

TENNESSEE DEPARTMENT OF HEALTH

**FEMALE BREAST CANCER FACTS & FIGURES,
TENNESSEE, 2001-2005**

OFFICE OF POLICY PLANNING & ASSESSMENT

Office of Cancer Surveillance

Tennessee Cancer Registry

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Female Breast Cancer Facts & Figures Tennessee, 2001-2005

What Is Breast Cancer?

Breast cancer is a malignant tumor that starts from cells of the breast. A *malignant tumor* is a group of cancer cells that may invade surrounding tissues or spread (metastasize) to distant areas of the body. The disease occurs almost entirely in women, but men can get it, too. The remainder of this document refers only to breast cancer in women.

In order to understand breast cancer, it is helpful to have some basic knowledge about the normal structure of the breasts.

The female breast is made up mainly of *lobules* (milk-producing glands), *ducts* (tiny tubes that carry the milk from the lobules to the nipple), and *stroma* (fatty tissue and connective tissue surrounding the ducts and lobules, blood vessels, and lymphatic vessels).

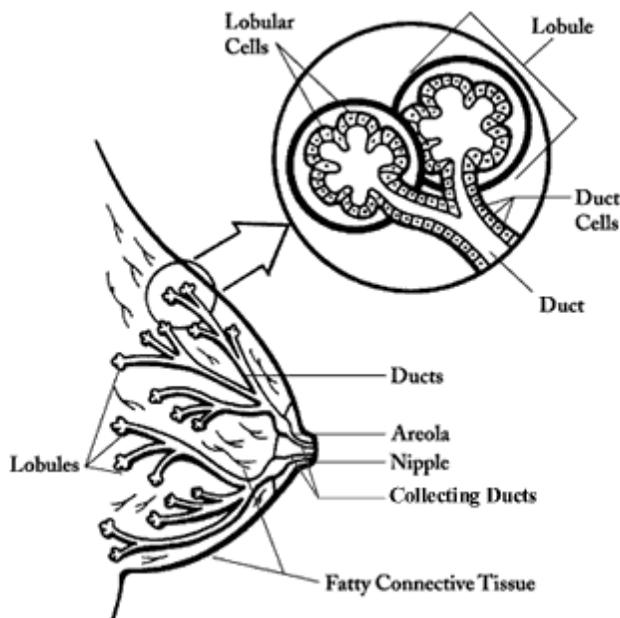
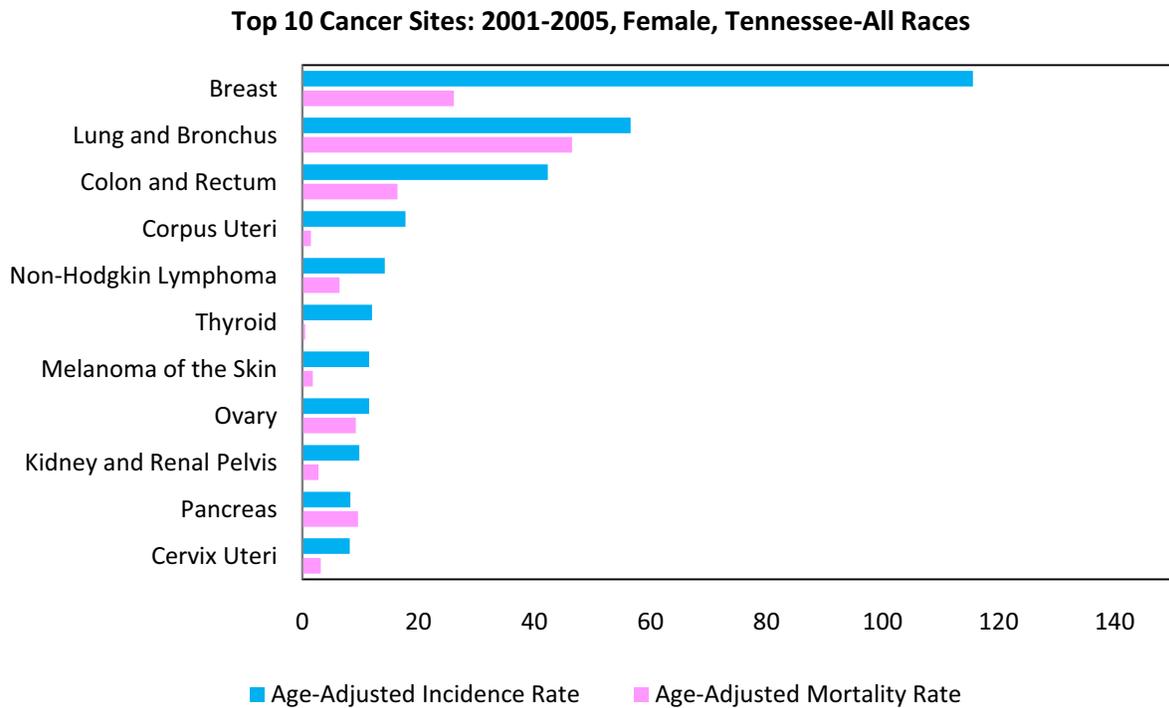


Image courtesy of American Cancer Society

Most breast cancers begin in the cells that line the ducts (*ductal* cancers); some begin in the cells that line the lobules (*lobular* cancers), and the rest in other tissues.

Breast Cancer Is The Most Commonly Diagnosed Cancer In Tennessee Women!

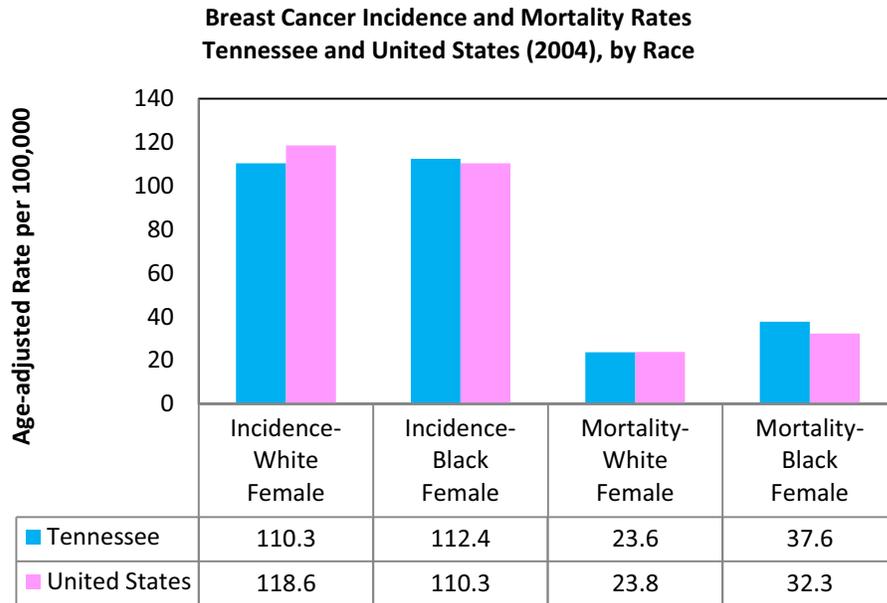


Breast cancer is the most common cancer among women in Tennessee. 15% of all cancer cases are breast cancer cases in 2001-2005. Each year from 2001 to 2005, nearly 4000 cases of invasive female breast cancer were reported to Tennessee Cancer Registry. White females (age-adjusted incidence rate 115.7 per 100,000) were more likely to be diagnosed with the breast cancer than black females (age-adjusted incidence rate 111.6 per 100,000).

Breast Cancer Is The Second Leading Cause Of Cancer Death In Tennessee Women!

Breast cancer is the second leading cause of cancer death in Tennessee women, after lung cancer. Each year from 2001 to 2005, nearly 900 Tennessee females died from breast cancer. The mortality rate for black females (37.2 per 100,000) was higher than that for white females (24.5 per 100,000).

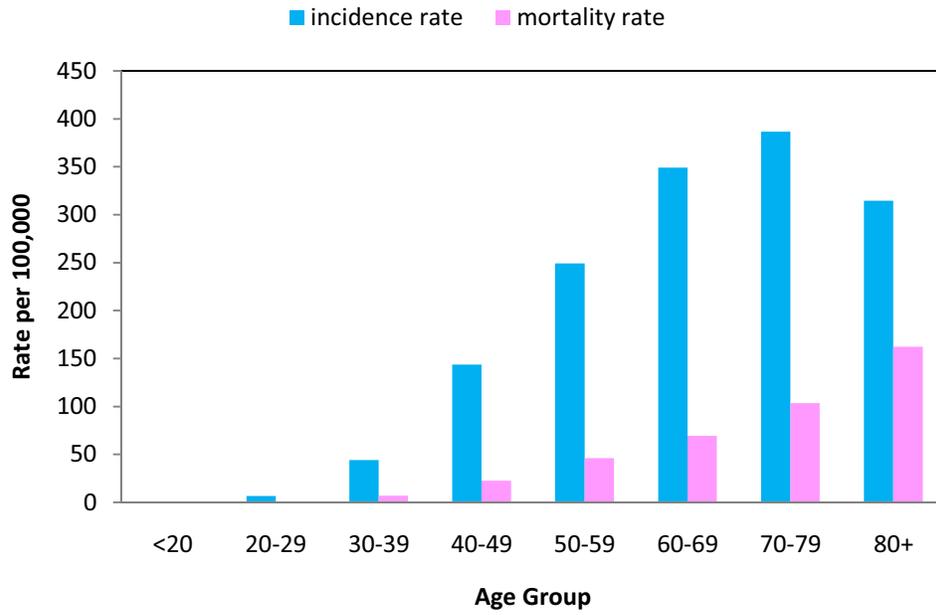
Overall, Tennessee’s breast cancer incidence rate (110.7 per 100,000 in 2004) was lower than the U.S. rate (117.7 per 100,000 in 2004), but Tennessee’s breast cancer mortality rate (25.4 per 100,000 in 2004) was slightly higher than the U.S. rate (24.4 per 100,000 in 2004).



At What Age Is Breast Cancer Most Often Diagnosed In Tennessee?

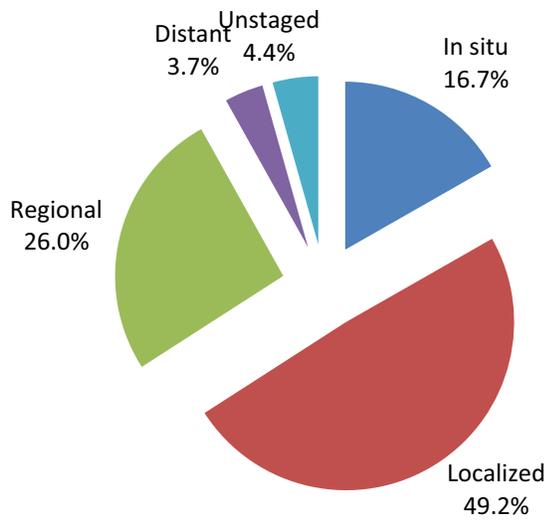
Cancer is a matter of aging. Breast cancer incidence and mortality rates increase with age.

**Tennessee Female Breast Cancer Incidence and Mortality
by Age Group 2001-2005**



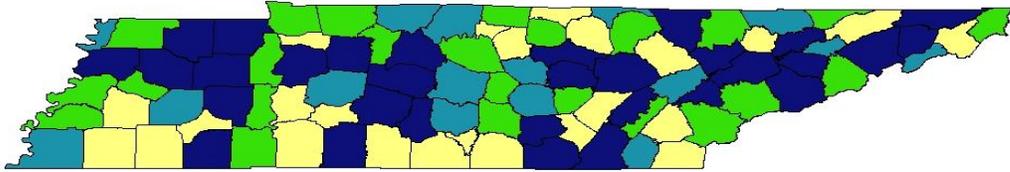
What Is The Stage Of Breast Cancer At Diagnosis In Tennessee Women?

Female Breast Cancer by Stage, Tennessee, 2001-2005



How Does Breast Cancer Vary By Region?

Female Breast Cancer Incidence Rates
by County, Tennessee, All Races, 2001-2005



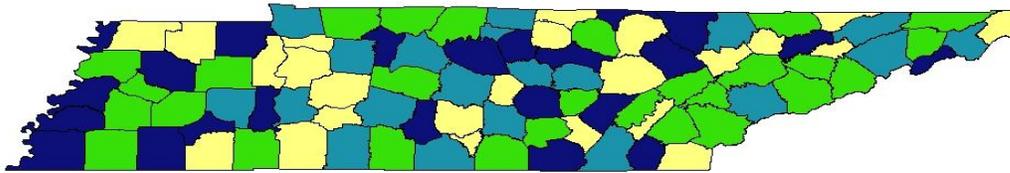
Female Breast Cancer Age-adjusted Incidence Rate



Tennessee Female Breast Cancer Incidence Rate (2004): 110.7 per 100,000
U.S. Female Breast Cancer Incidence Rate (2004): 117.7 per 100,000

* Five-year average annual rate per 100,000 Tennessee males and females, age-adjusted to the 2000 U.S. standard population
* U.S. rate is from U.S. Cancer Statistics 2004 Incidence and Mortality

Female Breast Cancer Mortality Rates
by County, Tennessee, All Races, 2001-2005



Female Breast Cancer Age-adjusted Mortality Rate



Tennessee Female Breast Cancer Mortality Rate (2004): 25.4 per 100,000
U.S. Female Breast Cancer Mortality Rate (2004): 24.4 per 100,000

* Five-year average annual rate per 100,000 Tennessee males and females, age-adjusted to the 2000 U.S. standard population
* U.S. rate is from U.S. Cancer Statistics 2004 Incidence and Mortality

What Are Risk Factors For Breast Cancer?

A risk factor is anything that affects your chance of getting a disease, such as cancer. Different cancers have different risk factors. But having a risk factor, or even several, does not mean that you will get the disease. Most women who have one or more breast cancer risk factors never develop the disease, while many women with breast cancer have no apparent risk factors (other than being a woman and growing older). Even when a woman with breast cancer has a risk factor, there is no way to prove that it actually caused her cancer.

There are different kinds of risk factors. Some factors, like a person's age or race, can't be changed. Others are linked to cancer-causing factors in the environment. Still others are related personal behaviors, such as smoking, drinking, and diet. Some factors influence risk more than others, and your risk for breast cancer can change over time, due to factors such as aging or lifestyle.

Risk Factors You Cannot Change

Aging

Your risk of developing breast cancer increases as you get older. About 1 out of 8 invasive breast cancer diagnoses are among women younger than 45, while about 2 out of 3 women with invasive breast cancer are age 55 or older when they are diagnosed.

Genetic Risk Factors

About 5% to 10% of breast cancer cases are thought to be hereditary, resulting directly from gene changes (called mutations) inherited from a parent.

Genetic testing: If you are considering genetic testing, it is strongly recommended that you talk first to a genetic counselor, nurse, or doctor qualified to explain and interpret the results of these tests. It is very important to understand and carefully weigh the benefits and risks of genetic testing before these tests are done. Testing is expensive and is not covered by some health insurance plans. There have been concerns that people with abnormal genetic test results might not be able to get life insurance or that coverage may only be available at a much higher cost, but many states have passed laws that prevent insurance companies from denying insurance on the basis of genetic testing.

For more information, see the separate American Cancer Society document, *Genetic Testing: What You Need to Know*. You may also want to visit the National Cancer Institute web site (www.cancer.gov/cancertopics/Genetic-Testing-for-Breast-and-

[Ovarian-Cancer-Risk](http://www.ncsl.org/programs/health/genetics/ndishlth.htm)). To learn about state laws against genetic testing discrimination, you may want to visit the web site of the National Conference of State Legislatures (www.ncsl.org/programs/health/genetics/ndishlth.htm).

Family History of Breast Cancer

Breast cancer risk is higher among women whose close blood relatives have this disease.

Having one first-degree relative (mother, sister, or daughter) with breast cancer approximately doubles a woman's risk. Having 2 first-degree relatives increases her risk about 5-fold. Although the exact risk is not known, women with a family history of breast cancer in a father or brother also have an increased risk of breast cancer. Altogether, about 20% to 30% of women with breast cancer have a family member with this disease. (It's important to note this means that 70% to 80% of women who get breast cancer do not have a family history of this disease.)

Personal History of Breast Cancer

A woman with cancer in one breast has a 3- to 4-fold increased risk of developing a new cancer in the other breast or in another part of the same breast. This is different from a *recurrence* (return) of the first cancer.

Race

White women are slightly more likely to develop breast cancer than are African-American women. African-American women are more likely to die of this cancer. At least part of this seems to be because African-American women tend to have more aggressive tumors, although why this is the case is not known. Asian, Hispanic, and Native-American women have a lower risk of developing and dying from breast cancer.

Abnormal Breast Biopsy Results

Some types of benign breast conditions are more closely linked to breast cancer risk than others.

Menstrual Periods

Women who started menstruating at an early age (before age 12) or who went through menopause at a late age (after age 55) have a slightly higher risk of breast cancer. This may be related to a higher lifetime exposure to the hormones estrogen and progesterone.

Previous Chest Radiation

Women who, as children or young adults, had radiation therapy to the chest area as treatment for another cancer (such as Hodgkin disease or non-Hodgkin lymphoma) are at significantly increased risk for breast cancer. This varies with the age of the patient at the time of radiation. If chemotherapy was also given, the risk may be lowered if the chemotherapy stopped ovarian hormone production. The risk of developing breast cancer appears to be highest if the breast was still in development (during adolescence) when the radiation was given.

Diethylstilbestrol (DES) Exposure

From the 1940s through the 1960s some pregnant women were given diethylstilbestrol because it was thought to lower their chances of losing the baby (miscarriage). Studies have shown that these women have a slightly increased risk of developing breast cancer. Recent findings have also suggested that women whose mothers took DES during pregnancy may have a higher risk for breast cancer. For more information on DES see the separate American Cancer Society document, [*DES Exposure: Questions and Answers*](#).

Lifestyle-Related Factors (Breast Cancer Risk Factors You Can Change)

Not Having Children, or Having Them Later in Life

Women who have had no children or who had their first child after age 30 have a slightly higher breast cancer risk. Having multiple pregnancies and becoming pregnant at an early age reduces breast cancer risk.

Oral Contraceptive Use

It is still not clear what part oral contraceptives (birth control pills) might play in breast cancer risk. Studies have suggested that women now using oral contraceptives have a slightly greater risk of breast cancer than women who have never used them, but this risk seems to decline once their use is stopped. Women who stopped using oral contraceptives more than 10 years ago do not appear to have any increased breast cancer risk. When thinking about using oral contraceptives, women should discuss their other risk factors for breast cancer with their health care team.

Postmenopausal Hormone Therapy (PHT)

Postmenopausal hormone therapy, also known as hormone replacement therapy (HRT), has been used for many years to help relieve symptoms of menopause and to help

prevent osteoporosis (thinning of the bones). Earlier studies suggested it might have other health benefits as well, but these have not been found in more recent, better designed studies.

The decision to use PHT should be made by a woman and her doctor after weighing the possible risks and benefits (including the severity of her menopausal symptoms), and considering her other risk factors for heart disease, breast cancer, and osteoporosis.

Breast-feeding

Some studies suggest that breast-feeding may slightly lower breast cancer risk, especially if breast-feeding is continued for 1.5 to 2 years. But this has been a difficult area to study, especially in countries such as the United States, where long-term breast-feeding is uncommon.

The explanation for this possible effect may be that breast-feeding reduces a woman's total number of lifetime menstrual cycles. This may be similar to the reduction of risk due to starting menstrual periods at a later age or due to early menopause, which also decrease the total number of menstrual cycles.

Alcohol

Use of alcohol is clearly linked to an increased risk of developing breast cancer. The risk increases with the amount of alcohol consumed. Compared with nondrinkers, women who consume 1 alcoholic drink a day have a very small increase in risk. Those who have 2 to 5 drinks daily have about 1½ times the risk of women who drink no alcohol. Alcohol is also known to increase the risk of developing cancers of the mouth, throat, esophagus, and liver. The American Cancer Society recommends limiting your consumption of alcohol.

Being Overweight or Obese

Being overweight or obese has been found to increase breast cancer risk, especially for women after menopause. Before menopause your ovaries produce most of your estrogen, and fat tissue produces a small amount of estrogen. After menopause, once the ovaries stop making estrogen, most of a woman's estrogen comes from fat tissue. Having more fat tissue after menopause can increase your estrogen levels and thereby increase your likelihood of developing breast cancer.

The American Cancer Society recommends you maintain a healthy weight throughout your life by balancing your food intake with physical activity and avoiding excessive weight gain.

Physical Activity

Evidence is growing that physical activity in the form of exercise reduces breast cancer risk. The only question is how much exercise is needed. In one study from the Women's Health Initiative (WHI) as little as 1.25 to 2.5 hours per week of brisk walking reduced a woman's risk by 18%. Walking 10 hours a week reduced the risk a little more.

To reduce your risk of breast cancer, the American Cancer Society recommends that you engage in 45 to 60 minutes of intentional physical activity 5 or more days a week.

Can Breast Cancer Be Prevented?

There is no sure way to prevent breast cancer. But a woman might reduce her risk somewhat by changing those risk factors that can be changed. If you avoid alcohol, exercise regularly, and maintain a healthy body weight, you are decreasing your risk of getting breast cancer. Breast-feeding for several months also seems to reduce breast cancer risk. Likewise, not using PHT will avoid increasing your risk.

Other than these lifestyle changes, the most important action a woman can take is to follow early detection guidelines. Following the American Cancer Society's guidelines for early detection will not prevent breast cancer, but it can help find cancers when the likelihood of successful treatment is greatest.

American Cancer Society's Guidelines For Early Detection Of Breast Cancer

Women age 40 and older should have a screening mammogram every year and should continue to do so for as long as they are in good health.

Women in their 20s and 30s should have a clinical breast exam (CBE) as part of a periodic (regular) health exam by a health professional preferably every 3 years. After age 40, women should have a breast exam by a health professional every year.

Breast self exam (BSE) is an option for women starting in their 20s. Women should be told about the benefits and limitations of BSE. Women should report any breast changes to their health professional right away.

Women at high risk (greater than 20% lifetime risk) should get an MRI and a mammogram every year. Women at moderately increased risk (15% to 20% lifetime risk) should talk with their doctors about the benefits and limitations of adding MRI screening

to their yearly mammogram. Yearly MRI screening is not recommended for women whose lifetime risk of breast cancer is less than 15%.

What Is The Status Of Breast Cancer Screening In Tennessee?

In 2005, 75.5% of Tennessee women age 40 and older reported they had a current mammogram (i.e., within the past 2 years); 14.3% reported they had a mammogram more than 2 years ago; and 10.2% reported they never had a mammogram.

The percentage of women *without* a current mammogram was higher among whites (25.6%) than among blacks (18.3%).

Where Can I Find Out More About Breast Cancer?

You can learn more about breast cancer from the following organizations:

American Cancer Society

Telephone: 1-800-ACS-2345

Internet Address: <http://www.cancer.org>

National Cancer Institute, Cancer Information Service

Telephone: 1-800-4-CANCER

Internet Address: <http://www.cancer.gov>

Technical Notes

Data sources:

The primary source of data on cancer incidence is medical records. Staff at health care facilities abstract data from patients' medical records, enter it into the facility's own cancer registry if it has one, and then send the data to the state registry. The Tennessee Cancer Registry (TCR) collects data using uniform data items and codes as documented by North American Association of Central Cancer Registries (NAACCR). Information on primary site and histology was coded according to the *International Classification of Diseases for Oncology, Third Edition (ICD-O-3)*, and categorized according to the revised SEER (stands for the Surveillance, Epidemiology and End Results program of the National Cancer Institute (NCI)) recodes dated January 27, 2003, which define standard groupings of primary cancer sites.

Cancer mortality statistics in this report are based on information from all death certificates filed in the state's vital records processed by Tennessee Division of Health Statistics for deaths that occurred in 2001-2005 and were received as of December, 2007.

The cancer mortality data were compiled in accordance with World Health Organization (WHO) regulations, which specify that member nations classify and code causes of death in accordance with the current revision of the *International Classification of Diseases* (ICD). Effective with deaths that occurred in 1999, the United States began using the Tenth Revision of this classification (ICD-10).

The Tennessee population estimates for the denominators of incidence and death rates presented in this report are race-specific (all races, whites, blacks) and sex-specific (both sex, males, females) population estimates aggregated to the county level. They are based on single years of age and are summed to form the 5-year age groups. The estimates used in this report are based on the revised Tennessee population estimates effective on February 1, 2008 made by Tennessee Department of Health's Division of Health Statistics.

The 2000 US standard population were obtained from the US Bureau of the Census.

Methods:

SEER*Stat software was used to calculate all rates, and SAS software was used to generate all results. ArcGIS software was used to draw the maps with rate distribution by county.

Definitions:

Incidence rate: The cancer incidence rate is the number of new cancers of a specific site/type occurring in a specified population during a year, usually expressed as the number of cancers per 100,000 persons at risk. That is,

Incidence rate = (New Cancer Counts / Population) * 100,000.

The *numerator* of the incidence rate is the number of new cancers; the *denominator* of the incidence rate is the size of the population.

Mortality rate: The cancer mortality (or death) rate is the number of deaths with cancer given as the underlying cause of death occurring in a specified population during a year, usually expressed as the number of deaths due to cancer per 100,000 persons. That is,

Death Rate = (Cancer Death Counts / Population) * 100,000.

The *numerator* of the death rate is the number of deaths; the *denominator* of the death rate is the size of the population.

Age-adjusted rate: An age-adjusted incidence or mortality rate is a weighted average of the age-specific incidence or mortality rates, where the weights are the counts of persons in the corresponding age groups of a standard population. The potential confounding effect of age is reduced when comparing age-adjusted rates based on the same standard population.

Stage of cancer: Stage provides a measure of disease progression, detailing the degree to which the cancer has advanced. SEER historic describes cancers in five stages:

- **In situ cancer** is early cancer that is present only in the layer of cells in which it began. For most cancer sites mentioned in this report, in situ tumors are excluded from the analysis because of non-uniform classification; the urinary bladder is exception.
- **Localized cancer** is cancer that is limited to the organ in which it began, without evidence of spread.
- **Regional cancer** is cancer that has spread beyond the original (primary) site to nearby lymph nodes or organs and tissues.
- **Distant cancer** is cancer that has spread from the primary site to distant organs or distant lymph nodes.
- **Unstaged cancer** is cancer for which there is not enough information to indicate a stage.

References

American Cancer Society, *Learn About Breast Cancer*. Available at <http://www.cancer.org>. Accessed July 2008.

Li Q., Whiteside MA. *Cancer in Tennessee 2001-2005*, Tennessee Department of Health, Office of Cancer Surveillance. Nashville, Tennessee, 2008.

Surveillance, Epidemiology and Evaluation Section, *2005 BRFSS Fact Sheet--Breast Cancer Screening*. Tennessee Department of Health, Nashville, TN, 2007.