

NJ Health
New Jersey Department of Health

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of New Jersey

Racial/ethnic differences in risk of subsequent invasive breast cancer among women diagnosed with invasive breast cancer and ductal and lobular breast carcinoma *in situ* in New Jersey, 1992-2012

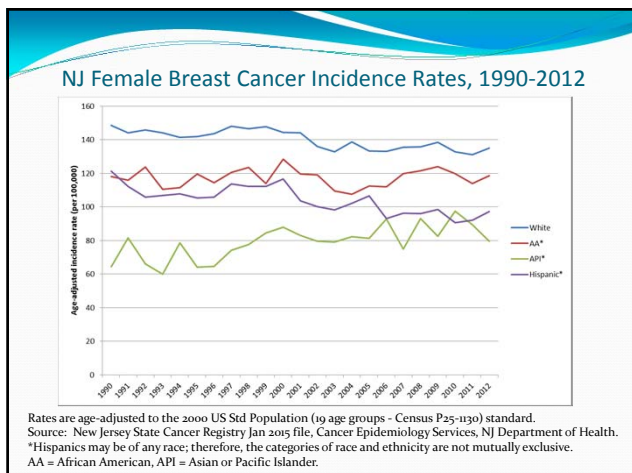
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Introduction - Breast cancer

- Most common cancer diagnosed among women in NJ and US
- ACS estimates that in the U.S. in 2015
 - 231,840 women will be diagnosed with breast cancer &
 - 40,290 women will die of the disease
- Women diagnosed with breast cancer have ↑ risk for a subsequent primary breast cancer
- Risk for breast cancer varies by race/ethnicity
- Few studies on risk for subsequent primary breast cancer in breast cancer survivors by race/ ethnicity



Objectives

Evaluate risk of subsequent breast cancer in a cohort of NJ women diagnosed with breast cancer

- by race and ethnicity
- by age group
- by histologic subtype and other clinical factors

Methods

Data Source: NJ State Cancer Registry

Cohort: NJ women dx with invasive breast cancer or carcinoma *in situ* as a 1st primary malignancy during 1992-2012

Excluded:

- diagnosed with cancer prior to index breast cancer
- diagnosed at autopsy or by DCO
- < 2 months of follow-up time
- other/unknown race.

N = 136,671 women after exclusions (112,374 invasive, 19,653 DCIS, and 4,644 lobular carcinoma *in situ*)

Methods (2)

Standardized incidence ratios (SIRs) and 95% confidence intervals

SIR = Observed/ expected

Observed: Subsequent invasive primary breast cancers

- Diagnosed > 2 months after index breast cancer and before December 31, 2012
- All 2nd and later (3rd, etc.) breast cancers were included
- NJSCR follows SEER rules for classifying multiple primary cancers

Methods (3)

Person years at risk (PYR):

- Calculated from 2 months after dx of index breast cancer until date of death, last known follow-up, or 12/31/2012
- Stratified by age at initial dx (5 year groups), race (or ethnicity), calendar year

Expected:

NJ female age-, race-, & year-specific breast cancer rates were multiplied to strata-specific PYR and then summed.

MP-SIR session of SEER*Stat software

Results

Risk for subsequent invasive breast cancer significantly elevated in all 4 racial/ethnic groups

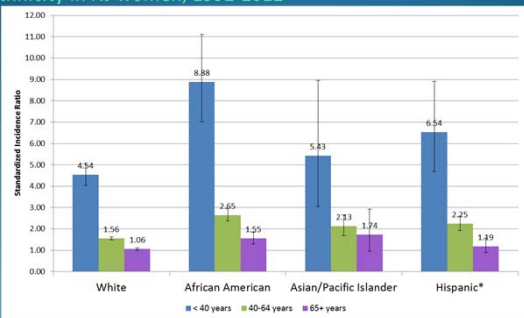
	<u>Persons</u>	<u>Observed</u>	<u>SIR</u>	<u>95% CI</u>
White	96,201	3,712	1.40	1.36-1.45
AA	12,139	555	2.48	2.28-2.69
API	3,918	108	2.26	1.85-2.73
Hispanic*	8,050	268	2.10	1.86-2.37

*Hispanics may be of any race; therefore, the categories of race and ethnicity are not mutually exclusive.

SIR = standardized incidence ratio. Null value = 1.0.

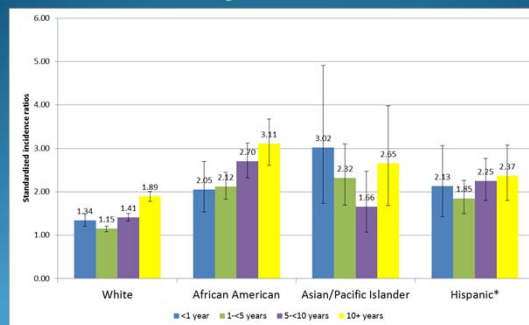
AA = African American. API = Asian or Pacific Islander.

Risk of subsequent invasive breast cancer after breast cancer diagnosis by age at dx of index breast cancer and race/ethnicity in NJ women, 1992-2012



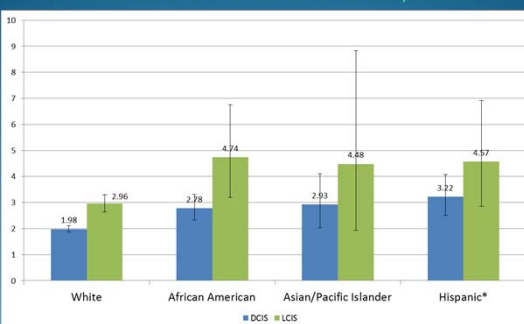
Vertical lines indicate 95% confidence intervals.
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Risk of subsequent invasive breast cancer by time since index invasive breast cancer diagnosis in NJ women, 1992-2012



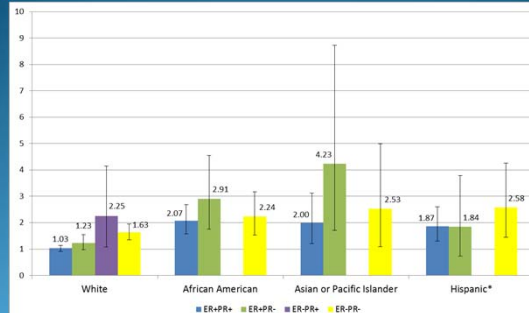
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Risk of subsequent invasive breast cancer after diagnosis of ductal or lobular carcinoma *in situ* in NJ women, 1992-2012



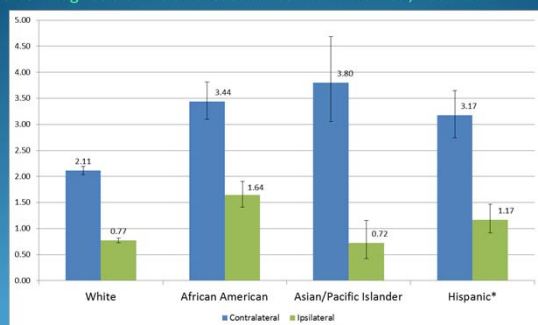
Vertical lines indicate 95% confidence intervals.
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Risk of subsequent invasive breast cancer after breast cancer dx by tumor receptor status of index breast cancer in NJ women, 2004-2012



Vertical lines indicate 95% confidence intervals. ER = estrogen receptor, PR = progesterone receptor. Patients with index breast cancer of unknown ER or PR status were excluded.
 *Hispanics may be of any race; therefore, the categories of race and ethnicity are not mutually exclusive.

Risk of subsequent contralateral and ipsilateral invasive breast cancer after diagnosis of index breast cancer in NJ women, 1992-2012



Vertical lines indicate 95% confidence intervals.

*Hispanics may be of any race; therefore, the categories of race and ethnicity are not mutually exclusive.

Limitations

- Medical surveillance bias
- Possible misclassification of separate primary cancer vs. recurrence of original cancer
- Patients who move out-of-state
→ under-ascertainment of subsequent cases
- Misclassification of race or ethnicity

Strengths

- Population based cancer registry with high-quality data
- Diverse population of New Jersey
- Large numbers to do sub-analyses
- High rates of microscopic confirmation of cases (98.8%)

Conclusions


- Our findings support the importance of continued surveillance of breast cancer patients, especially African American women, women dx at younger ages & lobular carcinoma *in situ* patients.
- Risk of subsequent breast cancer continued to be elevated more than 10 years after dx of the first breast cancer.



Thank you!

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<http://nj.gov/health/ces/index.shtml>



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