Carroll County Cancer Profile

Ohio Department of Health

2015

Introduction

This report provides an overview of cancer in Carroll County, Ohio, including data on cancer incidence (new cases) and mortality (deaths), Ohio and U.S. comparisons, trends, stage at diagnosis, cancer screening 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.

Overview

- An average of 183 new invasive cancer cases and 72 deaths occurred each year among Carroll County residents from 2008-2012.
- In 2008-2012, the cancer incidence rate for all sites/types combined in Carroll County was 480.8 per 100,000, compared with the Ohio rate of 463.9 per 100,000.
- The 2008-2012 cancer mortality rate in Carroll County was 189.7 per 100,000, compared with the Ohio rate of 186.6 per 100,000.
- Cancer sites/types and demographic subgroups with high numbers of cancer cases and/or high incidence rates should be prioritized in cancer prevention and early detections programs. 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.

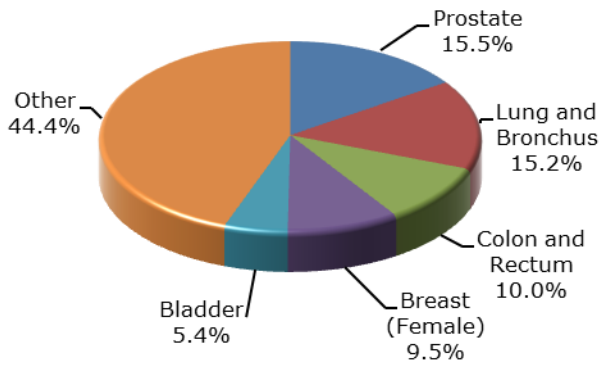
Table 1. Average Annual Number and Age-adjusted Rates of Invasive Cancer Cases and Cancer Deaths by Sex and Race in Carroll County, Ohio and the United States, 2008-2012[1,2,3]

Demographics		Incidence				Mortality			
		Carroll County		Ohio	U.S.	Carroll County		Ohio	U.S.
		Cases	Rate	Rate	Rate	Deaths	Rate	Rate	Rate
Total		**183**	**480.8**	**463.9**	**454.8**	**72**	**189.7**	**186.6**	**171.2**
Sex	Male	104	574.2	524.2	516.6	44	256.9	227.5	207.9
	Female	79	408.3	423.1	411.2	28	139.1	158.0	145.4
Race	White	180	477.1	456.1	463.3	71	188.0	184.3	170.9
	Black	<1	*	470.8	478.0	<1	*	217.2	202.0

[1] Source of Ohio data: Ohio Cancer Incidence Surveillance System, Chronic Disease Epidemiology and Evaluation Section and the Bureau of Vital Statistics, Ohio Department of Health, 2015.
[2] Source of U.S. data: Surveillance, Epidemiology and End Results Program, National Cancer Institute and the National Center for Health Statistics, 2015.
[3] Rates are per 100,000 and age-adjusted to the 2000 U.S. standard population.
* Rates may be unstable and are not presented when the count for 2008-2012 is less than five (i.e., average annual count is less than one).

Leading Cancers

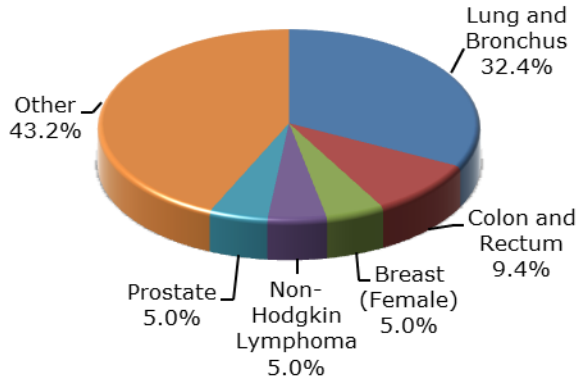
Figure 1. Percentage of Cancer Cases by Site/Type for the Leading Cancers in Carroll County, 2008-2012[1]



- The leading sites/types of cancer incidence in Carroll County in 2008-2012 were prostate, lung and bronchus, colon and rectum, female breast and bladder, representing 55.6 percent of all invasive cancer cases.

[1] Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2015.

Figure 2. Percentage of Cancer Deaths by Site/Type for the Leading Cancers in Carroll County, 2008-2012[1]



- The leading sites/types of cancer mortality in Carroll County in 2008-2012 were lung and bronchus, colon and rectum, female breast, non-Hodgkin lymphoma and prostate, representing 56.8 percent of all cancer deaths.

[1] Source: Chronic Disease Epidemiology and Evaluation Section and the Bureau of Vital Statistics, Ohio Department of Health, 2015.

- Prostate cancer was the leading cause of cancer incidence, accounting for 15.5 percent of cancer cases in 2008-2012. Lung and bronchus cancer was the leading cause of cancer mortality, accounting for 32.4 percent of cancer deaths in Carroll County in 2008-2012.

Cancer Sites/Types

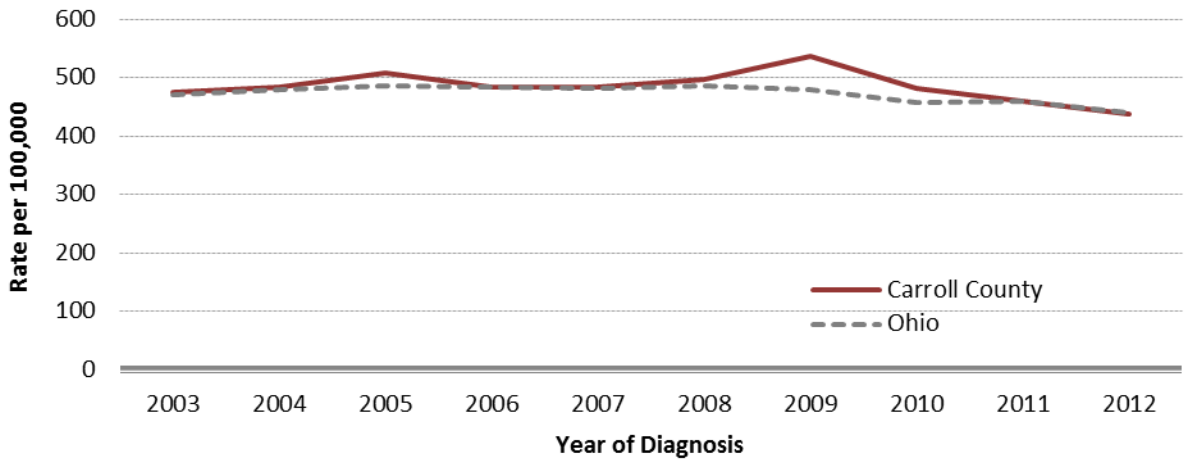
Table 2. Average Annual Number and Age-adjusted Rates of Invasive Cancer Cases and Cancer Deaths by Site/Type in Carroll County, Ohio and the United States, 2008-2012[1,2,3]

Cancer Site/Type	Incidence				Mortality			
	Carroll County		Ohio	U.S.	Carroll County		Ohio	U.S.
	Cases	Rate	Rate	Rate	Deaths	Rate	Rate	Rate
All Sites/Types	**183**	**480.8**	**463.9**	**454.8**	**72**	**189.7**	**186.6**	**171.2**
Bladder	10	26.2	21.9	20.3	2	6.8	5.0	4.4
Brain and Other CNS	3	8.5	6.9	6.4	3	8.0	4.5	4.3
Breast (Female)	17	88.2	120.9	124.8	4	18.9	23.6	21.9
Cervix	1	7.1	7.5	7.7	<1	*	2.6	2.3
Colon and Rectum	18	47.6	43.1	42.4	7	17.2	17.0	15.5
Esophagus	3	6.4	5.3	4.4	3	7.0	5.0	4.2
Hodgkin Lymphoma	1	4.1	2.7	2.7	<1	*	0.4	0.4
Kidney and Renal Pelvis	9	22.0	16.4	15.6	2	5.3	4.3	3.9
Larynx	2	4.7	4.1	3.2	<1	*	1.3	1.1
Leukemia	4	10.2	11.8	13.3	3	8.2	7.3	7.0
Liver and Intrahepatic Bile Duct	1	2.9	6.1	8.2	1	3.2	5.3	6.0
Lung and Bronchus	28	72.8	71.7	58.7	23	61.8	55.3	47.2
Melanoma of Skin	8	19.0	19.7	21.6	1	3.5	3.0	2.7
Multiple Myeloma	2	5.5	5.7	6.3	1	2.8	3.5	3.3
Non-Hodgkin Lymphoma	7	17.7	18.9	19.7	4	9.5	6.9	6.2
Oral Cavity and Pharynx	4	10.6	10.7	11.0	<1	*	2.5	2.5
Ovary	3	16.2	11.9	12.1	<1	*	7.9	7.7
Pancreas	4	9.6	12.4	12.4	3	8.1	11.5	10.9
Prostate	28	147.9	127.8	137.9	4	23.2	22.0	21.4
Stomach	2	5.6	6.1	7.4	<1	*	2.9	3.4
Testis	<1	*	5.4	5.6	<1	*	0.3	0.3
Thyroid	4	13.7	13.0	13.5	<1	*	0.5	0.5
Uterus	6	30.8	27.7	25.1	<1	*	4.9	4.4
Other Sites/Types	17	NA	NA	NA	7	NA	NA	NA

[1] Source of Ohio data: Ohio Cancer Incidence Surveillance System, Chronic Disease Epidemiology and Evaluation Section and the Bureau of Vital Statistics, Ohio Department of Health, 2015.
[2] Source of U.S. data: Surveillance, Epidemiology and End Results Program, National Cancer Institute and the National Center for Health Statistics, 2015.
[3] 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.
NA = Not Applicable
CNS = Central Nervous System
* Rates may be unstable and are not presented when the count for 2008-2012 is less than five (i.e., average annual count is less than one).

Trends

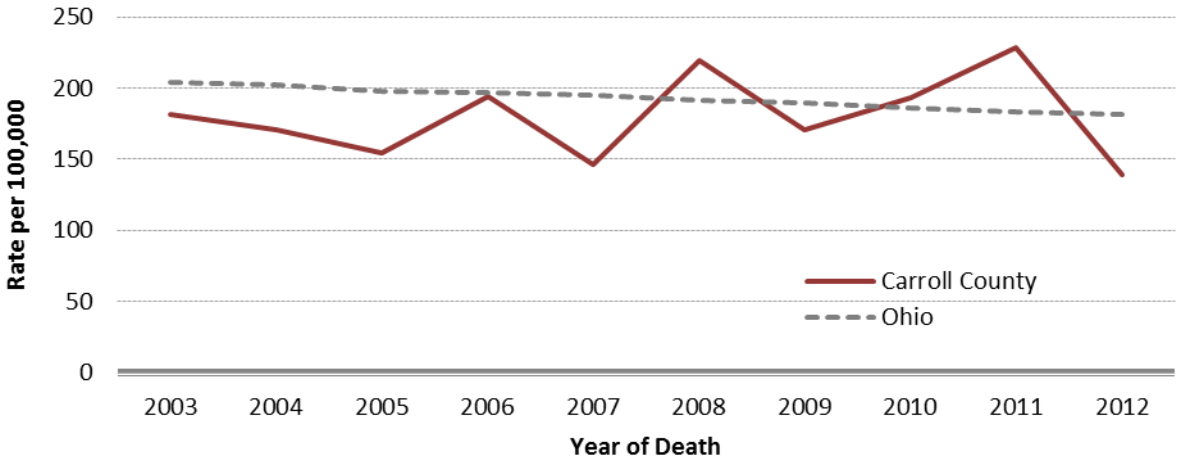
Figure 3. Age-adjusted Cancer Incidence Rates in Carroll County and Ohio by Year, 2003-2012[1,2]



[1] Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2015.
[2] Rates are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Cancer incidence rates decreased 8 percent in Carroll County and 7 percent in Ohio from 2003-2012. Note: Incidence rates are often variable over time at the county level, particularly for counties with small populations.

Figure 4. Age-adjusted Cancer Mortality Rates in Carroll County and Ohio by Year, 2003-2012[1,2]



[1] Source: Chronic Disease Epidemiology and Evaluation Section and the Bureau of Vital Statistics, Ohio Department of Health, 2015.
[2] Rates are per 100,000 and age-adjusted to the 2000 U.S. Standard Population.

Cancer mortality rates decreased 23 percent in Carroll County and 11 percent in Ohio from 2003-2012.

Stage at Diagnosis

Table 3. Percent of Cancer Cases by Stage at Diagnosis for the Leading and Screenable Cancers in Carroll County, Ohio and the United States, 2008-2012[1,2,3]

Cancer Site/Type	Carroll County		Ohio		U.S.	
	Early Stage	Late Stage	Early Stage	Late Stage	Early Stage	Late Stage
Breast (Female)	73.0	27.0	67.4	29.3	70.5	27.9
Cervix	33.3	50.0	41.4	52.0	45.2	49.7
Colon and Rectum	36.5	55.2	39.9	49.7	42.5	52.1
Lung and Bronchus	8.6	76.4	16.9	69.8	18.4	75.3
Melanoma of Skin	92.6	4.4	86.1	8.6	90.6	7.2
Oral Cavity and Pharynx	20.0	65.0	29.8	64.0	45.5	50.1
Pancreas	5.3	68.4	7.5	69.4	10.5	78.4
Prostate	82.4	9.9	79.0	13.0	78.8	16.3
Testis	66.7	33.3	67.7	29.5	68.0	30.6

[1] Source of Ohio data: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2015.
[2] Source of U.S. data: Surveillance, Epidemiology and End Results Program, National Cancer Institute, 2015.
[3] 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. 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.

- Screening programs should target cancers with high proportions of late-(regional and distant) stage tumors to increase the probability of survival.

- Cancers may be reported as unstaged or with a missing stage. High proportions of unstaged/missing stage cancers may indicate incomplete reporting and should be accounted for when comparing proportions by stage.

- Lung and bronchus cancer had the highest proportion of late-stage tumors in Carroll County among the leading and screenable cancers.

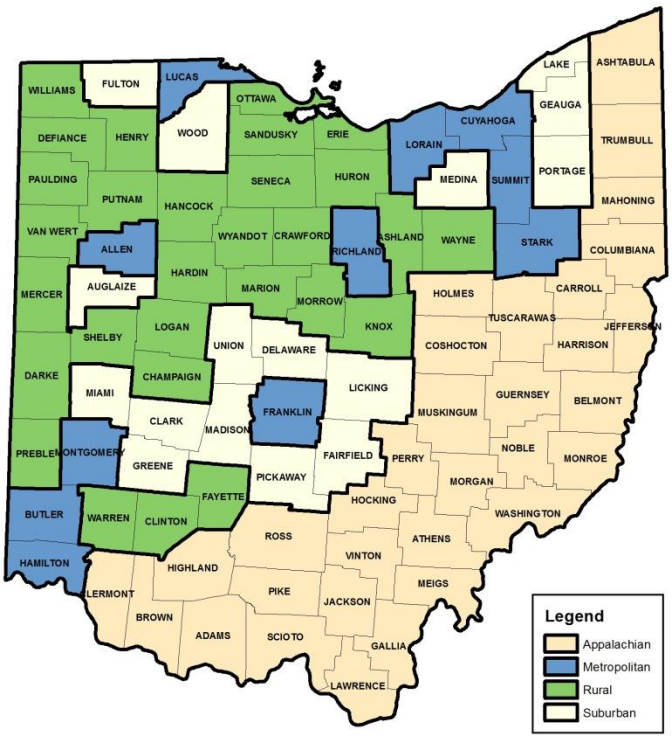
Screening

Table 4. Percent of Adults Meeting Screening Guidelines for Female Breast, Cervical and Colon and Rectum Cancer by County Type with Comparison to Ohio, 2014[1,2]

County Type	Female Breast*	Cervix**	Colon and Rectum***
Appalachian	72.2	76.7	61.7
Metropolitan	77.0	83.3	67.8
Rural	76.7	80.0	59.6
Suburban	72.5	81.8	65.1
Ohio	75.8	81.5	65.1

[1] Source: 2014 Ohio Behavioral Risk Factor Surveillance System, Ohio Department of Health, 2015.
[2] Cancer screening guidelines are based on U.S. Preventative Services Task Force recommendations.
*Female breast cancer recommendations are a mammogram every two years for women ages 50-74.
**Cervical cancer recommendations are a Pap test every three years, or a combination of Pap and HPV testing every five years, for women ages 21-65. Data shown do not include HPV co-testing and only represent women ages 21-65 who have had a Pap test in the last three years.
***Colon and rectum cancer recommendations are a screening colonoscopy every 10 years; or sigmoidoscopy every five years, with high-sensitivity fecal occult blood test (FOBT) every three years; or screening with high-sensitivity FOBT every year, for persons ages 50-74.

Figure 5. Ohio Counties by County Type, 2015[1]



- There were no significant differences between county types in the percent of women meeting breast cancer screening guidelines.
- Women in metropolitan counties were most likely to meet cervical cancer screening guidelines, while women in Appalachian counties were least likely to meet the guidelines.
- Metropolitan counties had a higher percent of persons meeting colon and rectum cancer screening guidelines compared with persons residing in Appalachian and rural counties.

[1] County designations as defined by the Ohio Medicaid Assessment survey (OMAS), with the exception of Mahoning County which OMAS defines as metropolitan.

Risk Factors

Table 5. Percent of Adults ages 18+ who are Current Smokers, Do Not Meet Physical Activity Guidelines and are Overweight/Obese by County Type with Comparison to Ohio, 2013 and 2014[1]

County Type	Current Smoker*	Does Not Meet Physical Activity Guidelines**	Overweight/ Obese***
Appalachian	23.7	81.6	70.3
Metropolitan	21.7	80.7	67.4
Rural	21.0	82.1	65.6
Suburban	16.9	79.8	66.5
Ohio	21.0	81.0	66.7

[1] Source: 2013 and 2014 Ohio Behavioral Risk Factor Surveillance System, Ohio Department of Health, 2015. Physical activity data are from 2013, and current smoker and overweight/obesity data are from 2014.
*Current smoker is defined as persons who reported smoking at least 100 cigarettes in their lifetime and currently smoke every day or some days.
**Physical activity guidelines for adults are defined as at least 150 minutes of moderate-intensity physical activity per week and muscle-strengthening activities two or more days per week.
***Overweight classification is defined as a Body Mass Index (BMI) of 25.0-29.9 and obese classification is defined as a BMI of 30.0+.

- Adults located in suburban counties were less likely to smoke compared with those located in Appalachian and metropolitan counties.
- There were no significant differences by county type for percent of adults not meeting physical activity guidelines.
- Adults located in Appalachian counties were more likely to be overweight/obese compared with those located in rural counties.

Did You Know?

Tobacco use causes many types of cancer, including cancer of the lung, larynx (voice box), mouth, esophagus, throat, bladder, kidney, liver, stomach, pancreas, cervix, colon and rectum as well as acute myeloid leukemia.

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.

If Ohioans reduce their BMI by just five percent, 23,000 cases of cancer will be prevented in Ohio by 2030, saving $1 billion.

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.

Ohio Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is an annual survey designed to collect data on diseases, health behaviors, clinical risk factors and injuries through landline and cell phone interviews of randomly selected adults age 18 and older. ODH conducts the Ohio BRFSS in conjunction with the Centers for Disease Control and Prevention (CDC).

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, 1975-2012* and the SEER*Stat Database, SEER 18 Registries Research Data, released April 2015, based on the November 2014 submission. Stage distributions were calculated using SEER*Stat software version 8.2.1.

Other Sources of Information

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

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