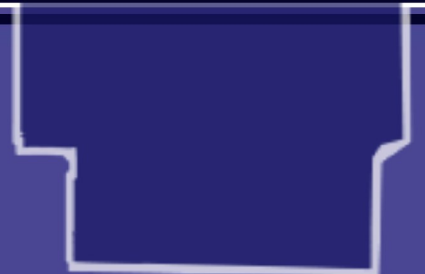




CANCER IN SUMMIT COUNTY 2015





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EXECUTIVE SUMMARY

The following are highlights on cancer incidence and mortality in Summit County from 2007 to 2011. These data were obtained from the Ohio Cancer Incidence Surveillance System.

INVASIVE CANCER IN SUMMIT COUNTY

- For every 100,000 residents, there were approximately 439 new cases of cancer (all types) each year
- The mortality rate for all types of cancer was 186 per 100,000 each year
- The average cancer incidence rate was below the state and national average rates
- The average cancer mortality rate was below the state average rate and above the national average rate

SUBSTANTIAL RACIAL DISPARITIES

- **ALL TYPES OF CANCER:** Black females had a lower incidence rate than white females; yet, black females experienced a higher mortality rate than white females. Black males had incidence and mortality rates that were higher than those observed in white males
- **PROSTATE CANCER:** Black males had higher incidence and mortality rates, but lower rates of prostate screening than white males
- **BREAST CANCER:** Black women had higher mammogram rates and lower incidence rates than white women; yet, black women had a higher breast cancer mortality rate
- **LUNG & BRONCHUS CANCER:** Blacks had higher incidence and mortality rates
- **COLORECTAL CANCER:** Incidence and mortality rates were higher among blacks. There was a lower screening rate observed among blacks when compared to whites
- **BLADDER CANCER:** The incidence rate among whites was twice as high as blacks; yet, both groups had similar mortality rates
- **UTERINE:** Higher incidence rate among whites, but blacks and whites both had similar mortality rates
- **MELANOMA:** Whites had higher incidence and mortality rates than blacks
- **TOBACCO USE:** The rate of use is higher among blacks than whites

EXECUTIVE SUMMARY

SUBSTANTIAL INCOME AND EDUCATION DISPARITIES

- Screening rates for breast and prostate cancer were lowest among those with lower incomes and levels of education
- Tobacco use was higher among residents with lower income and levels of education

SUBSTANTIAL GEOGRAPHICAL DISPARITIES

- For all cancers combined, the highest incidence rates were observed in the Sagamore Hills/Northfield/Macedonia, Barberton, Franklin, Akron Southeast and Akron Southwest areas. The lowest rates were observed in the Richfield/Boston, Hudson, Copley/Bath/Fairlawn, Cuyahoga Falls, Stow/Silver Lake and Akron South areas
- The highest mortality rates for all types of cancer were observed in the Akron North, Akron Southeast and Akron Southwest clusters. The lowest mortality rates occurred in the Richfield/Boston, Hudson and Copley/Bath/Fairlawn clusters

CANCER BASICS

Cancer has been the leading cause of death in the United States (U.S.) since the early 1900s and currently ranks as second only to ischemic heart disease [1.2]. In 2014, it was estimated that more than 14 million Americans had been diagnosed with cancer [3].

WHAT IS CANCER?

Cancer is a general term used to describe a collection of more than 100 diseases, each with their own manifestation. Although the types of cancer can behave differently and have varying health effects, the mechanism by which they begin is the same. **All cancers begin when abnormal cells grow out of control** [4]. Abnormal cells result from changes to cellular DNA (deoxyribonucleic acid). Growth, spread, and response to treatment of cancer cells varies between the different types.[‡]

Cancers that do not spread beyond their origin are referred to as non-invasive. A cancer that spreads beyond its origin is termed invasive. This document reports on invasive cancers (see Data Table 17—at the end of this report).

WHO IS AT RISK FOR CANCER?

The American Cancer Society (ACS) estimates that more than one in three women in the U.S. will develop cancer at some point during their lifetime. Men in the U.S. have higher risk, with nearly one in two developing cancer during their lifetime [5].

These estimates may seem high, but it is helpful to remember that this is lifetime risk (from birth to death). In an average lifetime, the risk for developing certain cancers differs by group. An example of this can be seen in **Table 1**, which shows average risk of select cancers by gender during the lifetime.

‡For the purposes of this report, all types of invasive cancer have been designated into 23 different primary sites/types as defined by the Surveillance, Epidemiology, and End Results (SEER) Program.

Table 1—Lifetime Risk of Cancer in the U.S., 2009-2011^{1,2,3}

Primary Site/Type	Gender	Lifetime Risk of Developing Cancer
All Invasive Sites/Types	Male	1 in 2 (43.3%)
	Female	1 in 3 (37.8%)
Breast	Female	1 in 8 (12.3%)
Colon & Rectum	Male	1 in 21 (4.8%)
	Female	1 in 22 (4.5%)
Lung & Bronchus	Male	1 in 13 (7.4%)
	Female	1 in 16 (6.8%)
Melanoma*	Male	1 in 39 (2.6%)
	Female	1 in 62 (1.6%)
Non-Hodgkin's Lymphoma	Male	1 in 42 (2.4%)
	Female	1 in 52 (1.9%)
Prostate	Male	1 in 7 (15.0%)
Urinary Bladder	Male	1 in 26 (3.8%)
	Female	1 in 88 (1.1%)
Uterine Corpus and NOS**	Female	1 in 37 (2.7%)

¹ Source: DevCan: Probability of Developing or Dying of Cancer Software, Version 6.7.3; Statistical Research and Applications Branch, National Cancer Institute, 2014.

² Based on risk for those free of cancer from birth and living through to age 85 and cancers diagnosed between 2009 and 2011

³ These numbers have been rounded to the nearest whole person.

* Excludes basal and squamous cell skin cancer and *in situ* carcinomas except urinary bladder.

** Not otherwise specified

In women, the lifetime risk of breast cancer is higher than melanoma and in men, the risk for prostate cancer is higher than bladder cancer.

CANCER BASICS

WHAT CAUSES CANCER?

The exact cause of most cancers is not fully understood. There are, however, a number of exposures, called **risk factors**, that contribute to one’s chance of developing cancer. Some risk factors, such as genetics, cannot be controlled. Other risk factors can be controlled by altering behavior or reducing exposure to cancer-causing substances known as **carcinogens**. An example of a carcinogen is tobacco smoke.

High levels of exposure to carcinogens or other risk factors does not guarantee that cancer will develop. Conversely, those with extremely low levels of exposure to risk factors may still develop cancer. This indicates that there is a great deal to be understood about the exact causes and mechanisms of cancer and is why cancer research continues to be a priority.

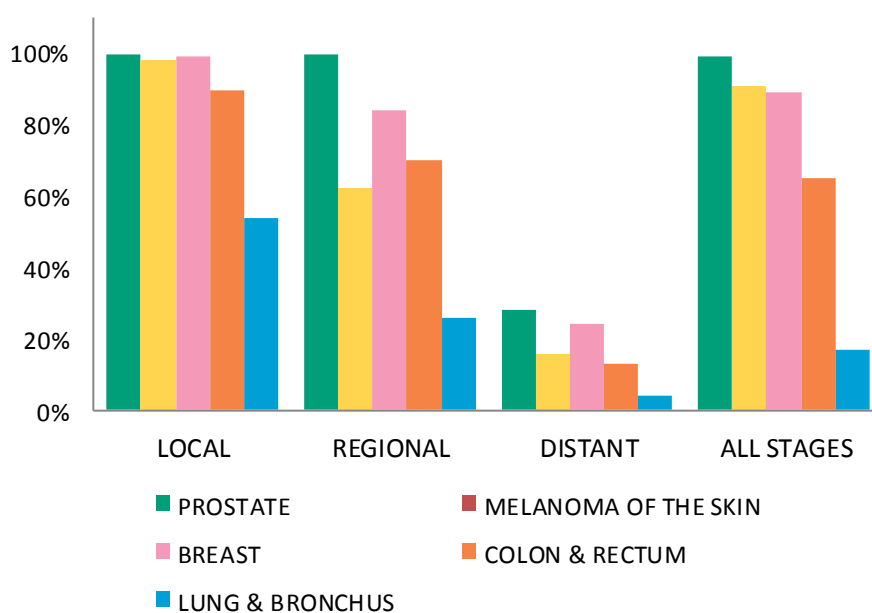
Despite limited understanding on the exact cause of most cancers, it is known that older age is a strong risk factor. **Nearly 80% of cancers occur among those age 55 and older** [6]. While age does not cause cancer, cancer is more common in older individuals because cancers can take a long time to develop. The longer you live, the more opportunity cancer has to develop.

HOW IS CANCER DETECTED?

For many types of cancer, the chances for survival increase the sooner the cancer is diagnosed and treated. The earlier the diagnosis, the less likely it is that the cancer will have spread beyond its origin.

Figure 1 shows the chances for survival depending on the **stage** at which a certain type of cancer was detected. With localized cancer (cancer confined to original organ/tissue) the five-year survival is high compared to distant stages. This helps to emphasize the importance of early cancer screening.

Figure 1—Five-Year Survival Probabilities in the U.S. by Select Cancer Site/Type and SEER Summary Stage at Diagnosis, 2007-2011¹



What are the stages of Cancer?*

in situ - Cancer has not spread to surrounding tissues or cancer is not invasive

Localized - Cancer confined to original organ/tissue

Regional - Cancer has moved beyond original organ/tissue to surrounding organs/tissues and regional lymph nodes

Distant - Cancer has moved beyond original organs/tissues and lymph nodes

Unknown - No information available to determine stage

*Stage based on SEER Program Summary Stage guidelines

1. Source: Surveillance, Epidemiology and End Results (SEER) Program, *SEER Cancer Statistics Review 1973-2011*, National Cancer Institute, 2012

UNDERSTANDING THE DATA

The goal of this report is to explain the burden of cancer in residents of Summit County, Ohio. This report is meant to act as an informational tool so that community members and policy makers can be informed of and understand areas that may require special attention.

WHERE DO THE DATA COME FROM?

This document provides information on all cancers diagnosed and all cancer deaths that occurred in Summit County residents between 2007 and 2011. Data from the Ohio Cancer Incidence Surveillance System (OCISS) and death records from the State of Ohio's Bureau of Vital Statistics were analyzed, compared, and standardized to data from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) Program. SEER contains the highest quality and most complete national data for the years included in this report. See the **Data Sources** section of this document for further information.

TERMINOLOGY

The following sections can be used to help the reader gain a better understanding of terms that are used in this document to describe cancer burden. Terms such as **incidence rate**, **mortality rate**, and **age-adjustment** are used to make comparisons of diseases in the population.

WHAT IS A CANCER INCIDENCE RATE?

A cancer incidence rate represents the number of

new cases of cancer diagnosed in a period of time. For example, if there were 100,000 people who lived in a city and 1,000 of them developed cancer last year, the incidence rate would be 1,000 cases of cancer per 100,000 residents last year (**Formula 1**).

WHAT IS A CANCER MORTALITY RATE?

A cancer mortality rate is generally expressed as the number of **deaths** from cancer per size of the population over a certain period of time. For example, if there were 950 deaths from cancer in a population of 100,000 people in 2010 the formula would be 950/100,000 in 2010 or in simpler terms the mortality rate = 9.5 per 1,000 people in 2010.

WHAT IS AGE-ADJUSTMENT?

Age-adjustment is a statistical technique used to make populations with different age structures more comparable. For example, imagine you have a city that has more elderly residents than another city. Knowing that 80% of cancer occurs in older adults, it can be expected that this city with the older population will have a higher cancer incidence rate. However, this may only be due to the city having more older adults. In this case, we cannot compare the two cities because they differ in age structure. To account for these differences the data is standardized to age groups in both populations, then rates can be calculated*. This adjustment removes the influence of differences in age structure.

Formula 1: Incidence Rate

An Incident Rate of 1,000 in a city of 100,000 residents:

$$\frac{1,000 \text{ new cases in one year}}{100,000 \text{ residents}} = \frac{1 \text{ new case in one year}}{100 \text{ residents}}$$

*The weights assigned are based on U.S. 2000 Census numbers which is the standard when doing age-adjustment

SUMMIT COUNTY DEMOGRAPHICS

Figure 2—Select Demographic Characteristics of Summit County Residents, 2010¹

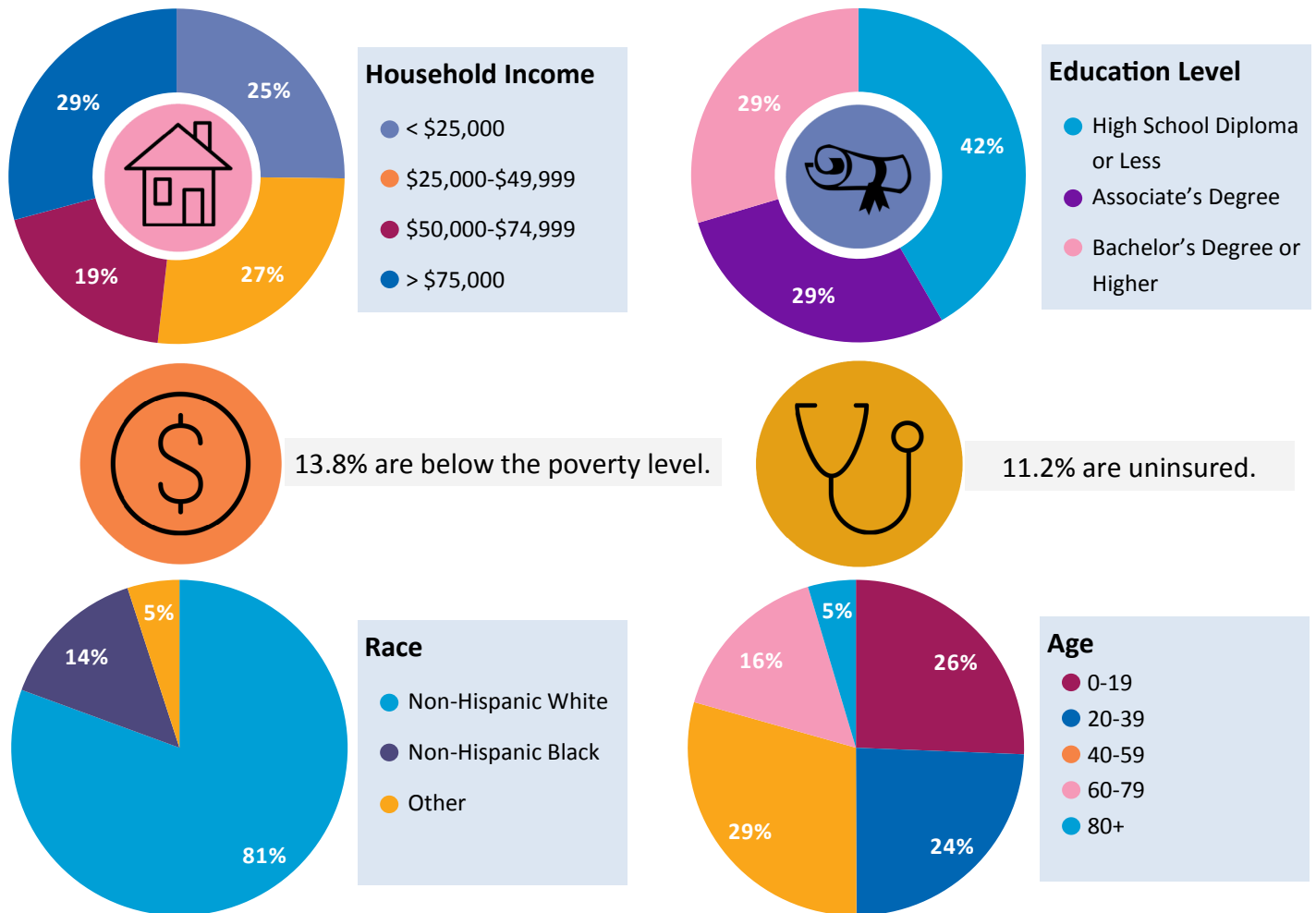


Figure 2 shows the socio-demographic characteristics of Summit County residents. There are over 540,000 residents in Summit County. Approximately 50% are male and 50% are under age 40. The majority (81%) of residents are non-Hispanic white with non-Hispanic black residents comprising less than 15%. More than half (58%) of residents

have more than a high school education. Fourteen percent of residents live below the federal poverty level. According to the 2010 U.S. Census, roughly one in 10 residents do not have health insurance; however, the number of people who are uninsured is expected to decrease over the next decade due to the Affordable Care Act.

1. Source: U.S. 2010 Decennial Census SF1 File

ALL CANCERS COMBINED

In Summit County, the incidence rate of invasive cancer is relatively low compared to the rest of Ohio and the United States. Between 2007 and 2011 Summit County had at least 20 fewer cases of cancer per 100,000 people compared to the rest of Ohio and the U.S. (**Table 2**). Despite the lower incidence, county residents have a greater mortality rate from cancer compared to the U.S. rate.

Table 2—Average Annual Age-Adjusted Rate for All Invasive Cancers in Summit County, Ohio, and the U.S., 2007-2011^{1,2}

Summit County	Ohio	U.S.
New Cases Per 100,000 People		
439.2	465.1	463.0
Deaths Per 100,000 People		
186.7	191.9	176.4

¹ Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; SEER Program, *SEER Cancer Statistics Review 1973-2011*, National Cancer Institute, 2012; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

INCIDENCE

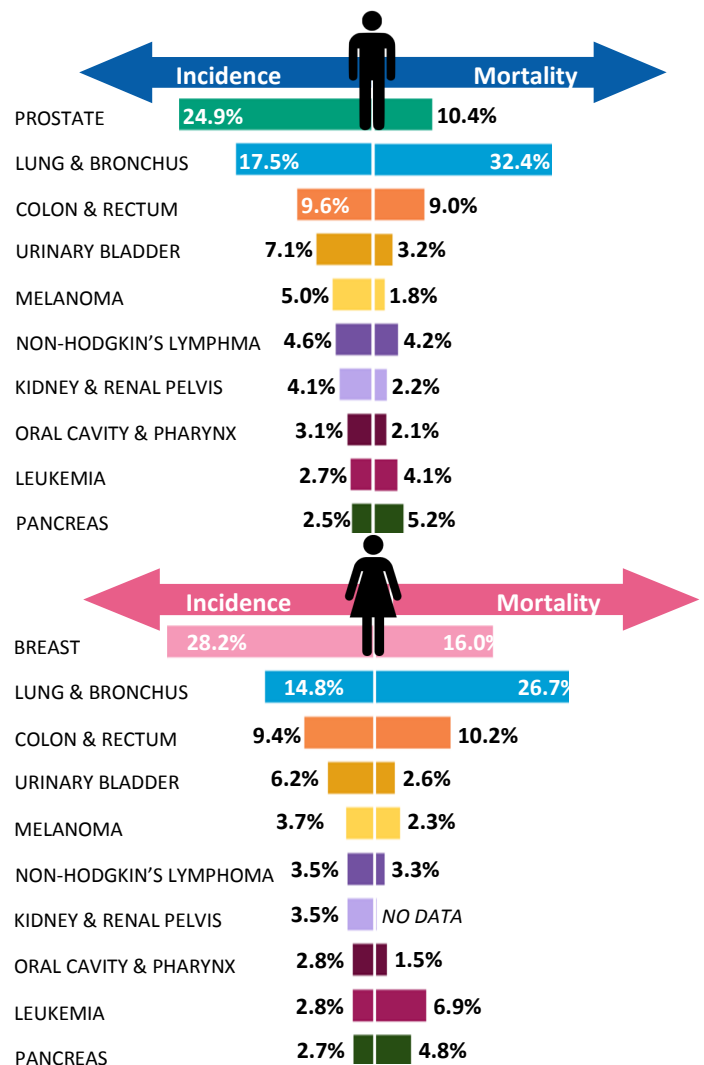
The risk for being diagnosed with certain cancers varies by type of cancer for both males and females. **Table 3** provides the incidence rates for 23 primary sites/types in male and female residents of Summit County in comparison with Ohio and the U.S.. This data shows that males have a higher incidence of invasive cancer when compared to females and excluding gender-specific cancers. The only invasive cancer that has a higher incidence rate in females is thyroid cancer.

MORTALITY

Approximately 187 per 100,000 Summit County residents die from cancer each year. While this is

slightly better than the State of Ohio, it is worse when compared to the U.S. **Table 4** shows the mortality rate for 21 types of cancer for males and females in Summit County. More deaths occur from lung & bronchus cancers than any other type of cancer for both males and females. **Figure 3** shows the leading types of invasive cancer incidence and mortality in males and females. One in four cancers diagnosed in males is prostate cancer while 28% of cancers diagnosed in females are breast cancer.

Figure 3—Leading Percentages of Incident Invasive Cancer Cases and Cancer Deaths in Males and Females in Summit County, 2007-2011¹



1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2012; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

ALL CANCERS COMBINED

Table 3—Average Annual Number of Incident Invasive Cancer Cases and Age-Adjusted Incidence Rate per 100,000 by Cancer Site/Type and Gender in Summit County, Ohio, and the U.S., 2007-2011^{1,2,3AV}

Primary Site/Type	Total			Male			Female					
	Summit County Cases	Summit County Rate	Ohio Rate	U.S. Rate	Summit County Cases	Summit County Rate	Ohio Rate	U.S. Rate	Summit County Cases	Summit County Rate	Ohio Rate	U.S. Rate
	All Invasive Sites	2,837.0	439.2	465.1	463.0	1,447.4	504.9	534.3	535.9	1,389.8	394.2	418.5
Brain & Other CNS*	43.6	7.1	7.0	6.5	20.0	7.3	8.0	7.7	23.6	7.1	6.0	5.4
Breast	-	-	-	-	-	-	-	-	392.0	113.7	119.1	123.8
Cervix	-	-	-	-	-	-	-	-	15.4	5.3	7.6	7.9
Colon & Rectum	269.2	41.2	46.2	45.0	139.2	49.4	53.5	52.2	130.0	35.1	40.5	39.3
Esophagus	34.6	5.2	5.4	4.4	27.6	9.3	9.7	7.7	7.0	2.0	2.0	1.8
Hodgkin's Lymphoma	10.8	2.0	2.9	2.8	6.0	2.3	3.2	3.2	4.8	1.7	2.6	2.4
Kidney & Renal Pelvis	97.6	15.1	15.7	15.3	58.8	20.1	20.8	21.0	38.8	11.0	11.6	10.6
Larynx	21.2	3.2	4.3	3.4	14.4	4.6	7.3	6.0	6.8	2.0	1.8	1.3
Leukemia	72.2	11.6	11.1	12.8	39.4	14.3	14.2	16.3	32.8	9.3	8.8	10.0
Liver & IBD**	37.2	5.5	5.4	7.7	28.0	9.1	8.5	11.9	9.2	2.5	2.8	4.0
Lung & Bronchus	458.4	70.1	72.8	61.4	253.4	89.2	90.5	74.3	205.0	56.0	59.8	51.9
Melanoma of the Skin	121.4	19.6	19.1	21.1	73.0	26.1	22.8	27.4	48.4	15.0	16.9	16.7
Multiple Myeloma	33.6	5.1	5.4	5.9	17.4	6.1	6.6	7.5	16.2	4.3	4.4	4.8
Non-Hodgkin Lymphoma	118.2	18.7	18.8	19.7	66.2	23.7	22.6	23.9	52.0	14.7	15.8	16.4
Oral Cavity & Pharynx	65.2	9.8	10.1	10.8	44.6	14.7	15.0	16.2	20.6	5.7	5.9	6.2
Ovary	-	-	-	-	-	-	-	-	38.0	10.5	12.0	12.5
Pancreas	74.4	11.3	12.0	12.2	35.8	12.4	13.6	13.9	38.6	10.2	10.6	10.9
Prostate	-	-	-	-	360.6	120.6	139.7	152.0	-	-	-	-
Stomach	31.8	4.9	5.9	7.5	17.6	6.2	8.5	10.4	14.2	3.9	4.0	5.3
Testis	-	-	-	-	15.4	6.3	5.2	5.5	-	-	-	-
Thyroid	64.8	11.5	11.3	12.2	16.6	6.1	5.5	6.1	48.2	16.5	17.0	18.2
Urinary Bladder	140.2	21.1	21.6	20.7	102.6	36.9	38.2	36.6	37.6	9.6	9.5	8.9
Uterine Corpus & NOS***	-	-	-	-	-	-	-	-	85.8	23.7	27.4	24.3

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; Surveillance, Epidemiology, and End Results (SEER) Program, SEER Cancer Statistics Review 1975-2010, National Cancer Institute, 2013.

2. Ohio and United States rates based on years 2006-2010

- Not Applicable * Central Nervous System **Intrahepatic Bile Duct ***Not Otherwise Specified

ALL CANCERS COMBINED

Table 4—Average Annual Number of Deaths from Cancer and Age-Adjusted Mortality Rate per 100,000 by Cancer Site/Type and Gender in Summit County, Ohio, and the U.S., 2007-2011^{1,2,3}

Primary Site/Type	Total				Male				Female			
	Summit County Deaths	Summit County Rate	Ohio Rate	U.S. Rate	Summit County Deaths	Summit County Rate	Ohio Rate	U.S. Rate	Summit County Deaths	Summit County Rate	Ohio Rate	U.S. Rate
All Invasive Sites	1,239.2	186.7	191.9	176.4	644.6	231.3	235.9	215.3	594.6	156.7	162.1	149.7
Brain & Other CNS*	29.8	4.7	4.5	4.3	4.7	5.8	5.4	5.2	14.2	4.0	3.7	3.5
Breast	-	-	-	-	-	-	-	-	95.0	25.8	24.7	22.6
Cervix	-	-	-	-	-	-	-	-	4.6	1.4	2.7	2.4
Colon & Rectum	118.4	17.6	17.9	15.9	57.8	20.5	21.7	19.6	60.6	15.3	15.1	13.9
Esophagus	32.2	0.5	5.1	4.4	25.0	8.4	9.3	7.6	7.2	2.0	1.8	1.6
Hodgkin's Lymphoma	2.0	0.3	0.4	0.4	0.8	0.3	0.5	0.5	1.2	0.3	0.3	0.3
Kidney & Renal Pelvis	23.4	3.6	4.4	4.0	14.2	5.0	6.3	5.8	9.2	2.4	3.0	2.6
Larynx	7.2	1.0	1.4	1.1	6.0	1.9	2.5	2.0	1.2	0.3	0.5	0.4
Leukemia	48.6	7.5	7.4	7.1	26.2	9.7	9.8	9.5	22.4	5.7	5.7	5.3
Liver & IBD**	32.6	4.8	4.9	5.6	23.2	7.7	7.3	8.3	9.4	2.6	2.9	3.4
Lung & Bronchus	367.8	56.0	57.1	49.5	209.0	74.4	74.8	63.5	158.8	42.8	44.2	39.2
Melanoma of the Skin	18.6	2.9	2.9	3.6	11.6	4.1	4.4	4.1	7.0	2.0	1.8	1.7
Multiple Myeloma	23.8	3.5	3.6	3.4	14.0	4.8	4.5	4.3	9.8	2.4	3.0	2.7
Non-Hodgkin Lymphoma	47.0	7.0	7.1	6.4	27.2	9.9	9.1	8.2	19.8	4.9	5.6	5.1
Oral Cavity & Pharynx	20.0	2.9	2.6	2.5	13.6	4.6	4.0	3.8	6.4	1.6	1.5	1.4
Ovary	-	-	-	-	-	-	-	-	28.8	7.7	8.1	8.1
Pancreas	74.4	11.3	11.4	10.9	33.6	12.0	13.1	12.5	40.8	10.7	10.1	9.6
Prostate	-	-	-	-	67.0	25.8	23.6	23.0	-	-	-	-
Stomach	22.0	8.1	3.2	3.5	11.8	4.3	4.5	4.9	10.2	2.6	2.2	2.5
Urinary Bladder	32.0	4.7	5.1	4.4	20.8	7.9	9.0	7.7	11.2	2.7	2.5	2.2
Uterine Corpus & NOS***	-	-	-	-	-	-	-	-	15.6	4.1	4.8	4.3

1. Source: Ohio Department of Vital Statistics Death, 2014; Surveillance, Epidemiology, and End Results (SEER) Program, SEER Cancer Statistics Review 1975-2010, National Cancer Institute, 2013.

2. Ohio and United States rates based on years 2006-2010

- Not Applicable *Central Nervous System **Intrahepatic Bile Duct ***Not Otherwise Specified

ALL CANCERS COMBINED

HEALTHY PEOPLE 2020

Healthy People 2020 is an initiative to improve the overall health status of the nation. It is comprised of a number of goals set by the U.S. Department of Health and Human Services to improve health and decrease mortality and disability from disease. The goals presented in this report demonstrate where Summit County ranks in meeting the national goals.

In terms of cancer, Healthy People 2020 established the goal to reduce the number of deaths from cancer to 161 per 100,000 persons. With the current mortality rate of 187 per 100,000, Summit County will need to reduce the number of annual deaths from cancer by about 26 per 100,000 residents.

Examples of strategies to reduce cancer mortality include more effective screening and earlier diagnosis, and more specific interventions targeting the most lethal types of cancer.

Healthy People 2020 Goal: Reduce overall cancer mortality rate to *161.4 deaths per 100,000*.

CANCER STAGING

As discussed in the **Cancer Basics** section, detecting cancers at an earlier stage can help increase the odds of survival and reduce the number of overall deaths from cancer. **Table 5** shows that many invasive cancers are initially diagnosed at the localized stage. However, one in four cancers overall are still diagnosed at the distant stage. This can have a major impact on the survival of our residents. Lung and bronchus cancers and Non-Hodgkin's Lymphoma are among the largest contributors to this dynamic, as 44% and 52% of new cases of these types of cancer are diagnosed in the distant stage, respectively.

Table 5—Number and Percent of Select Cancers Diagnosed by SEER Summary Stage in Summit County, 2007-2011¹

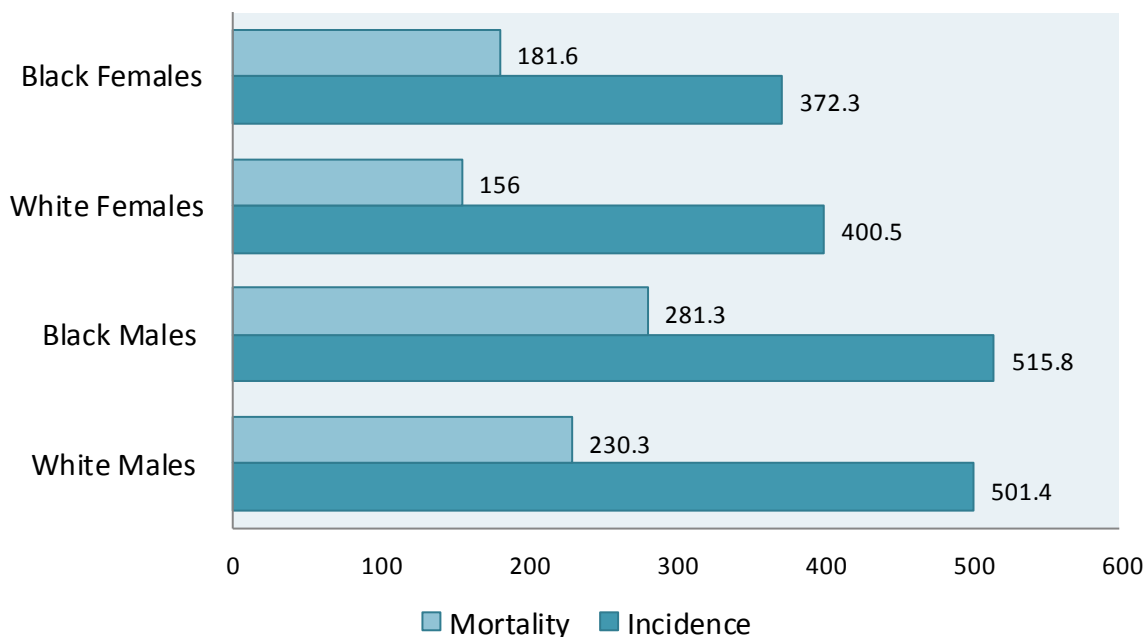
Primary Cancer Site/Type	Localized		Regional		Distant		Unstaged	
	Cases	%	Cases	%	Cases	%	Cases	%
All Cancer Site/Types	3,614	42%	1,576	18%	2,003	23%	1,144	13%
Urinary Bladder	162	75%	27	13%	8	4%	18	8%
Breast	723	62%	331	28%	72	6%	42	4%
Colon & Rectum	332	39%	243	28%	179	21%	101	12%
Lung & Bronchus	226	16%	316	22%	634	44%	265	18%
Melanoma	287	79%	35	10%	21	6%	22	6%
Non-Hodgkin's Lymphoma	92	26%	50	14%	187	52%	28	8%
Prostate	790	79%	72	7%	33	3%	100	10%
Uterine Corpus & NOS**	182	69%	51	19%	14	5%	15	6%

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014

* Not Otherwise Specified

ALL CANCERS COMBINED

Figure 4—Average Annual Age-Adjusted Incidence and Mortality Rate per 100,000 for all Invasive Cancer Sites/Types Among Males and Females by Race in Summit County, 2007-2011¹



DISPARITIES

Differences in cancer incidence and mortality rates are apparent between men and women, and between different ethnic and racial groups. For the purpose of this report, race and ethnicity were categorized into four different groups: non-Hispanic white, non-Hispanic black, Hispanic and other races.

Among those in the Hispanic and other races groups there were only 212 new cases of cancer diagnosed between 2007 and 2011 and 55 deaths from cancer in Summit County, meaning that there were, on average, 50 new cases of cancer and 11 deaths per year for these two groups combined. With the average annual number of new cases being low, the data becomes unstable when calculating incidence and mortality rates. For this reason, non-Hispanic whites and non-Hispanic blacks are the only populations discussed throughout the remainder of

this report.

Disparities in incidence and mortality for all invasive cancers are shown in **Figure 5**. The incidence rates for white males and black males are 501 and 516 per 100,000 men respectively. When considering mortality, black men experience a mortality rate that is 20% higher than white men.

Interestingly, white females have a higher incidence rate of invasive cancer, while black females have a higher cancer mortality rate. The causes for these differences is of much interest to researchers and public health professionals alike. White females may have better access to health care, including cancer screening, which may increase their chances of being diagnosed with cancer. Increased access to cancer screenings may also result in an earlier cancer diagnosis, which can improve the odds of survival.

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

ALL CANCERS COMBINED

Figure 5 and **Figure 6** show annual mortality and incidence trends from 2007 to 2011. White and black males have similar incidence rates up until 2010 and 2011 when there was an increase in the rate of new cases. Even though incidence rates in males have increased, it may not indicate that there is a growing problem of cancer in Summit County. Instead, it could mean that more existing cases are being diagnosed, possibly due to increased focus on early cancer screening or to recent advances in cancer detection technology. Steadily decreasing mortality rates offer evidence that we are diagnosing cancers in earlier stages among men.

Incidence rates among females have remained relatively stable since 2007. Mortality rates among black females, however, appear to have a high level of variability, which may be explained by the relatively low annual number of deaths among black females.

GEOGRAPHY

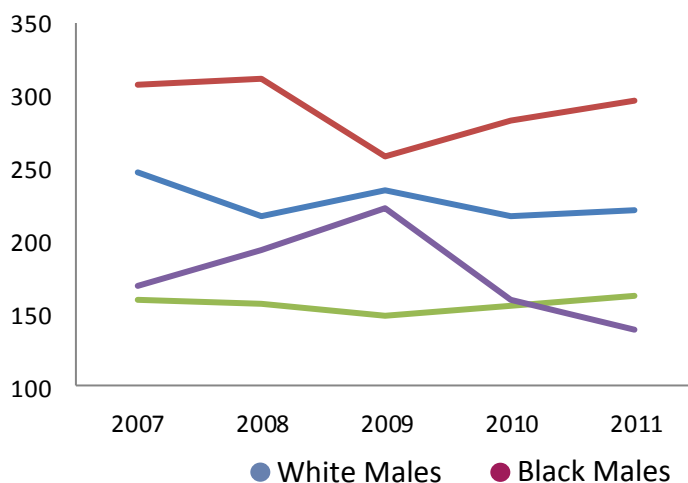
Cancer trends have also been found to be linked to where one lives. People residing in certain areas are

at a greater risk of developing cancer than people in other areas. **Figure 7** shows the distribution of invasive cancer incidence rates, based on the 20 Summit County geographic clusters, while **Figure 8** shows the geographic distribution of cancer mortality rates in Summit County. The highest incidence rates generally occur in the central and southern half of the county, while the highest mortality rates are more centrally located.

Residents living in the north central part of the county generally have the lowest incidence and mortality rates of cancer. It is important to emphasize that the **factors that influence geographic distribution of invasive cancers include access to care, quality of care, living close to relatives, shared behaviors, and a variety of other factors.**

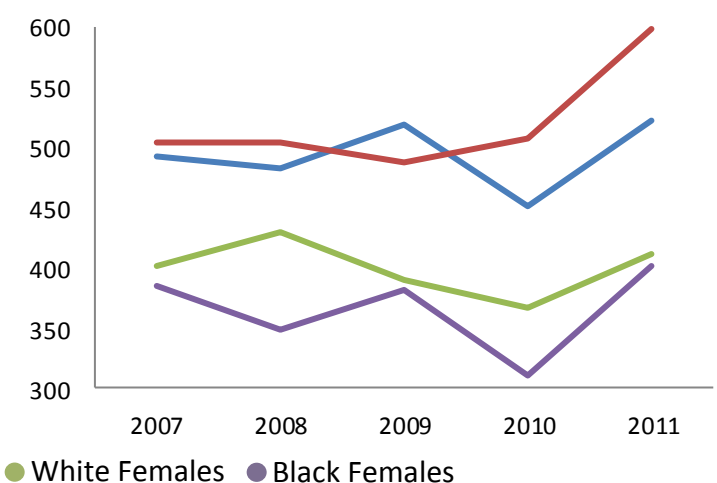
A full table of the incidence and mortality rates for each of the 20 clusters for select sites/types of cancer may be found in **Data Tables** section of at the end of this report.

Figure 5—Average Annual Age-Adjusted Cancer Mortality Rate per 100,000 by Gender and Race in Summit County, 2007-2011¹



1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014

Figure 6—Average Annual Age-Adjusted Cancer Incidence Rate per 100,000 by Gender and Race in Summit County, 2007-2011¹

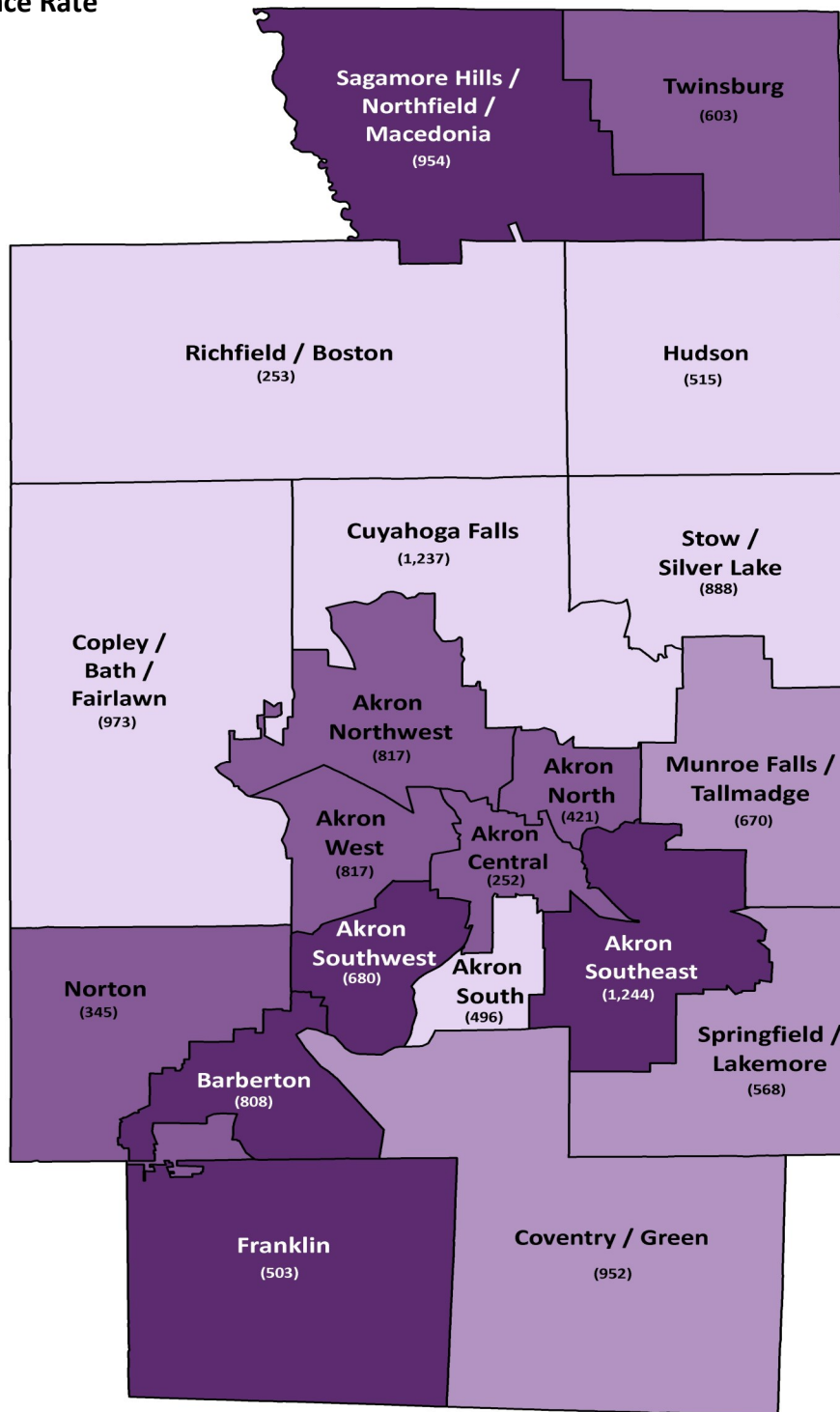
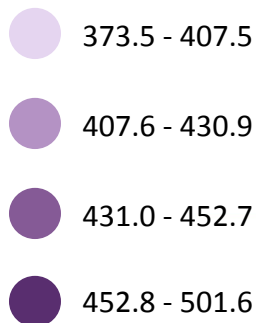


1. Source: State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

ALL CANCERS COMBINED

Figure 7—Average Annual Age-Adjusted Incidence Rate per 100,000 and Number of New Cases for All Invasive Cancers by Summit County Geographical Cluster, 2007-2011¹

Average Annual Age Adjusted Incidence Rate



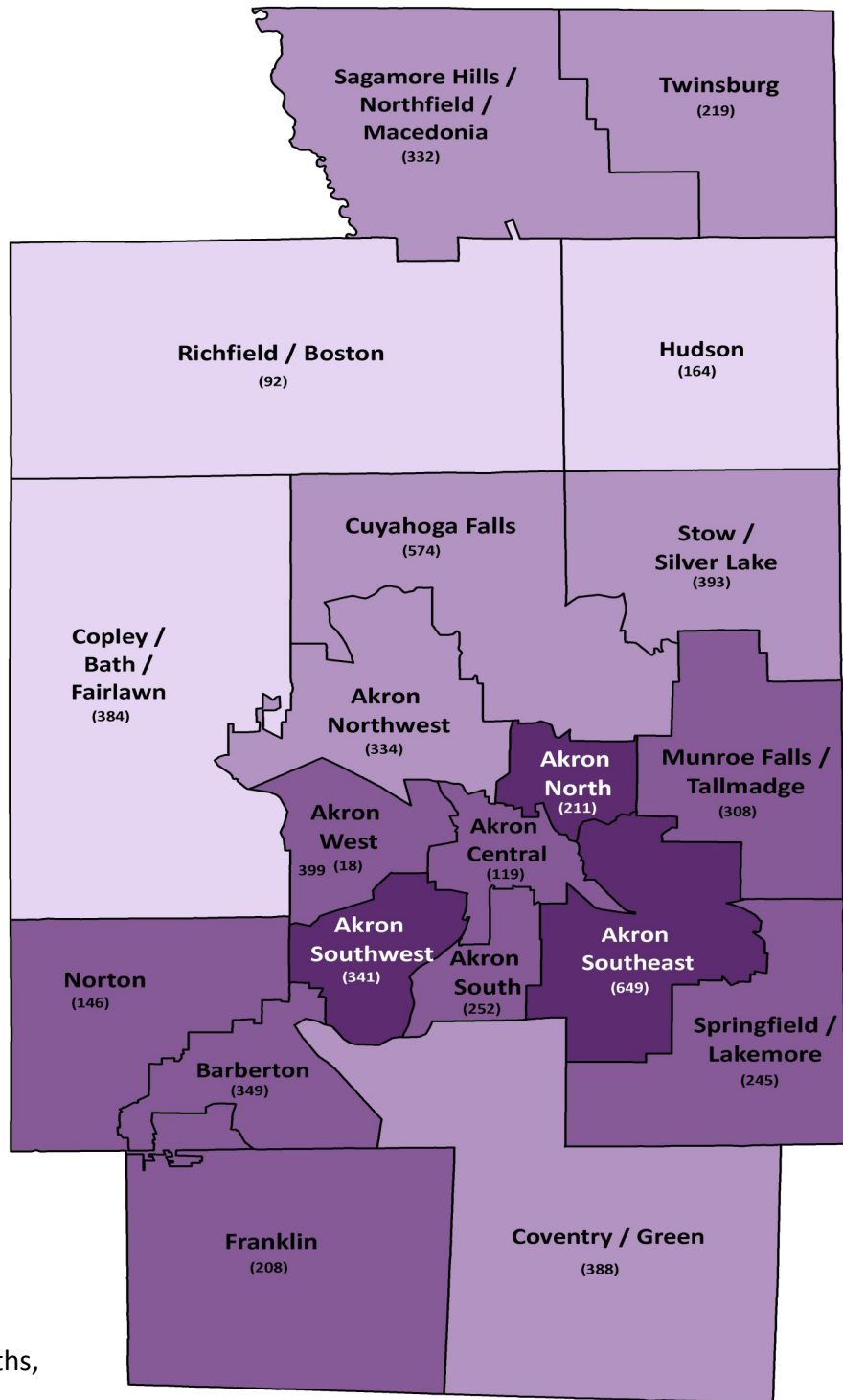
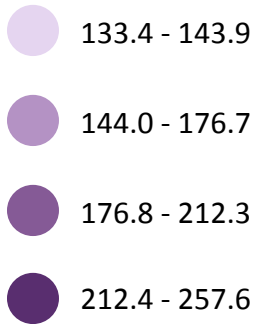
Number in parentheses are the cumulative number of new invasive cancer cases, 2007-2011

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014

ALL CANCERS COMBINED

Figure 8—Average Annual Age-Adjusted Mortality Rate per 100,000 and Number of Deaths for All Invasive Cancers by Summit County Geographical Cluster, 2007-2011¹

Average Annual Age Adjusted Mortality Rate



Number in parentheses are the cumulative number of cancer deaths, 2007-2011

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014

PROSTATE CANCER

Prostate cancer is the most common type of cancer in Summit County. As seen in *Table 6*, new cases of prostate cancer are diagnosed at a rate of 121 per 100,000 each year, which is 14% less than Ohio and 21% less than the national average. Despite lower incidence rates, the mortality rate from prostate cancer in Summit County is greater than Ohio and the U.S. This is particularly concerning because those who are diagnosed with prostate cancer in localized or regional stages have nearly a 100% chance of survival (see *Figure 1*). A possible explanation is that males in Summit County are being diagnosed at later stages or experiencing some gap in treatment or clinical care after diagnosis.

Table 6—Average Annual Age-Adjusted Rate for Prostate Cancer in Summit, Ohio, and the U.S., 2007-2011^{1,2}

Summit County	Ohio	U.S.
New Cases Per 100,000 Men		
120.6	139.7	152.0
Deaths Per 100,000 Men		
25.8	23.6	23.0

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; SEER Program, *SEER Cancer Statistics Review 1973-2011*, National Cancer Institute, 2012; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

2. Ohio and United States rates based on years 2006-2010

WHAT IS PROSTATE CANCER?

The prostate is a gland found only in men, located beneath the urinary bladder. The main function of the prostate gland is to make seminal fluid, which protects and nourishes sperm. The prostate gland is initially about the size of a walnut, but grows larger in size as men age. Prostate cancer typically initiates

in the gland cells—cancers with this type of origin are termed **adenocarcinomas** [7].

Healthy People 2020 Goal: Reduce prostate cancer rate to *21.8 deaths per 100,000*

WHAT ARE THE RISK FACTORS?

The risk factors listed below have been shown to be associated with the development of prostate cancer. They are separated into two categories: modifiable (potentially controlled by behavioral changes) and non-modifiable (risk factors that cannot be changed). Although a risk factor can be modified by changing one’s behavior, it does not mean that cancer may be entirely avoided. Even if one does not have exposure to any of the listed risk factors, there is always some risk of developing cancer. In addition, a person may have exposure to multiple risk factors and may never develop cancer.

Non-Modifiable Risk Factors

- Age: The majority of cases occur in men over the age of 50
- Race/Ethnicity: African Americans are at a greater risk.
- Family History: Those who have had a family member with prostate cancer are at greater risk.

Potentially Modifiable Risk Factors

- Diet: Those who eat a lot of red-meat and dairy products are at greater risk.
- STDs: Having sexually transmitted diseases such as Chlamydia or Gonorrhea can increase one’s risk.
- Occupation: Those exposed to toxic combustion products (e.g., firefighters) are at greater risk [8].

PROSTATE CANCER

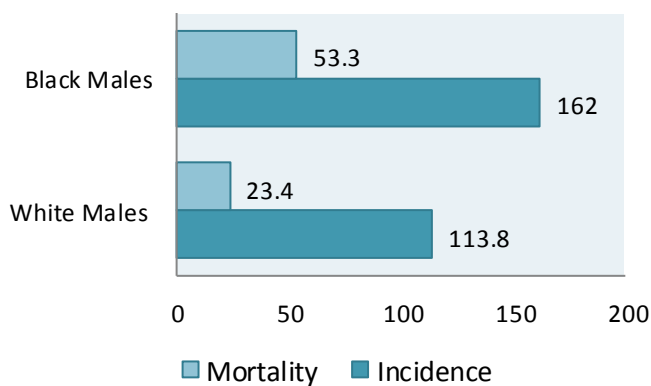
HEALTHY PEOPLE 2020

A Healthy People 2020 goal for prostate cancer is to reduce the number of deaths to 21.8 per 100,000 men. With the current mortality rate at 25.8 per 100,000, Summit County needs to decrease the prostate cancer mortality rate by 15.5%.

DISPARITIES

For non-Hispanic black men, the incidence rate was 40% higher and the mortality rate was double the rate observed in non-Hispanic white men (*Figure 9*). The greater risk of developing prostate cancer faced by black men may offer an explanation for the higher incidence rate, but it does not explain the doubled mortality rate. According to *Table 7*, non-Hispanic black men had a lower proportion of having had a prostate exam within the last year compared to non-Hispanic whites. This demonstrates that there is a racial gap in prostate cancer screening for black men which may be leading to the much higher mortality rate.

Figure 9—Average Annual Age-Adjusted Incidence and Mortality Rate per 100,000 for Prostate Cancer by Race in Summit County, 2007-2011¹



1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

*Defined as those men age 50 and older who reported having either a Prostate-Specific Antigen (PSA) screening test or Digital Rectal Exam (DRE) within the past year

Table 7—Percent of Men Who Have Had a Prostate Exam Within the Past 12 Months in Summit County, 2008¹

Race/Ethnicity	
Non-Hispanic White	67.3%
Non-Hispanic Black	60.1%
Education	
High School or Less	63.0%
Some College	65.7%
Bachelor's Degree or Higher	69.0%
Income	
Less than \$35,000	59.3%
\$35,000 - \$74,999	65.4%
Greater than \$75,000	71.5%
All Men (Age 50 and Older)	66.3%

1. Source: 2008 Behavioral Risk Factor Surveillance System (BRFSS)

The data in Table 7 indicates that higher education level is associated with getting an annual prostate exam. Similar trends related to income are apparent as almost three out of every four of the top income earners had their annual prostate exam while only 59% of those making less than \$35,000 had a prostate exam.

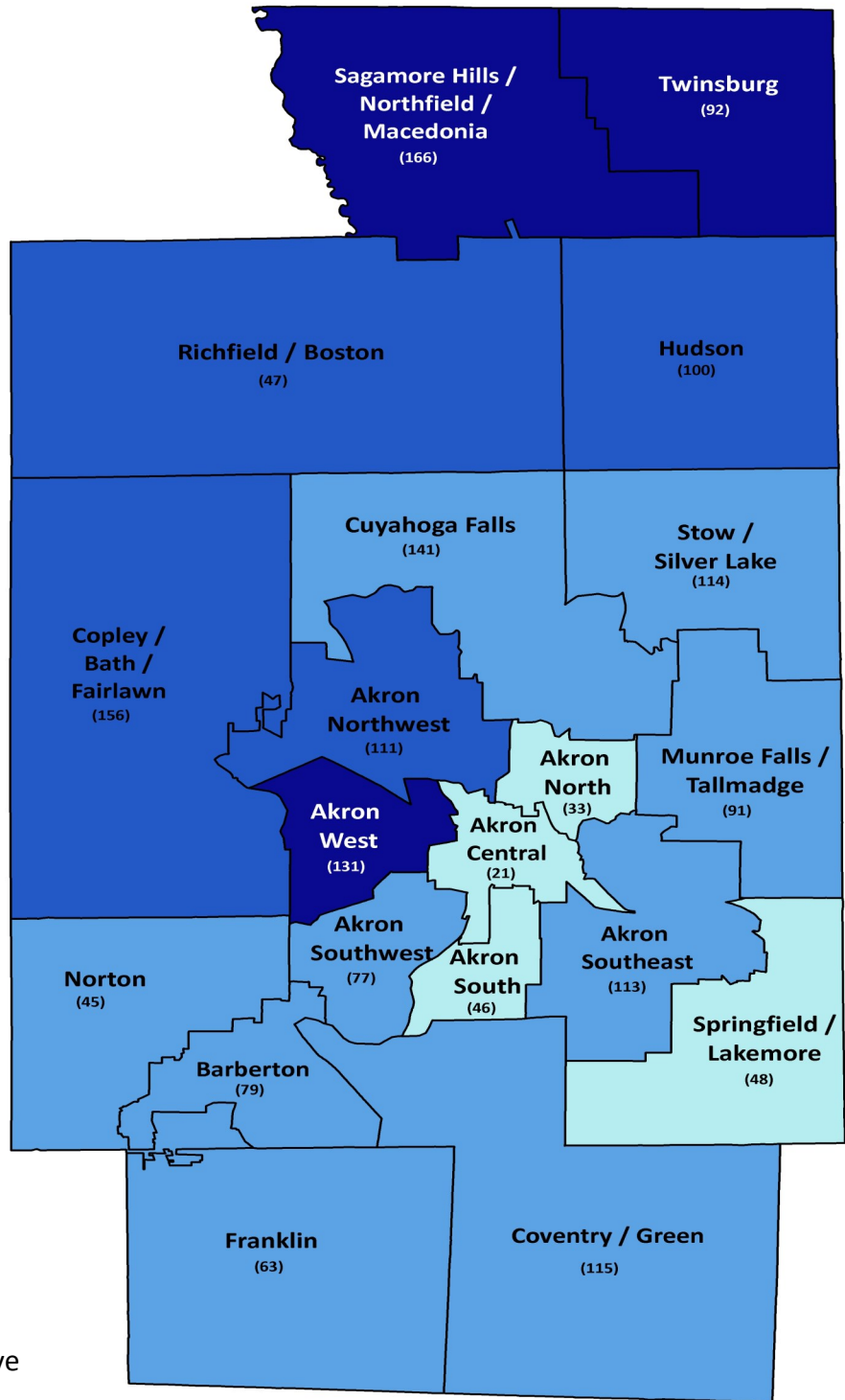
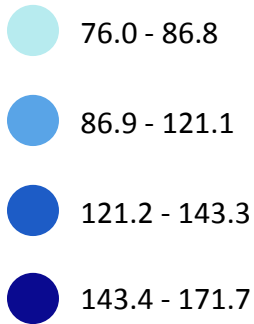
GEOGRAPHY

As seen in *Figure 10*, the greatest incidence of prostate cancer is in the northern, high socioeconomic status (SES) clusters: Sagamore Hills/Northfield/Macedonia, Twinsburg, and in West Akron. The lowest incidence rates are in lower SES areas: three of Akron's clusters and in Springfield/Lakemore. This could point to differences in cancer screening rates. A higher number of prostate screenings in the high income groups may simply result in an increase in cancer diagnoses in that group, while a low number of prostate screenings in the low income groups may result in fewer cancer diagnoses.

PROSTATE CANCER

Figure 10—Average Annual Age-Adjusted Incidence Rate per 100,000 and Number of New Cases for Prostate Cancer by Summit County Geographical Cluster, 2007-2011¹

Average Annual Age Adjusted Incidence Rate



Number in parentheses are the cumulative number of new invasive cancer cases, 2007-2011

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014

PROSTATE CANCER

Signs and Symptoms

- Frequent urination, especially at night
- Difficulty starting urination
- Pain or burning during urination
- Difficulty having an erection
- Painful ejaculation
- Blood in urine or semen
- Frequent pain or stiffness in lower back, hips, or upper thighs [9]

Please keep in mind that these symptoms may be associated with other, less serious health conditions. It is important to consult with your doctor if you notice any of these symptoms.

GETTING SCREENED

Ninety-seven percent of prostate cancers occur among those age 50 and older [10]. The ACS recommends that men age 50 and older begin to have initial conversations with their doctors about the need for prostate cancer screening. Men who are at an elevated risk, such as African-American men or men who have a father or brother who have been diagnosed with prostate cancer, should start this conversation by age 45. Men who are at an even greater risk—if they have multiple closely-related relatives who have been diagnosed with prostate cancer—should begin discussions with their doctor around age 40 [11].

Conversing with one’s doctor about potential risks is essential in order to fully understand and decide whether prostate cancer screening would be appropriate. Comorbidity burden and age impact the appropriateness of cancer screenings. For example, asymptomatic men over the age of 75 or

young men with life-limiting health conditions may not benefit from prostate cancer screening. A conversation with one’s doctor will help him understand what his best screening options are.

Summit County Resources:

Brother to Brother Project

662 Wolf Ledges Parkway
Akron, OH 44311
330.618.8327

One-in-Six Foundation

106 South Main Street, Suite 1100
Akron, OH 44311
330.615.7288

Stewart’s Caring Place: Prostate Cancer Support Group

2955 West Market Street, Suite R
Akron, OH 44333
330.836.1772

Additional Information:

American Cancer Society

www.cancer.org/cancer/prostatecancer/index

National Cancer Institute

www.cancer.gov/cancertopics/types/prostate

Prostate Cancer Foundation

www.prostatecancerfoundation.org

US Centers for Disease Control and Prevention

www.cdc.gov/cancer/prostate

BREAST CANCER

Breast cancer is the leading form of cancer among women in Summit County, making up nearly one third of all new cancer diagnoses. While the incidence of breast cancer is lower here than the national and state rates, according to **Table 8**, breast cancer mortality is higher in Summit County than in Ohio and the rest of the United States.

Table 8—Average Annual Age-Adjusted Rate for Female Breast Cancer in Summit, Ohio, and the U.S., 2007-2011^{1,2}

Summit County	Ohio	U.S.
New Cases Per 100,000 Women		
113.7	119.1	123.8
Deaths Per 100,000 Women		
25.8	24.7	22.6

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; SEER Program, *SEER Cancer Statistics Review 1973-2011*, National Cancer Institute, 2014; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

2. Ohio and United States rates based on years 2006-2010

WHAT IS BREAST CANCER?

Breast cancer is a malignant tumor that usually originates in the cells that surround the milk ducts or in the lobules, the milk-producing glands. Breast cancers are particularly worrisome because of their proximity to lymph nodes under the arm. If the breast cancer has metastasized, the cancer may be transported into the bloodstream and carried to other parts of the body via the lymphatic system [12].

WHAT ARE THE RISK FACTORS?

There are numerous risk factors that have been shown to be associated with breast cancer. Only a select few are presented here in this report, and

they are separated by whether or not they can be modified by one's behavior.

For more information regarding these and other potential risk factors that have been shown to be associated with breast cancer.

Non-Modifiable Risk Factors

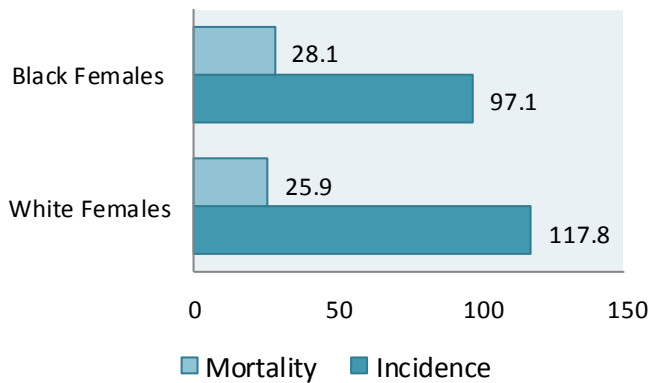
- **Age:** Two-thirds of breast cancers are among women older than 55.
- **BRCA1 & BRCA2 genes:** Women who have mutations in these genes.
- **Race/Ethnicity:** White women are more likely to be diagnosed but black women are more likely to die from it.
- **Family History:** Those who have had a family member with breast cancer.
- **Menstrual Periods:** Women who started their periods at an earlier age (<12 years) or underwent menopause at an older age (>55 years).

Potentially Modifiable Risk Factors

- **Alcohol Use:** Women who drink more than 2 alcoholic drinks per day.
- **Oral Contraceptives:** Women who use oral contraceptives (OC) have a slightly greater risk (this risk diminishes after OC use stops).
- **Breastfeeding:** Women who breastfeed, especially for 1.5 to 2 years, are less likely to develop breast cancer.
- **Having Children:** Women who are pregnant multiple times at younger ages have less risk of developing breast cancer.
- **High BMI:** Women who are overweight or obese are more likely to develop breast cancer.
- **Physical Activity:** Having 1.25 to 2.5 hours of physical activity per week can reduce your risk by 18% [13].

BREAST CANCER

Figure 11—Average Annual Age-Adjusted Incidence and Mortality Rate per 100,000 for Breast Cancer by Race in Summit County, 2007-2011¹



1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

Table 9—Percent of Women Who Have Had a Mammogram Within the Past 2 Years in Summit County, 2008¹

Race/Ethnicity	
Non-Hispanic White	78.6%
Non-Hispanic Black	86.8%
Education	
High School or Less	76.8%
Some College	76.5%
Bachelor's Degree or Higher	84.5%
Income	
Less than \$35,000	72.2%
\$35,000 - \$74,999	81.6%
Greater than \$75,000	83.6%
All Women (Age 50-75)	79.5%

1. Source: 2008 Behavioral Risk Factor Surveillance System (BRFSS)

DISPARITIES

Breast cancer incidence rates are 21% higher in white women when compared to black women, according to **Figure 11**. However, **Table 9** indicates that in 2008, a higher percentage of black women in

Summit County had mammograms yet had a slightly higher breast cancer mortality rate, when compared to white women in the county. Disparities also exist in terms of education and income levels, as the rate of breast cancer screening is higher in women with higher levels of education and income.

GEOGRAPHY

The highest incidence rates of breast cancer are scattered throughout Summit County in the Sagamore Hills/Northfield/Macedonia, Hudson, Norton, and Springfield/Lakemore clusters. In contrast, the lowest rates appear more centralized to the Akron areas where socioeconomic status might affect women's ability to get regular mammograms/screenings. This would, in turn, decrease the number of women who are newly diagnosed with breast cancer.

HEALTHY PEOPLE 2020

The main goals regarding breast cancer are listed below. To achieve the first goal of reducing mortality to 20.7 deaths per 100,000, the current rate of 25.8 deaths per 100,000 in Summit County needs to be reduced by 20%. The second goal has already been attained; the age-adjusted rate for regional and late-stage cancers is currently 24.3 per 100,000. Regarding the final goal, breast cancer screening rates must be increased from 79.5% to 81.1%, an improvement of less than 2%.

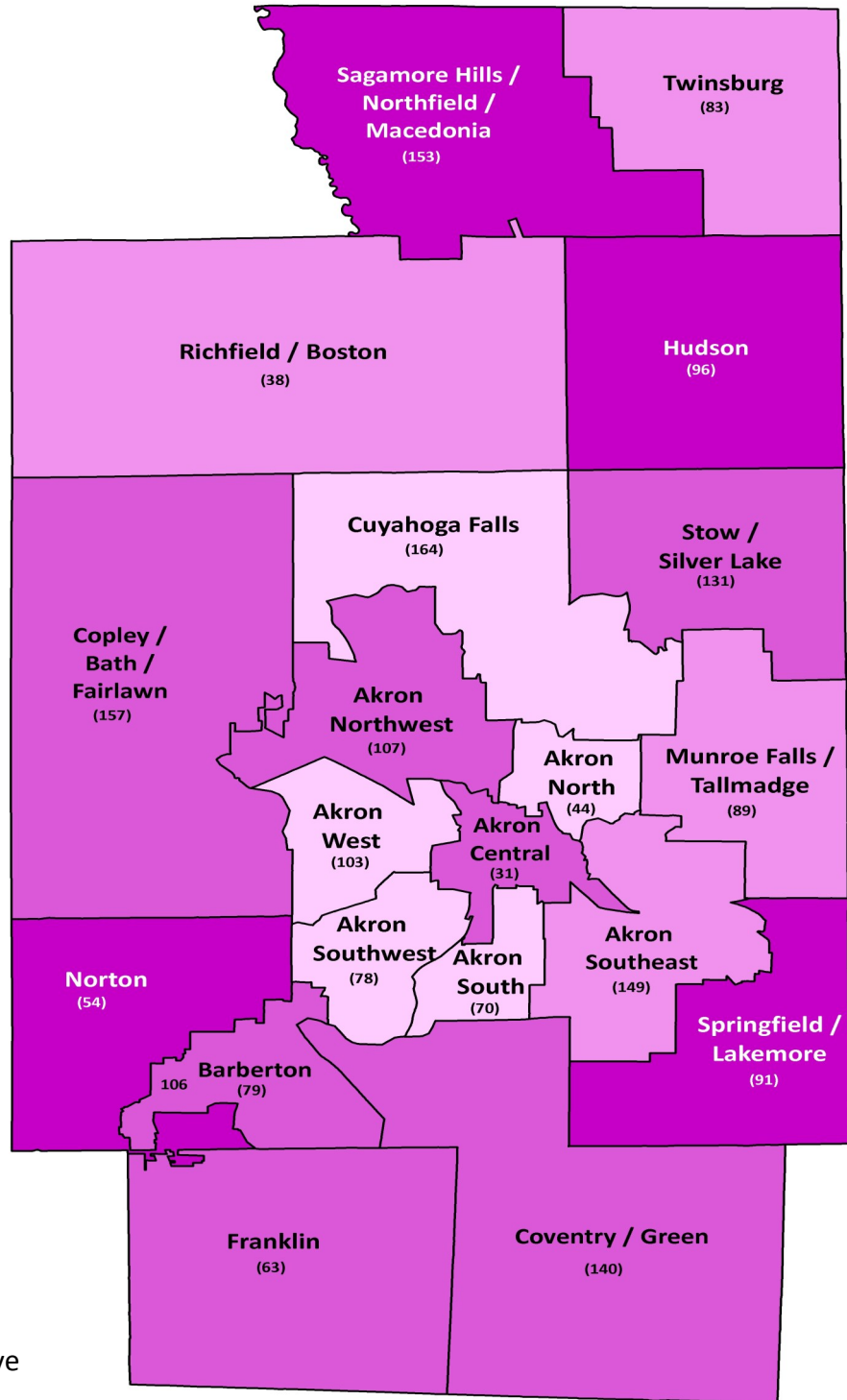
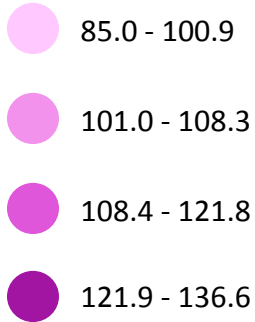
Healthy People 2020 Goal: Reduce breast cancer mortality rate to 20.7 deaths per 100,000, reduce late-stage breast cancer to 42.1 new cases per 100,000, and increase proportion of women who have had a mammogram to 81.1%

*Defined as those women age 50 to 74 who reported having a mammogram within the past two years

BREAST CANCER

Figure 12—Average Annual Age-Adjusted Incidence Rate per 100,000 and Number of New Cases for Breast Cancer by Summit County Geographical Cluster, 2007-2011¹

Average Annual Age Adjusted Incidence Rate



Number in parentheses are the cumulative number of new invasive cancer cases, 2007-2011

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014

BREAST CANCER

GETTING STARTED

Early breast cancer detection is critical for increased survival and overall quality of life. When diagnosed in the distant stage, the chances for survival dramatically decrease. At this stage only one in five women will survive for at least five years after diagnosis—refer back to **Figure 1**.

The ACS generally recommends that women begin having clinical breast exams (CBE) once every three years and doing monthly breast self-exams (BSE) when women are in their 20s and 30s. ACS also recommends that women should get a yearly mammogram starting at age 40. [14].

Contrary to the ACS, the US Preventive Services Task Force (USPSTF), recommends that women in their 40s should only begin mammography screening if they are at an increased risk, as the number of false-positive tests and unnecessary biopsies are greatest among this age group. Those considered to be at higher risk are those who have an immediate

family member who has been diagnosed with breast cancer. The USPSTF recommends that, in general, women should have a mammogram every other year, rather than annually, beginning from age 50 through age 74 [15].

Summit County Resources:

Ohio Breast Cervical Cancer

662 Wolf Ledges Parkway
Akron, OH 44311
330.618.8327

Stewart's Caring Place: Breast Cancer Support Group

2955 West Market Street, Suite R
Akron, OH 44333
330.836.1772

American Cancer Society: Reach to Recovery Program

800.227.2345

Signs and Symptoms

- Breast lumps, swelling or darkening
- Nipple discharge
- Dimpling or puckering of skin
- Breast or nipple pain
- Nipple retraction
- Reddening, scaling, or thickening of the nipple or breast skin [16]

Please keep in mind that these symptoms may be associated with other, less serious health conditions. It is important to consult with your doctor if you notice any of these symptoms.

Additional Information:

American Cancer Society

www.cancer.org/cancer/breastcancer/index

National Cancer Institute

www.cancer.gov/cancertopics/types/breast

Susan G. Komen Foundation

ww5.komen.org

Breastcancer.org

www.breastcancer.org/community

LUNG & BRONCHUS CANCER

Lung and bronchus cancers are the leading type of non-gender specific cancers in the county, Ohio, and United States. Summit County and the State of Ohio have relatively similar rates; however, as seen in **Table 10**, rates in Summit County are 14 and 13% greater than national incidence and mortality rates, respectively. To achieve Healthy People 2020 goal, the mortality rate in Summit County needs reduced by 18.8%.

WHAT IS LUNG & BRONCHUS CANCER?

Lung cancers are believed to develop as the result of pre-cancerous changes in lung cells. While genetic changes may cause certain lung cells to grow faster this does not indicate cancer until these rapidly growing lung cells acquire other genetic changes, including production of chemicals, that cause new blood vessels to form. The new vessels nourish these cells allowing them to continue to grow and eventually form tumors. In more advanced stages, malignant cells break off from these tumors and spread to other parts of the body—resulting in **metastasized** cancer [17].

WHAT ARE THE RISK FACTORS?

Most risk factors are associated with behaviors that can be modified. The most significant risk factor associated with the development of lung and bronchus cancers is smoking. Quitting smoking reduces risk. It is estimated that ten years after quitting smoking, the mortality rate for lung cancer is half of those who still smoke [18]. Other risk factors include additional forms of harmful exposures

Healthy People 2020 Goal: Reduce lung & bronchus mortality rate to 45.5 deaths per 100,000 people

in the environment. These exposures include radon gas, asbestos, pollution, and even arsenic in the drinking water.

Table 10—Average Annual Age-Adjusted Rate for Lung & Bronchus Cancer in Summit County, Ohio, and the U.S., 2007-2011^{1,2}

Summit County	Ohio	U.S.
New Cases Per 100,000 People		
70.1	72.8	61.4
Deaths Per 100,000 People		
56.0	57.1	49.5

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; SEER Program, *SEER Cancer Statistics Review 1973-2011*, National Cancer Institute, 2012; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

2. Ohio and United States rates based on years 2006-2010

Non-Modifiable Risk Factors

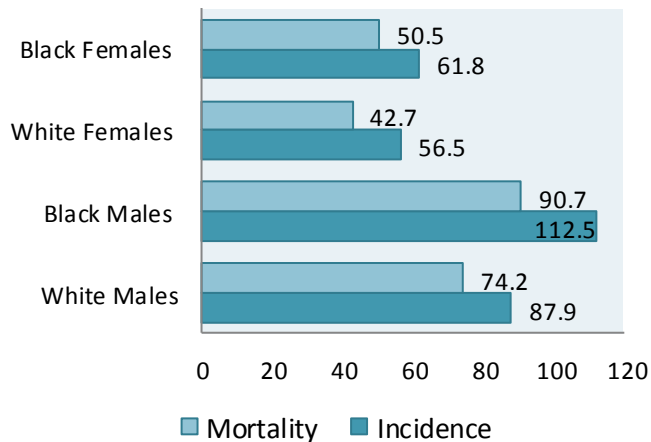
- Family History: Having a family member with lung cancer increases risk.

Potentially Modifiable Risk Factors

- Tobacco Use: Smoking is the leading risk factor for developing lung cancer. Secondhand smoke has also been associated with increased risk.
- Radon: This gas is released from certain soils and rocks as they break down and is dangerous for people in enclosed areas.
- Asbestos: People who work with asbestos (e.g. mills, mines, textile plants and shipyards) are at increased risk of developing lung cancer.
- Air Pollution: Repeated exposure to heavily trafficked roads slightly increases risk for lung cancer.
- Arsenic in Drinking Water: Drinking water contaminated with arsenic is associated with higher risks [19].

LUNG & BRONCHUS CANCER

Figure 13—Average Annual Age-Adjusted Incidence and Mortality Rate per 100,000 for Lung & Bronchus Cancer in Summit County, 2007-2011¹



1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; State of Ohio Bureau of Vital Statistics

Signs and Symptoms

- A worsening cough that won't go away
- Hoarseness
- Weight loss and loss of appetite
- Coughing up blood
- Shortness of breath
- Feeling tired or weak
- New onset of wheezing
- Recurrent respiratory tract infections (bronchitis or pneumonia)
- Chest pain made worse by deep breathing, coughing, or laughing [20]

Please keep in mind that most lung cancers do not cause any symptoms until they have spread too far to be cured. It is important to consult with your doctor if you notice any of these symptoms.

DISPARITIES

As displayed in **Figure 13**, the incidence and mortality rates for lung and bronchus cancers are greatest among men, particularly black men. The incidence among black men is 28% greater than

white men and more than twice the rate for white and black women. Similar disparities exist in lung cancer mortality rates, but at a smaller scale.

GEOGRAPHY

The highest incidence rates of lung and bronchus cancer were observed in the southern half of Summit County (**Figure 14**). In contrast, the northern county clusters had lower incidence rates. These northern clusters are typically associated with higher **socioeconomic status** (SES). Low levels of SES have been shown to be associated with tobacco use (**Table 16** in the **Tobacco Use** section).

Summit County Resources:

Akron General Medical Center: Tobacco Cessation Program

1 Akron General Avenue
Akron, OH 44307
(330) 344-4262

Ohio Tobacco Quit Line

1 (800) QUIT-NOW

Summit County Public Health: Free Radon Test Kit

1867 West Market Street
Akron, OH 44313
(330) 923-4891

Additional Information:

American Cancer Society

www.cancer.org/cancer/lungcancer/index

National Cancer Institute

www.cancer.gov/cancertopics/types/lung

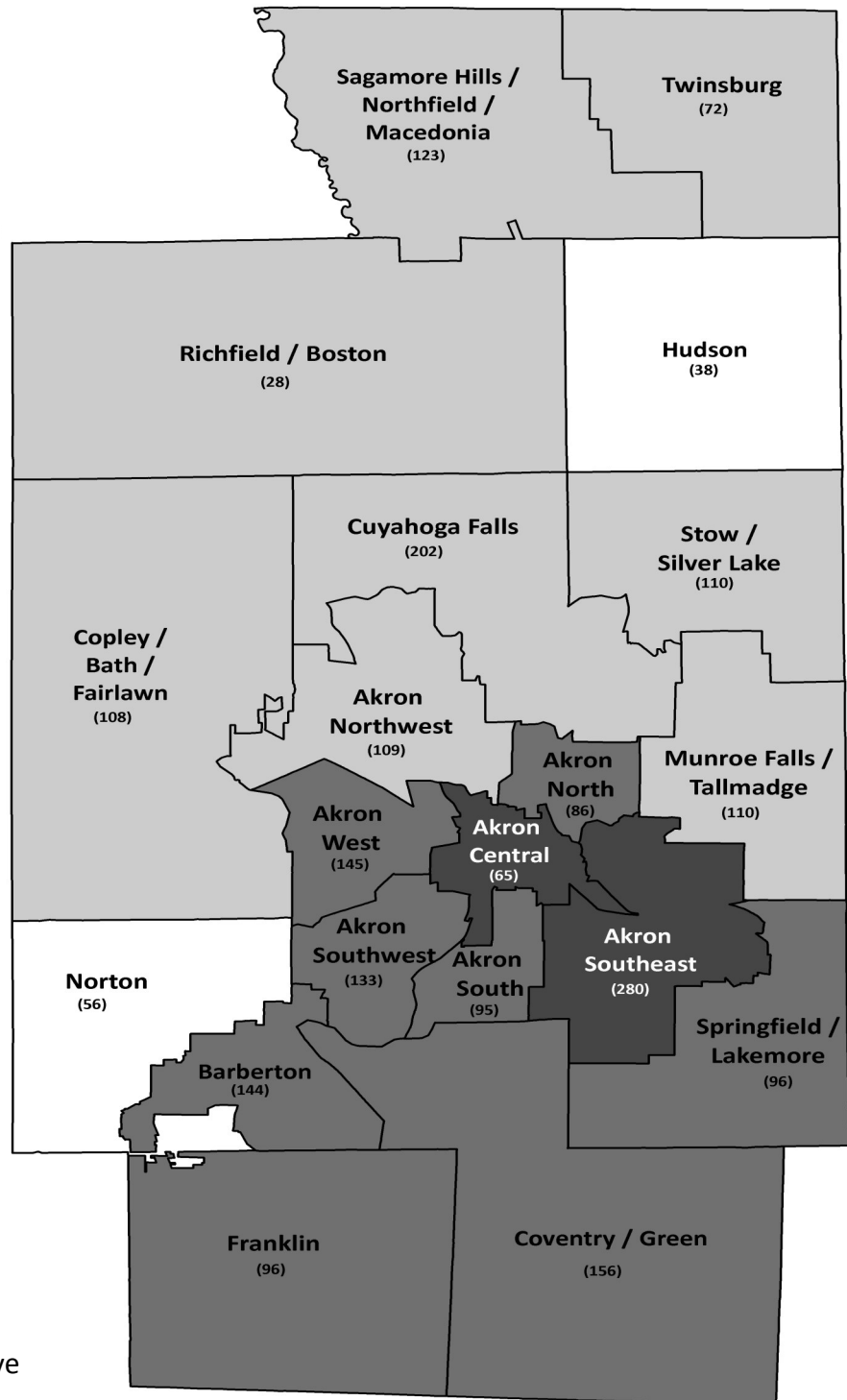
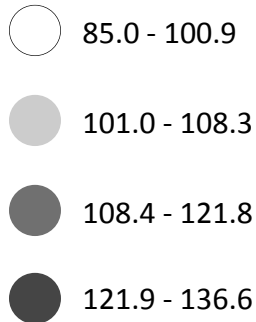
Cancer Care

www.cancercares.org/diagnosis/lung_cancer

LUNG & BRONCHUS CANCER

Figure 14—Average Annual Age-Adjusted Incidence Rate per 100,000 and Number of New Cases for Lung & Bronchus Cancer by Summit County Geographical Cluster, 2007-2011¹

Average Annual Age Adjusted Incidence Rate



Number in parentheses are the cumulative number of new invasive cancer cases, 2007-2011

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014

COLORECTAL CANCER

Cancers occurring in the colon and rectum are also referred to as colorectal cancer (CRC). Summit County has a lower incidence rate for CRC than Ohio and the United States, yet the CRC mortality rate for the county exceeds the state and national rates.

WHAT IS COLORECTAL CANCER?

Colorectal cancer begins as an abnormal growth, or **polyp**, that forms in the inner lining of the colon then eventually grows into the wall of the colon and/or rectum. There are many different forms of polyps, yet only certain types become cancer. The most common polyps, in over 95% of CRC, begin their formation in gland cells and are termed **adenocarcinomas** [21].

Non-Modifiable Risk Factors

- Family History: Having an immediate family member with CRC increases risk.
- Other Bowel Diseases: Having diseases such as inflammatory bowel disease, Crohn’s disease, or ulcerative colitis puts you at greater risk.

Potentially Modifiable Risk Factors

- Certain Diets: People who consume diets that are low in fruits, vegetables, and fiber, and high in fat are more likely to develop CRC.
- Physical Activity: Not engaging in regular physical activity puts one at greater risk.
- Weight: People who are overweight or obese are a greater risk.
- Alcohol and tobacco use: People who regularly drink or use tobacco are more likely to develop CRC [22].

Table 11—Average Annual Age-Adjusted Rate for Colorectal Cancer in Summit County, Ohio, and the U.S., 2007-2011^{1,2}

Summit County	Ohio	U.S.
New Cases Per 100,000 People		
41.2	46.2	45.0
Deaths Per 100,000 People		
17.6	17.9	15.9

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; SEER Program, *SEER Cancer Statistics Review 1973-2011*, National Cancer Institute, 2014; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

2. Ohio and United States rates based on years 2006-2010

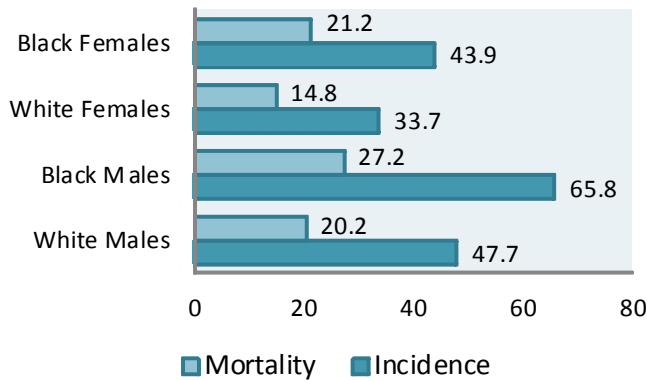
WHAT ARE THE RISK FACTORS?

The risk factors for developing colorectal cancers usually have the potential for modification through certain behavioral changes. The risk factors with the strongest association to colorectal cancer are related to diet, physical activity and weight. People who consume less healthy diets, who do not engage in regular physical activity, and who are overweight or obese are far more likely to develop colorectal cancer than those who make healthier life choices.



COLORECTAL CANCER

Figure 15—Average Annual Age-Adjusted Incidence and Mortality Rate per 100,000 for Colorectal Cancer by Race in Summit County, 2007-2011¹



1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; State of Ohio Bureau of Vital Statistics

DISPARITIES

Men in Summit County experienced higher incidence and mortality rates for colorectal cancer than women (**Figure 15**). Black men had the highest incidence and mortality rates. The incidence rate for black men for CRC was 38% higher than white men and 50% higher than black women. White women experienced the lowest incidence and mortality rates for colorectal cancer.

GEOGRAPHY

The highest incidence for CRC is in the Sagamore Hills/Northfield/Macedonia cluster (**Figure 16**). Higher rates also are found in the majority of Akron clusters. The lowest rates occurred in the northern clusters of Richfield/Boston and Hudson.

HEALTHY PEOPLE 2020

There are three major goals regarding colorectal cancer for the Healthy People 2020 initiative. The first is to reduce incidence to 41.6 new cases per 100,000. Summit County is currently meeting this

goal with an incidence rate of 41.2 per 100,000. The second goal is to reduce mortality to 14.5 deaths per 100,000, meaning the CRC mortality rate in Summit County needs to be reduced by 18%. The third goal is to increase the proportion of people who receive CRC screening to 70.5%. Summit County must obtain a 17% increase in people receiving CRC screening to meet this goal (**Table 12**). The third goal can be achieved by targeting those groups who are least likely to receive screenings, such as non-Hispanic blacks, those with a high school education or less and those who make less than \$35,000 annually.

Healthy People 2020 Goal: Reduce CRC incidence rate to 41.6 new cases per 100,000, reduce CRC mortality rate to 14.5 deaths per 100,000, and increase proportion of people who have had a CRC screening to 70.5%

Table 12—Percent of Summit County Residents Who Have Had CRC Screening Based on Current Guidelines, 2008^{1,2}

Race/Ethnicity	
Non-Hispanic White	61.1%
Non-Hispanic Black	51.4%
Education	
High School or Less	52.6%
Some College	63.1%
Bachelor's Degree or Higher	65.0%
Income	
Less than \$35,000	47.1%
\$35,000 - \$74,999	64.4%
Greater than \$75,000	67.0%
All Residents (Age 50-75)	60.1%

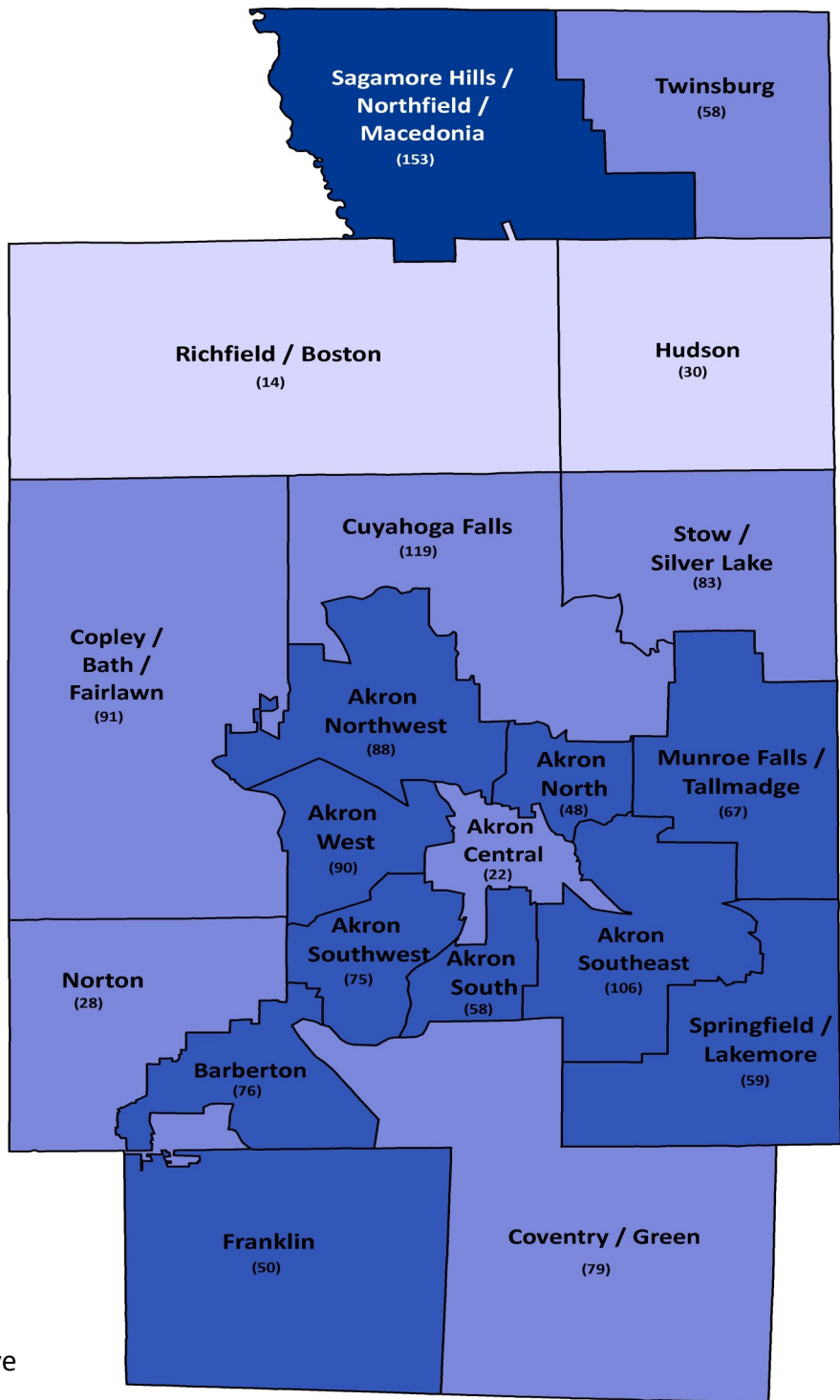
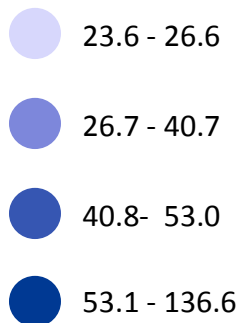
1. Source: 2008 Behavioral Risk Factor Surveillance System (BRFSS)

*Defined as those people aged 50-75 who have had a blood stool test in the past year, a sigmoidoscopy within the past 5 years and a blood stool test in the past 3 years, or a colonoscopy in the past 10 years.

COLORECTAL CANCER

Figure 16—Average Annual Age-Adjusted Incidence Rate per 100,000 and Number of New Cases for Colorectal Cancer by Summit County Geographical Cluster, 2007-2011¹

Average Annual Age Adjusted Incidence Rate



Number in parentheses are the cumulative number of new invasive cancer cases, 2007-2011

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014

COLORECTAL CANCER

GETTING SCREENED

The screening guidelines for colorectal cancer vary based on an individual's personal risk. According to the United States Preventive Services Task Force (USPSTF), people at average risk should begin screening at age 50. However, those at higher risk (having exposure to the risk factors listed on page 30) should begin screenings at an earlier age.

There are a number of different types of screenings that can be used to detect CRC. The following screening tests are generally recommended for those at average risk and who have never had a positive test result:

1. High-sensitivity fecal occult blood test (FOBT) or fecal immune chemical test (FIT)— complete annually: These tests check for blood in stool samples

2. Flexible sigmoidoscopy — complete every five years in conjunction with FOBT every 5 years or with FIT every 3 years: This test involves a flexible, lighted tube that examines the interior walls of the rectum and part of the colon

3. Colonoscopy — should be done once every 10 years: This test involves a flexible, lighted tube that examines the interior walls of the rectum and colon; tissue samples may be collected for further examination or polyps removed. This is also used as a diagnostic test when the results of other screening measures are positive [23].

Signs and Symptoms

- Changes in bowel habits (such as diarrhea or narrowing of the stool) that last for more than a few days
- Feeling like you need to have a bowel movement that does not go away after having the bowel movement
- Rectal bleeding, dark stools or presence of blood in stool
- Cramping or abdominal pain
- Weakness and fatigue
- Unintended weight loss [24]

Please keep in mind that these symptoms may be associated with other, less serious health conditions. It is important to consult with your doctor if you notice any of these symptoms.

Additional Information:

American Cancer Society

www.cancer.org/cancer/colonandrectumcancer/index

National Cancer Institute

www.cancer.gov/cancertopics/types/colorectal

US Centers for Disease Control and Prevention: Colorectal Cancer Control Program (CRCCP)

www.cdc.gov/cancer/crccp/index

Colon Cancer Prevention Project

www.coloncancerpreventionproject.org

Colon Cancer Alliance

www.ccalliance.org/about/index

BLADDER CANCER

The incidence and mortality rates of bladder cancer in Summit County, Ohio and the United States are relatively similar, with Summit County having slightly higher rates than the United States and slightly lower rates than Ohio.

WHAT IS BLADDER CANCER?

There are numerous different types of bladder cancer, the most common type being **transitional cell carcinomas**. Bladders cancers usually occur in the urothelial cells which line the inside of the bladder, the urethra, and the kidneys. Since the urothelial cells occur throughout the urinary system, patients with bladder cancer may have additional tumors in the urethra and/or kidneys. This should be a consideration during screening and diagnosis of bladder cancer [25].

Many bladder cancers are noninvasive, meaning that they have not spread into surrounding tissues. However, as the cancer continues to grow, it is more likely that it will become invasive and more difficult

Table 13—Average Annual Age-Adjusted Rate for Bladder Cancer in Summit County, Ohio, and the U.S., 2007-2011^{1,2}

Summit County	Ohio	U.S.
New Cases Per 100,000 People		
21.1	21.6	20.7
Deaths Per 100,000 People		
4.7	5.1	4.4

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; SEER Program, *SEER Cancer Statistics Review 1973-2011*, National Cancer Institute, 2012; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

2. Ohio and United States rates based on years 2006-2010

to treat, thus stressing the importance of early detection of bladder cancers.

WHAT ARE THE RISK FACTORS?

Similar to lung cancer, **the leading risk factor for developing bladder cancer is smoking**. In addition, there are many other risk factors associated with bladder cancer, as seen below, categorized by whether or not they are modifiable by behavioral changes.

Non-Modifiable Risk Factors

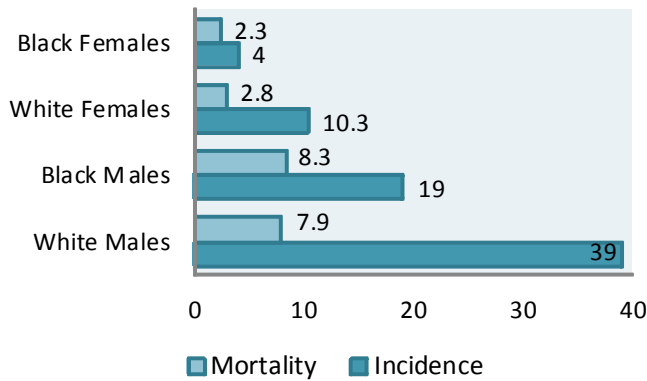
- Age: 95% of bladder cancer cases are among those who are 55 and older.
- Gender: Men are more likely to develop bladder cancer than women.
- Race/Ethnicity: Whites are twice as likely to develop bladder cancer compared to blacks, Hispanics, Asian-Americans, or American Indians.
- Family History: Having a family member who had bladder cancer puts one at greater risk.
- Bladder Infections: Those who have chronic bladder irritation or infections are at greater risk.

Potentially Modifiable Risk Factors

- ◆ Tobacco Use: Smoking is the number one risk factor for developing bladder cancer.
- ◆ Workplace exposures: Workers who are exposed to *aromatic amines*—such as those used in the rubber, leather, textile and paint products industries—are more likely to develop bladder cancer.
- ◆ Low Fluid Consumption: Not drinking enough fluids can increase your risk of developing bladder cancer [26].

BLADDER CANCER

Figure 17—Average Annual Age-Adjusted Incidence and Mortality Rate per 100,000 for Bladder Cancer by Race in Summit County, 2007-2011¹



1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

DISPARITIES

As seen in **Figure 17**, white males have the highest incidence rate of bladder cancer in Summit County, with rates being twice as high as black men, nearly four times as high as white women, and ten times as high as black women. Despite this large disparity in incidence, there are minimal differences between racial groups in terms of mortality rates. There is a disparity between genders, as men have mortality rates that are more than twice as high as women.

GEOGRAPHY

There is an interesting distribution of bladder cancer cases across the northern and southern parts of the county (**Figure 18**). The highest incidence rates appear to be in clusters on the bordering edges of the county in Franklin, Coventry/Green, Norton, Richfield/Boston and Twinsburg, while the lower incidence rates are more located toward the more central and western areas of Summit County.

Additional Information:

American Cancer Society

www.cancer.org/cancer/bladdercancer/index

National Cancer Institute

www.cancer.gov/cancertopics/types/bladder

US Centers for Disease Control and Prevention

www.cdc.gov/cancer/bladder/index

Bladder Cancer Society

www.bcan.org

Siteman Cancer Center: Bladder Cancer Toolkit

www.siteman.wustl.edu/bladdercancer.aspx

Signs and Symptoms

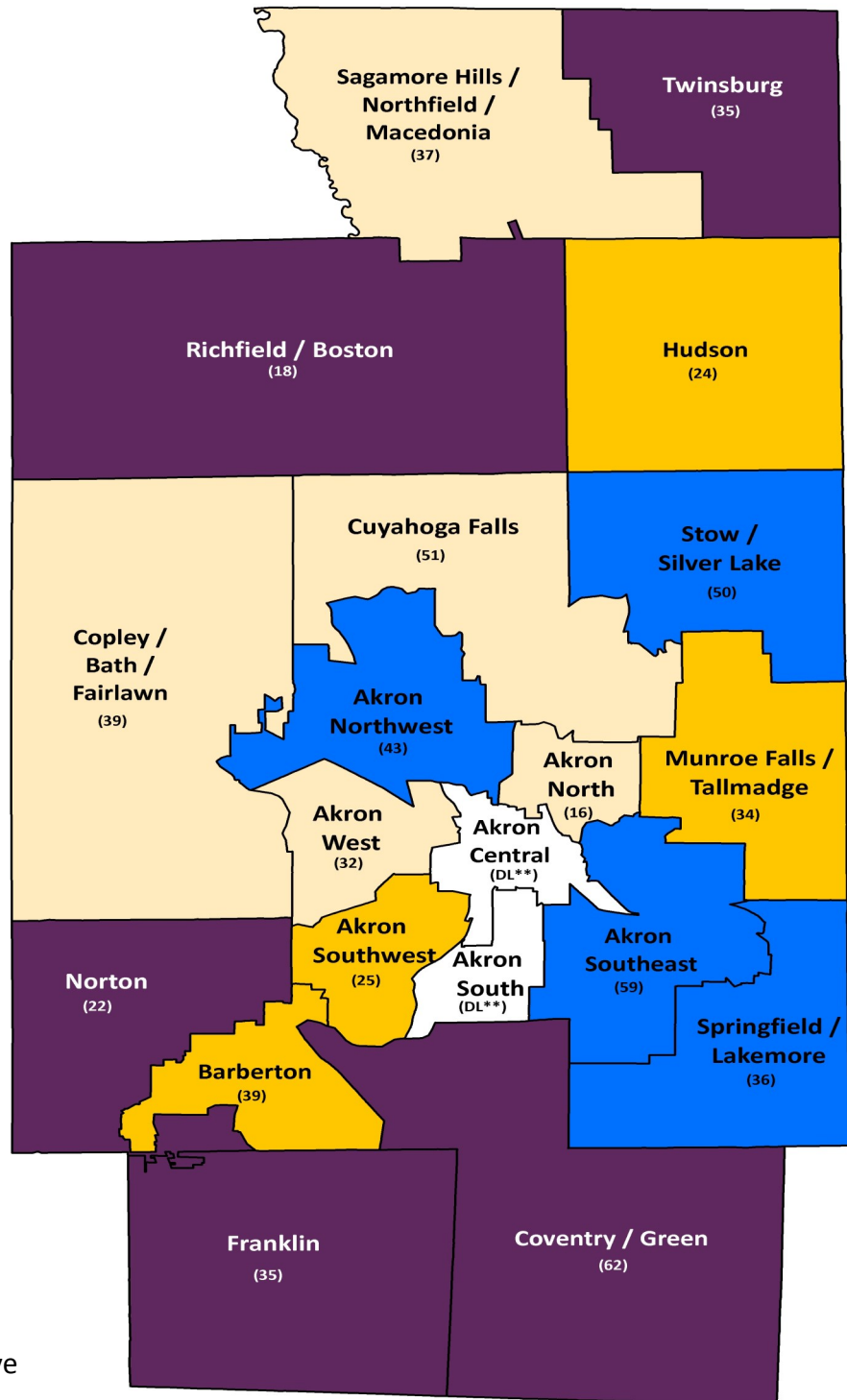
- Blood in urine
- Frequent urination
- Pain or burning during urination
- Feeling like you need to go right away even when bladder is not full
- Being unable to urinate
- Lower back pain or pain on one side
- Loss of appetite or unintentional weight loss
- Swelling in feet
- Bone pain [27]

Please keep in mind that these symptoms may be associated with other, less serious health conditions. It is important to consult with your doctor if you notice any of these symptoms.

BLADDER CANCER

Figure 18—Average Annual Age-Adjusted Incidence Rate per 100,000 and Number of New Cases for Bladder Cancer by Summit County Geographical Cluster, 2007-2011¹

Average Annual Age Adjusted Incidence Rate



Number in parentheses are the cumulative number of new invasive cancer cases, 2007-2011

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014
DL**: Data Limited. Data withheld when number of new cases was less than 10.

UTERINE CANCER

Uterine cancer is the second most common type of cancer among women in Summit County. Women who reside in Summit County have lower incidence and mortality rates compared to the rest of Ohio and the United States (*Table 14*). The Healthy People 2020 goal for uterine cancer is to reduce the number of deaths to 2.2 per 100,000 women, which requires a 50% decrease in the current uterine cancer mortality rate of 4.1 deaths per 100,000 in Summit County.

WHAT IS UTERINE CANCER?

There are several different types of uterine cancer, with two types being the most common.

Endometrial cancers are the most prevalent and develop in the cells that line the womb. The second most common type is **uterine sarcoma**, which typically develops in the muscle layers of the uterus. Uterine cancers generally emerge after a woman has gone through menopause [28].

Table 14—Average Annual Age-Adjusted Rate for Uterine Cancer in Summit County, Ohio, and the U.S., 2007-2011^{1,2}

Summit County	Ohio	U.S.
New Cases Per 100,000 Women		
23.7	27.4	24.3
Deaths Per 100,000 Women		
4.1	4.8	4.3

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2012; SEER Program, *SEER Cancer Statistics Review 1973-2011*, National Cancer Institute, 2014; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

2. Ohio and United States rates based on years 2006-2010

Healthy People 2020 Goal: Reduce uterine cancer mortality rate to *2.2 deaths per 100,000 women*

WHAT ARE THE RISK FACTORS?

Listed below are a number of risk factors that have been shown to be associated with the development of endometrial cancer, the most common form of uterine cancer. Of these, the most important and least understood is the role of a woman's hormone levels in the development of these types of cancer.

Non-Modifiable Risk Factors

- **Family History:** Having a family member who had endometrial and/or colon cancer increases risk.
- **Diabetes:** Women with diabetes are at greater risk for endometrial cancer.
- **Age:** 95% of endometrial cancers occur in women who are older than 40.
- **Hormones:** Hormones have been shown to affect your chances of developing endometrial cancers. Factors that affect your hormones include the number of menstrual cycles in your lifetime, pregnancies, certain ovarian tumors, polycystic ovarian syndrome and even obesity has been shown to affect hormone levels.

Potentially Modifiable Risk Factors

- **Alcohol Use:** Women who drink more than 2 drinks on a daily basis have greater risk.
- **Oral Contraceptives:** Women who used oral contraceptives (OC) have a slightly greater risk (this risk diminishes after OC use stops).
- **IUD Use:** Women who use an intrauterine device (IUD) are more likely to develop endometrial cancer.
- **Diet & Exercise:** Women who have a poor diet and/or do not exercise are at a greater risk [29].

UTERINE CANCER

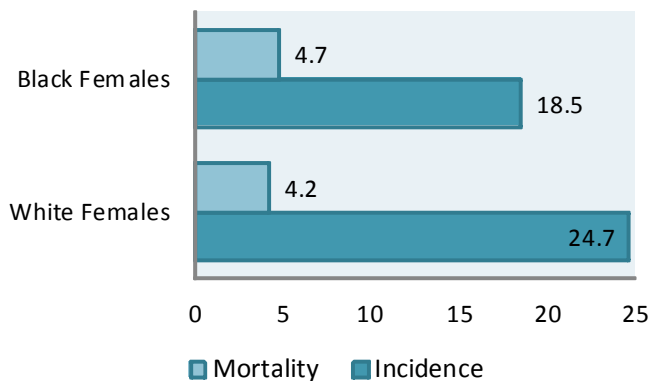
DISPARITIES

Figure 19 indicates that white women in Summit County have a higher incidence rate of uterine cancer than black women. Black women have a slightly higher mortality rate compared to white women.

GEOGRAPHY

The Sagamore Hills/Northfield/Macedonia and Barberton areas have the highest rates of uterine cancer, according to **Figure 20**. Higher incidences are found in the central clusters of the county compared to the edges. The lowest incidence rates were located in the eastern part of the county, in the Munroe Falls/Tallmadge, Springfield/Lakemore and Akron South clusters.

Figure 19—Average Annual Age-Adjusted Incidence and Mortality Rate per 100,000 for Uterine Cancer by Race in Summit County, 2007-2011¹



1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

Summit County Resources:

American Cancer Society: Reach to Recovery Program

800.227.2345

Stewart's Caring Place: Gynecologic Oncology Cancer Support Group

2955 West Market Street, Suite R
Akron, OH 44333

Additional Information:

American Cancer Society

www.cancer.org/cancer/endometrialcancer/index
www.cancer.org/cancer/uterinesarcoma/index

National Cancer Institute

www.cancer.gov/types/uterine

US Centers for Disease Control and Prevention

www.cdc.gov/cancer/uterine

Foundation for Women's Cancer

www.foundationforwomenscancer.org/types-ofgynecologic-cancers/uterine/

Signs and Symptoms

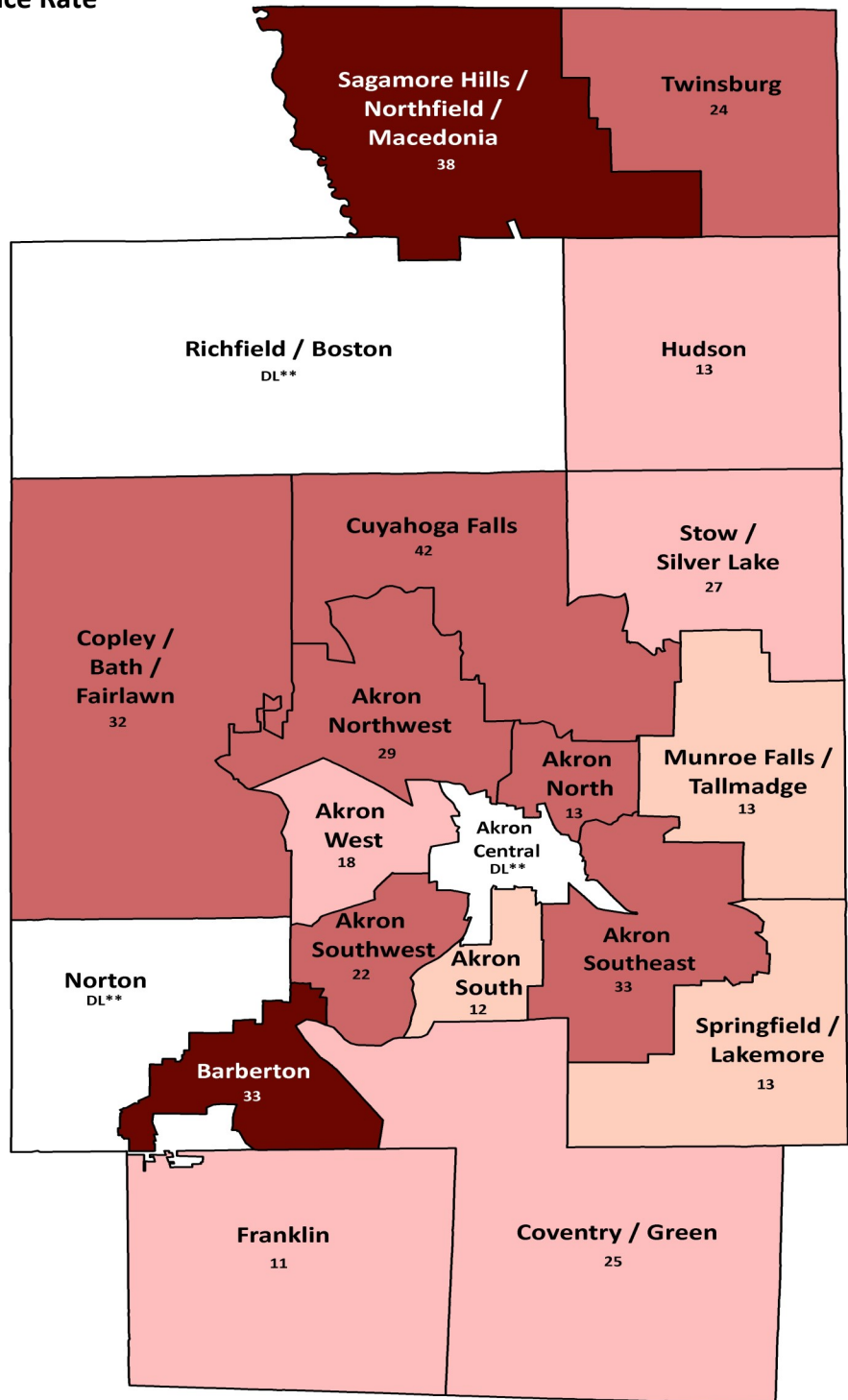
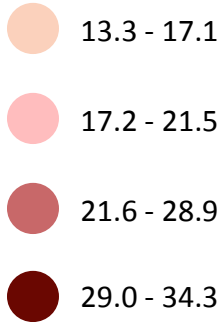
- Abnormal vaginal bleeding
- Bleeding after menopause
- Pelvic pain or pressure
- Feeling a mass or tumor
- Pain during intercourse
- Abnormal, watery, or blood-tinged discharge from vagina
- Unintentional weight loss

Please keep in mind that these symptoms may be associated with other, less serious health conditions. It is important to consult with your doctor if you notice any of these symptoms.

UTERINE CANCER

Figure 20—Average Annual Age-Adjusted Incidence Rate per 100,000 and Number of New Cases for Uterine Cancer by Summit County Geographical Cluster, 2007-2011¹

Average Annual Age Adjusted Incidence Rate



Number in parentheses are the cumulative number of new invasive cancer cases, 2007-2011

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014
DL**: Data Limited. Data withheld when number of new cases was less than 10.

MELANOMA OF THE SKIN

The incidence and mortality rates for melanoma in Summit County are not significantly different from Ohio or the United States (**Table 15**). The Healthy People 2020 goal is to reduce the mortality rate to 2.4 deaths per 100,000 people. The current mortality rate in Summit County of 2.9 deaths per 100,000, needs to be reduced by 17% to meet this goal.

WHAT IS THE MELANOMA OF THE SKIN?

Melanoma develops in certain types of skin cells, called **melanocytes**. It is important to know that there are many non-cancerous tumors that often form in other skin cells, and both cancerous and non-cancerous tumors frequently take the form of skin formations called moles. **Most moles are not cancer.**

Melanoma can develop anywhere on the skin but commonly develops on the face and neck. In addition, melanomas are common on the chest and back for men, and on the legs for women.

Melanoma is one of the only leading types of cancer and has increased in terms of both incidence and mortality in the past 50 years [31].

WHAT ARE THE RISK FACTORS?

There are a number of risk factors for melanoma, but exposure to UV radiation, typically from the sun or tanning beds, is the largest contributor to the development of this type of skin cancer.

Healthy People 2020 Goal: Reduce melanoma mortality rate to 2.4 per 100,000 people

Table 15—Average Annual Age-Adjusted Rate for Melanoma in Summit County, Ohio, and the U.S., 2007-2011^{1,2}

Summit County	Ohio	U.S.
New Cases Per 100,000 Women		
19.6	19.1	21.1
Deaths Per 100,000 Women		
2.9	2.9	3.6

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; SEER Program, *SEER Cancer Statistics Review 1973-2011*, National Cancer Institute, 2012; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

2. Ohio and United States rates based on years 2006-2010

Non-Modifiable Risk Factors

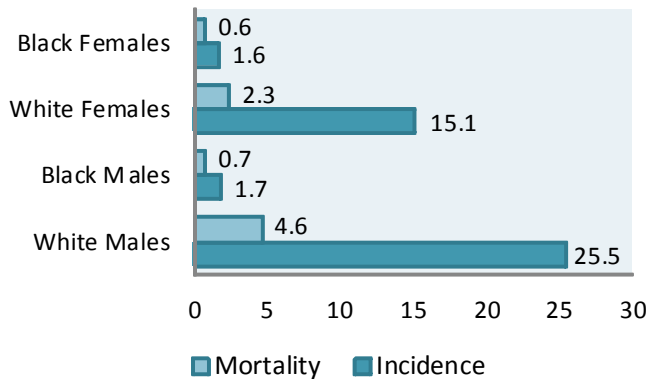
- Family History: Having a family member with melanoma increases risk
- Gender: Men are more likely to develop melanoma than women
- Age: Older people are more likely to develop cancer, however, melanoma is one of the most common forms of cancer among those younger than 50
- Personal History: Having a diagnosis of other forms of cancer increases risk
- Having fair skin, freckling, blue or green eyes, or blonde hair

Potentially Modifiable Risk Factors

- UV Radiation: The number one risk factor for melanoma is exposure to UV radiation (typically from the sun or tanning beds) [32]

MELANOMA OF THE SKIN

Figure 21—Average Annual Age-Adjusted Incidence and Mortality Rate per 100,000 for Melanoma by Race in Summit County, 2007-2011¹



1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014; State of Ohio Bureau of Vital Statistics Death Records, 2007-2011

DISPARITIES

White men and women have the highest incidence rates and mortality rates for melanoma (**Figure 21**). This supports male gender and white race being risk factors in the development of melanoma. White men have more than one and a half times the incidence compared to white women but approximately fifteen times the incidence rate compared to black men and black women.

GEOGRAPHY

The highest incidence rates for melanoma are located in the Franklin cluster and in other clusters where the SES is typically higher (**Figure 22**). Those with a higher SES are more likely to have increased leisure time where they are exposed to more sunlight, possibly increasing the risk for melanoma in those areas [33]. The lowest rates are located in the southern Akron clusters and other Akron clusters where the incidence is too low to report stable rates.

ABCDEs of Moles

Moles are what doctors observe to check for melanoma. Below listed are the characteristics used by doctors to assess moles for melanoma.

A—Asymmetrical shape

Benign moles are usually symmetrical while those which indicate melanoma are often irregular

B—Border

Moles that do not have smooth, even borders that are difficult to define are more indicative of cancer

C—Color

Having more than one color or distribution of colors—including blue, black, brown, tan—can indicate melanoma

D—Diameter

Cancerous moles or lesions that are often larger than 6 millimeters across which is equal to about the size of a pencil eraser

E—Evolution

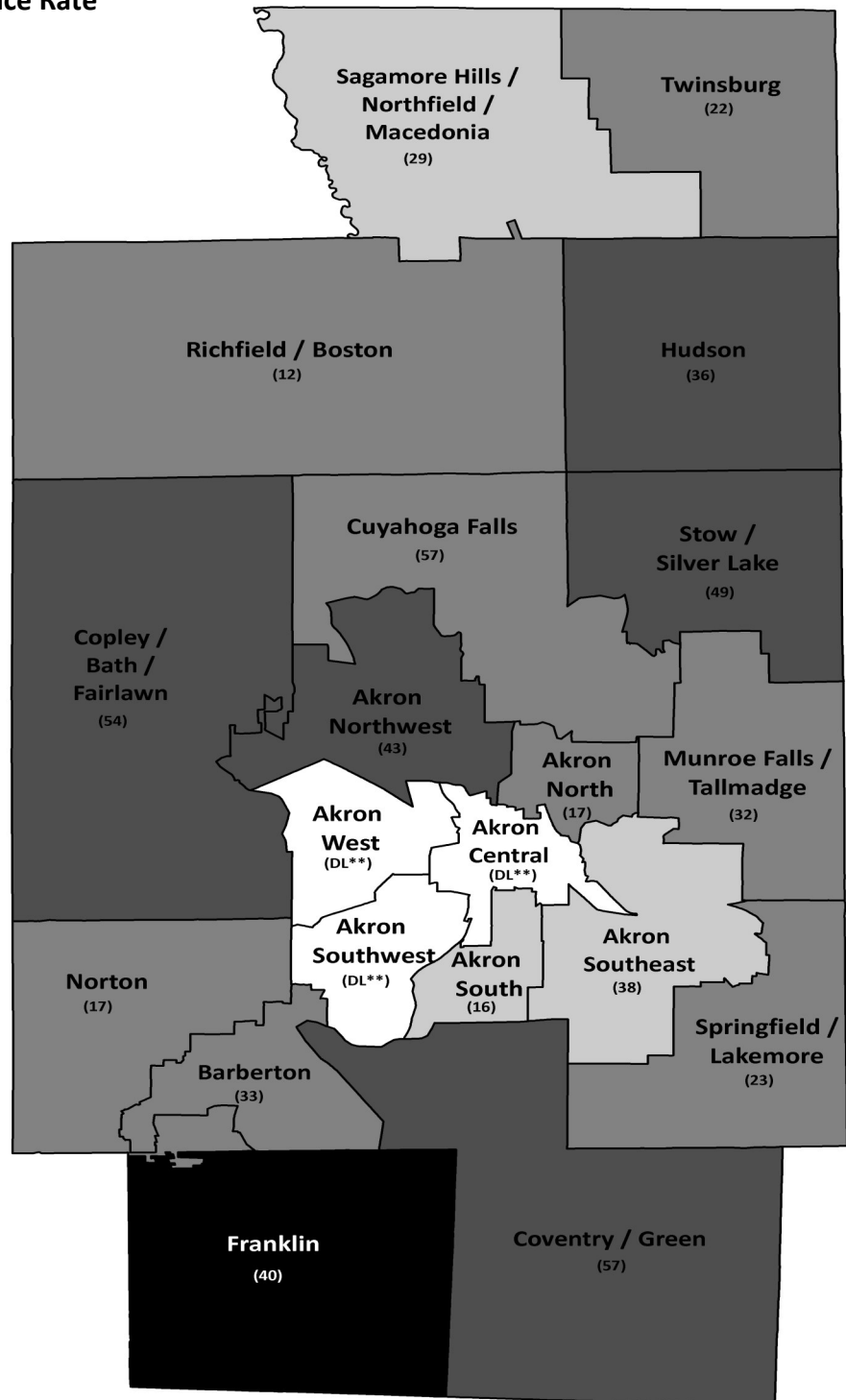
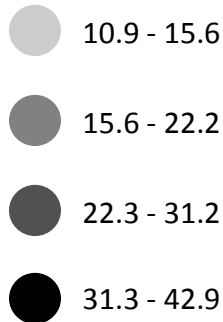
The most important factor in determining whether or not your mole has become cancerous is monitoring it to see if it has gone through any changes recently in color or size [34]

If you notice any changes in the shape or size of a mole, see your doctor or dermatologist right away.

MELANOMA OF THE SKIN

Figure 22—Average Annual Age-Adjusted Incidence Rate per 100,000 and Number of New Cases for Melanoma by Summit County Geographical Cluster, 2007-2011¹

Average Annual Age Adjusted Incidence Rate



Number in parentheses are the cumulative number of new invasive cancer cases, 2007-2011

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014
DL**: Data Limited. Data withheld when number of new cases was less than 10.

TOBACCO USE

Cigarette smoking and the use of other tobacco products are significant risk factors in the development of many cancers as well as numerous other chronic conditions and eventually premature death. Almost one in three cancer deaths will be caused from smoking, according to a 2015 estimate [35].

Smoking is linked to 90% of all lung cancers [36], and people who smoke today have a much greater chance of dying from lung cancer today than they did back in 1964, mostly due to differences in how cigarettes are produced and cigarette content [37].



Smoking is linked to 90% of all lung cancers

SMOKING IN SUMMIT COUNTY

According to **Table 16**, nearly one in five Summit County residents report smoking regularly. In addition, dramatic disparities were observed between racial groups and other socioeconomic factors. Approximately 25% of non-Hispanic black residents of Summit County smoke, while only 18% of non-Hispanic whites are regular smokers. 32% of those with a high school diploma or less smoke, compared to only 8% of those who have a bachelor's degree. And, about 35% those who make less than \$35,000 per year are smokers, compared to 12% of those who make \$75,000 or more annually. Any plans for community-based interventions to reduce smoking in Summit County must take these disparities into consideration.

Table 16—Percent of Summit County Residents Who Smoke “Everyday” or “Some Days”, 2008¹

Race/Ethnicity	
Non-Hispanic White	18.1%
Non-Hispanic Black	24.4%
Education	
High School or Less	32.7%
Some College	18.0%
Bachelor's Degree or Higher	8.2%
Income	
Less than \$35,000	35.3%
\$35,000 - \$74,999	14.1%
Greater than \$75,000	12.1%
All Residents	19.2%

1. Source: 2008 Behavioral Risk Factor Surveillance System (BRFSS)

The Smoking Recovery Timeline [38]



Within 2 Minutes—Your blood pressure and pulse have returned to normal



Within 24 Hours—Your anxiety has peaked intensity but will return to normal in 2 weeks



Within 72 Hours—Your body is 100% nicotine free—with less than 10% of the related chemicals remaining



Within 1 Year—Your risk for hear disease, heart attack, and stroke has dropped to half of that of a smoker



Within 10 Years—Your risk for being diagnosed with lung cancer is 30-50% that of a smoker



Within 13 Years—Those who don't quit have 5.8 fewer teeth by age 75, your risk for tooth loss is now the same as a non-smoker



Within 20 Years—Your risk of dying is now equal to those who never smoked

* Defined as those residents who reported smoking at least 30 cigarettes in their lifetime and now smoke every day or some days

GLOSSARY

Adenocarcinoma

Type of cancer that forms in gland cells.

Age-Adjustment

Statistical method used to compare two different populations by assigning standard weights to account for differences in age.

Carcinogen

Any substance that causes or contributes significantly to the development of cancer.

Comorbidities

Having two or more chronic diseases or conditions at the same time in the same person.

Endometrial Cancer

Cancer that begins in the cells that line the uterus.

Incidence Rate

The frequency of a disease, in this case cancer. It is a measure of risk, or likelihood of a disease occurring in a population within a specified period of time.

Malignant Neoplasm

Essentially the same as invasive cancer, specifically referring to a tumor that tends to grow, invade, and metastasize.

Melanocytes

The cells of the skin that produce melanin, which are also the cells where melanoma begins to form.

Metastasize

The spread of cancer from one organ system to another, often spread via the circulatory or lymphatic systems.

Mortality Rate

The frequency of death, in this case from cancer. It is a measure of risk, or likelihood of a death occurring in a population within a specified period of time.

Polyp

An abnormal growth of tissue that projects from a mucous membrane, such as the colon or rectum.

Risk Factor

A factor that has been shown to be related to, or associated with, the development of cancer(s).

Stage

A diagnostic term used to describe the extent of cancer spread. There are a number of different ways to stage cancers, but this report is based on those defined by the SEER Program. Please refer to *Figure 1* on page 8 for more details regarding cancer staging.

Transitional Cell Carcinoma

This is the primary form of cancer that occurs in the bladder, affecting the urothelial cells that line the bladder, ureters, urethra, and the kidneys.



DATA TABLES

Table 17—List of 24 Invasive Cancers by Site/Type¹

List of Invasive Cancers	
Bladder (includes carcinoma in situ)	Brain and Other CNS*
Breast	Cervix
Colon and Rectum	Esophagus
Hodgkin's Lymphoma	Kidney and Renal Pelvis
Larynx	Leukemia
Liver and Intrahepatic Bile Duct	Lung and Bronchus
Melanoma of Skin	Multiple Myeloma
Non-Hodgkin's Lymphoma	Oral Cavity and Pharynx
Ovary	Pancreas
Prostate	Stomach
Testis	Thyroid
Uterus	Other Sites/Types

1.Source: Surveillance, Epidemiology, and End Results Program Cancer Site/Type Codes as based on International Classification of Diseases for Oncology (ICD-O-3)

*Central Nervous System

DATA TABLES

Table 18—Average Annual Age-Adjusted Incidence Rate per 100,000 for Select Cancer Sites/Types by Geographical Cluster, 2007-2011¹

	All Invasive	Prostate	Breast	Lung & Bronchus	Colorectal	Bladder	Uterine	Melanoma
Akron Central	437.4	84.6	112.6	112.3	38.1	-	-	-
Akron North	452.7	86.8	85.0	92.5	52.6	17.4	25.6	17.2
Akron Northwest	447.1	134.1	116.5	56.8	48.8	22.5	28.0	24.4
Akron South	373.5	77.7	100.9	74.1	42.6	-	16.5	10.9
Akron Southeast	501.6	103.6	108.3	112.4	43.3	23.4	23.7	15.5
Akron Southwest	465.1	121.1	97.3	88.7	53.0	18.4	26.4	-
Akron West	448.8	171.7	100.5	79.9	47.8	16.4	18.0	-
Barberton	474.5	106.4	120.6	82.9	43.5	20.3	34.3	21.0
Copley/Bath/Fairlawn	595.0	136.0	121.8	41.9	34.3	15.7	24.5	23.5
Coventry/Green	420.0	101.4	113.8	68.3	34.1	26.8	19.3	26.6
Cuyahoga Falls	403.2	103.8	99.2	63.8	38.6	15.9	24.6	19.0
Franklin	471.7	109.9	117.0	86.5	45.6	33.4	19.0	42.9
Hudson	407.5	143.3	136.5	32.9	26.6	18.7	18.8	31.2
Munroe Falls/Tallmadge	424.4	119.2	107.8	66.2	43.4	18.4	13.3	21.7
Norton	445.7	116.9	128.7	11.2	37.5	26.6	-	22.2
Richfield/Boston	399.9	139.8	106.0	46.3	23.6	29.6	-	18.6
Sagamore Hills/ Northfield/Macedonia	463.6	169.3	136.6	58.0	136.6	17.3	32.5	15.0
Springfield/Lakemore	430.9	76.0	134.8	69.8	43.4	25.4	17.1	17.4
Stow/Silver Lake	400.3	110.6	113.4	48.9	36.7	22.7	21.5	23.3
Twinsburg	446.1	155.8	108.1	53.3	40.7	26.3	28.9	19.0
Summit County Total	439.2	120.6	113.7	70.1	41.2	21.1	23.7	19.6

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014

-Data suppressed when number of cases is fewer than 10

DATA TABLES

Table 19—Average Annual Age-Adjusted Mortality Rate per 100,000 for Select Cancer Sites/Types by Geographical Cluster, 2007-2011¹

	All Invasive	Prostate	Breast	Lung & Bronchus	Colon & Rectal
Akron Central	212.0	-	-	89.0	-
Akron North	227.9	-	20.8	79.5	14.7
Akron Northwest	172.6	27.6	29.5	44.0	17.3
Akron South	190.1	31.7	20.3	54.2	21.2
Akron Southeast	257.6	38.3	32.1	94.6	18.5
Akron Southwest	257.6	30.2	42.1	74.9	21.7
Akron West	212.3	32.7	27.2	66.0	26.0
Barberton	195.9	27.1	17.5	62.3	20.2
Copley/Bath/Fairlawn	141.0	21.3	24.6	33.3	15.0
Coventry/Green	166.5	21.1	25.8	56.6	11.8
Cuyahoga Falls	176.7	20.9	23.0	52.3	17.7
Franklin	191.6	-	0	69.7	19.0
Hudson	133.4	-	29.8	23.5	10.2
Munroe Falls/Tallmadge	182.7	23.5	17.5	56.9	13.5
Norton	187.4	36.7	-	56.3	17.9
Richfield/Boston	143.9	-	38.7	28.3	-
Sagamore Hills/Northfield/Macedonia	158.2	29.8	21.5	37.1	17.1
Springfield/Lakemore	184.6	-	20.3	60.0	15.5
Stow/Silver Lake	173.1	16.8	29.9	41.7	19.1
Twinsburg	158.4	23.8	17.9	45.3	17.2
Summit County Total	186.7	25.8	25.8	56.0	17.6

1. Source: Ohio Bureau of Vital Statistics Death Records, 2014

-Data suppressed when number of cases is fewer than 10

DATA TABLES

Table 20—Average Annual Age-Adjusted Incidence Rate per 100,000 by Sex and Race, 2007-2011¹

Cancer Type	White Males	Black Males	White Females	Black Females
All Invasive Cancers	501.4	515.8	400.5	372.3
Brain & Other CNS	39.0	19.0	10.3	4.0
Breast	-	-	117.8	97.1
Cervix	-	-	5.4	5.0
Colon & Rectum	47.7	65.8	33.7	43.9
Esophagus	10.0	2.5	2.1	1.6
Hodgkin's Lymphoma	0	0	1.4	3.9
Kidney & Renal Pelvis	21.0	17.4	10.9	12.5
Larynx	4.4	6.8	2.0	2.5
Leukemia	14.7	14.2	9.5	8.2
Liver & Intrahepatic Bile Duct	8.2	11.8	2.6	2.4
Lung & Bronchus	87.9	112.5	56.5	61.8
Melanoma of the Skin	25.5	1.7	15.1	1.6
Multiple Myeloma	6.1	7.6	4.0	8.4
Non-Hodgkin's Lymphoma	24.6	20.1	15.9	8.1
Oral Cavity & Pharynx	15.9	8.1	5.9	4.1
Ovary	-	-	11.1	7.0
Pancreas	13.1	8.0	9.4	16.8
Prostate	113.8	162.0	-	-
Stomach	6.0	7.7	3.2	8.6
Testis	7.6	2.0	-	-
Thyroid	6.3	5.0	17.3	12.2
Urinary Bladder	39.0	19.0	10.3	4.0
Uterine Corpus & Uterine NOS*	-	-	24.7	18.5

1. Source: Ohio Cancer Incidence Surveillance System (OCISS), Ohio Department of Health, 2014

- Gender-specific cancer

* Not otherwise specified

** Central Nervous System

DATA TABLES

Table 21—Average Annual Age-Adjusted Mortality Rate per 100,000 by Sex and Race, 2007-2011¹

Cancer Type	White Males	Black Males	White Females	Black Females
All Invasive Cancers	230.3	281.3	156.0	181.6
Brain & Other CNS	6.2	2.5	4.0	2.6
Breast	-	-	25.9	28.1
Cervix	-	-	1.2	1.4
Colon & Rectum	20.2	27.2	14.8	21.2
Esophagus	8.9	4.6	2.1	1.1
Hodgkin's Lymphoma	0.4	0	0.4	0
Kidney & Renal Pelvis	4.8	8.8	2.4	3.5
Larynx	1.8	2.9	0.4	0
Leukemia	9.5	13.2	5.9	5.5
Liver & Intrahepatic Bile Duct	0	0	2.7	2.3
Lung & Bronchus	74.2	90.7	42.7	50.5
Melanoma of the Skin	4.6	0.7	2.3	0.6
Multiple Myeloma	4.9	4.9	2.3	4.4
Non-Hodgkin's Lymphoma	10.1	8.5	4.6	7.0
Oral Cavity & Pharynx	4.9	2.8	1.6	0.7
Ovary	-	-	8.1	4.2
Pancreas	12.4	11.1	10.2	16.6
Prostate	23.4	53.3	-	-
Stomach	4.1	6.5	2.2	6.2
Urinary Bladder	7.9	8.3	2.8	2.3
Uterine Corpus & Uterine NOS*	-	-	4.2	4.7

1. Source: Ohio Department Bureau of Vital Statistics Death Records, 2014

- Gender-specific cancer

* Not otherwise specified

** Central Nervous System

DATA SOURCES

ALPHABETICAL LIST OF SOURCES

BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM (BRFSS)

The BRFSS is the largest state-sponsored health survey in the nation. This phone-based survey includes a variety of questions of health and health behaviors and provides valuable information on demographics, employment, and income; health insurance coverage; access to care or preventative services and unmet needs; utilization and quality; adult health status and behaviors. In 2008, an oversample of residents in Summit County was conducted, which resulted in a larger sample size that allows for more in-depth analyses of the data.

Like the American Community Survey, the 2008 BRFSS was conducted among a sample of the population rather than 100% of Ohio residents. Therefore, statistics based on these samples may differ from those that would have been obtained had the entire population been surveyed. Margins of error (MOEs) and confidence intervals are not presented in the body of this report in an effort to make the presented data more palatable for a general audience. However, the estimates provided should be interpreted with caution as the estimated measures lie within a range of values for which we can be 95% confident that the estimate represents the actual measure.

OHIO CANCER INCIDENCE SURVEILLANCE SYSTEM (OCISS) DATA

The OCISS collects data regarding individual diagnoses of cancer from a variety of hospitals and facilities, including ambulatory surgery and radiation therapy centers, free-standing pathology laboratories, nursing homes, and physician offices. Each OCISS record represents one primary malignant cancer diagnosis and contains multiple data elements including: patient demographics, residence, cancer diagnosis, site, histology, staging, and treatment. For the purpose of this report, cancer diagnoses among residents of Summit County in the calendar years of 2007 through 2011 were analyzed and represent all Summit County resident cancer diagnoses reported during that time frame. The patient's residential address and zip code at the time of cancer diagnosis was utilized for geocoding to obtain the patient's Summit County census tract of residence. The census tract was subsequently categorized into one of 20 Summit County geographies, or county clusters.

Each cancer case is coded by site and histology using the International Classification of Diseases for Oncology, 3rd Revision (ICD-O-3). For the purpose of these analyses, cancers were also staged in the manner of the Surveillance, Epidemiology, and End Results (SEER) Program at the National Cancer Institute, which are described in **Figure 1** on page 9.

DATA SOURCES

OHIO DEATH CERTIFICATE DATA

All fatalities occurring in the state of Ohio are recorded on Ohio death certificates and submitted as the death certificate record to the Ohio Department of Health (ODH) through the Electronic Death Registration System (EDRS).

Each record represents the death of one person and contains information regarding: decedent demographics, residence, occupation, causes of death, and other descriptors of the fatality. For the purpose of this report, deaths among all residents of Summit County that occurred in the calendar years of 2007 through 2011 were analyzed and represent the universe of all deaths during that time frame. The decedent's residential address and zip code at the time of death were utilized for geocoding to obtain the decedent's census tract of residence. The census tract was subsequently categorized into one of 20 Summit County geographies, or county clusters.

SURVEILLANCE, EPIDEMIOLOGY, AND END RESULTS (SEER)

The SEER Program, run by the National Cancer Institute, collects data on cancer cases from a number of locations and sources nationwide. Currently, it is the highest quality surveillance system for cancer in the US and has been collecting data on cancer cases since 1973. Like OCISS, SEER uses location-based registries to collect information regarding every new case of cancer diagnosed. The most current SEER data utilizes registries from 18 different locations, many of them state-wide. For a full list of SEER cancer registries, please visit: <http://seer.cancer.gov/registries/list.html>. For the purposes of this report, SEER data are used to compare the Summit County and Ohio cancer incidence and mortality rates to national rates.

U.S. DECENNIAL CENSUS SUMMARY FILE 1 (SF1) 100% DATA

The United States Census is a decennial, constitutionally-mandated count of every resident in the U.S. The Census form used in 2010 was one of the shortest forms in the history of the Census and only contained ten questions, as many of the questions previously asked on the Census form are now asked in the American Community Survey. These ten Census questions were designed to collect information on the following: the number of people who were living or staying in each house, apartment, and mobile home; whether each residence was owned with a mortgage, owned without a mortgage, rented, or occupied without rent, and every resident's sex, age, date of birth, race, and ethnicity. Data from the US decennial Census are available every ten years for an abundance of geographies, including blocks, block groups, census tracts, cities, villages, county subdivisions, counties, and states. For the purpose of this report, data for census tracts were aggregated (where

appropriate) to calculate statistics at the county cluster level. In addition, analyses in this report frequently used 2010 US Census data to provide denominators when incidence rates were calculated.

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SUMMIT COUNTY, OHIO





Summit County Public Health Mission Statement

To protect and advance the health of the entire community through its policies, programs and activities that protect the safety, health and well-being of the people in Summit County. Through its policies, programs and activities, the Health District endeavors to create a healthful environment and ensure the accessibility of health services to all.



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