Colon and Rectum Cancer in Ohio 2021

October 2021

Key Findings and Populations at High Risk

- An average of 5,914 new colon and rectum cancer cases and 2,213 deaths occurred each year in Ohio in from 2014 to 2018.
- Ohio's colon and rectum cancer mortality rate (15.1 per 100,000) was 10% higher than the U.S. rate (13.7 per 100,000) from 2014 to 2018.
- Colon and rectum cancer occurs more often in men than in women in Ohio and the United States.
- Blacks have the highest colon and rectum cancer mortality rate of the major racial groups in both Ohio and the United States.
- Colon and rectum cancer was most frequently diagnosed among older adults (ages 65 to 74) in Ohio.
- Mortality rates of colon and rectum cancer in Ohio decreased 40% from 1996 to 2018.
- In 2014-2018, 19.1% of colon and rectum cancers in Ohio were diagnosed at the latest (distant) stage, where the five-year relative survival is only 15%.
- Colon and rectum cancers occur most often in the rectum and the sigmoid colon.
- Ohio counties with the lowest colon and rectum cancer screening rates were predominantly rural.

Ohio Department of Health

Incidence and Mortality

Colon and rectum cancer, commonly called colorectal cancer, is cancer that starts in the colon, the large intestine, or the rectum (the passageway that connects the colon to the anus). Colon and rectum cancer is the third most common invasive cancer in both men and women.

New Cases

Colon and rectum cancer made up 8.8% of all newly diagnosed (incidence) cancer cases, as reported to the Ohio Cancer Incidence Surveillance System (OCISS) from 2014 to 2018. An average of 5,914 new cases of colon and rectum cancer were diagnosed annually in Ohio in 2014 to 2018 (Table 1). Ohio's colon and rectum cancer incidence rate of 41.3 per 100,000 was 9% higher than the national incidence rate of 37.8 per 100,000. Incidence rates were higher among males and those 65 years and older.

Deaths

Colon and rectum cancer accounted for 8.7% of all cancer deaths in Ohio from 2014 to 2018. An average of 2,213 deaths from colon and rectum cancer occurred each year in Ohio from 2014 to 2018 (Table 1). The Ohio colon and rectum cancer mortality rate of 15.1 per 100,000 was 10% higher than the national rate of 13.7 per 100,000. In Ohio, the colon and rectum cancer mortality rate for men was 39% higher than the rate for women. Mortality rates were higher among males, Blacks, and those 65 years and older.

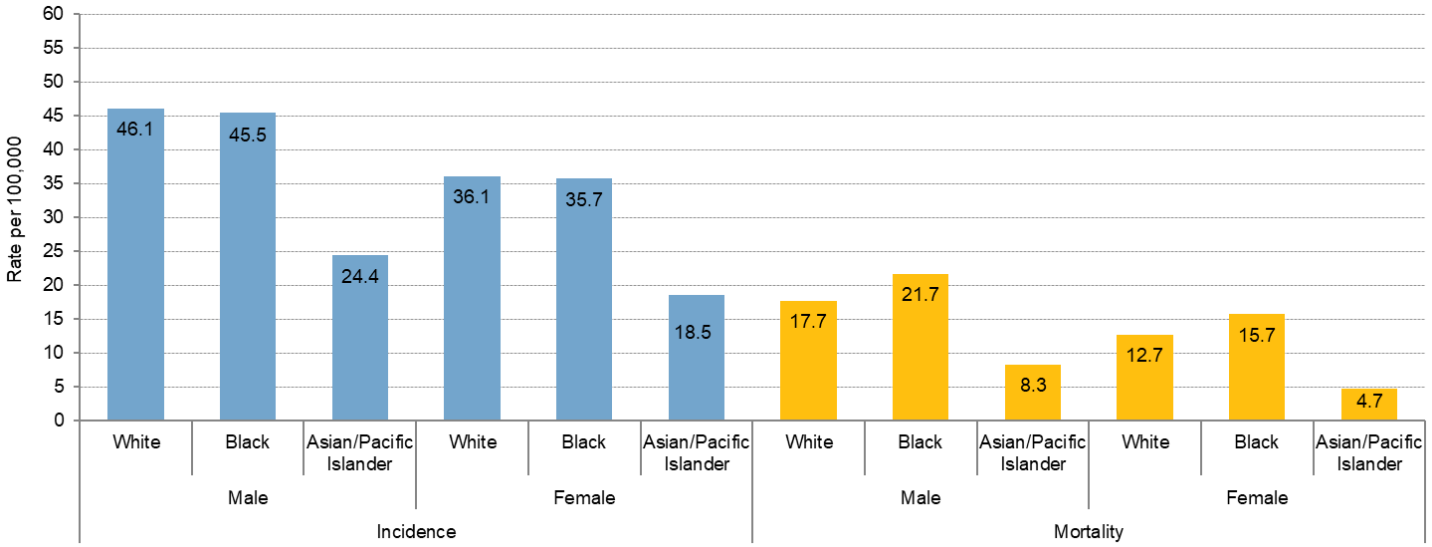
Table 1. Average Annual Number and Age-adjusted Rates of Colon and Rectum Cancer Cases and Deaths per 100,000 Persons by Sex, Race, and Age Group, Ohio and the United States, 2014-2018

		Incidence			Mortality		
		Ohio Cases	Ohio Rate	U.S. Rate	Ohio Deaths	Ohio Rate	U.S. Rate
Total		5,914	41.3	37.8	2,213	15.1	13.7
Sex	Male	3,058	46.9	43.2	1,143	17.9	16.3
	Female	2,857	36.6	33.3	1,070	12.9	11.5
Race	White	5,128	40.7	37.4	1,934	14.9	13.4
	Black	592	39.8	42.6	262	18.2	18.0
	Asian/Pacific Islander	47	21.1	31.3	12	6.3	9.4
Age Group	<65	2,448	20.1	18.9	676	5.3	4.9
	65+	3,466	187.7	168.3	1,537	82.9	74.3

Source: Ohio Cancer Incidence Surveillance System and Bureau of Vital Statistics, Ohio Department of Health, 2021; Surveillance, Epidemiology, and End Results (SEER) Program,

Incidence and Mortality by Sex and Race

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

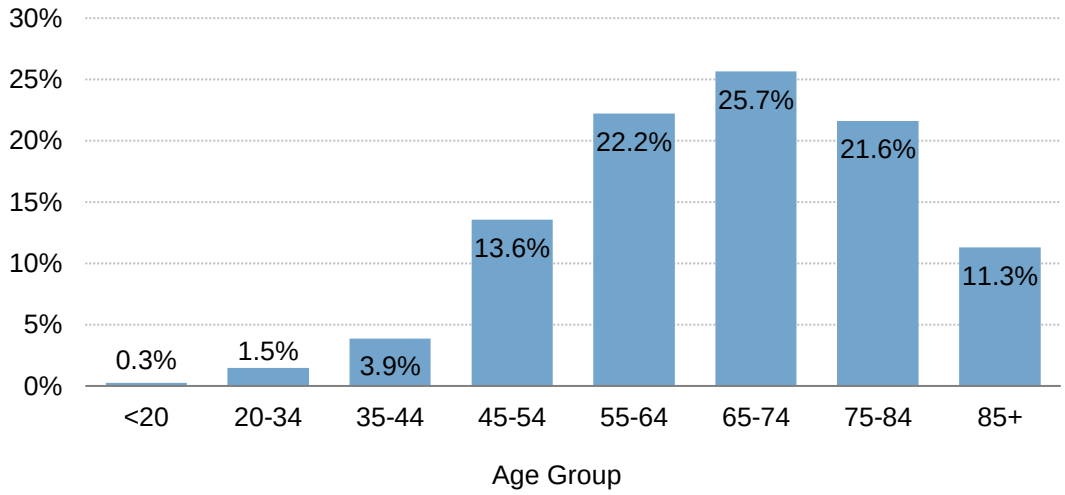


Source: Ohio Cancer Incidence Surveillance System and Bureau of Vital Statistics, Ohio Department of Health, 2021.

White males had the highest colon and rectum cancer incidence rate in Ohio (46.1 per 100,000), while Black males had the highest mortality rate (21.7 per 100,000) based on data from 2014 to 2018 (Figure 1). Asian/Pacific Islander females had the lowest incidence and mortality rates of colon and rectum cancer in Ohio from 2014 to 2018.

Incidence by Age Group

Figure 2. Percent of New Cases of Colon and Rectum Cancer by Age Group, Ohio, 2014-2018



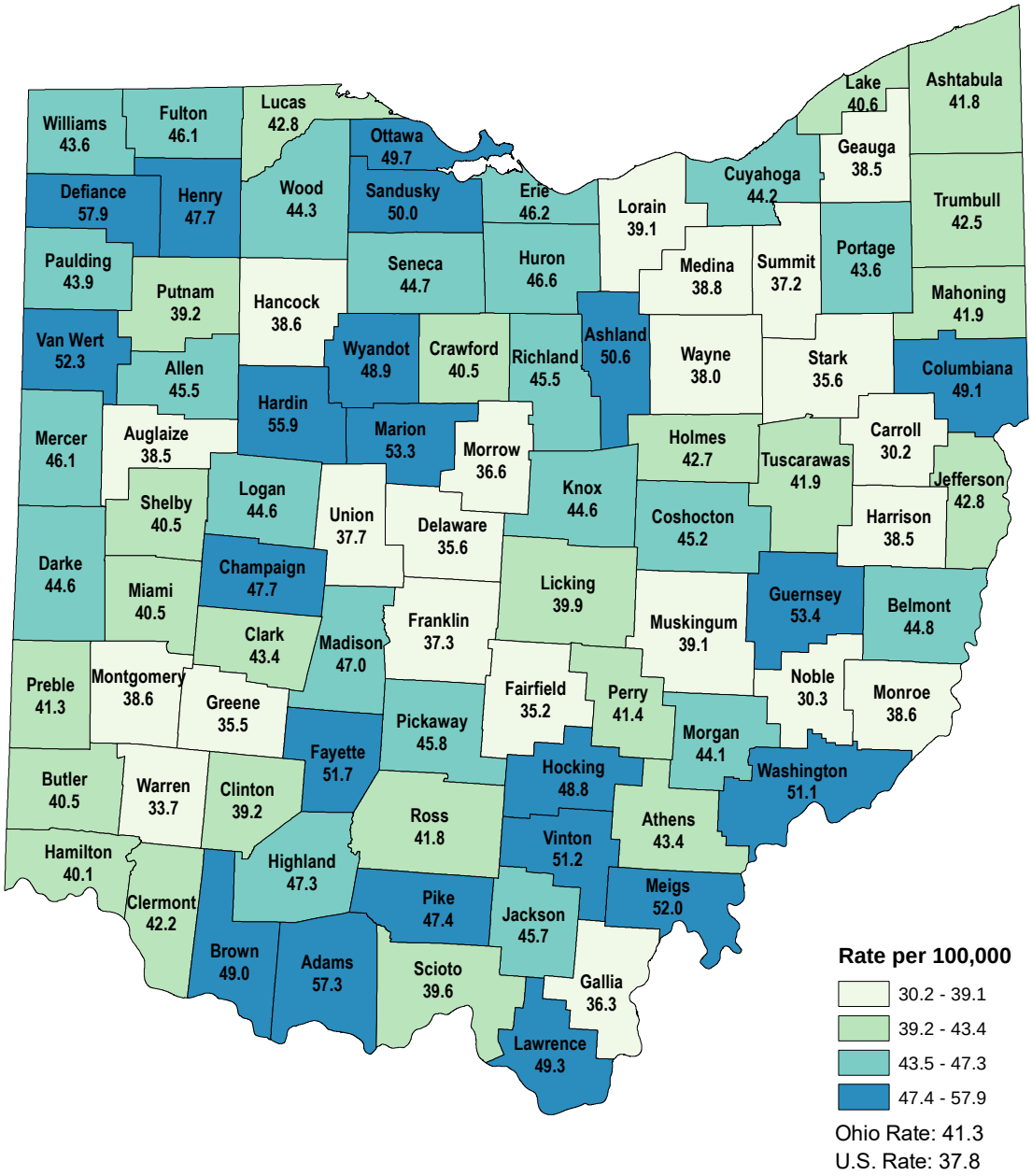
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2021.

As shown in Figure 2, colon and rectum cancers in Ohio were most frequently diagnosed among people ages 65 to 74 (25.7%).

Colon and Rectum Cancer Incidence by County

Figure 3 shows 2014 to 2018 average annual age-adjusted colon and rectum cancer incidence rates by county of residence. Colon and rectum cancer incidence rates in Ohio varied by county from 2014 to 2018. The county with the highest age-adjusted colon and rectum cancer incidence rate (Defiance County, 57.9 per 100,000) had a rate nearly two times higher than the county with the lowest rate (Carroll County, 30.2 per 100,000).

Figure 3. Average Annual Age-adjusted Incidence Rates of Colon and Rectum Cancer per 100,000 Persons by County of Residence, Ohio, 2014-2018

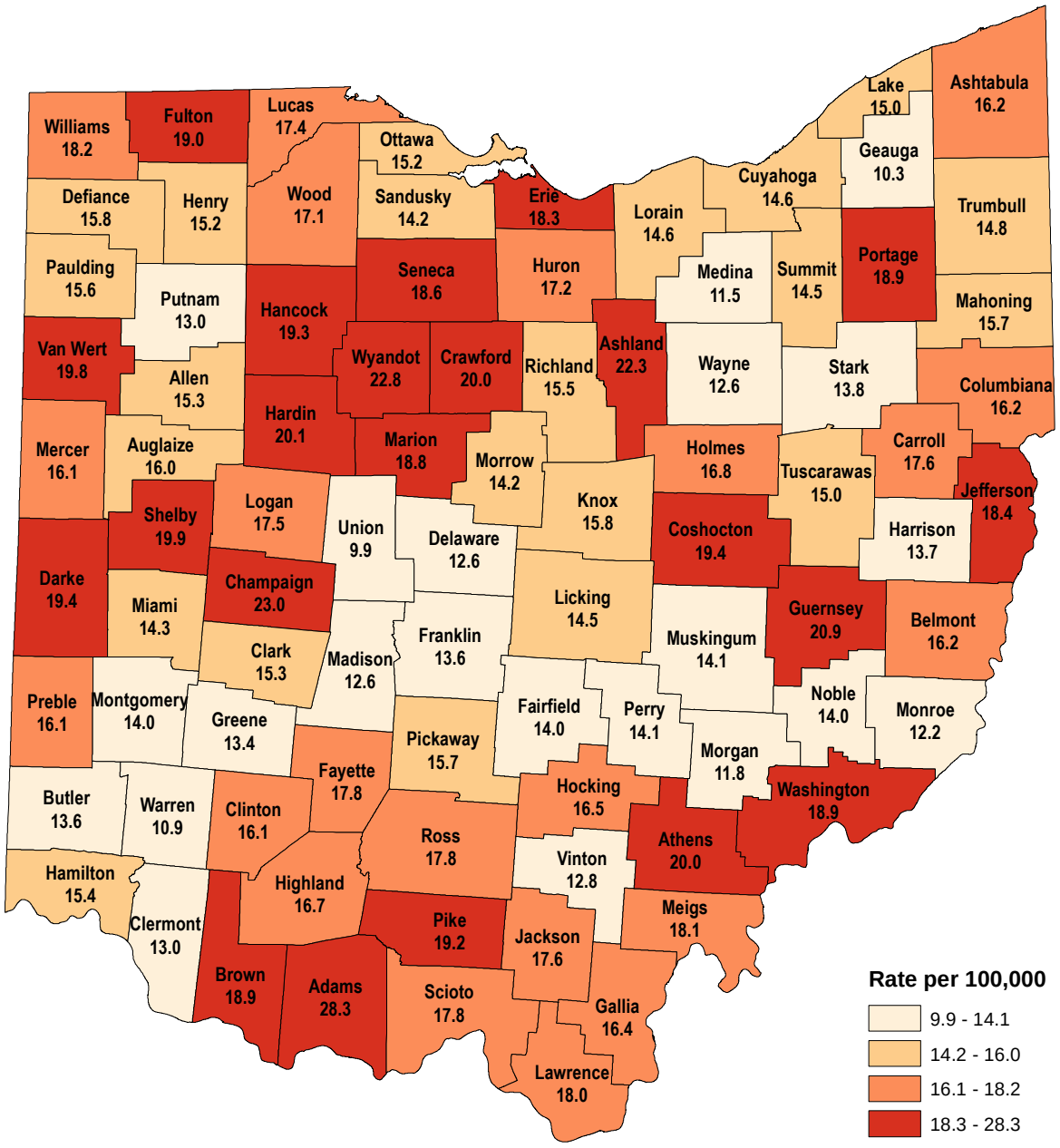


Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2021.
Each category represents approximately 25% of the 88 Ohio counties.

Colon and Rectum Cancer Mortality by County

Figure 4 shows 2014 to 2018 average annual age-adjusted colon and rectum cancer mortality rates by county of residence. Colon and rectum cancer mortality rates in Ohio varied by county from 2014 to 2018. The county with the highest age-adjusted colon and rectum cancer mortality rate (Adams County, 28.3 per 100,000) had a rate nearly three times higher than the county with the lowest rate (Union County, 9.9 per 100,000).

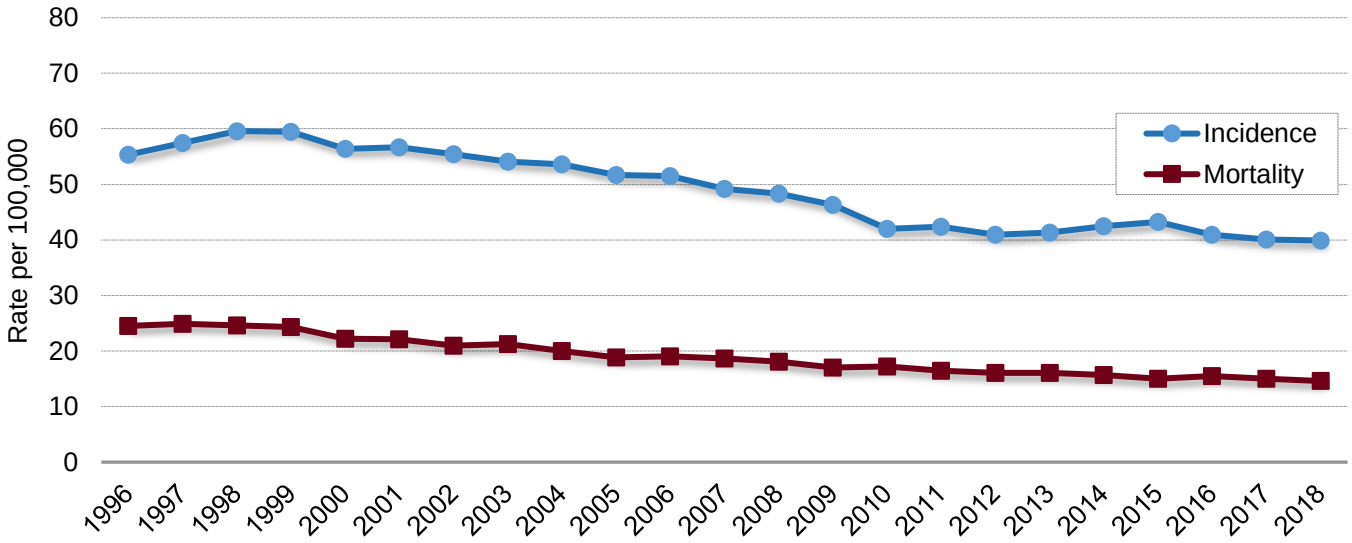
Figure 4. Average Annual Age-adjusted Mortality Rates of Colon and Rectum Cancer per 100,000 Persons by County of Residence, Ohio, 2014-2018



Source: Bureau of Vital Statistics, Ohio Department of Health, 2021.
Each category represents approximately 25% of the 88 Ohio counties.

Trends

Figure 5. Trends in Age-adjusted Incidence and Mortality Rates of Colon and Rectum Cancer per 100,000 Persons, Ohio, 1996-2018



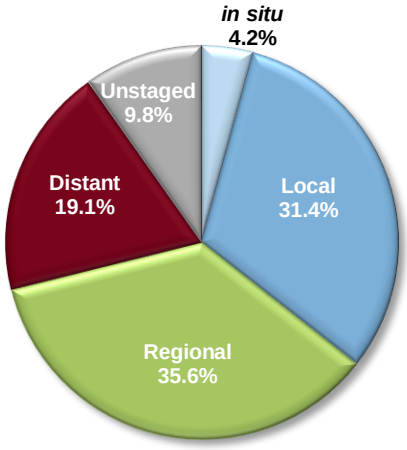
Source: Ohio Cancer Incidence Surveillance System and the Bureau of Vital Statistics, Ohio Department of Health, 2021.

Figure 5 shows incidence and mortality rates of colon and rectum cancer from 1996 through 2018 in Ohio. Colon and rectum cancer incidence rates decreased 28% during this time period but stabilized after 2009. Mortality rates of colon and rectum cancer decreased 40% from 1996 to 2018.

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 6. Proportion of Colon and Rectum Cancer Cases (%) by Stage at Diagnosis, Ohio, 2014-2018



In Ohio in 2014-2018:

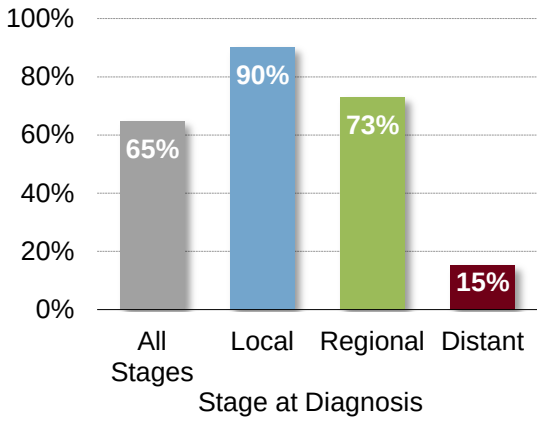
- 4.2% of colon and rectum cancer cases were *in situ*.
- 31.4% were diagnosed at a local stage.
- 35.6% were regional stage.
- 19.1% were distant stage.
- 9.8% were unstaged or had missing stage information (Figure 6).

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 7: Five-Year Relative Survival (%) for Colon and Rectum Cancer by Stage at Diagnosis, Ohio, 2011-2017



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

- 65% for all stages combined.
- 90% among those diagnosed at a local stage.
- 73% at the regional stage.
- Only 15% when the cancer was diagnosed at the latest (distant) stage (Figure 7).

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

Colon and Rectum Cancer by Site

Figure 8. Average Annual Number and Percentage of Colon and Rectum Cancer Cases by Site, Ohio, 2014-2018

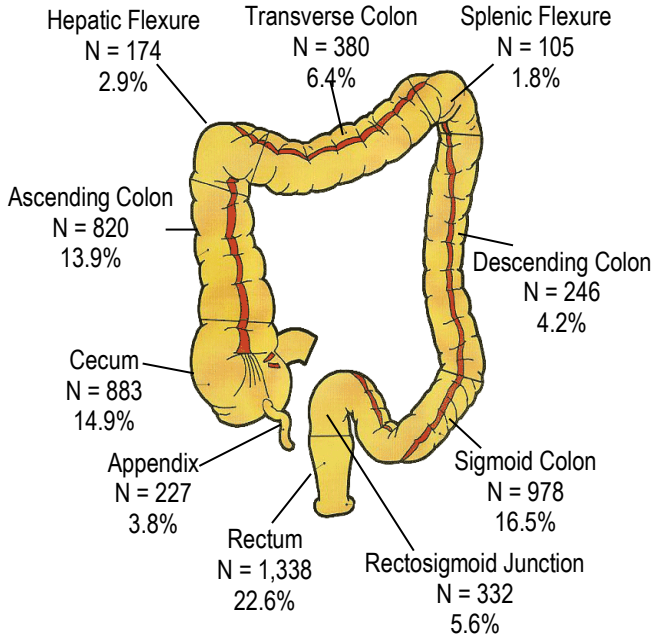


Figure 8 shows the average number and percentage of Ohio colon and rectum cancer cases according to specific anatomic site.

- The highest percentage of cases occurred in the rectum (22.6%) and the sigmoid colon (16.5%).
- Cancers of the cecum (14.9%) and ascending colon (13.9%) were the next highest in occurrence, followed by the transverse colon (6.4%) and rectosigmoid junction (5.6%).
- The remaining specific anatomic sites include: descending colon (4.2%), appendix (3.8%), hepatic flexure (2.9%), and splenic flexure (1.8%).

Photo adapted and used with permission from the Colon & Rectum Surgery Associates, Ltd, Minneapolis, MN, November 2006.
Source: Ohio Cancer Incidence Surveillance System, Ohio Department of Health, 2021.
Colon, not otherwise specified (NOS) and the overlapping lesion of colon accounted for 6.3% and 1.0% of cases each in 2014-2018 and are not shown in Figure 8; therefore, the percentages in the figure do not add up to 100%.

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 colon and rectum cancer.

Age: Risk of colon and rectum cancer increases with age. Younger adults can get it, but it's much more common after age 50.

Sex: Males have a higher incidence rate of colon and rectum cancer, compared with females.

Race: In the United States, Blacks have the highest incidence and mortality rates of colon and rectum cancer.

Ethnicity: Ashkenazi Jews are at increased risk of colon and rectum cancer.

Colon and rectum polyps: Polyps, growths on the inner wall of the colon or rectum, are common in people older than 50. Most polyps are benign, but some polyps (high-risk adenomas) can continue to grow and become cancerous.

Family history of colon and rectum cancer or adenomatous polyps: Having a parent, sibling, or offspring who has had colon and rectum cancer or adenomatous polyps increases risk, especially if more than one has been diagnosed or the relative was diagnosed at a young age.

Genetic alterations: Lynch syndrome, also known as hereditary nonpolyposis colon cancer (HNPCC), is an inherited condition that increases colon and rectum cancer risk. Familial adenomatous polyposis (FAP), caused by a change in a gene called adenomatous polyposis coli (APC), is a rare, inherited condition in which hundreds of polyps form in the colon and rectum, which increases colon and rectum cancer risk.

Personal history of certain cancers or adenomatous polyps: A person who has already had colon and rectum cancer may develop colon and rectum cancer a second time. Also, women with a history of cancer of the ovary are at higher risk. A person with a history of adenomatous polyps has an increased risk of colon and rectum cancer, especially if the polyps were numerous or large.

Ulcerative colitis or Crohn's disease: A person who has had a condition that causes inflammatory bowel disease (such as ulcerative colitis or Crohn's disease) for many years is at increased risk of developing colon and rectum cancer.

Excessive alcohol use: Having three or more drinks of alcohol per day increases risk.

Obesity: Obesity is linked to an increased risk.

Smoking: Cigarette smoking increases the risk of colon and rectum cancer.

Colon and Rectum Cancer Signs and Symptoms

Early stage colon and rectum cancer usually does not have any signs and symptoms. Signs and symptoms of advanced disease may include the following:

- Change in bowel habits such as diarrhea, constipation, or narrowing of the stool that lasts for more than a few days.
- Rectal bleeding, blood in the stool, or blood in the toilet after having a bowel movement.
- Dark or black stools.
- Feeling that the bowel does not empty completely.
- Cramping or steady lower abdominal (stomach area) pain.
- Weakness and excessive fatigue.
- Decreased appetite and unintentional weight loss.

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

Screening can prevent colon and rectum cancer through the detection and removal of precancerous growths, as well as detect cancer at an early stage, when treatment is usually less extensive and more successful. Regular adherence to either of the two types of testing (stool or visual exams) results in a similar reduction in premature death from colon and rectum cancer.

The American Cancer Society (ACS) and the U.S. Preventive Services Task Force (USPSTF) recommend that individuals at average risk for colon and rectum cancer begin screening at age 45 and continue through age 75, with more individualized decision making from ages 76 to 85 based on health status/life expectancy, patient preferences, and prior screening history. Recommended screenings include:

Visual Exams

- Colonoscopy every 10 years.
- Computed tomography (CT) colonography (virtual colonoscopy) every five years.
- Flexible sigmoidoscopy every five years.

Stool-based Tests

- Fecal immunochemical test (FIT) every year.
- Guaiac-based fecal occult blood test (gFOBT) every year.
- Multi-targeted stool DNA test (MT-sDNA) every three years.

COLON AND RECTUM CANCER SCREENING TESTS

Colonoscopy: A colonoscope, a slender, flexible, hollow, lighted tube about the thickness of a finger, is inserted through the rectum and into the colon to visually examine the inside of the entire colon. If a polyp is found, the physician may remove it by laser or by passing a wire loop through the colonoscope to cut the polyp from the wall of the colon using an electric current.

Computed Tomography (CT) Colonography (Also referred to as Virtual Colonoscopy): A CT scan of the colon and rectum is an X-ray test that produces detailed cross-sectional images to allow a doctor to look for polyps or cancer. If polyps or other suspicious areas are detected, this test should be followed up by a colonoscopy.

Flexible Sigmoidoscopy: A sigmoidoscope, an instrument similar to a colonoscope but shorter, is inserted through the rectum and into the colon to view the inside of the rectum and the lower portion of the colon. If a polyp is present, the patient is referred for a colonoscopy so that the colon can be examined further.

Fecal Immunochemical Test (FIT): This test, also called an immunochemical fecal occult (hidden) blood test (iFOBT), is used to detect hidden blood in the stool. This test reacts to part of the hemoglobin molecule, which is found on red blood cells. If results are positive, a colonoscopy is required to investigate further.

Guaiac-based Fecal Occult Blood Test (gFOBT): The gFOBT detects occult blood in the stool through a chemical reaction, in a different way than a FIT. But like the FIT, this test can't tell if the blood is from the colon or from other parts of the digestive tract (such as the stomach). The ACS recommends the more modern, highly sensitive versions of this test for screening. This test must be done every year, unlike some other tests (such as the visual tests described above). This test is done with a kit that you can use in the privacy of your own home that allows you to check more than one stool sample. A gFOBT done during a digital rectal exam in the doctor's office (which only checks one stool sample) is not enough for proper screening, as it is likely to miss most colon and rectum cancers. If the test results are positive (that is, if hidden blood is detected), a colonoscopy will be needed to find the reason for the bleeding.

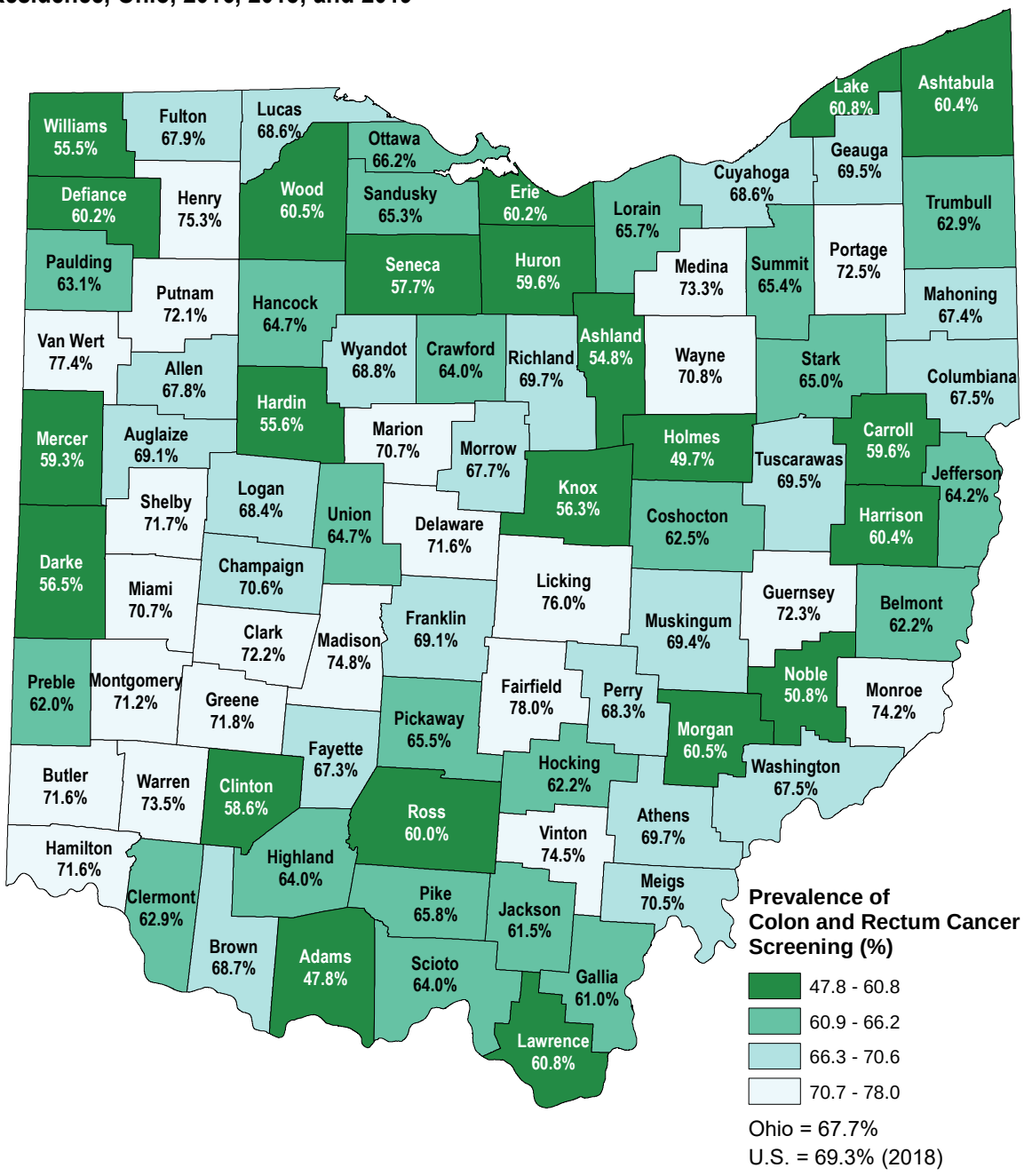
Multi-targeted stool DNA (MT-sDNA): This test is referred to as "multi-targeted" because it not only detects blood in the stool, but also certain genetic mutations in the DNA of cells that are shed into the stool by large adenomas and colon and rectum cancers. Patients with a positive test result are referred for a colonoscopy. Cologuard®, the only MT-sDNA test currently available, tests for both DNA changes and blood in the stool. It has been shown to detect cancer and precancerous lesions more often than FIT, but also results in more false-positive tests, which can lead to unnecessary colonoscopies. In addition, because it is new, the benefits and harms of this test are less well established than for other tests. Although it is recognized as an acceptable screening option by the USPSTF and is covered by Medicare, some private insurance companies may not cover this test.

Source: ACS http://www.cancer.org/healthy/findcancerearly/cancerscreeningguidelines/american-cancer-society-guidelines-for-the-early-detection-of-cancer; USPSTF http://www.uspreventiveservicestaskforce.org as of March 2021.

Colon and Rectum Cancer Screening by County

Figure 9 shows the percentage of Ohio adults ages 50 to 75 who met colon and rectum cancer screening guidelines by county, based on 2016, 2018, and 2019 combined estimates from the Ohio Behavioral Risk Factor Surveillance System (BRFSS). Ohio counties with the lowest colon and rectum screening rates (darkest color) tended to be mostly rural. The county with the highest colon and rectum cancer screening rate (Fairfield County, 78.0%) had a rate 63% higher than the county with the lowest screening rate (Adams County, 47.8%).

Figure 9. Prevalence of Meeting Colon and Rectum Cancer Screening Guidelines* among Adults Ages 50-75 by County of Residence, Ohio, 2016, 2018, and 2019



Source: 2016, 2018, and 2019 Ohio Behavioral Risk Factor Surveillance System, Ohio Department of Health, 2021; 2018 Behavioral Risk Factor Surveillance System, Centers for Disease Control and Prevention, 2021.
* Colon and rectum cancer screening estimates in Figure 9 are based on the following guidelines: high-sensitivity fecal occult blood test (FOBT) every year; or sigmoidoscopy every five years with FOBT every three years; or colonoscopy every 10 years.

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.

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; 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).

Incidence: The number of cases diagnosed during a specified time period (e.g., 2014 to 2018). Colon and rectum cancer cases were defined by the International Classification of Diseases for Oncology, Third Edition (ICD-O-3), and categorized by site codes C180-C189, C199, C209, and C260, 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.

Mortality: The number of deaths during a specified time period (e.g., 2014 to 2018). Colon and rectum cancer deaths were defined as follows: International Statistical Classification of Diseases and Related Health Problems, Tenth Edition (ICD-10), codes C180-C209 and C260 (1999+) and ICD 9 codes 153-154.1 and 159.0 for 1996-1998.

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. Relative survival does not distinguish between patients who have no evidence of cancer and those who have relapsed or are still in treatment.

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 2. Colon and Rectum Cancer: Average Annual Number and Age-adjusted Rates of Cases and Deaths per 100,000 Persons by County of Residence, Ohio and the United States, 2014-2018

	Incidence		Mortality	
	Cases	Rate	Deaths	Rate
Ohio	**5,914**	**41.3**	**2,213**	**15.1**
U.S.		**37.8**		**13.7**
Adams	20	57.3	10	28.3
Allen	57	45.5	20	15.3
Ashland	36	50.6	16	22.3
Ashtabula	56	41.8	22	16.2
Athens	27	43.4	12	20.0
Auglaize	24	38.5	10	16.0
Belmont	45	44.8	18	16.2
Brown	29	49.0	11	18.9
Butler	169	40.5	57	13.6
Carroll	13	30.2	7	17.6
Champaign	23	47.7	11	23.0
Clark	78	43.4	28	15.3
Clermont	103	42.2	32	13.0
Clinton	20	39.2	9	16.1
Columbiana	67	49.1	24	16.2
Coshocton	23	45.2	10	19.4
Crawford	24	40.5	13	20.0
Cuyahoga	723	44.2	250	14.6
Darke	33	44.6	14	19.4
Defiance	27	57.9	8	15.8
Delaware	73	35.6	25	12.6
Erie	54	46.2	21	18.3
Fairfield	62	35.2	24	14.0
Fayette	18	51.7	7	17.8
Franklin	456	37.3	162	13.6
Fulton	24	46.1	11	19.0
Gallia	14	36.3	7	16.4
Geauga	50	38.5	14	10.3
Greene	71	35.5	28	13.4
Guernsey	28	53.4	12	20.9
Hamilton	376	40.1	145	15.4
Hancock	37	38.6	18	19.3
Hardin	20	55.9	8	20.1
Harrison	9	38.5	3	13.7
Henry	17	47.7	6	15.2
Highland	26	47.3	9	16.7
Hocking	18	48.8	6	16.5
Holmes	19	42.7	7	16.8
Huron	32	46.6	12	17.2
Jackson	18	45.7	7	17.6
Jefferson	41	42.8	19	18.4
Knox	34	44.6	12	15.8
Lake	127	40.6	48	15.0
Lawrence	38	49.3	15	18.0
Licking	81	39.9	30	14.5
Logan	26	44.6	11	17.5
Lorain	156	39.1	59	14.6
Lucas	221	42.8	91	17.4
Madison	24	47.0	6	12.6
Mahoning	143	41.9	55	15.7
Marion	45	53.3	16	18.8
Medina	88	38.8	26	11.5
Meigs	17	52.0	6	18.1
Mercer	23	46.1	9	16.1
Miami	55	40.5	20	14.3
Monroe	9	38.6	2	12.2
Montgomery	260	38.6	99	14.0
Morgan	10	44.1	3	11.8
Morrow	17	36.6	7	14.2
Muskingum	42	39.1	16	14.1
Noble	8	30.3	4	14.0
Ottawa	33	49.7	11	15.2
Paulding	11	43.9	4	15.6
Perry	18	41.4	6	14.1
Pickaway	31	45.8	11	15.7
Pike	17	47.4	7	19.2
Portage	83	43.6	35	18.9
Preble	23	41.3	9	16.1
Putnam	17	39.2	6	13.0
Richland	73	45.5	26	15.5
Ross	40	41.8	16	17.8
Sandusky	39	50.0	12	14.2
Scioto	39	39.6	18	17.8
Seneca	33	44.7	15	18.6
Shelby	24	40.5	12	19.9
Stark	180	35.6	71	13.8
Summit	262	37.2	107	14.5
Trumbull	125	42.5	45	14.8
Tuscarawas	52	41.9	20	15.0
Union	21	37.7	5	9.9
Van Wert	20	52.3	8	19.8
Vinton	8	51.2	2	12.8
Warren	85	33.7	27	10.9
Washington	43	51.1	17	18.9
Wayne	55	38.0	19	12.6
Williams	22	43.6	9	18.2
Wood	63	44.3	25	17.1
Wyandot	14	48.9	7	22.8

Source: Ohio Cancer Incidence Surveillance System and Bureau of Vital Statistics, Ohio Department of Health, 2021; Surveillance, Epidemiology, and End Results (SEER) Program, National Cancer Institute, 2021.

Sources of Data and Additional Information

Ohio Cancer Incidence Surveillance System:
https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/ohio-cancer-incidence-surveillance-system/welcome-to

Ohio Public Health Data Warehouse:
http://publicapps.odh.ohio.gov/EDW/DataCatalog

National Cancer Institute:
https://www.cancer.gov/types/colorectal

American Cancer Society:
https://www.cancer.org/cancer/colon-rectal-cancer.html

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Acknowledgements

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Sincere appreciation to the OCISS, cancer registrars, medical records technicians, and other health professionals who improve the collection and quality of cancer data in Ohio.

Suggested Citation

Colon and Rectum Cancer in Ohio 2021. Ohio Cancer Incidence Surveillance System, Ohio Department of Health, October 2021.

Ohio Department of Health

The OCISS is supported in part by the State of Ohio and the Centers for Disease Control and Prevention (CDC), National Program of Cancer Registries, cooperative agreement number NU58DP006284. The contents are the sole responsibility of the authors and do not necessarily represent the official views of the CDC.