

Kansas



Comparison of Kansas and National Breast Cancer Rates

Research Summary

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Our Vision – Healthy Kansans Living in Safe and Sustainable Environments

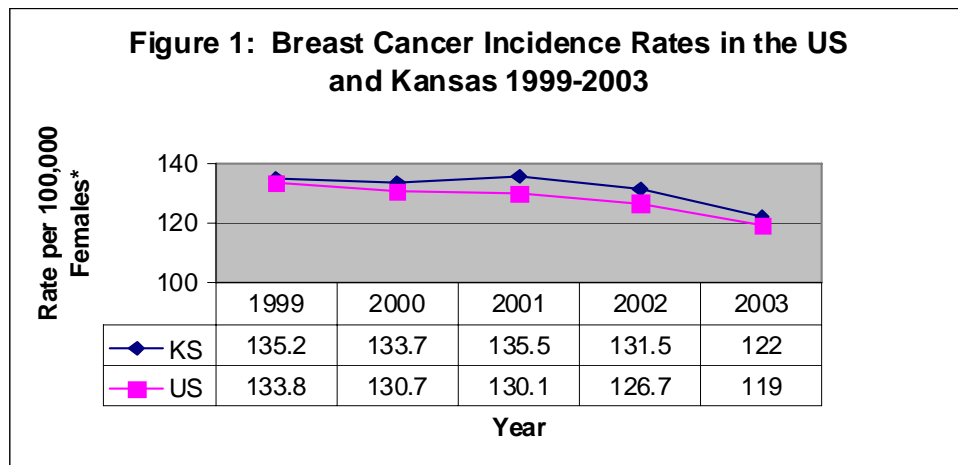
As the state's environmental protection and public health agency, KDHE promotes responsible choices to protect the health and environment for all Kansans. Through education, direct services, and the assessment of data and trends, coupled with policy development and enforcement, KDHE will improve health and quality of life. We prevent illness, injuries and foster a safe and sustainable environment for the people of Kansas.

Comparison of Kansas and National Breast Cancer Rates

The American Cancer Society predicts that 178,480 new cases of breast cancer will be diagnosed in 2007 in the United States (US). In recent years, breast cancer was identified as one of the most common causes of cancer death among American women, second only to lung cancer. However, nationally, death rates have been decreasing since 1990, due to improved detection, treatment and understanding of the development of breast cancer¹. The purpose of this article is to compare Kansas and national breast cancer rates to determine whether trends are similar and to review important risk factors. Data were evaluated from the National Vital Statistics System (NVSS)² in combination with the Kansas Vital Statistics Mortality Data³ and Cancer Registry Data⁴ provided through the Kansas Information for Communities (KIC) system.⁵

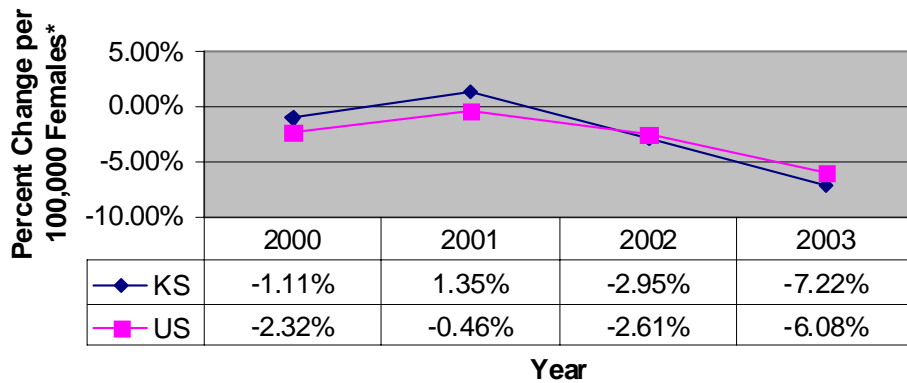
Breast Cancer Rates

As shown in Figure 1, Kansas and US breast cancer rates are comparable. Although Kansas incidence rates are slightly higher than those of the US, the declining rates in the incidence of breast cancer reported in Kansas mirror those of the United States.⁴ In 1999, the Kansas breast cancer rate was 135.2 per 100,000 females, while the rate was 133.8 in the US. By 2002, the Kansas rate fell to 131.5, while the US rate was 126.7. The incidence rate fell both in Kansas and the US in 2003 (122.0 and 119.0, respectively).



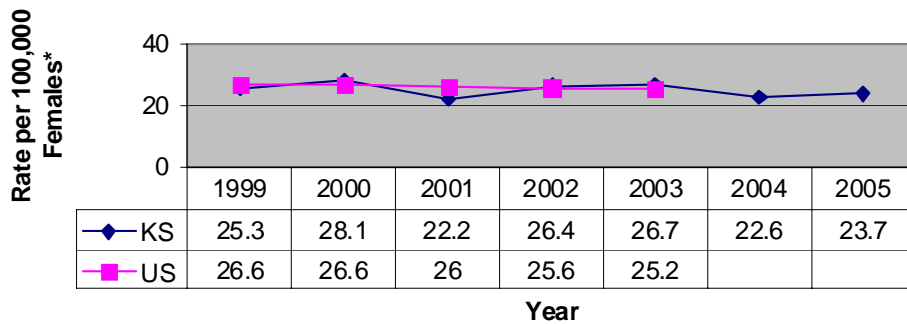
In comparing the percent of difference in incidence between 1999 and 2003, both Kansas and the US show larger declines in 2003 (7.22% and 6.08%, respectively). Although the declining trend appears to have begun in earlier years, the largest reduction appears in 2003. Nationally, breast cancer incidence rates were reported to have dropped unexpectedly by more than 7 percent in 2003. Although it was acknowledged that other factors may have had an impact, this decrease was attributed mainly to a reduction in the use of hormone replacement therapy (HRT) in 2002.^{6,7} Kansas trends appear to mirror national reports as shown in Figure 2 below.

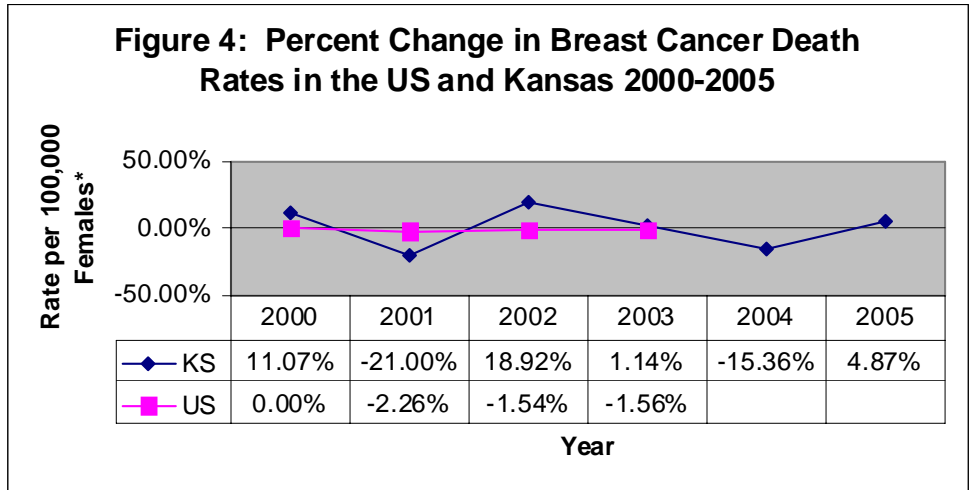
Figure 2: Percent Change in Breast Cancer Incidence Rates in the US and Kansas 2000-2003



Kansas breast cancer death rates and percent of change rates between 1999 and 2005 have fluctuated over time. National breast cancer death rates and percents of change appear stable; however, national death data for 2004 and 2005 are not yet available (see Figures 3 and 4 below).

Figure 3: Breast Cancer Death Rates in the US and Kansas 1999-2005

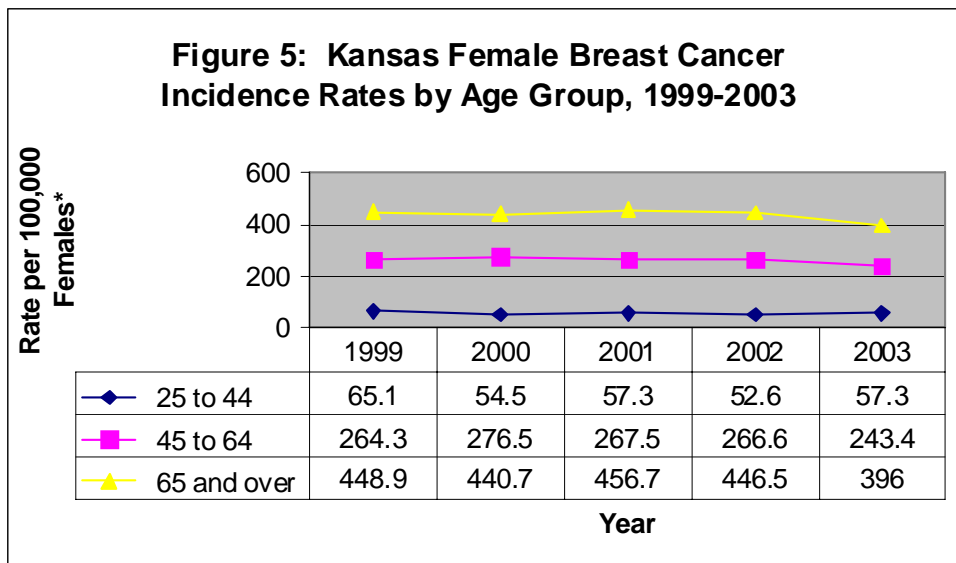




Demographic Factors Impacting Breast Cancer

Some of the demographic factors identified as impacting breast cancer rates include age, race and ethnicity.

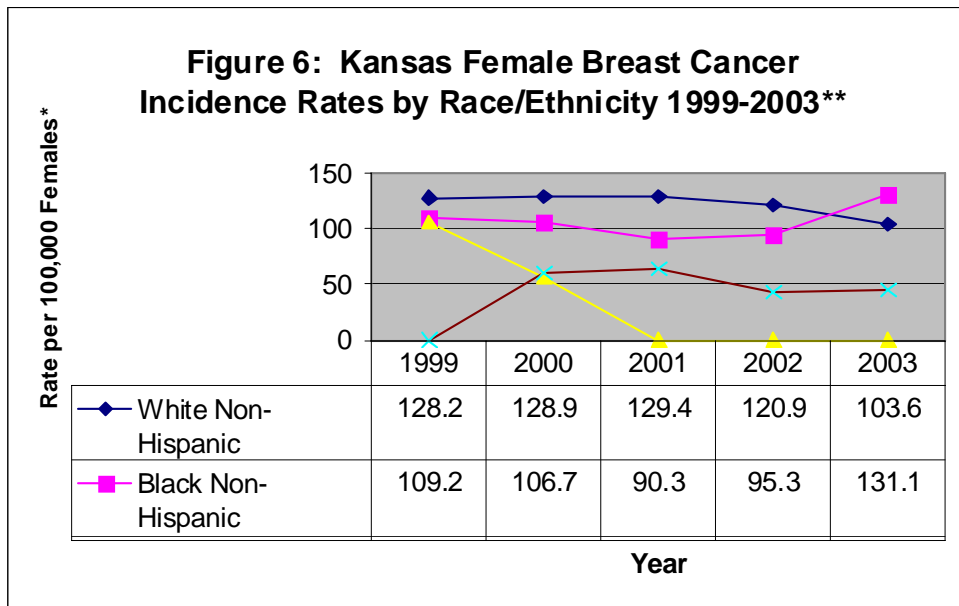
- Age:** Generally speaking, the number of women who get breast cancer and who die with breast cancer increases progressively with age.⁸ Most breast cancer occurs in women who are age 50 and over,¹ with women age 60 and over at greatest risk.⁹ Figure 5 depicts Kansas breast cancer incidence rates by age group for 1999 – 2003. Kansas mirrors national trends in that older women have progressively higher breast cancer rates as they age. Declines similar to those reported nationally for breast cancer rates in 2003 are evident among Kansas women age 45 and over.



- Race and Ethnicity:** According to the Centers for Disease Control and Prevention (CDC), “The rate of women getting breast cancer or dying from breast

cancer varies by race and ethnicity.”⁸ Nationally, aside from non-melanoma skin cancer¹, breast cancer is the most common form of cancer in women^{8,6}. It is the number one cause of cancer death for Hispanic women, and it is the second most frequent primary form of cancer death for all other women.⁸ However, the incidence rate in Hispanic women is about 40% lower than that of non-Hispanic white women.¹⁰ On the other hand, in 2003, black women were more likely to die of breast cancer than any other group. White women had the highest incidence rate for breast cancer, while Black women had the second highest incidence rate followed by Asian/Pacific Islander, Hispanic, and American Indian/Alaska Native women.⁸

Figure 6 illustrates the distribution of breast cancer incidence rates for race/ethnicity in Kansas for 1999-2003.¹¹ Kansas data show that those women of Hispanic Origin have lower breast cancer incidence rates than Kansas women of Non-Hispanic Origin for each of the years reported below. Additionally, incidence rates for Kansas Hispanic women of all races (31.8% decrease between 2001 and 2002) and for Non-Hispanic White women (14.3% decrease between 2002 and 2003), breast cancer rates are declining. On the other hand, as similar to national trends, Kansas rates for Non-Hispanic Black women increased between 2002 and 2003 (37.6% increase).



Other Factors Impacting Breast Cancer

Some of the other factors identified as impacting breast cancer rates include monitoring and treatment, genetics, pregnancy, diet and exercise, and use of HRT.

- **Monitoring and Treatment:** Monitoring and testing are cornerstones for detection of breast cancer. The use of X-ray mammograms decreased by 4% between 2000 and 2005 according to the National Center for Health Statistics.

The most concerning rate decline was among women ages 50 to 64, since this age group is at high risk for breast cancer.^{8,12} Mammography screening rates may also impact changes in detection of breast cancer¹⁷. It is important to have regular breast exams and mammograms and to evaluate any risk factors.^{9,13}

- **Genetics:** Women who inherit genes identified as BRCA1 and BRCA2 have been found to be more likely to develop breast cancer. Tests are available for identifying these genes for women with strong family history of breast or ovarian cancer.⁹ Hispanic women with breast cancer even with equivalent healthcare, tend to be younger and to have larger, more advanced tumors at diagnosis suggesting possible biological or genetic factors that vary in effect for different ethnicities.¹⁰
- **Pregnancy:** Factors increasing breast cancer risk include giving birth temporarily (slightly increases risk), having a first child after 35, ingestion during pregnancy of DES (diethylstilbesterol)⁷, and never having given birth¹⁴. Factors decreasing breast cancer risk include being a younger age at the birth of the first child, giving birth to more than one child at a younger age, having preeclampsia, and extended breastfeeding.
- **Diet and Exercise:** Diet and physical activity are broadly recommended as deterrents to breast cancer. A low-fat diet containing recommended servings of fruits, vegetables, and whole grains is suggested. Regular exercise and limiting alcohol consumption is important¹⁵. Studies indicate that postmenopausal alcohol exposure has a greater impact than that consumed at earlier ages.¹⁶
- **HRT:** A study released in 2007 found that estrogen stimulates the expression of an inhibitor which hinders the ability of immune cells to kill tumor cells.¹⁸ Another study found lower breast cancer rates among postmenopausal women not treated with HRT. It was reported that estrogen appeared to stimulate cancer receptor cells. Findings distributed from this study are reputed to have led to a major drop in the use of HRT.⁶ The mechanism by which HRT use might result in a change in breast cancer incidence is not known.¹⁷

Discussion

It appears, however, that the incidence of breast cancer is declining both nationally and in Kansas. Medical experts attribute the decline in breast cancer deaths mainly to earlier detection and more effective treatments.¹ A number of factors like reproductive changes, mammography screening rates, environmental exposures, dietary changes may be affecting breast cancer rates; although, HRT is the only risk factor to change substantially from 2002 to 2003 with the 7% decline in breast cancer rates. Continued monitoring and public education about impacting risk factors is critical and further study is warranted.^{1,7,17} Professor Mike Richards as quoted by BBC News states, “Continued investment in staff and equipment combined with reforms to the way we work will mean that breast cancer services will improve even further in the future.”¹³

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