

**Project
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Age and Racial/Ethnic Disparities in the Diagnosis of Breast Cancer in an Urban Population

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Aim

To characterize the newly diagnosed patients with breast cancer from 1999-2006 at University Hospital.

Background

- Breast cancer accounts for one of every three cancers diagnosed in women (ACS, 2006).
- In 2006, an estimated 212,920 women were diagnosed with invasive breast cancer and over 30,970 died from this disease (Smigal, et al, 2006).

Breast Cancer in New Jersey

- Among females in New Jersey, breast cancer is the most commonly diagnosed cancer across all racial and ethnic groups
- For Hispanic females, breast cancer is the leading cause of cancer mortality, while for non-Hispanic White and Black females lung cancer is the leading cause of cancer mortality
- Black women have lower incidence rates when compared to White women, (113.3 vs. 138.1), but greater mortality rates (34.4 vs. 29.0).

Breast Cancer Disparities

- The burden of breast cancer is not equally distributed.
- Minority women are more likely to
 - Be diagnosed with advanced disease
 - Have comorbid conditions
 - Delay initial treatment
 - Discontinue treatment
 - Have poorer outcomes
 - Have shorter survival

Breast Cancer in Young Women

- According to data from the SEER program, 6.5% of breast tumors occur in women < 40 years of age.
- Young women with breast cancer have been shown to:
 - Have larger tumors
 - Poorer grade tumors
 - More lymph node involvement
 - Fewer hormone receptor positive tumors
 - More local recurrences
 - Poorer overall survival

Methods

- Cancer registry data was reviewed at University Hospital.
- All women newly diagnosed with breast cancer between 1999 and 2006 were included.
- For this analysis we only looked at those patients who were classified as Non-Hispanic Black, Hispanic or Non-Hispanic White

Demographic Characteristics

Number of Cases

N=522

Age (Mean/SD)

54.5/13.2

Race

Non-Hispanic Black

290 (55.6)

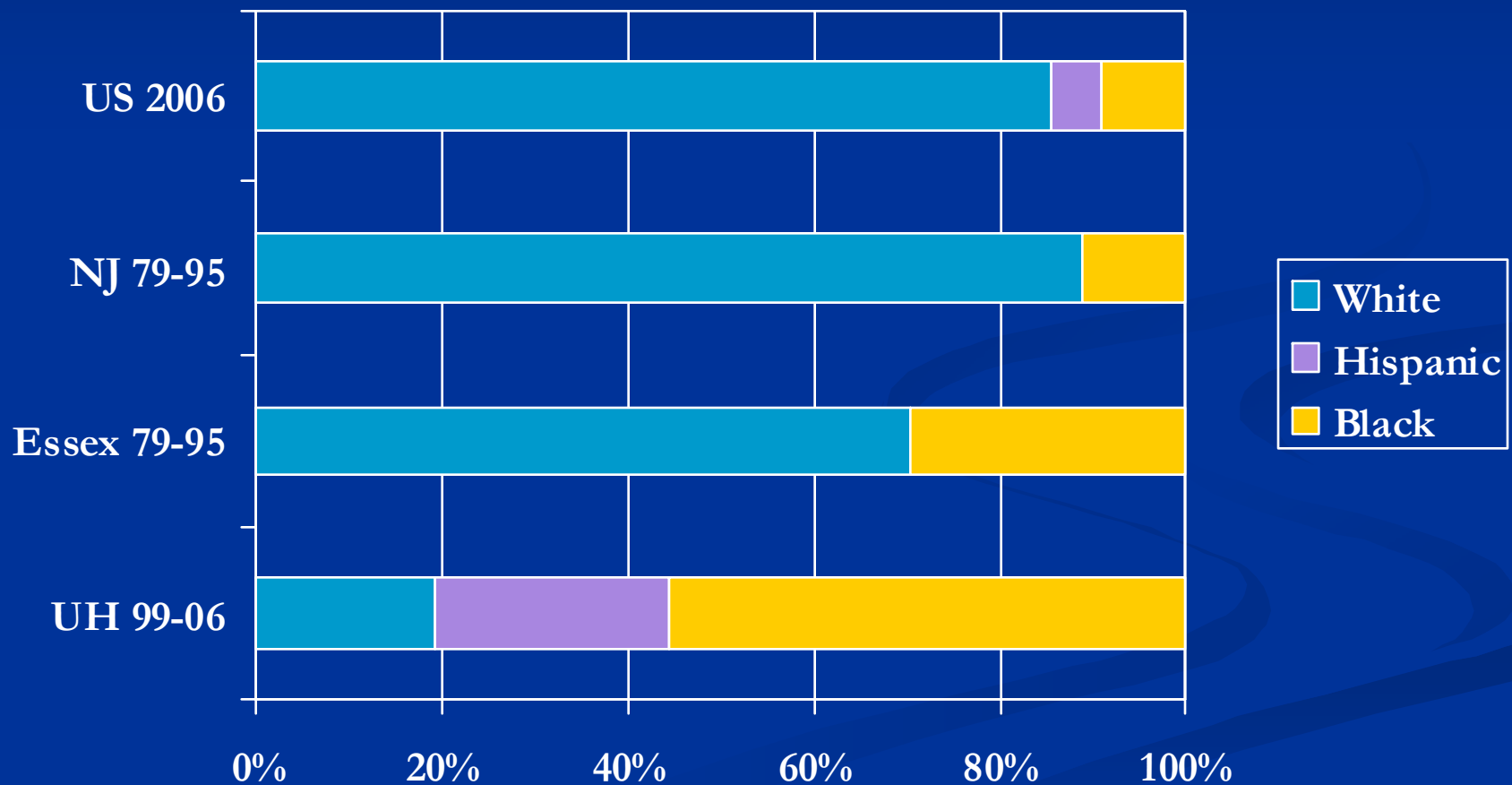
Hispanic

131 (25.1)

Non-Hispanic White

101 (19.3)

Racial Distribution of Breast Cancer



Demographic Characteristics

Marital Status

Single	230	(44.1)
Married	117	(22.4)
Separate/Divorced	99	(19.0)
Widow	58	(11.1)
Unknown	18	(3.4)

Insurance Status

No insurance	160	(30.7)
Medicaid/Medicare	213	(40.8)
Private insurance	136	(26.1)
Unknown	13	(2.5)

Clinical Characteristic

Insitu	105	(20.1)
Malignant	417	(79.9)
AJCC Stage		
0	105	(20.1)
1	107	(20.5)
2	167	(32.0)
3	78	(14.9)
4	51	(9.8)
Unknown	14	(2.7)
Tumor Grade		
Grade 1 (Well differentiated)	51	(9.8)
Grade 2 (Moderately differentiated)	142	(27.2)
Grade 3 (Poorly differentiated)	209	(40.0)
Undifferentiated	3	(0.6)
Unknown	117	(22.4)

Clinical Characteristic

Size		
< 1 cm	51	(9.8)
1.0-2.9 cm	167	(32.0)
\geq 3 cm	168	(32.2)
Unknown	136	(26.1)
No. of lymph nodes examined		
0	186	(35.6)
1	30	(5.7)
2-4	71	(13.6)
\geq 5	204	(39.1)
Unknown	31	(5.9)
No. of lymph nodes positive		
0	181	(34.7)
1	40	(7.7)
2-4	51	(9.8)
\geq 5	38	(7.3)
Not Applicable	186	(35.6)
Unknown	26	(4.9)

Demographic Characteristics by Race

Characteristic	Black	Hispanic	White
Age (Mean/SD)	54.9 (13.3)	52.4 (11.9)*	56.1 (14.3)
Marital Status			
Single	142 (50.9)*	50 (39.1)	38 (39.2)
Married	41 (14.7)	41 (32.0)	35 (36.1)
Separate/ Divorced	55 (19.7)	33 (25.8)	11 (11.3)
Widow	41 (14.7)	4 (3.1)	13 (13.4)
Insurance Status			
No insurance	78 (27.6)	63 (49.6)*	19 (19.2)
Medicaid/ Medicare	137 (48.4)	38 (29.9)	38 (38.4)
Private insurance	68 (24.0)	26 (20.5)	42 (42.4)

* p<0.05

Clinical Characteristic by Race

Characteristic	Black		Hispanic		White	
Insitu	59	(20.3)	26	(19.8)	20	(19.8)
Malignant	231	(79.7)	105	(80.2)	81	(80.2)
AJCC Stage						
0	59	(20.7)	26	(20.2)	20	(21.3)
1	54	(18.9)	33	(25.6)	20	(21.3)
2	93	(32.6)	46	(35.7)	28	(29.8)
3	45	(15.8)	18	(14.0)*	15	(16.0)
4	34	(11.9)	6	(4.7)	11	(11.7)
Tumor Grade						
Grade 1	25	(10.9)	17	(16.2)	9	(12.6)
Grade 2	76	(33.2)	37	(35.2)	29	(40.8)
Grade 3	125	(54.6)	51	(48.6)	33	(46.5)
Undiff	3	(1.3)	0	(0.0)	0	(0.0)

* p<0.05

Clinical Characteristic by Race

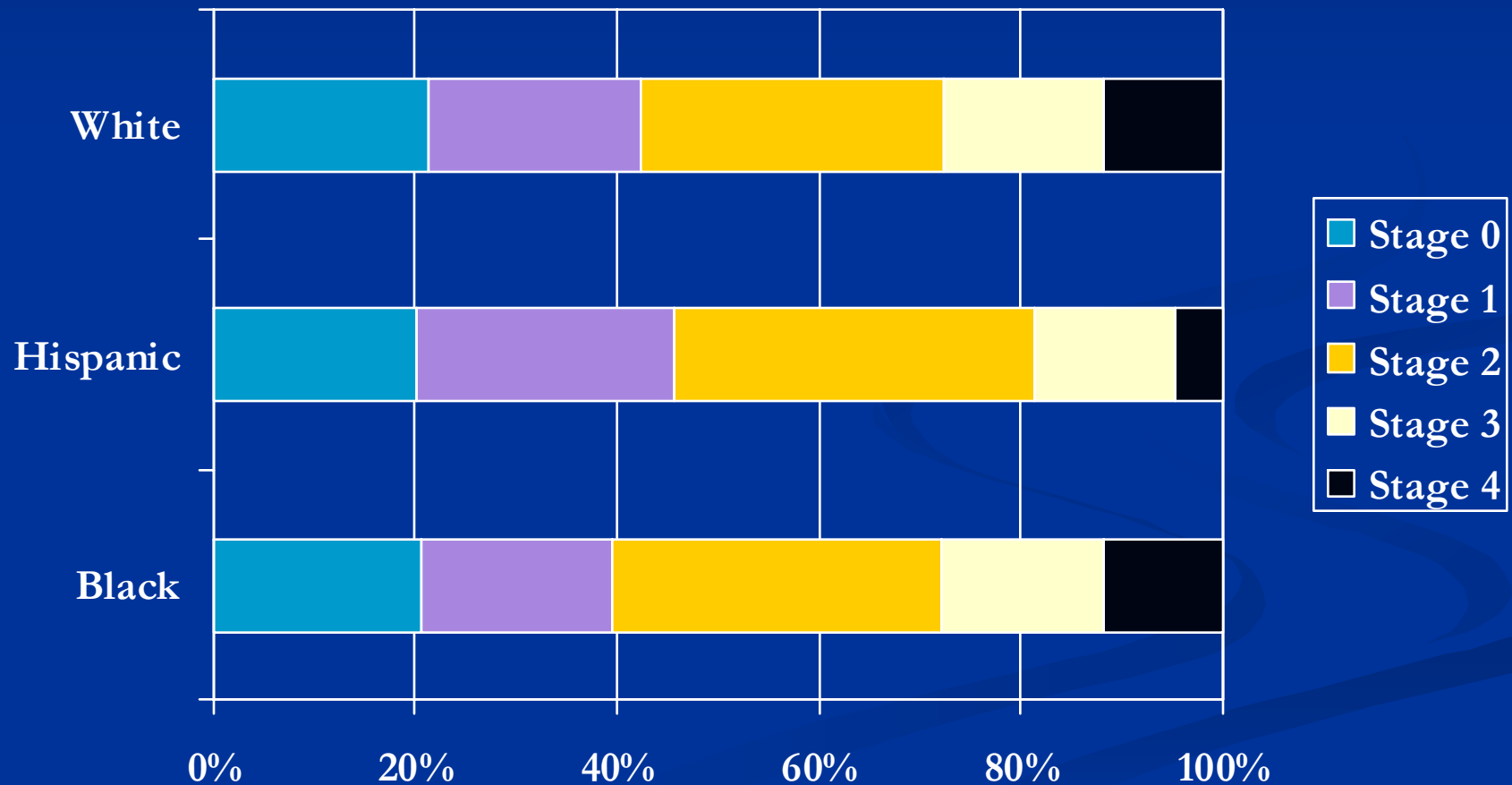
Characteristic	Black		Hispanic		White	
Size						
< 1 cm	26	(11.9)	19	(18.8)	6	(9.0)
1.0-2.9 cm	97	(44.5)	40	(39.6)	30	(44.8)
≥ 3 cm	95	(43.6)	42	(41.6)	31	(46.3)
No. of lymph nodes examined						
0	102	(37.0)	43	(34.4)	41	(45.6)
1	16	(5.8)	11	(8.8)	3	(3.3)
2-4	35	(12.7)	19	(15.2)	17	(18.9)
≥ 5	123	(44.6)	52	(41.6)	29	(32.2)
No. of lymph nodes positive						
0	99	(56.3)	51	(61.4)	31	(60.8)
1	25	(14.2)	8	(9.6)	7	(13.7)
2-4	25	(14.2)	19	(22.9)	7	(13.7)
≥ 5	27	(15.3)	5	(6.0)	6	(11.8)

Clinical Characteristic by Race

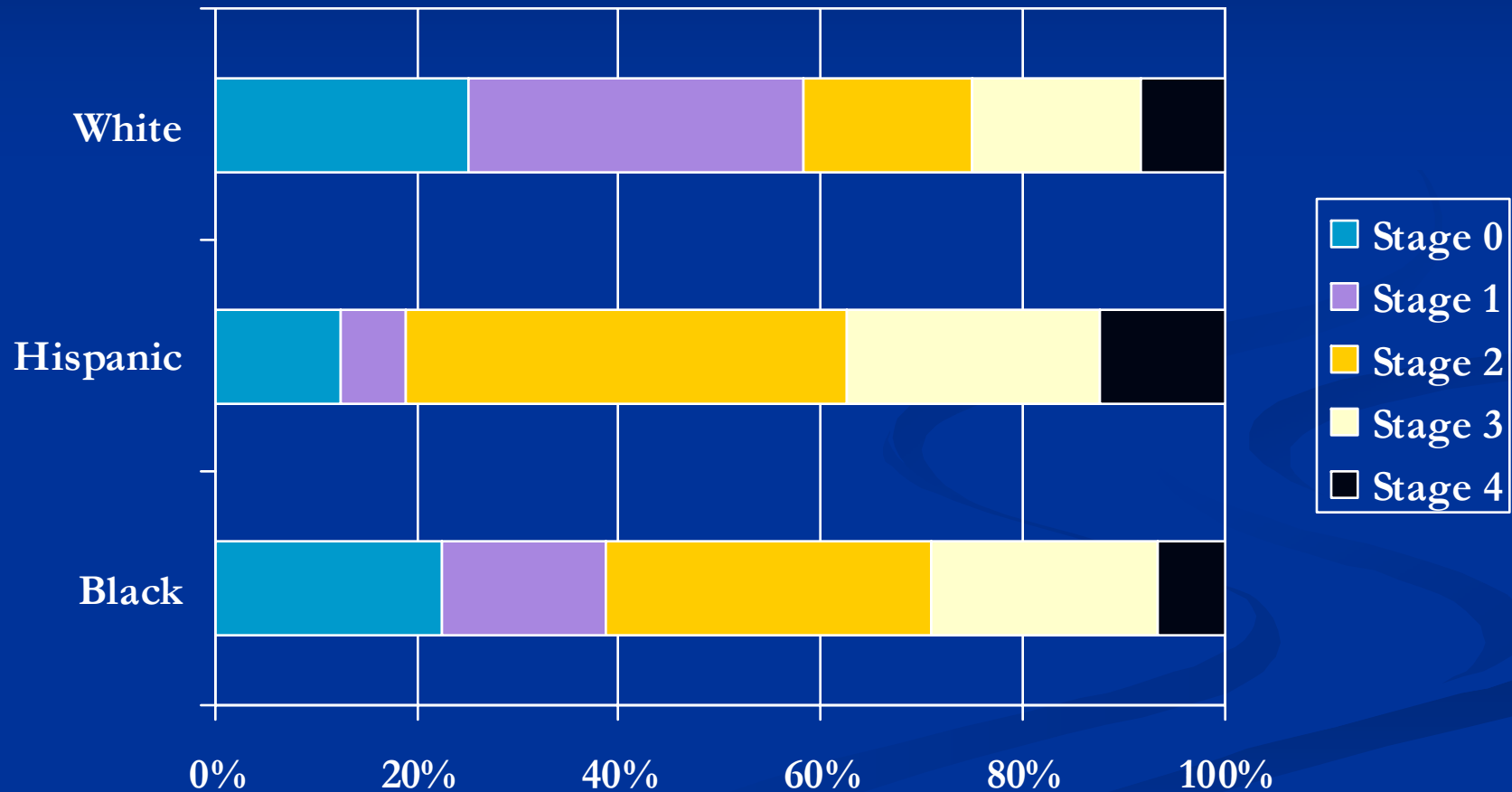
Characteristic	Black	Hispanic	White
Alive			
Yes	223 (76.9)	122 (93.1)	85 (84.2)
No	67 (23.2)	9 (6.9)*	16 (15.8)
Advanced disease			
Yes	79 (27.7)	24 (18.6)	26 (27.7)
No	206 (72.3)	105 (81.4)*	68 (72.3)
ERPR Status			
-/-	70 (41.2)	27 (35.1)	15 (28.3)
+/-	20 (11.8)	5 (6.5)	11 (20.8)
-/+	1 (0.6)	2 (2.6)	0 (0.0)
+/+	79 (46.5)	43 (55.8)	27 (50.9)

* p<0.05

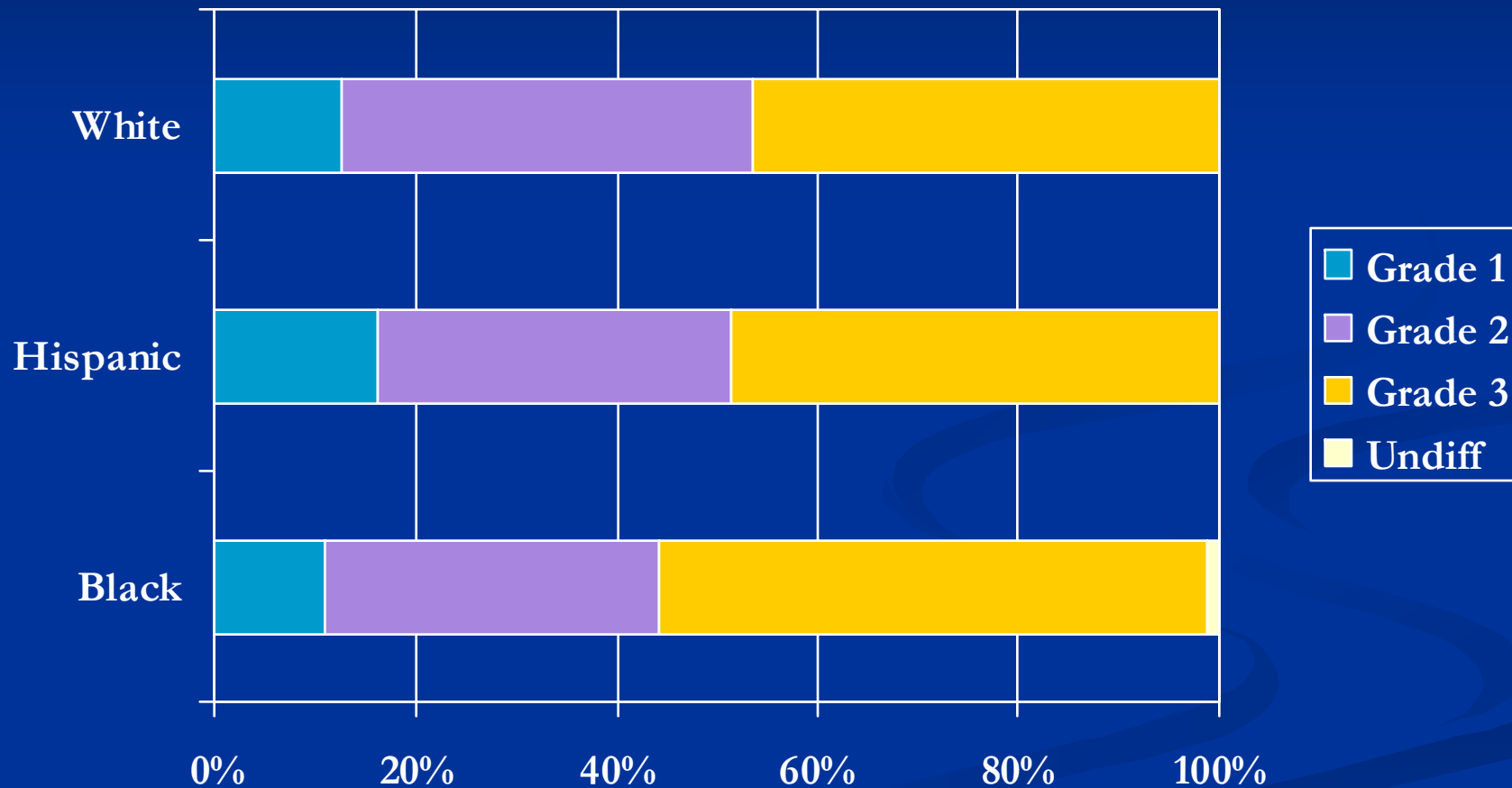
Proportion of Breast Cancer Patients by Stage and Race



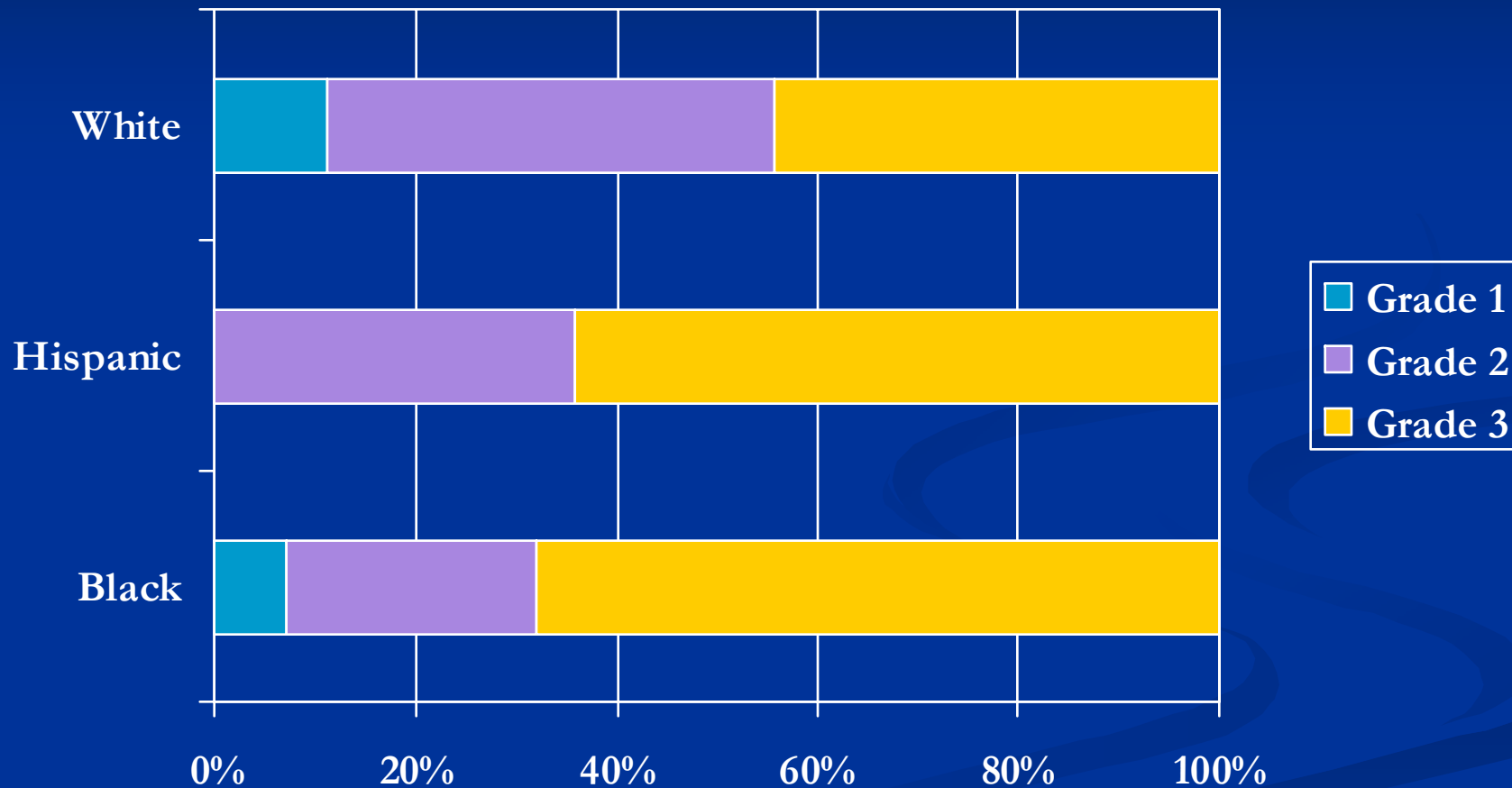
Proportion of Breast Cancer Patients Below the Age of 40 by Stage and Race



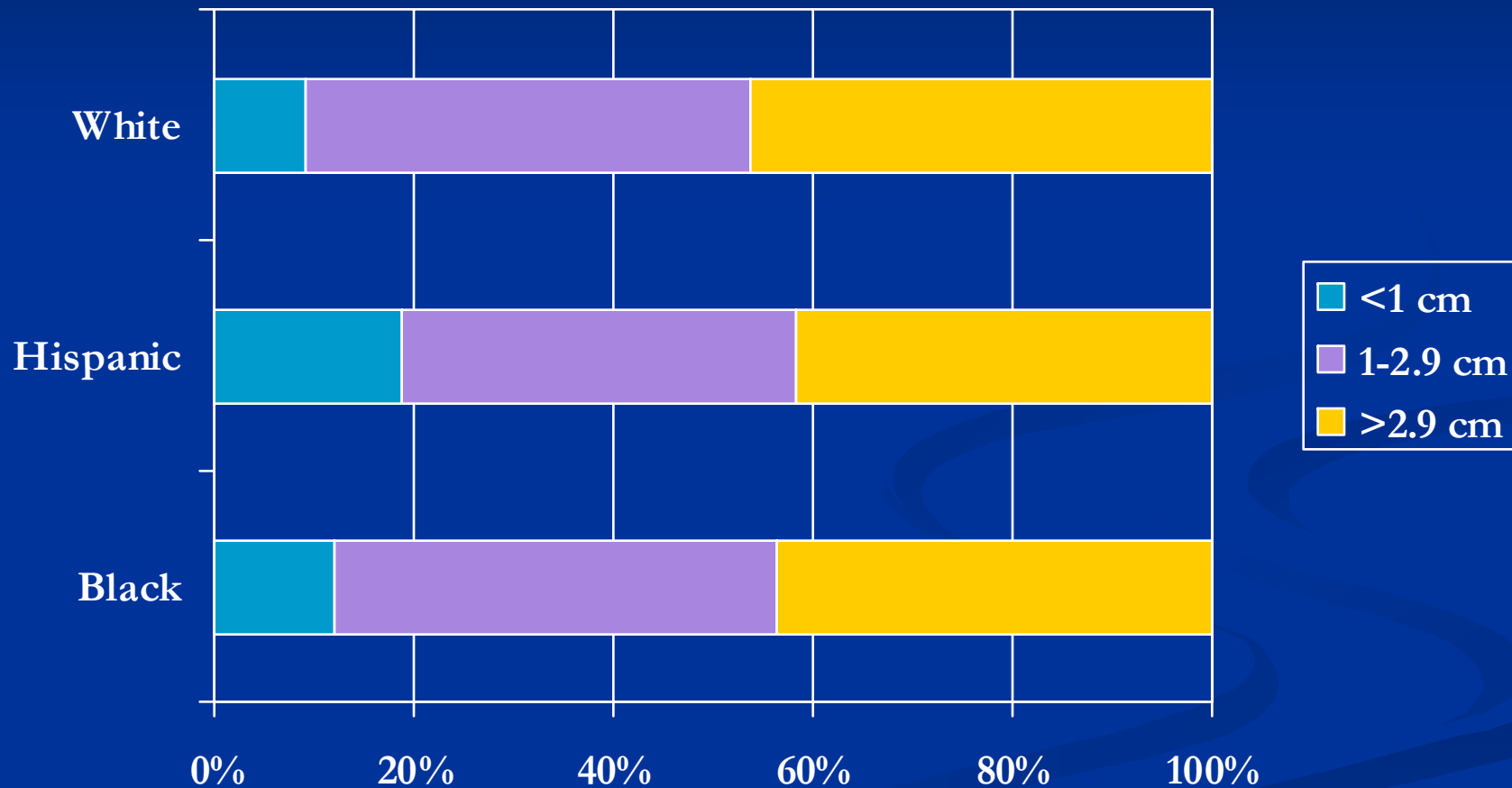
Proportion of Breast Cancer Patients by Grade and Race



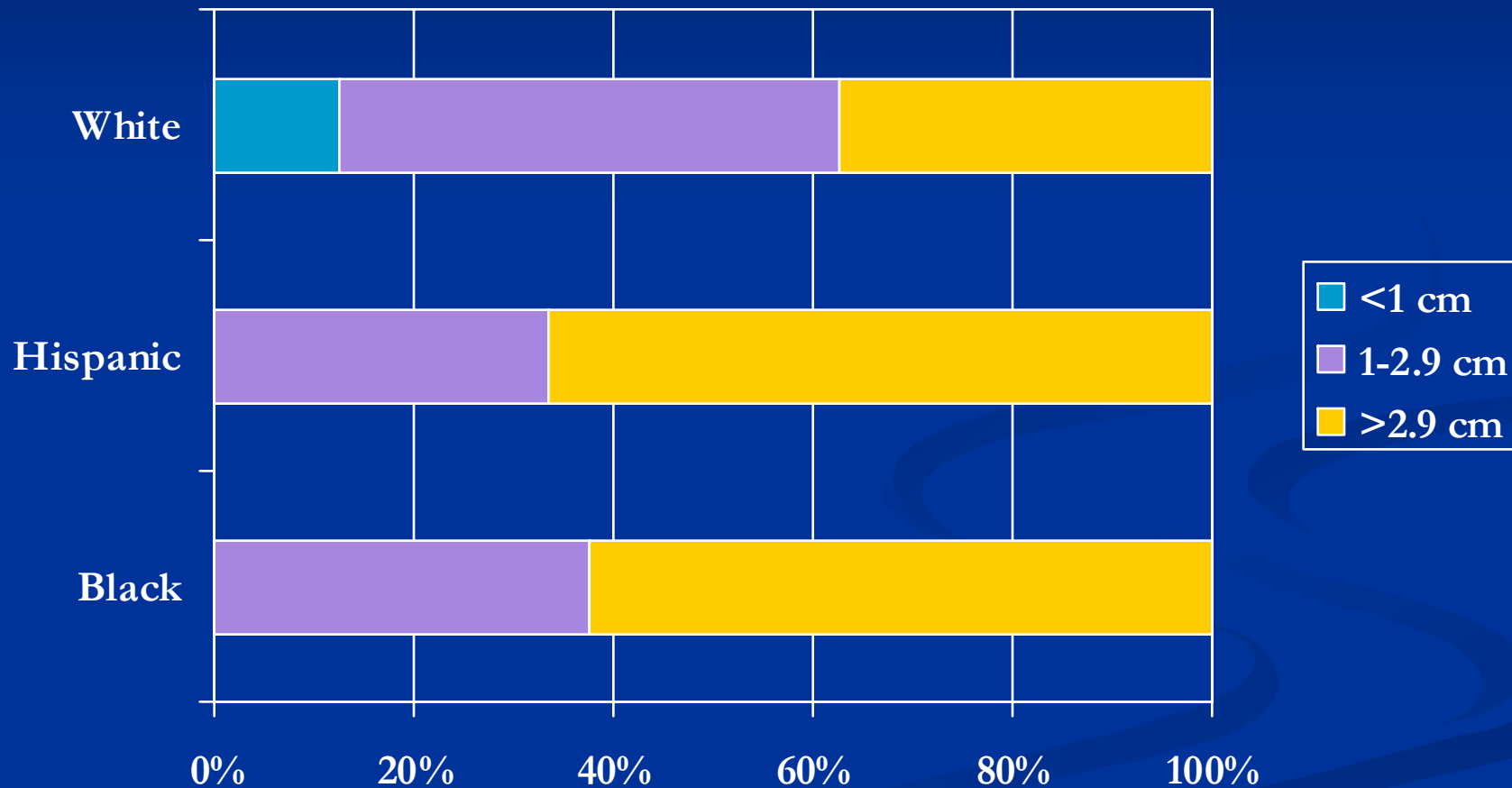
Proportion of Breast Cancer Patients Below the Age of 40 by Grade and Race



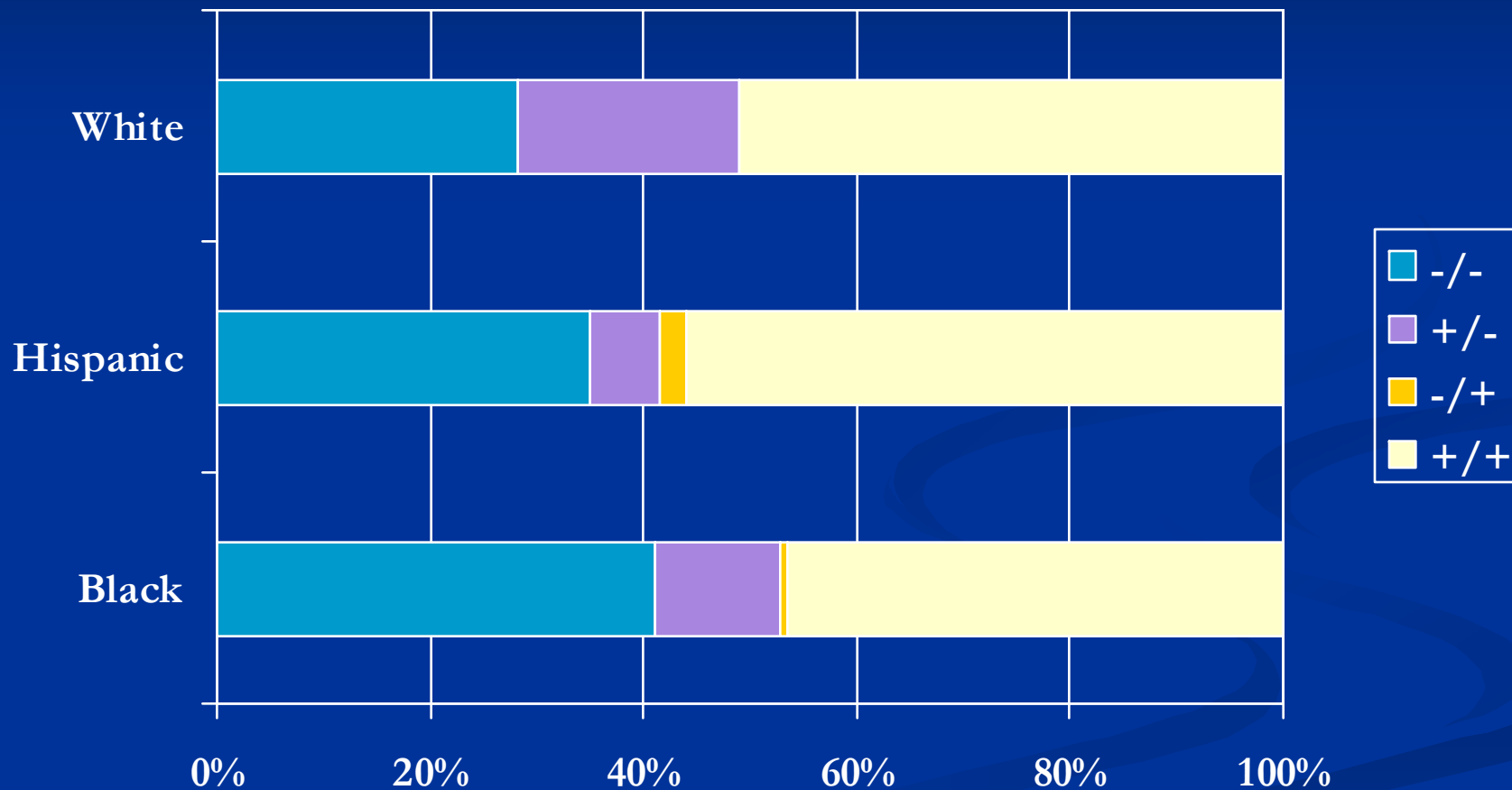
Proportion of Breast Cancer Patients by Size and Race



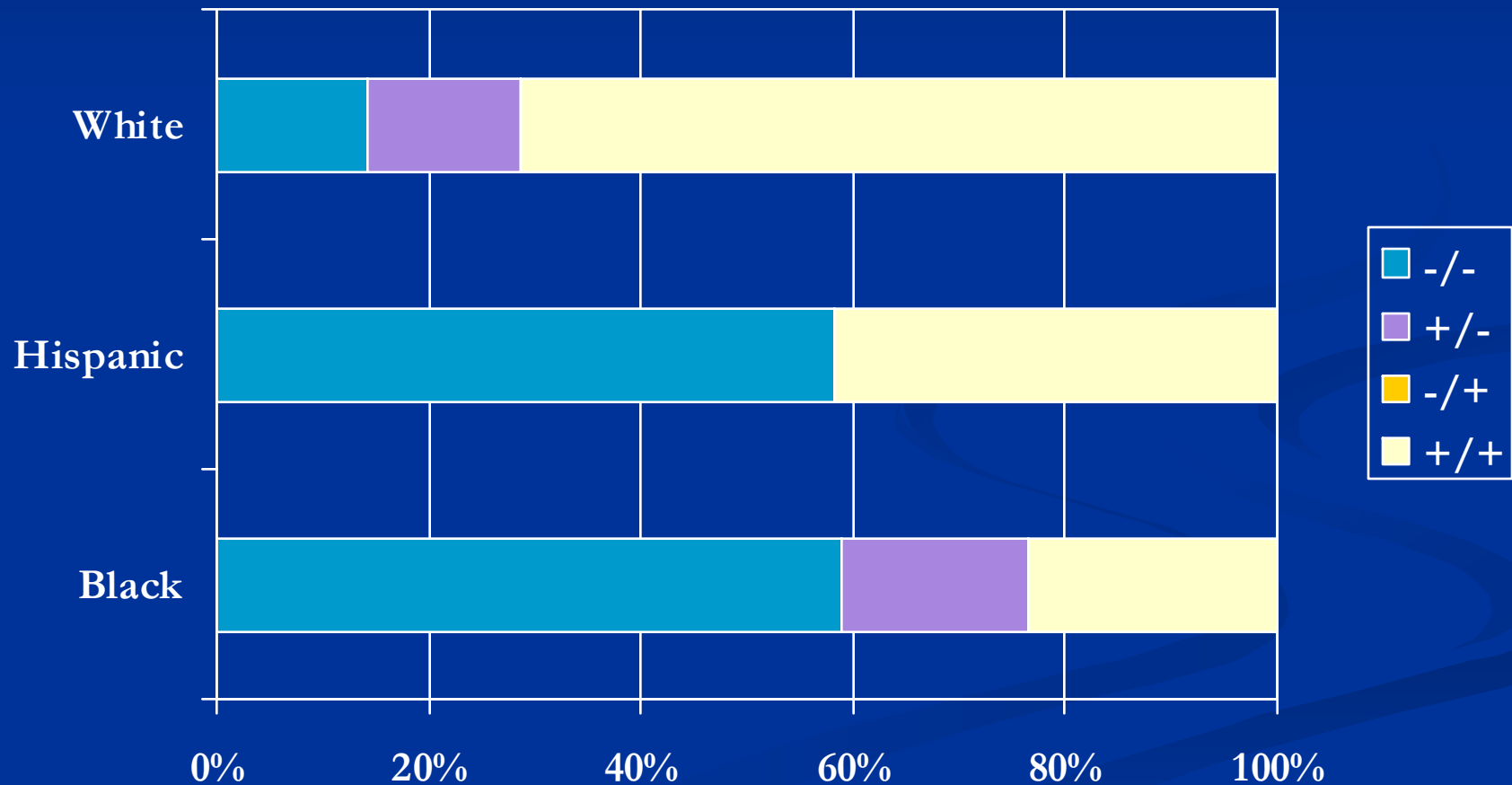
Proportion of Breast Cancer Patients Below the Age of 40 by Size and Race



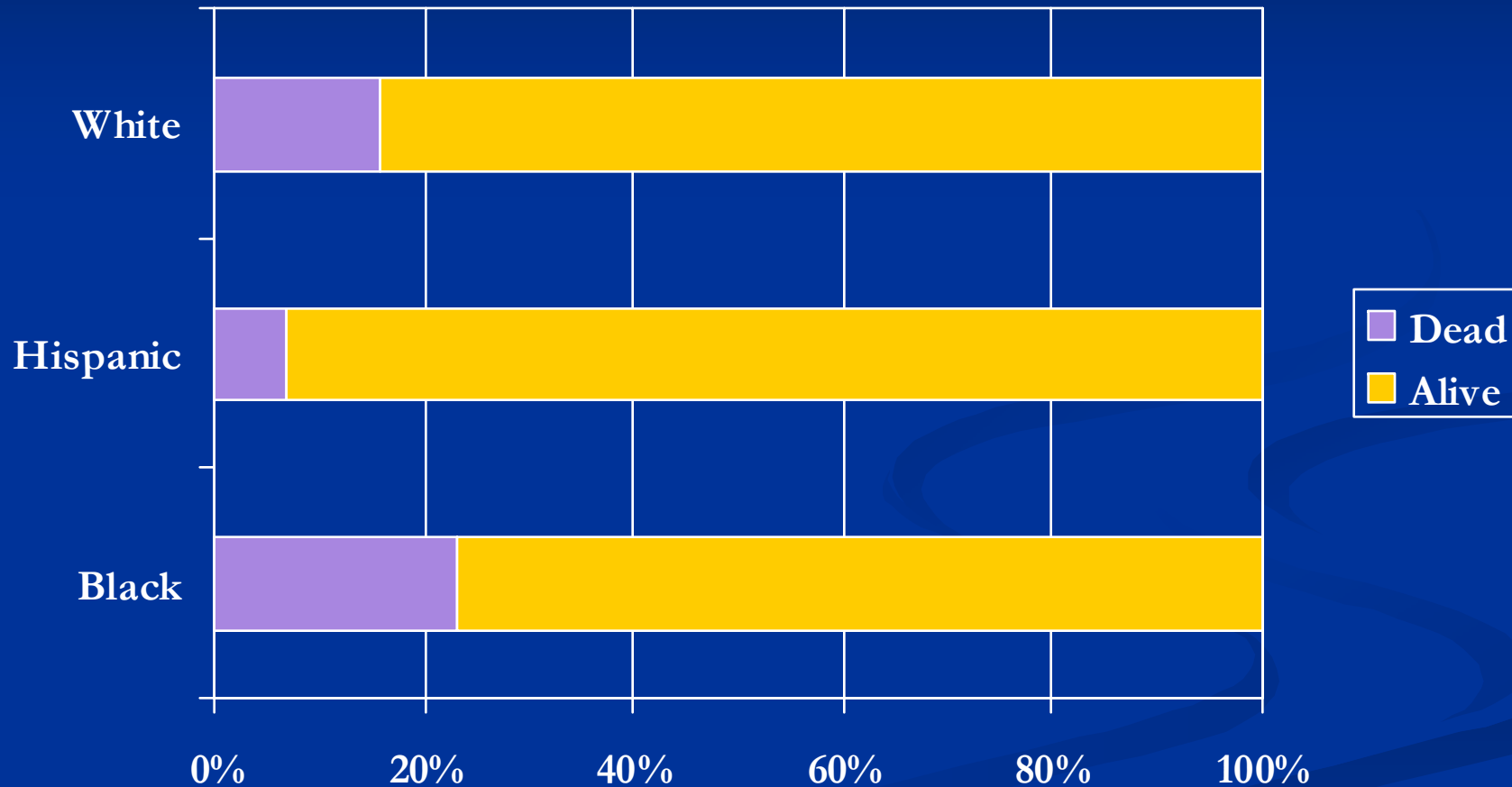
Proportion of Breast Cancer Patients by ER/PR status and Race



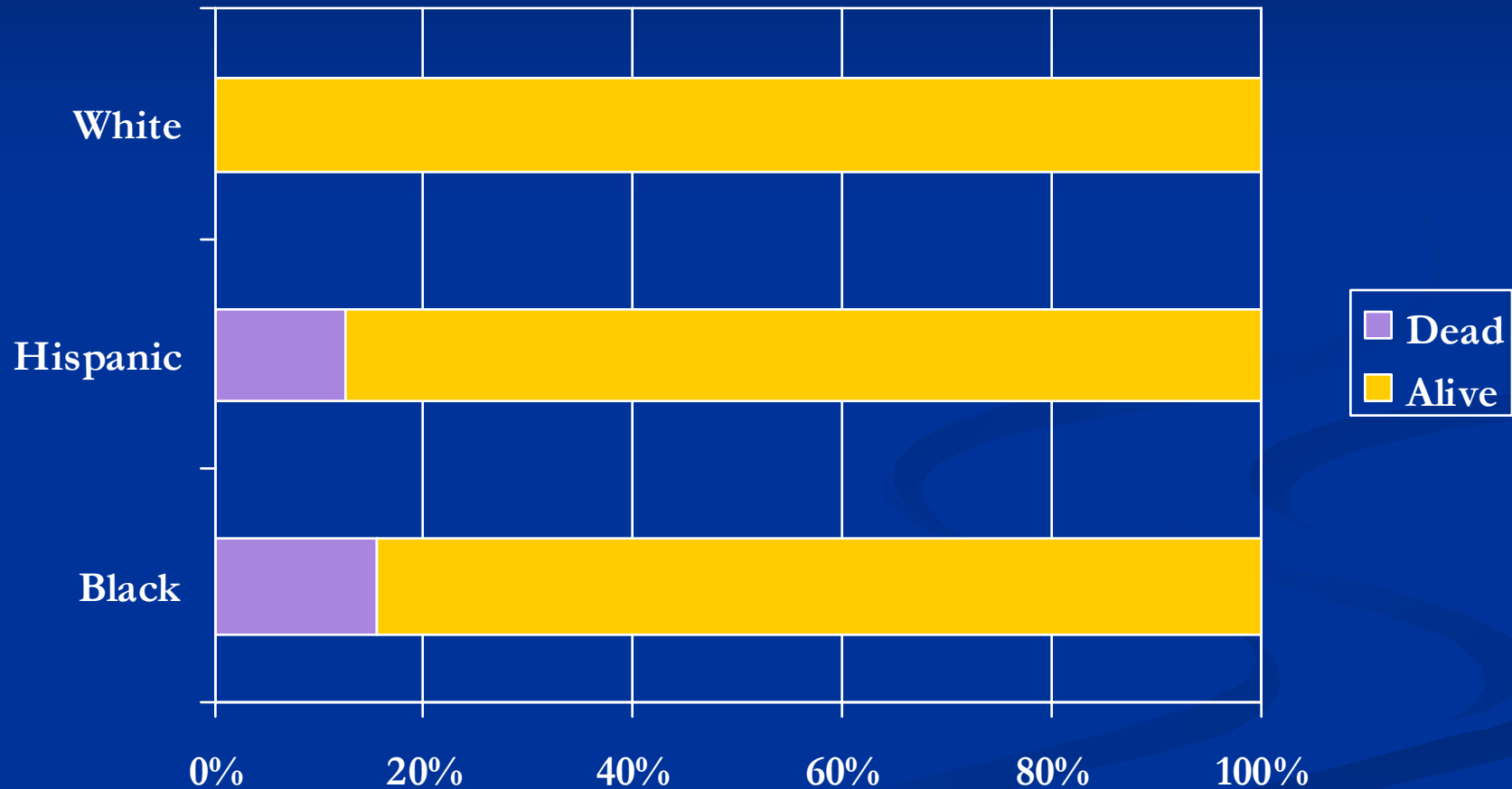
Proportion of Breast Cancer Patients Below the Age of 40 by ERPR status and Race



Proportion of Breast Cancer Patients by Status and Race



Proportion of Breast Cancer Patients Below the Age of 40 by Status and Race



Conclusions

- The proportion of Black, Hispanic and White women who were diagnosed with advanced stage disease varied (28%, 19% and 28% respectively).
- Our population had 11.7% of the breast tumors occur in women age <40.

Conclusions

- Younger (<40) Black and Hispanic women were more likely to be diagnosed with advanced stage disease than White women (29%, 38% and 25% respectively).
- Younger (<40) Black and Hispanic women were more likely to be diagnosed with a higher grade tumor, larger sized tumor, have more ER and PR negative tumors and die than White women.

Limitations

- Analysis based on cancer registry data
 - Limited by the variables available
 - In a validation study of charts from 2001-2004 looking at size and ER/PR status, Kappa statistic of 0.86 and 0.89 respectively
- Misclassification of race/ethnicity
 - Race/ethnicity taken from medical record and may involve subjective appraisals by hospital personnel .
- Small sample size

Future Research

- Approaching the New Jersey Department of Health and Senior Services to expand our look at the registry data from all of New Jersey for 1999-2006.
- Continuing to do patient chart reviews to validate registry data and to obtain more information on tumor biology and socioeconomic status.