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Award Number: DAMD17-03-1-0328

TITLE: Quality of Breast Cancer Care: the Role of Hispanic
Ethnicity, Language and Socioeconomic Position

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REPORT DATE: June 2005

TYPE OF REPORT: Annual Summary

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;
Distribution Unlimited

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20060110 091

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

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1. REPORT DATE (DD-MM-YYYY)

01-06-05

2. REPORT TYPE

Annual Summary

3. DATES COVERED (From - To)

06/01/04-05/31/05

4. TITLE AND SUBTITLE

Quality of Breast Cancer Care: the Role of Hispanic
Ethnicity, Language and Socioeconomic Position

5a. CONTRACT NUMBER

5b. GRANT NUMBER

DAMD17-03-1-0328

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

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5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

University of California, Los Angeles
Los Angeles, California 90024

8. PERFORMING ORGANIZATION REPORT
NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT
NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT

Approved for Public Release; Distribution Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT:

Abstract can be found on next page.

15. SUBJECT TERMS

breast cancer, quality of care, disparities, language, socioeconomic position

16. SECURITY CLASSIFICATION OF:

a. REPORT

U

b. ABSTRACT

U

c. THIS PAGE

U

17. LIMITATION
OF ABSTRACT

UU

18. NUMBER
OF PAGES

7

19a. NAME OF RESPONSIBLE PERSON
USAMRMC

19b. TELEPHONE NUMBER (include area
code)
301-619-7325

ABSTRACT

Socioeconomic position (SEP) refers to a range of dimensions that describe position in society, poverty, deprivation, wealth, occupation and social status. The goal of the proposed work is to inform our understanding of racial and ethnic disparities in breast cancer care and the impact of SEP and linguistic barriers. We received approval from the Contracting Specialist to begin work in July, 2004. This first year of work was spent obtaining study data and preliminary cleaning, variable creation, and descriptive analyses. We enriched existing data from a population-based sample of Los Angeles women diagnosed with breast cancer in 2000 with publicly available 2000 Census data elements. We identified census tracts classified as Poverty Areas ($\geq 20\%$ of population below the federal poverty level (FPL)); Extreme Poverty Areas ($\geq 50\%$ of population below FPL); Undereducated Areas ($>25\%$ of the adult population lacks high school degree); percentages of foreign-born, citizens, race/ethnic groups, and limited English-proficiency (LEP). These were linked to individual de-identified patient data by census tract. Preliminary findings show that treatment in hospitals with characteristics associated with high quality care varies by race/ethnicity and neighborhood characteristics. Preliminary results support the hypothesis that quality of care research should consider patient, healthcare setting, *and* neighborhood characteristics.

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Annual Summary Report Report: DAMD17-03-1-0328, "Quality of Breast Cancer Care: The Role of Hispanic Ethnicity, Language, and Socioeconomic Position," (Diana Tisnado, Ph.D., P.I.; Katherine L. Kahn, Faculty Mentor)

Introduction: Socioeconomic position (SEP) refers to a range of dimensions that describe absolute and relative position in society including not only income and education, but also poverty, deprivation, wealth, occupation and social status. Studies have found powerful relationships between SEP and various health indicators, including breast cancer outcomes. The specific aims of this DOD-funded study are to 1) enrich an existing, clinically extensive survey data set collected from a diverse population-based sample of women in Los Angeles County with breast cancer with data from the Year 2000 Census; 2) examine the relative importance of ethnicity, language, SEP and how they relate to the structural characteristics of settings in which women receive care, the care women do and do not receive, and, ultimately, to patient outcomes, particularly for the population-based sample of Hispanic and non-Hispanic white women with breast cancer; 3) to inform strategies to address racial and ethnic, linguistic, and socioeconomic disparities in breast cancer care. This study is observational in design, and will build upon an existing dataset from a cohort of women with newly diagnosed breast cancer (Los Angeles Women's Health Study (LAWHS), funded by the NCI, RAND IRB #k0048-98-01, current approval date 03/11/05-06/22/05), supplementing the already rich information about quality and outcomes of care with neighborhood level data from the Year 2000 census, as well as with enriched data regarding the structure of care that have been collected from physicians who care for women with breast cancer (Impact of Structure on Quality of Breast Cancer Care, funded by the California Breast Cancer Research Program, (CA BCRP), UCLA IRB#G01-11-093B, approval period 08/11/2004-10/13/2005). The ultimate goal of the proposed work is to inform our understanding of racial and ethnic disparities in breast cancer care and the contribution of SEP and linguistic barriers, particularly for the growing population of Hispanic women. This work has the potential to contribute to the body of knowledge for understanding why certain cohorts of women with breast cancer fare worse than others, and additionally to inform strategies to improve access to and quality of care for all women with breast cancer.

Body: Since our last report, we were pleased to report that we received notice regarding approval to begin work from the project's Contracting Specialist in July of 2004.

Prior to this approval, one final issue for the DOD's IRB was raised regarding Dr. Tisnado's participation on the study team of the CA BCRP-funded study. The CA BCRP-funded study was about to begin the process of fielding a survey to collect structure of care data from physicians who cared for breast cancer patients (the de-identified patient data make up the key dataset in the DOD-funded study). Certain of the data elements collected as part of the CA BCRP physician study such as physician characteristics were proposed to be included in analyses conducted as part of the DOD-sponsored study, as described in previous protocols submitted to the UCLA and Department of the Army Institutional Review Boards. As part of the CA BCRP study, Dr. Tisnado was originally slated to be involved in the fielding the physician survey, raising concerns as to whether the physicians' data to be used in the DOD-sponsored study could be characterized as de-identified data. In order to address this issue and to ensure that only de-identified data would be used in the DOD-sponsored study, it was agreed that Dr. Tisnado would not be permitted to be involved with the data collection efforts of the CA BCRP study, and that

she would not have any access to any version of the physician data set containing any physician identifying information. Additionally, as per previous Institutional Review Boards' requests, physicians were made aware that their data could be used in the DOD-funded study as well as the CA BCRP study in the approved study information sheet that accompanied their survey mailing.

Research Accomplishments To Date:

As planned in the approved statement of work, the first year of work has been spent obtaining study data, and embarking upon preliminary cleaning, creation of variables, and preliminary analyses as briefly outlined below:

- A de-identified version of the patient data set from the RAND LAWHS Study including geo-coded census tracts was transferred from RAND to the DOD study programmer at UCLA.
- We have enriched the existing data for this population-based sample of women diagnosed with breast cancer in Los Angeles County in 2000 with some publicly available 2000 Census data elements. Using the census data, we identified census tracts classified as Poverty Areas ($\geq 20\%$ of population below the federal poverty level (FPL)); Extreme Poverty Areas ($\geq 50\%$ of population below FPL); Undereducated Areas ($>25\%$ of the adult population lacks high school degree); obtained percentages of foreign-born, citizens, and race/ethnicity, and percentages of individuals from limited English-proficient (LEP) households. These variables have been linked these to individual observations in the de-identified patient data set by census tract. Further work in this area will include linkage of additional census variables and derivation of additional variables. The most appropriate specifications of these variables will be explored based on the literature, advice from a statistical consultant and empirical explorations.
- We have also identified characteristics associated with hospitals noted in the patient data set previously shown to influence quality of hospital care. Using publicly available hospital data we identified size, ownership (Public, Non-profit, For-profit), and teaching (High, Low, or None). We derived hospital breast cancer volume using a count of study patients seen at each hospital. We defined High Volume as $\geq 75^{\text{th}}$ percentile (35). We also identified hospitals with American College of Surgeons (ACOS)-approved cancer programs using publicly available data.
- Preliminary analyses have been conducted to explore the relationships among patient-level race/ethnicity, primary hospital characteristics, and neighborhood-level characteristics. We have explored distributions of these variables individually, and tested for bivariate associations among these characteristics using Chi-squares and GLM.
 - Results: The mean age for the 2643 study women treated in 96 hospitals was 66 (SD=14). The sample was diverse: 12% Black, 16% Hispanic, 4% Other and 68% White. All neighborhood characteristics were significantly associated with patient race/ethnicity ($p < 0.001$). Hospital characteristics varied with patient race/ethnicity and neighborhood characteristics ($p < 0.001$). Rates of treatment in Public hospitals varied: Hispanics (20%), Blacks (10%) Whites (6%), as did treatment in High Teaching hospitals: Blacks (24%), Whites (20%), Hispanics (14%). Nonwhites were underrepresented in High Volume and ACOS hospitals: 58% of Blacks and 50% of Hispanics (Vs 71% of Whites) were treated in High Volume hospitals,

and 36% of Blacks and Hispanics (Vs 45% of Whites) treated in ACOS hospitals. Patients from Poverty, Extreme Poverty, Undereducated Areas, and areas with higher proportions of foreign-born, non-citizens, and LEP were disproportionately treated in Public and Teaching hospitals ($p < 0.0001$). Patients from Poverty Areas were underrepresented in High Volume hospitals compared with other patients (48% Vs 70%), as were patients from Undereducated Areas (54% Vs 74%). We conclude from these preliminary findings that hospitals with characteristics associated with high quality care varies by race/ethnicity and neighborhood characteristics. These preliminary results support the hypothesis that quality of care research should consider patient, healthcare setting, *and* neighborhood characteristics.

- In terms of training and mentoring activities, Dr. Tisnado meets several times at least once per week with her mentor regarding research plans and progress. She also attends monthly mentoring meetings led by senior faculty in her department for fellows and junior faculty, and weekly departmental seminars.
- Dr. Tisnado has also attended several presentations locally and at national conferences regarding studies of disparities research addressing the topics of:
 - accessing and using census data for local demographic analyses
 - developing more sophisticated conceptual frameworks for disparities research
 - indices for estimating neighborhood-level socio-economic characteristics
 - estimating the impact of problems with cancer prevention and treatment delivery on racial/ethnic disparities in years of potential life lost
 - methods for incorporating measures of the impact of geography on disparities in the delivery of appropriate treatment
 - advanced methods for controlling for differences in health status between racial/ethnic groups to more accurately identify inappropriate versus appropriate treatment

Reportable Outcomes:

- Selected results of the preliminary analyses were presented in an abstract and poster at the annual Era of Hope Conference in 2005 (Unfortunately, Dr. Tisnado was unable to attend in person as planned due to a family emergency involving the hospitalization of her husband).

Conclusions/ Next Steps: Additional analyses in the coming months will examine associations between patient-level characteristics and additional census-tract level characteristics and alternative specifications of those variables, and Dr. Tisnado will begin exploration of the multivariate modeling methods to be used in the study of the relative impact of patient and census-level characteristics on enriched measures of quality and outcomes of breast cancer care to be derived from the patient-level data on the subset of women who were provided enriched survey data as part of the original LAWHHS study.