

# Brown County Cancer Profile

Ohio Department of Health

2019



## Introduction

Approximately four out of 10 Ohioans will be diagnosed with cancer at some point during their lifetime. Cancer is the second leading cause of death, accounting for nearly one in every four deaths in Ohio and the United States. Disparities in rates may be associated with lifestyle factors, lack of access to health care, later stage at diagnosis, inadequate treatment or other risk factors that should be addressed in cancer prevention, early detection and control initiatives. This report provides an overview of cancer in Brown County, Ohio, including data on cancer incidence (new cases) and mortality (deaths), Ohio and U.S. comparisons, trends, stage at diagnosis and risk factors. This information can be used to increase awareness about the burden of cancer in Brown County and to develop targeted cancer programs in the community.

## Overview

- An average of 269 new invasive cancer cases and 121 deaths occurred each year among Brown County residents from 2012-2016.
- In 2012-2016, the cancer incidence rate for all sites/types combined in Brown County was 475.5 per 100,000, compared with the Ohio rate of 461.9 per 100,000 and the U.S. rate of 442.0 per 100,000.
- The 2012-2016 cancer mortality rate in Brown County was 214.0 per 100,000, compared with the Ohio rate of 176.8 per 100,000 and the U.S. rate of 161.0 per 100,000.
- Cancer incidence and mortality rates among males were higher than the rates for females in Brown County, Ohio and the United States in 2012-2016.

**Table 1.** Average Annual Number and Age-adjusted Rates of Invasive Cancer Cases and Cancer Deaths by Sex and Race in Brown County, Ohio and the United States, 2012-2016<sup>1,2,3</sup>

Demographics		Incidence				Mortality			
		Brown County		Ohio	U.S.	Brown County		Ohio	U.S.
		Cases	Rate	Rate	Rate	Deaths	Rate	Rate	Rate
Total		269	475.5	461.9	442.0	121	214.0	176.8	161.0
Sex	Male	145	530.9	500.7	481.0	67	248.2	212.6	193.1
	Female	124	430.9	437.5	417.1	54	184.1	151.5	137.7
Race	White	262	469.4	458.1	451.7	119	213.4	175.6	161.5
	Black	3	466.3	452.7	442.9	1	219.9	197.8	185.6

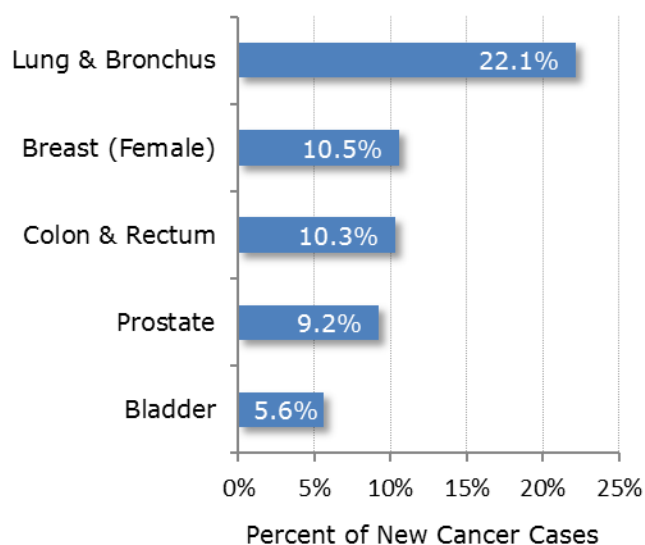
<sup>1</sup> Source of Ohio data: Ohio Cancer Incidence Surveillance System and the Bureau of Vital Statistics, Ohio Department of Health, 2019.

<sup>2</sup> Source of U.S. data: Surveillance, Epidemiology and End Results Program, National Cancer Institute and the National Center for Health Statistics, 2019.

<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 Brown County, 2012-2016<sup>1</sup>

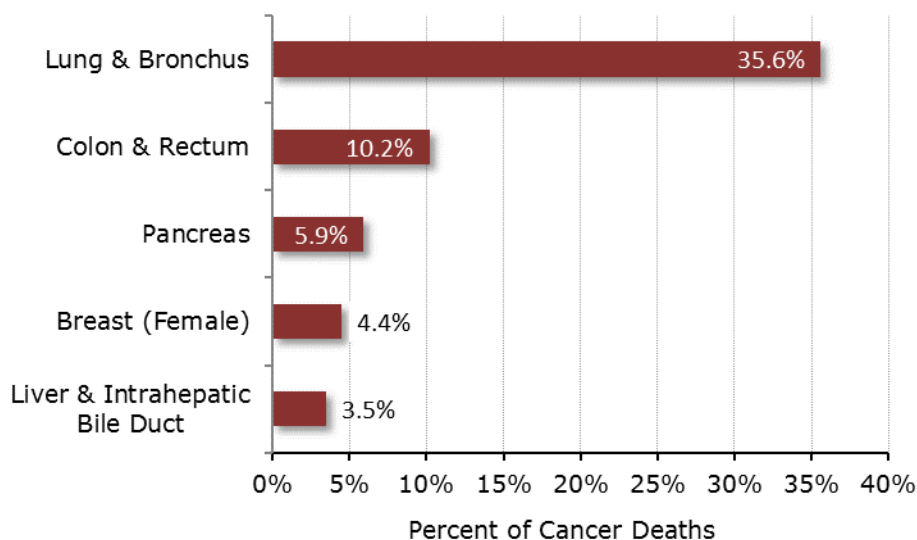


The leading sites/types of cancer incidence in Brown County in 2012-2016 were lung and bronchus, female breast, colon and rectum, prostate and bladder\*, representing 58 percent of all invasive cancer cases.

<sup>1</sup> Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2019.

\* Melanoma of the skin also represents 5.6% of cancer cases in Brown County.

**Figure 2.** Percentage of Cancer Deaths by Site/Type for the Top Five Cancers in Brown County, 2012-2016<sup>1</sup>



The leading sites/types of cancer mortality in Brown County in 2012-2016 were lung and bronchus, colon and rectum, pancreas, female breast, and liver and intrahepatic bile duct, representing 60 percent of all cancer deaths.

<sup>1</sup> Source: Bureau of Vital Statistics, Ohio Department of Health, 2019.

Lung and bronchus cancer was the leading cause of cancer incidence and mortality in Brown County in 2012-2016, accounting for 22.1 percent of cancer cases and 35.6 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 Brown County, Ohio and the United States, 2012-2016<sup>1,2,3</sup>

Cancer Site/Type	Incidence				Mortality			
	Brown County		Ohio	U.S.	Brown County		Ohio	U.S.
	Cases	Rate	Rate	Rate	Deaths	Rate	Rate	Rate
<b>All Sites/Types</b>	<b>269</b>	<b>475.5</b>	<b>461.9</b>	<b>442.0</b>	<b>121</b>	<b>214.0</b>	<b>176.8</b>	<b>161.0</b>
Bladder	15	26.1	22.0	20.1	3	5.5	5.0	4.4
Brain & Other CNS	4	8.5	7.1	6.4	4	7.5	4.6	4.4
Breast (Female)	28	100.3	127.4	127.5	5	20.0	22.4	20.6
Cervix	3	11.4	7.6	7.3	1	5.2	2.3	2.3
Colon & Rectum	28	48.7	41.5	38.6	12	22.8	15.7	14.2
Esophagus	2	4.1	5.2	4.3	3	5.4	5.0	4.0
Hodgkin Lymphoma	<1	*	2.8	2.7	<1	*	0.3	0.3
Kidney & Renal Pelvis	9	16.6	17.1	16.1	2	2.5	3.9	3.8
Larynx	5	7.3	4.0	3.0	1	1.6	1.3	1.0
Leukemia	5	8.6	12.2	14.1	3	6.5	6.9	6.5
Liver & Intrahepatic Bile Duct	5	7.7	7.0	8.8	4	6.9	5.9	6.5
Lung & Bronchus	60	101.4	68.5	54.9	43	73.9	50.3	41.9
Melanoma of the Skin	15	29.2	22.9	22.2	2	3.1	2.8	2.5
Multiple Myeloma	3	5.2	6.0	6.9	2	3.4	3.6	3.3
Non-Hodgkin Lymphoma	11	19.5	19.1	19.6	4	6.8	6.1	5.6
Oral Cavity & Pharynx	9	15.1	11.8	11.3	2	4.3	2.7	2.5
Ovary	3	8.9	11.0	11.4	3	9.2	7.4	7.0
Pancreas	7	11.8	12.8	12.9	7	12.2	11.6	11.0
Prostate	25	85.5	103.0	109.5	3	12.4	19.0	19.2
Stomach	3	5.7	6.4	7.4	1	2.4	2.7	3.1
Testis	<1	*	5.8	5.9	<1	*	0.3	0.3
Thyroid	6	12.2	15.1	15.8	<1	*	0.5	0.5
Uterus	8	26.9	29.7	27.5	1	3.3	5.0	4.7

<sup>1</sup> Source of Ohio data: Ohio Cancer Incidence Surveillance System and the Bureau of Vital Statistics, Ohio Department of Health, 2019.

<sup>2</sup> Source of U.S. data: Surveillance, Epidemiology and End Results Program, National Cancer Institute and the National Center for Health Statistics, 2019.

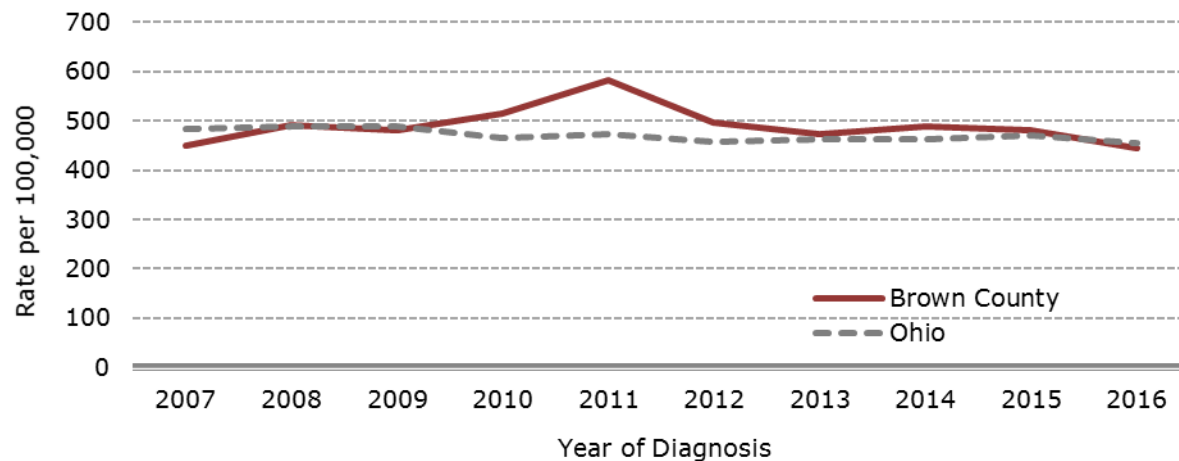
<sup>3</sup> Rates are per 100,000 and age-adjusted to the 2000 U.S. standard population. Rates are sex specific for cancers of the breast, cervix, ovary, prostate, testis and uterus.

CNS = Central Nervous System

\* Rates may be unstable and are not presented when the count for 2012-2016 is less than five (i.e., average annual count is less than one).

## Trends

**Figure 3.** Age-adjusted Cancer Incidence Rates in Brown County and Ohio by Year, 2007-2016<sup>1,2</sup>



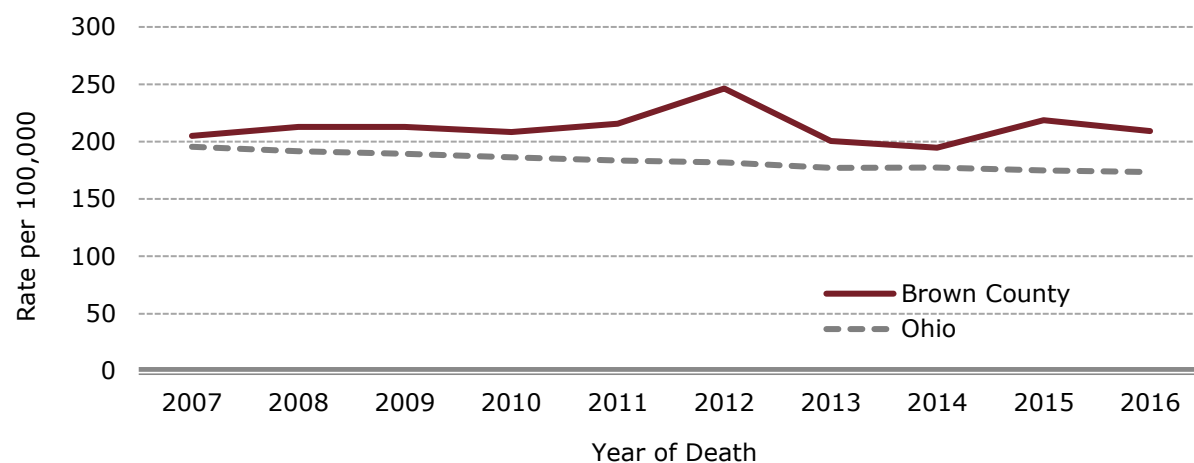
<sup>1</sup> Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2019.

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

Note: Incidence rates are often variable over time at the county level, particularly for counties with small populations.

Cancer incidence rates were variable in Brown County and decreased 6 percent in Ohio from 2007-2016.

**Figure 4.** Age-adjusted Cancer Mortality Rates in Brown County and Ohio by Year, 2007-2016<sup>1,2</sup>



<sup>1</sup> Source: Bureau of Vital Statistics, Ohio Department of Health, 2019.

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

Note: Mortality rates are often variable over time at the county level, particularly for counties with small populations.

Cancer mortality rates were variable in Brown County and decreased 11 percent in Ohio from 2007-2016.

## Stage at Diagnosis

**Table 3.** Percent of Cancer Cases by Stage at Diagnosis for Select Cancer Sites/Types in Brown County, Ohio and the United States, 2012-2016<sup>1,2,3</sup>

Cancer Site/Type	Brown County		Ohio		U.S.	
	Early Stage	Late Stage	Early Stage	Late Stage	Early Stage	Late Stage
Breast (Female)	72.0	26.9	70.2	27.9	72.1	26.3
Cervix	42.9	57.1	43.8	51.2	43.1	51.6
Colon & Rectum	40.8	49.3	37.3	53.1	41.0	52.8
Lung & Bronchus	21.4	70.9	20.1	70.8	21.7	72.2
Melanoma of the Skin	74.4	14.0	82.2	8.6	89.6	6.8
Oral Cavity & Pharynx	27.9	69.8	30.1	65.0	33.1	61.5
Prostate	60.0	15.2	70.7	19.5	72.1	19.7

<sup>1</sup> Source of Ohio data: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2019.

<sup>2</sup> Source of U.S. data: Surveillance, Epidemiology and End Results Program, National Cancer Institute, 2019.

<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 also be reported as unstaged or with a missing stage (not shown). Regular screening can result in the detection of these cancers 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 Brown County were lung and bronchus cancer (70.9 percent), followed by oral cavity and pharynx cancer (69.8 percent), and cervical cancer (57.1 percent).
- Cancer sites/types with a higher percentage of late stage tumors in Brown County compared to Ohio include cervix, melanoma of the skin, and oral cavity and pharynx. Please note that the percentage of unstaged/missing stage cases varies by cancer site/type and region; therefore, comparisons between Brown County, Ohio and the United States should be interpreted with caution.

## Risk Factors

**Table 4.** Percent of Adults who are Current Smokers, Obese or Physically Inactive in Brown County with Comparison to Ohio and the United States, 2015, 2016<sup>1</sup>

Risk Factor	Brown County	Ohio	U.S.
Current Smoker	23.7	22.5	17
Obese	33.1	31.8	29
Physically Inactive	29.2	24.6	22

<sup>1</sup> Source: County Health Rankings, [www.countyhealthrankings.org](http://www.countyhealthrankings.org), 2019. Current smoker data are from 2016, and obesity and physical inactivity data are from 2015.

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 Brown County who are current smokers is 23.7 percent, compared to 22.5 percent in Ohio and 17 percent in the United States.
- The percentage of adults who are obese in Brown County is 33.1 percent, compared to 31.8 percent in Ohio and 29 percent in the United States.
- The percentage of adults that report no leisure-time physical activity in Brown County is 29.2 percent, compared to 24.6 percent in Ohio and 22 percent in the United States.

### Did You Know?

- Tobacco use is associated with 12 types of cancer. Nearly one-third of all cancer deaths could be prevented by eliminating tobacco use.
- Overweight and obesity are associated with at least 13 types of cancer. Nearly one-fifth of cancer deaths could be prevented by adopting healthy diet and exercise practices.

## 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 2019*, 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, 1975-2016* and the SEER\*Stat Database, SEER 21 Registries Research Data, released April 2019, based on the November 2018 submission. Stage distributions were calculated using SEER\*Stat software version 8.3.5.

### Other Sources of Information

Ohio Department of Health, Cancer Data and Statistics:

<https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/ohio-cancer-incidence-surveillance-system/data-statistics/data-statistics>

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: <https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/ohio-cancer-incidence-surveillance-system/welcome-to>

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## **Suggested Citation**

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