

**Susan G. Komen® Columbus  
Quantitative Data Report**



2014

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## 1. Purpose, Intended Use, and Summary of Findings

The purpose of the quantitative data report for Susan G. Komen® Columbus is to combine evidence from many credible sources (see Section 5) and use the data to identify the highest priority areas for evidence-based breast cancer programs.

The report's intended use is to provide quantitative data to guide the 2015 Susan G. Komen Community Profile process by providing data tables, maps, preliminary data interpretation, and identification of priority areas.

The quantitative data report provides the following data at the Affiliate and county-level, as well as for the United States and State(s):

- Female breast cancer incidence (new cases)
- Female breast cancer mortality
- Late-stage diagnosis
- Screening mammography
- Population demographics (e.g. age, race/ethnicity)
- Socioeconomic indicators (e.g. income and education level)

The data provided in the report are used to identify priorities within the Affiliate's service area based on estimates of how long it would take an area to achieve Healthy People 2020 objectives for breast cancer late-stage diagnosis and mortality [HP 2020].

Nancy G. Brinker promised her dying sister, Susan G. Komen, she would do everything in her power to end breast cancer forever. In 1982, that promise became Susan G. Komen® and launched the global breast cancer movement. Today, Susan G. Komen is the boldest community fueling the best science and making the biggest impact in the fight against breast cancer by empowering people, ensuring quality care for all and energizing science to find the cures. This promise is put into action at a local level through a network of 114 Affiliates.

### **Limitations in the use of the data**

The quantitative data presented in this report have been gathered from credible sources using the most current data available at the time the report was generated. However, there are some limitations of these data and with the application of the data in planning for breast cancer programs. See Section 6 for additional details about data limitations.

- Data can change over time. The most recent data available were utilized in this report. However, data may change during the five year planning period for this report (2015 to 2019).

- Limited available data. The breast cancer data available in this report may be limited for a number of reasons including source data restrictions or counties with small populations. Data on population characteristics, which are available for all counties, can be used to help guide planning for where specific breast cancer data are not available.
- Affiliates with a small number of counties. When there are just a few counties in the Affiliate's service area, the Affiliate can refer to the state report to compare its counties to neighboring counties in the state.
- Difference with other cancer data sources. There may be minor differences between the breast cancer data in this report and data reported by state registries and health departments due to registry database updates between the times when the data were extracted for the two reports.
- Data on specific racial and ethnic subgroups. Data on cancer rates for specific racial and ethnic subgroups such as Somali, Hmong, or Ethiopian are not generally available.
- Reasons for changes in cancer rates may not be obvious. The various types of breast cancer data in this report are inter-dependent. For example, if the breast cancer incidence rate increases, it may mean that more women are getting breast cancer. However, it could also mean that more breast cancers are being found because of an increase in screening.
- Missing factors. Quantitative data are not available for some factors that impact breast cancer risk and survival such as family history, genetic markers like HER2 and BRCA, and the presence of other medical conditions that can complicate treatment.

### **Summary of key findings**

To determine priority areas, each county's estimated time to reach the HP2020 target for late-stage diagnosis and mortality were compared and then each county was categorized into seven potential priority levels. Ten counties in the Komen Columbus service area are in the highest priority category: Clark County, Hocking County, Licking County, Madison County, Meigs County, Monroe County, Morgan County, Muskingum County, Perry County and Washington County.

Two counties in the Komen Columbus service area are in the high priority category: Guernsey County and Marion County.

## 2. Quantitative Data

### 2.1 Data Types

This section of the report provides specific information on the major types of data that are included in the report.

#### Incidence rates

**“Incidence” means the number of new cases of breast cancer that develop in a specific time period.**

**If the breast cancer incidence rate increases, it may mean that more women are getting breast cancer. However, it could also mean that more breast cancers are being found because of an increase in screening.**

The breast cancer incidence rate shows the frequency of new cases of breast cancer among women living in an area during a certain time period. Incidence rates may be calculated for all women or for specific groups of women (e.g. for Asian/Pacific Islander women living in the area).

#### *How incidence rates are calculated*

The female breast cancer incidence rate is calculated as the number of females in an area who were diagnosed with breast cancer divided by the total number of females living in that area.

Incidence rates are usually expressed in terms of 100,000 people. For example, suppose there are 50,000 females living in an area and 60 of them are diagnosed with breast cancer during a certain time period. Sixty out of 50,000 is the same as 120 out of 100,000. So the female breast cancer incidence rate would be reported as 120 per 100,000 for that time period.

#### *Adjusting for age*

Breast cancer becomes more common as women grow older. When comparing breast cancer rates for an area where many older people live to rates for an area where younger people live, it’s hard to know whether the differences are due to age or whether other factors might also be involved.

To account for age, breast cancer rates are usually adjusted to a common standard age distribution. This is done by calculating the breast cancer rates for each age group (such as 45- to 49-year-olds) separately, and then figuring out what the total breast

cancer rate would have been if the proportion of people in each age group in the population that's being studied was the same as that of the standard population.

Using age-adjusted rates makes it possible to spot differences in breast cancer rates caused by factors other than differences in age between groups of women.

### *Trends over time*

To show trends (changes over time) in cancer incidence, data for the annual percent change in the incidence rate over a five-year period were included in the report. The annual percent change is the average year-to-year change of the incidence rate. It may be either a positive or negative number.

- A negative value means that the rates are getting lower.
- A positive value means that the rates are getting higher.
- A positive value (rates getting higher) may seem undesirable—and it generally is. However, it's important to remember that an increase in breast cancer incidence could also mean that more breast cancers are being found because more women are getting mammograms. So higher rates don't necessarily mean that there has been an increase in the occurrence of breast cancer.

### **Death rates**

**A fundamental goal is to reduce the number of women dying from breast cancer.**

**It is desirable that death rate trends be negative: death rates should be getting lower over time.**

The breast cancer death rate shows the frequency of death from breast cancer among women living in a given area during a certain time period. Like incidence rates, death rates may be calculated for all women or for specific groups of women (e.g. Black/African-American women).

### *How death rates are calculated*

The death rate is calculated as the number of women from a particular geographic area who died from breast cancer divided by the total number of women living in that area.

Like incidence rates, death rates are often shown in terms of 100,000 women and adjusted for age.

### *Death rate trends*

As with incidence rates, data are included for the annual percent change in the death rate over a five-year period.

The meanings of these data are the same as for incidence rates, with one exception. Changes in screening don't affect death rates in the way that they affect incidence rates. So a negative value, which means that death rates are getting lower, is always desirable. A positive value, which means that death rates are getting higher, is always undesirable.

### **Late-stage diagnosis**

**People with breast cancer have a better chance of survival if their disease is found early and treated.**

**The stage of cancer indicates the extent of the disease within the body. Most often, the higher the stage of the cancer, the poorer the chances for survival will be.**

**If a breast cancer is determined to be regional or distant stage, it's considered a late-stage diagnosis.**

Medical experts agree that it's best for breast cancer to be detected early. Women whose breast cancers are found at an early stage usually need less aggressive treatment and do better overall than those whose cancers are found at a late stage [US Preventive Services Task Force].

### *How late-stage breast cancer incidence rates are calculated*

For this report, late-stage breast cancer is defined as regional or distant stage using the Surveillance, Epidemiology and End Results (SEER) Summary Stage definitions [SEER Summary Stage]. State and national reporting usually uses the SEER Summary Stage. It provides a consistent set of definitions of stages for historical comparisons.

The late-stage breast cancer incidence rate is calculated as the number of women with regional or distant breast cancer in a particular geographic area divided by the number of women living in that area.

Like incidence and death rates, late-stage incidence rates are often shown in terms of 100,000 women and adjusted for age.

## Mammography screening

**Getting regular screening mammograms (along with treatment if diagnosed) lowers the risk of dying from breast cancer.**

**Knowing whether or not women are getting regular screening mammograms as recommended by their health care providers can be used to identify groups of women who need help in meeting screening recommendations.**

### *Mammography recommendations*

There is some controversy over breast cancer screening recommendations for women of average risk. For example, the American Cancer Society and the National Comprehensive Cancer Network all recommend that women with average risk of breast cancer have a screening mammogram every year starting at age 40, which aligns with Susan G. Komen breast self-awareness messaging. Meanwhile, the US Preventive Services Task Force recommends that women age 50 to 74 have a screening mammogram every two years and encourages women ages 40 to 49 to discuss the pros and cons of mammography screening with their health care providers.

**Table 2.1.** Breast cancer screening recommendations for women at average risk.

American Cancer Society	National Cancer Institute	National Comprehensive Cancer Network	US Preventive Services Task Force
Mammography every year starting at age 40	Mammography every 1-2 years starting at age 40	Mammography every year starting at age 40	Informed decision-making with a health care provider ages 40-49 Mammography every 2 years ages 50-74

### *Why mammograms matter*

Getting regular screening mammograms (and treatment if diagnosed) lowers the risk of dying from breast cancer. Screening mammography can find breast cancer early, when the chances of survival are highest. The US Preventive Services Task Force found that having screening mammograms reduces the breast cancer death rate for women age

40 to 74. The benefit of mammograms is greater for women age 50 to 74. It's especially high for women age 60 to 69 [Nelson et al.]. Because having mammograms lowers the chances of dying from breast cancer, it's important to know whether women are having mammograms when they should. This information can be used to identify groups of women who should be screened who need help in meeting the current recommendations for screening mammography.

#### *Where the data come from*

The Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factors Surveillance System (BRFSS) collected the data on mammograms that are used in this report. The data come from interviews with women age 50 to 74 from across the United States. During the interviews, each woman was asked how long it has been since she has had a mammogram. BRFSS is the best and most widely used source available for information on mammography usage among women in the United States, although it does not collect data matching Komen breast self-awareness messaging (i.e. from women age 40 and older).

For some counties, data about mammograms are not shown because not enough women were included in the survey (less than 10 survey responses).

The data have been weighted to account for differences between the women who were interviewed and all the women in the area. For example, if 20 percent of the women interviewed are Latina, but only 10 percent of the total women in the area are Latina, weighting is used to account for this difference.

#### *Calculating the mammography screening proportion*

The report uses the mammography screening proportion to show whether the women in an area are getting screening mammograms when they should.

Mammography screening proportion is calculated from two pieces of information:

- The number of women living in an area whom the BRFSS determines should have mammograms (i.e. women age 50 to 74).
- The number of these women who actually had a mammogram during the past two years.

The number of women who had a mammogram is divided by the number who should have had one. For example, if there are 500 women in an area who should have had mammograms and 250 of those women actually had a mammogram in the past two years, the mammography screening proportion is 50 percent.

### *Confidence intervals*

Because the screening proportions come from samples of women in an area and are not exact, this report includes confidence intervals. A confidence interval is a range of values that gives an idea of how uncertain a value may be. It's shown as two numbers—a lower value and a higher one. It is very unlikely that the true rate is less than the lower value or more than the higher value.

For example, if screening proportion was reported as 50 percent, with a confidence interval of 35 to 65, the real rate might not be exactly 50 percent, but it's very unlikely that it's less than 35 or more than 65 percent.

In general, screening proportions at the county level have fairly wide confidence intervals. The confidence interval should always be considered before concluding that the screening proportion in one county is higher or lower than that in another county.

### **Demographic and socioeconomic measures**

**Demographic and socioeconomic data can be used to identify which groups of women are most in need of help and to figure out the best ways to help them.**

The report includes basic information about the women in each area (demographic measures) and about factors like education, income, and unemployment (socioeconomic measures) in the areas where they live.

Demographic measures in the report include:

- Age
- Race
- Ethnicity (whether or not a woman is Hispanic/Latina – can be of any race)

It is important to note that the report uses the race and ethnicity categories used by the US Census Bureau, and that race and ethnicity are separate and independent categories. This means that everyone is classified as both a member of one of the four race groups as well as either Hispanic/Latina or Non-Hispanic/Latina.

Socioeconomic measures for the areas covered in the report include:

- Education level
- Income
- Unemployment
- Immigration (how many of the people living in an area were born in another country)
- Use of the English language

- Proportion of people who have health insurance
- Proportion of people who live in rural areas
- Proportion of people who live in areas that don't have enough doctors or health care facilities (medically underserved areas)

#### *Why these data matter*

Demographic and socioeconomic data can be used to identify which groups of women are most in need of help and to figure out the best ways to help them.

#### *Important details about these data*

The demographic and socioeconomic data in this report are the most recent data available for US counties. All the data are shown as percentages. However, the percentages weren't all calculated in the same way.

- The race, ethnicity, and age data are based on the total female population in the area (e.g. the percent of females over the age of 40).
- The socioeconomic data are based on all the people in the area, not just women.
- Income, education and unemployment data don't include children. They're based on people age 15 and older for income and unemployment and age 25 and older for education.
- The data on the use of English, called "linguistic isolation", are based on the total number of households in the area. The Census Bureau defines a linguistically isolated household as one in which all the adults have difficulty with English.

#### *Where the data come from*

The demographic and socioeconomic sources of data are:

- Race/ethnicity, age, and sex data come from the US Census Bureau estimates for July 1, 2011.
- Most of the other data come from the US Census Bureau's American Community Survey program. The most recent data for counties are for 2007 to 2011.
- Health insurance data come from the US Census Bureau's Small Area Health Insurance Estimates program. The most recent data are for 2011.
- Rural population data come from the US Census Bureau's 2010 population survey.
- Medically underserved area information comes from the US Department of Health and Human Services, Health Resources and Services Administration. The most recent data are for 2013.

## 2.2 Breast Cancer Incidence, Death, and Late-stage Diagnosis Rates and Trends

Breast cancer incidence, death, and late-stage diagnosis rates are shown in Table 2.2a for:

- United States
- State of Ohio
- Komen Columbus service area
- Each of Komen Columbus's service area counties

For the Komen Columbus service area, rates are also shown by race for Whites, Blacks/African-Americans, Asians and Pacific Islanders (API), and American Indians and Alaska Natives (AIAN). In addition, rates are shown by ethnicity for Hispanics/Latinas and women who are not Hispanic/Latina (regardless of their race).

The rates in Table 2.2a are age-adjusted and are shown per 100,000 females from 2005 to 2009 for incidence and late-stage rates and from 2006 to 2010 for death rates. Note that 2005 to 2009 are the latest years of incidence and late-stage data available for the State of Ohio. The HP2020 death rate and late-stage incidence rate targets are included for reference.

In addition, Table 2.2a shows:

- Average number of breast cancer cases or deaths per year from 2005 to 2009 for incidence cases and from 2006 to 2010 for deaths
- Incidence, death, and late-stage diagnosis trends (as annual percent change) from 2005 to 2009 for incidence and late-stage trends and from 2006 to 2010 for death trends
- Average size of the female population for 2006 through 2010

Table 2.2b compares the Affiliate service area incidence, death, and late-stage rates to state rates, and compares county rates to the Affiliate service area rate.

Table 2.2c indicates whether the trends for the Affiliate service area incidence, death, and late-stage rates and each of its service area counties are generally rising, falling, or not changing.

Table 2.2d compares the Affiliate service area incidence, death, and late-stage trends to state trends and compares county trends to Affiliate service area trends.

**Table 2.2a.** Female breast cancer incidence rates and trends, death rates and trends, and late-stage rates and trends.

Population Group	Incidence Rates and Trends				Death Rates and Trends			Late-stage Rates and Trends		
	Female Population (Annual Average)	# of New Cases (Annual Average)	Age-adjusted Rate/ 100,000	Trend (Annual Percent Change)	# of Deaths (Annual Average)	Age-adjusted Rate/ 100,000	Trend (Annual Percent Change)	# of New Cases (Annual Average)	Age-adjusted Rate/ 100,000	Trend (Annual Percent Change)
US	154,540,194	198,602	122.1	-0.2%	40,736	22.6	-1.9%	70,218	43.7	-1.2%
HP2020	.	-	-	-	-	20.6*	-	-	41.0*	-
Ohio	5,895,383	8,319	120.8	-0.1%	1,820	24.8	-1.9%	2,972	44.0	0.6%
Komen Columbus Service Area	1,442,796	1,895	122.3	-0.1%	412	25.7	NA	689	44.8	1.1%
White	1,239,201	1,708	122.5	0.1%	367	25.1	NA	608	44.1	1.9%
Black/African-American	163,959	155	119.4	-2.1%	43	33.4	NA	71	54.1	-5.1%
AIAN	5,522	SN	SN	SN	SN	SN	SN	SN	SN	SN
API	34,115	15	63.0	9.7%	SN	SN	SN	4	17.1	7.7%
Non-Hispanic/ Latina	1,409,295	1,887	123.1	-0.1%	411	25.8	NA	687	45.1	1.1%
Hispanic/ Latina	33,501	7	53.3	1.6%	SN	SN	SN	SN	SN	SN
Athens County - OH	32,363	33	116.7	-1.5%	6	18.7	-4.1%	10	35.1	-6.9%
Champaign County - OH	20,247	29	123.3	3.4%	6	23.7	-2.4%	10	43.0	11.7%
Clark County - OH	71,971	114	126.9	2.2%	26	27.1	-1.2%	43	49.7	3.3%
Delaware County - OH	84,110	113	143.2	2.0%	18	23.2	-2.4%	37	45.2	4.7%
Fairfield County - OH	72,571	103	130.4	-5.6%	23	28.6	-0.9%	34	43.0	-7.9%
Fayette County - OH	14,690	17	92.7	-13.6%	5	28.7	NA	4	23.6	-9.1%
Franklin County - OH	585,597	730	128.6	-1.0%	161	27.7	-1.7%	263	45.8	-2.0%
Gallia County - OH	15,711	21	111.3	9.3%	4	23.1	-2.1%	8	47.2	5.9%
Guernsey County - OH	20,615	35	139.3	-4.6%	7	24.6	-0.1%	17	69.3	-7.2%
Hocking County - OH	14,666	20	121.8	17.7%	5	25.1	0.9%	5	32.2	5.4%
Jackson County - OH	16,965	20	98.8	0.5%	5	22.7	-2.5%	9	44.4	6.8%
Knox County - OH	30,816	48	139.2	7.8%	8	23.6	-2.7%	15	44.3	7.5%
Lawrence County - OH	32,256	46	116.2	-2.2%	12	28.1	-0.2%	15	41.4	-4.2%
Licking County - OH	83,659	118	123.6	-0.5%	27	27.9	-0.7%	38	40.5	4.4%
Madison County - OH	19,476	28	123.7	6.4%	7	28.2	-1.8%	13	57.7	11.9%
Marion County - OH	31,627	46	119.0	1.6%	11	25.9	-2.6%	20	53.1	0.7%
Meigs County - OH	12,044	13	86.2	2.1%	SN	SN	SN	3	23.6	13.3%
Monroe County - OH	7,415	9	86.0	3.3%	SN	SN	SN	4	40.3	21.0%
Morgan County - OH	7,582	9	89.7	10.7%	SN	SN	SN	4	40.1	16.0%
Morrow County - OH	17,377	24	122.7	-4.4%	7	33.2	-28.1%	10	53.4	-7.7%

Population Group	Incidence Rates and Trends				Death Rates and Trends			Late-stage Rates and Trends		
	Female Population (Annual Average)	# of New Cases (Annual Average)	Age-adjusted Rate/ 100,000	Trend (Annual Percent Change)	# of Deaths (Annual Average)	Age-adjusted Rate/ 100,000	Trend (Annual Percent Change)	# of New Cases (Annual Average)	Age-adjusted Rate/ 100,000	Trend (Annual Percent Change)
Muskingum County - OH	44,492	57	106.2	-1.0%	15	27.2	-1.6%	24	46.9	6.6%
Noble County - OH	6,195	6	69.8	-1.4%	SN	SN	SN	SN	SN	SN
Perry County - OH	17,961	22	106.5	-0.9%	6	28.1	-1.8%	10	49.0	-1.4%
Pickaway County - OH	25,996	34	113.9	3.9%	7	24.7	-3.3%	11	36.7	4.1%
Pike County - OH	14,481	18	108.1	-9.8%	3	18.4	-1.7%	6	36.6	-29.0%
Ross County - OH	36,636	48	109.3	-5.9%	8	17.6	-2.2%	18	41.9	7.4%
Scioto County - OH	40,014	50	102.0	1.2%	11	20.8	-2.0%	22	44.4	-0.1%
Union County - OH	26,678	27	108.4	-1.6%	5	19.3	-4.2%	10	43.0	5.2%
Vinton County - OH	6,769	7	98.8	12.2%	SN	SN	SN	SN	SN	SN
Washington County - OH	31,816	49	118.9	3.5%	11	24.7	-1.5%	17	44.5	14.9%

\*Target as of the writing of this report.

NA – data not available

SN – data suppressed due to small numbers (15 cases or fewer for the 5-year data period).

Data are for years 2005-2009 for incidence and late-stage data and 2006-2010 death data.

Rates are in cases or deaths per 100,000.

Age-adjusted rates are adjusted to the 2000 US standard population.

Source of incidence and late-stage data: NAACCR – CINA Deluxe Analytic File.

Source of death rate data: CDC – NCHS mortality data in SEER\*Stat.

Source of death trend data: NCI/CDC State Cancer Profiles.

**Table 2.2b.** Comparison of female breast cancer incidence rates, death rates, and late-stage rates.

<b>Geographic Area</b>	<b>Incidence Rate Comparison</b>	<b>Death Rate Comparison</b>	<b>Late-stage Rate Comparison</b>
<b>Komen Columbus compared to State Rate Statistics</b>			
Ohio	Not Significantly Different	Not Significantly Different	Not Significantly Different
<b>Counties compared to Komen Columbus Statistics</b>			
Athens County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Champaign County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Clark County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Delaware County - OH	<b>Significantly Higher</b>	Not Significantly Different	Not Significantly Different
Fairfield County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Fayette County - OH	<b>Significantly Lower</b>	Not Significantly Different	<b>Significantly Lower</b>
Franklin County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Gallia County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Guernsey County - OH	Not Significantly Different	Not Significantly Different	<b>Significantly Higher</b>
Hocking County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Jackson County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Knox County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Lawrence County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Licking County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Madison County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Marion County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Meigs County - OH	<b>Significantly Lower</b>	SN	<b>Significantly Lower</b>
Monroe County - OH	<b>Significantly Lower</b>	SN	Not Significantly Different
Morgan County - OH	Not Significantly Different	SN	Not Significantly Different
Morrow County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Muskingum County - OH	<b>Significantly Lower</b>	Not Significantly Different	Not Significantly Different
Noble County - OH	<b>Significantly Lower</b>	SN	SN
Perry County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Pickaway County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Pike County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Ross County - OH	Not Significantly Different	<b>Significantly Lower</b>	Not Significantly Different

Geographic Area	Incidence Rate Comparison	Death Rate Comparison	Late-stage Rate Comparison
Scioto County - OH	Significantly Lower	Not Significantly Different	Not Significantly Different
Union County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Vinton County - OH	Not Significantly Different	SN	SN
Washington County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different

NA – data not available.

SN – data suppressed due to small numbers (15 cases or fewer for the 5-year data period).

Rate Comparison
<p><b>Significantly Higher:</b> based on statistical methods, there is a significant likelihood that female breast cancer occurred more frequently among women in the county than among those in the Affiliate as a whole, which is generally <b>unfavorable</b> for the county.</p> <p><b>Not Significantly Different:</b> statistical methods were <b>unable to determine</b> whether female breast cancer occurred with a different frequency among women in the county than it occurred among those in the Affiliate as a whole.</p> <p><b>Significantly Lower:</b> based on statistical methods, there is a significant likelihood that female breast cancer occurred less frequently among women in the county than among those in the Affiliate as a whole, which is generally <b>favorable</b> for the county.</p> <p>The statistical methods used to determine whether an area is classified as either Significantly Higher, Not Significantly Different, or Significantly Lower than another area depends on comparing the confidence intervals (not shown in Table 2.2a) for each area. For more information on confidence intervals, see Sections 2.1 (under “Mammography Screening”) and 2.3.</p>

**Table 2.2c.** Interpretation of female breast cancer incidence, death, and late-stage trend direction.

<b>Geographic Area</b>	<b>Incidence Rate Trend Direction</b>	<b>Death Rate Trend Direction</b>	<b>Late-stage Rate Trend Direction</b>
<b>Affiliate-level Trend Statistics</b>			
Komen Columbus Service Area	No Significant Change	NA	No Significant Change
<b>County-level Trend Statistics</b>			
Athens County - OH	No Significant Change	<b>Falling</b>	No Significant Change
Champaign County - OH	No Significant Change	No Significant Change	No Significant Change
Clark County - OH	No Significant Change	No Significant Change	No Significant Change
Delaware County - OH	No Significant Change	<b>Falling</b>	No Significant Change
Fairfield County - OH	<b>Falling</b>	No Significant Change	No Significant Change
Fayette County - OH	No Significant Change	NA	No Significant Change
Franklin County - OH	No Significant Change	<b>Falling</b>	No Significant Change
Gallia County - OH	No Significant Change	No Significant Change	No Significant Change
Guernsey County - OH	No Significant Change	No Significant Change	No Significant Change
Hocking County - OH	No Significant Change	No Significant Change	No Significant Change
Jackson County - OH	No Significant Change	No Significant Change	No Significant Change
Knox County - OH	<b>Rising</b>	<b>Falling</b>	No Significant Change
Lawrence County - OH	No Significant Change	No Significant Change	No Significant Change
Licking County - OH	No Significant Change	No Significant Change	No Significant Change
Madison County - OH	No Significant Change	No Significant Change	No Significant Change
Marion County - OH	No Significant Change	<b>Falling</b>	No Significant Change
Meigs County - OH	No Significant Change	SN	No Significant Change
Monroe County - OH	No Significant Change	SN	No Significant Change
Morgan County - OH	No Significant Change	SN	No Significant Change
Morrow County - OH	No Significant Change	No Significant Change	No Significant Change
Muskingum County - OH	No Significant Change	No Significant Change	No Significant Change
Noble County - OH	No Significant Change	SN	SN
Perry County - OH	No Significant Change	No Significant Change	No Significant Change
Pickaway County - OH	No Significant Change	<b>Falling</b>	No Significant Change
Pike County - OH	<b>Falling</b>	No Significant Change	No Significant Change

Geographic Area	Incidence Rate Trend Direction	Death Rate Trend Direction	Late-stage Rate Trend Direction
Ross County - OH	No Significant Change	No Significant Change	No Significant Change
Scioto County - OH	No Significant Change	No Significant Change	No Significant Change
Union County - OH	No Significant Change	Falling	No Significant Change
Vinton County - OH	No Significant Change	SN	SN
Washington County - OH	No Significant Change	No Significant Change	No Significant Change

NA – data not available.

SN – data suppressed due to small numbers (15 cases or fewer for the 5-year data period).

Trend Direction
<p><b>Rising:</b> based on statistical methods, there is a significant likelihood of an increase in the occurrence of female breast cancer among women in the area over the observation period, which is <b>unfavorable</b> for women in the area.</p> <p><b>No Significant Change:</b> statistical methods were <b>unable to conclude</b> whether there was a general tendency with respect to female breast cancer occurrence among women in the area over the observation period.</p> <p><b>Falling:</b> based on statistical methods, there is a significant likelihood of a decrease in the occurrence of female breast cancer among women in the area over the observation period, which is <b>favorable</b> for women in the area.</p> <p>The statistical methods used to determine whether an area is classified as either Rising, No Significant Change, or Falling depends on examining the confidence intervals (not shown in Table 2.2a) for each area. For more information on confidence intervals, see Sections 2.1 (under “Mammography Screening”) and 2.3.</p>

**Table 2.2d.** Comparison of female breast cancer incidence, death, and late-stage trend sizes.

<b>Geographic Area</b>	<b>Incidence Trend Comparison</b>	<b>Death Trend Comparison</b>	<b>Late-stage Trend Comparison</b>
<b>Komen Columbus compared to State Statistics</b>			
Ohio	Not Significantly Different	NA	Not Significantly Different
<b>Counties compared to Komen Columbus Statistics</b>			
	<b>Counties compared to Affiliate Incidence Rate Trend</b>	<b>Counties Compared to State* Death Rate Trend</b>	<b>Counties compared to Affiliate Late-Stage Rate Trend</b>
Athens County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Champaign County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Clark County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Delaware County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Fairfield County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Fayette County - OH	Not Significantly Different	NA	Not Significantly Different
Franklin County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Gallia County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Guernsey County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Hocking County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Jackson County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Knox County - OH	<b>Unfavorable</b>	Not Significantly Different	Not Significantly Different
Lawrence County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Licking County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Madison County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Marion County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Meigs County - OH	Not Significantly Different	SN	Not Significantly Different
Monroe County - OH	Not Significantly Different	SN	Not Significantly Different
Morgan County - OH	Not Significantly Different	SN	Not Significantly Different
Morrow County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Muskingum County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Noble County - OH	Not Significantly Different	SN	SN
Perry County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Pickaway County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different

Geographic Area	Incidence Trend Comparison	Death Trend Comparison	Late-stage Trend Comparison
Pike County - OH	<b>Favorable</b>	Not Significantly Different	Not Significantly Different
Ross County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Scioto County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Union County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different
Vinton County - OH	Not Significantly Different	SN	SN
Washington County - OH	Not Significantly Different	Not Significantly Different	Not Significantly Different

\* The death rate trend is not available for the Affiliate as a whole so this comparison is to the state trend.

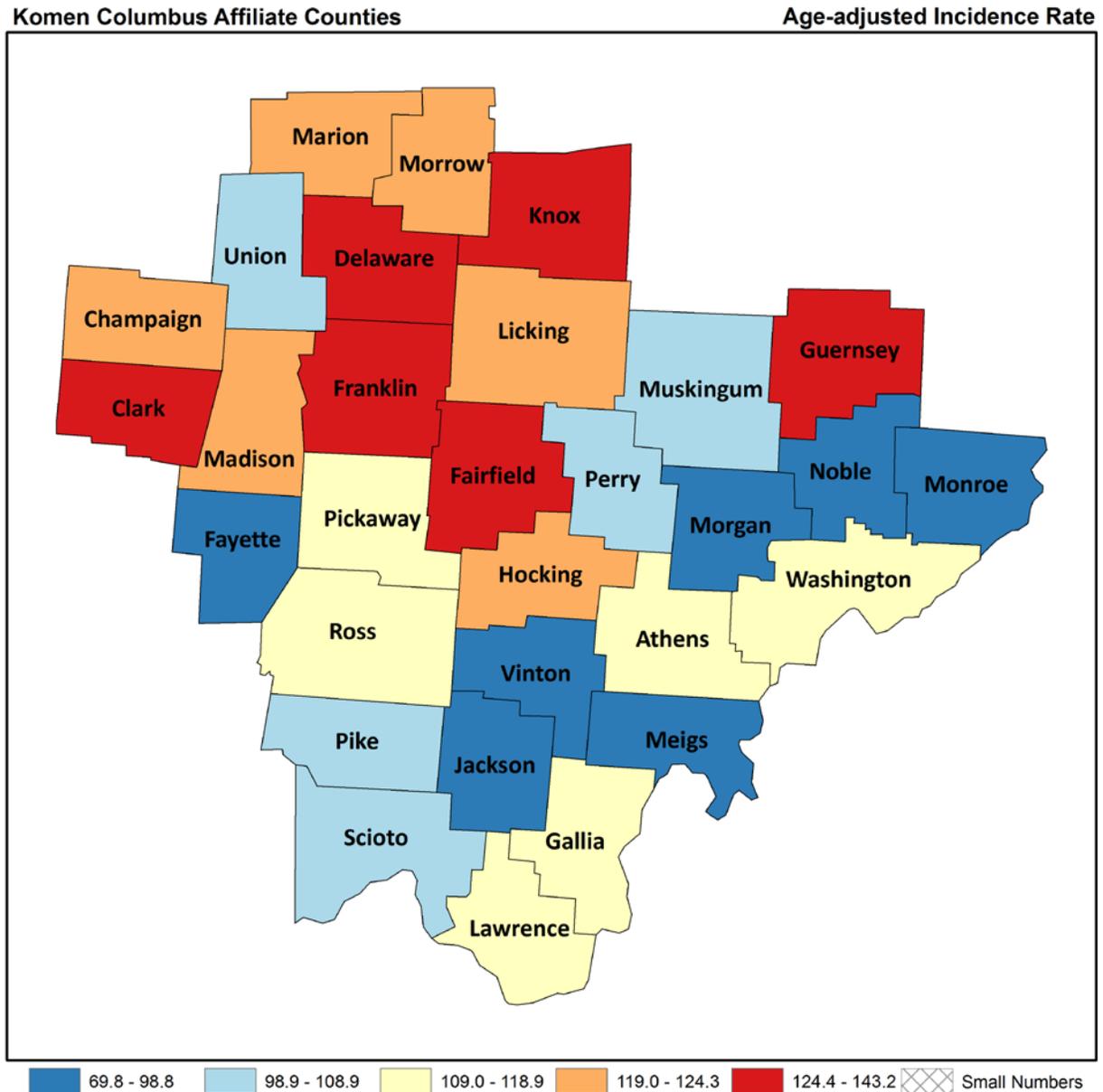
NA – data not available.

SN – data suppressed due to small numbers (15 cases or fewer for the 5-year data period).

Trend Size Comparison
<p><b>Unfavorable:</b> based on statistical methods, there is a significant likelihood that the trend of female breast cancer occurrence among women in the county was <b>less favorable</b> than among those in the Affiliate as a whole. This means the rate of female breast cancer occurrence decreased less (or increased more) than the Affiliate rate.</p> <p><b>Not Significantly Different:</b> statistical methods were <b>unable to conclude</b> whether the trend of female breast cancer occurrence among women in the county was different than the trend among those in the Affiliate as a whole.</p> <p><b>Favorable:</b> based on statistical methods, there is a significant likelihood that the trend of female breast cancer occurrence among women in the county was <b>more favorable</b> than the trend among those in the Affiliate as a whole. This means the rate of female breast cancer occurrence decreased more (or increased less) than the Affiliate rate.</p> <p>The statistical methods used to determine whether an area is classified as either Significantly Higher, Not Significantly Different, or Significantly Lower than another area depends on comparing the confidence intervals (not shown in Table 2.2a) for each area. For more information on confidence intervals, see Sections 2.1 (under “Mammography Screening”) and 2.3.</p>

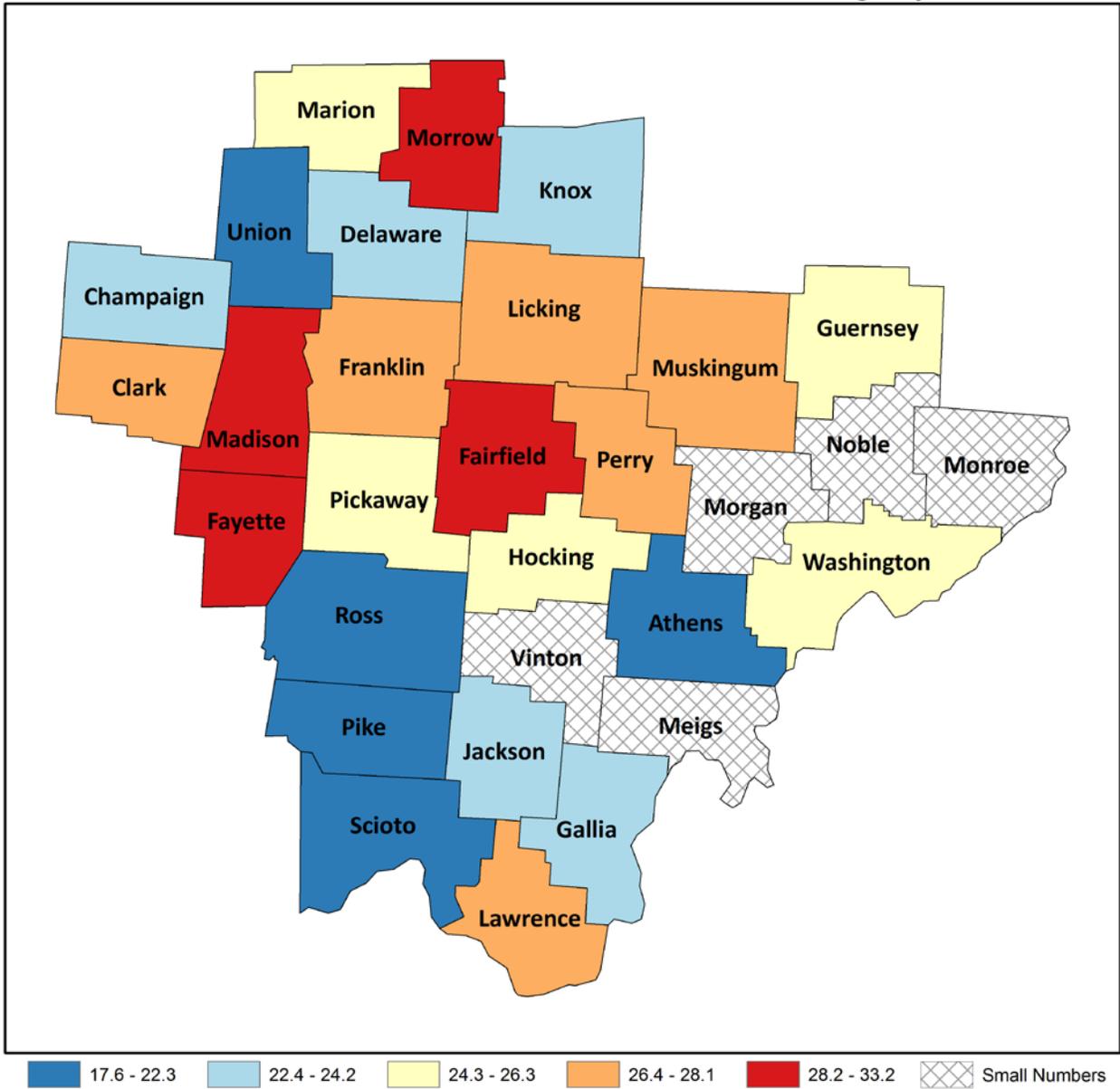
## Maps of Breast Cancer Incidence, Death, and Late-stage Incidence

Figures 2.2a, 2.2b, and 2.2c show maps of breast cancer incidence (new cases), death, and late-stage incidence rates for the counties in the Affiliate service area. When the numbers of cases or deaths used to compute the rates are small (15 cases or fewer for the 5-year data period), those rates are unreliable and are shown as “small numbers” on the maps.



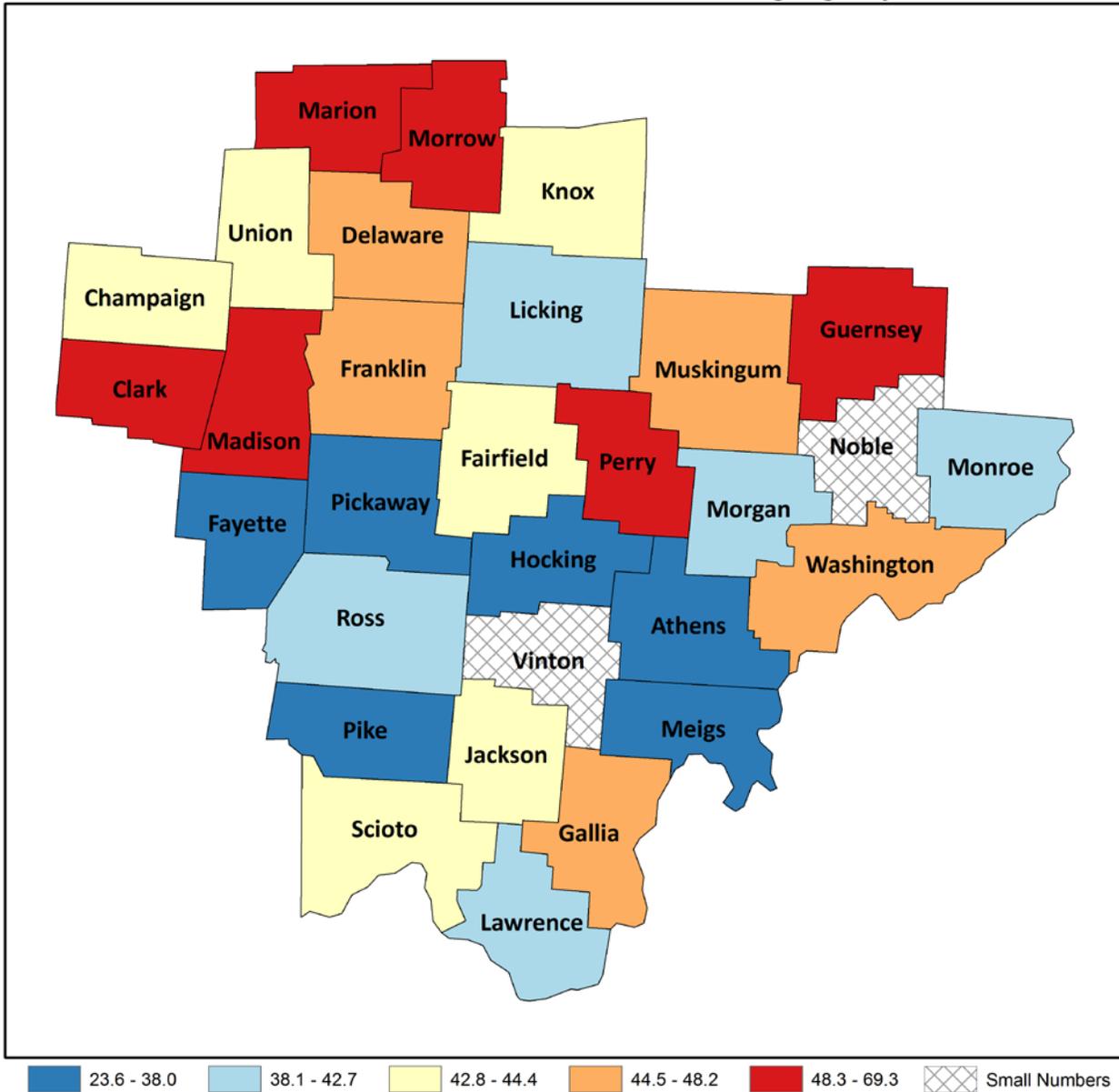
Data are for years 2005-2009.  
 Rates are in cases per 100,000.  
 Age-adjusted rates are adjusted to the 2000 US standard population.  
 Source: NAACCR – CINA Deluxe Analytic File.

**Figure 2.2a.** Female breast cancer age-adjusted incidence rates.



Data are for years 2006-2010.  
Rates are in deaths per 100,000.  
Age-adjusted rates are adjusted to the 2000 US standard population.  
Source: CDC – NCHS mortality data in SEER\*Stat.

**Figure 2.2b.** Female breast cancer age-adjusted death rates.



Data are for years 2005-2009.  
Rates are in cases per 100,000.  
Age-adjusted rates are adjusted to the 2000 US standard population.  
Source: NAACCR – CINA Deluxe Analytic File.

**Figure 2.2c.** Female breast cancer age-adjusted late-stage incidence rates.

## Conclusions: Breast Cancer Incidence, Death, and Late-stage Diagnosis

### Incidence rates and trends

Overall, the breast cancer incidence rate and trend in the Komen Columbus service area were similar to that observed in the US as a whole. The incidence rate and trend of the Affiliate service area were not significantly different than that observed for the State of Ohio.

For the United States, breast cancer incidence in Blacks/African-Americans is lower than in Whites overall. The most recent estimated breast cancer incidence rates for APIs and AIANs were lower than for Non-Hispanic Whites and Blacks/African-Americans. The most recent estimated incidence rates for Hispanics/Latinas were lower than for Non-Hispanic Whites and Blacks/African-Americans. For the Affiliate service area as a whole, the incidence rate was slightly lower among Blacks/African-Americans than Whites and lower among APIs than Whites. There were not enough data available within the Affiliate service area to report on AIANs so comparisons cannot be made for this racial group. The incidence rate among Hispanics/Latinas was lower than among Non-Hispanics/Latinas.

The following county had an incidence rate **significantly higher** than the Affiliate service area as a whole:

- Delaware County

The incidence rate was significantly lower in the following counties:

- Fayette County
- Meigs County
- Monroe County
- Muskingum County
- Noble County
- Scioto County

**Significantly less favorable trends** in breast cancer incidence rates were observed in the following counties:

- Knox County

Significantly more favorable trends in breast cancer incidence rates were observed in the following county:

- Pike County

The rest of the counties had incidence rates and trends that were not significantly different than the Affiliate service area as a whole or did not have enough data available.

It's important to remember that an increase in breast cancer incidence could also mean that more breast cancers are being found because more women are getting mammograms. Section 2.3 contains information about screening rates.

### **Death rates and trends**

Overall, the breast cancer death rate in the Komen Columbus service area was higher than that observed in the US as a whole and the death rate trend was not available for comparison with the US as a whole. The death rate of the Affiliate service area was not significantly different than that observed for the State of Ohio.

For the United States, breast cancer death rates in Blacks/African-Americans are substantially higher than in Whites overall. The most recent estimated breast cancer death rates for APIs and AIANs were lower than for Non-Hispanic Whites and Blacks/African-Americans. The most recent estimated death rates for Hispanics/Latinas were lower than for Non-Hispanic Whites and Blacks/African-Americans. For the Affiliate service area as a whole, the death rate was higher among Blacks/African-Americans than Whites. There were not enough data available within the Affiliate service area to report on APIs and AIANs so comparisons cannot be made for these racial groups. Also, there were not enough data available within the Affiliate service area to report on Hispanics/Latinas so comparisons cannot be made for this group.

The death rate was significantly lower in the following county:

- Ross County

The rest of the counties had death rates and trends that were not significantly different than the Affiliate service area as a whole or did not have enough data available.

### **Late-stage incidence rates and trends**

Overall, the breast cancer late-stage incidence rate in the Komen Columbus service area was slightly higher than that observed in the US as a whole and the late-stage incidence trend was higher than the US as a whole. The late-stage incidence rate and trend of the Affiliate service area were not significantly different than that observed for the State of Ohio.

For the United States, late-stage incidence rates in Blacks/African-Americans are higher than among Whites. Hispanics/Latinas tend to be diagnosed with late-stage breast cancers more often than Whites. For the Affiliate service area as a whole, the late-stage incidence rate was higher among Blacks/African-Americans than Whites and lower among APIs than Whites. There were not enough data available within the Affiliate service area to report on AIANs so comparisons cannot be made for this racial group.

Also, there were not enough data available within the Affiliate service area to report on Hispanics/Latinas so comparisons cannot be made for this group.

The following county had a late-stage incidence rate **significantly higher** than the Affiliate service area as a whole:

- Guernsey County

The late-stage incidence rate was significantly lower in the following counties:

- Fayette County
- Meigs County

The rest of the counties had late-stage incidence rates and trends that were not significantly different than the Affiliate service area as a whole or did not have enough data available.

## 2.3 Breast Cancer Screening Proportions

Breast cancer screening proportions are shown in Table 2.3a for:

- United States
- State of Ohio
- Komen Columbus service area
- Each of Komen Columbus's service area counties

For the Komen Columbus service area, proportions are also shown for Whites, Blacks/African-Americans, Asians and Pacific Islanders (API), and American Indians and Alaska Natives (AIAN). In addition, proportions are shown for Hispanics/Latinas and women who are not Hispanic/Latina (regardless of their race).

The proportions in Table 2.3a are based on the number of women age 50 to 74 who reported in 2012 having had a mammogram in the last two years. As mentioned in Section 2.1, the data source is the BRFSS, which only surveys women in this age range for mammography usage. The data on the proportion of women who had a mammogram in the last two years have been weighted to account for differences between the women who were interviewed and all the women in the area. For example, if 20 percent of the women interviewed are Latina, but only 10 percent of the total women in the area are Latina, weighting is used to account for this difference.

Table 2.3a shows:

- Number of women interviewed
- Number who had a mammogram in the last two years
- Proportion of women who had a mammogram in the last two years (weighted)
- Confidence interval for the proportion

The confidence interval is shown as two numbers—a lower value and a higher one. It is very unlikely that the true rate is less than the lower value or more than the higher value. In general, screening proportions at the county level have fairly wide confidence intervals. The confidence interval should always be considered before concluding that the screening proportion in one county is higher or lower than that in another county.

Table 2.3b provides a comparison of the county screening rates to the Affiliate service area rate. These comparisons, determining significance, take the confidence interval into account.

**Table 2.3a.** Proportion of women ages 50-74 with screening mammography in the last two years, self-report.

Population Group	# of Women Interviewed (Sample Size)	# w/ Self-Reported Mammogram	Proportion Screened (Weighted Average)	Confidence Interval of Proportion Screened
US	174,796	133,399	77.5%	77.2%-77.7%
Ohio	5,046	3,891	77.0%	75.5%-78.4%
Komen Columbus Service Area	1,104	860	77.8%	74.5%-80.8%
White	1,031	795	76.8%	73.4%-79.9%
Black/African-American	50	45	87.1%	69.5%-95.3%
AIAN	SN	SN	SN	SN
API	SN	SN	SN	SN
Hispanic/ Latina	10	7	76.7%	36.8%-94.9%
Non-Hispanic/ Latina	1,086	846	77.6%	74.3%-80.6%
Athens County - OH	45	34	84.2%	63.8%-94.1%
Champaign County - OH	16	12	82.2%	53.3%-94.9%
Clark County - OH	43	35	86.8%	69.7%-94.9%
Delaware County - OH	37	28	81.9%	61.5%-92.8%
Fairfield County - OH	51	42	82.3%	67.1%-91.4%
Fayette County - OH	12	8	36.6%	14.7%-66.0%
Franklin County - OH	246	201	80.7%	74.0%-85.9%
Gallia County - OH	39	24	66.1%	45.2%-82.2%
Guernsey County - OH	27	22	82.0%	58.8%-93.6%
Hocking County - OH	20	17	93.1%	63.7%-99.0%
Jackson County - OH	39	32	73.4%	54.1%-86.6%
Knox County - OH	32	25	77.3%	56.1%-90.1%
Lawrence County - OH	59	44	67.6%	50.9%-80.8%
Licking County - OH	70	53	74.4%	59.3%-85.2%
Madison County - OH	14	10	64.4%	36.0%-85.3%
Marion County - OH	28	22	79.8%	54.4%-92.9%
Meigs County - OH	28	25	91.9%	69.3%-98.3%
Monroe County - OH	13	11	85.0%	57.3%-96.0%
Morgan County - OH	16	10	49.7%	22.7%-76.9%

<b>Population Group</b>	<b># of Women Interviewed (Sample Size)</b>	<b># w/ Self-Reported Mammogram</b>	<b>Proportion Screened (Weighted Average)</b>	<b>Confidence Interval of Proportion Screened</b>
Morrow County - OH	SN	SN	SN	SN
Muskingum County - OH	68	62	95.4%	83.7%-98.8%
Noble County - OH	10	7	89.9%	54.0%-98.5%
Perry County - OH	17	15	92.2%	63.3%-98.8%
Pickaway County - OH	23	15	57.9%	34.2%-78.5%
Pike County - OH	11	9	87.0%	45.0%-98.2%
Ross County - OH	18	11	61.3%	33.6%-83.3%
Scioto County - OH	21	15	73.0%	44.7%-90.0%
Union County - OH	17	13	77.9%	51.9%-92.0%
Vinton County - OH	14	10	80.6%	53.9%-93.6%
Washington County - OH	63	44	69.8%	55.4%-81.2%

SN – data suppressed due to small numbers (fewer than 10 samples).

Data are for 2012.

Source: CDC – Behavioral Risk Factor Surveillance System (BRFSS).

**Table 2.3b.** Comparison of the proportion of women with screening mammography in the last two years.

<b>Geographic Area</b>	<b>Counties compared to Komen Columbus</b>
Athens County - OH	Not Significantly Different
Champaign County - OH	Not Significantly Different
Clark County - OH	Not Significantly Different
Delaware County - OH	Not Significantly Different
Fairfield County - OH	Not Significantly Different
Fayette County - OH	<b>Significantly Lower</b>
Franklin County - OH	Not Significantly Different
Gallia County - OH	Not Significantly Different
Guernsey County - OH	Not Significantly Different
Hocking County - OH	Not Significantly Different
Jackson County - OH	Not Significantly Different
Knox County - OH	Not Significantly Different
Lawrence County - OH	Not Significantly Different
Licking County - OH	Not Significantly Different
Madison County - OH	Not Significantly Different
Marion County - OH	Not Significantly Different
Meigs County - OH	Not Significantly Different
Monroe County - OH	Not Significantly Different
Morgan County - OH	Not Significantly Different
Morrow County - OH	SN
Muskingum County - OH	<b>Significantly Higher</b>
Noble County - OH	Not Significantly Different
Perry County - OH	Not Significantly Different
Pickaway County - OH	Not Significantly Different
Pike County - OH	Not Significantly Different
Ross County - OH	Not Significantly Different
Scioto County - OH	Not Significantly Different
Union County - OH	Not Significantly Different

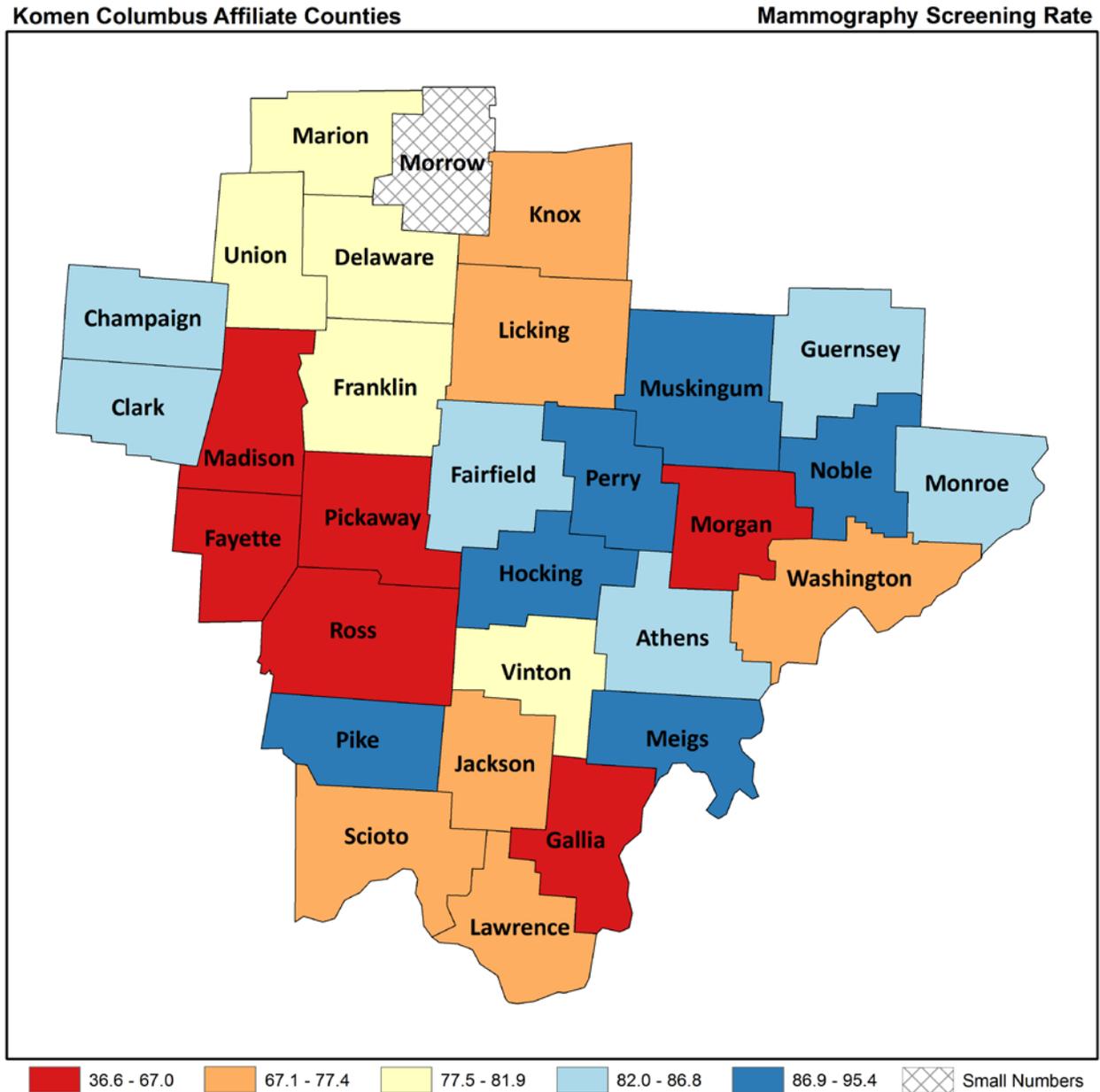
Geographic Area	Counties compared to Komen Columbus
Vinton County - OH	Not Significantly Different
Washington County - OH	Not Significantly Different

SN – data suppressed due to small numbers (fewer than 10 samples).

Rate Comparison
<p><b>Significantly Lower:</b> based on statistical hypothesis testing, it can be concluded that female breast cancer screening occurred less frequent among the county residents than among Affiliate women in general, which is <b>unfavorable</b> for the county residents.</p> <p><b>Not Significantly Different:</b> statistical hypothesis testing was <b>unable to conclude</b> whether female breast cancer occurred among the county residents with a different frequency than it occurred among Affiliate women in general.</p> <p><b>Significantly Higher:</b> based on statistical hypothesis testing, it can be concluded that female breast cancer screening occurred more frequent among the county residents than among the Affiliate women in general, which is <b>favorable</b> for the county residents.</p> <p>The statistical methods used to determine whether an area is classified as either Significantly Higher, Not Significantly Different, or Significantly Lower than another area depends on comparing the confidence intervals for each area.</p>

## Map of Screening Rates

Figure 2.3 shows a map of breast cancer mammography screening rates for the counties in the Affiliate service area. When the numbers of samples used to compute the rates are small (fewer than 10 samples), those rates are unreliable and are shown as “small numbers” on the map.



Data are for 2012.

Data are in the percentage of women who had a mammogram.

Source: CDC – Behavioral Risk Factor Surveillance System (BRFSS).

**Figure 2.3.** Mammography screening rates for women ages 50-74 in the last two years, self-report.

## Conclusions: Breast Cancer Screening Proportions

The breast cancer screening proportion in the Komen Columbus service area was not significantly different than that observed in the US as a whole. The screening proportion of the Affiliate service area was not significantly different than the State of Ohio.

For the United States, breast cancer screening proportions among Blacks/African-Americans are similar to those among Whites overall. APIs have somewhat lower screening proportions than Whites and Blacks/African-Americans. Although data are limited, screening proportions among AIANs are similar to those among Whites. Screening proportions among Hispanics/Latinas are similar to those among Non-Hispanic Whites and Blacks/African-Americans. For the Affiliate service area as a whole, the screening proportion was not significantly different among Blacks/African-Americans than Whites. There were not enough data available within the Affiliate service area to report on APIs and AIANs so comparisons cannot be made for these racial groups. The screening proportion among Hispanics/Latinas was not significantly different than among Non-Hispanics/Latinas.

The following county had a screening proportion **significantly lower** than the Affiliate service area as a whole:

- Fayette County

The following county had a screening proportion significantly higher than the Affiliate service area as a whole:

- Muskingum County

The remaining counties had screening proportions that were not significantly different than the Affiliate service area as a whole or did not have enough data available.

## 2.4 Population Characteristics

Race, ethnicity, and age data for the US, the state, the Komen Columbus service area, and each of the counties in the Affiliate's service area are presented in Table 2.4a.

Table 2.4a shows:

- Race percentages for four groups: White, Black/African-American, American Indian and Alaska Native (AIAN), and Asian and Pacific Islander (API)
- Percentages of women that are of Hispanic/Latina ethnicity (who may be of any race)
- Percentages of women in three age-groups: 40 and older, 50 and older, and 65 and older

Table 2.4b shows socioeconomic data for the US, the state, the Komen Columbus service area, and each of the counties in the Affiliate's service area.

Table 2.4b shows:

- Educational attainment as the percentage of the population 25 years and over that did not complete high school
- Income relative to the US poverty level. Two levels are shown – the percentage of people with income less than the poverty level (below 100%) and less than 2.5 times the poverty level (below 250%).
- Percentage of the population who are unemployed
- Percentage of the population born outside the US
- Percentage of households that are linguistically isolated (all adults in the household have difficulty with English)
- Percentage living in rural areas
- Percentage living in medically underserved areas as determined by the US Health Resources and Services Administration (HRSA)
- Percentage between ages 40 and 64 who have no health insurance

**Table 2.4a.** Population characteristics – demographics.

Population Group	White	Black /African-American	AIAN	API	Non-Hispanic /Latina	Hispanic /Latina	Female Age 40 Plus	Female Age 50 Plus	Female Age 65 Plus
US	78.8 %	14.1 %	1.4 %	5.8 %	83.8 %	16.2 %	48.3 %	34.5 %	14.8 %
Ohio	84.2 %	13.4 %	0.3 %	2.0 %	97.0 %	3.0 %	50.5 %	36.9 %	16.0 %
Komen Columbus Service Area	85.3 %	11.8 %	0.4 %	2.6 %	97.3 %	2.7 %	47.3 %	33.6 %	13.9 %
Athens County - OH	93.0 %	3.6 %	0.5 %	2.9 %	98.2 %	1.8 %	36.8 %	27.1 %	11.8 %
Champaign County - OH	95.9 %	3.0 %	0.5 %	0.6 %	98.9 %	1.1 %	51.7 %	37.4 %	16.2 %
Clark County - OH	88.8 %	9.9 %	0.4 %	0.9 %	97.5 %	2.5 %	52.6 %	39.6 %	18.2 %
Delaware County - OH	91.1 %	3.9 %	0.2 %	4.8 %	97.8 %	2.2 %	47.1 %	30.1 %	10.8 %
Fairfield County - OH	91.8 %	6.4 %	0.3 %	1.6 %	98.3 %	1.7 %	49.7 %	34.4 %	14.0 %
Fayette County - OH	96.2 %	2.8 %	0.3 %	0.8 %	98.3 %	1.7 %	51.3 %	37.9 %	16.5 %
Franklin County - OH	71.9 %	23.3 %	0.4 %	4.3 %	95.5 %	4.5 %	42.9 %	29.8 %	11.5 %
Gallia County - OH	96.2 %	2.8 %	0.4 %	0.5 %	99.1 %	0.9 %	51.9 %	39.1 %	17.8 %
Guernsey County - OH	97.2 %	2.0 %	0.3 %	0.5 %	99.0 %	1.0 %	53.3 %	39.9 %	17.7 %
Hocking County - OH	98.4 %	0.8 %	0.4 %	0.4 %	99.3 %	0.7 %	52.7 %	38.3 %	16.1 %
Jackson County - OH	98.1 %	1.0 %	0.4 %	0.5 %	99.2 %	0.8 %	50.7 %	37.3 %	16.1 %
Knox County - OH	97.6 %	1.3 %	0.3 %	0.8 %	98.8 %	1.2 %	49.4 %	37.0 %	16.2 %
Lawrence County - OH	96.8 %	2.5 %	0.2 %	0.5 %	99.3 %	0.7 %	52.4 %	38.5 %	17.2 %
Licking County - OH	94.6 %	4.0 %	0.4 %	1.1 %	98.5 %	1.5 %	50.6 %	36.0 %	14.9 %
Madison County - OH	96.4 %	2.5 %	0.3 %	0.8 %	98.6 %	1.4 %	51.3 %	36.3 %	15.5 %
Marion County - OH	95.4 %	3.5 %	0.3 %	0.8 %	97.9 %	2.1 %	52.1 %	38.9 %	17.4 %
Meigs County - OH	98.1 %	1.3 %	0.3 %	0.3 %	99.4 %	0.6 %	53.0 %	39.8 %	17.8 %
Monroe County - OH	98.8 %	0.7 %	0.3 %	0.3 %	99.4 %	0.6 %	57.4 %	44.3 %	20.8 %
Morgan County - OH	94.4 %	4.3 %	1.0 %	0.3 %	99.4 %	0.6 %	54.5 %	41.2 %	19.0 %
Morrow County - OH	98.5 %	0.8 %	0.2 %	0.5 %	98.9 %	1.1 %	51.4 %	37.2 %	15.1 %
Muskingum County - OH	94.4 %	4.7 %	0.4 %	0.5 %	99.2 %	0.8 %	51.5 %	38.2 %	17.5 %
Noble County - OH	98.3 %	0.9 %	0.4 %	0.4 %	99.7 %	0.3 %	53.3 %	39.7 %	18.8 %
Perry County - OH	98.6 %	0.8 %	0.3 %	0.2 %	99.3 %	0.7 %	49.7 %	35.3 %	14.6 %
Pickaway County - OH	98.0 %	1.2 %	0.3 %	0.5 %	99.0 %	1.0 %	50.5 %	36.0 %	15.3 %
Pike County - OH	97.5 %	1.4 %	0.8 %	0.3 %	99.2 %	0.8 %	50.7 %	37.0 %	16.8 %
Ross County - OH	95.0 %	4.0 %	0.4 %	0.6 %	99.1 %	0.9 %	51.9 %	37.7 %	16.2 %

<b>Population Group</b>	<b>White</b>	<b>Black /African-American</b>	<b>AIAN</b>	<b>API</b>	<b>Non-Hispanic /Latina</b>	<b>Hispanic /Latina</b>	<b>Female Age 40 Plus</b>	<b>Female Age 50 Plus</b>	<b>Female Age 65 Plus</b>
Scioto County - OH	96.8 %	2.0 %	0.7 %	0.5 %	99.0 %	1.0 %	51.4 %	38.4 %	17.8 %
Union County - OH	92.7 %	4.3 %	0.3 %	2.7 %	98.8 %	1.2 %	44.7 %	28.0 %	10.2 %
Vinton County - OH	98.4 %	0.9 %	0.4 %	0.3 %	99.5 %	0.5 %	51.0 %	37.1 %	15.2 %
Washington County - OH	97.6 %	1.4 %	0.2 %	0.8 %	99.2 %	0.8 %	55.6 %	42.4 %	19.5 %

Data are for 2011.

Data are in the percentage of women in the population.

Source: US Census Bureau – Population Estimates

**Table 2.4b.** Population characteristics – socioeconomics.

Population Group	Less than HS Education	Income Below 100% Poverty	Income Below 250% Poverty (Age: 40-64)	Un-employed	Foreign Born	Linguistic-ally Isolated	In Rural Areas	In Medically Under-served Areas	No Health Insurance (Age: 40-64)
US	14.6 %	14.3 %	33.3 %	8.7 %	12.8 %	4.7 %	19.3 %	23.3 %	16.6 %
Ohio	12.2 %	14.8 %	33.1 %	9.3 %	3.9 %	1.3 %	22.1 %	14.8 %	14.0 %
Komen Columbus Service Area	12.3 %	16.0 %	34.0 %	8.8 %	4.7 %	1.6 %	28.6 %	18.8 %	14.2 %
Athens County - OH	12.9 %	31.5 %	43.1 %	11.9 %	3.9 %	1.9 %	43.2 %	18.4 %	16.4 %
Champaign County - OH	12.9 %	15.1 %	32.4 %	10.6 %	1.1 %	0.1 %	70.8 %	0.0 %	14.4 %
Clark County - OH	14.6 %	16.9 %	36.4 %	10.1 %	2.2 %	0.7 %	23.6 %	6.2 %	13.6 %
Delaware County - OH	4.1 %	4.5 %	12.5 %	4.5 %	5.4 %	0.8 %	19.3 %	0.0 %	7.5 %
Fairfield County - OH	8.4 %	11.5 %	27.1 %	7.6 %	2.6 %	1.1 %	34.7 %	0.0 %	11.9 %
Fayette County - OH	19.1 %	18.5 %	43.6 %	12.0 %	1.4 %	0.4 %	47.8 %	100.0 %	16.0 %
Franklin County - OH	10.7 %	17.4 %	32.9 %	8.3 %	9.0 %	3.0 %	1.4 %	13.7 %	15.2 %
Gallia County - OH	18.4 %	20.2 %	43.7 %	9.3 %	0.9 %	0.3 %	81.4 %	0.0 %	14.2 %
Guernsey County - OH	15.5 %	17.1 %	42.9 %	9.7 %	1.0 %	0.5 %	61.4 %	15.8 %	16.6 %
Hocking County - OH	14.4 %	15.7 %	41.7 %	8.9 %	0.7 %	0.3 %	70.8 %	23.7 %	16.5 %
Jackson County - OH	20.7 %	23.2 %	46.7 %	10.8 %	0.6 %	0.5 %	64.6 %	100.0 %	15.5 %
Knox County - OH	11.8 %	13.0 %	33.9 %	8.2 %	1.3 %	1.2 %	55.7 %	0.0 %	14.1 %
Lawrence County - OH	17.3 %	17.4 %	45.7 %	7.4 %	0.4 %	0.0 %	45.9 %	100.0 %	15.8 %
Licking County - OH	11.0 %	11.6 %	29.7 %	7.7 %	1.7 %	0.3 %	35.5 %	0.0 %	13.7 %
Madison County - OH	15.3 %	10.5 %	31.7 %	6.0 %	1.7 %	0.8 %	48.5 %	0.0 %	12.8 %
Marion County - OH	16.0 %	18.5 %	39.1 %	9.4 %	1.3 %	0.5 %	30.3 %	14.0 %	15.7 %
Meigs County - OH	16.8 %	21.3 %	46.9 %	13.9 %	0.2 %	0.1 %	81.3 %	100.0 %	17.2 %
Monroe County - OH	14.1 %	18.1 %	41.0 %	6.1 %	0.4 %	0.2 %	97.7 %	100.0 %	15.2 %
Morgan County - OH	17.1 %	19.5 %	46.8 %	8.5 %	0.3 %	0.1 %	81.5 %	100.0 %	17.9 %
Morrow County - OH	13.7 %	11.9 %	36.4 %	7.4 %	0.8 %	0.4 %	88.8 %	12.9 %	14.6 %
Muskingum County - OH	13.5 %	16.9 %	41.5 %	11.2 %	0.9 %	0.3 %	47.0 %	0.0 %	14.4 %
Noble County - OH	21.0 %	16.3 %	40.8 %	9.7 %	0.2 %	0.4 %	62.5 %	4.5 %	17.0 %
Perry County - OH	16.4 %	17.7 %	41.6 %	11.2 %	0.4 %	0.2 %	75.2 %	56.9 %	15.7 %
Pickaway County - OH	16.4 %	13.1 %	33.0 %	7.6 %	1.0 %	0.0 %	49.9 %	0.0 %	13.5 %
Pike County - OH	22.0 %	22.5 %	49.7 %	19.3 %	0.5 %	0.0 %	74.2 %	100.0 %	16.1 %

<b>Population Group</b>	<b>Less than HS Education</b>	<b>Income Below 100% Poverty</b>	<b>Income Below 250% Poverty (Age: 40-64)</b>	<b>Un-employed</b>	<b>Foreign Born</b>	<b>Linguistic-ally Isolated</b>	<b>In Rural Areas</b>	<b>In Medically Under-served Areas</b>	<b>No Health Insurance (Age: 40-64)</b>
Ross County - OH	16.3 %	17.5 %	40.2 %	13.8 %	0.8 %	0.9 %	58.7 %	15.9 %	14.6 %
Scioto County - OH	19.1 %	21.8 %	48.4 %	12.0 %	1.0 %	0.1 %	54.3 %	100.0 %	15.6 %
Union County - OH	8.7 %	6.6 %	21.7 %	5.9 %	2.9 %	0.3 %	50.0 %	0.0 %	10.3 %
Vinton County - OH	24.0 %	20.8 %	50.4 %	11.3 %	0.2 %	1.3 %	100.0 %	100.0 %	16.0 %
Washington County - OH	11.8 %	15.1 %	37.6 %	8.8 %	1.1 %	0.1 %	56.6 %	2.8 %	15.1 %

Data are in the percentage of people (men and women) in the population.

Source of health insurance data: US Census Bureau – Small Area Health Insurance Estimates (SAHIE) for 2011.

Source of rural population data: US Census Bureau – Census 2010.

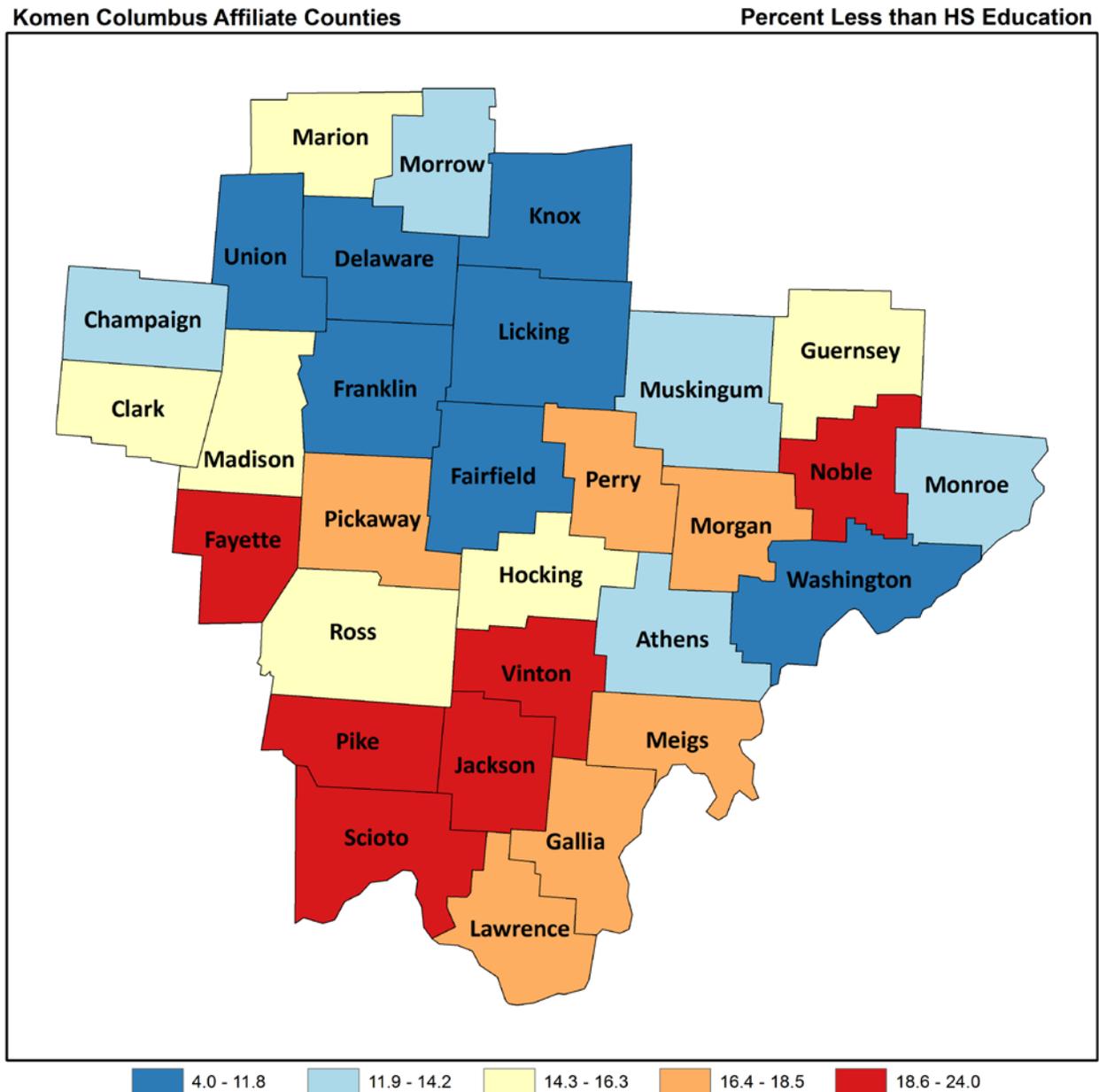
Source of medically underserved data: Health Resources and Services Administration (HRSA) for 2013.

Source of other data: US Census Bureau – American Community Survey (ACS) for 2007-2011.

## Map of Education Level and Linguistic Isolation

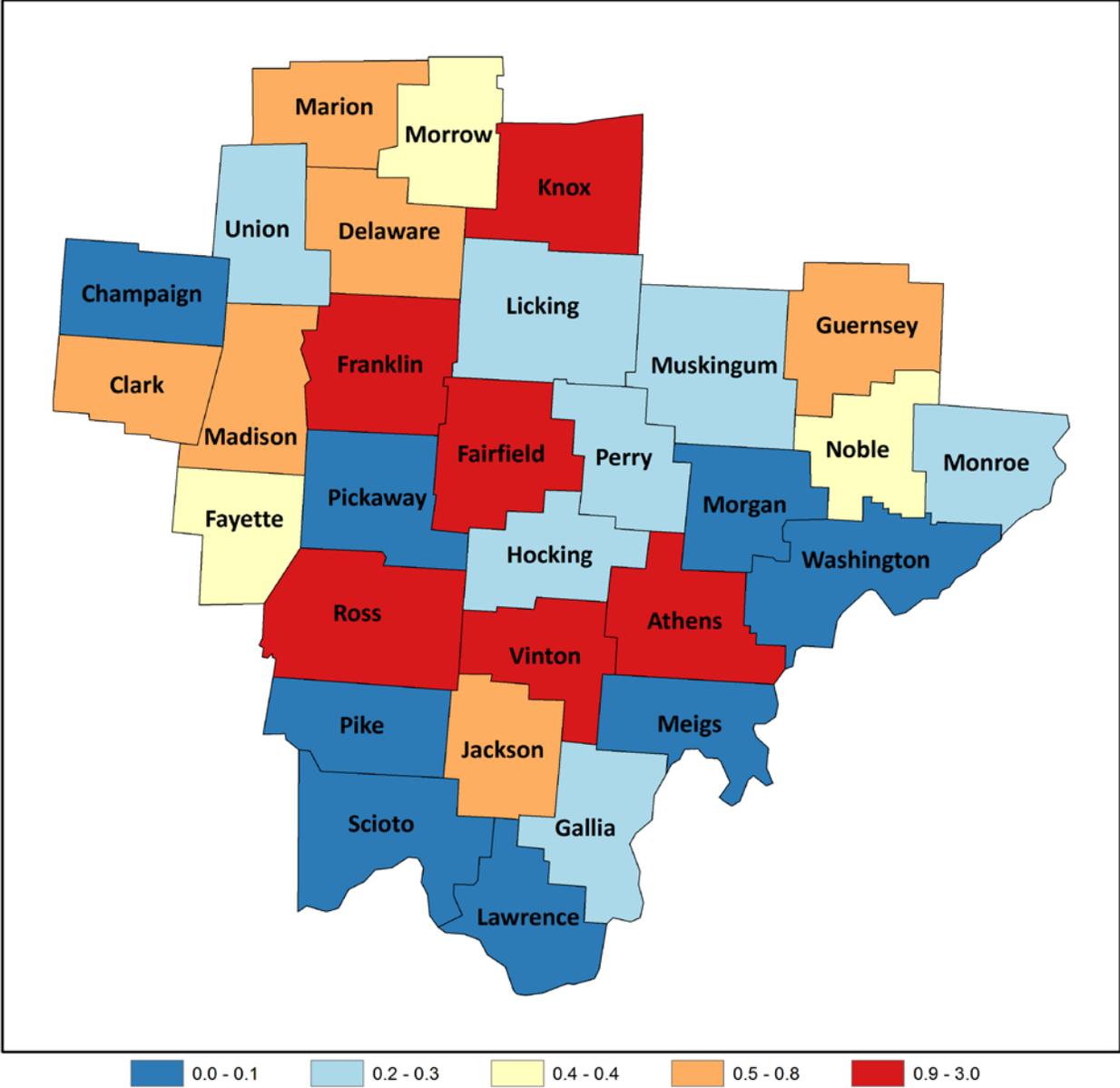
Figure 2.4a shows a map of the percent of people with less than a high school education for the counties in the Affiliate service area.

Figure 2.4b shows a map of the percent of people who are linguistically isolated (living in a household in which all the adults have difficulty with English) for the counties in the Affiliate service area.



Data are in the percentage of people (men and women) in the population.  
 Source: US Census Bureau – American Community Survey (ACS) for 2007-2011.

**Figure 2.4a.** Percent less than high school education.



Data are in the percentage of people (men and women) in the population.  
Source: US Census Bureau – American Community Survey (ACS) for 2007-2011.

Figure 2.4b. Percent linguistically isolated.

## **Conclusions: Population Characteristics**

Proportionately, the Komen Columbus service area has a substantially larger White female population than the US as a whole, a slightly smaller Black/African-American female population, a substantially smaller Asian and Pacific Islander (API) female population, a slightly smaller American Indian and Alaska Native (AIAN) female population, and a substantially smaller Hispanic/Latina female population. The Affiliate's female population is slightly younger than that of the US as a whole. The Affiliate's education level is slightly higher than and income level is slightly lower than those of the US as a whole. There are a slightly larger percentage of people who are unemployed in the Affiliate service area. The Affiliate service area has a substantially smaller percentage of people who are foreign born and a substantially smaller percentage of people who are linguistically isolated. There are a substantially larger percentage of people living in rural areas, a slightly smaller percentage of people without health insurance, and a slightly smaller percentage of people living in medically underserved areas.

The following county has a substantially larger Black/African-American female population percentage than that of the Affiliate service area as a whole:

- Franklin County

The following counties have substantially older female population percentages than that of the Affiliate service area as a whole:

- Monroe County
- Morgan County
- Washington County

The following counties have substantially lower education levels than that of the Affiliate service area as a whole:

- Fayette County
- Gallia County
- Jackson County
- Lawrence County
- Noble County
- Pike County
- Scioto County
- Vinton County

The following counties have substantially lower income levels than that of the Affiliate service area as a whole:

- Athens County
- Jackson County
- Meigs County
- Pike County
- Scioto County

The following counties have substantially lower employment levels than that of the Affiliate service area as a whole:

- Athens County
- Fayette County
- Meigs County
- Pike County
- Ross County
- Scioto County

### 3. Priority Areas

#### 3.1 Methods for Setting Priorities

##### Healthy People 2020 forecasts

**Healthy People 2020 is a major federal government program that has set specific targets (called “objectives”) for improving Americans’ health by the year 2020.**

**The report shows whether areas are likely to meet the two Healthy People 2020 objectives related to breast cancer: reducing breast cancer death rate and reducing the number of late-stage breast cancers.**

Healthy People 2020 (HP2020) is a major federal government initiative that provides specific health objectives for communities and for the country as a whole [HP 2020]. Many national health organizations use HP2020 targets to monitor progress in reducing the burden of disease and improve the health of the nation. Likewise, Komen believes it is important to refer to HP2020 to see how areas across the country are progressing towards reducing the burden of breast cancer.

HP2020 has several cancer-related objectives, including:

- Reducing women’s death rate from breast cancer
- Reducing the number of breast cancers that are found at a late-stage

*The HP2020 objective for breast cancer death rates*

As of the writing of this report, the HP2020 target for the breast cancer death rate is 20.6 breast-cancer related deaths per 100,000 females – a 10 percent improvement in comparison to the 2007 rate.

To see how well counties in the Komen Columbus service area are progressing toward this target, the report uses the following information:

- County breast cancer death rate data for years 2006 to 2010.
- Estimates for the trend (annual percent change) in county breast cancer death rates for years 2006 to 2010.
- Both the data and the HP2020 target are age-adjusted. The section on **Incidence Rates** (Section 2.1) explains age adjustment.

These data are used to estimate how many years it will take for each county to meet the HP2020 objective. Because the target date for meeting the objective is 2020, and 2008 was used as a starting point, a county has 12 years to meet the target.

Death rate data and trends are used to calculate whether an area will meet the HP2020 target, assuming that the trend seen in years 2006 to 2010 continues for 2011 and beyond.

The calculation was conducted using the following procedure:

- The annual percent change for 2006-2010 was calculated.
- Using 2008 as a starting point, the annual percent change was subtracted from the expected death rate (based on the 2006-2010 death rate) for each year between 2010 and 2020.
- These calculated death rates were then compared with the target.
  - If the breast cancer death rate for 2006-2010 was already below the target, it is reported that the area “Currently meets target.”
  - If it would take more than 12 years (2008 to 2020) to meet the target, it is reported that the area would need “13 years or longer” to meet the target.
  - If the rate is currently below the target but the trend is increasing such that the target will no longer be met in 2020, it is reported that the area would need “13 years or longer” to meet the target.
  - In all other cases, the number of years it would take for the area to meet the target is reported. For example, if the area would meet the target in 2016, it would be reported as “8 years,” because it’s 8 years from 2008 to 2016.

#### *The HP2020 objective for late-stage breast cancer diagnoses*

Another Healthy People 2020 objective is a decrease in the number of breast cancers diagnosed at a late stage.

For each county in the Affiliate service area, the late-stage incidence rate and trend are used to calculate the amount of time, in years, needed to meet the HP2020 target, assuming that the trend observed from 2005 to 2009 continues through year 2020.

The calculation was conducted using the following procedure:

- The annual percent change for 2005-2009 was calculated.
- Using 2008 as a starting point, the annual percent change was subtracted from the expected late-stage incidence rate (based on the 2005-2009 rate) for each year between 2009 and 2020.
- The calculated late-stage incidence rates were then compared with the target.

- If the late-stage incidence rate for 2005-2009 was already below the target, it is reported that the area “Currently meets target.”
- If it would take more than 12 years (2008 to 2020) to meet the target, it is reported that the area would need “13 years or longer” to meet the target.
- If the rate is currently below the target but the trend is increasing such that the target will no longer be met in 2020, it is reported that the area would need “13 years or longer” to meet the target.
- In all other cases, the number of years it would take for the area to meet the target is reported.

## Identification of priority areas

**Identifying geographic areas and groups of women with high needs will help develop effective, targeted breast cancer programs.**

**Priority areas are identified based on the time needed to meet Healthy People 2020 targets for breast cancer.**

The purpose of this report is to combine evidence from many credible sources and use it to identify the highest priority areas for breast cancer programs (i.e. the areas of greatest need).

Classification of priority areas are based on the time needed to achieve HP2020 targets in each area. These time projections depend on both the starting point and the trends in death rates and late-stage incidence.

Late-stage incidence reflects both the overall breast cancer incidence rate in the population and the mammography screening coverage. The breast cancer death rate reflects the access to care and the quality of care in the health care delivery area, as well as cancer stage at diagnosis.

There has not been any indication that either one of the two HP2020 targets is more important than the other. Therefore, the report considers them equally important.

### *How counties are classified by need*

Counties are classified as follows:

- Counties that are not likely to achieve either of the HP2020 targets are considered to have the highest needs.
- Counties that have already achieved both targets are considered to have the lowest needs.
- Other counties are classified based on the number of years needed to achieve the two targets.

Table 3.1 shows how counties are assigned to priority categories.

**Table 3.1.** Needs/priority classification based on the projected time to achieve HP2020 breast cancer targets.

		Time to Achieve Late-stage Incidence Reduction Target				
		13 years or longer	7-12 yrs.	0 – 6 yrs.	Currently meets target	Unknown
Time to Achieve Death Rate Reduction Target	13 years or longer	Highest	High	Medium High	Medium	Highest
	7-12 yrs.	High	Medium High	Medium	Medium Low	Medium High
	0 – 6 yrs.	Medium High	Medium	Medium Low	Low	Medium Low
	Currently meets target	Medium	Medium Low	Low	Lowest	Lowest
	Unknown	Highest	Medium High	Medium Low	Lowest	Unknown

If the time to achieve a target cannot be calculated for one of the HP2020 indicators, then the county is classified based on the other indicator. If both indicators are missing, then the county is not classified. This doesn't mean that the county may not have high needs; it only means that sufficient data are not available to classify the county.

## 3.2 Healthy People 2020 Forecasts

Table 3.2a shows for individual counties and the Komen Columbus service area as a whole:

- Predicted number of years needed to achieve the HP2020 breast cancer death rate target. The starting year is 2008.
- Initial (2006-2010) death rate
- Annual percent change (2006-2010)

Table 3.2b shows:

- Predicted number of years needed to achieve the HP2020 breast cancer late-stage incidence target. The starting year is 2008.
- Initial (2005-2009) late-stage incidence rate
- Annual percent change (2005-2009)

HP2020 forecasts are reported for the Affiliate service area as a whole as well as the individual counties. The forecasts can be different – counties with the largest populations will have the greatest influence on the Affiliate service area forecast.

The results presented in Tables 3.2a and 3.2b help identify which counties have the greatest needs when it comes to meeting the HP2020 breast cancer targets.

- For counties in the “13 years or longer” category, current trends would need to change to achieve the target.
- Some counties may currently meet the target but their rates are increasing and they could fail to meet the target if the trend is not reversed.

Trends can change for a number of reasons, including:

- Improved screening programs could lead to breast cancers being diagnosed earlier, resulting in a decrease in both late-stage incidence rates and death rates.
- Improved socioeconomic conditions, such as reductions in poverty and linguistic isolation could lead to more timely treatment of breast cancer, causing a decrease in death rates.

The data in these tables should be considered together with other information on factors that affect breast cancer death rates such as screening rates and key breast cancer death determinants such as poverty and linguistic isolation.

**Table 3.2a.** Predicted number of years needed to achieve HP2020 target for female breast cancer death rates.

Target is **20.6\*** deaths per 100,000.  
Starting year is 2008.

Geographic Area	Female Breast Cancer Death Rate		
	Base Rate for years 2006-2010	Trend (In Annual Percent Change for years 2006-2010)	Predicted # of Years Needed to Achieve Target
Komen Columbus Service Area	25.7	NA	NA
Athens County - OH	18.7	-4.1%	Currently meets target
Champaign County - OH	23.7	-2.4%	6 years
Clark County - OH	27.1	-1.2%	13 years or longer
Delaware County - OH	23.2	-2.4%	5 years
Fairfield County - OH	28.6	-0.9%	13 years or longer
Fayette County - OH	28.7	NA	NA
Franklin County - OH	27.7	-1.7%	13 years or longer
Gallia County - OH	23.1	-2.1%	6 years
Guernsey County - OH	24.6	-0.1%	13 years or longer
Hocking County - OH	25.1	0.9%	13 years or longer
Jackson County - OH	22.7	-2.5%	4 years
Knox County - OH	23.6	-2.7%	5 years
Lawrence County - OH	28.1	-0.2%	13 years or longer
Licking County - OH	27.9	-0.7%	13 years or longer
Madison County - OH	28.2	-1.8%	13 years or longer
Marion County - OH	25.9	-2.6%	9 years
Meigs County - OH	SN	SN	SN
Monroe County - OH	SN	SN	SN
Morgan County - OH	SN	SN	SN
Morrow County - OH	33.2	-28.1%	2 years
Muskingum County - OH	27.2	-1.6%	13 years or longer
Noble County - OH	SN	SN	SN
Perry County - OH	28.1	-1.8%	13 years or longer

	Female Breast Cancer Death Rate		
Geographic Area	Base Rate for years 2006-2010	Trend (In Annual Percent Change for years 2006-2010)	Predicted # of Years Needed to Achieve Target
Pickaway County - OH	24.7	-3.3%	6 years
Pike County - OH	18.4	-1.7%	Currently meets target
Ross County - OH	17.6	-2.2%	Currently meets target
Scioto County - OH	20.8	-2.0%	1 year
Union County - OH	19.3	-4.2%	Currently meets target
Vinton County - OH	SN	SN	SN
Washington County - OH	24.7	-1.5%	13 years or longer

\*Target as of the writing of this report.

NA – data not available.

SN – data suppressed due to small numbers (15 cases or fewer for the 5-year data period).

Data are for years 2006-2010.

Rates are in cases or deaths per 100,000.

Age-adjusted rates are adjusted to the 2000 US standard population.

Source: CDC – NCHS mortality data in SEER\*Stat.

**Table 3.2b.** Predicted number of years needed to achieve HP2020 target for female breast cancer late-stage incidence rates.

Target is **41.0\*** cases per 100,000.  
Starting year is 2008.

Geographic Area	Late-stage Female Breast Cancer Rate		
	Base Rate for years 2005-2009	Trend (In Annual Percent Change for years 2005-2009)	Predicted # of Years Needed to Achieve Target
Komen Columbus Service Area	44.8	1.1%	13 years or longer
Athens County - OH	35.1	-6.9%	Currently meets target
Champaign County - OH	43.0	11.7%	13 years or longer
Clark County - OH	49.7	3.3%	13 years or longer
Delaware County - OH	45.2	4.7%	13 years or longer
Fairfield County - OH	43.0	-7.9%	1 year
Fayette County - OH	23.6	-9.1%	Currently meets target
Franklin County - OH	45.8	-2.0%	6 years
Gallia County - OH	47.2	5.9%	13 years or longer
Guernsey County - OH	69.3	-7.2%	7 years
Hocking County - OH	32.2	5.4%	13 years or longer**
Jackson County - OH	44.4	6.8%	13 years or longer
Knox County - OH	44.3	7.5%	13 years or longer
Lawrence County - OH	41.4	-4.2%	1 year
Licking County - OH	40.5	4.4%	13 years or longer**
Madison County - OH	57.7	11.9%	13 years or longer
Marion County - OH	53.1	0.7%	13 years or longer
Meigs County - OH	23.6	13.3%	13 years or longer**
Monroe County - OH	40.3	21.0%	13 years or longer**
Morgan County - OH	40.1	16.0%	13 years or longer**
Morrow County - OH	53.4	-7.7%	4 years
Muskingum County - OH	46.9	6.6%	13 years or longer
Noble County - OH	SN	SN	SN
Perry County - OH	49.0	-1.4%	13 years or longer

	<b>Late-stage Female Breast Cancer Rate</b>		
<b>Geographic Area</b>	<b>Base Rate for years 2005-2009</b>	<b>Trend (In Annual Percent Change for years 2005-2009)</b>	<b>Predicted # of Years Needed to Achieve Target</b>
Pickaway County - OH	36.7	4.1%	13 years or longer**
Pike County - OH	36.6	-29.0%	Currently meets target
Ross County - OH	41.9	7.4%	13 years or longer
Scioto County - OH	44.4	-0.1%	13 years or longer
Union County - OH	43.0	5.2%	13 years or longer
Vinton County - OH	SN	SN	SN
Washington County - OH	44.5	14.9%	13 years or longer

\*Target as of the writing of this report.

\*\* While this county currently meets the HP2020 target, because the trend is increasing it should be treated the same as a county that will not meet the HP2020 target.

NA – data not available.

SN – data suppressed due to small numbers (15 cases or fewer for the 5-year data period).

Data are for years 2005-2009.

Rates are in cases or deaths per 100,000.

Age-adjusted rates are adjusted to the 2000 US standard population.

Source: NAACCR – CINA Deluxe Analytic File.

## Conclusions: Healthy People 2020 Forecasts

Because death rate trend data are not available for the Komen Columbus service area, it can't be predicted whether the Affiliate service area will meet the HP2020 target of 20.6 female breast cancer deaths per 100,000.

The following counties **currently meet** the HP2020 breast cancer death rate target of 20.6:

- Athens County
- Pike County
- Ross County
- Union County

The following counties are **likely to miss** the HP2020 breast cancer death rate target unless the death rate falls at a faster rate than currently estimated:

- Clark County
- Fairfield County
- Franklin County
- Guernsey County
- Hocking County
- Lawrence County
- Licking County
- Madison County
- Muskingum County
- Perry County
- Washington County

Because data are not available and data for small numbers of people are not reliable, it can't be predicted whether Fayette County, Meigs County, Monroe County, Morgan County, Noble County and Vinton County will reach the death rate target. The remaining counties are likely to achieve the target by 2020 or earlier.

As shown in Table 3.2b, the Komen Columbus service area as a whole is **likely to miss** the HP2020 late-stage incidence rate target. The Affiliate service area had a base rate of 44.8 new late-stage cases per 100,000 females per year from 2005 to 2009 (age-adjusted). This rate coupled with the recent late-stage incidence rate trend, indicates that the Komen Columbus service area is likely to miss the HP2020 target of 41.0 new late-stage cases per 100,000.

The following counties **currently meet** the HP2020 late-stage incidence rate target of 41.0:

- Athens County
- Fayette County
- Pike County

The following counties are **likely to miss** the HP2020 late-stage incidence rate target unless the late-stage incidence rate falls at a faster rate than currently estimated:

- Champaign County
- Clark County
- Delaware County
- Gallia County
- Hocking County
- Jackson County
- Knox County
- Licking County
- Madison County
- Marion County
- Meigs County
- Monroe County
- Morgan County
- Muskingum County
- Perry County
- Pickaway County
- Ross County
- Scioto County
- Union County
- Washington County

Because data for small numbers of people are not reliable, it can't be predicted whether Noble County and Vinton County will reach the late-stage incidence rate target. The remaining counties are likely to achieve the target by 2020 or earlier.

### 3.3 Needs Assessment and Priority Areas

Table 3.3 shows the priority levels for each county in the Komen Columbus service area, determined as described in Section 3.1.

Table 3.3 also shows:

- Predicted number of years needed to achieve the HP2020 death rate and late-stage incidence targets
- Population characteristics from Tables 2.4a and 2.4b that are substantially different than the Affiliate service area as a whole (e.g. county has substantially lower education rate and is substantially more rural than Affiliate service area as a whole)

**Table 3.3.** Intervention priorities for Komen Columbus service area with predicted time to achieve the HP2020 breast cancer targets and key population characteristics.

County	Priority	Predicted Time to Achieve Death Rate Target	Predicted Time to Achieve Late-stage Incidence Target	Key Population Characteristics
Clark County - OH	Highest	13 years or longer	13 years or longer	
Hocking County - OH	Highest	13 years or longer	13 years or longer	Rural
Licking County - OH	Highest	13 years or longer	13 years or longer	Rural
Madison County - OH	Highest	13 years or longer	13 years or longer	Rural
Meigs County - OH	Highest	SN	13 years or longer	Poverty, employment, rural, medically underserved
Monroe County - OH	Highest	SN	13 years or longer	Older, rural, medically underserved
Morgan County - OH	Highest	SN	13 years or longer	Older, rural, medically underserved
Muskingum County - OH	Highest	13 years or longer	13 years or longer	Rural
Perry County - OH	Highest	13 years or longer	13 years or longer	Rural, medically underserved
Washington County - OH	Highest	13 years or longer	13 years or longer	Older, rural
Guernsey County - OH	High	13 years or longer	7 years	Rural
Marion County - OH	High	9 years	13 years or longer	
Champaign County - OH	Medium High	6 years	13 years or longer	Rural
Delaware County - OH	Medium High	5 years	13 years or longer	
Fairfield County - OH	Medium High	13 years or longer	1 year	Rural
Franklin County - OH	Medium High	13 years or longer	6 years	%Black/African-American
Gallia County - OH	Medium High	6 years	13 years or longer	Education, rural
Jackson County - OH	Medium High	4 years	13 years or longer	Education, poverty, rural, medically underserved
Knox County - OH	Medium High	5 years	13 years or longer	Rural
Lawrence County - OH	Medium High	13 years or longer	1 year	Education, rural, medically underserved
Pickaway County - OH	Medium High	6 years	13 years or longer	Rural
Scioto County - OH	Medium High	1 year	13 years or longer	Education, poverty, employment, rural, medically underserved
Ross County - OH	Medium	Currently meets target	13 years or longer	Employment, rural

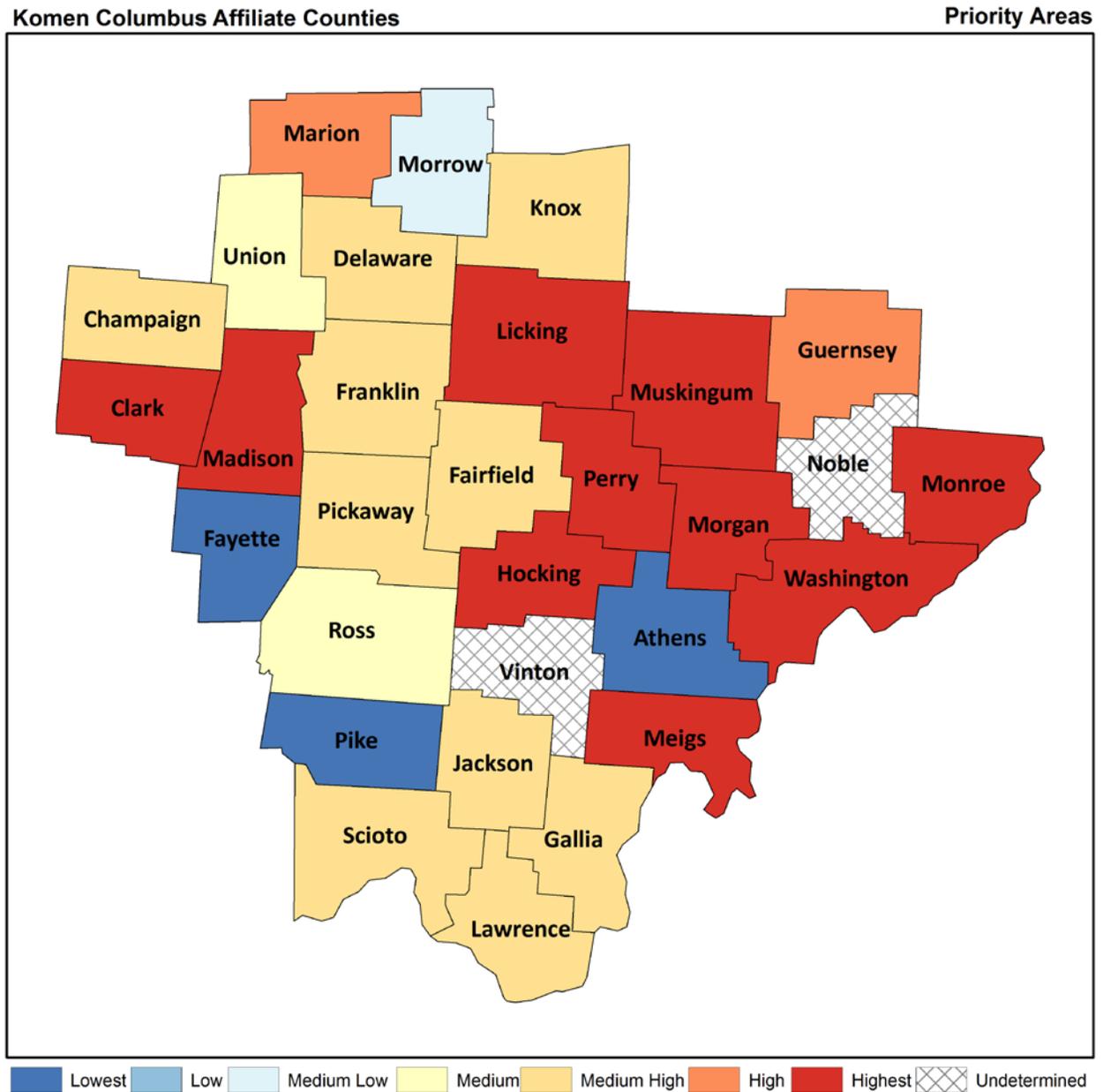
<b>County</b>	<b>Priority</b>	<b>Predicted Time to Achieve Death Rate Target</b>	<b>Predicted Time to Achieve Late-stage Incidence Target</b>	<b>Key Population Characteristics</b>
Union County - OH	Medium	Currently meets target	13 years or longer	Rural
Morrow County - OH	Medium Low	2 years	4 years	Rural
Athens County - OH	Lowest	Currently meets target	Currently meets target	Poverty, employment, rural
Fayette County - OH	Lowest	NA	Currently meets target	Education, employment, rural, medically underserved
Pike County - OH	Lowest	Currently meets target	Currently meets target	Education, poverty, employment, rural, medically underserved
Noble County - OH	Undetermined	SN	SN	Education, rural
Vinton County - OH	Undetermined	SN	SN	Education, rural, medically underserved

NA – data not available.

SN – data suppressed due to small numbers (15 cases or fewer for the 5-year data period).

## Map of Intervention Priority Areas

Figure 3.3 shows a map of the intervention priorities for the counties in the Affiliate service area. When both of the indicators used to establish a priority for a county are not available, the priority is shown as “undetermined” on the map.



**Figure 3.3.** Intervention priorities.

## Conclusions: Needs Assessment and Priority Areas

Table 3.3 shows that the counties classified as **highest** priority are:

- Clark County
- Hocking County
- Licking County
- Madison County
- Meigs County
- Monroe County
- Morgan County
- Muskingum County
- Perry County
- Washington County

The counties classified as **high** priority are:

- Guernsey County
- Marion County

The counties classified as **medium high** priority are:

- Champaign County
- Delaware County
- Fairfield County
- Franklin County
- Gallia County
- Jackson County
- Knox County
- Lawrence County
- Pickaway County
- Scioto County

The counties classified as **medium** priority are:

- Ross County
- Union County

## 4. Conclusions

### Highest priority areas

Ten counties in the Komen Columbus service area are in the highest priority category. Seven of the ten, Clark County, Hocking County, Licking County, Madison County, Muskingum County, Perry County and Washington County, are not likely to meet either the death rate or late-stage incidence rate HP2020 targets. Three of the ten, Meigs County, Monroe County and Morgan County, are not likely to meet the late-stage incidence rate HP2020 target.

Meigs County has high poverty rates and high unemployment. Monroe County has an older population. Morgan County has an older population. Washington County has an older population.

### High priority areas

Two counties in the Komen Columbus service area are in the high priority category. One of the two, Guernsey County is not likely to meet the death rate HP2020 target. One of the two, Marion County is not likely to meet the late-stage incidence rate HP2020 target.

The late-stage incidence rates in Guernsey County (69.3 per 100,000) are significantly higher than the Affiliate service area as a whole (44.8 per 100,000).

### Notes for program planning

Plans for breast cancer programs should be based mainly on observed breast cancer trends, in particular the trend of the HP2020 breast cancer death and late-stage targets. Plans could also consider additional breast cancer data such as late-stage proportion and screening rates as well as population characteristics such as poverty and linguistic isolation.

## 5. Summary of Data Sources

**Table 5.1.** Data sources and years.

Data Item	Source	Years
Incidence rates	North American Association of Central Cancer Registries (NAACCR) – Cancer in North America (CINA) Deluxe Analytic File	2005-2009
Incidence trends	NAACCR – CINA Deluxe Analytic File	2005-2009
Mortality rates	CDC – National Center for Health Statistics (NCHS) mortality data in SEER*Stat	2006-2010
Mortality trends	NCI/CDC – State Cancer Profiles	2006-2010
Late-stage diagnoses	NAACCR – CINA Deluxe Analytic File	2005-2009
Late-stage trends	NAACCR – CINA Deluxe Analytic File	2005-2009
Population denominators for calculating breast cancer incidence and death rates	Census Bureau – Population Estimates*	2011 release of counts for July 1 2005-2010
Mammography screening	CDC – Behavioral Risk Factor Surveillance System (BRFSS)	2012
Population counts by race/ethnicity and age	Census Bureau – Population Estimates*	2011 release of counts for July 1 2011
Socioeconomic indicators	Census Bureau – American Community Survey (ACS)	2007-2011
Rural population	Census Bureau – Census 2010	2010
Health insurance	Census Bureau – Small Area Health Insurance Estimates (SAHIE)	2011
Medically underserved areas	Health Resources and Services Administration (HRSA) – Medically Underserved Areas (MUAs)	2013

\* Population estimates for bridged single-race estimates derived from the original multiple race categories provided by the Census Bureau to the National Cancer Institute. See <http://seer.cancer.gov/popdata/>.

## 6. Data Limitations

The quantitative data in the report have been gathered from credible sources and uses the most current data available at the time.

### Recent data

The most recent data available were used but, for cancer incidence and mortality, these data are still several years behind. The most recent breast cancer incidence and mortality data available in 2013 were data from 2009 (incidence) and 2010 (mortality). For the US as a whole and for most states, breast cancer incidence and mortality rates do not often change rapidly. Rates in individual counties might change more rapidly. In particular if a cancer control program has been implemented in 2011-2013, any impact of the program on incidence and mortality rates would not be reflected in this report.

Over the planning period for this report (2015 to 2019), the data will become more out-of-date. The trend data included in the report can help estimate more current values. Also, the State Cancer Profiles Web site (<http://statecancerprofiles.cancer.gov/>) is updated annually with the latest cancer data for states and can be a valuable source of information about the latest breast cancer rates for the US, states, and counties.

### Data Availability

For some areas, data might not be available or might be of varying quality. Cancer surveillance programs vary from state to state in their level of funding and this can impact the quality and completeness of the data in the cancer registries and the state programs for collecting death information. There are also differences in the legislative and administrative rules for the release of cancer statistics for studies such as these. These factors can result in missing data for some of the data categories in this report.

### Small populations

Areas with small populations might not have enough breast cancer cases or breast cancer deaths each year to support the generation of reliable statistics. Because breast cancer has relatively good survival rates, breast cancer deaths occur less often in an area than breast cancer cases. So it may happen that breast cancer incidence rates are reported for a county with a small number of people but not breast cancer death rates.

The screening mammography data have a similar limitation because they are based on a survey of a small sample of the total population. So screening proportions may not be available for some of the smaller counties. Finally, it may be possible to report a late-

stage incidence rate but not have enough data to report a late-stage trend and to calculate the number of years needed to reach the HP2020 late-stage target.

Data on population characteristics were obtained for all counties, regardless of their size. These data should be used to help guide planning for smaller counties where there are not enough specific breast cancer data to calculate a priority based on HP2020 targets.

### **Other cancer data sources**

If a person has access to other sources of cancer data for their state, they might notice minor differences in the values of the data, even for the same time period. There are often several sources of cancer statistics for a given population and geographic area. State registries and vital statistics offices provide their data to several national organizations that compile the data. This report used incidence data compiled by the North American Association of Central Cancer Registries (NAACCR) and the National Cancer Institute (NCI) and mortality (death) data compiled by the National Center for Health Statistics (NCHS).

Individual state registries and health departments often publish their own cancer data. These data might be different from the data in this report for several reasons. The most common reason is differences in the timing of when cases are reported.

Sometimes, a small number of cancer cases are reported to cancer registries with as much as a five year delay. Because of this delay, counts of cancer cases for a particular year may differ. In addition, data need to be checked to see whether the same case might have been counted twice in different areas. If a case is counted twice, one of the two reports is deleted. These small adjustments may explain small inconsistencies in the number of cases diagnosed and the rates for a specific year. However, such adjustments shouldn't have a substantial effect on cancer rates at the state level.

### **Specific groups of people**

Data on cancer rates for specific racial and ethnic subgroups such as Somali, Hmong, or Ethiopian are not generally available. Records in cancer registries often record where a person was born if they were born in a foreign country. However, matching data about the population in an area are needed to calculate a rate (the number of cases per 100,000 people) and these matching population data are often not available.

### **Inter-dependent statistics**

The various types of breast cancer data in this report are inter-dependent. For example, an increase in screening can result in fewer late-stage diagnoses and fewer deaths. However, an increase in screening rates can also result in an increase in

breast cancer incidence – simply because previously undetected cases are now being diagnosed. Therefore, caution is needed in drawing conclusions about the causes of changes in breast cancer statistics.

It is important to consider possible time delay between a favorable change in one statistic such as screening and the impact being reflected in other statistics such as the death rate. There can take 10 to 20 years for favorable changes in breast cancer control activities to be reflected in death rates.

### **Missing factors**

There are many factors that impact breast cancer risk and survival for which quantitative data are not available. Some examples include family history, genetic markers like HER2 and BRCA, other medical conditions that can complicate treatment, and the level of family and community support available to the patient. Good quantitative data are not available on how factors such as these vary from place to place. The quantitative data in this report should be supplemented by qualitative information about these other factors from communities whenever possible.

### **Trend limitations**

The calculation of the years needed to meet the HP2020 objectives assume that the current trends will continue until 2020. However, the trends can change for a number of reasons. For example, breast cancer programs, if they are successful, should change the trends. In fact, this is the primary goal of breast cancer programs.

However, trends could also change from differences in the population characteristics of the area such as shifts in the race or ethnicity of the people in the area or changes in their general socioeconomics. Areas with high migration rates, either new people moving into an area or existing residents moving elsewhere, are particularly likely to see this second type of change in breast cancer trends.

### **Late-stage data and un-staged cases**

Not all breast cancer cases have a stage indication. Breast cancer might be suspected in very elderly women and a biopsy may not be performed. Also, some breast cancer cases may be known only through an indication of cause-of-death on a death certificate. When comparing late-stage statistics, it is assumed that the rates of unknown staging don't change and are similar between counties. This may not be a good assumption when comparing data between urban and rural areas or between areas with younger and older populations. It is also assumed that the size and types of unknown cases do not change over time when the trends in late-stage statistics are calculated.

## References

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