Summit County Public Health & Alzheimer's Association

Alzheimer's Disease and Related Dementias in Summit County Vital Statistics Brief: February, 2023

The *Population Health Vital Statistics Data Brief* series was created to provide regular updates to the current Community Health Assessment and to provide the community with additional important information about population health. For more information on the Community Health Assessment and to access other reports in the Vital Statistics Data Brief series, please visit scph.org/assessments-reports

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Introduction

This report is an update of the 2018 brief released by Summit County in collaboration with the Alzheimer's Association. Its purpose is to provide the residents of Summit County with more localized information about Alzheimer's disease and related dementias (ADRD), and to increase awareness regarding these devastating illnesses that are so prevalent in our country and community.

For those interested in obtaining more detailed statistics on Alzheimer's disease and related dementia deaths in Summit County, please visit www.scph.org/dashboards. At this site, visitors can access our interactive Death Data Dashboard, which allows users to design customized graphics and tables for their own use.

For those interested in learning more about Alzheimer's disease and dementia, including statistics for the state and country, please visit www.alz.org/alzheimers-dementia/facts-figures. Additionally, if you, a loved one, or someone you know needs help or further information regarding Alzheimer's disease please call the Alzheimer's Association's free 24/7 helpline at 1.800.272.3900.

INSIDE THIS BRIEF:

Background

Alzheimer's disease is a degenerative brain disease, and the most common cause of dementia. In 2020, there were approximately 220,000 Ohioans living with Alzheimer's disease or other related dementias (ADRD). This total is expected to be 250,000 by 2025, a projected increase of 16.7%. Additionally, Alzheimer's disease was the 6th leading cause of death in the United States in 2019, dropping to 7th place during the COVID-19 pandemic in 2020 and 2021. Dementia continues to be the 5th leading cause among those 65 years and older, and one in three seniors in the United States die with Alzheimer's disease or other forms of dementia.[1] When Alzheimer's disease and related dementias are combined, ADRD was the third leading cause of death in Summit County in 2017 to 2021.[4]

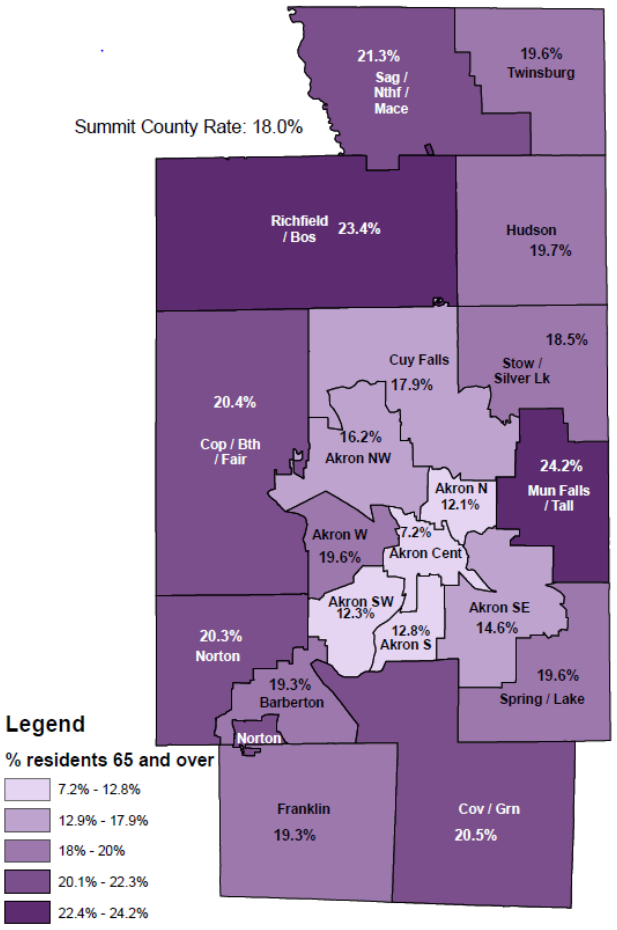
Dementia disorders occur due to neurons in the brain being damaged or destroyed by a variety of causes. Resulting symptoms of dementia disorders include complications with memory, language, problem solving and other cognitive skills that affect a person's ability to carry out daily actions. In Alzheimer's dementia, neurons in other parts of the brain are eventually damaged or destroyed as well, affecting an individual's capability to carry out basic bodily functions such as walking or swallowing.

Diagnosis of Alzheimer's disease encompasses a multitude of approaches that include:

- Conducting cognitive tests and physical examinations
- Conducting brain imaging and blood tests to rule out other causes of dementia
- Obtaining the family and medical history of an individual
- Asking friends and family to provide any information about cognitive and behavioral changes from baseline[2]

Alzheimer's disease and related dementia (ADRD) also have a substantial impact on family members and friends who provide care to individuals with these diseases. As the disease progresses, caregivers provide assistance with activities of daily living, such as bathing, dressing, meal preparation, grocery shopping, paying bills, and home maintenance. Caregivers also provide support in medical care, such as transportation to appointments, medication management, and emotional support. The Alzheimer's Association estimates that more than 11 million Americans provided over $271 billion worth of unpaid care to older adults with Alzheimer's disease and dementia in 2021.[1] The 2020 Behavioral Risk Factor Surveillance System (BRFSS) identified that 4.6% of Ohioans and 3.5% Summit County residents aged 18 and older reported providing care to an older adult with dementia, which translates to an estimated 420,000 Ohio adults and 15,000 Summit County adults.[2]

Figure 1. Rates of Summit County residents aged 65 and over by cluster, 2017-2021 5 year averages



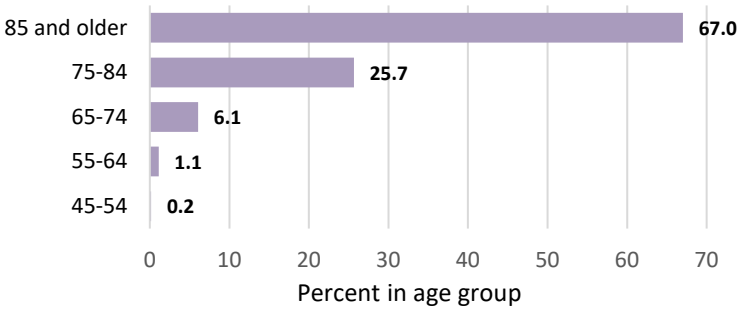
Source: 2017-21 American Community Survey, 5 year estimates

Who Might Be At Risk?

Age

Age is the most significant risk factor for Alzheimer's disease and related dementias with an increased risk of developing the disease as age increases. However, these diseases should not be viewed as a natural part of aging. The 2020 Behavioral Risk Factor Surveillance System (BRFSS) identified that 9.0% of Ohioans and Summit County residents aged 45 and older reported experiencing subjective cognitive decline (SCD), an increase in confusion or worsening memory loss that is increasing in frequency.[2] SCD is increasingly recognized as a strong predictor of future dementia risk. The vast majority of Alzheimer's dementia cases occur after the age of 65: Three percent of those aged 65 to 74 years will develop Alzheimer's disease and dementia, and the incidence of these diseases increase to 17% of those aged 75 to 84 years and 32% of those aged 85 and older.[1]

Figure 2. Percent of Alzheimer's disease and dementia deaths in Summit County in each age group, 2017-2021



Source: Ohio Department of Health Death Records, SCPH Calculations

In Summit County, 18 percent of residents are aged 65 or older. As seen in Figure 1, the distribution of residents in this age group vary throughout the county with the smallest proportion living in the Akron Central cluster (7.2%) and the highest proportion living in the Munroe Falls/Tallmadge cluster (24.2%).[3] Not surprisingly, the areas of Summit County with the lowest representation of older adults also had the lowest calculated life expectancy values, as indicated

Table 1. Summit County residents older than 65 years, 85 years, and life expectancy by cluster, 2017-21				
Summit County Cluster	Total population	% 65 and older	% 85 and older	Life Expectancy, 2016-21 (years)
Akron Central	14659	7.2%	0.7%	69.2
Akron North	15954	12.1%	0.9%	74.1
Akron Northwest	31649	16.2%	3.2%	79.7
Akron South	25586	12.8%	0.8%	72.8
Akron Southeast	48124	14.6%	1.3%	72.7
Akron Southwest	26469	12.3%	1.5%	69.4
Akron West	26818	19.6%	3.9%	73.7
Barberton	27571	19.3%	2.8%	73.9
Copley / Bath / Fairlawn	36014	20.4%	2.8%	79.6
Coventry / Green	39237	20.5%	3.2%	77.9
Cuyahoga Falls	42366	17.9%	2.4%	76.2
Franklin	21206	19.3%	3.6%	79.5
Hudson	23523	19.7%	3.0%	82.2
Munroe Falls / Tallmadge	20194	24.2%	4.2%	78.3
Norton	12788	20.3%	2.2%	78.5
Richfield / Boston	10189	23.4%	3.2%	77.7
Sagamore Hills / Northfield / Macedonia	30826	21.3%	1.8%	78.9
Springfield / Lakemore	21986	19.6%	1.7%	74.8
Stow / Silver Lake	37846	18.5%	2.9%	80.2
Twinsburg	27805	19.6%	2.4%	79.5
Summit County	540810	18.0%	2.5%	76.4

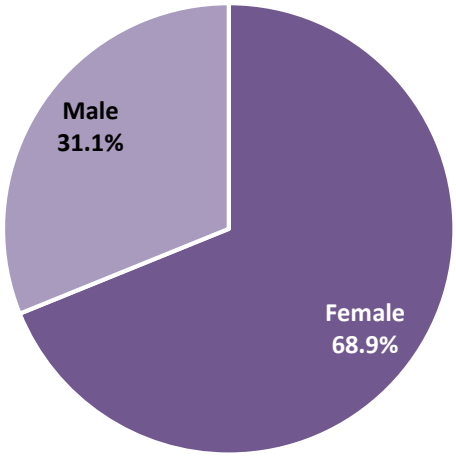
Source: 2017-2021 American Community Survey 5-Year Estimates, SCPH calculations

in Table 1.[4] Not only are the older age groups more affected by ADRD, but they are also dying from the disease more often. A five-year analysis of Alzheimer's disease and related dementias deaths in Summit County shows that the age group 85 years and older had the highest percentage of ADRD deaths (67.0%) with a median age of these deaths at 88 years (Figure 2).[5]

Gender

Almost two thirds of all Americans living with Alzheimer's disease and related dementias are women. Since age is the greatest risk factor for ADRD, this gender discrepancy is believed to be due to women living longer than men: studies have provided evidence that any observed difference in dementia risk between men and women may be an artifact of who is more or less likely to die of other health factors before developing dementia.[1] In Summit County females make up approximately 56% of residents who are 65 years of age or older. This disparities increase with older age groups: nearly two-thirds (66.4%) of residents 85 years and older are female.[3] When evaluating Alzheimer's deaths females accounted for 69% of deaths in Summit County from 2017 to 2021 (Figure 3).[5]

Figure 3. Summit County Alzheimer's and dementia deaths by sex, 2017-2021 (n=3,138)

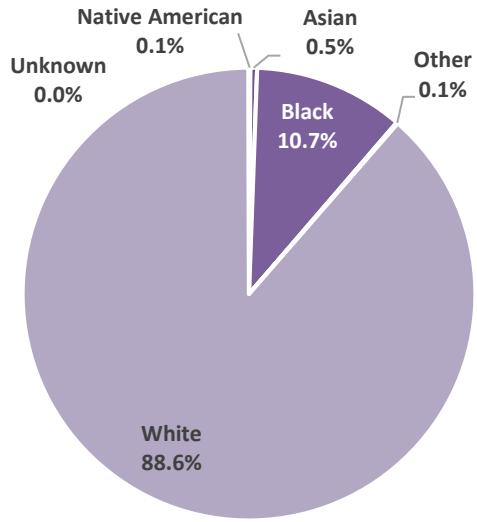


Source: Ohio Department of Health Death Records, SCPH Calculations

Race and Ethnicity

Previous studies indicate that there is a large disparity in the risk of ADRD development by race.[1] Older African-Americans are about twice as likely and older Hispanics are 1.5 times as likely as whites to have Alzheimer's disease or another form of dementia.[1,6] This is thought to be due to a number of factors. People of color are more likely to have diseases that are associated with an increased risk of Alzheimer's, such as diabetes and heart disease.[1] Decreased access to health care earlier in life can attribute to worsening of these conditions. In Summit County 11.5% of African Americans ages 19-64 were reported as uninsured in 2021, while 7.0% of white residents of that age group were uninsured.[3] In addition, socioeconomic conditions such as poverty, education, and exposure to early life discrimination and adversity can increase the risk for dementia. However, while older people of color are more likely to develop Alzheimer's than whites, they are less likely to receive a diagnosis. This is thought to be due to higher rates of missed diagnoses among older African-Americans when compared to older whites.[1] In Summit County from 2017 to 2021, deaths due to ADRD were approximately 88.6% White, 10.7% African-American and 0.7% other races.[5] Since 14.3% of all deaths of Summit County during these five years were identified as African American on the death certificate, this suggests that there is not a racial disparity. However, a closer look at older age groups indicates that only 9.8% of deaths aged 75 and older and 8.6% of deaths aged 85 and over were African American. As indicated in Figure 2, over 90% of all ADRD deaths were aged 75 and over.

Figure 4. Summit County Alzheimer's and dementia deaths by race, 2017-2021 (n=3,138)

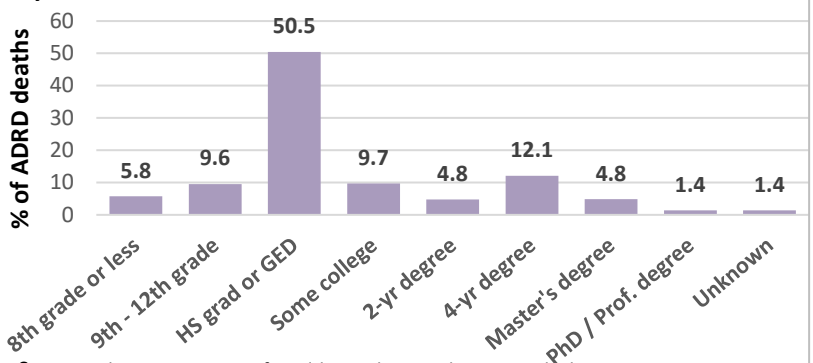


Source: Ohio Department of Health Death Records, SCPH Calculations

Education

People with fewer years of formal education have a higher risk of developing Alzheimer's disease or other dementias than those with more formal education. The reasons behind this correlation are unclear, but one theory is that individuals with more years of education have added "cognitive reserve" and are more capable of counterbalancing changes in the brain. It is also theorized that those with more education are able to afford healthier diets, and better healthcare and medical treatments.[1] Additionally, these individuals are more likely to have mentally stimulating jobs, and are less likely to have other risk factors such as heart disease and diabetes.[1] Out of those who are currently 65 and older in Summit County in 2021, 9.8% have less than a high school degree and 56.4% have a high school degree or equivalent. When evaluating the 2017 to 2021 Alzheimer's dementia deaths in Summit County, 15.4% did not have a high school degree, and 60.1% had at least a high school degree.[5] The high school degree attainment also included some college (but no degree) for both groups.

Figure 5. Alzheimer's Disease and dementia deaths in Summit County by education level, 2017-2021

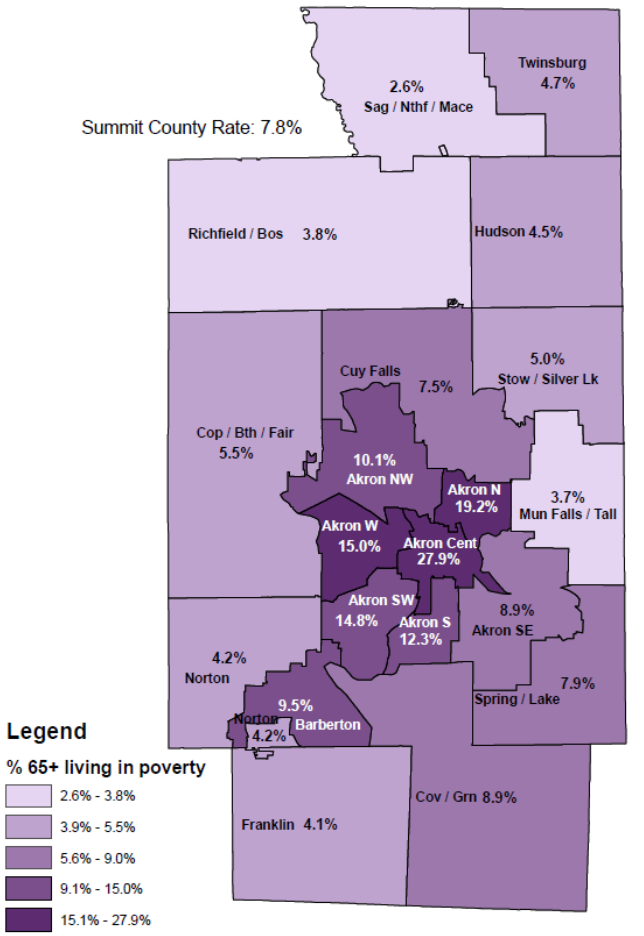


Source: Ohio Department of Health Death Records, SCPH Calculations

Poverty

As stated previously, individuals who can afford healthy diets, healthcare, and medical treatments are less likely to develop diseases such as heart disease and diabetes. In turn, those who are less likely to have these diseases are also less likely to have Alzheimer's disease or related dementias.[1] Based on 2021 Summit County data, an estimated 5.5% of the total population are uninsured, and 12.6% are living below the poverty level. Furthermore, if you are living in poverty, you are likely less able to afford medical treatment for Alzheimer's and dementia symptoms. An estimated 8.8% of Summit County's 65 and older population are living below the poverty level.[3] With a rate of 27.9%, the Akron Central cluster has highest percentage of 65 and older living below the poverty level (Figure 6).

Figure 6. Rates of Summit County residents aged 65 and over and living in poverty, 2017-2021 5 year averages



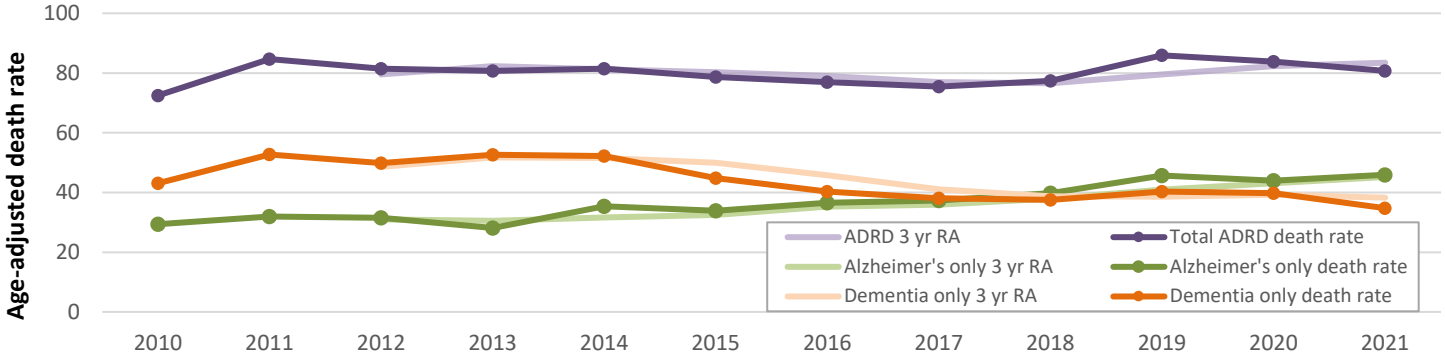
Source: 2017-21 American Community Survey, 5 year estimate

Alzheimer's Disease and Related Dementias Mortality

The CDC definition "of death by Alzheimer's disease or other dementia" are deaths that have these diseases listed as either an immediate or underlying cause of death. The number of deaths in this report may be an under representation, since the progression of Alzheimer's and dementia will cause the development of other morbidities that will be the acute cause of death. For example, difficulty swallowing, immobility and malnutrition from severe dementia may lead to pneumonia; respiratory distress and/or failure to thrive as the immediate causes of death in about one half of Alzheimer's disease and related dementia cases.[1] Focus on the immediate cause(s) of death by the physician completing the death certificate may lead to the exclusion of ADRD disorders as an underlying cause from this document. As observed in the Alzheimer's Association 2022 report, "difficulty in using death certificates to determine the number of deaths from Alzheimer's and other dementias has been referred to as a blurred distinction between death *with* dementia and death *from* dementia".[1]

Death certificate data from Summit County indicates that there was a small increase in the age-adjusted ADRD death rate from 2010 to 2021. The age-adjusted death rate for all dementia disorders listed as a cause of death increased from 72.5 per 100,000 in 2010 to 80.7 in 2021, an 11.3% increase.[6] From 2010 to 2021 there was a 3.8% increase in the age-adjusted ADRD

Figure 7. Age-adjusted death rates for Alzheimer's disease and related dementia (ADRD) deaths per year in Summit County from 2010 - 2021, yearly rates and 3 year rolling averages (RA)



Source: Ohio Department of Health Death Records, SCPH Calculations

death rate due to Alzheimer's disease and related dementias (ADRD) throughout the United States, increasing from 57.6 per 100,000 in 2010 to 59.8 in 2021.[7]

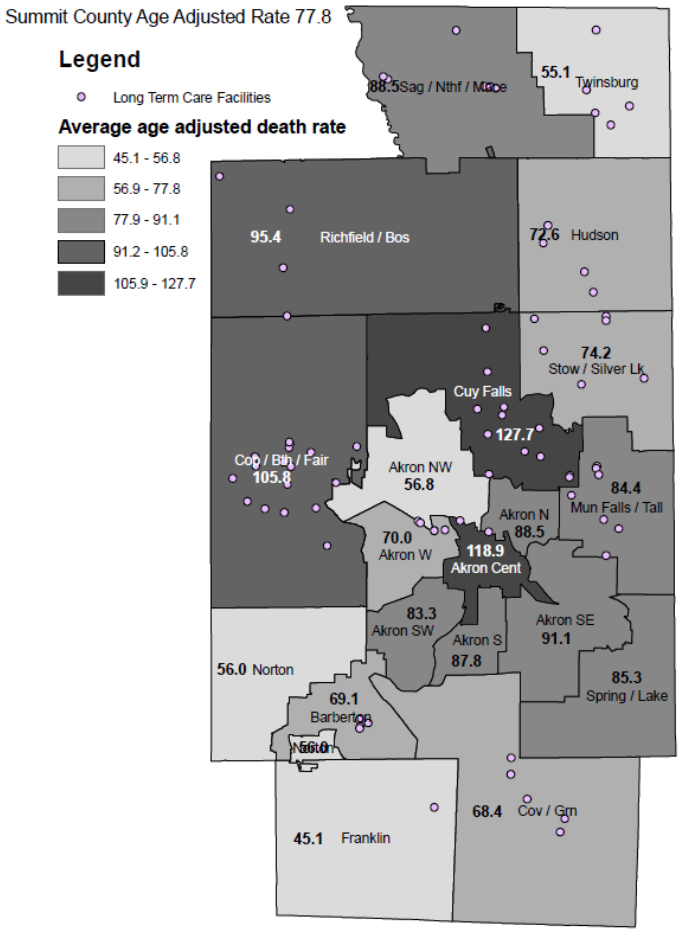
Based on death certificate data for deaths among Summit County residents from 2010 to 2021, there has also been an increasing trend in deaths specifically for Alzheimer's disease and a decrease in other related forms of dementia. When evaluating age-adjusted death rates from 2010 to 2021 there was a 56.1% increase in Alzheimer's deaths in Summit County, compared to an increase of 23.1% in the United States. Deaths by related dementias decreased by 19.5% in Summit County and 11.4% in the United States.[5,7] These changes in ADRD reporting are likely due to variations in the practices by certifiers of death, different practices in coding dementia, differences in demographics of those who suffer from ADRD and how it may affect their diagnosis and the care they receive, and improved physician education and awareness of ADRD as chronic diseases that can lead to death.[8]

Table 2 displays the counts and average age-adjusted death rates of ADRD deaths from 2017 to 2021 (with and without long term care residents) by Summit County clusters.[5] The age-adjusted death rate controls for the effects of differences in population age distributions in Summit County and each of the clusters. As seen in Table 1, there is variability in the percentage of older adults and the life expectancy of each cluster. The highest counts of ADRD deaths occurred in the Cuyahoga Falls clusters and the Copley/Bath/Fairlawn clusters while the lowest counts of deaths occurred in the Norton, Akron Central, and Akron North Clusters. However, the calculated age-adjusted death rate in a cluster may not be proportional to the number of ADRD deaths. Although Akron Central had the lowest *number* of ADRD deaths in Summit County, this cluster had the second highest age-adjusted death rate.

Numerous factors can impact the rate of ADRD in a geographic area. The clusters with the highest percentage of Alzheimer's deaths, Copley/Bath/Fairlawn and Cuyahoga Falls, contain about one third of all of Summit County's nursing and assisted living facilities (Figure 8). The location of long term care (LTC) facilities in Summit County cannot be adjusted for in a straightforward way, due to how residential address are documented on the death certificate. The deceased may have been residing in an LTC facility, but the death certificate will list their former residence as their official address and the LTC facility as the place of death. LTC facilities and / or the individual filling out the death certificate may have different policies on how they document residential address in general. Of the 3,138 ADRD deaths in Summit County from 2017-2021, 29.3% (921) of the death certificate s had LTC facilities as their residential address. Of the 2,132 deaths that occurred in LTC facilities, only 38.4% of these deaths had the LTC facility documented as the residential address. To account for this variability, the age-adjusted ADRD death rate excluding LTC residents was calculated for each cluster (Table 2).

As seen in Table 1, 2016-2021 average life expectancy in Summit County was 76.4 years, but disparities were apparent among the twenty clusters. The range between clusters was 13 years, from 69.2 years to 82.2 years.[4] Central Akron and Southwest Akron had the two lowest life expectancy values that were under the age of 70, at 69.2 and 69.4 years, respectively. The life expectancies of two clusters were above 80 years: Stow / Silver Lake (80.2 years) and Hudson (82.2 years). Areas with lower life

Figure 8. Average age adjusted death rates (per 100,000) for Alzheimer's Disease and dementia by cluster, 2017-2021



Source: Ohio Department of Health Death Records, SCPH Calculations

expectancies tend to have fewer people living past the age of 85, when the risk of developing ADRD is highest. The resulting fewer deaths from ADRD in those areas is likely due to residents dying of other health issues before ADRD can develop and be diagnosed; they are simply not living long enough to develop ADRD. While the raw data seems to indicate higher deaths in some of the more affluent areas of Summit County, it should be noted that many of these clusters have higher concentrations of individuals who are 65 or older.

Clusters with the highest rates of ADRD deaths often had the highest rates of poverty in residents over the age of 65 in the county.[3] Living in poverty may restrict access to healthy food, medical care, transportation, exercise, and mentally stimulating activities.[1] These restrictions can impact overall health and can increase the risk of developing ADRD and other chronic diseases. Since non-white populations experience poverty at higher rates than white populations, this may partially explain why people of color are at higher risk for developing ADRD but also may not be diagnosed for ADRD. These factors are likely to contribute to higher diagnoses and therefore, more causes of deaths labeled as Alzheimer's dementia in wealthier neighborhoods of Summit County.

Table 2. Summit County Alzheimer's disease and related dementia (ADRD) deaths and average age-adjusted death rates (AADR), 2017-21

Summit County Cluster	Number of deaths	% of total ADRD deaths	Average AADR (per 100,000)	Average AADR, no LTC residents (per 100,000)
Akron Central	43	1.4	118.9	92.6
Akron North	74	2.4	88.5	73.1
Akron Northwest	154	4.9	56.8	51.1
Akron South	85	2.7	87.8	82.8
Akron Southeast	223	7.1	91.1	85.5
Akron Southwest	107	3.4	83.3	74.9
Akron West	192	6.1	70.0	46.8
Barberton	173	5.5	69.1	52.4
Copley / Bath / Fairlawn	350	11.2	105.8	48.5
Coventry / Green	237	7.6	68.4	52.6
Cuyahoga Falls	345	11.0	127.7	77.2
Franklin	92	2.9	45.1	39.0
Hudson	128	4.1	72.6	31.5
Munroe Falls/Tallmadge	201	6.4	84.4	61.3
Norton	52	1.7	56.0	53.9
Richfield/Boston	94	3.0	95.4	42.9
Sagamore Hills / Northfield / Macedonia	169	5.4	88.5	61.4
Springfield / Lakemore	99	3.2	85.3	78.8
Stow / Silver Lake	212	6.8	74.2	53.9
Twinsburg	101	3.2	55.1	40.7
Summit County	3138		77.8	55.8

Source: 2017-2021 American Community Survey 5-Year Estimates, SCPH calculations

Further Information

Based on 2019 Medicare claims data, 9 out of 10 ADRD cases also had at least one other chronic coexisting condition:[1]

- Coronary artery disease: 46% of individuals with ADRD
- Chronic kidney disease: 46% of individuals with ADRD
- Diabetes: 37% of individuals with ADRD
- Congestive heart failure: 34% of individuals with ADRD
- Chronic obstructive pulmonary disease (COPD): 20% of individuals with ADRD

Due to the seriousness of ADRD and its comorbidities, it is important to know the signs and symptoms to aid in early detection and diagnosis. According to the 2020 Ohio BRFSS, of the statewide respondents reporting increased confusion or worsening memory loss, over half (55.5%) have not talked about their memory concerns with a health care provider.[2] It is

estimated that only about half of the population in the United States with Alzheimer's disease or related dementias have a diagnosis from a medical provider. Of those with the diagnosis (or their caregivers), only about 60% were told that they have the disease.[9] With early detection, Individuals with an earlier diagnosis can plan ahead with regards to decisions about healthcare, financing, housing, care, end of life decisions, etc. prior to severe cognitive changes. The Alzheimer's Association has published a list of 10 important warning signs to aid individuals in detecting mild cognitive impairment (MCI) and early stage dementia:[9]

1. Memory loss that disrupts daily life
2. Challenges in planning or solving problems
3. Difficulty completing familiar tasks at home at work or at leisure
4. Confusion with time or place
5. Trouble understanding visual images and spatial relationships
6. New problems with words in speaking or writing
7. Misplacing things and losing the ability to retrace steps
8. Decreased or poor judgement
9. Withdrawal from work or social activities
10. Changes in mood and personality

Early detection and diagnosis is vital so that individuals can seek expedited treatment and interventions, build a care team, and even access clinical trials. An earlier ADRD diagnosis will also reduce treatment and care costs for ADRD and other comorbidities as the disease progresses.[6,9]

References

1 Alzheimer's Association. *2022 Alzheimer's Disease Facts and Figures*. Available from: https://www.alz.org/media/Documents/alzheimers-facts-and-figures.pdf
2 Ohio Department of Health. 2020 Behavioral Risk Factor Surveillance System, (BRFSS), Ohio Data
3 United States Census Bureau. American Community Survey, 2017-2021 5 year averages. Available from: https://data.census.gov/advanced
4 Eayres, D, and Williams, ES. Evaluation of methodologies for small area life expectancy estimation. J Epidemiol Community Health 2004;58:243–249.
5 Ohio Department of Health, Vital Statistics Department. Summit County death data, 2007-2021.
6 Healthy Brain Initiative. State and Local Public Health Partnerships to Address Dementia: The 2018-2023 Road Map. 2018. Available from: https://www.cdc.gov/aging/pdf/2018-2023-Road-Map-508.pdf
7 CDC Wonder. Underlying Cause of Death, 2007-2021 Request. (2022). Available at: https://wonder.cdc.gov/ucd-icd10.html
8 Kramarow EA, Tejada-Vera B. Dementia Mortality in the United States, 2000-2017. Natl Vital Stat Rep. 2019 Mar;68(2):1-29. PMID: 31112120. Available from: https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_02-508.pdf
9 Alzheimer's Association. *Early Detection and Diagnosis of Alzheimer's Dementia Policy Brief*. 2017. Available from: https://www.alz.org/professionals/public-health/public-health-topics/early-detection-diagnosis

Notes about data and calculations:

Data in this report includes deaths with the primary underlying cause of death listed as a form of Alzheimer's disease or dementia and include the following: Alzheimer disease with late onset, Alzheimer disease with early onset, Alzheimer disease unspecified, delirium superimposed on dementia, unspecified dementia, vascular dementia unspecified

Age adjustment calculations: Age-adjusted death rates were calculated using 2017-2021 5 year average population estimates from the American Community Survey and 2000 Standard Millions. Age-adjusted rates standardize death rates between groups / geographical areas with different age distributions.

Life expectancy: Life expectancy estimates for the 20 Summit County clusters were calculated using the Chiang methodology as described in Eayres and Williams.[4]

Summit County clusters: All geographical analyses are separated by the same 20 Summit County geographic clusters. These geographic clusters are designated based on the most current Summit County census tracts which have been grouped together based on similar demographic characteristics.