths from Alzheimer's were excluded due to missing or suppressed age details, leaving 121,599 deaths from Alzheimer's for analysis.

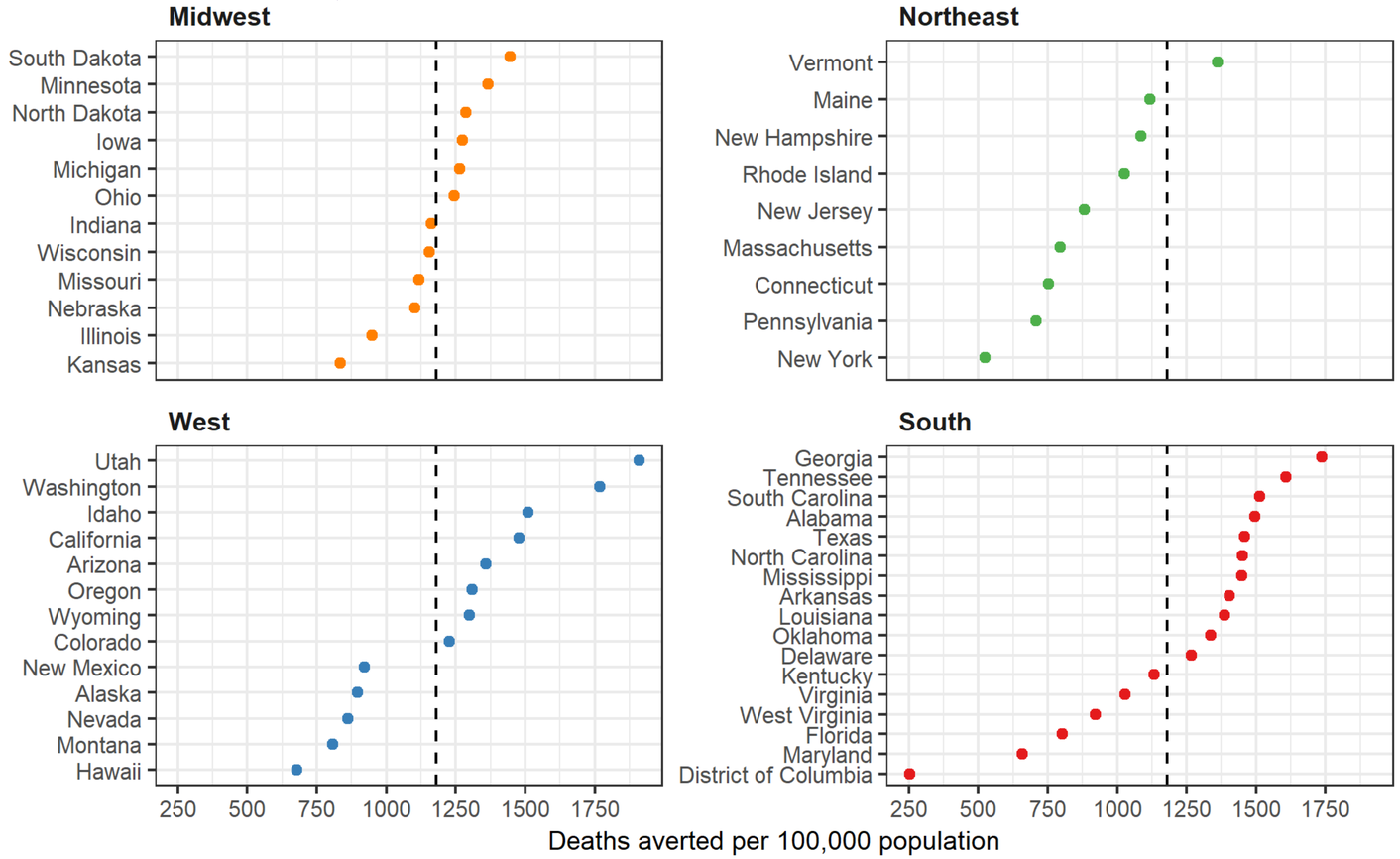
Population estimates data by 5-year age groups from the U.S. Census Bureau 2018 American Community Survey are also utilized. Additionally, Census-defined regions are used to group the states.

METHODS

Using mortality statistics from NCHS, I calculate all-cause and Alzheimer's-removed period life tables to examine mortality conditions for a synthetic cohort subject to the U.S. mortality schedule in 2018.

Comparing the empirical survival rates and years of remaining life expectancy, I assess the current effects of Alzheimer's disease on the U.S. population. I also examine state-level effects.

CONSIDERABLE SPATIAL VARIATION IN TOTAL NUMBER OF DEATHS AVERTED PER 100,000 POPULATION



FINDINGS

- The number of deaths averted per 100,000 population should Alzheimer's be eliminated as a potential cause of death varies considerably by state and region.
- Nationally, the average number of deaths averted per 100,000 population is about 1180. This is represented by the vertical dashed line in each panel.
- 27 states are expected to see more than 1180 per 100,000 deaths averted.
- DC is expected to see the smallest number of averted deaths (252), followed by New York (524). Utah is predicted to see the largest number of deaths averted (1911).
- Midwestern states see the smallest range in the number of averted deaths, while Southern and Western states see a wide range.
- Differences in number of averted deaths and gains in life expectancy partially reflects the age structure and prevalence of Alzheimer's deaths by state and region.

Center for Studies in Demography & Ecology

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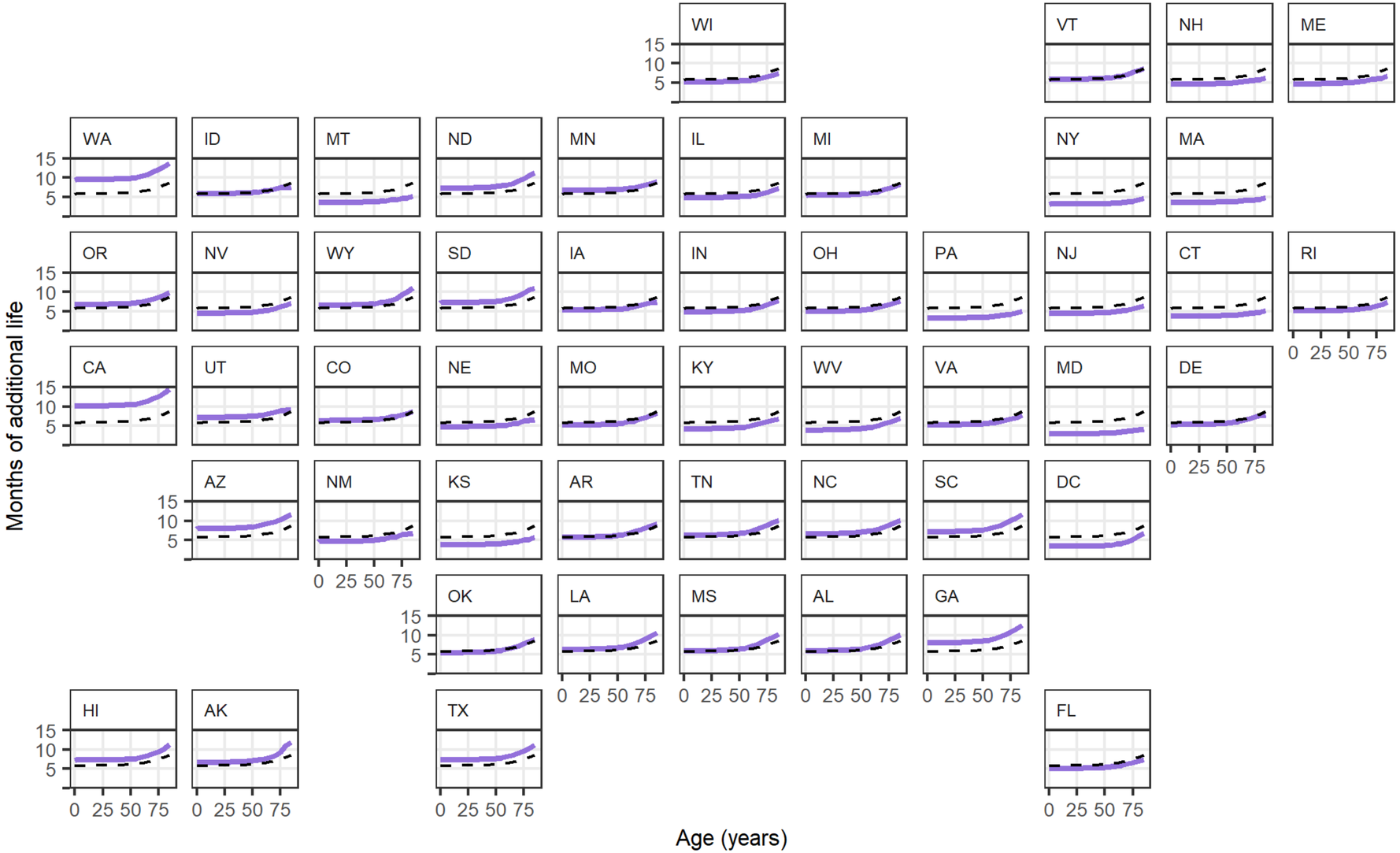
GAINS IN LIFE EXPECTANCY INCREASE WITH AGE



LIMITATIONS

The accuracy of the results are dependent on data quality. As Alzheimer's disease tends to be underdiagnosed and underreported as a contributing cause of death, this may result in underestimates. This, however, does establish a minimum baseline for reference.

Estimates of gains in life expectancy by age and deaths averted per 100,000 population are based on 2018 mortality trends. These values may fluctuate in other years.

NEXT STEPS

- Calculate predicted costs involved with servicing a larger older population
- Examine how mortality from Alzheimer's disease has changed over time
- Disaggregate the risk of death from Alzheimer's from all other causes of death using a competing hazards perspective

FINDINGS

- Gains in life expectancy from eliminating Alzheimer's disease as a cause of death varies by state and region.
- Nationally, gains from 5 to 8 months are expected across the life course. This is represented by the black dashed line in each state grid.
- The largest gains in life expectancy are expected among 85+ year olds, ranging from 4 months (Maryland, New York, Massachusetts) to over 14 months (California).
- Although predicted gains in life expectancy are small, the social impact can be immense. This will have a substantial effect on social policies, planning and budgeting for social services. Moreover, this will likely increase the demand for healthcare workers, care services, and nursing homes, among other related amenities.

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