

Breast Cancer Survival in Minnesota, 2020

FACTS AND FIGURES

Breast Cancer is the most common cancer

More than 4,500 women were diagnosed with malignant breast cancer in Minnesota in 2017, accounting for nearly one-third of all malignant cancer cases diagnosed in women.

Breast cancer relative survival is high

93% of women with breast cancer will live at least five years after diagnosis. This is better than survival of the next three most common cancers diagnosed among women in our state: lung cancer (31%), colorectal cancer (69%), and uterine cancer (82%).

Breast cancer survival is much higher when diagnosed early

When breast cancer is found early (localized stage), the five-year survival rate in Minnesota is 99% (Table 1). But when diagnosed late (regional or distant stage), breast cancer survival is much lower (32%). Two-thirds of women diagnosed with breast cancer in Minnesota are diagnosed with early stage disease compared with one-third diagnosed with late stage disease.

Table 1: Breast Cancer 5-Year Relative Survival by SEER Summary Stage, Minnesota, 2010 to 2016

SEER Summary Stage	Number of Cancers	Percent of Total Cancers	5-Yr Relative Survival (%)
Localized	18,577	66.0%	99.1%
Regional	7,812	27.7%	86.4%
Distant	1,370	4.9%	32.4%

Minnesota Cancer Reporting System data. Females 15 years and older, diagnosed with invasive breast cancer from 2010 to 2016 with follow-up through 2017. Complete analysis method. Relative survival percentages are age-standardized. SEER Summary Stage: localized cancers have not spread beyond the breast; regional stage cancers have spread to nearby tissues or lymph nodes; distant stage cancers have spread to distant parts of the body. Unstaged/unknown stage cancers (not shown) account for 1.4% of diagnoses. Percentages of total cancers by stage are calculated from survival analysis counts.

Breast cancer survival in Minnesota has improved in recent years

Among women diagnosed with breast cancer in 1992 to 1994, five-year breast cancer relative survival was 87% (Table 2). It has since improved to nearly 93%. The chance of dying from breast cancer within five years of diagnosis over this period decreased by nearly half, from 13 to 7%.

Table 2: Breast Cancer 5-Year Relative Survival by Diagnosis Cohort, Minnesota

3-Year Diagnosis Cohort	1992 to 1994	1995 to 1997	1998 to 2000	2001 to 2003	2004 to 2006	2007 to 2009	2010 to 2012
5-Year Relative Survival Percentage	86.8%	87.8%	89.3%	90.7%	90.6%	90.6%	92.5%

Minnesota Cancer Reporting System data. Females 15 years and older, diagnosed with invasive breast cancer. Cohorts are defined by year of diagnosis. Cases are followed 5 years for vital status. Relative survival percentages are age-standardized.

Breast cancer survival has improved for all stages

Minnesota data for estimating survival by stage at diagnosis is available back to 1995. Survival has improved across all cancer stages (Table 3), with the greatest gains for regional and distant stage disease.

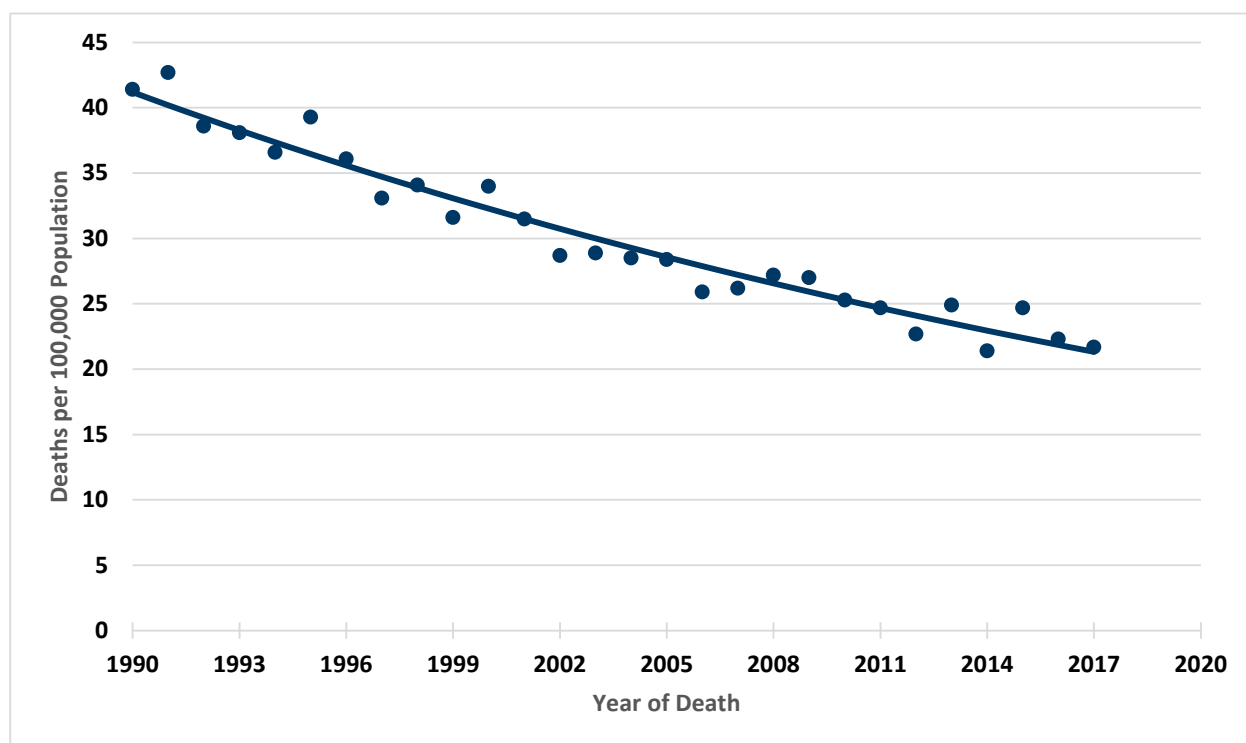
Table 3: Breast Cancer Change in 5-Year Relative Survival Over 15 years by SEER Summary Stage, Minnesota

SEER Stage	1995 to 1997 Cohort, 5-Yr Relative Survival	2009 to 2012 Cohort, 5-Yr Relative Survival	Change in Relative Survival
Local	96.3%	98.9%	+2.6%
Regional	76.9%	87.1%	+10.2%
Distant	16.9%	28.0%	+11.1%

Minnesota Cancer Reporting System data. Females 15 years and older, diagnosed with invasive breast cancer. The 1995 to 1997 cohort consists of women diagnosed with breast cancer from 1995 to 1997 and followed 5 years for vital status; the 2010 to 2012 cohort is defined similarly. Relative survival percentages are age-standardized. Change in relative survival is measured as an absolute difference.

Does improved survival represent progress against breast cancer?

Cancer survival and cancer death are closely related. All else equal, improvements in breast cancer survival should lead to a decrease in breast cancer deaths (1-3). We see this happening in Minnesota: Rates of breast cancer death decreased by 48% between 1990 and 2017 (Figure 1). This is similar to the pattern seen nationally.

Figure 1: Breast Cancer Mortality Trend, Minnesota, 1990 to 2017

Minnesota Cancer Reporting System data. Females 15 years and older with a breast cancer death between 1990 and 2017. Age-standardized mortality rates as breast cancer deaths per 100,000 population per year. Circles represent annual mortality rates; the solid line represents modeled mortality rate estimates using NCI Joinpoint software.

Summary

- Breast cancer survival is high compared with other common cancers and is nearly 100% for women diagnosed with localized disease. Survival is much lower for cancer that has spread to distant parts of the body.
- Breast cancer survival has improved across all stage groups since the 1990s, with the largest gains for regional and distant stage cancer.
- Minnesota breast cancer mortality rates have dropped dramatically since 1990. This is similar to the pattern seen nationally, a reduction that experts attribute to improvements in breast cancer survival over the past several decades.

References

1. Narod, SA, Iqbal, J, & Miller, AB. (2015). Why Have Breast Cancer Mortality Rates Declined? *J Cancer Policy*, 5, 8-17.
2. Welch, HG, Prorok, PC, O'Malley, AJ, & Kramer, BS. (2016). Breast-Cancer Tumor Size, Overdiagnosis, and Mammography Screening Effectiveness. *N Engl J Med*, 375(15), 1438-1447. doi:10.1056/NEJMoa1600249
3. Cho, H, Mariotto, AB, Schwartz, LM, Luo, J, & Woloshin, S. (2014). When do changes in cancer survival mean progress? The insight from population incidence and mortality. *J Natl Cancer Inst Monogr*, 2014(49), 187-197. doi:10.1093/jncimonographs/lgu014

The collection of Minnesota Cancer data was supported by Cooperative Agreement Number, 1NU58DP006337 from the Centers for Disease Control and Prevention (CDC) The contents of this work are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services.

Minnesota Department of Health
Minnesota Cancer Reporting System
PO Box 64882
St. Paul, MN 55164-0822
651-201-5900
health.mcrcs@state.mn.us
www.health.state.mn.us

06/21/2021

To obtain this information in a different format, call: 651-201-5900.