

# Ohio Cancer Profile

Ohio Department of Health

2017



## Introduction

This report provides an overview of cancer in Ohio, including data on cancer incidence (new cases) and mortality (deaths), U.S. comparisons, trends, stage at diagnosis and risk factors. This information can be used to increase awareness about the impact of cancer on Ohio residents and to develop targeted programs for cancer prevention, early detection and control. High mortality rates may be associated with a later stage at diagnosis, lack of access to health care, inadequate treatment or other risk factors that should be addressed in cancer control initiatives.

## Overview

- An average of 62,882 new invasive cancer cases and 25,107 deaths occurred each year among Ohio residents from 2010-2014.
- In 2010-2014, the cancer incidence rate for all sites/types combined in Ohio was 459.8 per 100,000, compared with the U.S. rate of 442.7 per 100,000.
- The 2010-2014 cancer mortality rate in Ohio was 181.1 per 100,000, compared with the U.S. rate of 166.1 per 100,000.

**Table 1.** Average Annual Number and Age-adjusted Rates of Invasive Cancer Cases and Cancer Deaths by Sex and Race in Ohio and the United States, 2010-2014<sup>1,2,3</sup>

Demographics		Incidence			Mortality		
		Ohio		U.S.	Ohio		U.S.
		Cases	Rate	Rate	Deaths	Rate	Rate
<b>Total</b>		<b>62,882</b>	<b>459.8</b>	<b>442.7</b>	<b>25,107</b>	<b>181.1</b>	<b>166.1</b>
Sex	Male	31,684	508.3	492.4	13,081	219.1	200.5
	Female	31,194	427.5	408.7	12,026	154.6	141.5
Race	White	54,858	454.0	451.8	22,225	179.5	166.2
	Black	6,316	458.8	459.3	2,699	206.6	194.2
	Asian/Pacific Islander	416	240.2	298.8	130	90.9	102.8

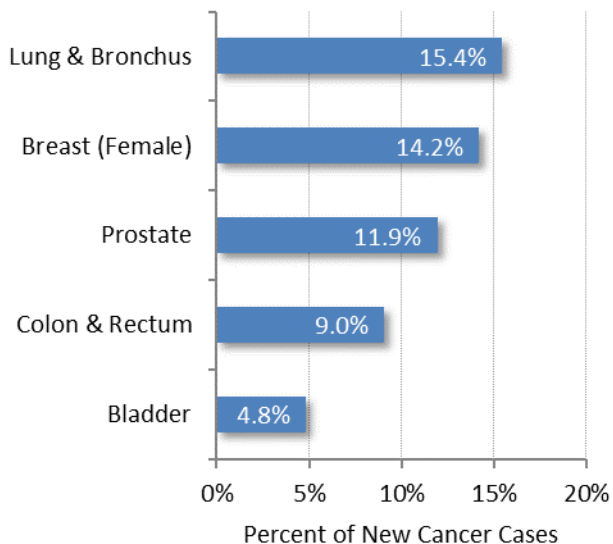
<sup>1</sup> Source of Ohio data: Ohio Cancer Incidence Surveillance System and the Bureau of Vital Statistics, Ohio Department of Health, 2017.

<sup>2</sup> Source of U.S. data: Surveillance, Epidemiology and End Results Program, National Cancer Institute and the National Center for Health Statistics, 2017.

<sup>3</sup> Rates are per 100,000 and age-adjusted to the 2000 U.S. standard population.

## Leading Cancers

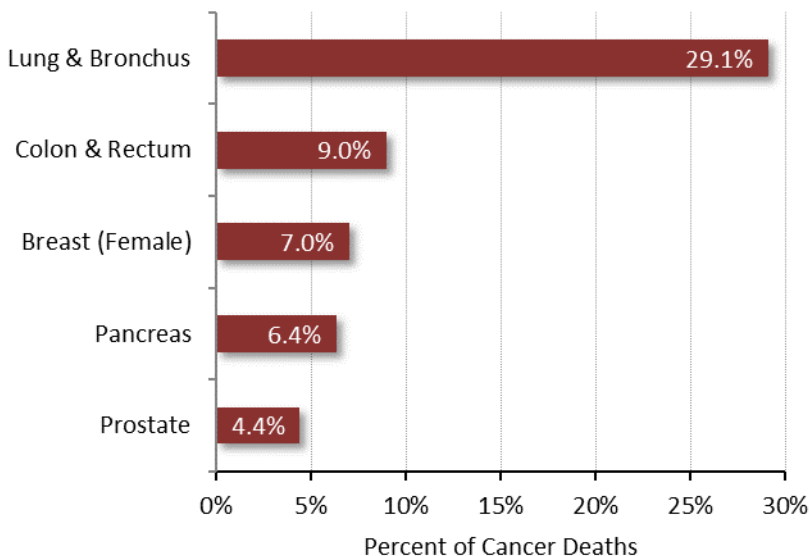
**Figure 1.** Percentage of Cancer Cases by Site/Type for the Top Five Cancers in Ohio, 2010-2014<sup>1</sup>



The leading sites/types of cancer incidence in Ohio in 2010-2014 were lung and bronchus, female breast, prostate, colon and rectum, and bladder, representing 55 percent of all invasive cancer cases.

<sup>1</sup> Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2017.

**Figure 2.** Percentage of Cancer Deaths by Site/Type for the Top Five Cancers in Ohio, 2010-2014<sup>1</sup>



The leading sites/types of cancer mortality in Ohio in 2010-2014 were lung and bronchus, colon and rectum, female breast, pancreas and prostate, representing 56 percent of all cancer deaths.

<sup>1</sup> Source: Bureau of Vital Statistics, Ohio Department of Health, 2017.

Lung and bronchus cancer was the leading cause of cancer incidence and mortality in Ohio in 2010-2014, accounting for 15.4 percent of cancer cases and 29.1 percent of cancer deaths.

## Cancer Sites/Types

**Table 2.** Average Annual Number and Age-adjusted Rates of Invasive Cancer Cases and Cancer Deaths by Site/Type in Ohio and the United States, 2010-2014<sup>1,2,3</sup>

Cancer Site/Type	Incidence			Mortality		
	Ohio		U.S.	Ohio		U.S.
	Cases	Rate	Rate	Deaths	Rate	Rate
<b>All Sites/Types</b>	<b>62,882</b>	<b>459.8</b>	<b>442.7</b>	<b>25,107</b>	<b>181.1</b>	<b>166.1</b>
Bladder	3,034	21.9	19.8	709	5.1	4.4
Brain & Other CNS	872	6.8	6.4	599	4.5	4.3
Breast (Female)	8,932	123.8	124.9	1,768	23.0	21.2
Cervix	457	7.4	7.4	164	2.5	2.3
Colon & Rectum	5,687	41.5	40.1	2,258	16.3	14.8
Esophagus	729	5.2	4.2	699	5.0	4.1
Hodgkin Lymphoma	308	2.6	2.6	47	0.4	0.3
Kidney & Renal Pelvis	2,254	16.6	15.6	569	4.1	3.9
Larynx	584	4.1	3.1	183	1.3	1.0
Leukemia	1,587	12.0	13.7	955	7.1	6.8
Liver & Intrahepatic Bile Duct	935	6.5	8.6	795	5.6	6.3
Lung & Bronchus	9,707	69.9	55.8	7,316	52.7	44.7
Melanoma of the Skin	2,665	20.4	22.3	398	2.9	2.7
Multiple Myeloma	822	5.9	6.6	501	3.6	3.3
Non-Hodgkin Lymphoma	2,550	18.9	19.5	897	6.5	5.9
Oral Cavity & Pharynx	1,587	11.4	11.2	356	2.5	2.5
Ovary	831	11.4	11.7	585	7.6	7.4
Pancreas	1,753	12.5	12.5	1,595	11.4	10.9
Prostate	7,504	113.1	119.8	1,098	19.9	20.1
Stomach	874	6.4	7.3	380	2.8	3.2
Testis	296	5.6	5.7	16	0.3	0.3
Thyroid	1,764	14.5	14.2	67	0.5	0.5
Uterus	2,163	28.7	25.7	388	4.9	4.6

<sup>1</sup> Source of Ohio data: Ohio Cancer Incidence Surveillance System and the Bureau of Vital Statistics, Ohio Department of Health, 2017.

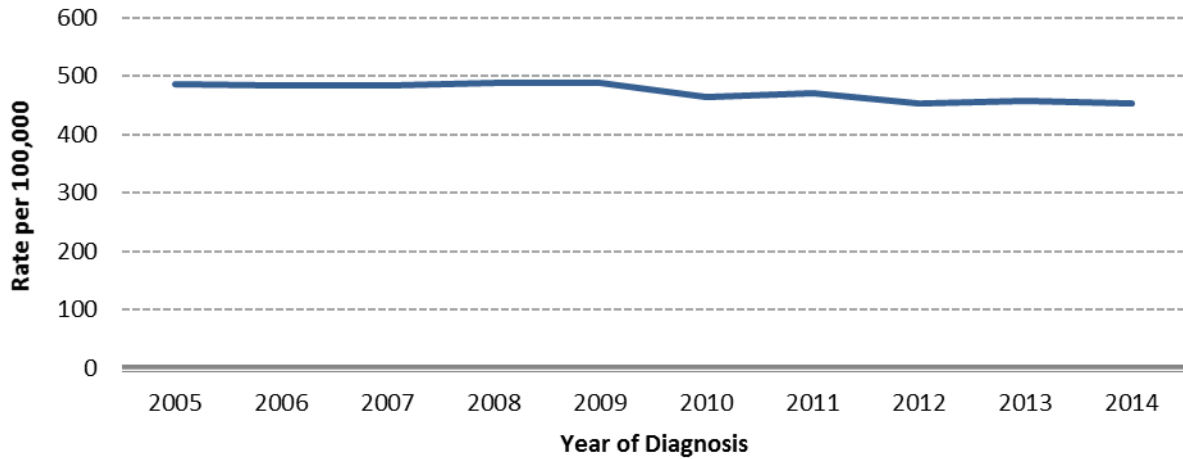
<sup>2</sup> Source of U.S. data: Surveillance, Epidemiology and End Results Program, National Cancer Institute and the National Center for Health Statistics, 2017.

<sup>3</sup> Rates are per 100,000 and age-adjusted to the 2000 U.S. standard population. Rates are sex specific for cancers of the breast, cervix, ovary, prostate, testis and uterus.

CNS = Central Nervous System

## Trends

**Figure 3.** Age-adjusted Cancer Incidence Rates in Ohio by Year, 2005-2014<sup>1,2</sup>

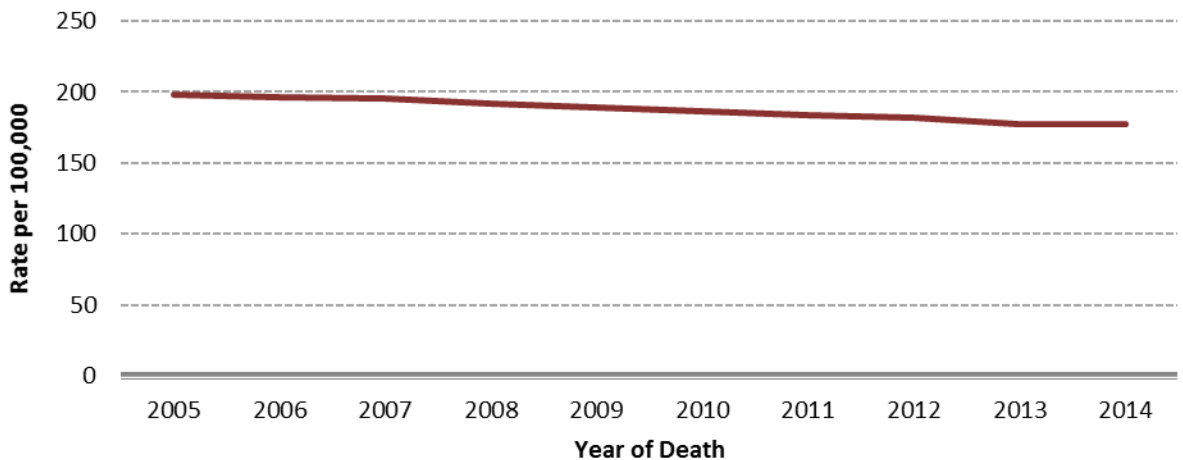


<sup>1</sup> Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2017.

<sup>2</sup> Rates are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Cancer incidence rates decreased 7 percent in Ohio from 2005-2014.

**Figure 4.** Age-adjusted Cancer Mortality Rates in Ohio by Year, 2005-2014<sup>1,2</sup>



<sup>1</sup> Source: Bureau of Vital Statistics, Ohio Department of Health, 2017.

<sup>2</sup> Rates are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Cancer mortality rates decreased 10 percent in Ohio from 2005-2014.

## Stage at Diagnosis

**Table 3.** Percent of Cancer Cases by Stage at Diagnosis for Select Cancer Sites/Types in Ohio and the United States, 2010-2014<sup>1,2,3</sup>

Cancer Site/Type	Ohio		U.S.	
	Early Stage	Late Stage	Early Stage	Late Stage
Breast (Female)	68.9	28.9	70.9	27.5
Cervix	43.0	51.7	43.6	51.0
Colon & Rectum	38.3	52.5	41.7	52.9
Lung & Bronchus	18.0	71.6	19.0	74.9
Melanoma of the Skin	84.8	8.8	90.8	7.0
Oral Cavity & Pharynx	29.6	65.3	45.3	50.1
Pancreas	9.1	72.1	11.1	78.6
Prostate	75.6	15.9	77.1	17.9
Testis	67.6	29.3	67.8	30.6

<sup>1</sup> Source of Ohio data: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2017.

<sup>2</sup> Source of U.S. data: Surveillance, Epidemiology and End Results Program, National Cancer Institute, 2017.

<sup>3</sup> Early and late stage values do not add up to 100 percent because unstaged/missing stage cancers are not included.

Cancer stage at diagnosis is the extent or spread of the tumor from the site of origin. The stages, in order of increasing spread, are *in situ*, local, regional and distant. Early stage cancers are those diagnosed at the *in situ* or local stage, and late stage cancers are those diagnosed at the regional or distant stage. Cancers may be reported as unstaged or with a missing stage (not shown). Regular screening can result in the detection of these cancers (with the exception of pancreas) at earlier stages, when treatment is more likely to be successful.

- Among the cancers selected, those with the highest proportions of late-stage tumors in Ohio were pancreatic cancer (72.1 percent), followed by lung and bronchus cancer (71.6 percent), and oral cavity and pharynx cancer (65.3 percent).
- Oral cavity and pharynx cancer had a higher proportion (65.3 percent) of late-stage tumors in Ohio compared to the United States (50.1 percent).

## Risk Factors

**Table 4.** Percent of Adults who are Current Smokers, Obese or Physically Inactive in Ohio with Comparison to the United States, 2013, 2015<sup>1</sup>

Risk Factor	Ohio	U.S.
Current Smoker	21.6	17.5
Obese	31.4	28
Physically Inactive	25.3	22

<sup>1</sup> Source: County Health Rankings, [www.countyhealthrankings.org](http://www.countyhealthrankings.org), 2017. Current smoker data are from 2015, and obesity and physical inactivity data are from 2013.

Current Smoker = Percentage of adults who are current smokers

Obese = Percentage of adults that report body mass index (BMI)  $\geq$  30

Physically Inactive = Percentage of adults that report no leisure-time physical activity

A cancer risk factor is anything that increases a person's risk of developing cancer. Modifiable cancer risk factors include health behaviors and lifestyle factors (e.g., tobacco use, obesity and physical inactivity). It is often not just one factor that increases a person's risk of developing cancer; rather, cancer most often results from a complex interaction of multiple factors.

- The percentage of adults in Ohio who are current smokers is 21.6 percent, compared to 17.5 percent in the United States.
- The percentage of adults who are obese in Ohio is 31.4 percent, compared to 28 percent in the United States.
- The percentage of adults that report no leisure-time physical activity in Ohio is 25.3 percent, compared to 22 percent in the United States.

### Did You Know?

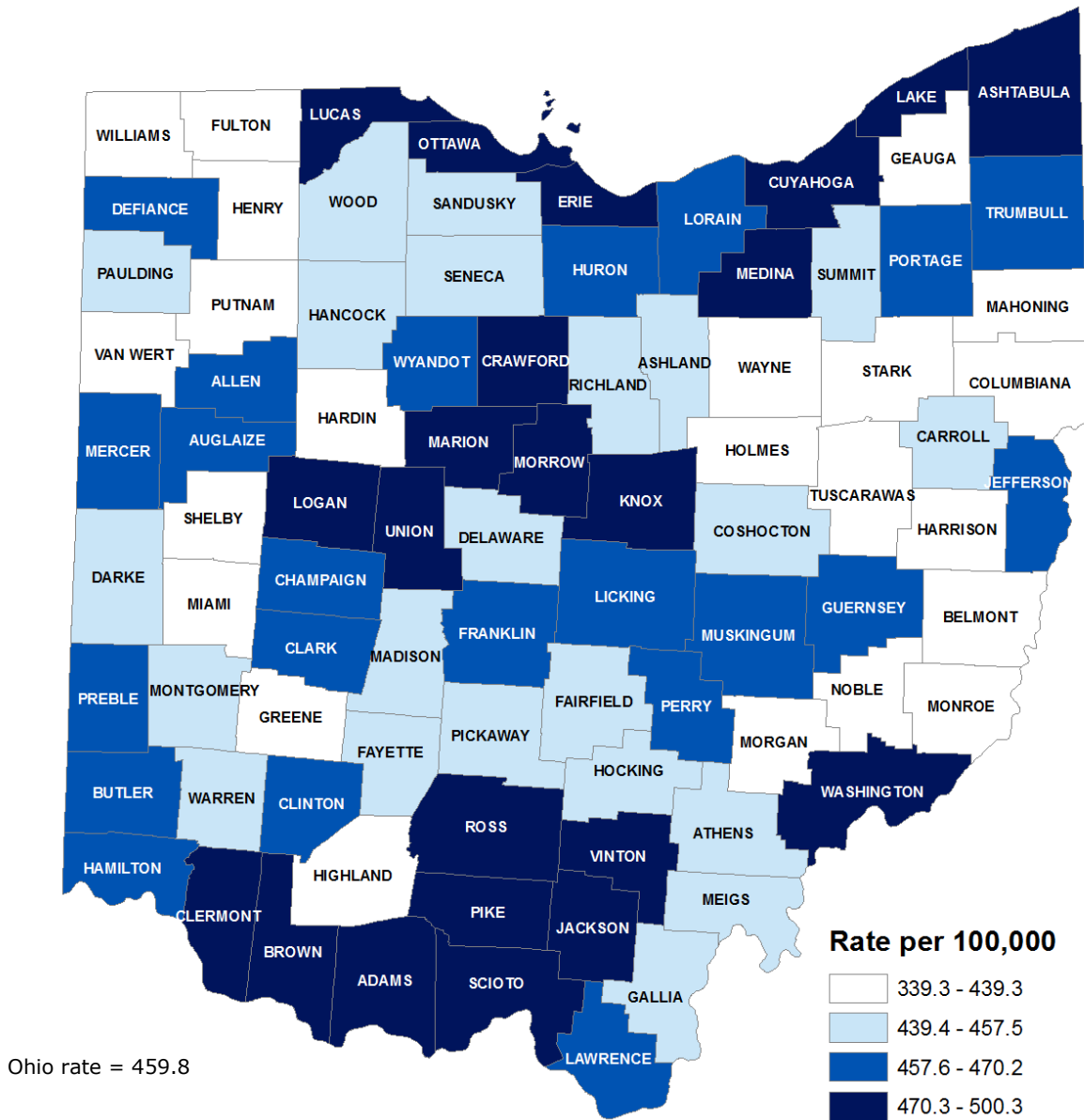
Tobacco use is associated with 12 types of cancer and is estimated to cause more than 30 percent of all cancer deaths in the United States, including 80 percent of lung cancer deaths among men and women.

It is estimated that a 5 percent reduction in body mass index (BMI) would prevent 23,000 cancer cases in Ohio by 2030, saving \$1 billion.

Physical activity may reduce the risk of several types of cancer including cancer of the breast, colon and rectum, and endometrium as well as advanced prostate cancer.

## County Maps

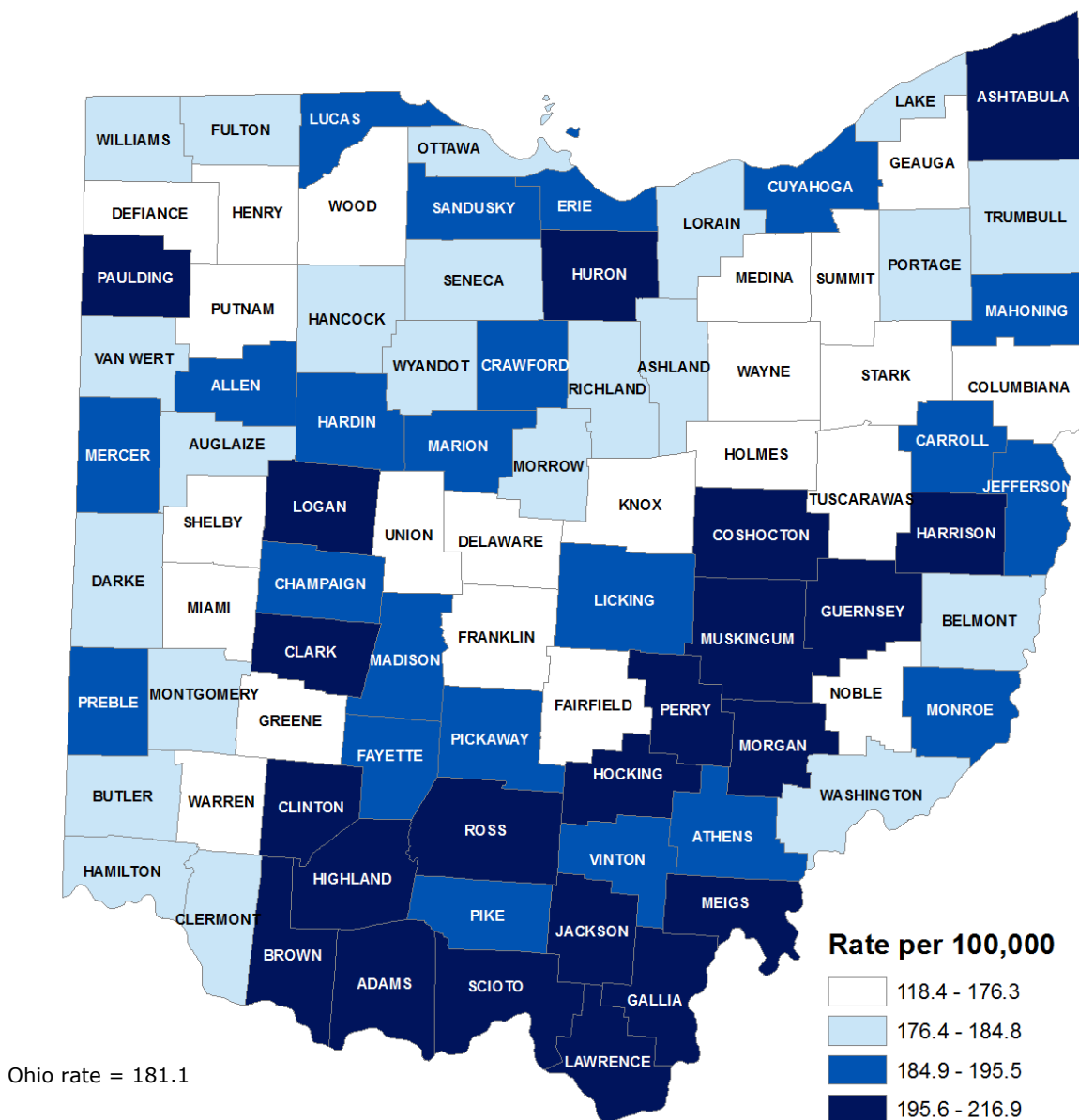
**Figure 5.** Average Annual Age-adjusted Incidence Rates for All Cancer Sites/Types Combined in Ohio by County, 2010-2014<sup>1</sup>



<sup>1</sup> Source of Ohio data: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2015.

- The cancer incidence rate in Ohio varied by county in 2010-2014. The county with the highest age-adjusted cancer incidence rate (Knox County, 500.3 per 100,000) had a rate 1.5 times higher than the county with the lowest rate (Holmes County, 339.3 per 100,000).

**Figure 6.** Average Annual Age-adjusted Mortality Rates for All Cancer Sites/Types Combined in Ohio by County, 2010-2014<sup>1</sup>



<sup>1</sup> Source: Bureau of Vital Statistics, Ohio Department of Health, 2017.

- The cancer mortality rate in Ohio varied by county in 2010-2014. The county with the highest age-adjusted cancer mortality rate (Guernsey County, 216.9 per 100,000) had a rate 1.8 times higher than the county with the lowest rate (Noble County, 118.4 per 100,000).



## Sources of Data and Additional Information

### Ohio Cancer Incidence Surveillance System (OCISS)

Cancer incidence data were provided by OCISS, the central cancer registry for Ohio. OCISS data can be accessed through the **Ohio Public Health Data Warehouse**, <http://publicapps.odh.ohio.gov/EDW/DataCatalog>.

### Ohio Vital Statistics

Cancer mortality data were provided by the Bureau of Vital Statistics and analyzed by the Chronic Disease Epidemiology and Evaluation Section at the Ohio Department of Health. Cancer mortality data can also be accessed through the Ohio Public Health Data Warehouse.

### County Health Rankings

Risk factor data were obtained from *County Health Rankings Key Findings 2017*, University of Wisconsin Population Health Institute, available at [www.countyhealthrankings.org](http://www.countyhealthrankings.org).

### U.S. Statistics

Cancer statistics for the United States were obtained from the Surveillance, Epidemiology, and End Results (SEER) Program, National Cancer Institute, and the National Center for Health Statistics, available at: <http://seer.cancer.gov>. Data sources include the *SEER Cancer Statistics Review, 1975-2014* and the SEER\*Stat Database, SEER 18 Registries Research Data, released April 2017, based on the November 2016 submission. Stage distributions were calculated using SEER\*Stat software version 8.3.4.

### Other Sources of Information

Ohio Department of Health, Cancer Data and Statistics: <http://www.odh.ohio.gov/health/cancer/ocisshs/newrpts1.aspx>  
American Cancer Society: <http://www.cancer.org>  
National Cancer Institute: <http://www.cancer.gov>

### To address comments and information requests:

Ohio Cancer Incidence Surveillance System  
Phone: (614) 752-2689  
E-mail: [ociss@odh.ohio.gov](mailto:ociss@odh.ohio.gov)  
OCISS website: [http://www.odh.ohio.gov/health/cancer/ocisshs/ci\\_surv1.aspx](http://www.odh.ohio.gov/health/cancer/ocisshs/ci_surv1.aspx)

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