Breast Cancer

Indiana Department of Health

Division of Chronic Disease, Primary Care, and Rural Health- Comprehensive Cancer Control

October 2023

WHAT IS BREAST CANCER?

Breast cancer is an uncontrolled growth of breast cells. Breast cancer is the second leading cause of cancer death and, excluding skin cancers, the most frequently diagnosed cancer among females in the US. The lifetime risk of developing breast cancer among females is one in eight. Breast cancer is typically diagnosed during a screening examination.[1]

SIGNS AND SYMPTOMS

Signs and symptoms:

- Lumps, hard knots, or thickening.
- Swelling, warmth, redness, or darkening.
- Pulling in of the nipple or other parts of the breast.
- Change in size or shape.
- Nipple discharge that starts suddenly.
- New pain that does not go away. [2]

DIAGNOSIS

Females should have frequent conversations with their health care providers about their risks for breast cancer and how often they should be screened. In general, females should follow these recommendations:

Breast self-awareness: Females in their 20s should be aware of the normal look and feel of their breasts, so that they can identify potentially dangerous changes. These changes may include a lump, hard knot, or thickening inside the breast or under- arm area; swelling, warmth, redness, or darkening of the breast; change in the size or shape of the breast; dimpling or puckering of the skin; itchy, scaly sore or rash on the nipple; pulling in of the nipple or other parts of the breast; nipple discharge that starts suddenly; and new pain in one spot that does not go away.[1]

Screening mammograms: The United States Preventive Services Task Force (USPSTF) recommends a screening mammogram every two years for females aged 50 to 74, which help detect cancers before a lump can be felt. Females between the ages of 40 to 49, especially those with a family history of breast cancer, should discuss the risks and benefits of mammography with their health provider to determine if it is right for them.[1]

Clinical breast exams: According to the ACS, research has not shown a clear benefit of regular physical breast exams done by either a health professional or through self breast exams. Women should be familiar with how their breasts normally look and feel and immediately report any changes to a health care provider.[1]

WHAT CAN YOU DO TO PREVENT?

- Know your risk! Talk to your doctor about your personal and family history, and screening.
- Get screened regularly.
- Be smoke free! Visit www.in.gov/quitline for free, evidence-based smoking cessation assistance.
- Maintain a healthy weight.
- Adopt a physically active lifestyle.
- Limit or avoid alcohol consumption.
- Limit postmenopausal hormone use. When evaluating treatment options for menopausal symptoms, consider the increased risk of breast cancer associated with the use of estrogen and progestin and discuss this with your physician.
- Breastfeed, if you can. Studies suggest that breastfeeding for one year or more slightly reduces a woman's overall risk of breast cancer.[1]

*Although these symptoms can be caused by things other than breast cancer, it is important to have them checked out by your doctor.

INCIDENCE

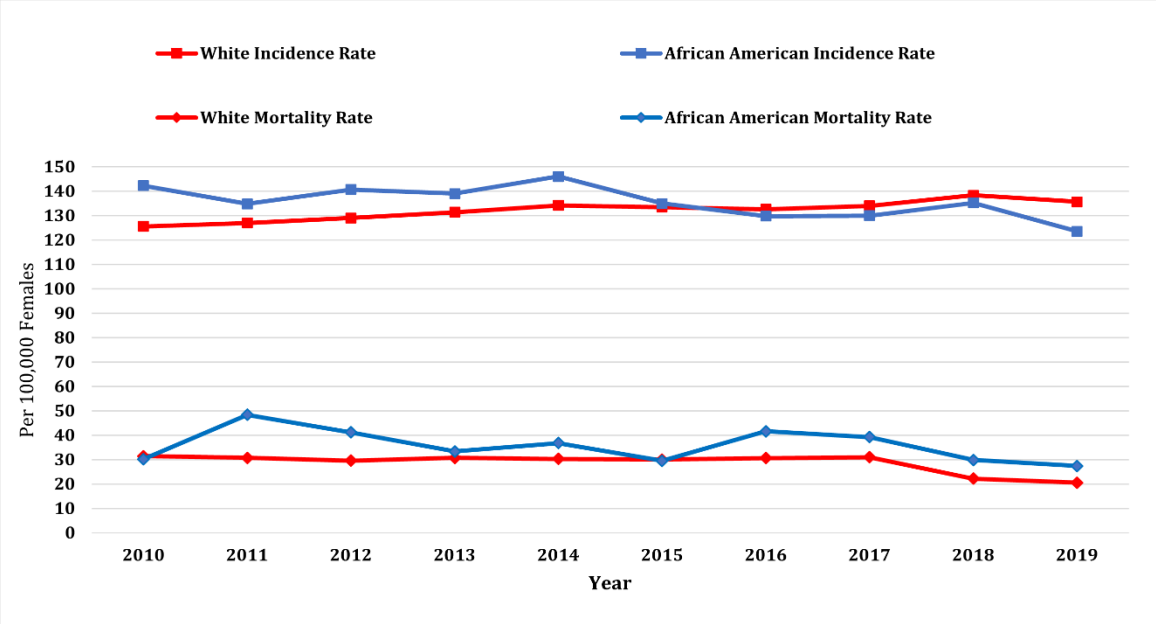
Breast cancer is the most frequently diagnosed cancer among women in Indiana and the United States. As you can see in Table 1 in Indiana 5,378 women were diagnosed with breast cancer in 2019. The breast cancer incidence rate as remained relatively stable in recent years with the rate among African American women decreasing as can be seen in Figure 1. Figure 1 also shows that in recent years white women have higher incidence rates than African American women, but African American women have significantly higher breast cancer mortality rates.

Table 1: Indiana Breast Cancer Incidence 2015-2019

	Average Number of Cases per Year	Rate per 100,000 Females	Number of Cases	Rate per 100,000 Females
	(2015-2019)	*(2015-2019)*	*(2019)*	*(2019)*
Indiana Breast Cancer Incidence	5,185	133.0	5,378	134.4

Source: Indiana State Cancer Registry
Rates Age-adjusted to the US Standard 2000 Population

Figure 1: Female Breast Cancer Incidence and Mortality (Death) Rates Trends by Race*- Indiana 2010-2019



Note: Excludes in situ
**Age-adjusted to the US 2000 Standard Population*
Source: Indiana State Cancer Registry

STAGING

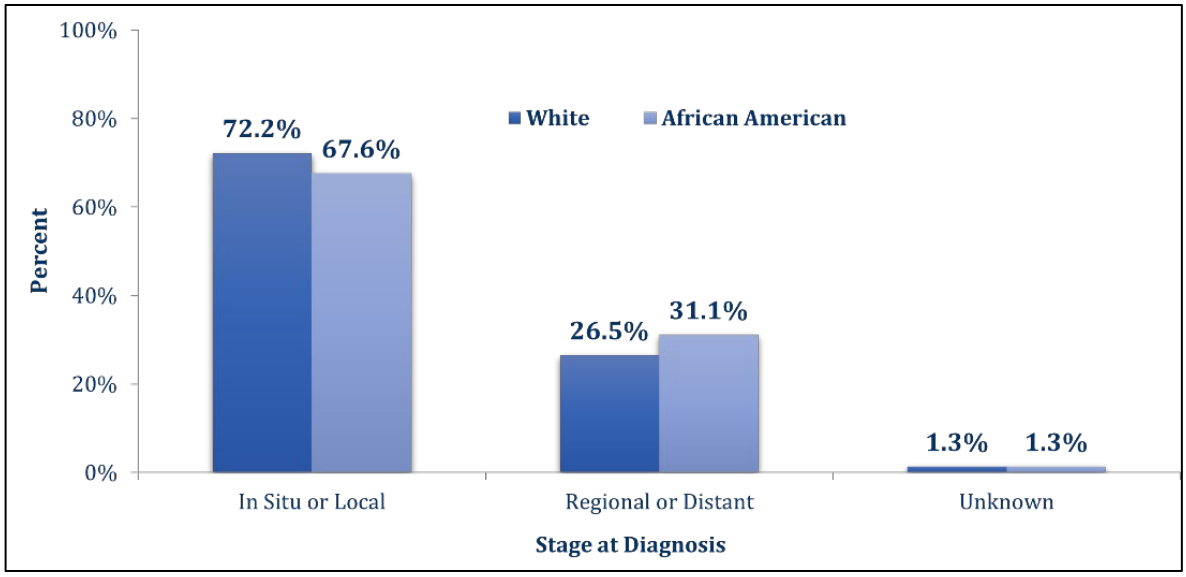
The extent of cancer and its spread at the time of diagnosis, as well as microscopic characteristics of the tumor, determine its stage. Cancer stage is the best predictor of prognosis (disease outcome) and is essential for guiding treatment options. The two main staging systems for breast cancer are the American Joint Committee on Cancer (AJCC) staging system, typically used in clinical settings, and the Surveillance, Epidemiology, and End Results (SEER) summary staging system, reported by cancer registries and used in surveillance research to measure the success of cancer control efforts.[3]

According to the SEER summary stage system:

- In situ refers to the presence of abnormal cells that are confined to the layer of cells where they originated.
- Local stage refers to invasive cancer that is confined to the breast.
- Regional stage refers to cancer that has spread to surrounding tissue and/or lymph nodes.
- Distant stage refers to cancer that has spread to distant organs and/or lymph nodes, including nodes above the collarbone.[3]

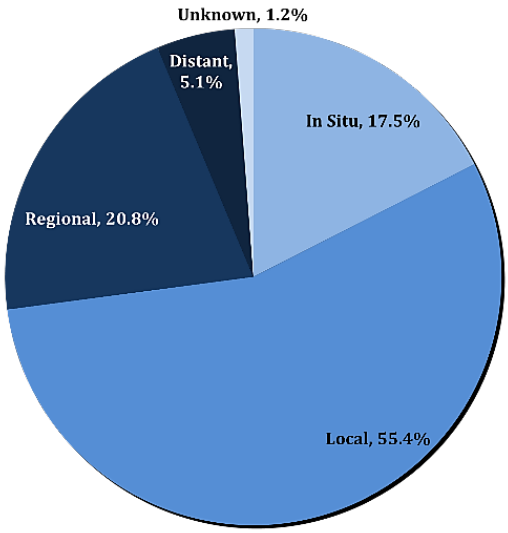
As seen in Figure 3, during 2015-2019, of the 31,467 female Indiana residents who received a breast cancer diagnosis, 22,933 (72.9%) were diagnosed in the in situ or local stage, 8,142 (25.9%) were diagnosed in the regional or distant stage, and 392 (1.2%) had unknown staging. Cancer stage analysis also allows for understanding of how early intervention effects chances of survival and allows to view differences between different races in how advanced the stage of cancer is at diagnosis. As such, Figure 2 shows that in Indiana from 2010-2019 African American individuals were more likely to be diagnosed with a more advanced stage of breast cancer than white individuals and thus have higher rates of mortality than white individuals.

Figure 2: Percent of Female Breast Cancer Cases by Stage of Diagnosis and Race - Indiana, 2010-2019



Source: Indiana State Cancer Registry

Figure 3: Percent of Female Breast Cancer Cases Diagnosed During Each Stage*-Indiana, 2015-2019



**Includes all in situ and invasive cases*
Source: Indiana State Cancer Registry

RISK FACTORS

Factors associated with increased breast cancer risk include weight gain after the age of 18 and/or being overweight or obese (for postmenopausal breast cancer); menopausal hormone therapy (combined estrogen and progestin), physical inactivity, and alcohol consumption. Research also indicates that long-term, heavy smoking increases breast cancer risk, particularly among females who start smoking before their first pregnancy.

Family history: People who have had one or more first-degree relatives who have been diagnosed with breast cancer have an increased risk. Additionally, according to the American Cancer Society (ACS), breast cancer risk increases if a person has a family member who carries the breast cancer susceptibility genes, known as BRCA 1 or BRCA 2, which account for 5 to 10 percent of all female breast cancers. BRCA mutations also account for 5 to 20 percent of all male breast cancers, and 15 to 20 percent of familial breast cancers.

Race: Disparities exist in breast cancer mortality between White and African American women. In Indiana, during 2015-2019 the breast cancer incidence rates for African American and White females were similar (129.7 versus 135.4 respectively), but the mortality rate for African American females was significantly higher than the rate for whites with the mortality rate for African American females being 25.7 and the rate for White females being 22.8.

Reproductive factors: Females may have an increased risk if they have a long menstrual history (menstrual periods that start early and/or end later in life), have recently used hormonal birth control, have never had children, or had their first child after the age of 30.

Certain medical findings: High breast tissue density, high bone mineral density, type 2 diabetes, certain benign breast conditions, and lobular carcinoma in situ may increase risk for developing breast cancer. In addition, high dose radiation to the chest for cancer treatment increases risk. [1]

MORTALITY

The overall breast cancer death rate increased by 0.4% per year from 1975 to 1989, but since has decreased steadily, for a total decline of 43% through 2020. As a result, 460,000 breast cancer deaths were averted in US women from 1989 through 2020. The decline in breast cancer mortality has been attributed to better and more targeted treatment and earlier detection.[3]

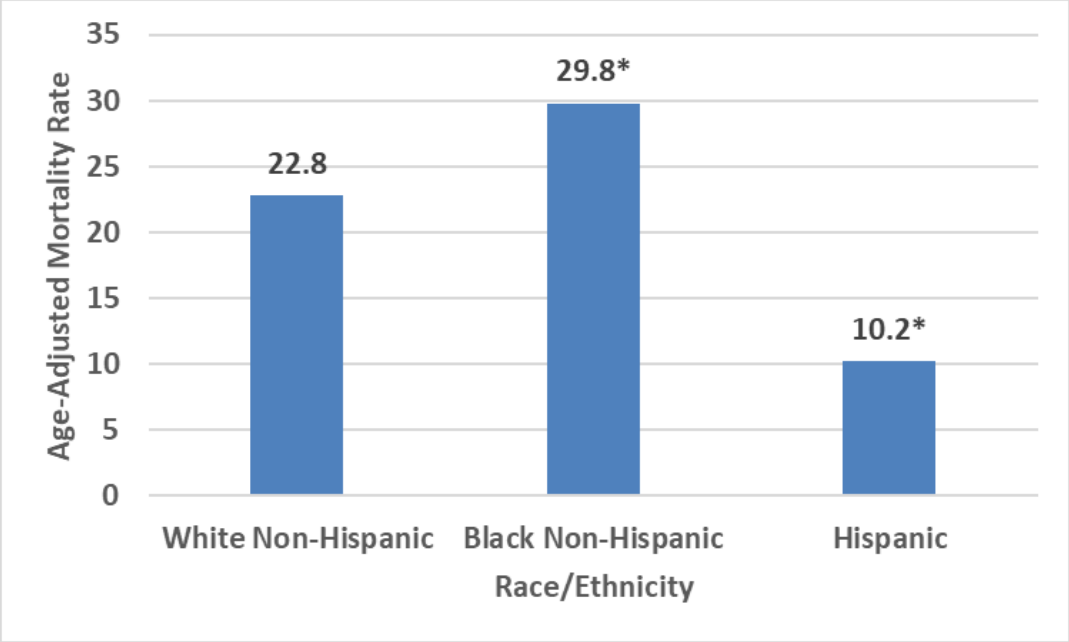
While breast cancer mortality has decreased in recent years, in 2019 there were 830 deaths in Indiana due to breast cancer as seen in Table 2. In regards to breast cancer disparities, these are seen most in breast cancer mortality as African American women have significantly higher breast cancer mortality rates than white or Hispanic women as shown in Figure 4.

Table 2: Indiana Breast Cancer Mortality 2015-2019

	Average Number of Cases per Year	Rate per 100,000 Females	Number of Cases	Rate per 100,000 Females
	(2015-2019)	*(2015-2019)*	*(2019)*	*(2019)*
Indiana Breast Cancer Mortality	870	22.5	830	21.0

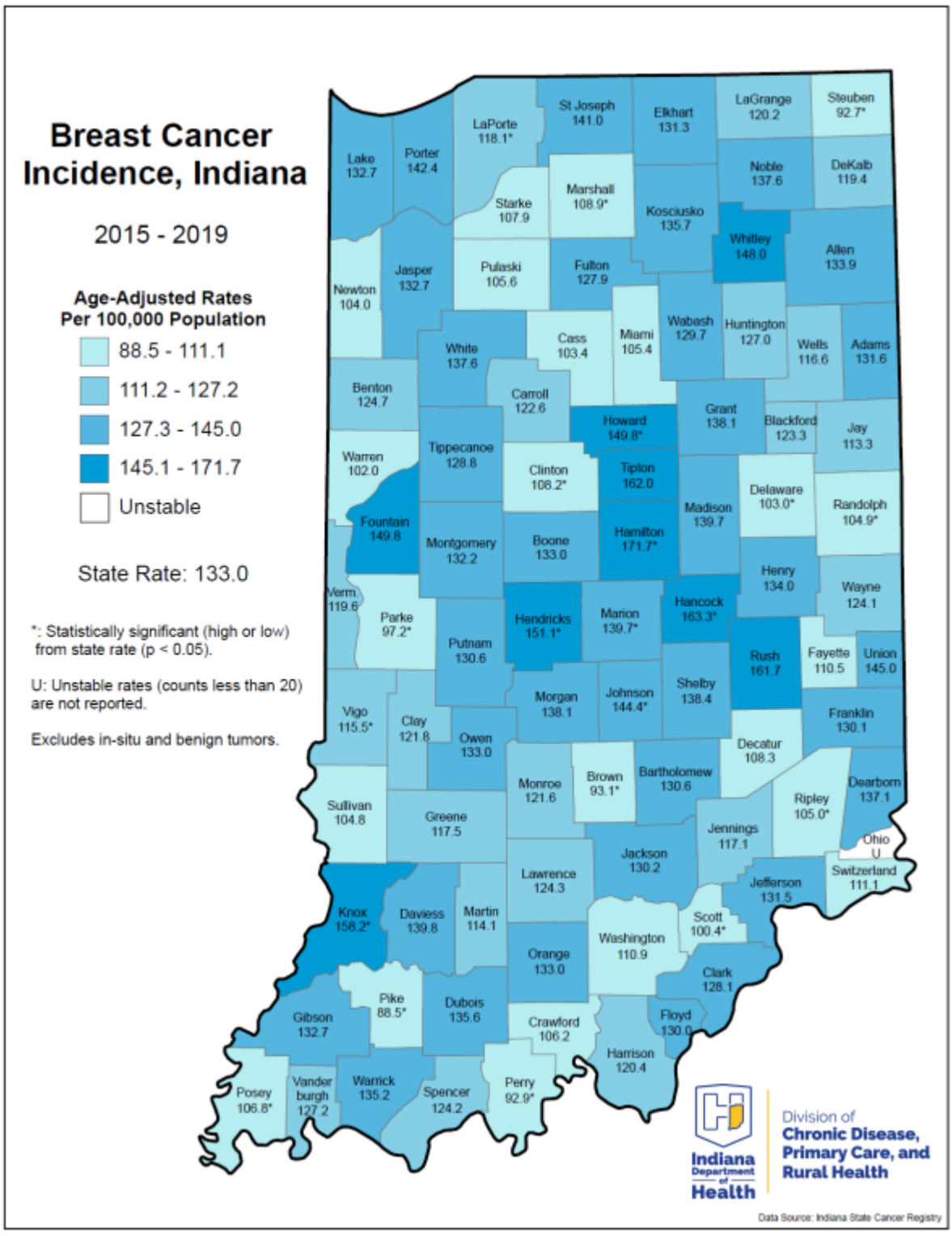
Source: Indiana State Cancer Registry
Rates Age-adjusted to the US Standard 2000 Population

FIGURE 4: INDIANA BREAST CANCER MORTALITY BY RACE/ETHNICITY 2015-2019



Source: Indiana State Cancer Registry
Rates Age-adjusted to the US Standard 2000 Population
** Rate is statistically significantly higher or lower than White Non-Hispanic Rate*

FIGURE 5: BREAST CANCER INCIDENCE IN INDIANA



SCREENING

In regard to breast cancer the United States Preventative Services Task Force (USPSTF) currently recommends biennial mammography screening for women aged 50 to 74 years of age with average risk for breast cancer. THE USPSTF recently submitted a draft recommendation statement to recommend all women get screened for breast cancer every other year, starting at age 40. The Indiana Breast and Cervical Cancer Program offers mammography screening for women aged 40 to 74 years of age. The Behavioral Risk Factor Surveillance System (BRFSS) collects data on the percentage of women who have had a mammogram within the past two years. This data can be seen in table 3 below. [5] Always consult your doctor.

Table 3: Indiana Breast Cancer Screening Data 2016-2020

BRFSS Measure	2016	2018	2020
Females Aged 40-75 Years Old Who Have Had a Mammogram Within the Past Two Years	68.4%	72.3%	68.5%
Females Aged 50-75 Years Old Who Have Had a Mammogram Within the Past Two Years	72.5%	76.6%	73.6%

Source: Indiana Behavioral Risk Factor Surveillance System

INDIANA BREAST AND CERVICAL CANCER PROGRAM

The Indiana Breast and Cervical Cancer Program (BCCP) is the Hoosier implementation of the National Breast and Cervical Cancer Early Detection Program (NBCCEDP). The BCCP provides access to breast and cervical cancer screenings, diagnostic testing, and treatment for underserved and underinsured people (under 200% of federal poverty level), who qualify for services.

The BCCP receives funds from both the NBCCEDP and the State of Indiana and serves between 3,000 and 4,000 people annually.

INDIANA CANCER CONTROL PLAN

The Indiana Cancer Control Plan 2023-2027 identifies the policies, changes, and actions required at all levels, from statewide to individual, to reduce Indiana's cancer burden. The collaborative processes of the ICC are best reflected through the development and implementation of this plan. A targeted roadmap to coordinate cancer control efforts.

Ways to Promote Breast Cancer Awareness

1. Be aware of local programs offered to help with those who may have financial barriers. For questions on if you qualify and what services are offered, visit Indiana Department of Health's website for details and contact information on the Indiana Breast and Cervical Cancer Program.

2. View and share educational materials on breast cancer prevention, detection, and survivorship. American Cancer Society and the Indiana Cancer Consortium both have informational resources on their webpages available for everyone.

3. Be aware of breast cancer in men. Though breast cancer is rare among males, they may be prone to ignoring warning signs which leads to being diagnosed at later stages with poorer prognoses.[6] Find out how breast cancer in men is tested for and other resources at the American Cancer Society's webpage. Always discuss concerns with your doctor.

4. Know about trauma-informed care. Providers should be made aware of barriers their patients may have if they have experienced trauma, abuse, or violence in the past.

5. Transgender individuals are eligible for screenings and there are resources available. Susan G. Komen is a resource that supplies terms helpful in understanding the breast cancer recommendations for transgender people. For those looking for providers that are certified and knowledgeable about working with the transgender population, providers in Indiana are listed here: OutCare Health- LGBTQ+ Healthcare Resources and Providers.

REFERENCES

1. https://indianacancer.org/wp-content/uploads/2021/11/ICC_BreastCancerFF_2021.pdf

2. https://www.in.gov/health/cdpc/files/Breast-Cancer-Fact-Sheet-DONE.pdf

3. https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/breast-cancer-facts-and-figures/2022-2024-breast-cancer-fact-figures-acs.pdf

4 . https://indianacancer.org/wp-content/uploads/2023/07/CancerControlPlan_ICC_23-27.pdf

5. https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/breast-cancer-screening

6. https://indianacancer.org/resources/breast-cancer/