

Key Findings and Populations at High Risk

- An average of 10,058 new lung and bronchus cancer cases and 6,979 deaths occurred each year in Ohio from 2014 to 2018.
- Ohio's lung and bronchus cancer incidence rate was 17% higher and the mortality rate was 21% higher than the U.S. rates from 2014 to 2018.
- Lung and bronchus cancer occurs more often in men than in women in Ohio and the United States.
- Black men had the highest lung and bronchus cancer incidence and mortality rates of the major racial groups in both Ohio and the United States.
- In Ohio, lung and bronchus cancer occurred most often among adults ages 65-74 years.
- Counties in the southern region of Ohio had higher rates of lung and bronchus cancer in 2014-2018.
- From 2014 to 2018, 45% of lung and bronchus cancers in Ohio were diagnosed at the latest (distant) stage, where the five-year relative survival is only 6%.
- From 1996 to 2018, incidence rates of lung and bronchus cancer in Ohio decreased 7% overall, 20% for white men, and 41% for Black men.
- From 1996 to 2018, mortality rates of lung and bronchus cancer in Ohio decreased 33% overall.

Incidence and Mortality

Lung and bronchus cancer is the leading cause of cancer incidence (new cases) and cancer-related deaths in Ohio.

New Cases

Lung and bronchus cancer made up nearly 15% of all newly diagnosed cancer cases, as reported to the Ohio Cancer Incidence Surveillance System (OCISS) from 2014 to 2018. An average of 10,058 new cases of lung and bronchus cancer were diagnosed annually in Ohio from 2014 to 2018 (Table 1). Ohio's lung and bronchus cancer incidence rate of 67.3 per 100,000 was 17% higher than the U.S. incidence rate of 57.3 per 100,000. In Ohio, the lung and bronchus cancer incidence rate was 34% higher among males (78.7 per 100,000) than females (58.7 per 100,000). Asians/Pacific Islanders had the lowest incidence rate for this cancer (27.6 per 100,000), compared with white (67.5 per 100,000) and Black Ohioans (70.9 per 100,000).

Deaths

Lung and bronchus cancer accounted for 27% of all cancer-related deaths in Ohio from 2014 to 2018, as reported by the Bureau of Vital Statistics at the Ohio Department of Health. An average of 6,979 deaths from lung and bronchus cancer occurred each year in Ohio during this time period (Table 1). Ohio's lung and bronchus cancer mortality rate of 46.7 per 100,000 was 21% higher than the national rate of 38.5 per 100,000. In Ohio, the lung and bronchus cancer mortality rate for males (58.3 per 100,000) was 54% higher than the rate for females (37.9 per 100,000). Mortality rates for this cancer were higher among Black Ohioans (50.3 per 100,000) and lowest among Asians/Pacific Islanders (21.9 per 100,000).

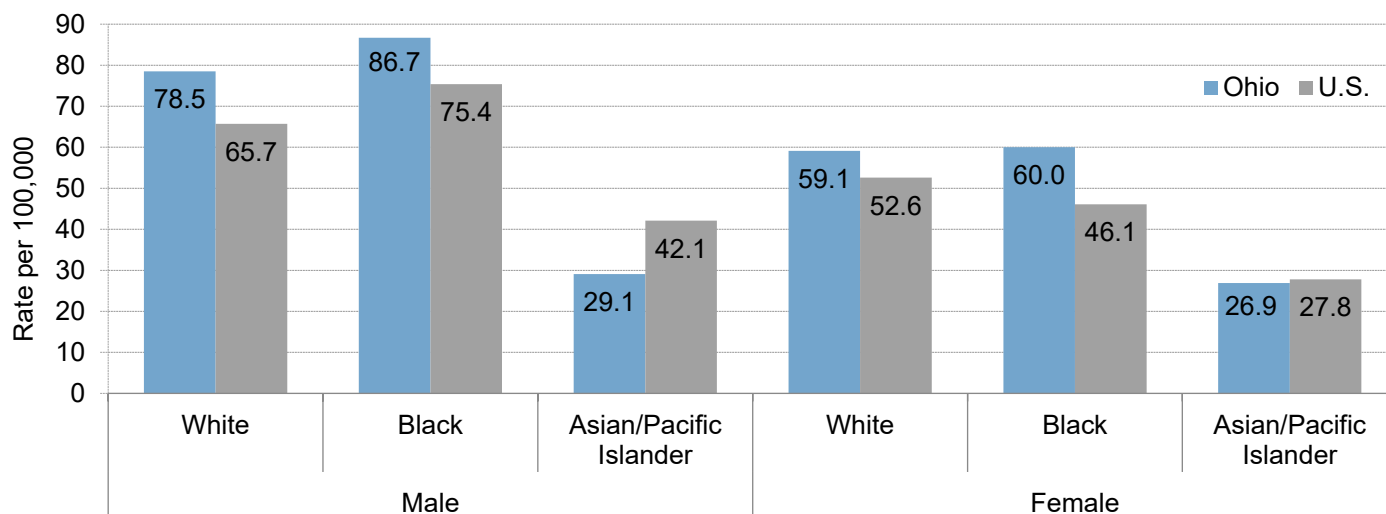
Table 1. Average Annual Number and Age-adjusted Rates of Lung and Bronchus Cancer Cases and Deaths per 100,000 Persons by Sex and Race, Ohio and the United States, 2014-2018

		Incidence			Mortality		
		Ohio Cases	Ohio Rate	U.S. Rate	Ohio Deaths	Ohio Rate	U.S. Rate
Total		10,058	67.3	57.3	6,979	46.7	38.5
Sex	Male	5,291	78.7	65.8	3,858	58.3	46.9
	Female	4,767	58.7	50.8	3,120	37.9	32.0
Race	White	8,913	67.5	58.2	6,187	46.7	39.3
	Black	1,054	70.9	58.1	733	50.3	40.1
	Asian/Pacific Islander	53	27.6	34.0	40	21.9	21.3

Source: Ohio Cancer Incidence Surveillance System and Bureau of Vital Statistics, Ohio Department of Health, 2021; U.S. Cancer Statistics, Centers for Disease Control and Prevention and National Cancer Institute, 2021.

Incidence and Mortality by Sex and Race

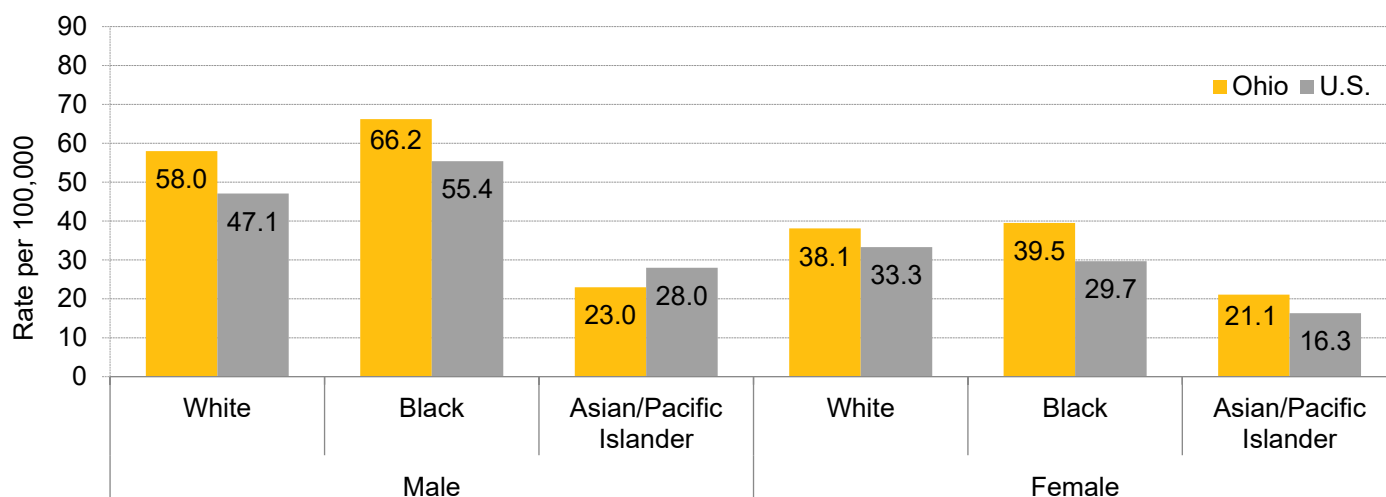
Figure 1. Average Annual Age-adjusted Incidence Rates of Lung and Bronchus Cancer per 100,000 Persons by Sex and Race, Ohio, 2014-2018



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2021; U.S. Cancer Statistics, Centers for Disease Control and Prevention and National Cancer Institute, 2021.

As in the United States, Black males in Ohio had the highest lung and bronchus cancer incidence rate (86.7 per 100,000) based on data from 2014 to 2018 (Figure 1). Asian/Pacific Islander females had the lowest incidence rate of lung and bronchus cancer in Ohio and the United States from 2014 to 2018.

Figure 2. Average Annual Age-adjusted Mortality Rates of Lung and Bronchus Cancer per 100,000 Persons by Sex and Race, Ohio, 2014-2018

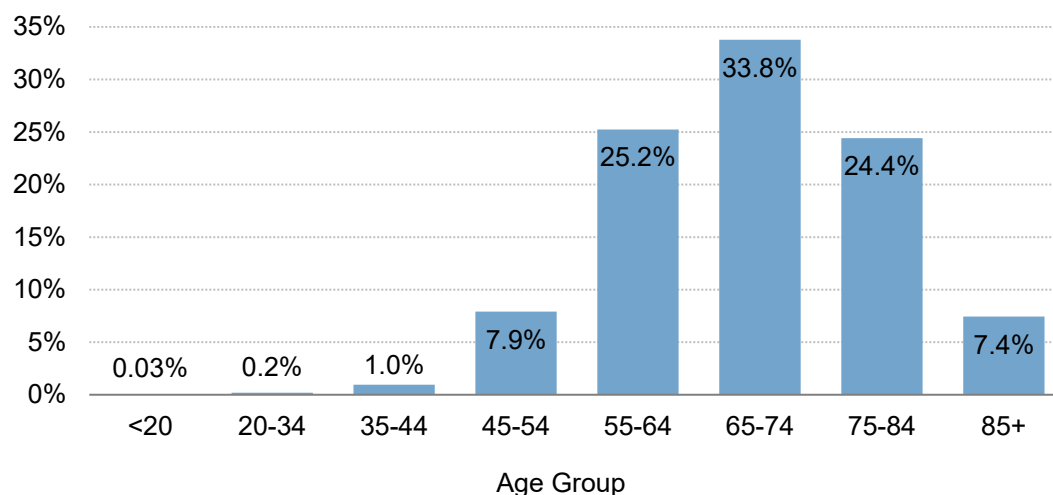


Source: Bureau of Vital Statistics, Ohio Department of Health, 2021; U.S. Cancer Statistics, Centers for Disease Control and Prevention and National Cancer Institute, 2021.

As in the United States, Black males in Ohio had the highest lung and bronchus cancer mortality rate (66.2 per 100,000), based on data from 2014 to 2018 (Figure 2). Asian/Pacific Islander females had the lowest mortality rate of lung and bronchus cancer in Ohio and the United States from 2014 to 2018.

Incidence by Age Group

Figure 3. Percentage of New Cases of Lung and Bronchus Cancer by Age Group, Ohio, 2014-2018

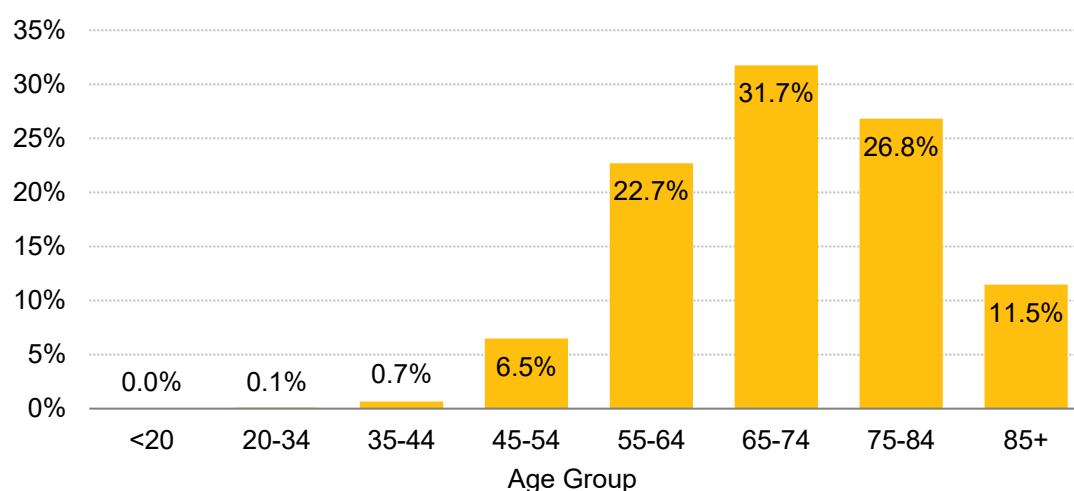


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2021.

As shown in Figure 3, lung and bronchus cancers in Ohio were most frequently diagnosed among people ages 65-74 years (33.8%).

Mortality by Age Group

Figure 4. Percentage of Lung and Bronchus Cancer Deaths by Age Group, Ohio, 2014-2018

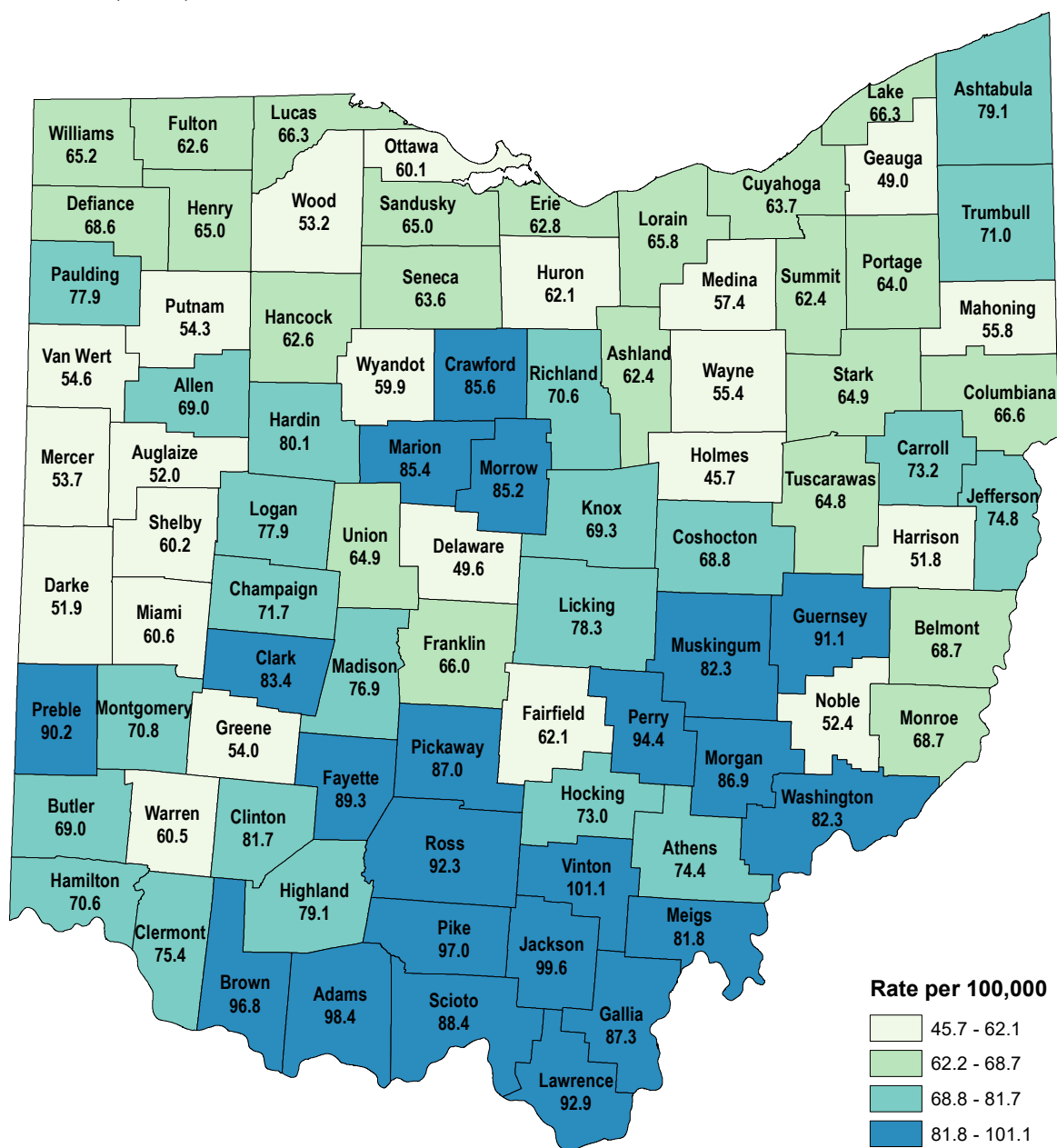


Source: Bureau of Vital Statistics, Ohio Department of Health, 2021.

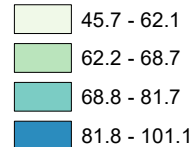
As shown in Figure 4, deaths due to lung and bronchus cancers in Ohio occurred most often among people ages 65-74 years (31.7%).

Lung and Bronchus Cancer Incidence by County

Figure 5. Average Annual Age-adjusted Incidence Rates of Lung and Bronchus Cancer per 100,000 Persons by County of Residence, Ohio, 2014-2018



Rate per 100,000



Ohio Rate: 67.3

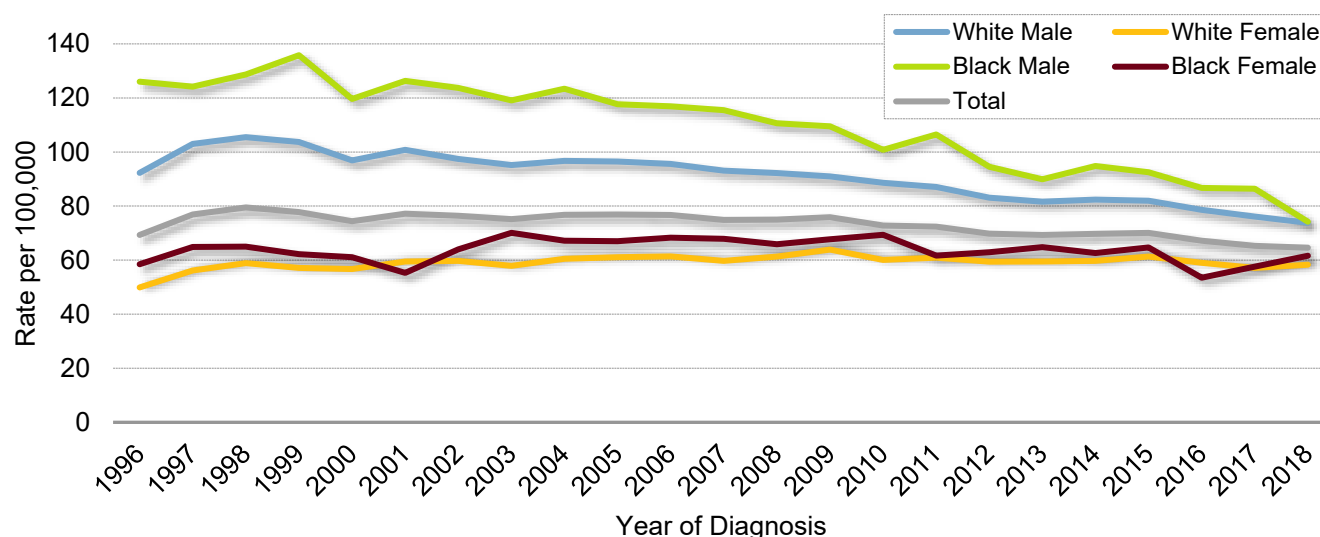
U.S. Rate: 57.3

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2021.
Each category represents approximately 25% of the 88 Ohio counties.

Counties in the southern region of Ohio tended to have higher age-adjusted incidence rates for lung and bronchus cancer from 2014 to 2018.

Trends

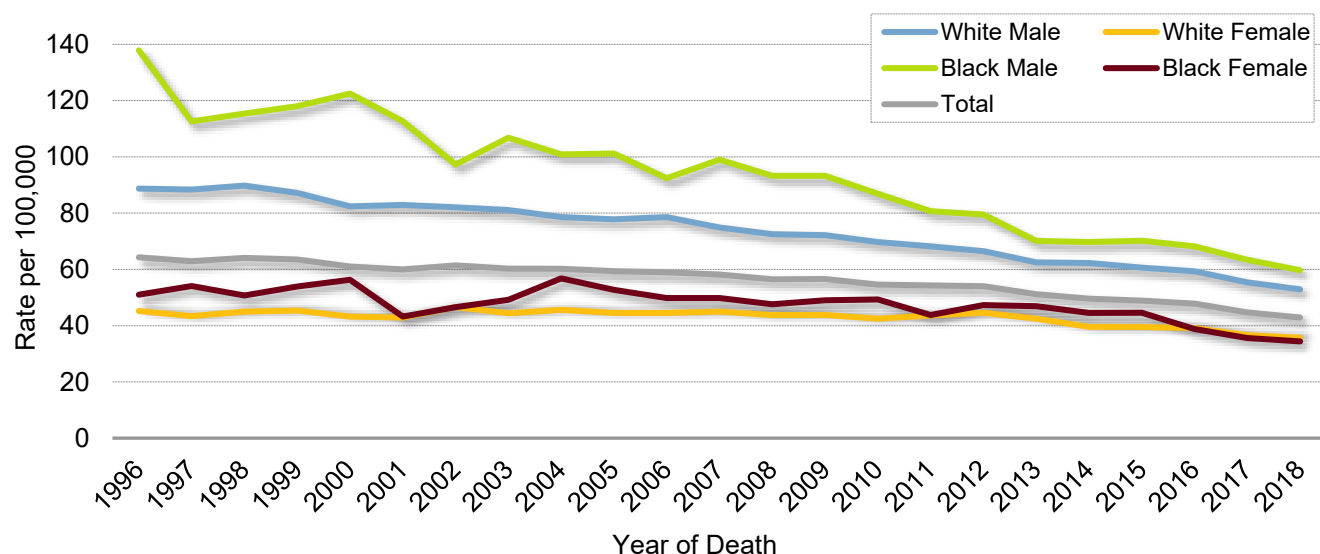
Figure 6. Trends in Age-adjusted Incidence Rates of Lung and Bronchus Cancer per 100,000 Persons, Ohio, 1996-2018



Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2021.

Overall, lung and bronchus cancer incidence rates in Ohio decreased 7% from 1996 to 2018. For each year, Black males had the highest incidence rate. Incidence rates decreased considerably from 1996 to 2018 for Black males (41%) and white males (20%), while incidence rates among Black females and white females remained relatively unchanged.

Figure 7. Trends in Age-adjusted Mortality Rates of Lung and Bronchus Cancer per 100,000 Persons, Ohio, 1996-2018



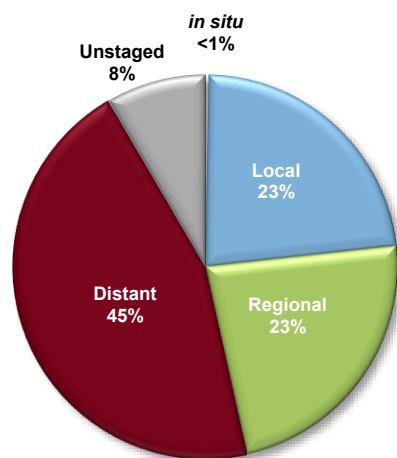
Source: Bureau of Vital Statistics, Ohio Department of Health, 2021

Overall, lung and bronchus cancer mortality rates in Ohio decreased 33% from 1996 to 2018. For each year, Black males had the highest mortality rate. Mortality rates declined considerably from 1996 to 2018 for Black males (57%), white males (40%), Black females (32%), and white females (21%) in Ohio.

Stage at Diagnosis

Cancer stage at diagnosis refers to the extent or spread of a cancer in the body and is an important determinant of survival. If cancer cells are present only in the layer of cells (tissue) where they developed and have not spread, the stage is *in situ*. If cancer cells have penetrated beyond the original layer of tissue, the cancer has become invasive and is categorized as local, regional, or distant based on the extent of spread.

Figure 8. Proportion of Lung and Bronchus Cancer Cases (%) by Stage at Diagnosis, Ohio, 2014-2018



In Ohio from 2014 to 2018:

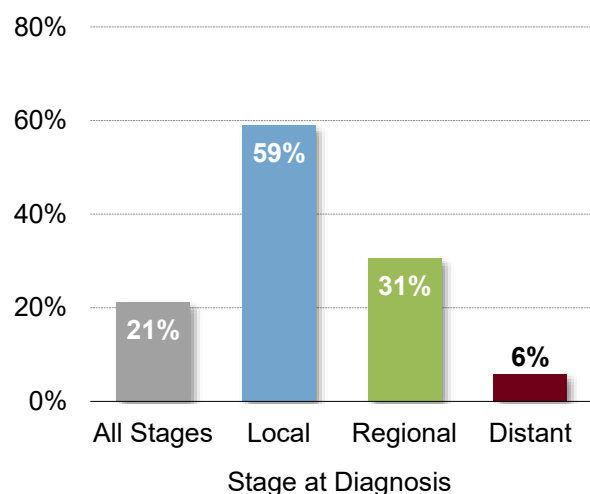
- <1% of lung and bronchus cancer cases were *in situ*.
- 23% were diagnosed at a local stage.
- 23% were regional stage.
- 45% were distant stage.
- 8% were unstaged or had missing stage information (Figure 8).

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2021.

Survival

In general, cancer survival is estimated as the proportion of people alive at some point after cancer diagnosis, usually five years. Five-year relative survival, the estimate used here, compares the survival of people diagnosed with cancer with the survival of people in the general population who are the same age, race, and sex, and who have not been diagnosed with cancer.

Figure 9: Five-Year Relative Survival (%) for Lung and Bronchus Cancer by Stage at Diagnosis, Ohio, 2011-2017



In Ohio, the five-year relative survival for lung and bronchus cancer from 2011 to 2017 was:

- 21% for all stages combined.
- 59% among those diagnosed at a local stage.
- 31% at the regional stage.
- Only 6% when the cancer was diagnosed at the latest (distant) stage (Figure 9).

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2021.

Lung and Bronchus Cancer by Site

Figure 10. Anatomy of the Respiratory System

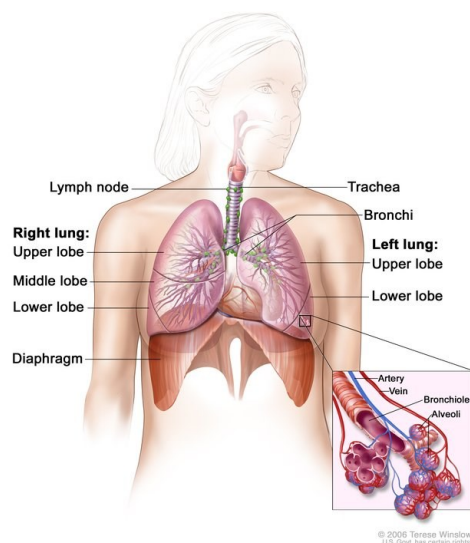


Figure 10 shows the anatomy of the respiratory system. Based on Ohio cancer data from 2014 to 2018:

- The highest percentage of cases occurred in the upper lobe of the lung (48.5%).
- Cancers of the lower lobe of the lung were the next highest in occurrence (24.9%).
- Cancers of the lung, NOS (not otherwise specified) accounted for 17.4% of cases, followed by cancers of the middle lobe (4.0%), main bronchus (3.9%), and overlapping lesions of lung (1.2%).

Image: <http://www.cancer.gov/types/lung>.

Histology

Lung and bronchus cancers are usually grouped into two main types, small cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC) and are categorized based on how the cancer cells look under the microscope. These types of lung cancer grow, spread, and are treated in different ways. Table 2 shows average annual numbers of cases and percentages of specific histologies of lung and bronchus cancer in Ohio, where adenocarcinomas are the most commonly diagnosed histological type (39.4%).

Table 2. Average Annual Number and Percentage of Invasive Lung and Bronchus Cancer Cases by Histology, Ohio, 2014-2018

Histology	Cases	Percent
Small cell carcinoma	1,446	14.4%
Non-small cell carcinoma		
Adenocarcinoma	3,968	39.4%
Squamous cell carcinoma	2,378	23.6%
Large cell carcinoma	109	1.1%
Other specified carcinoma	453	4.5%
Unspecified carcinoma	1,684	16.7%

SCLC is less common, comprising about 10-15% of all lung cancers, and tends to grow quickly and spread rapidly to other parts of the body. NSCLCs account for 85% of all lung cancers and typically grow at a slower rate. The three main types (histologies) of NSCLC are adenocarcinoma, squamous cell carcinoma, and large cell carcinoma. Smoking is a major risk factor for both SCLC and NSCLC, and 95% of those with SCLC have a history of smoking.

Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2021.

Small cell carcinoma includes histology codes 8002, 8041-8045.

Adenocarcinoma includes histology codes 8015, 8050, 8140-8141, 8143-8145, 8147, 8190, 8201, 8211, 8250-8255, 8260, 8290, 8310, 8320, 8323, 8333, 8401, 8440, 8470-8471, 8480-8481, 8490, 8503, 8507, 8550, 8551, 8570-8572, 8574, 8576.

Squamous cell carcinoma includes histology codes 8051-8052, 8070-8076, 8078, 8083-8084, 8090, 8094, 8120, 8123.

Large cell carcinoma includes histology codes 8012-8014, 8021, 8034, 8082.

Other specified carcinoma includes histology codes 8003-8004, 8022, 8030-8033, 8035, 8200, 8240-8241, 8243-8246, 8249, 8430, 8525, 8560, 8562, 8575.

Unspecified carcinoma includes histology codes for carcinoma, NOS (not otherwise specified): 8010-8011, 8020, 8230; non-small cell carcinoma: 8046; malignant neoplasm, NOS: 8000-8001.

Percentages do not sum to 100% due to the omission of histology codes for non-carcinomas (8580-9999) including sarcomas, and a few other types.

Risk Factors

Anything that increases the chance of getting a disease is called a risk factor. Having one or more risk factors does not mean that a person will develop the disease. Below are some of the risk factors for lung and bronchus cancer.

Potentially Modifiable Risk Factors

Smoking: Tobacco smoking is the most important risk factor for lung cancer. Cigarette, cigar, and pipe smoking all increase the risk of lung cancer. Tobacco smoking causes about nine out of 10 cases of lung cancer in men and about eight out of 10 cases of lung cancer in women. Risk increases with the amount and duration of use.

Secondhand smoke: Exposure to secondhand (environmental) tobacco smoke increases risk. Nonsmokers exposed to secondhand smoke have approximately 20% increased risk of lung and bronchus cancer.

Radon: Radon is a cancer-causing gas and is the second leading cause of lung cancer.

Radiation: Being exposed to radiation is a risk factor for lung cancer. Sources include radiation therapy and imaging tests.

Occupational exposure: Workplace exposure to asbestos, arsenic, crystalline silica dust, beryllium, cadmium, nickel compounds, chromium (VI) compounds, tar and soot, mustard gas, chloromethyl ethers, and diesel exhaust increases risk.

Air pollution: Exposure to outdoor air pollution, specifically small particles, increases risk.

Non-Modifiable Risk Factors

Age: About two out of three people diagnosed with lung and bronchus cancer are older than 65.

Sex: Lung and bronchus cancer is more common among men, compared with women.

Signs and Symptoms of Lung and Bronchus Cancer

Signs and symptoms usually do not occur until the cancer is advanced and may include:

- Persistent cough.
- Chest discomfort or pain.
- Trouble breathing, wheezing, or hoarseness.
- Bloody sputum (mucus coughed up from the lungs).
- Loss of appetite or weight loss.
- Trouble swallowing.
- Recurring pneumonia or bronchitis.

It is possible that one or more of these signs and symptoms may be the result of other health problems. If you have any of these symptoms, you should consult with your healthcare provider.

Early Detection

The U.S. Preventive Services Task Force (USPSTF) recommends annual screening for lung and bronchus cancer with low-dose computed tomography (LDCT) in adults ages 50 to 80 years who have a 20 pack-year* smoking history and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.

* A pack year is the number of packs of cigarettes smoked per day times the number of years smoked.

Tobacco Use

Ohio was seventh highest in the nation in the prevalence of cigarette smoking in 2020, the major cause of lung cancer, based on data from the Ohio Behavioral Risk Factor Surveillance System (BRFSS). In 2020, 19.3% of Ohio adults reported that they currently smoke, compared with 14.2% of adults in the United States (Figure 11). In Ohio, the prevalence of cigarette smoking is significantly lower among adults ages 18-24 years (10.5%) and adults ages 65 and older (11.3%), compared with all other age groups. Current cigarette smoking was more common among males and multi-racial people. The prevalence of cigarette smoking decreases dramatically with increasing educational level and household income. For help quitting tobacco, call 1-800-QUIT-NOW, and for more information on Ohio Department of Health (ODH) initiatives to address tobacco use and disparities, visit the ODH Tobacco Use Prevention and Cessation web page [here](#).

Figure 11. Prevalence of Current Smoking Among Adults (Age 18+) by Demographic Characteristics, Ohio and the United States, 2020

Demographic Characteristics	Ohio		United States	
	Prevalence (%)	95% CI	Prevalence (%)	95% CI
Total	19.3	18.3 – 20.2	14.2	14.0 - 14.5
Age				
18-24	10.5	8.0 – 12.9	8.3	7.7 - 8.9
25-34	24.0	21.0 – 26.9	16.6	15.9 - 17.3
35-44	26.8	23.9 – 29.7	18.4	17.6 - 19.1
45-54	23.5	21.0 – 26.0	16.1	15.4 - 16.7
55-64	23.0	20.8 – 25.2	17.4	16.8 - 18.1
65+	11.3	9.9 – 12.6	8.8	8.5 - 9.2
Sex				
Male	20.0	18.6 – 21.4	16.2	15.8 - 16.6
Female	18.6	17.3 – 19.9	12.3	12.0 - 12.6
Race/Ethnicity				
White, Non-Hispanic	19.2	18.2 – 20.2	14.9	14.7 - 15.2
Black, Non-Hispanic	19.8	16.6 – 23.0	16.6	15.6 - 17.5
Hispanic	16.2	10.6 – 21.8	11.0	10.3 - 11.8
Other, Non-Hispanic	15.2	9.3 – 21.1	10.9	9.9 - 11.9
Multi-Racial	29.9	22.3 – 37.4	21.5	19.6 - 23.4
Annual Household Income				
<\$15,000	40.6	36.0 – 45.2	25.1	23.9 - 26.4
\$15,000-\$24,999	29.4	26.5 – 32.3	22.1	21.3 - 23.0
\$25,000-\$34,999	23.4	19.7 – 27.1	18.5	17.5 - 19.4
\$35,000-\$49,999	22.8	19.8 – 25.8	16.1	15.3 - 16.8
\$50,000-\$74,999	15.3	12.9 – 17.6	12.9	12.3 - 13.6
\$75,000+	10.8	9.2 – 12.3	8.6	8.2 - 9.0
Education				
Less than High School	40.3	35.5 – 45.2	24.2	23.2 - 25.3
High School Diploma	24.8	23.1 – 26.6	18.9	18.3 - 19.4
Some College	17.3	15.7 – 18.9	14.4	13.9 - 14.8
College Graduate	6.6	5.7 – 7.5	5.6	5.4 - 5.9

Source: 2020 Ohio Behavioral Risk Factor Surveillance System, Ohio Department of Health, 2021.

Current cigarette smoking is defined as those who reported smoking at least 100 cigarettes in their lifetime and currently smoke every day or some days.
95% CI = 95% Confidence Interval.

Technical Notes

Age-Adjusted Rate: A summary rate that is a weighted average of age-specific rates, where the weights represent the age distribution of a standard population (direct adjustment). The incidence and mortality rates presented in this report were standardized to the age distribution of the 2000 U.S. Standard Population. Under the direct method, the population was first divided into 19 age groups, i.e., <1, 1-4, 5-9, 10-14, 15-19 ... 85+, and the age-specific rate was calculated for each age group. Each age-specific rate was then multiplied by the standard population proportion for the respective age group.

Average Annual Number: The number of cases or deaths diagnosed per year, on average, for the time period of interest (e.g., 2014 to 2018). Average annual numbers are calculated by summing the number of cases or deaths for a given time period, dividing by the number of years that comprise the time period, and rounding to the nearest whole number.

Confidence Interval (CI): An estimated range of values for a measure (e.g., current smoking) constructed so that the range has a specified probability of including the true value of the measure in the population.

Incidence: The number of cases diagnosed during a specified time period (e.g., 2014 to 2018). Lung and bronchus cancer cases were defined by the International Classification of Diseases for Oncology, Third Edition (ICD-O-3), and categorized by site codes C340-C349, excluding types 9050-9055, 9140, 9590-9992, in accordance with the SEER Program of the National Cancer Institute.

Invasive Cancer: A malignant tumor that has infiltrated the organ in which the tumor originated. Invasive cancers consist of those diagnosed at the local, regional, distant, and unstaged/missing stages. Only invasive cancers were included in the calculation of incidence rates in this document.

Histology: The study of tissues and cells under a microscope.

Mortality: The number of deaths during a specified time period (e.g., 2014 to 2018). Lung and bronchus cancer deaths were defined as follows: International Statistical Classification of Diseases and Related Health Problems, Ninth Edition (ICD-9), codes 1622-1629 for 1996-1998 and International Statistical Classification of Diseases and Related Health Problems, Tenth Edition (ICD-10), codes C340-C349 for 1999-2018.

Population Data Used to Calculate Rates: The 1996 to 2018 rates were calculated using population estimates from the U.S. Census Bureau and National Center for Health Statistics. Population data were compiled from bridged-race intercensal population estimates for July 1, 1990 to July 1, 1999 (released July 26, 2004); revised bridged-race intercensal population estimates for July 1, 2000 to July 1, 2004 (released Oct. 26, 2012); revised bridged-race intercensal population estimates for July 1, 2005 to July 1, 2009 (released June 26, 2014), and vintage 2019 bridged-race postcensal population estimates for July 1, 2010 to July 1, 2019 (released July 9, 2020).

Prevalence: The proportion of people with a certain disease or characteristic at a given time.

Rate: The number of cases or deaths per unit of population (e.g., per 100,000 persons) during a specified time period (e.g., 2014 to 2018). Rates may be unstable and are not presented when the count is less than five.

Relative Survival: The percentage of people who are alive at a designated time period (usually five years) after a cancer diagnosis divided by the percentage expected to be alive in the absence of cancer based on normal life expectancy.

Stage at Diagnosis: The degree to which a tumor has spread from its site of origin at the time of diagnosis. A system of summary staging is often used to group cases into the following stages:

In situ — Noninvasive cancer that has not penetrated surrounding tissue.

Local — A malignant tumor confined entirely to the organ of origin.

Regional — A malignant tumor that has extended beyond the organ of origin directly into surrounding organs or tissues or into regional lymph nodes.

Distant — A malignant tumor that has spread to parts of the body (distant organs, tissues, and/or lymph nodes) remote from the primary tumor.

Unstaged/Missing — Insufficient information is available to determine the stage or extent of the disease at diagnosis.

Table 3. Average Annual Number and Age-adjusted Rates of Lung and Bronchus Cancer Cases and Deaths per 100,000 Persons by County of Residence, Ohio and the United States, 2014-2018

	Incidence		Mortality			Incidence		Mortality			Incidence		Mortality	
	Cases	Rate	Deaths	Rate		Cases	Rate	Deaths	Rate		Cases	Rate	Deaths	Rate
Ohio	10,058	67.3	6,979	46.7	Harrison	13	51.8	12	45.8	Putnam	24	54.3	14	31.2
U.S.		53.1		38.5	Henry	25	65.0	18	47.3	Richland	122	70.6	85	48.4
Adams	38	98.4	28	71.7	Highland	45	79.1	32	55.3	Ross	94	92.3	61	61.2
Allen	92	69.0	71	52.4	Hocking	30	73.0	23	57.8	Sandusky	53	65.0	37	45.5
Ashland	46	62.4	31	41.7	Holmes	21	45.7	16	36.2	Scioto	91	88.4	63	60.6
Ashtabula	111	79.1	78	56.1	Huron	47	62.1	34	46.1	Seneca	48	63.6	34	45.1
Athens	49	74.4	32	49.2	Jackson	42	99.6	29	70.6	Shelby	36	60.2	31	50.1
Auglaize	33	52.0	24	37.3	Jefferson	79	74.8	58	54.9	Stark	347	64.9	247	45.4
Belmont	70	68.7	54	52.0	Knox	57	69.3	40	48.6	Summit	452	62.4	305	42.2
Brown	59	96.8	44	74.4	Lake	222	66.3	155	45.7	Trumbull	216	71.0	149	48.2
Butler	295	69.0	198	46.4	Lawrence	81	92.9	52	60.9	Tuscarawas	85	64.8	62	47.2
Carroll	31	73.2	23	55.1	Licking	172	78.3	117	53.6	Union	36	64.9	23	41.3
Champaign	38	71.7	28	53.4	Logan	48	77.9	37	61.1	Van Wert	23	54.6	16	39.7
Clark	158	83.4	102	53.7	Lorain	270	65.8	199	48.9	Vinton	18	101.1	11	63.3
Clermont	191	75.4	129	51.6	Lucas	351	66.3	260	49.3	Warren	153	60.5	109	43.8
Clinton	45	81.7	30	54.5	Madison	41	76.9	27	51.1	Washington	78	82.3	50	52.9
Columbiana	106	66.6	74	46.5	Mahoning	194	55.8	149	42.3	Wayne	84	55.4	58	37.8
Coshocton	36	68.8	22	42.8	Marion	75	85.4	50	57.1	Williams	33	65.2	26	48.7
Crawford	53	85.6	35	56.1	Medina	135	57.4	89	38.4	Wood	79	53.2	59	39.9
Cuyahoga	1086	63.7	760	44.4	Meigs	27	81.8	20	60.6	Wyandot	19	59.9	14	43.7
Darke	38	51.9	35	47.6	Mercer	29	53.7	20	36.8					
Defiance	36	68.6	27	52.1	Miami	87	60.6	70	48.3					
Delaware	100	49.6	62	31.4	Monroe	16	68.7	11	46.4					
Erie	74	62.8	51	42.6	Montgomery	502	70.8	345	48.3					
Fairfield	117	62.1	79	43.1	Morgan	20	86.9	12	52.6					
Fayette	35	89.3	22	57.3	Morrow	39	85.2	25	56.1					
Franklin	797	66.0	532	44.6	Muskingum	95	82.3	65	56.7					
Fulton	35	62.6	23	41.9	Noble	13	52.4	9	32.8					
Gallia	37	87.3	25	57.8	Ottawa	41	60.1	29	42.5					
Geauga	68	49.0	45	32.1	Paulding	20	77.9	12	45.0					
Greene	115	54.0	83	39.1	Perry	44	94.4	30	67.2					
Guernsey	52	91.1	36	61.2	Pickaway	61	87.0	43	62.1					
Hamilton	677	70.6	444	46.0	Pike	37	97.0	24	62.2					
Hancock	62	62.6	40	40.9	Portage	130	64.0	93	45.7					
Hardin	30	80.1	21	57.5	Preble	52	90.2	32	55.7					

Source: Ohio Cancer Incidence Surveillance System and Bureau of Vital Statistics, Ohio Department of Health, 2021; U.S. Cancer Statistics, Centers for Disease Control and Prevention and National Cancer Institute, 2021.

Sources of Data and Additional Information

Ohio Department of Health

[Ohio Cancer Incidence Surveillance System \(OCISS\)](#)

[Comprehensive Cancer Control Program](#)

[Tobacco Use Prevention and Cessation Program](#)

Ohio Public Health Data Warehouse:

<https://publicapps.odh.ohio.gov/EDW/DataCatalog>

National Cancer Institute:

<https://www.cancer.gov/types/lung>

American Cancer Society:

<https://www.cancer.org/cancer/lung-cancer.html>

U.S. Cancer Statistics:

www.cdc.gov/cancer/dataviz

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