UCSF
University of California
San Francisco

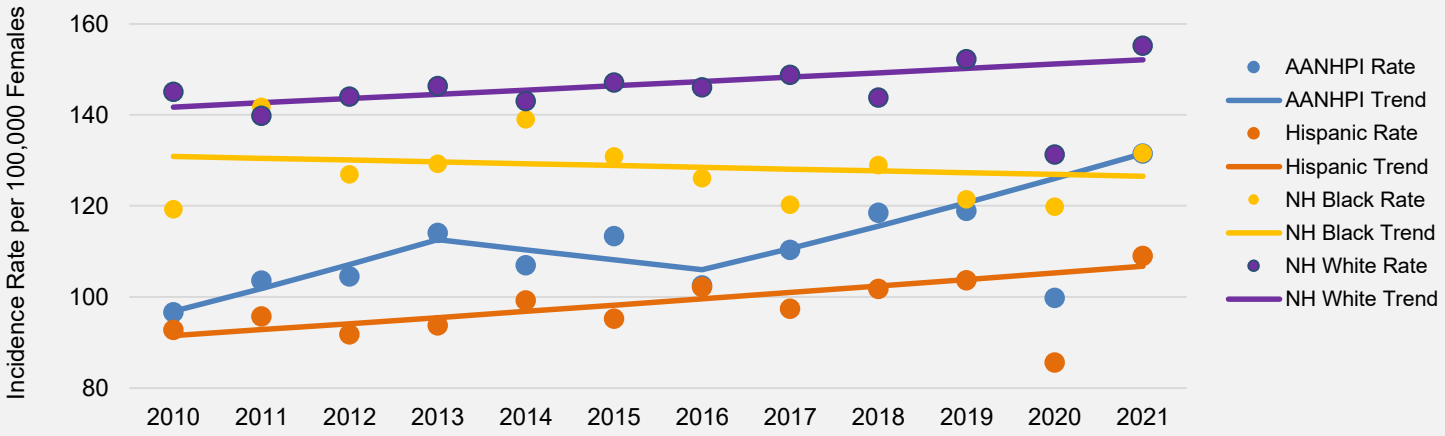
Differences in Incidence of Female Invasive Breast Cancer by Race and Ethnicity in the Greater Bay Area, 2010-2021

Greater Bay Area CANCER REGISTRY

Breast Cancer Incidence Trends

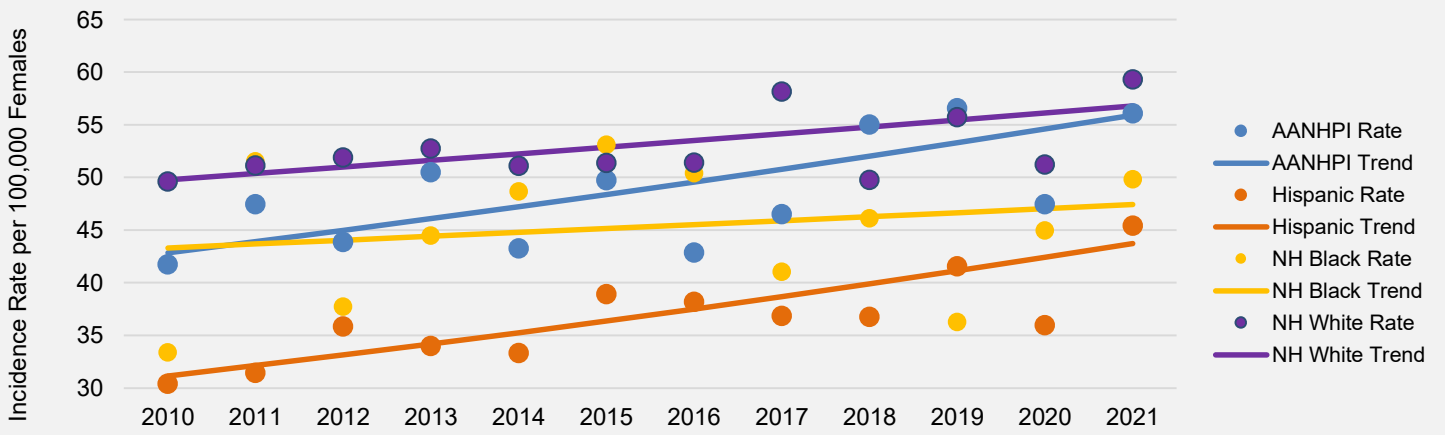
- Invasive breast cancer is the most common cancer among females in the Greater Bay Area. The incidence (number of new cases per year) increased significantly starting in the mid-1990s, particularly in non-Hispanic (NH) White populations.
- There are differences in incidence rates (number of new cases per 100,000 females) across racial and ethnic groups (Figure 1).
  - Rates have stabilized for NH Black females, and slightly increased for NH White and Hispanic females.
  - For Asian American/Native Hawaiian/Pacific Islander (AANHPI) females, incidence rates have increased significantly since 2016 (4.4% per year).
- Among females diagnosed at less than 50 years of age (early-onset), invasive breast cancer has been increasing in most racial and ethnic groups (Figure 2).
  - AANHPI 2.5% per year (significant)
  - Hispanic 3.1% per year (significant)
  - NH Black 0.8% per year (non-significant)
  - NH White 1.2% per year (significant)
- The reasons for these increases are not well understood and more research is warranted.

Figure 1: Invasive female breast cancer incidence rates and trends, GBACR, 2010-2021



*2020 rate not included in calculation of trend due to pandemic era decline in diagnoses.

Figure 2: Early onset (<50 years of age) female breast cancer rates and trends, GBACR, 2010-2021



*2020 rate not included in calculation of trend due to pandemic era decline in diagnoses.

UCSF
University of California
San Francisco

Incidence of Female Invasive Breast Cancer by Subtype in the Greater Bay Area, 2017-2021

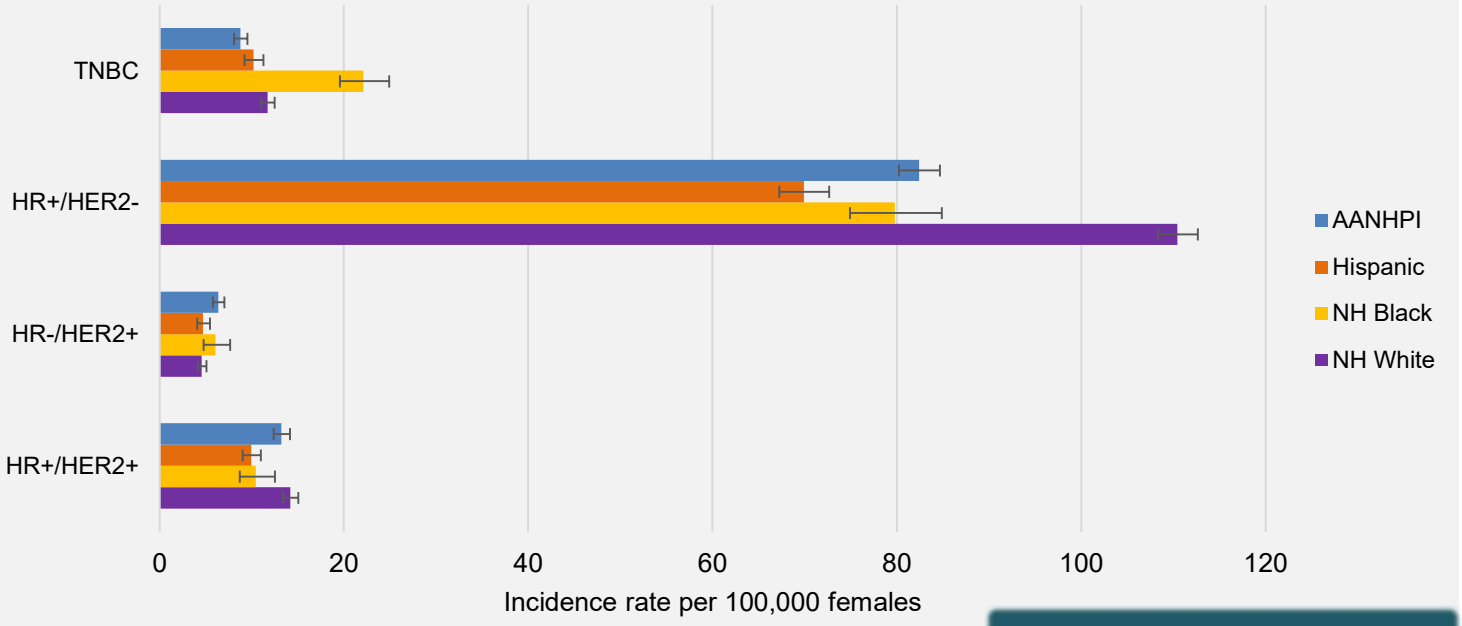
Greater Bay Area
CANCER REGISTRY

Breast Cancer Subtypes

The distribution of breast cancer subtypes vary by race and ethnicity, resulting in subtypes that are more common in specific racial and ethnic groups (Figure 3). The various subtypes are defined by tumor expression of estrogen and/or progesterone hormone receptors (HR), and expression of human epidermal growth factor-2 (HER2).

- **HR-/HER2-** breast cancer indicates a triple negative subtype (**TNBC**). This subtype is diagnosed more frequently in younger, pre-menopausal women and is more common in NH Black females.
- **HR+/HER2-** breast cancer makes up approximately 75% of invasive breast cancers; NH White females have the highest incidence rate.
- **HR-/HER2+** breast cancer has little variation by race and ethnicity. HR- breast cancer is more common in pre-menopausal women.
- **HR+/HER2+** breast cancer also has little variation by race and ethnicity. These tumors tend to grow more slowly than those that are HR-.

Figure 3: Breast cancer incidence rates by race, ethnicity and breast cancer subtype, GBACR, 2017-2021



Key Messages

- Breast cancer is the most common invasive cancer in females.
- Breast cancer incidence varies by age group, and across racial and ethnic groups. Incidence is increasing significantly among younger females (<50 years) in most racial and ethnic groups.
- Factors that increase breast cancer risk in the US include:
  - presence of certain genetic mutations (for ex, BRCA 1, BRCA2)
  - having no or few children
  - later age at first birth
  - moderate to high consumption of alcohol
  - late age at menopause
  - use of combined (estrogen + progestin) hormone replacement therapy during menopause