

Quantitative Data: Measuring Breast Cancer Impact in Local Communities

Quantitative Data Report

Introduction

The purpose of the quantitative data report for the Virginia Blue Ridge Affiliate of Susan G. Komen® is to combine evidence from many credible sources and use the data to identify the highest priority areas for evidence-based breast cancer programs.

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 (<http://www.healthypeople.gov/2020/default.aspx>).

The following is a summary of the Komen Virginia Blue Ridge Affiliate's Quantitative Data Report. For a full report please contact the Affiliate.

Breast Cancer Statistics

Incidence rates

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 (Table 1). 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).

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.

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. 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.

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

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 (Table 1). Like incidence rates, death rates may be calculated for all women or for specific groups of women (e.g. Black women).

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. Death rates are shown in terms of 100,000 women and adjusted for age.

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

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 (Table 1). Late-stage incidence rates are often shown in terms of 100,000 women and adjusted for age.

Table 1. 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 | - |
| Virginia | 3,993,827 | 5,420 | 124.8 | 1.3% | 1,074 | 24.0 | -1.9% | 1,896 | 43.9 | 0.1% |
| Komen Virginia Blue Ridge Affiliate Service Area | 544,651 | 818 | 119.1 | 2.9% | 172 | 23.4 | NA | 287 | 43.0 | 0.2% |
| White | 454,337 | 711 | 119.5 | 2.8% | 147 | 22.8 | NA | 244 | 42.4 | -2.1% |
| Black | 80,780 | 101 | 117.3 | 2.6% | 24 | 27.7 | NA | 42 | 48.3 | 12.8% |
| AIAN | 1,472 | SN | SN | SN | SN | SN | SN | SN | SN | SN |
| API | 8,061 | 4 | 66.4 | 38.9% | SN | SN | SN | SN | SN | SN |
| Non-Hispanic/ Latina | 532,755 | 814 | 119.3 | 2.9% | 171 | 23.5 | NA | 285 | 42.9 | 0.2% |
| Hispanic/ Latina | 11,896 | 5 | 91.2 | -0.3% | SN | SN | SN | SN | SN | SN |
| Alleghany County - VA | 8,379 | 13 | 104.5 | 6.1% | 4 | 29.5 | NA | 3 | 26.5 | 1.4% |
| Amherst County - VA | 16,879 | 25 | 114.8 | -3.6% | 6 | 26.9 | -2.8% | 9 | 39.8 | -9.8% |
| Bath County - VA | 2,360 | 5 | 144.7 | -26.8% | SN | SN | SN | SN | SN | SN |
| Bedford County - VA | 34,069 | 65 | 149.1 | -4.8% | 10 | 23.1 | -2.3% | 21 | 49.3 | -13.7% |
| Bland County - VA | 3,074 | 4 | 101.1 | -3.0% | SN | SN | SN | SN | SN | SN |
| Botetourt County - VA | 16,602 | 25 | 115.0 | 4.5% | 4 | 17.8 | 0.8% | 9 | 42.3 | -4.4% |
| Campbell County - VA | 27,836 | 40 | 116.3 | -7.7% | 9 | 23.3 | -1.3% | 15 | 43.3 | -8.9% |
| Carroll County - VA | 15,176 | 22 | 95.7 | 5.2% | 5 | 21.9 | -2.4% | 8 | 36.2 | 5.6% |
| Craig County - VA | 2,594 | SN | SN | SN | SN | SN | SN | SN | SN | SN |
| Floyd County - VA | 7,505 | 10 | 93.8 | 19.4% | SN | SN | SN | SN | SN | SN |
| Franklin County - VA | 27,833 | 46 | 128.9 | 7.9% | 8 | 19.4 | -4.5% | 13 | 39.7 | 6.6% |
| Giles County - VA | 8,763 | 12 | 104.1 | -8.5% | SN | SN | SN | 5 | 44.9 | -17.1% |
| Grayson County - VA | 8,091 | 14 | 112.3 | -4.7% | SN | SN | SN | 4 | 35.0 | -21.0% |
| Henry County - VA | 28,331 | 53 | 136.9 | 13.8% | 10 | 22.6 | -0.8% | 15 | 38.8 | 9.0% |
| Montgomery County - VA | 44,503 | 57 | 148.3 | 5.2% | 8 | 19.2 | -2.9% | 24 | 63.0 | -1.7% |
| Patrick County - VA | 9,440 | 12 | 93.7 | 14.5% | SN | SN | SN | 4 | 30.4 | 13.6% |
| Pittsylvania County - VA | 32,138 | 47 | 110.1 | 1.1% | 10 | 21.9 | -2.2% | 17 | 40.8 | 12.5% |
| Pulaski County - VA | 17,649 | 24 | 101.3 | -3.6% | 6 | 25.7 | 1.2% | 14 | 60.8 | -13.6% |
| Roanoke County - VA | 47,992 | 79 | 125.4 | 5.5% | 16 | 25.1 | -0.5% | 25 | 41.4 | 5.4% |

| 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) |
| Rockbridge County - VA | 11,244 | 18 | 116.0 | 2.2% | SN | SN | SN | 6 | 39.1 | -6.5% |
| Wythe County - VA | 14,867 | 20 | 94.0 | 16.6% | 6 | 28.6 | -0.6% | 7 | 35.7 | 16.5% |
| Bedford City - VA | 3,301 | 4 | 81.9 | -8.5% | SN | SN | SN | SN | SN | SN |
| Buena Vista City - VA | 3,553 | 3 | 74.5 | 14.1% | SN | SN | SN | SN | SN | SN |
| Covington City - VA | 3,102 | SN | SN | SN | SN | SN | SN | SN | SN | SN |
| Danville City - VA | 23,827 | 39 | 111.2 | 3.3% | 11 | 28.7 | -1.7% | 13 | 37.0 | 11.5% |
| Galax City - VA | 3,675 | 5 | 85.3 | 12.9% | SN | SN | SN | SN | SN | SN |
| Lexington City - VA | 3,098 | 5 | 116.4 | -2.4% | SN | SN | SN | SN | SN | SN |
| Lynchburg City - VA | 39,320 | 49 | 116.6 | 2.9% | 13 | 26.7 | -2.0% | 17 | 42.9 | 4.5% |
| Martinsville City - VA | 7,650 | 14 | 137.0 | 9.5% | 3 | 23.6 | -1.6% | 5 | 50.6 | 7.7% |
| Radford City - VA | 8,647 | 8 | 134.5 | -9.4% | SN | SN | SN | 5 | 81.8 | -4.7% |
| Roanoke City - VA | 50,219 | 71 | 116.0 | 1.9% | 17 | 27.0 | -1.7% | 28 | 46.9 | 3.1% |
| Salem City - VA | 12,932 | 23 | 138.7 | 7.3% | 4 | 19.1 | -3.2% | 7 | 48.2 | -11.5% |

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.

Incidence rates and trends summary

Overall, the breast cancer incidence rate in the Komen Virginia Blue Ridge Affiliate service area was slightly lower than that observed in the US as a whole and the incidence trend was higher than the US as a whole. The incidence rate of the Affiliate service area was significantly lower than that observed for the State of Virginia and the incidence trend was not significantly different than the State of Virginia.

For the United States, breast cancer incidence in Blacks 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. The most recent estimated incidence rates for Hispanics/Latinas were lower than for Non-Hispanic Whites and Blacks. For the Affiliate service area as a whole, the incidence rate was slightly lower among Blacks 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 counties had an incidence rate **significantly higher** than the Affiliate service area as a whole:

- Bedford County
- Montgomery County

The incidence rate was significantly lower in the following county:

- Wythe 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.

Death rates and trends summary

Overall, the breast cancer death rate in the Komen Virginia Blue Ridge Affiliate service area was slightly 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 Virginia.

For the United States, breast cancer death rates in Blacks 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. The most recent estimated death rates for Hispanics/Latinas were lower than for Non-Hispanic Whites and Blacks. For the Affiliate service area as a whole, the death rate was higher among Blacks 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.

Significantly less favorable trends in breast cancer death rates were observed in the following county:

- Pulaski County

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

- Franklin 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 summary

Overall, the breast cancer late-stage incidence rate in the Komen Virginia Blue Ridge Affiliate service area was similar to 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 Virginia.

For the United States, late-stage incidence rates in Blacks 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 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 following counties had a late-stage incidence rate **significantly higher** than the Affiliate service area as a whole:

- Montgomery County
- Pulaski County
- Radford City

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.

Mammography Screening

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. Table 2 shows some screening recommendations among major organizations for women at average risk.

Table 2. Breast cancer screening recommendations for women at average risk.

| Susan G. Komen | American Cancer Society | National Cancer Institute | National Comprehensive Cancer Network | US Preventive Services Task Force |
|---|---|--|---|---|
| Mammography every year starting at age 40 | 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 |

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. 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 screening recommendations (i.e. from women age 40 and older). The proportions in Table 3 are based on the number of women age 50 to 74 who reported in 2012 having had a mammogram in the last two years.

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 20.0 percent of the women interviewed are Latina, but only 10.0 percent of the total women in the area are Latina, weighting is used to account for this difference.

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 50.0 percent.

Because the screening proportions come from samples of women in an area and are not exact, Table 3 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 50.0 percent, with a confidence interval of 35.0 to 65.0 percent, the real rate might not be exactly 50.0 percent, but it's very unlikely that it's less than 35.0 or more than 65.0 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.

Table 3. 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% |
| Virginia | 2,644 | 2,156 | 79.8% | 77.8%-81.7% |
| Komen Virginia Blue Ridge Affiliate Service Area | 434 | 347 | 76.1% | 71.0%-80.6% |
| White | 373 | 301 | 77.6% | 72.1%-82.2% |
| Black | 55 | 41 | 66.2% | 50.8%-78.8% |
| AIAN | SN | SN | SN | SN |
| API | SN | SN | SN | SN |
| Hispanic/ Latina | SN | SN | SN | SN |
| Non-Hispanic/ Latina | 428 | 342 | 76.1% | 71.0%-80.6% |
| Alleghany County - VA | SN | SN | SN | SN |
| Amherst County - VA | SN | SN | SN | SN |
| Bath County - VA | SN | SN | SN | SN |
| Bedford County - VA | 18 | 14 | 64.7% | 40.6%-83.0% |
| Bland County - VA | SN | SN | SN | SN |
| Botetourt County - VA | 10 | 8 | 85.4% | 45.2%-97.6% |
| Campbell County - VA | 21 | 15 | 62.3% | 38.4%-81.4% |
| Carroll County - VA | 13 | 11 | 83.3% | 49.8%-96.2% |
| Craig County - VA | SN | SN | SN | SN |
| Floyd County - VA | SN | SN | SN | SN |
| Franklin County - VA | 13 | 13 | 100% | 70.0%-100% |
| Giles County - VA | SN | SN | SN | SN |
| Grayson County - VA | SN | SN | SN | SN |
| Henry County - VA | 31 | 28 | 90.9% | 72.7%-97.4% |
| Montgomery County - VA | 36 | 30 | 85.0% | 66.4%-94.2% |
| Patrick County - VA | 13 | 10 | 72.6% | 43.5%-90.1% |
| Pittsylvania County - VA | 53 | 41 | 71.8% | 55.2%-84.0% |
| Pulaski County - VA | 18 | 16 | 92.4% | 67.0%-98.7% |

| Population Group | # of Women Interviewed (Sample Size) | # w/ Self-Reported Mammogram | Proportion Screened (Weighted Average) | Confidence Interval of Proportion Screened |
|------------------------|--------------------------------------|------------------------------|--|--|
| Roanoke County - VA | 58 | 48 | 79.9% | 64.6%-89.7% |
| Rockbridge County - VA | 17 | 13 | 85.1% | 60.6%-95.5% |
| Wythe County - VA | 10 | 6 | 42.8% | 15.6%-75.2% |
| Bedford City - VA | SN | SN | SN | SN |
| Buena Vista City - VA | SN | SN | SN | SN |
| Covington City - VA | SN | SN | SN | SN |
| Danville City - VA | SN | SN | SN | SN |
| Galax City - VA | SN | SN | SN | SN |
| Lexington City - VA | SN | SN | SN | SN |
| Lynchburg City - VA | 21 | 14 | 55.5% | 32.2%-76.5% |
| Martinsville City - VA | SN | SN | SN | SN |
| Radford City - VA | SN | SN | SN | SN |
| Roanoke City - VA | 51 | 42 | 78.8% | 61.6%-89.6% |
| Salem City - VA | SN | SN | SN | SN |

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

Data are for 2012.

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

Breast cancer screening proportions summary

The breast cancer screening proportion in the Komen Virginia Blue Ridge Affiliate 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 Virginia.

For the United States, breast cancer screening proportions among Blacks are similar to those among Whites overall. APIs have somewhat lower screening proportions than Whites and Blacks. 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. For the Affiliate service area as a whole, the screening proportion was not significantly different among Blacks 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.

None of the counties in the Affiliate service area had substantially different screening proportions than the Affiliate service area as a whole.

Population Characteristics

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 (Tables 4 and 5). 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.

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.

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.

Table 4. Population characteristics – demographics.

| Population Group | White | Black | 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 % |
| Virginia | 71.9 % | 21.1 % | 0.6 % | 6.5 % | 92.3 % | 7.7 % | 48.5 % | 33.9 % | 13.9 % |
| Komen Virginia Blue Ridge Affiliate Service Area | 83.1 % | 14.9 % | 0.3 % | 1.7 % | 97.5 % | 2.5 % | 53.3 % | 40.0 % | 18.6 % |
| Alleghany County - VA | 94.1 % | 5.3 % | 0.2 % | 0.4 % | 98.9 % | 1.1 % | 59.8 % | 46.1 % | 22.4 % |
| Amherst County - VA | 78.9 % | 19.4 % | 1.0 % | 0.7 % | 98.2 % | 1.8 % | 54.6 % | 40.5 % | 18.5 % |
| Bath County - VA | 94.5 % | 5.0 % | 0.2 % | 0.3 % | 98.1 % | 1.9 % | 63.2 % | 48.0 % | 24.0 % |
| Bedford County - VA | 92.1 % | 6.3 % | 0.3 % | 1.3 % | 98.3 % | 1.7 % | 57.8 % | 42.0 % | 17.5 % |
| Bland County - VA | 98.1 % | 1.4 % | 0.0 % | 0.4 % | 99.5 % | 0.5 % | 59.7 % | 45.9 % | 20.7 % |
| Botetourt County - VA | 95.7 % | 3.3 % | 0.2 % | 0.8 % | 98.8 % | 1.2 % | 59.5 % | 43.7 % | 18.4 % |
| Campbell County - VA | 83.3 % | 15.2 % | 0.3 % | 1.2 % | 98.3 % | 1.7 % | 53.6 % | 39.6 % | 17.6 % |
| Carroll County - VA | 98.5 % | 0.9 % | 0.3 % | 0.3 % | 97.4 % | 2.6 % | 58.5 % | 44.7 % | 21.5 % |
| Craig County - VA | 99.0 % | 0.4 % | 0.3 % | 0.3 % | 98.9 % | 1.1 % | 56.9 % | 42.4 % | 17.6 % |
| Floyd County - VA | 96.9 % | 2.5 % | 0.1 % | 0.5 % | 97.8 % | 2.2 % | 57.3 % | 43.3 % | 19.8 % |
| Franklin County - VA | 90.0 % | 8.9 % | 0.4 % | 0.7 % | 97.6 % | 2.4 % | 56.5 % | 42.7 % | 19.1 % |
| Giles County - VA | 97.5 % | 2.0 % | 0.1 % | 0.4 % | 98.9 % | 1.1 % | 57.0 % | 42.6 % | 20.5 % |
| Grayson County - VA | 97.2 % | 2.4 % | 0.2 % | 0.3 % | 97.6 % | 2.4 % | 60.9 % | 47.7 % | 23.8 % |
| Henry County - VA | 75.9 % | 23.1 % | 0.3 % | 0.6 % | 95.5 % | 4.5 % | 59.1 % | 44.9 % | 22.4 % |
| Montgomery County - VA | 89.7 % | 4.5 % | 0.3 % | 5.5 % | 97.2 % | 2.8 % | 37.3 % | 26.9 % | 11.8 % |
| Patrick County - VA | 92.5 % | 6.6 % | 0.4 % | 0.4 % | 97.6 % | 2.4 % | 61.3 % | 47.8 % | 23.9 % |
| Pittsylvania County - VA | 76.2 % | 23.1 % | 0.2 % | 0.5 % | 98.1 % | 1.9 % | 57.7 % | 43.2 % | 19.5 % |
| Pulaski County - VA | 93.7 % | 5.4 % | 0.2 % | 0.6 % | 98.7 % | 1.3 % | 58.6 % | 44.5 % | 20.4 % |
| Roanoke County - VA | 91.0 % | 5.8 % | 0.2 % | 3.0 % | 97.9 % | 2.1 % | 57.0 % | 42.4 % | 19.7 % |
| Rockbridge County - VA | 95.4 % | 3.4 % | 0.5 % | 0.7 % | 98.4 % | 1.6 % | 59.9 % | 46.1 % | 22.1 % |
| Wythe County - VA | 95.8 % | 3.5 % | 0.1 % | 0.6 % | 99.1 % | 0.9 % | 57.2 % | 42.5 % | 19.9 % |
| Bedford City - VA | 77.4 % | 21.6 % | 0.2 % | 0.8 % | 98.2 % | 1.8 % | 57.3 % | 44.7 % | 24.5 % |
| Buena Vista City - VA | 92.0 % | 6.0 % | 1.1 % | 1.0 % | 97.9 % | 2.1 % | 50.1 % | 38.3 % | 18.5 % |
| Covington City - VA | 85.9 % | 13.1 % | 0.4 % | 0.7 % | 98.7 % | 1.3 % | 56.9 % | 42.4 % | 21.8 % |
| Danville City - VA | 48.5 % | 50.2 % | 0.2 % | 1.0 % | 97.5 % | 2.5 % | 55.6 % | 43.5 % | 22.1 % |
| Galax City - VA | 91.6 % | 7.3 % | 0.3 % | 0.9 % | 87.2 % | 12.8 % | 56.8 % | 44.7 % | 24.5 % |
| Lexington City - VA | 87.8 % | 9.9 % | 0.1 % | 2.3 % | 96.6 % | 3.4 % | 43.6 % | 36.9 % | 22.9 % |
| Lynchburg City - VA | 66.4 % | 30.7 % | 0.4 % | 2.6 % | 97.2 % | 2.8 % | 42.6 % | 32.5 % | 16.1 % |

| Population Group | White | Black | AIAN | API | Non-Hispanic /Latina | Hispanic /Latina | Female Age 40 Plus | Female Age 50 Plus | Female Age 65 Plus |
|-------------------------|--------------|--------------|-------------|------------|-----------------------------|-------------------------|---------------------------|---------------------------|---------------------------|
| Martinsville City - VA | 52.6 % | 46.0 % | 0.4 % | 1.1 % | 96.7 % | 3.3 % | 56.2 % | 42.5 % | 21.4 % |
| Radford City - VA | 87.4 % | 9.2 % | 0.2 % | 3.2 % | 97.5 % | 2.5 % | 26.5 % | 19.7 % | 9.9 % |
| Roanoke City - VA | 67.2 % | 30.4 % | 0.3 % | 2.0 % | 95.2 % | 4.8 % | 50.4 % | 37.4 % | 16.7 % |
| Salem City - VA | 90.2 % | 7.7 % | 0.4 % | 1.8 % | 97.6 % | 2.4 % | 53.2 % | 40.6 % | 19.5 % |

Data are for 2011.

Data are in the percentage of women in the population.

Source: US Census Bureau – Population Estimates

Table 5. 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 % |
| Virginia | 13.4 % | 10.7 % | 26.9 % | 6.5 % | 11.0 % | 2.7 % | 24.5 % | 27.2 % | 13.3 % |
| Komen Virginia Blue Ridge Affiliate Service Area | 17.8 % | 15.9 % | 38.3 % | 7.8 % | 3.6 % | 1.1 % | 45.6 % | 46.3 % | 15.8 % |
| Alleghany County - VA | 17.3 % | 10.9 % | 37.4 % | 7.3 % | 1.8 % | 0.2 % | 52.4 % | 0.0 % | 13.9 % |
| Amherst County - VA | 20.1 % | 11.5 % | 37.3 % | 7.5 % | 1.7 % | 0.5 % | 63.7 % | 0.0 % | 16.0 % |
| Bath County - VA | 18.8 % | 12.7 % | 38.7 % | 2.2 % | 2.8 % | 0.7 % | 100.0 % | 100.0 % | 15.9 % |
| Bedford County - VA | 14.4 % | 8.9 % | 27.4 % | 6.0 % | 1.9 % | 0.4 % | 78.4 % | 26.0 % | 14.4 % |
| Bland County - VA | 18.7 % | 11.4 % | 37.3 % | 5.1 % | 2.8 % | 0.0 % | 100.0 % | 100.0 % | 14.7 % |
| Botetourt County - VA | 10.5 % | 6.0 % | 22.8 % | 4.4 % | 2.2 % | 0.3 % | 64.1 % | 23.5 % | 11.7 % |
| Campbell County - VA | 17.4 % | 13.7 % | 36.8 % | 7.0 % | 1.8 % | 0.4 % | 61.1 % | 0.0 % | 15.4 % |
| Carroll County - VA | 25.6 % | 17.7 % | 49.1 % | 8.5 % | 2.2 % | 0.7 % | 97.1 % | 100.0 % | 19.1 % |
| Craig County - VA | 10.8 % | 4.2 % | 36.4 % | 1.9 % | 0.3 % | 0.2 % | 100.0 % | 100.0 % | 15.1 % |
| Floyd County - VA | 20.8 % | 13.1 % | 39.3 % | 6.0 % | 1.6 % | 1.7 % | 100.0 % | 100.0 % | 18.4 % |
| Franklin County - VA | 18.9 % | 13.6 % | 38.4 % | 7.7 % | 2.8 % | 1.0 % | 89.2 % | 100.0 % | 17.9 % |
| Giles County - VA | 19.3 % | 15.0 % | 38.9 % | 7.6 % | 1.0 % | 0.1 % | 66.3 % | 100.0 % | 15.1 % |
| Grayson County - VA | 26.8 % | 17.2 % | 51.8 % | 5.0 % | 0.8 % | 0.9 % | 99.9 % | 100.0 % | 18.9 % |
| Henry County - VA | 25.6 % | 18.8 % | 48.8 % | 12.3 % | 3.2 % | 1.5 % | 60.7 % | 100.0 % | 20.3 % |
| Montgomery County - VA | 10.8 % | 23.6 % | 29.2 % | 6.4 % | 8.2 % | 1.5 % | 24.9 % | 39.3 % | 13.4 % |
| Patrick County - VA | 26.4 % | 15.9 % | 47.0 % | 11.4 % | 1.1 % | 0.3 % | 100.0 % | 100.0 % | 18.9 % |
| Pittsylvania County - VA | 23.2 % | 14.4 % | 41.8 % | 10.0 % | 2.0 % | 0.7 % | 85.6 % | 100.0 % | 17.4 % |
| Pulaski County - VA | 19.5 % | 15.0 % | 40.8 % | 10.0 % | 1.4 % | 0.9 % | 46.9 % | 0.0 % | 15.2 % |
| Roanoke County - VA | 9.6 % | 5.8 % | 22.7 % | 4.6 % | 4.9 % | 1.4 % | 18.5 % | 0.0 % | 10.8 % |
| Rockbridge County - VA | 19.0 % | 11.9 % | 38.0 % | 4.2 % | 2.0 % | 0.2 % | 91.6 % | 0.0 % | 15.7 % |
| Wythe County - VA | 20.9 % | 12.8 % | 43.0 % | 9.3 % | 0.4 % | 0.4 % | 75.3 % | 34.8 % | 16.9 % |
| Bedford City - VA | 16.2 % | 17.8 % | 42.7 % | 7.1 % | 2.9 % | 0.0 % | 2.1 % | 100.0 % | 16.0 % |
| Buena Vista City - VA | 24.8 % | 21.6 % | 45.3 % | 7.7 % | 0.3 % | 0.0 % | 3.9 % | 0.0 % | 16.0 % |
| Covington City - VA | 20.4 % | 20.5 % | 43.4 % | 4.9 % | 1.5 % | 0.0 % | 0.0 % | 0.0 % | 15.1 % |

| Population Group | Less than HS Education | Income Below 100% Poverty | Income Below 250% Poverty (Age: 40-64) | Un-employed | Foreign Born | Linguistically Isolated | In Rural Areas | In Medically Underserved Areas | No Health Insurance (Age: 40-64) |
|------------------------|------------------------|---------------------------|--|-------------|--------------|-------------------------|----------------|--------------------------------|----------------------------------|
| Danville City - VA | 23.4 % | 25.6 % | 52.2 % | 13.8 % | 3.2 % | 1.0 % | 4.5 % | 100.0 % | 17.6 % |
| Galax City - VA | 22.8 % | 27.6 % | 52.1 % | 3.8 % | 5.0 % | 6.8 % | 13.7 % | 0.0 % | 20.9 % |
| Lexington City - VA | 21.0 % | 25.2 % | 27.0 % | 1.7 % | 5.3 % | 2.1 % | 0.0 % | 0.0 % | 13.1 % |
| Lynchburg City - VA | 15.0 % | 23.2 % | 43.2 % | 10.4 % | 4.5 % | 1.5 % | 2.7 % | 32.1 % | 15.5 % |
| Martinsville City - VA | 20.6 % | 24.1 % | 51.5 % | 12.9 % | 3.1 % | 2.1 % | 0.0 % | 100.0 % | 16.6 % |
| Radford City - VA | 11.7 % | 33.9 % | 35.5 % | 9.8 % | 6.7 % | 1.8 % | 2.9 % | 59.8 % | 13.8 % |
| Roanoke City - VA | 18.5 % | 20.8 % | 46.9 % | 7.1 % | 6.4 % | 2.4 % | 0.0 % | 38.7 % | 18.1 % |
| Salem City - VA | 12.1 % | 9.4 % | 30.7 % | 6.9 % | 5.3 % | 0.9 % | 0.0 % | 0.0 % | 12.8 % |

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.

Population characteristics summary

Proportionately, the Komen Virginia Blue Ridge Affiliate service area has a slightly larger White female population than the US as a whole, a slightly larger Black 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 older than that of the US as a whole. The Affiliate’s education level is slightly lower than and income level is slightly lower than those of the US as a whole. There is a slightly smaller 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 is a substantially larger percentage of people living in rural areas, a slightly smaller percentage of people without health insurance, and a substantially larger percentage of people living in medically underserved areas.

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

- Henry County
- Pittsylvania County
- Bedford City
- Danville City
- Lynchburg City
- Martinsville City
- Roanoke City

The following county has substantially larger API female population percentages than that of the Affiliate service area as a whole:

- Montgomery County

The following county has substantially larger Hispanic/Latina female population percentages than that of the Affiliate service area as a whole:

- Galax City

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

- Bath County
- Grayson County
- Patrick County

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

- Carroll County
- Grayson County
- Henry County
- Patrick County
- Pittsylvania County
- Buena Vista City
- Danville City

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

- Buena Vista City
- Danville City
- Galax City
- Martinsville City

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

- Henry County
- Patrick County
- Danville City
- Martinsville City

The following county has substantially larger percentage of adults without health insurance than does the Affiliate service area as a whole:

- Galax City

Priority Areas

Healthy People 2020 forecasts

Healthy People 2020 (HP2020) is a major federal government initiative that provides specific health objectives for communities and for the country as a whole. 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 (Target 20.6 per 100,000 women).
- Reducing the number of breast cancers that are found at a late-stage (Target: 41.0 cases per 100,000 women).

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

- County breast cancer death rate for years 2006 to 2010 and late-stage diagnosis data for years 2005 to 2009.
- Estimates for the trend (annual percent change) in county breast cancer death rates for years 2006 to 2010 and late-stage diagnoses for years 2005 to 2009.
- Both the data and the HP2020 target are age-adjusted.

These data are used to estimate how many years it will take for each county to meet the HP2020 objectives. Because the target date for meeting the objective is 2020, and 2008 (the middle of the 2006-2010 period) was used as a starting point, a county has 12 years to meet the target.

Death rate and late-stage diagnosis data and trends are used to calculate whether an area will meet the HP2020 target, assuming that the trend for death rate seen in years 2006 to 2010 and the trend for late-stage diagnosis from 2005 to 2009 continues through 2020.

Identification of priority areas

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.

Counties are classified as follows (Table 6):

- 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 6. 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.

Affiliate Service Area Healthy People 2020 Forecasts and Priority Areas

The results presented in Table 7 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 7. Intervention priorities for Komen Virginia Blue Ridge Affiliate 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 |
|--------------------------|-------------|---|---|---|
| Patrick County - VA | Highest | SN | 13 years or longer | Older, education, employment, rural, medically underserved |
| Roanoke County - VA | Highest | 13 years or longer | 13 years or longer | |
| Wythe County - VA | Highest | 13 years or longer | 13 years or longer | Rural |
| Danville City - VA | Highest | 13 years or longer | 13 years or longer | %Black, education, poverty, employment, medically underserved |
| Lynchburg City - VA | Highest | 13 years or longer | 13 years or longer | %Black |
| Radford City - VA | Highest | SN | 13 years or longer | Medically underserved |
| Roanoke City - VA | Highest | 13 years or longer | 13 years or longer | %Black |
| Henry County - VA | High | 12 years | 13 years or longer | %Black, education, employment, rural, medically underserved |
| Martinsville City - VA | High | 9 years | 13 years or longer | %Black, poverty, employment, medically underserved |
| Carroll County - VA | Medium High | 3 years | 13 years or longer | Education, rural, medically underserved |
| Pittsylvania County - VA | Medium High | 3 years | 13 years or longer | %Black, education, rural, medically underserved |
| Pulaski County - VA | Medium High | 13 years or longer | 3 years | |
| Campbell County - VA | Medium | 10 years | 1 year | Rural |

| County | Priority | Predicted Time to Achieve Death Rate Target | Predicted Time to Achieve Late-stage Incidence Target | Key Population Characteristics |
|------------------------|--------------|---|---|--|
| Franklin County - VA | Medium | Currently meets target | 13 years or longer | Rural, medically underserved |
| Montgomery County - VA | Medium | Currently meets target | 13 years or longer | %API |
| Amherst County - VA | Medium Low | 10 years | Currently meets target | Rural |
| Bedford County - VA | Medium Low | 5 years | 2 years | Rural |
| Giles County - VA | Medium Low | SN | 1 year | Rural, medically underserved |
| Botetourt County - VA | Low | Currently meets target | 1 year | Rural |
| Salem City - VA | Low | Currently meets target | 2 years | |
| Alleghany County - VA | Lowest | NA | Currently meets target | Rural |
| Grayson County - VA | Lowest | SN | Currently meets target | Older, education, rural, medically underserved |
| Rockbridge County - VA | Lowest | SN | Currently meets target | Rural |
| Bath County - VA | Undetermined | SN | SN | Older, rural, medically underserved |
| Bland County - VA | Undetermined | SN | SN | Rural, medically underserved |
| Craig County - VA | Undetermined | SN | SN | Rural, medically underserved |
| Floyd County - VA | Undetermined | SN | SN | Rural, medically underserved |
| Bedford City - VA | Undetermined | SN | SN | %Black, medically underserved |
| Buena Vista City - VA | Undetermined | SN | SN | Education, poverty |
| Covington City - VA | Undetermined | SN | SN | |
| Galax City - VA | Undetermined | SN | SN | %Hispanic, poverty, language, insurance |
| Lexington City - VA | Undetermined | SN | SN | |

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 1 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.

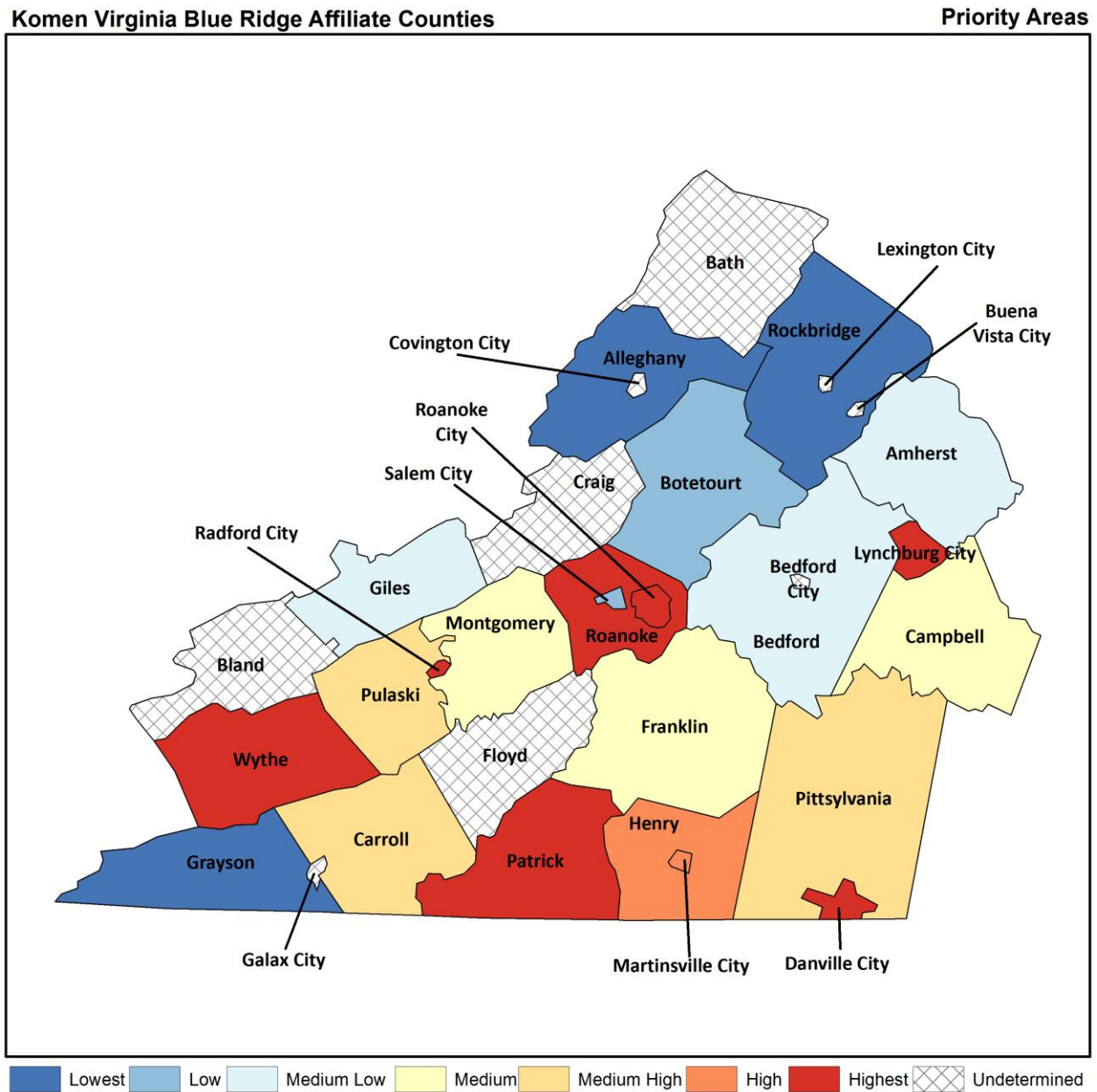


Figure 1. Intervention priorities.

Data Limitations

The following data limitations need to be considered when utilizing the data of the Quantitative Data Report:

- The most recent data available were used but, for cancer incidence and mortality, these data are still several years behind.
- For some areas, data might not be available or might be of varying quality.
- Areas with small populations might not have enough breast cancer cases or breast cancer deaths each year to support the generation of reliable statistics.
- There are often several sources of cancer statistics for a given population and geographic area; therefore, other sources of cancer data may result in minor differences in the values even in the same time period.
- Data on cancer rates for specific racial and ethnic subgroups such as Somali, Hmong, or Ethiopian are not generally available.
- The various types of breast cancer data in this report are inter-dependent.
- 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.
- 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.
- Not all breast cancer cases have a stage indication.

Quantitative Data Report Conclusions

Highest priority areas

Seven counties in the Komen Virginia Blue Ridge Affiliate service area are in the highest priority category. Five of the seven, Roanoke County, Wythe County, Danville City, Lynchburg City and Roanoke City, are not likely to meet either the death rate or late-stage incidence rate HP2020 targets. Two of the seven, Patrick County and Radford City, are not likely to meet the late-stage incidence rate HP2020 target.

The late-stage incidence rates in Radford City (81.8 per 100,000) are significantly higher than the Affiliate service area as a whole (43.0 per 100,000).

Patrick County has an older population, low education levels and high unemployment. Danville City has a relatively large Black population, low education levels, high poverty rates and high unemployment. Lynchburg City has a relatively large Black population. Roanoke City has a relatively large Black population.

High priority areas

Two counties in the Komen Virginia Blue Ridge Affiliate service area are in the high priority category. Both of the two, Henry County and Martinsville City, are not likely to meet the late-stage incidence rate HP2020 target.

Henry County has a relatively large Black population, low education levels and high unemployment. Martinsville City has a relatively large Black population, high poverty rates and high unemployment.

Selection of Target Communities

In order to be the most efficient stewards of resources, Susan G. Komen Virginia Blue Ridge Affiliate has chosen five target communities within the service area. The Affiliate will focus strategic efforts on these target communities over the course of the next five years. Target communities are those communities which have cumulative key indicators showing an increased chance of vulnerable populations likely at risk for experiencing gaps in breast health services and/or barriers in access to care.

When selecting target communities, the Affiliate reviewed Healthy People 2020, a major federal government initiative that provides specific health objectives for communities and the country as a whole. Specific to the Affiliate mission, goals based on reducing women's death rate from breast cancer and reducing the number of breast cancers found at a late-stage were analyzed. Through this review, areas of priority were identified based on the time needed to meet Healthy People 2020 targets for breast cancer. These communities have been chosen by their predicted time to achieve Healthy People 2020 breast cancer death rate target and predicted time to achieve late-stage breast cancer diagnoses target.

Additional key indicators the Affiliate reviewed when selecting target counties included, but were not limited to:

- Incidence rates and trends
- Death rates and trends
- Late-stage rates and trends
- Below average screening rates
- Residents living below poverty level
- Residents living without health insurance
- Unemployment rates
- Mammography screening rates

The selected target communities are:

- Central Blue Ridge Region, Virginia (Roanoke County, Roanoke City, Radford City)
- South Central Blue Ridge Region, Virginia (Patrick County, Henry County, Martinsville City)
- Wythe County, Virginia
- Danville City, Virginia
- Lynchburg City, Virginia

Compared to the rest of the state, the Affiliate service area has considerably more White women and older populations which are risk factors associated with higher incidences of breast cancer. The Affiliate also has challenges for providing access to health care given that the service area has higher rates of poverty and unemployment than the remainder of the state. Other social determinants of health, such as health literacy, cultural beliefs, values, practices, and willingness to engage and seek care are unknown but important determinants. Although the demographic makeup of this region's female residents is primarily White; several cities and counties within the region have higher populations of Black women than the Affiliate populations.

In addition to being female, aging is a risk factor for breast cancer and also represents a major difference between the Affiliate service area and the remainder of the state. The Affiliate over 65 population is 18.6 percent, which is considerably greater than the state's over 65 population with 13.9 percent.

Finally, social determinants of health for the region indicate a potential concern about women's access to affordable breast health care. Several counties in the Affiliate service area have substantially higher percentages of residents living below 250 percent poverty income, which is 38.3 percent compared to the United States average of 33.3 percent. Additionally, many of the counties served by the Affiliate are considered to be in a medically underserved area compounding potential barriers to breast health care.

The health systems analysis component of this report will take a deeper look at the available breast health services in the region. Due to the region's rural nature and having areas designated as medically underserved, it is vitally important to gain a clear understanding of how accessible breast health services are for residents in the region.

Central Blue Ridge Region, Virginia (Roanoke County, Roanoke City, Radford City): Central Blue Ridge Region consists of Roanoke County, Roanoke City, and Radford City, Virginia. The City of Roanoke is nested within Roanoke County, which provides an easily targeted geographic region. Radford City, being isolated from all other highest priority regions, aligns closest with Roanoke County, thus has been included in the Central Blue Ridge community. In addition, Radford City and Roanoke City are both medically underserved regions. Roanoke County, Roanoke City, and Radford City are not predicted to reach the Healthy People 2020 target death rate or late-stage incident rate, therefore falling within the highest priority areas.

Roanoke County is located within Southwest Virginia, with a total of 47,992 women. Roanoke City is an urban city located in mostly rural Southwest Virginia. It has 50,219 women representing a diverse population. Of these women, 30.4 percent are Black, a rate double that of the service area average (14.9 percent). This is important due to the high breast cancer mortality rates Black women experience when compared to other Races. Black women make up 5.8 percent of women in Roanoke County and 9.2 percent in Radford City.

Radford City, with a population of 8,647, is also included within the Central Blue Ridge Region. Data shows that 59.8 percent of Radford City is considered medically underserved compared to 46.3 percent for the Affiliate service area. Radford City is unique to this target area in that the socioeconomic conditions are more favorable than the average of the service area. However, the incidence and late-stage rates are much higher in Radford City (134.5 and 81.8 per 100,000 respectively) in comparison to the service area (119.1 and 43.0 per 100,000 respectively).

Table 1. Central Blue Ridge Region breast cancer statistics

| | Roanoke County | Roanoke City | Radford City | Affiliate Service Area Rate | US Rate |
|-------------------|-----------------------|---------------------|---------------------|------------------------------------|----------------|
| Incidence Rates* | 125.4 | 116.0 | 134.5 | 119.1 | 122.1 |
| Death Rates* | 25.1 | 27.0 | SN | 23.4 | 22.6 |
| Late-Stage Rates* | 41.4 | 46.9 | 81.8 | 43.0 | 43.7 |

*Rates are age-adjusted and are figured per 100,000 women

Roanoke County, Roanoke City, and Radford City have each been identified as highest priority due to the amount of intervention time needed to achieve the Healthy People 2020 targets. The death rate is expected to decrease over the next few years. But currently, both Roanoke County and Roanoke City continue to have some of the highest rates of breast cancer mortality in the Affiliate service area. Roanoke City’s late-stage diagnosis rate is 46.9 per 100,000 women and Radford City’s is 81.8 per 100,000. Both cities have higher than the Affiliate’s service area rate of 43.0 per 100,000 with Radford City’s rate being nearly twice the rate for the Affiliate service area. Both Roanoke City and Roanoke County late-stage diagnosis trends were upward at 3.1 percent and 5.4 percent respectively, while Radford City had a downward trend of 4.7 percent.

The Affiliate service area’s average time to reach the Healthy People 2020 targets, together with the social determinants data for Roanoke County, Roanoke City, and Radford City, show several areas of concern. Roanoke County has one of the oldest populations in the Affiliate service area. In addition, social determinants of health impact Roanoke City residents substantially more than the remainder of the target community. In particular, Roanoke City residents are more likely to have less than a high school education, have an income below 250 percent poverty level, and have no health insurance compared to most other communities in the Affiliate service area. In Radford City, certain social determinants of health strongly impact residents substantially more than the remainder of the target community. Radford City residents are more likely to have an income below 100 percent poverty level and live in medically underserved areas.

Although Roanoke City is in the immediate metropolitan area where services are more likely to be readily available, a health systems analysis will provide a deeper look at any underserved areas in Roanoke City. Based on shared data regarding diversity and trends in Roanoke County, Roanoke City, and Radford City, it appears many residents would benefit from services within their neighborhoods that are no-cost or reduced cost, culturally sensitive, and easily accessible. The actual availability of these services will be reviewed in a health systems analysis.

South Central Blue Ridge Region, Virginia (Patrick County, Henry County, Martinsville City): The South Central Blue Ridge Region includes Patrick County, Henry County, and Martinsville City. This rural community has unique challenges due to social determinants of health which can influence access to health care as well as decisions and outcomes. Common social determinants help to explain potential health care issues in the service area as well as potential solutions.

Residents of Patrick County are older with lower education, higher unemployment, and are medically underserved. Patrick County has a population of 9,440 women with 61.3 percent over the age of 40, 47.8 percent over the age of 50, and 23.9 percent over the age of 65 as compared to the Affiliate service area with 53.3 percent over 40, 40.0 percent over 50, and 18.6 percent over 65. Of women living in Patrick County, 26.4 percent have less than a high school education compared to 17.8 percent of women in the Affiliate service area. In addition, 47.0 percent of those in Patrick County have income below the 250 percent poverty line (38.3 percent for the Affiliate service area). Patrick County has 100 percent of its population considered medically underserved (46.3 percent for the Affiliate service area).

Henry County has been designated as a locality with low income, greater poverty, higher rates of unemployment, and a medically underserved population. In Henry County, 20.3 percent of residents are without health insurance as compared to 15.8 percent of people living in the Affiliate service area. Henry County is also a 100 percent medically underserved area when compared to the Affiliate (46.3 percent). Lack of health insurance drastically impacts access to health care and lack of medical providers limit the ability to access health care regardless of insurance status. Henry County has a population of 28,331 women as compared to Martinsville City that has a total female population of 7,650.

Table 2. South Central Blue Ridge Region breast cancer statistics

| | Patrick County | Henry County | Martinsville City | Affiliate Service Area Rate | US Rate |
|-------------------|-----------------------|---------------------|--------------------------|------------------------------------|----------------|
| Incidence Rates* | 93.7 | 136.9 | 137.0 | 119.1 | 122.1 |
| Death Rates* | SN | 22.6 | 23.6 | 23.4 | 22.6 |
| Late-Stage Rates* | 30.4 | 38.8 | 50.6 | 43.0 | 43.7 |

*Rates are age-adjusted and are figured per 100,000 women

The South Central Blue Ridge Region has been identified as high priority due to the amount of intervention time needed to achieve the Healthy People 2020 targets. Currently, Henry County and Martinsville City continue to have some of the highest incidence rates of breast cancer mortality in the Affiliate service area, while Patrick County has incidence rates of 93.7 per 100,000. Martinsville City has some of the highest late-stage diagnoses rates in the service area, 50.6 per 100,000. Martinsville City, Patrick County, and Henry County late-stage diagnosis trends were upward at 7.7 percent, 13.6 percent and 9.0 percent, respectively. Incidence trends were also upward in Martinsville City (9.5 percent), Patrick County (14.5 percent), and Henry County (13.8 percent).

Healthy People 2020 targets and social determinants data for Martinsville City, Henry County, and Patrick County show several concerning areas as residents there are substantially more likely to have less than a high school education, have an income below 250 percent poverty, are medically underserved, and do not have health insurance.

Wythe, Virginia:

Wythe County has a female population of 14,867. White women make up approximately 95.8 percent of the population while 3.5 percent of women are Black. Wythe County is an income challenged area with higher poverty rates, where 43.0 percent of women aged 40-64 fall below 250 percent poverty level.

Table 3. Wythe County breast cancer statistics

| | Wythe County | Affiliate Service Area Rate | US Rate |
|-------------------|---------------------|------------------------------------|----------------|
| Incidence Rates* | 94.0 | 119.1 | 122.1 |
| Death Rates* | 28.6 | 23.4 | 22.6 |
| Late-Stage Rates* | 35.7 | 43.0 | 43.7 |

*Rates are age-adjusted and are figured per 100,000 women

Wythe County is listed as highest priority based on the intervention times needed to meet the Healthy People 2020 goals of reducing late-stage incidence and death rates. Wythe County has been chosen as a target community due to the breast cancer death rate of 28.6 per 100,000 in comparison to 23.4 per 100,000 in the Affiliate service area. In addition, the incidence rates have risen 16.6 percent compared to the Affiliate service region of 2.9 percent.

Wythe County has many social determinants that contribute toward its status as a highest priority area. Wythe County is listed as 75.3 percent rural, compared to 45.6 percent for the Affiliate service area. Rural areas are more likely to have problems with delivering medical services due to lack of medical providers. In addition, 20.9 percent of Wythe County residents have less than a high school education. Wythe County has high unemployment rates and a lack of health insurance, compared to the Affiliate service area.

Danville City, Virginia:

Danville City, Virginia is an urban city located in rural Southwest Virginia. Danville City has 23,827 women representing a diverse population in the Affiliate service area. Of these women,

50.2 percent are Black, a rate greater than three times that of the Affiliate service area average. This is important due to the high mortality rates Black women experience from breast cancer when compared to other Races.

Table 4. Danville City breast cancer statistics

| | Danville City | Affiliate Service Area Rate | US Rate |
|-------------------|----------------------|------------------------------------|----------------|
| Incidence Rate* | 111.2 | 119.1 | 122.1 |
| Death Rates* | 28.7 | 23.4 | 22.6 |
| Late-Stage Rates* | 37.0 | 43.0 | 43.7 |

*Rates are age-adjusted and are figured per 100,000 women

Danville City has been identified as highest priority due to the amount of intervention time needed to achieve the Healthy People 2020 goals. For instance, Danville City’s death rate is expected to decrease over the next few years, but currently, Danville City continues to have some of the highest rates of breast cancer death in the Affiliate service area. Danville City’s late-stage diagnosis trend and incidence rate represent that both of these trends are moving upward.

Danville City’s socioeconomic data show several concerning areas. In comparison, Danville City residents are substantially more likely to have less than a high school education, incomes below 100 percent and 250 percent poverty, be unemployed, and not have health insurance than the Affiliate service area.

Although Danville City is in the immediate metropolitan area where services are more likely to be readily available, a health systems analysis will provide a deeper look at any underserved areas in Danville City. Based on shared data regarding diversity and trends in Danville City, it appears many residents would strongly benefit from services located within their neighborhoods that are of no-cost or reduced cost, culturally sensitive, and easily accessible. The actual availability of these services will be reviewed in a health systems analysis.

Lynchburg City, Virginia:

Lynchburg City, Virginia is an urban city located in rural Southwest Virginia. Lynchburg City has 39,320 women representing a diverse population in the Affiliate service area. Of these women, 30.7 percent are Black, a rate considerably greater than twice that of the Affiliate service area average. This is important due to the high mortality rates Black women experience from breast cancer when compared to other Races.

Table 5. Lynchburg City breast cancer statistics

| | Lynchburg City | Affiliate Service Area Rate | US Rate |
|-------------------|-----------------------|------------------------------------|----------------|
| Incidence Rates* | 116.6 | 119.1 | 122.1 |
| Death Rates* | 26.7 | 23.4 | 22.6 |
| Late-Stage Rates* | 42.9 | 43.0 | 43.7 |

*Rates are age-adjusted and are figured per 100,000 women

Lynchburg City has been identified as highest priority due to the amount of intervention time needed to achieve the Healthy People 2020 targets. For instance, Lynchburg City's death rate of breast cancer is 26.7 per 100,000 women. This is higher than the Affiliate service area's rate. Lynchburg City's death rate is expected to decrease over the next few years, but currently, Lynchburg City continues to have some of the highest breast cancer death rates compared to the Affiliate service area. In addition, Lynchburg City's late-stage diagnosis trend is 4.5 percent while Lynchburg City's incidence rate trend is 2.9 percent representing that both of these trends are moving upward.

Lynchburg City's socioeconomic data show several concerning areas when compared to the Affiliate service area. In comparison, Lynchburg City residents are substantially more likely to be unemployed, have an income below 100 percent, and live below 250 percent poverty than the Affiliate service area.

Although Lynchburg City is in the immediate metropolitan area where services are more likely to be readily available, a health systems analysis will provide a deeper look at any underserved areas in Lynchburg City. Based on shared data regarding diversity and trends in Lynchburg City, it appears many residents would strongly benefit from services located within their neighborhoods that are of no-cost or reduced cost, culturally sensitive, and easily accessible. The actual availability of these services will be reviewed in a health systems analysis.