

AVERAGE AGE OF DEATH

OHIO, 2010 - 2019

October 26, 2020



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Introduction

The Ohio Alliance for Innovation in Population Health (The Alliance) is a collaborative effort of Ohio University and more than thirty partner organizations. By aligning the resources and expertise of state universities, researchers, hospital associations, healthcare providers, and public health experts, the Alliance works to solve complex and pressing health problems. A major goal of the Alliance is to help the citizens of Ohio live longer, healthier, and happier lives.

Previous reports from the Alliance have discussed the cost of preventable deaths associated with behavioral health disorders expressed in years of life lost (YLL). Over a period of 10 years in Ohio, overdose deaths accounted for approximately 1 million YLL's¹ and the constellation of overdoses, suicides and alcohol related cirrhosis, colloquially known as diseases of despair, were responsible for almost 2 million years of lost life.² The current report uses the average age of death statistic to explore geographic patterns in premature mortality.

Future monographs will focus on how specific diseases and social factors account for why some Ohioans die younger than others.

¹Higgins, Joe Ohioan have lost more than one million years of life due to drug overdose since 2009 Press Release, Ohio Alliance for Innovations in Population Heath https://878570bd-c4fe-4dfe-8107-669a96dd214b.filesusr.com/ugd/89e8f1_6f36fea2f1894e46aed077a0627237f2.pdf Accessed 1-22-2020

²Diseases of Despair claim more than 1.9 million years of Ohioans' lives over 10-year period. (2020). Retrieved 21 October 2020, from <https://www.ohio.edu/news/2020/10/diseases-despair-claim-more-1-9-million-years-ohioans-lives-over-10-year-period>

Executive Summary

Ohio is not the unhealthiest place to live in the United States but neither is it the healthiest. According to the Kaiser Family Foundation, Ohio had the 23rd highest percentage of adults in the U.S. who rated their health as “Poor,” and as of 2017 Ohio had the fourth highest death rate of any state in the U.S.³

The average ages of death calculated by region of state, county and census tract point toward areas that have significant health advantages and areas likely struggling with serious health conditions. The following key findings are noted:

1. The average age of death for all Ohioans over the ten-year period ending on December 31st, 2019 was 73.23 years.
2. The average age of death peaked in 2012 at 73.54 and hit a decade low in 2017 (72.63).
3. There was almost a seven-year (6.79) difference between the counties with the highest and lowest average age of death for the period.
4. Among Ohio Counties, Auglaize (76.98), Geauga (76.94) and Putnam (76.88) had the highest average age of death.
5. Vinton (70.19), Franklin (70.33) and Pike (70.44) had the lowest age of death for the period.
6. Counties recording the largest increases in average age of death between 2010 and 2019 were Putnam with a 3.28 year increase, followed by Monroe (2.66), and Paulding (2.51).
7. Clinton County experienced a 2.68 year drop in average age of death between 2010 and 2019, followed by Williams (1.69), and Ashland (1.23).
8. From a regional perspective, Ohioans residing in Northern Appalachia lived the longest (74.39), followed by residents from suburban communities (74.23), rural areas (74.23), and residents of metropolitan areas (72.80).
9. The lowest average age of death was found in the Southern Appalachian region (71.68).
10. There are dramatic differences in average age of death within counties. In Cuyahoga County, the average age of death differs by 31 years with large discrepancies in census tracts that abut each other. In Hamilton County the difference is 35 years. Large disparities in average age of death are not just limited to urban counties. In rural Coshocton County there is an 8 year difference between abutting census tracts.

³Health Status – KFF. (2020). Retrieved 21 October 2020, from <https://www.kff.org/state-category/health-status/>

Methods

A serial, cross-sectional analysis was performed for all Ohio fatalities between January 1, 2010 and December 31, 2019 ($N = 1,146,814$) with the intention of determining how long Ohioans live by region, county, and census tract. Data consisted of mortality records obtained from the Ohio Department of Health. The Department does not necessarily agree or disagree with the analysis, interpretations, or conclusions of this report.

Limitations

This report is based on the average age of Ohio decedents at time of death for the ten year period ending December 31, 2019. It is not however, a lifespan study, which would entail predicting the probability of surviving successive years of life, based on observed age-specific mortality rates. Our intent is to provide a working understanding of how long Ohioans live and how that general measure has changed over time.

Findings

In figure 1 we see the average age of death increased slightly between 2010 and 2012 and then declined through 2017, the peak year for overdose fatalities in Ohio. The combination of overdoses, suicides and cirrhosis related mortality are significant factors in Ohio's lagging lifespan.

Figure 1
Average Age of Death by Year for Ohio, 2010 - 2019

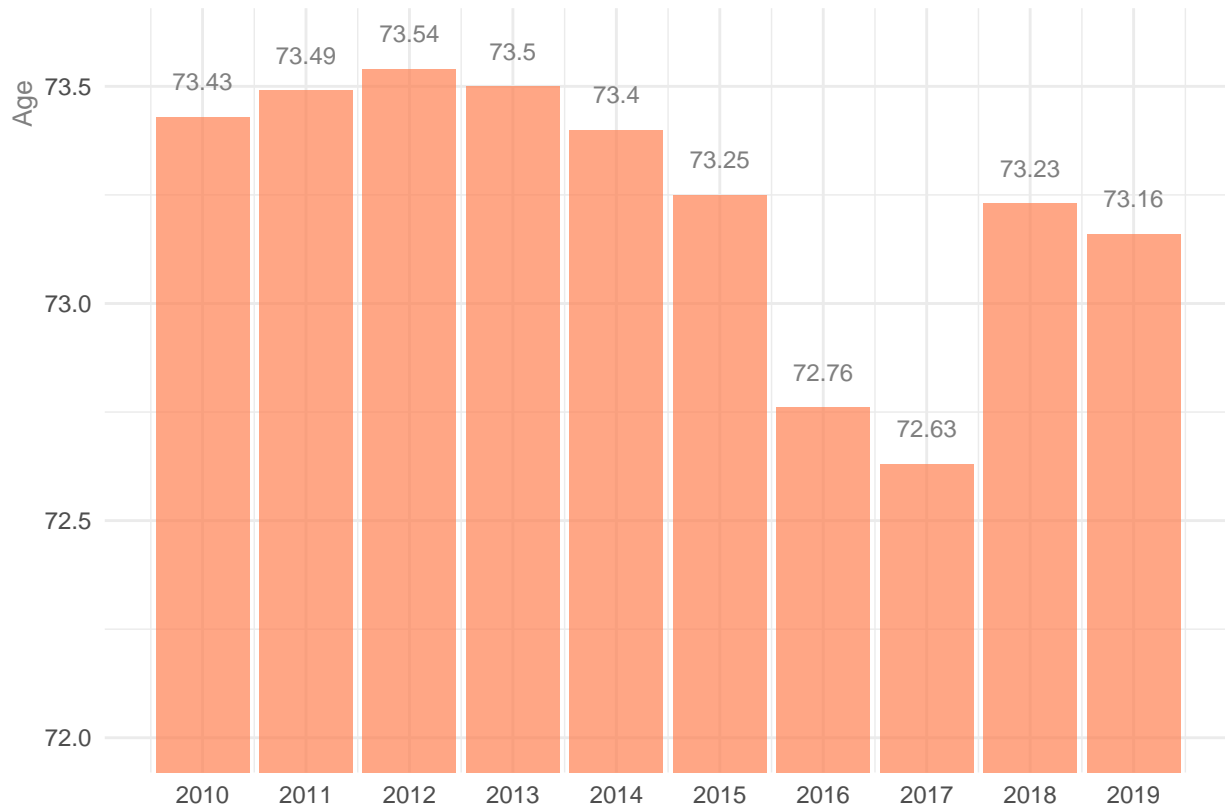


Figure 2 depicts the average age of death for Ohio counties. Those communities shaded in orange have the highest average age of death for the ten-year period. Virtually all of these counties can be found in northern Ohio.

Counties shaded in green have the lowest average ages of death. Residents of these communities are also more likely to exhibit serious underlying health conditions. With the notable exception of Franklin County, communities struggling with premature mortality are located in rural southern Ohio.

Figure 2
Average Age of Death by County, 2010 - 2019

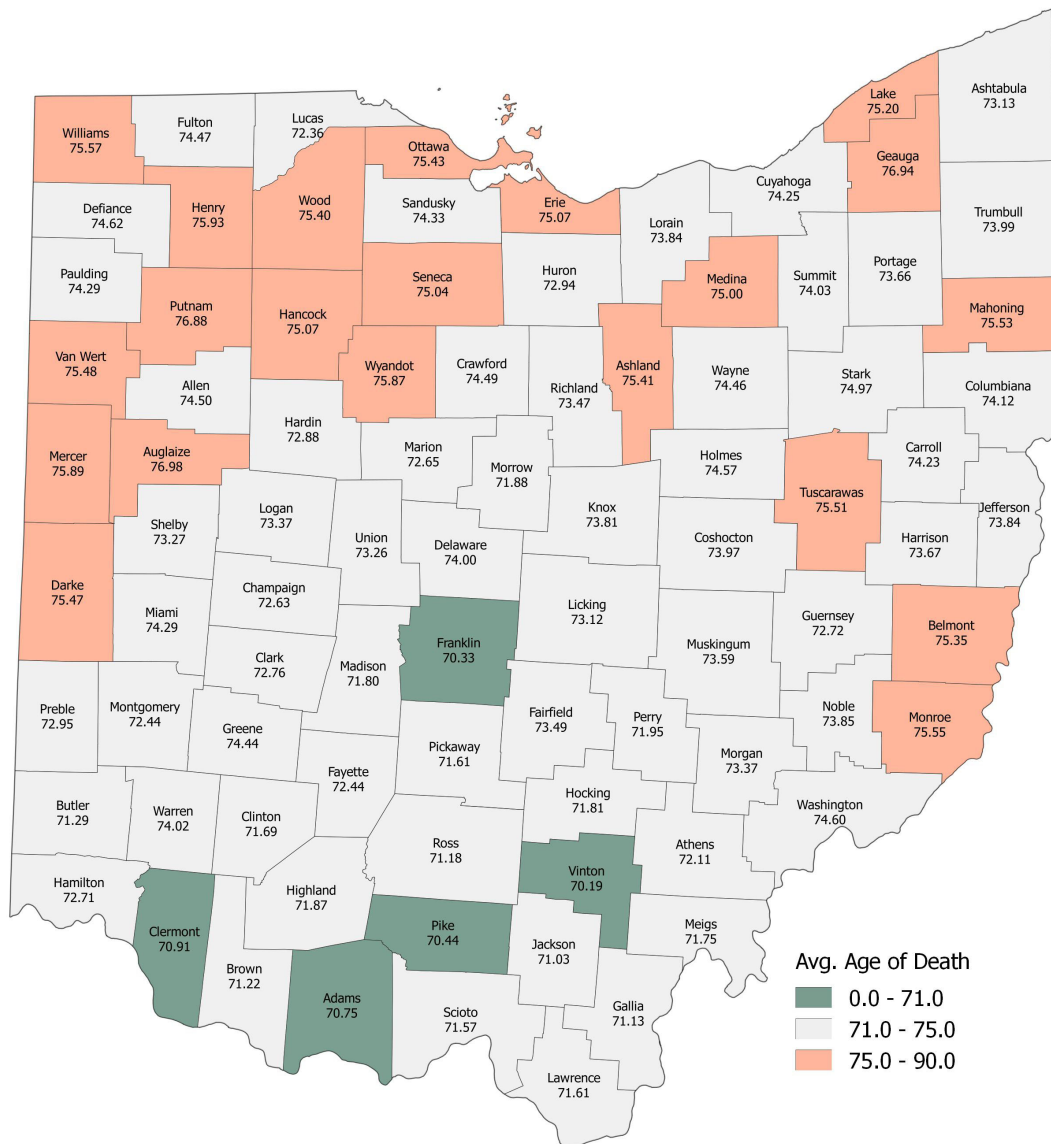


Figure 4 displays those census tracts determined to have the lowest average age of death (average age less than 71). Many residents of these tracts are likely to struggle with underlying conditions that co-occur with lower than expected lifespans.

Figure 4
Census Tracts with Low Average Age of Death, 2010 - 2019

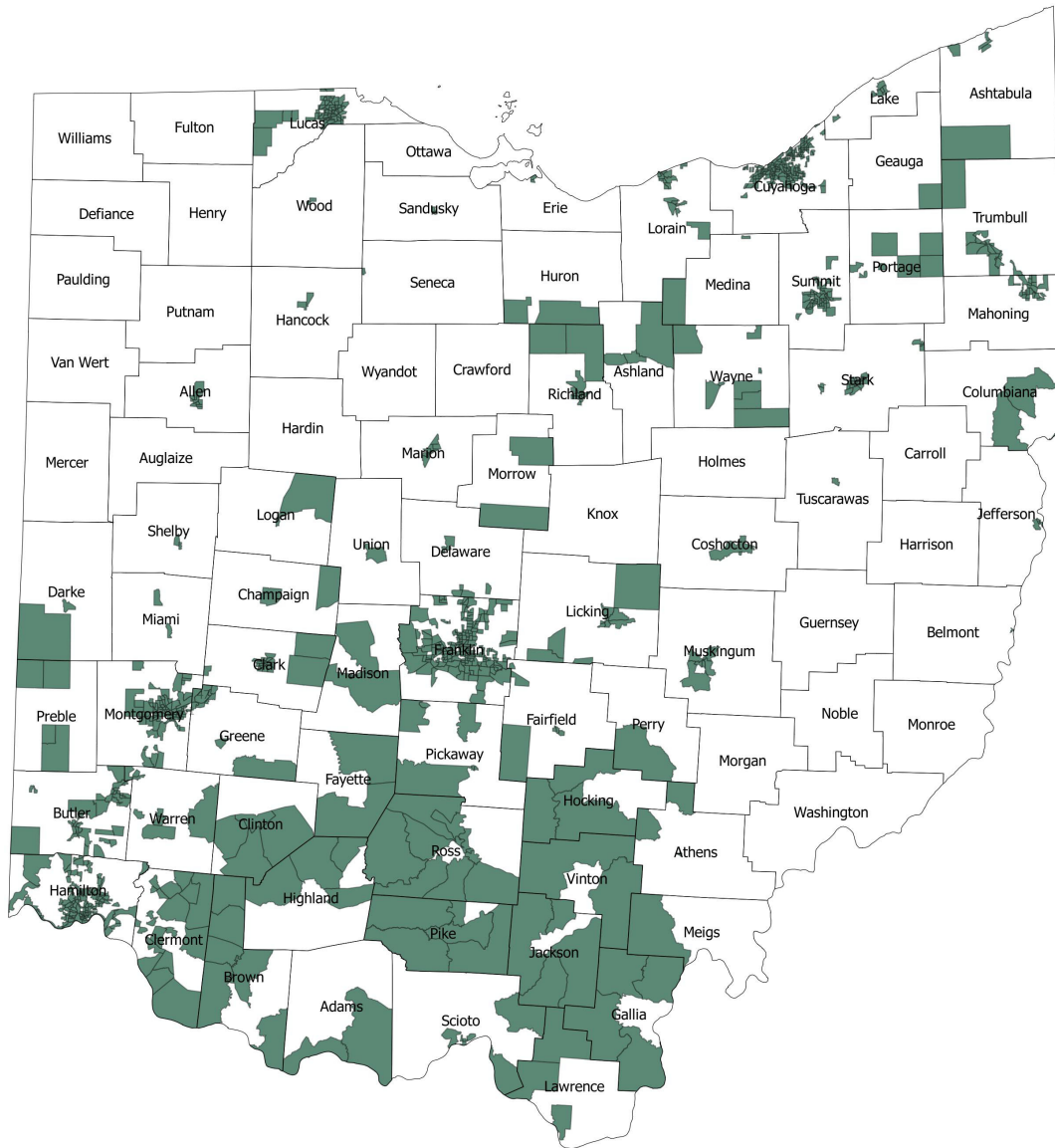
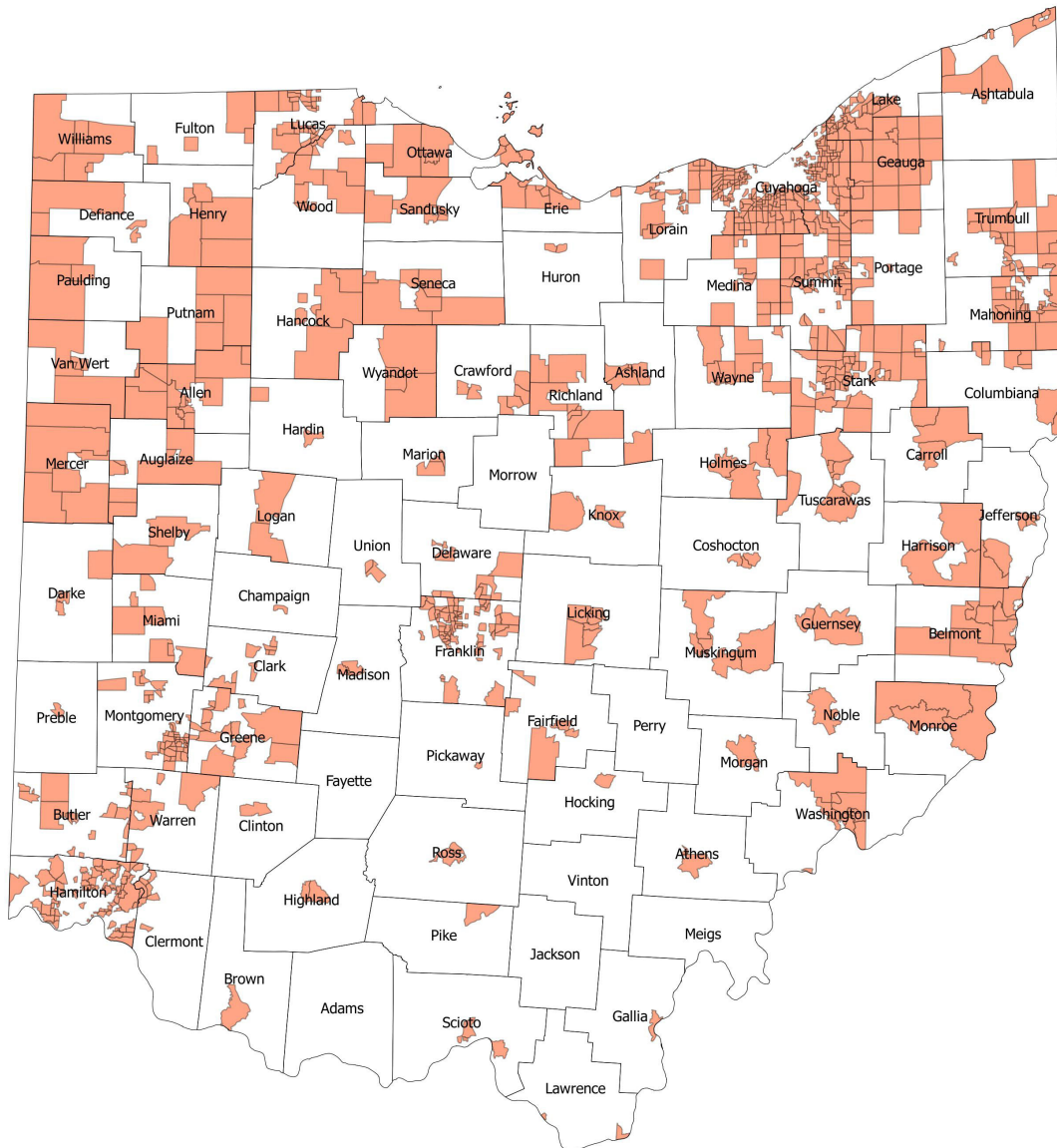


Figure 5 displays census tracts that have an average age of death that exceeds 75 years. These tracts are less likely to have residents struggling with serious underlying conditions.

Studying the conditions that distinguish these tracts from areas where people tend to die younger may provide important insight about health and social policies that can increase the average lifespan across the state.

Figure 5
Census Tracts with High Average Age of death, 2010 - 2019



Analysis of average age of death by county shows significant variability in average age of death among Ohio Counties, with Auglaize County in western Ohio having the highest average age of death (76.98) over the ten year period, followed by Geauga County (76.94), an affluent suburban county contiguous with greater Cleveland.

Vinton County, in rural Southeastern Ohio exhibited the lowest average age of death (70.19), followed closely by Ohio’s largest metropolitan county, Franklin (70.33),

Table 1
Average Age of Death by Year and County

County	Average Age of Death										Total
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Adams	70.50	69.15	71.36	72.04	70.64	70.69	69.46	70.65	71.20	71.54	70.75
Allen	75.36	74.94	75.13	75.29	74.10	73.67	72.53	73.92	74.97	75.13	74.50
Ashland	75.15	75.17	76.04	76.91	75.42	75.77	74.98	74.84	76.09	73.92	75.41
Ashtabula	72.44	74.02	73.85	73.85	72.59	73.31	73.31	72.41	71.88	73.68	73.13
Athens	72.77	71.98	72.37	71.67	71.42	71.00	72.06	72.59	73.10	72.02	72.11
Auglaize	76.29	76.89	77.64	76.39	78.33	77.25	76.20	76.68	76.34	77.75	76.98
Belmont	75.51	78.18	75.85	75.79	75.20	74.34	74.23	75.01	75.82	74.35	75.35
Brown	71.12	70.89	70.85	71.10	71.35	70.30	70.92	71.19	71.25	73.12	71.22
Butler	72.31	71.64	71.21	71.86	71.15	71.11	70.69	70.28	71.37	71.56	71.29
Carroll	73.49	74.79	74.18	73.67	74.08	75.01	73.91	72.91	75.68	74.58	74.23
Champaign	72.34	73.68	72.46	72.84	72.85	71.25	72.75	72.10	73.41	72.70	72.63
Clark	72.81	73.49	73.37	73.91	73.09	72.95	71.83	71.92	71.73	72.69	72.76
Clermont	71.54	69.97	69.83	70.86	70.07	71.22	70.35	71.66	71.38	71.85	70.91
Clinton	74.52	71.67	71.62	71.01	71.58	71.26	71.35	71.27	71.27	71.66	71.69
Columbiana	73.84	73.68	74.00	74.42	74.84	74.52	73.25	74.17	73.85	74.58	74.12
Coshocton	73.56	75.47	73.49	72.73	74.42	74.27	73.48	74.62	73.07	74.75	73.97
Crawford	73.21	76.05	74.38	76.06	74.94	73.99	74.99	72.54	74.63	74.42	74.49
Cuyahoga	74.75	74.74	74.70	74.59	74.59	74.27	73.46	73.62	74.05	73.81	74.25
Darke	75.81	76.80	74.21	75.54	76.05	76.36	75.29	73.49	75.44	75.69	75.47
Defiance	74.17	74.07	75.26	75.83	75.52	73.75	74.95	73.75	74.26	74.82	74.62
Delaware	72.48	73.29	73.88	73.81	73.74	75.92	72.92	73.71	75.30	74.42	74.00
Erie	75.74	76.39	74.73	74.56	74.71	75.46	73.81	74.72	75.53	75.18	75.07
Fairfield	72.53	73.23	73.13	73.02	74.01	74.27	73.23	73.43	73.96	73.84	73.49
Fayette	72.46	74.14	72.69	73.06	72.62	72.10	73.82	70.89	71.74	71.23	72.44
Franklin	70.53	70.38	70.86	70.61	70.71	70.56	70.16	69.63	70.03	70.05	70.33
Fulton	74.54	75.12	73.26	74.09	74.70	75.53	73.34	74.93	74.85	74.28	74.47
Gallia	72.14	70.97	70.10	71.63	71.68	71.41	70.86	71.05	70.48	71.20	71.13
Geauga	77.19	76.77	76.43	76.90	78.36	77.48	75.63	76.62	77.39	76.73	76.94
Greene	74.18	74.65	74.27	74.98	74.41	74.50	74.31	73.59	74.68	74.81	74.44
Guernsey	73.14	72.96	73.33	72.78	72.80	72.07	72.56	72.57	73.04	72.10	72.72

Table 1Average Age of Death by Year and County (*continued*)

County	Average Age of Death										Total
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Hamilton	73.15	73.17	73.04	72.77	72.76	72.55	72.39	72.08	72.63	72.64	72.71
Hancock	75.19	75.30	76.09	76.01	75.09	74.81	75.39	73.93	74.28	75.02	75.07
Hardin	72.55	72.84	73.15	71.91	73.25	74.13	71.35	72.33	73.77	73.64	72.88
Harrison	74.73	72.99	73.10	73.81	72.59	73.84	71.72	73.82	74.23	75.68	73.67
Henry	75.97	75.42	76.33	77.03	75.74	76.19	76.29	74.74	75.60	76.15	75.93
Highland	72.15	70.75	73.14	70.95	71.47	71.99	71.60	71.58	73.29	71.54	71.87
Hocking	73.33	70.81	71.02	71.26	73.38	70.54	71.64	71.07	72.24	72.75	71.81
Holmes	73.04	73.81	74.13	73.80	74.47	74.58	75.93	74.09	76.17	75.11	74.57
Huron	74.23	72.77	73.30	73.41	71.78	73.41	72.27	72.16	72.93	73.13	72.94
Jackson	70.60	71.52	72.26	70.63	71.78	70.28	71.07	70.73	70.53	70.96	71.03
Jefferson	73.59	74.39	74.15	73.50	74.43	73.39	74.06	73.18	74.31	73.47	73.84
Knox	72.23	72.97	74.70	73.52	74.16	74.20	74.21	73.64	74.23	74.16	73.81
Lake	75.35	75.54	75.24	75.18	75.67	75.16	74.63	74.93	75.22	75.22	75.20
Lawrence	70.92	71.30	72.10	72.54	71.87	71.19	70.07	71.31	72.44	72.17	71.61
Licking	73.24	72.57	73.13	72.65	73.25	72.89	73.37	73.16	73.78	73.06	73.12
Logan	73.07	73.69	73.03	73.58	75.30	74.19	74.52	71.42	72.94	72.07	73.37
Lorain	74.11	74.56	73.81	73.64	73.81	74.35	72.96	73.32	73.74	74.19	73.84
Lucas	72.81	72.67	72.64	73.03	72.67	72.73	71.63	71.93	71.98	71.70	72.36
Madison	70.55	71.20	72.08	71.92	72.87	72.60	71.29	71.06	73.01	71.48	71.80
Mahoning	75.25	76.37	75.79	75.24	76.20	75.56	75.51	75.13	75.02	75.29	75.53
Marion	73.37	73.36	73.22	73.39	72.43	71.79	72.63	71.65	72.72	72.23	72.65
Medina	75.02	75.47	75.05	75.02	75.19	73.93	74.62	74.87	75.26	75.61	75.00
Meigs	72.36	71.59	73.04	71.90	72.25	71.67	70.97	71.76	71.06	71.46	71.75
Mercer	76.00	75.77	74.82	76.55	75.33	74.52	76.50	76.95	76.55	75.98	75.89
Miami	73.89	74.93	74.92	73.94	73.88	73.76	74.38	73.78	74.63	74.69	74.29
Monroe	74.45	75.81	77.16	75.16	75.33	74.61	75.84	75.52	74.71	77.11	75.55
Montgomery	72.84	72.97	72.87	72.54	72.61	72.74	71.92	71.07	72.64	72.44	72.44
Morgan	72.94	75.29	74.49	71.26	73.47	73.90	73.42	73.91	71.10	73.83	73.37
Morrow	72.10	72.35	71.45	71.15	72.74	71.76	72.10	71.32	71.86	71.99	71.88
Muskingum	73.00	73.64	74.47	73.98	74.34	73.61	73.87	73.45	73.55	72.03	73.59
Noble	73.64	74.08	74.11	72.75	76.15	72.68	72.93	74.44	74.33	73.82	73.85
Ottawa	75.91	74.34	76.80	74.15	76.57	75.57	75.10	74.18	75.55	76.22	75.43
Paulding	72.09	75.29	73.67	76.18	76.11	76.38	72.50	71.81	74.94	74.60	74.29
Perry	71.57	71.78	71.94	72.63	72.73	71.74	70.83	73.42	71.43	71.41	71.95
Pickaway	71.41	72.21	72.00	69.54	71.80	72.14	72.15	72.20	71.77	70.75	71.61
Pike	72.00	69.64	69.57	70.30	69.92	71.86	70.35	68.90	70.84	71.10	70.44

Table 1Average Age of Death by Year and County (*continued*)

County	Average Age of Death										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
Portage	73.71	73.75	73.54	73.44	74.33	73.62	73.14	73.36	73.86	73.88	73.66
Preble	73.52	73.81	72.90	73.84	73.76	71.28	72.67	71.69	73.56	72.83	72.95
Putnam	77.03	76.36	75.16	77.09	76.30	76.66	75.64	77.73	76.17	80.31	76.88
Richland	73.27	74.32	73.88	73.82	74.34	72.95	72.20	73.32	73.34	73.37	73.47
Ross	70.93	71.86	71.22	71.29	71.68	70.62	70.78	71.20	70.75	71.61	71.18
Sandusky	73.40	73.97	75.46	75.57	74.00	73.75	74.64	74.03	74.36	74.18	74.33
Scioto	70.81	71.74	72.75	72.67	72.39	72.63	71.63	70.96	70.60	69.98	71.57
Seneca	75.05	75.87	74.15	73.51	74.63	75.66	76.71	74.53	75.39	74.96	75.04
Shelby	73.81	72.73	72.63	74.28	73.12	73.31	72.98	73.48	73.32	73.11	73.27
Stark	75.29	75.41	75.08	75.53	74.81	75.46	74.16	74.29	74.90	74.91	74.97
Summit	74.31	74.39	74.56	74.85	74.28	73.68	72.87	73.26	74.36	73.89	74.03
Trumbull	74.06	74.02	74.63	74.67	74.70	74.02	73.53	72.88	74.05	73.53	73.99
Tuscarawas	75.53	75.47	74.76	75.67	75.36	76.18	76.40	74.60	76.22	74.94	75.51
Union	71.83	73.64	74.34	73.07	74.14	72.05	74.02	72.23	73.93	73.38	73.26
Van Wert	76.79	75.78	75.58	75.08	77.25	75.22	73.85	74.64	75.25	75.85	75.48
Vinton	72.35	70.40	70.04	69.61	70.74	68.03	70.05	69.75	68.70	72.30	70.19
Warren	73.34	73.43	73.66	73.83	74.35	73.58	74.49	73.46	75.10	74.54	74.02
Washington	73.59	75.35	75.91	74.32	74.28	74.74	73.96	73.80	74.84	75.27	74.60
Wayne	74.42	74.50	74.36	74.99	75.00	74.27	73.90	73.57	75.18	74.41	74.46
Williams	76.21	75.28	77.04	75.16	76.15	75.16	75.20	75.76	75.42	74.52	75.57
Wood	75.60	74.49	75.44	75.04	75.69	74.73	75.20	76.08	76.09	75.42	75.40
Wyandot	73.97	77.63	75.83	76.45	76.72	76.56	75.95	76.81	75.42	73.47	75.87
Total	73.43	73.49	73.54	73.50	73.40	73.25	72.76	72.63	73.23	73.16	73.23

Example County Level Census Tract Maps

The following township level maps for Coshocton, Cuyahoga, Franklin, Hamilton, and Perry Counties are examples of how geospatial analysis can identify areas that are outliers for conditions that require monitoring or attention. The categories depict average age of death between 2010 and 2019 by census tract. Census tracts with unusually high or low average age of death only are labeled.

In accordance with principles set forth by the CDC, areas with fewer than sixteen recorded deaths have been excluded from the tract level analysis. This step assures a reasonable level of reliability and protection for the confidentiality of Ohio decedents.⁴

Within counties there are dramatic differences in average age of death. In Cuyahoga County, the average age of death differs by 31 years with large discrepancies in census tracts that abut each other. In Hamilton County the difference is 35 years. Large disparities in average age of death are not just limited to urban counties. In rural Coshocton County there is an 8 year difference between abutting census tracts.

Some of these discrepancies may be accounted for by local circumstances, but it is likely that social determinants of health are contributing profoundly to the quality of health and longevity of Ohio citizens.

⁴Statistical Methods: Suppression of Rates and Counts | U.S. Cancer Statistics Data Visualizations Tool Technical Notes | CDC. (2020). Retrieved 5 November 2020, from https://www.cdc.gov/cancer/uscs/technical_notes/stat_methods/suppression.htm

Figure 6
Average Age of Death for Coshocton County Census Tracts, 2010 - 2019

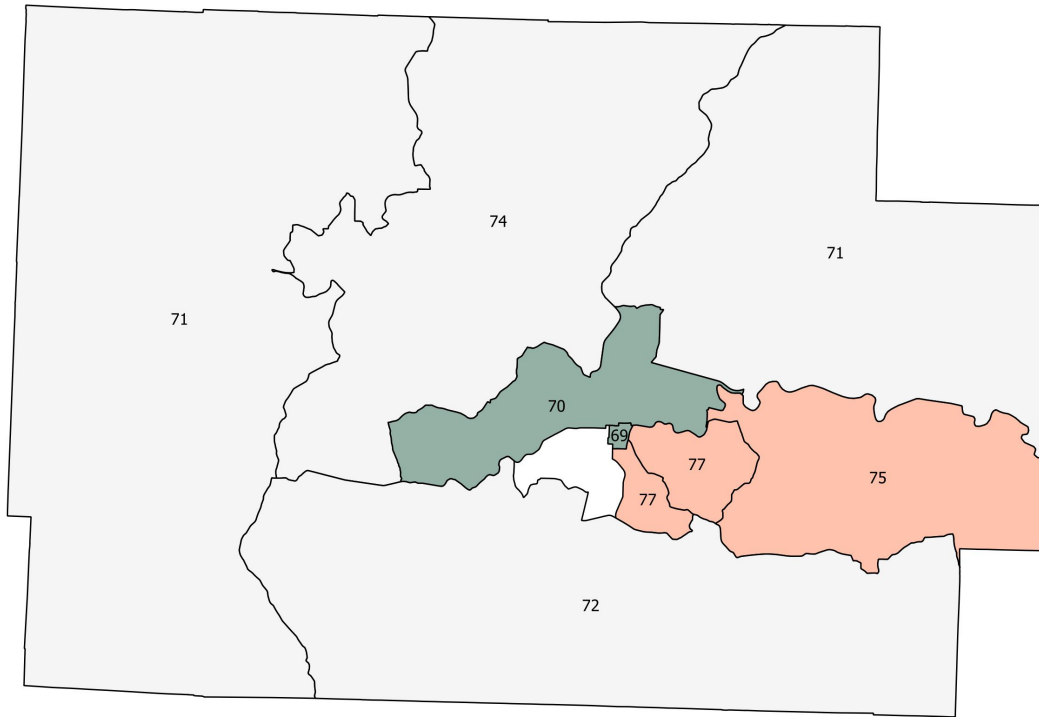


Figure 7
Average Age of Death for Cuyahoga County Census Tracts, 2010 - 2019

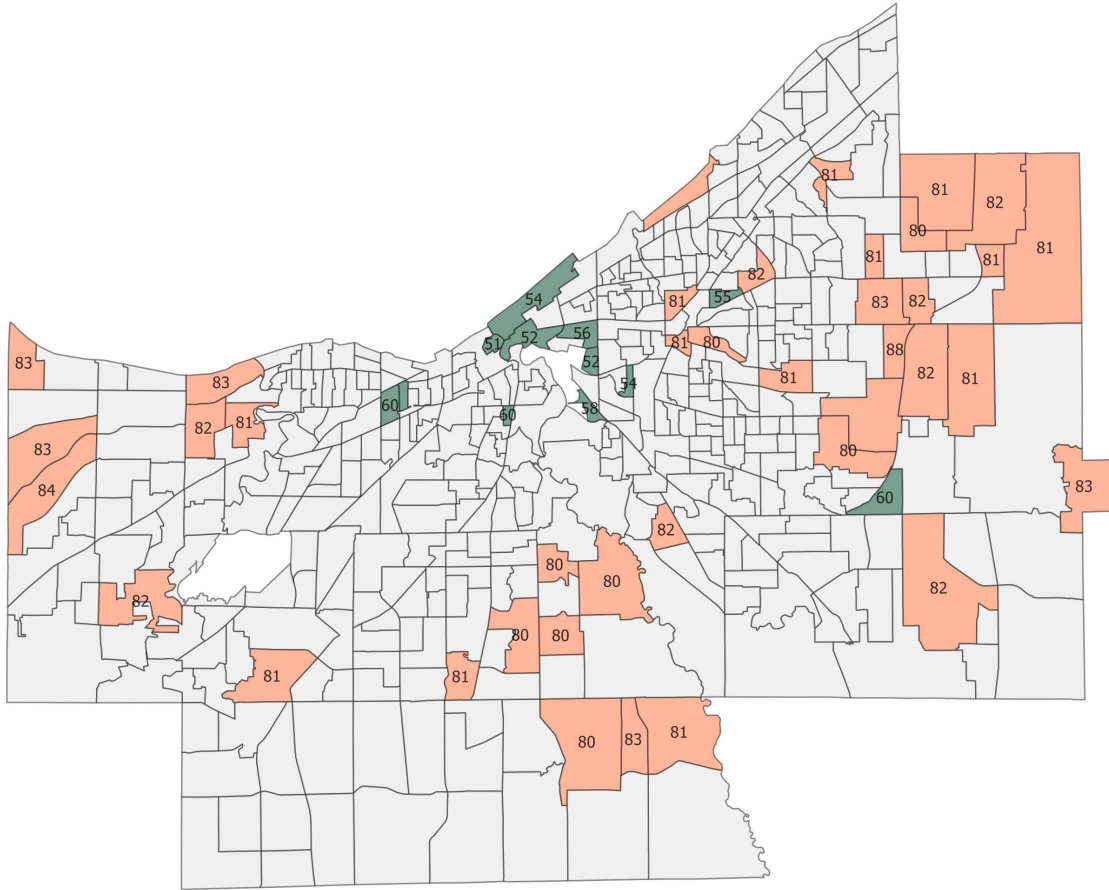


Figure 8
Average Age of Death for Franklin County Census Tracts, 2010 - 2019

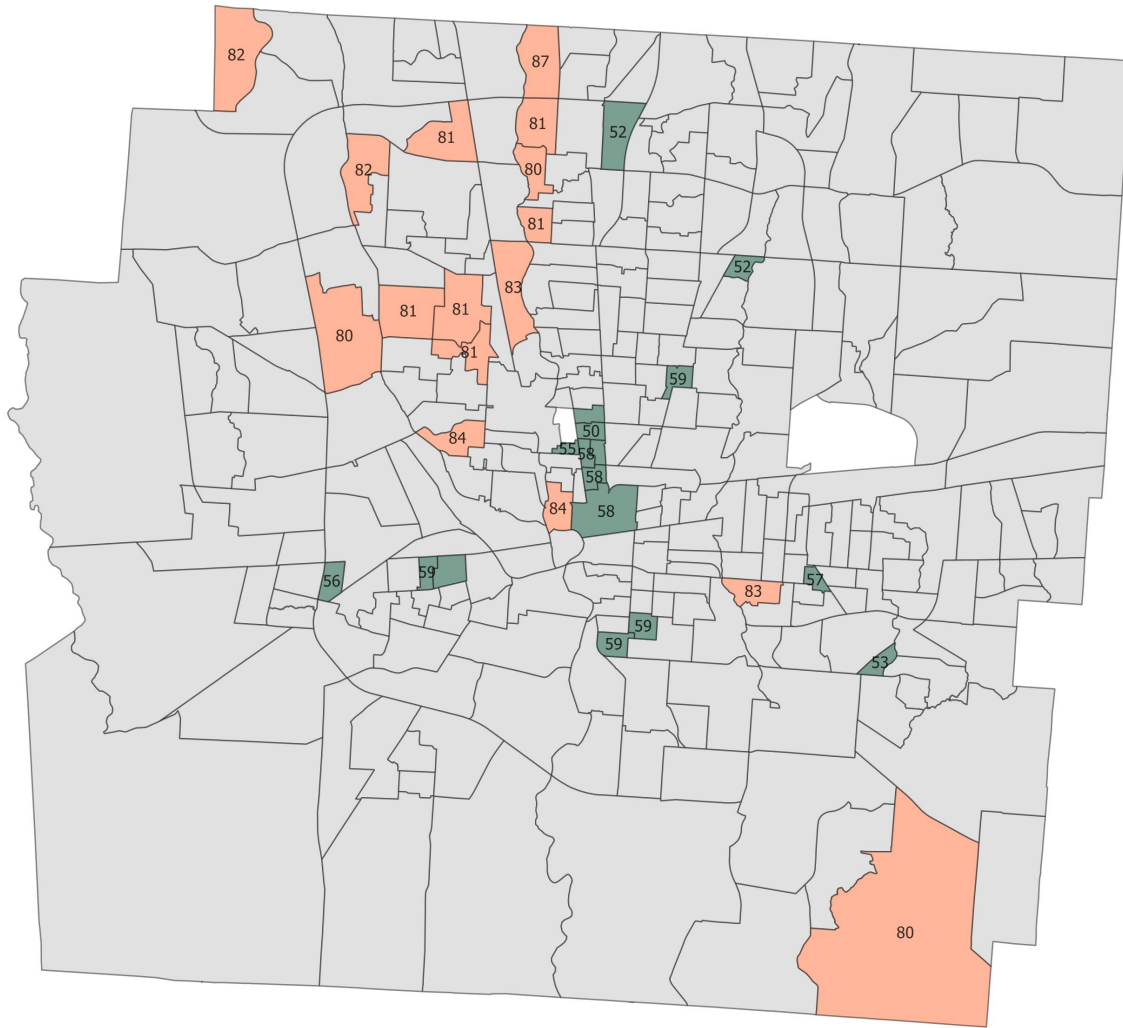


Figure 9
Average Age of Death for Hamilton County Census Tracts, 2010 - 2019

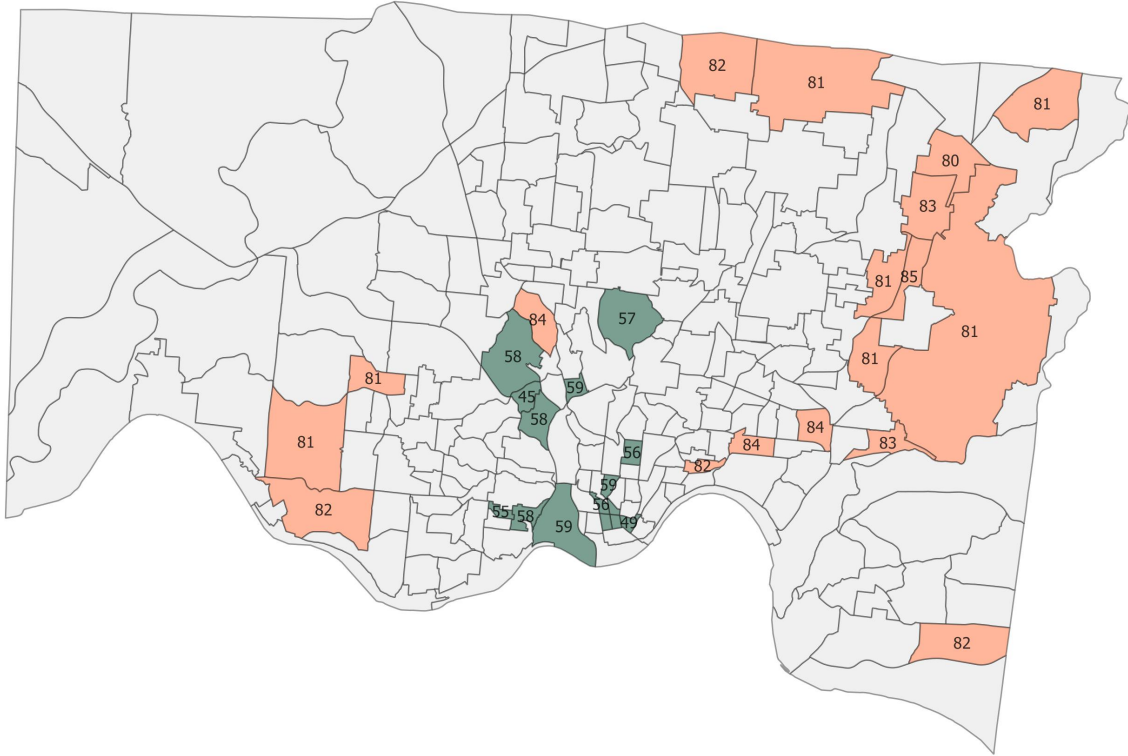


Figure 10
Average Age of Death for Perry County Census Tracts, 2010 - 2019

