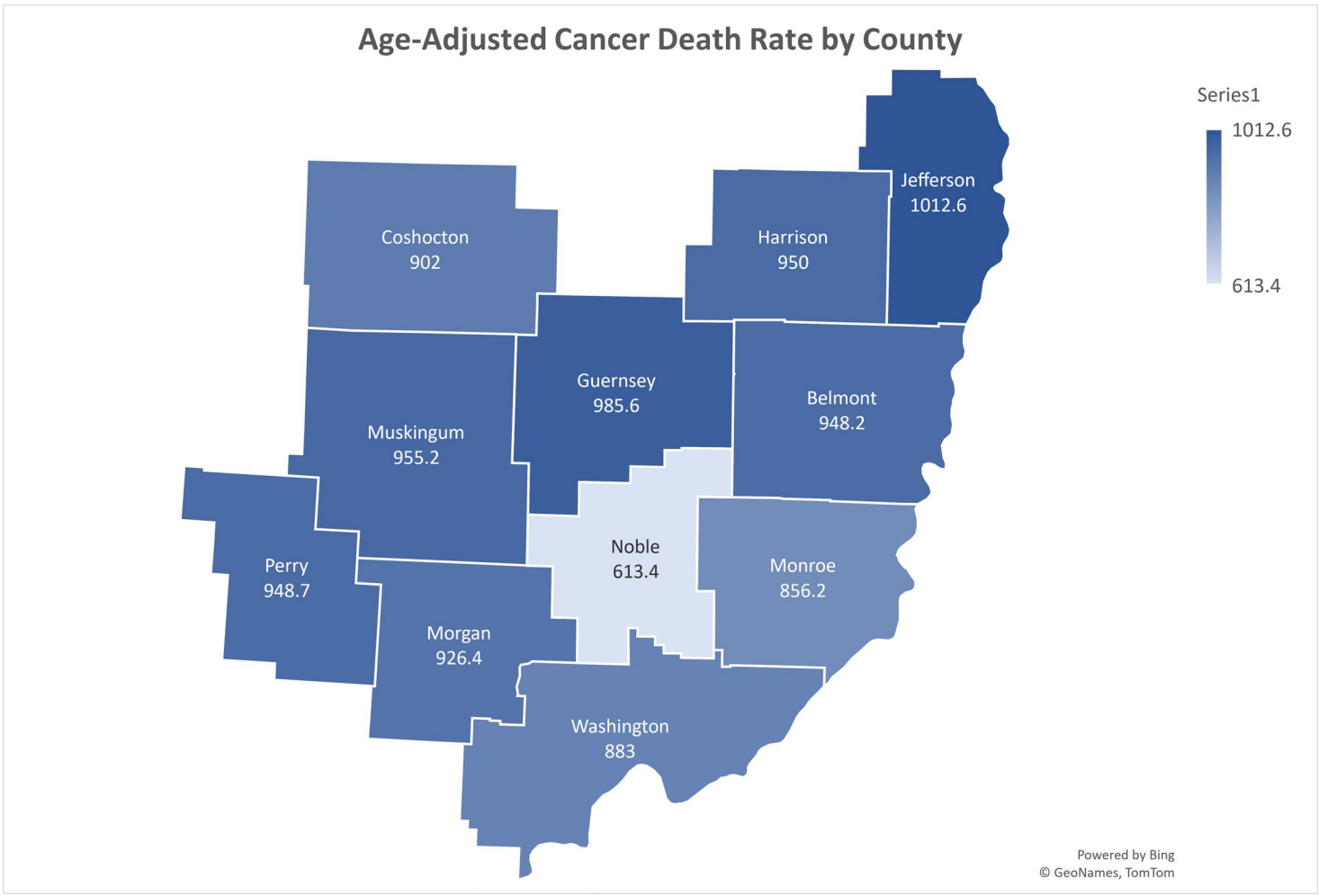
Southeastern Ohio Epidemiology Region
2022 Regional Cancer Data Review



Source: Ohio Department of Health Data Warehouse Mortality, Age-Adjusted Cancer Death Rates 2016-2021 (Map created in Microsoft Excel)

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Introduction

The Southeastern Ohio Epidemiology Region 2022 Regional Cancer Data Review provides cancer death rates, incidence data facts, and payor information on the 11 Ohio counties and approximately 440,000 Ohio residents in this portion of Southeastern Ohio. The review includes the county and city health districts of Belmont, Coshocton, Guernsey, Harrison, Jefferson, Monroe, Morgan, Muskingum, Noble, Perry, and Washington counties. For the remainder of this report, this 11-county area will be referred to as the Epidemiology Region. This region is composed primarily of rural communities bordering the western edge of the Appalachia region in Southeastern Ohio. Data availability to these local health districts is limited and often lacks the county-level granularity essential for development of screening programs, treatment information, and prevention materials distribution events. Additionally, the unique placement of these counties within the Appalachian Region may indicate their respective residents are at greater risk than their non-Appalachian counterparts, as cancer mortality rates in the Appalachia Region is 10% higher than the national rate[2].

The purpose of this report is to provide an overview of cancer mortality, incidence rates, and insurance data currently available for the epidemiology region. Through this, the local health departments and the communities they serve may better understand cancer and implement screening and treatment practices.

Cancer Deaths

There were 68,371 cancer cases diagnosed in Ohio during 2018, giving an age-adjusted rate of 461.1 per 100,000 population. During that same year, lung and bronchus cancer was the leading cause of new cases in Ohio, followed by breast cancer, prostate cancer, colon and rectum cancer, totaling 50.2% of all cancer diagnoses in 2018. Accounting for nearly one out of every four deaths of Ohioans, cancer is the second leading cause of death in Ohio[3]. The American Cancer Society (ACS) estimates that nationally in 2022 there will be 1,918,030 new cases with 609,306 deaths. This equates to approximately 5,250 new cases and 1,670 deaths every day in the United States. Taking a closer look at Ohio, ACS predicts in 2022 there will be 73,700 new cancer diagnoses with 25,120 deaths, ranking Ohio at #7 in the nation in both new cases and deaths[4].

Table 1: Age-Adjusted Cancer Mortality Rate (per 100,000 people) by County 2016-2019

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
2016	**830.5**	**869.5**	865.7	776.8	889.8	825.2	974.1	776.2	847.8	911.2	645.6	888	857.5
2017	**850.3**	**878.7**	893.4	758.5	929.4	866.9	955.9	757.2	905.4	921.4	564.1	876.3	892.8
2018	**840.7**	**889**	912.6	911.8	893	933.2	924.8	914.2	874.7	929.3	634.9	868	837.2
2019	**827.6**	**882.2**	884.6	906.1	958.6	823.1	959	768.1	808.1	903.3	606.4	890.1	818.1

Source: Ohio Department of Health Data Warehouse, Mortality, Cancer Deaths of Ohio Residents 2016-2019. Report created 5/20/2022.
CDC, Cancer, An Updated on Cancer Deaths in The United States, Age-adjusted death rates, by cause of death, United States, 1999–2020
Rates are sex specific for cancers of the cervix, ovary, prostate, testis and uterus.
Ohio Resident deaths include individuals that resided in Ohio at the time of death regardless of where the death occurred.
Age is using 19 age groups, i.e., <1, 1-4, 5-9

Cancer Incidence

As the tables below demonstrate, cancer incidence increases significantly after the age of 50 years, which is consistent with the previous identification of age as a risk factor for cancer. Age is a risk factor for cancer. A risk factor increases the chances of getting cancer but is not an indication that one will certainly get the disease[5]. Other risk factors include those with family genetic history, tobacco use, low incomes, low health literacy, lacking health insurance, or those with long distances to travel for screening services[6]. In the epidemiology region the 2016 cancer incidence rates were the highest, as compared to the state rates, in the 60-79 year age group. The following year, for 2017, the incidence rate for this age group was closer to the state rate. In 2018 and 2019, the incidence rates for this, the 60-79 year age group, began to rise again, with more counties above the state rate.

Table 2: Percent of Cancers by Age based on Total County Incidence for 2016

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
0-19	**0.8**	**0.8**	0.40	--	0.3	--	1.5	1.8	1.9	1.0	--	0.9	1.0
20-29	**1.2**	**0.8**	1.30	0.8	0.7	--	0.9	--	--	0.5	--	2.1	1.0
30-39	**2.9**	**2.9**	2.60	3.8	3.4	3.6	2.6	2.7	--	2.9	1.3	4.3	2.6
40-49	**7.2**	**6.8**	6.0	7.6	4.8	7.1	5.7	8.0	9.5	7.9	2.5	8.6	7.1
50-59	**18.8**	**17.8**	18.40	11.8	18.9	19.6	18.5	24.1	14.3	17.3	18.8	19.7	17.4
60-69	**29.9**	**31.3**	32.60	31.3	30.2	27.7	33.9	26.8	29.5	33.1	33.8	27.9	29.1
70-79	**23.9**	**25.8**	25.10	30.9	29.2	33	23.6	25	32.4	23.7	21.3	24.9	24.9
80+	**15.2**	**13.8**	13.60	13.7	12.4	8.9	13.3	11.60	12.4	13.8	22.5	11.6	16.8

Source: Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019

Table 3: Percent of Cancers by Age based on Total County Incidence for 2017

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
0-19	**0.8**	**0.5**	0.6	1.2	--	--	0.4	--	--	0.7	--	0.8	0.4
20-29	**1.2**	**1.3**	1.0	0.8	1.1	--	2.3	--	--	1.8	1.1	0.4	1.4
30-39	**2.8**	**2.6**	3.0	3.2	3.6	1.8	2.7	4.0	4.6	2.0	3.4	2.0	1.8
40-49	**7.0**	**7.2**	6.0	3.6	9.4	8.3	8.2	8.8	5.5	7.7	8.0	7.0	6.7
50-59	**18.4**	**18.0**	19.4	15.7	21.7	17.4	17.1	10.4	21.1	17.4	21.8	21.7	16.1
60-69	**30.2**	**29.8**	28.1	28.5	27.2	30.3	30.7	32.0	32.1	30.8	27.6	28.7	31.3
70-79	**25.0**	**26.3**	24.6	32.9	26.1	32.1	24.0	28.8	24.8	25.9	23.0	25.4	27.0
80+	**14.6**	**14.4**	17.2	14.1	10.9	10.1	14.7	16.0	11.9	13.8	14.9	13.9	15.4

Source: Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019

Table 4: Percent of Cancers by Age based on Total County Incidence for 2018

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
0-19	**0.8**	**0.7**	1.0	0.8	0.7	1.0	1.5	--	--	0.3	1.0	0.8	0.4
20-29	**1.1**	**0.6**	0.8	0.8	1.0	--	0.6	0.90	0.02	0.5	--	0.4	0.4
30-39	**3.0**	**2.8**	3.3	3.1	2.4	2.9	3.5	0.9	2.0	3.7	1.0	3.5	1.0
40-49	**6.9**	**6.0**	9.1	8.8	3.7	3.9	5.5	3.5	3.6	7.3	2.0	3.9	5.3
50-59	**17.5**	**17.0**	18.1	16.2	19.4	20.4	16.0	11.3	12.5	17.8	19.0	20.6	14.5
60-69	**30.1**	**31.8**	33.1	29.2	31.3	20.4	31.4	28.7	37.5	32.3	34.0	32.7	33.3
70-79	**25.7**	**26.0**	22.0	28.1	27.6	32.0	24.6	31.3	28.6	25.0	22.0	27.2	28.0
80+	**14.8**	**15.0**	12.6	13.1	13.9	19.4	16.9	23.5	13.4	13.0	21.0	10.9	17.1

Source: Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019

Table 5: Percent of Cancers by Age based on Total County Incidence for 2019

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
0-19	**0.9**	**0.8**	1.3	0.8	1.0	0.8	0.2	1.5	--	0.6	--	0.4	1.5
20-29	**1.2**	**0.9**	0.7	1.1	1.6	3.2	1.1	1.5	--	0.7	1.2	0.4	0.6
30-39	**2.9**	**2.0**	3.2	1.1	1.6	1.6	1.5	1.5	1.0	2.2	3.6	1.5	2.3
40-49	**6.8**	**5.6**	5.6	4.6	7.8	3.2	6.0	4.6	6.3	7.6	6.0	4.9	3.4
50-59	**17.0**	**16.3**	16.0	13.8	17.9	15.3	15.3	11.5	21.9	18.4	22.6	18.3	14.4
60-69	**30.6**	**31.7**	30.3	32.2	31.2	32.3	35.1	26.2	29.2	30.9	39.3	32.3	32.0
70-79	**26.0**	**28.1**	26.4	28.7	26.3	33.1	26.0	36.9	21.9	26.6	20.2	33.1	31.4
80+	**14.6**	**14.5**	16.5	17.6	12.7	10.5	14.9	16.2	19.8	13.1	7.1	9.1	14.4

Source: Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019

Cancer Incidence by Race

Race and gender are also risk factors for cancer. Breast, lung and colon cancers all have higher incidence rates in various racial/ethnic groups. White women are more likely to develop breast cancer, while Black men are more likely to develop lung cancer and are more pre-disposed to colon cancer[7]. For 2022, The American Cancer Society estimates that nationally 224,080 new cancer cases and 73,680 cancer deaths will occur in Black people[8]. As demonstrated in Table 6 (below), for 2016 through 2019, for White individuals in the Epidemiology Region, the cancer incidence rate consistently exceeds the state rate. The incidence rate for Black individuals and those whose race was categorized as Other are well under the state incidence rate yearly for the 2016-2019 period.

Sex is also a risk factor for the development of certain cancers. In Table 7, more than half of the counties in the Epidemiology Region the rates for males during the time period (2016-2019) exceed the respective yearly state cancer incidence rate. On the other hand, for females, less than a handful of the counties in the Epidemiology Region during the same time frame exceed the respective yearly state incidence cancer rate.

Table 6: Percent of Cancers by Race and Sex based on Total County by Year

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
White													
2016	**87.0**	**95.5**	96.3	97.3	97.6	96.4	91.1	100.0	97.1	95.2	97.5	97.4	98.4
2017	**86.9**	**95.9**	96.4	94.0	97.5	95.4	93.8	96.8	96.3	97.0	95.4	96.7	98.8
2018	**86.7**	**96.4**	97.0	96.5	95.9	98.1	96.0	99.1	96.4	97.4	96.0	96.1	97.7
2019	**86.2**	**96.0**	98.1	93.9	96.4	94.4	93.8	100.0	94.8	96.6	94.0	97.7	98.3
Black													
2016	**9.9**	**2.4**	2.2	0.8	--	1.8	6.8	--	--	4.2	1.3	--	0.4
2017	**9.9**	**1.8**	1.6	2.0	1.1	1.9	3.6	--	0.9	2.4	2.3	0.4	0.6
2018	**9.7**	**1.8**	2.2	1.2	1.7	1.0	3.3	--	1.8	2.2	2.0	0.4	1.3
2019	**9.7**	**1.9**	1.1	1.1	0.3	3.2	3.8	--	4.2	3.3	3.6	--	0.6
Other													
2016	**3.2**	**2.1**	1.5	1.9	2.4	1.8	2.0	--	2.9	0.6	1.3	2.6	1.2
2017	**3.2**	**2.3**	2.0	4.0	1.4	2.8	2.7	3.2	2.8	0.6	2.3	2.9	0.6
2018	**3.5**	**1.8**	0.8	2.3	2.4	1.0	0.7	0.9	1.8	0.4	2.0	3.5	1.1
2019	**4.1**	**2.1**	0.7	5.0	3.2	2.4	2.4	--	1.0	0.1	2.4	2.3	1.1
Male													
2016	**48.4**	**51.3**	52.7	53.1	53.3	55.4	50	53.6	52.4	51.7	51.3	51.9	48.6
2017	**49.2**	**50.4**	48.9	53.8	46.7	47.2	49.9	49.6	47.7	53.5	55.2	52.9	50.2
2018	**49.5**	**52.4**	49.2	53.1	56.1	60.2	51.7	53	56.3	50.8	64	50.6	52.7
2019	**49.6**	**52.2**	53.9	49	51.6	51.6	49.3	55.4	55.2	51.1	57.1	51.5	56.3
Female													
2016	**51.6**	**48.5**	47.3	46.9	46.7	44.6	50.0	46.4	47.6	48.3	48.8	48.1	51.4
2017	**50.8**	**49.6**	51.1	46.2	53.3	52.8	50.1	50.4	52.3	46.5	44.8	47.1	49.8
2018	**50.5**	**47.6**	50.8	46.9	43.9	39.8	48.3	47.0	43.8	49.2	36.0	49.4	47.3
2019	**50.4**	**47.8**	46.1	51.0	48.4	48.4	50.7	44.6	44.8	48.9	42.9	48.5	43.7

Source: Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019

Table 7: Number of Cancers by Payor based on Total County by Year

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
Insured													
2016	**25,166**	**952**	156	61	64	35	161	36	23	186	15	81	134
2017	**25,462**	**957**	177	63	69	31	163	39	26	158	29	78	124
2018	**25,724**	**1,000**	217	74	64	25	161	27	18	168	28	69	148
2019	**26,290**	**1,006**	192	61	83	35	167	30	26	177	37	76	121
Medicaid													
2016	**6,452**	**287**	55	19	24	13	56	15	12	38	6	20	29
2017	**6,547**	**297**	35	20	36	8	41	13	17	65	11	21	30
2018	**6,602**	**332**	47	32	24	10	44	9	15	78	11	33	29
2019	**6,385**	**297**	48	14	22	9	45	8	8	76	4	22	41
Medicare													
2016	**36,454**	**1,743**	215	149	167	55	272	59	63	307	51	114	290
2017	**37,598**	**1,780**	277	140	140	60	300	62	56	330	37	121	308
2018	**38,277**	**1,757**	202	123	154	53	293	70	66	301	51	125	319
2019	**39,789**	**1,937**	279	157	162	63	286	83	53	348	34	143	324
Military/VA													
2016	**1,113**	**58**	3	6	7	3	4	0	0	17	5	1	12
2017	**1,122**	**66**	3	3	9	1	3	2	5	13	4	6	17
2018	**1,218**	**68**	3	4	19	2	3	2	5	10	0	9	11
2019	**1,305**	**83**	5	5	8	10	8	2	4	18	4	7	12
Uninsured													
2016	**927**	**28**	2	5	2	1	0	0	1	4	1	4	8
2017	**935**	**34**	6	5	5	0	5	1	0	2	2	1	7
2018	**1,007**	**37**	3	8	3	1	7	0	1	4	1	5	4
2019	**1,021**	**48**	2	6	10	2	6	2	2	8	2	2	6
Unknown													
2016	**4,517**	**227**	32	22	27	5	49	2	6	44	2	13	21
2017	**4,597**	**246**	51	18	17	1	51	8	5	42	4	17	22
2018	**4,861**	**216**	20	19	30	12	36	7	7	41	9	16	14
2019	**3,951**	**222**	12	18	22	5	38	5	3	48	3	14	18

Source: Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019

Cancer Incidence by Payor per Year

Improved cancer survival in certain types of cancer (breast, colorectal, lung, and multiple myeloma) has been associated with holding private health insurance, as compared to Medicaid or no health insurance[9]. Health insurance coverage is also impacted by race, with Blacks and Hispanics possessing lower coverage rates[10]. For the Epidemiology Region, most of the cancer incidence payor claims were Medicare, which aligns with state incidence payor claims distribution.

Cancer by Site Type

In the Epidemiology Region, the cancer incidence rates were highest for colon and rectum cancer as well as lung and bronchus cancer. Each of these cancer types for the time period (2016-2019) had more than half of the counties incidence rate exceeded the yearly state rate. Breast cancer and prostate cancer rates trended consistently under their respective yearly state incidence rate.

Table 8: Age-Adjusted Rate (per 100,000 People) Cancer Site Type (Invasive) by County per Year

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
Bladder													
2016	**21.8**	**22.6**	23.9	26.4	30.3	18.0	21.3	26.3	--	19.3	17.9	25.4	23.6
2017	**21.6**	**22.2**	22.4	28.1	25.4	--	23.8	25.9	--	21.0	--	12.4	27.2
2018	**22.0**	**26.0**	18.4	30.6	39.0	--	23.1	41.4	25.3	29.4	25.7	18.6	24.2
2019	**21.3**	**22.7**	30.1	29.2	13.9	--	24.8	-	--	20.9	--	29.3	23.8
Breast (Males & Females)													
2016	**69.8**	**67.1**	69.3	53.8	41.9	95.9	66.8	56.3	86.5	82.0	39.3	85.8	61.8
2017	**70.1**	**64.4**	64.4	59.4	71.3	67.0	57.2	62.1	97.9	66.1	52.9	65.0	63.2
2018	**70.1**	**59.1**	55.1	60.6	40.6	56.3	59.5	52.6	72.7	74.6	43.5	55.5	60.1
2019	**70.1**	**63.9**	65.3	34.0	48.4	63.1	61.8	66.2	46.6	58.3	36.5	73.0	75.7
Breast (Females)													
2016	**130.2**	**128.7**	129.9	102.8	80.1	187.3	126.8	113.2	170.2	151.4	89.9	162.6	117.5
2017	**131.0**	**123.7**	127.4	109.0	140.0	131.5	108.3	126.3	187.4	121.7	127.4	120.0	119.3
2018	**131.0**	**113.8**	108.6	116.6	73.9	106.3	110.7	105.2	142.4	140.2	116.5	104.3	112.6
2019	**131.2**	**121.9**	122.2	62.1	94.1	121.9	115.2	133.0	89.4	147.4	111.1	140.5	140.5

Source: Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019. 3/31/2022

Table 8 (Continued): Age-Adjusted Rate (per 100,000 People) Cancer Site Type (Invasive) by County per Year

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
Colon & Rectal													
2016	**40.9**	**44.7**	39.9	48.6	56.0	47.5	43.8	34.7	48.1	41.5	32.5	49.9	46.2
2017	**40.3**	**44.6**	53.2	42.0	49.2	36.0	50.9	42.9	19.6	34.9	39.1	37.6	53.9
2018	**40.9**	**44.5**	44.9	42.1	47.4	44.6	47.1	51.4	42.6	37.8	31.6	49.1	46.5
2019	**37.8**	**39.9**	45.9	26.6	39.9	38.9	44.4	45.6	--	37.4	--	40.5	43.2
Kidney and Renal Pelvis													
2016	**17.9**	**18.6**	14.5	27.5	--	24.8	16.9	51.6	--	9.3	--	12.4	32.2
2017	**18.0**	**23.6**	18.4	10.5	17.8	--	42.2	--	--	29.1	--	21.6	19.5
2018	**17.6**	**21.0**	9.8	23.6	26.4	31.2	28.4	--	23.5	26.6	17.8	21.9	16.3
2019	**17.8**	**20.2**	10.0	22.8	--	34.0	28.1	33.4	--	12.7	--	15.8	29.0
Leukemia													
2016	**12.3**	**12.5**	13.9	--	12.6	--	16.7	--	--	18.4	--	--	16.1
2017	**12.5**	**13.3**	13.7	11.7	--	--	14.5	--	--	13.1	--	15.3	19.2
2018	**12.7**	**15.7**	17.5	16.6	18.7	--	14.1	--	--	9.0	26.4	16.2	25.0
2019	**12.0**	**12.6**	6.7	11.8	19.4	--	14.4	--	--	14.0	--	12.6	14.8
Liver and Intrahepatic Bile Duct													
2016	**7.5**	**9.1**	10.5	--	11.9	--	13.9	--	--	7.6	--	--	9.0
2017	**7.6**	**6.3**	--	--	9.4	--	9.4	--	--	7.1	--	--	8.1
2018	**7.6**	**7.8**	6.7	6.7	9.5	--	--	--	--	7.7	--	--	9.4
2019	**7.6**	**7.9**	10.8	--	--	--	--	--	--	6.2	--	--	4.8
Lung and Bronchus													
2016	**67.4**	**81.0**	69.2	69.8	97.0	52.1	86.3	57.1	124.4	84.0	64.4	97.2	81.7
2017	**65.7**	**76.6**	77.3	67.9	107.3	63.8	63.8	73.8	95.5	79.3	54.3	86.9	80.0
2018	**66.4**	**71.1**	61.9	55.3	78.4	43.6	78.5	51.5	98.2	70.0	66.9	87.2	79.7
2019	**63.9**	**74.1**	67.2	74.3	102.6	62.2	78.4	88.2	62.8	71.8	54.6	75.7	66.1
Melanoma/Skin Cancer													
2016	**26.5**	**23.8**	15.2	47.2	19.8	47.4	13.2	--	--	31.2	--	25.4	28.0
2017	**24.4**	**29.3**	27.8	23.4	10.0	--	37.9	42.0	19.7	36.7	--	38.4	30.4
2018	**25.0**	**28.6**	35.2	21.1	20.9	24.1	30.4	48.1	19.1	26.2	19.3	28.9	30.4
2019	**26.7**	**26.3**	23.0	44.1	18.8	44.4	20.7	20.7	--	38.1	--	28.2	24.4

Source: Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019. 3/31/2022

Table 8 (Continued): Age-Adjusted Rate (per 100,000 People) Cancer Site Type (Invasive) by County per Year

Source: Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019. 3/31/2022

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
Non-Hodgkin's Lymphoma													
2016	**18.9**	**20.7**	23.3	19.7	32.7	--	15.5	--	--	26.1	--	21.8	17.5
2017	**19.3**	**18.4**	13.8	32.1	19.1	22.6	21.8	--	--	12.6	--	23.0	23.9
2018	**19.1**	**21.1**	19.7	24.2	22.1	32.2	24.0	36.9	--	18.8	--	19.9	18.9
2019	**19.3**	**18.3**	17.3	15.8	23.4	18.5	19.2	--	--	32.5	--	16.5	20.9
Oral Cavity and Pharynx Cancer													
2016	**12.0**	**11.2**	12.1	12.8	14.9	--	5.7	--	--	15.3	--	12.4	11.5
2017	**12.6**	**16.2**	27.8	23.4	10.0	--	37.9	42.0	19.7	23.4	--	38.4	30.4
2018	**12.5**	**13.3**	19.7	--	17.3	--	15.6	--	--	8.2	--	15.6	14.8
2019	**12.9**	**14.8**	17.8	14.6	11.9	19.2	13.0	--	28.9	13.2	--	14.9	12.3
Pancreatic													
2016	**12.8**	**11.2**	6.6	--	8.1	20.1	13.3	--	--	14.9	--	--	14.0
2017	**13.5**	**13.2**	8.2	--	10.9	--	20.7	29.2	--	11.5	--	16.5	13.3
2018	**14.9**	**14.9**	11.3	21.3	15.9	--	18.5	--	--	13.4	--	12.5	16.5
2019	**13.8**	**14.8**	12.5	10.7	9.3	--	17.5	19.8	--	12.1	--	21.7	18.3
Prostate													
2016	**104.1**	**96.4**	93.7	109.6	111.5	98.2	92.3	138.1	79.3	104.7	--	97.0	97.5
2017	**114.6**	**102.8**	90.4	104.7	82.3	88.2	114.4	108.7	51.5	144.1	78.8	117.6	87.4
2018	**119.1**	**110.9**	97.3	90.2	122.2	99.8	105.2	98.0	92.9	126.7	66.8	119.3	144.3
2019	**118.9**	**128.4**	146.6	109.8	139.5	96.4	122.8	144.1	106.1	112.0	72.1	100.3	173.7
Uterine													
2016	**31.3**	**35.8**	25.2	31.1	47.8	--	29.3	--	50.2	37.4	--	40.4	48.7
2017	**32.4**	**39.8**	35.2	44.0	44.1	--	28.8	57.3	40.1	39.0	51.6	39.5	46.0
2018	**31.0**	**34.3**	37.5	22.7	34.8	--	32.6	--	--	47.4	--	51.7	21.8
2019	**31.6**	**38.6**	40.3	51.9	61.6	--	42.7	--	--	27.9	--	27.0	27.0

Cancer by Stage of Diagnosis[11]

Stage in cancer diagnosis refers to the extent the cancer had spread and the size of the tumor. Staging also assists the treatment provider in understanding chances of survival, developing the best plan of treatment, and determining if there are clinical trials available for participation. Cancer stage is determined at diagnosis, even if it worsens.

Table 9: Percent of Cancers at Stage of Diagnosis by County and Screening Type

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
Breast													
Early	**71.8**	**68.6**	76.9	70.3	71.8	67.2	75.0	75.4	66.7	47.8	58.5	77.2	75.5
Late	**26.7**	**29.1**	22.4	28.8	28.2	26.9	23.3	24.6	33.3	42.2	41.5	21.5	24.2
Unstaged/ Missing	**1.5**	**2.3**	0.7	0.8	--	6.0	1.7	--	--	10.0	--	1.3	0.4
Cervix													
Early	**46.1**	**38.1**	50.0	28.6	63.6	16.7	50.0	100.0	100.0	49.6	50.0	57.1	35.7
Late	**50.3**	**61.9**	33.3	71.4	36.4	66.7	50.0	--	--	40.7	50.0	42.9	64.3
Unstaged/ Missing	**3.6**	**--**	16.7	--	--	--	--	--	--	9.7	--	--	0.0
Colon and Rectal													
Early	**33.9**	**39.1**	35.5	39.8	33.3	42.1	39.0	31.0	42.9	49.7	18.8	41.5	38.0
Late	**57.8**	**55.5**	60.8	49.4	61.3	52.6	53.8	61.9	53.6	40.5	81.3	53.7	61.4
Unstaged/ Missing	**8.3**	**5.3**	3.8	10.8	5.4	5.3	7.1	7.1	3.6	9.8	--	4.9	0.6
Lung and Bronchus													
Early	**26.3**	**21.2**	23.5	19.9	22.3	21.1	26.3	29.2	19.3	51.4	26.7	27.2	31.5
Late	**66.2**	**70.8**	68.4	67.8	67.9	63.2	63.6	61.5	77.3	40.5	71.7	68.2	64.6
Unstaged/ Missing	**7.4**	**7.9**	8.1	12.3	9.8	15.8	10.1	9.2	3.4	8.2	1.7	4.6	4.0

Source: Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019. 6/27/2022

Table 9 (Continued): Percent of Cancers at Stage of Diagnosis by County and Screening Type

	Ohio	Regional	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
Prostate													
Early	**68.4**	**71.5**	86.0	67.6	77.7	84.8	77.8	81.4	70.7	52.2	80.0	69.6	81.0
Late	**21.6**	**23.3**	13.0	27.9	17.7	13.0	16.9	16.9	19.5	41.2	15.6	25.0	18.1
Unstaged/ Missing	**10.0**	**5.2**	0.9	4.5	4.6	2.2	5.3	1.7	9.8	6.6	4.4	5.4	0.8

Source: Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019. 6/27/2022

Screening by Cancer Type

Screening allows for the early detection of cancer, thus increasing the chances of survival[12]. Additionally, screening allows for the detection of cancers before symptoms appear[13]. There are different types of screening tests that range from physical examinations including family history to laboratory tests to genetics tests to imaging[13].

Table 10: Cancer Screenings by County (% of population in the appropriate sex and age bracket)

	Ohio	Belmont	Coshocton	Guernsey	Harrison	Jefferson	Monroe	Morgan	Muskingum	Noble	Perry	Washington
Pap Testing % (Past 3 years, 21-65y)	76.6	77.1	75.9	73.3	75.6	75.1	79.0	75.4	81.2	71.8	81.0	78.0
Colorectal Cancer Screening % (50-75y)	67.7	62.2	62.5	72.3	60.4	64.2	74.2	60.5	69.4	50.8	68.3	67.5
Mammogram % (Past 2 years, 50-74y)	78.2	80.8	78.8	85.8	80.6	80.1	83.6	73.7	85.4	80.1	87.0	82.8

Source: Ohio Department of Health County Cancer Profile

Data Selection

Demographic data were selected from the American Community Survey 2020 estimates, retrieved from U.S. Census Bureau Census Reporter. Death data were retrieved from the Ohio Public Health Information Warehouse Mortality Dataset. Cancer staging is defined as Early stage consists of in situ or local stage and Late stage consists of any regional or distant stage. The data for Muskingum County in this section is for years 2015 through 2019.

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Table Citations:

Table 1: Age-Adjust Cancer Mortality (per 100,000 people) by County 2016-2019

1. Source: Ohio Department of Health Data Warehouse, Mortality, Cancer Deaths of Ohio Residents 2016-2019. Report created 5/20/2022.Retrieved from: Ohio Public Health Information Warehouse - Mortality
2. Source: CDC, Cancer, An Update on Cancer Deaths in The United States, Figure 6: Age-adjusted death rates, by cause of death, United States, 1999–2020.(February 2022). Retrieved from: An Update on Cancer Deaths in the United States | CDC

Table 2: Percent Cancer Incidence by Age based on Total County Incidence for 2016

1. Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019

Table 3: Percent Cancer Incidence by Age based on Total County Incidence for 2017

1. Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019

Table 4: Percent Cancer Incidence by Age based on Total County Incidence for 2018

1. Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019

Table 5: Percent Cancer Incidence by Age based on Total County Incidence for 2019

1. Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019

Table 6: Percent Cancer Incidence by Race based on Total County by Year

1. Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019
2. SEER, All Cancer Sites Combined Recent Trends in SEER Age-Adjusted Incidence Rates, 2000-2019. Retrieved from: SEER*Explorer Application (cancer.gov)

Table 7: Percent Cancer Incidence by Gender based on Total County by Year

1. Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019

Table 8: Percent Cancer Incidence by Payor based on Total County by Year

1. Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019. Retrieved from: Ohio Public Health Information Warehouse - Secure: Browse - Cancer De-Identified Incidence Data (1996-Present)

Table 9: Stage of Diagnosis by County by Screening Type

1. Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019. 6/27/2022 Retrieved from: Ohio Public Health Information Warehouse - Public: Browse - Cancer Incidence Data (1996-2019)

Table 10: Screening by County by Cancer Type

1. Ohio Public Health Warehouse, Ohio Cancer De-Identified Incidence Surveillance System (OCISS), 2016-2019. 6/27/2022. Retrieved from: Ohio Public Health Information Warehouse - Secure: Browse - Cancer De-Identified Incidence Data (1996-Present)