INTRODUCTION

- Breast cancer is the second leading cause of cancer death among women in the U.S.
- In 2013, an estimated 232,340 women will be diagnosed with invasive breast cancer, and 39,620 will die from breast cancer.
- An enhanced Florida Cancer Data System (FCDS) Registry allows for examination of disparities in survival of cancer patients.
- The purpose of this study was to investigate race, ethnicity, and socioeconomic (SES) disparities in breast cancer survival using an enhanced Florida Cancer Data Systems (FCDS) registry.

METHODS

- Data from 1996-2007 FCDS was enhanced by linkage with Florida’s Agency for Health Care Administration (AHCA) and information from the U.S. Census.
- AHCA contains diagnosis and procedure codes for all in- and outpatient encounters at hospitals and free standing surgical and radiological treatment centers.
- Outcome of interest: survival time (date of diagnosis to date of death).
- Predictors of interest:
  - Race: White, Black, Native American, Asian, Pacific Islander, Asian Indian/Pakistani, or Other.
  - Ethnicity: non-Hispanic, or Hispanic.
  - SES by % of neighborhood living in poverty:
    - Lowest SES (≥20%); middle-low (≥10% and <20%); middle-high (≥5% and <10%);
    - Highest SES (<5%).
- Final sample size, N=127,754.
- Statistical analysis:
  - Descriptive; median survival in years; 1-, 3-, and 5-year survival rates.
  - Univariate and multivariate Cox proportional hazard regression models used to obtain unadjusted and adjusted hazard ratios (HR) and 95% confidence intervals (95%CI).

RESULTS

- The majority of the population was White (90.4%), non-Hispanic (90.4%), and in the middle-high or highest SES category (59.5%).
- Overall median survival time was 11.8 years – with Asians longest (12.6) and Native Americans shortest (7.4).
- In the unadjusted models:
  - Blacks had significantly worse survival compared to Whites (P<0.001).
  - Asians (P<0.001) and AIP (P=0.013) has significantly better survival
  - Hispanics had a survival advantage compared to non-Hispanics (P<0.001).
- In the multivariate model adjusted for all covariates:
  - Blacks (P<0.001) and Hispanics (P=0.001) remained significant predictors of worse survival.
  - Asians and AIP lost their survival advantage over Whites.
- In all both unadjusted and adjusted models, there was an incremental improvement in survival for each higher SES category (P<0.001).

CONCLUSION

- Using an enhanced FCDS registry for female breast cancer patients provided the strengthened ability to identify racial, ethnic, and SES disparities in survival outcome, therefore:
  - Further exploration is needed to clarify reasons for the survival disparities and tailor programs to ensure earlier diagnosis and access to treatment options, particularly for Blacks and those living in poorer neighborhoods.

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Univariate and Multivariate Cox Proportional Hazard Models

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\begin{array}{c|c|c|c|c|c|c|c|c}
\text{Race} & \text{White} & \text{Black} & \text{Native American} & \text{Asian} & \text{Pacific Islander} & \text{Asian Indian/Pakistani} & \text{Other} & \text{P-value} \\
\hline
\text{HR (95% CI)} & 1 & 1.44 (1.60, 1.49) & 1.50 (0.98, 2.29) & 0.71 (0.39, 0.85) & 0.76 (0.40, 1.46) & 0.65 (0.47, 0.91) & & \text{P}<0.001 \\
\text{Multivariate} & 1 & 1.28 (1.21, 1.36) & 1.19 (0.81, 1.73) & 0.84 (0.68, 1.03) & 1.09 (0.67, 1.78) & 0.87 (0.64, 1.19) & & \text{P}<0.001 \\
\end{array}
\]

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<thead>
<tr>
<th>SES STATUS</th>
<th>Median survival (yrs) by Race, Ethnicity, and SES</th>
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<tbody>
<tr>
<td></td>
<td>White</td>
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<tr>
<td>N=127,754</td>
<td>11.5</td>
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