DEPARTMENT OF HEALTH

The Need for Early Breast Cancer Diagnosis

FACT SHEET

- One in three breast cancers among women in Minnesota are diagnosed at late stage.

- When diagnosed at early stage, 5 and 10-year breast cancer relative survival is 99% and 98%, respectively.

- Relative survival is much lower when breast cancer is diagnosed at distant stage; 35% of patients survive their cancer for 5 years and only 19% survive their cancer for 10 years.

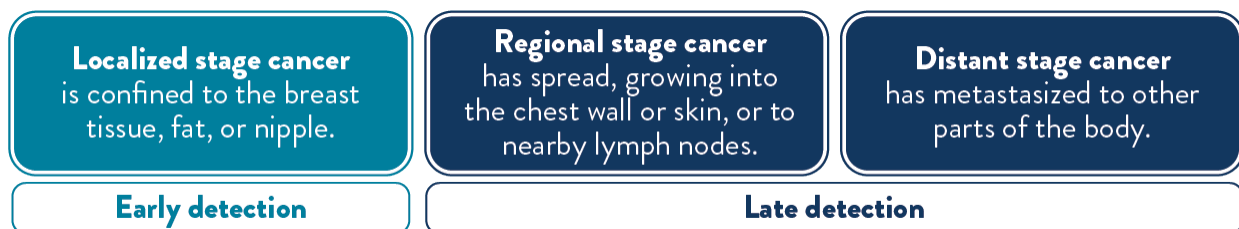| Overall survival vs. Relative survival |
| --- |
| **Overall survival** is the percentage of patients who remain alive for a specific period after diagnosis, having not died of any cause. |
| **Relative survival** is the percentage of patients with cancer who have survived their cancer for a specified period after diagnosis. These estimates do not include deaths from other causes. |

- In Minnesota, 73% of women aged 40 years or older report having had a mammography in the last 2 years.

- Mammography screening saves lives by detecting breast cancer before it becomes symptomatic.

- It's important to talk with a health care provider about breast cancer screening and frequency.

Introduction

Breast cancer is the most common invasive cancer diagnosed in women. In 2022, 5,105 Minnesota women were diagnosed with breast cancer, accounting for nearly one in three cancers diagnosed in women. Breast cancer mortality rates have declined over recent decades due to improvements in treatment and organized screening (Caswell-Jin 2024), but breast cancer remains the second leading cause of cancer death among women in our state.

The SEER summary staging system bases breast cancer stage on the distance a cancer has spread from its point of origin.

Localized stage cancer is confined to the breast tissue, fat, or nipple.	**Regional stage cancer** has spread, growing into the chest wall or skin, or to nearby lymph nodes.	**Distant stage cancer** has metastasized to other parts of the body.
Early detection	**Late detection**	

Mammograms can detect breast tumors early, before they become noticeable. Treatment is more effective, and survival is higher when the disease is detected early in the cancer's progression. A Rochester Epidemiology Project study in southeastern Minnesota found two in three invasive breast cancers (68%) were detected by screening mammography and very few of these women had symptoms, while most of the others had been detected based on symptoms, usually a breast lump (Basappa 2023).

Three in ten invasive breast cancers in Minnesota are diagnosed at late stage.
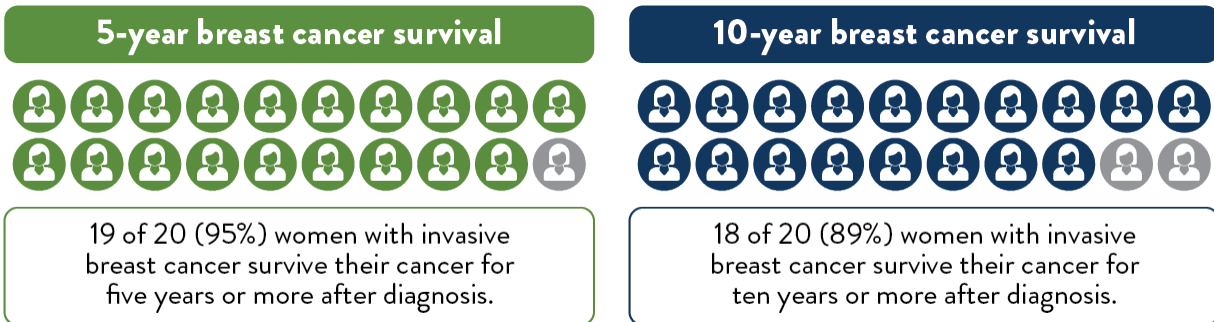
Two-thirds (67%) of invasive breast cancers in Minnesota are diagnosed early, at the localized stage while about 30% are diagnosed at late stage, including 26% at regional stage and 5% at distant stage.

Invasive Breast Cancer Diagnoses by Stage: 2010-2021

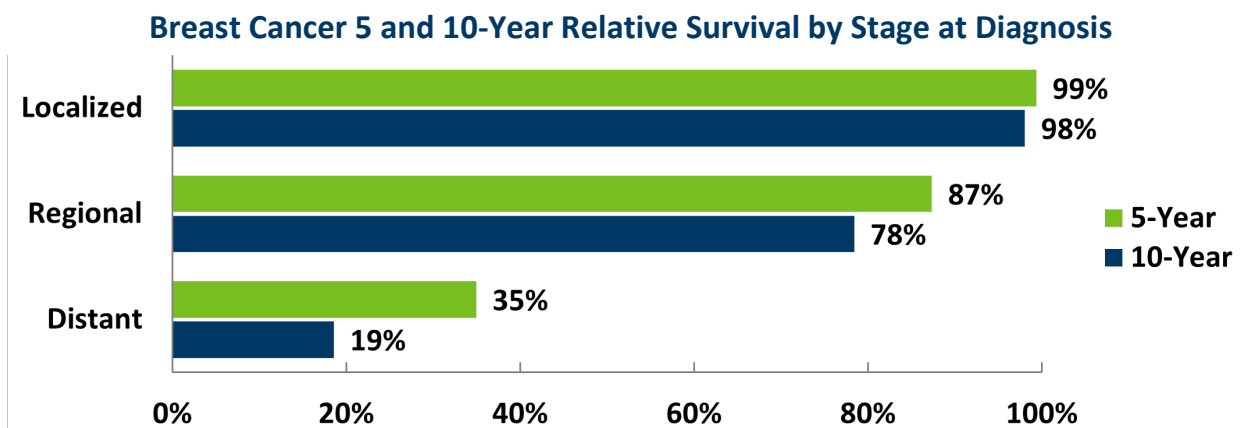| Breast Cancer Stage	Number of New Diagnoses	New Diagnoses as Percent of Total	Incident Diagnoses/100,000 Population/Year
All Invasive	53,061	100%	135.6
Localized (Early)	35,729	67%	90.2
Regional (Late)	13,648	26%	36.3
Distant (Late)	2,628	5%	6.6
Unknown/Unstaged	1,056	2%	2.4

Breast cancer survival is higher when diagnosed early.

Relative survival statistics estimate cancer mortality in patient populations. Five-year relative survival is the percentage of patients who survive their cancer in the 5 years after diagnosis. The estimates do not include deaths from other causes.

5-year breast cancer survival

19 of 20 (95%) women with invasive breast cancer survive their cancer for five years or more after diagnosis.

10-year breast cancer survival

18 of 20 (89%) women with invasive breast cancer survive their cancer for ten years or more after diagnosis.

Five-year breast cancer survival varies by stage at diagnosis. Ninety-nine percent of patients survive their local stage breast cancer for 5 years, compared with 87% of women who survive regional stage breast cancer, and 35% of patients surviving their distant stage cancer.

Breast cancer patients' chances of surviving their cancer over the longer term are much better when the disease is diagnosed earlier. Ten-year survival is 98% among women diagnosed with local stage breast cancer and 78% for patients diagnosed at regional stage but falls to 19% among women diagnosed at distant stage.

Breast Cancer 5 and 10-Year Relative Survival by Stage at Diagnosis

Localized: 99% (5-Year), 98% (10-Year)
Regional: 87% (5-Year), 78% (10-Year)
Distant: 35% (5-Year), 19% (10-Year)

Legend: 5-Year, 10-Year

Probability of cancer death is an alternative measure of cancer mortality in patient populations. Five and 10-year probabilities of breast cancer death are low for women diagnosed at localized stage but higher among women diagnosed at later stage. One percent of women diagnosed with localized breast cancer die of their cancer within 5 years, and 2% die of their cancer within 10 years. In contrast 65% of women diagnosed with distant stage breast cancer die of their disease within 5 years, and 81% die of their cancer within 10 years.

5 and 10-Year Probability of Breast Cancer Death by Stage at Diagnosis
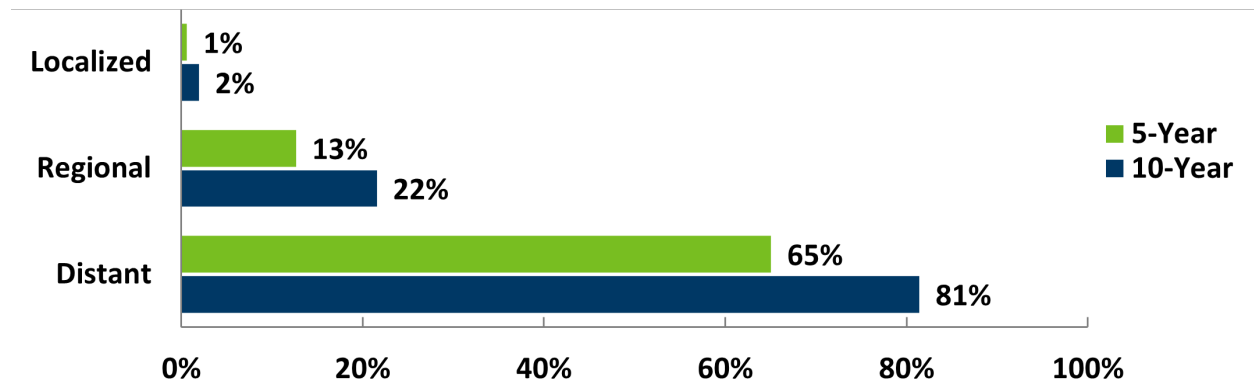
A closer look at 10-year outcomes in women diagnosed with breast cancer.

Cancer patients experience one of three vital status outcomes over a given time-period (e.g., 10 years) after diagnosis; they either die of their cancer, die of another cause, or remain alive.

Most local-stage breast cancer patients who die within 10 years of diagnosis die of causes other than their cancer. Of women diagnosed with localized breast cancer, 77% remain alive 10 years after their diagnosis, whereas 2% die of their breast cancer and 21% die of other causes.

In contrast, most women diagnosed with distant stage disease die of their breast cancer. Only 17% of women diagnosed with distant stage disease remain alive 10 years after diagnosis, whereas 76% die of their breast cancer and 7% die of other causes.

Vital Status Outcomes 10-Years After Breast Cancer Diagnosis

Breast Cancer Stage	Number of Women Diagnosed with Breast Cancer, 2010 to 2021	Percent of Women Remaining Alive 10 Years After Diagnosis	Percent of Women Dying of Breast Cancer	Percent of Women Dying of Other Causes	Total Percentage
Localized	34,140	77%	2%	21%	100%
Regional	13,285	69%	17%	14%	100%
Distant	2,506	17%	76%	7%	100%

Breast cancer screening is associated with better survival, regardless of stage at diagnosis.

Mammography screening increases the chances that breast tumors will be detected early, when they're more readily treatable. In Minnesota, 73% of women aged 40 years or older report having a mammogram in the last two years (https://www.health.mn.gov/data/mcrs/data/index.html#breast).

Screening mammography provides a survival benefit independent of stage at diagnosis and other factors influencing survival (Shen 2005, Mook 2011, Lehtimaki 2011). Regardless of stage at diagnosis, survival is better when breast cancer is detected by screening compared with other methods.

Support for Breast Cancer Screening from MDH

Early detection through regular screening is a vital approach to reduce breast cancer impact. Following evidence-based breast cancer screening guidelines from the U.S. Preventive Services Task Force (a mammogram every other year starting at age 40 and continuing through age 74) (USPSTF, 2024) is essential to maximizing the benefits of early detection and improving patient outcomes.

The MDH Sage Screening Program provides free annual mammograms and diagnostic services at approximately 450 clinics statewide to low-income individuals who lack adequate insurance coverage. Patients diagnosed through Sage are navigated to the Minnesota Department of Human Services to access treatment through Medical Assistance for Breast or Cervical Cancer (https://mn.gov/dhs/people-we-serve/adults/health-care/health-care-programs/programs-and-services/breast-cervical-cancer.jsp).

In addition to direct screening services, Sage advances population-based strategies to strengthen Minnesota's health systems and expand access to high-quality cancer screening. These efforts include partnering with clinics to implement evidence-based interventions (EBIs) that increase screening, providing patient navigation services to all age- and screening-appropriate Minnesotans regardless of Sage eligibility, and informing policies that enhance access to cancer care.

All MDH cancer initiatives align closely with Cancer Plan Minnesota (https://mncanceralliance.org/cancer-plan), a comprehensive plan developed by statewide stakeholders. Sage's efforts specifically support a key objective of the Plan that aims to reduce the statewide cancer burden by promoting equitable access to breast cancer screening and early detection.

For more information contact the Sage Patient Navigation Center at 1-888-643-2584 or visit www.mnsage.com.

For more breast cancer data, visit the MCRS website www.health.state.mn.us/data/mcrs/data/.

References

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Data source: Minnesota Cancer Reporting System. Incidence data include all diagnoses in females diagnosed with malignant breast cancer between 2010 and 2021. Cancer survival cancer data include all females 15 years and older, diagnosed with malignant breast cancer between 2010 and 2021.Relative survival estimates are age standardized. Probability of breast cancer death was estimated by subtraction, as 100% minus age-standardized relative survival.

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