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TITLE: A Neighborhood-Based Intervention to Reduce Prostate Cancer Disparities

PRINCIPAL INVESTIGATOR: Amy Leader, PhD

CONTRACTING ORGANIZATION: Thomas Jefferson University
Philadelphia, PA 19107

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6. AUTHOR(S)
Charnita Zeigler-Johnson, Ph.D.

Amy Leader, DrPH

E-Mail:Charnita.zeigler-johnson@jefferson.edu

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Thomas Jefferson University University of Pennsylvania

1020 Walnut Street, Suite 1 Philadelphia, PA 19104
Philadelphia, PA 19107

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14. ABSTRACT

Background: The goal of this study is to develop an educational intervention about prostate cancer (PCa). The intervention will be targeted to at-risk men in neighborhoods with poor PCa outcomes.

Methods: PCa patient addresses (n=10750) from the Pennsylvania cancer registry (2005-2014) were geocoded and aggregated to create standardized incidence ratios (SIRs) and standardized mortality ratios (SMRs) for Philadelphia census tracts (CT). Cancer stage and grade were combined to generate an aggressiveness variable. For each CT containing 300+ men age 35+, a PCa risk composite variable was created by adding the mean-centered SMR, SIR, and aggressiveness variables. CTs with the highest risk composite score were mapped and analyzed by the Steering Committee to choose neighborhoods.

Results: Of the CTs in Philadelphia with the top 13 PCa risk composite scores, 11 were in West Philadelphia, North Philadelphia, and Northwest Philadelphia. These areas (combined adjacent neighborhoods) have been chosen for the PCa intervention.

Conclusion: The selection of neighborhoods in which to conduct PCa interventions was based on 1) ranking of CTs using a PCa risk composite score determined by combining mean SIR, SMR, and aggressiveness. These methods could be utilized by researchers and public health stakeholders when selecting neighborhoods for public health interventions.

15. SUBJECT TERMS
Prostate Cancer; Neighborhoods; SIR; SMR; Focus Groups

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1. Introduction

Research shows that men who reside in low-income neighborhoods are less likely to be screened for PCa and more likely to have aggressive forms of PCa. Given these facts, it can be surmised that men who live in economically deprived neighborhoods are at high risk for poor PCa outcomes due to delayed timing of detection and the nature of the disease. Given that screening recommendations present conflicting guidelines while suggesting that additional research of high risk populations is needed, many men, particularly those living in low-resource neighborhoods, are not equipped to make informed decisions about screening. The neighborhood can serve as a key setting to recruit at-risk men for a neighborhood-based study that aims to increase knowledge and informed decision making about PCa screening. This study has the potential to lead to higher informed decision making about PCa screening in populations of men that are most susceptible to PCa, perhaps reducing PCa disparities related to late disease presentation. The short-term goal of this project is to increase PCa awareness and prompt shared decision making about screening. The long-term goal is to prevent advanced disease and decrease PCa mortality in high risk neighborhoods. We plan to eliminate barriers to PSA screening and provide men with tools that can be used to engage themselves with health professionals and neighborhood members in caring for future health concerns. By targeting high risk neighborhoods (those with the highest rates of advanced PCa in Philadelphia), we are most likely to impact the population that will benefit the most from PCa screening and targeted intervention focused on PCa education and the informed decision making process.

Specific Aim 1: To identify neighborhoods with disproportionately high rates of advanced prostate cancer and describe patient- and neighborhood-level risk factors associated with the high risk neighborhoods

Specific Aim 2: To develop, using a mixed methods approach, a targeted educational intervention about prostate cancer for men who live in high risk neighborhoods

Specific Aim 3: To test the impact of the targeted intervention on levels of knowledge, anxiety, and informed decision making about PCa screening

Sub-aim 4: To observe the rates of PCa screening in the intervention and control groups

2. Keywords

Prostate Cancer; Neighborhoods; SIR; SMR

3. Accomplishments

3.a. MAJOR GOALS OF THE PROJECT / RELATED ACCOMPLISHMENTS

Statement of Work – Year 1

Major Goal 1: Quantitative Analysis

- IRB approval
    - IRB approval was obtained initially June 2015 and renewed May 2016. (SOW date: November 2015)
- Obtain PA Cancer Registry, CHDB and Philadelphia Mortality data
    - These data were obtained from the PA Cancer Registry and the Policy Map program during the summer/fall of 2015. (SOW date: January 2016)
- Geocode and Map cases
    - Geocoding and mapping of prostate cancer cases was completed by team member Dr. Russell McIntire in March 2016. (SOW date: March 2016)
- Conduct Aim 1 Analysis
    - The goal of aim 1 was to identify high risk neighborhoods. This milestone was completed July 2016. A number of steps were taken to identify the highest risk neighborhoods. After geocoding patient addresses to the census-tract level, multiple maps of the data were created to indicate prostate cancer incidence and mortality. Using SEER data, mean age-standardized incidence (SIR) and mortality rates (SMR) were calculated for each census tract. A composite rate was developed by our team to select high risk census tracts of the city based upon combined mean SIR, SMR and tumor aggressiveness. High risk Philadelphia neighborhoods encompass the highest risk census tracts. (SOW date: May 2016)
    - Patient addresses were geocoded to the census tract level. Maps were created to identify high and low risk census tracts in Philadelphia. Figure 1 shows the number of high stage (regional + distant) prostate cancer cases diagnosed by census tract in Philadelphia (2005-2014). High stage incidence varied greatly in the city, from 0-7 high stage cases per census tract. Men diagnosed with regional and distant stage are not eligible for active surveillance protocols, and those diagnosed at distant stage are at increased risk for prostate cancer mortality. The map identifies which census tracts are enclaves for more advanced prostate cancer. Figure 2

shows the location of prostate cancer high risk census tracts. The risk composite score was developed by our team members to assist with selection of high risk neighborhoods for focus groups and intervention testing. The risk composite is the sum of mean age standardized incidence rate (SIR), age standardized mortality rate (SMR), and mean tumor aggressiveness (coded tumor Gleason score + stage). The score was calculated for each census tract to identify geographic areas with higher than expected prostate cancer incidence and mortality and more aggressive disease patterns. Figure 3 shows the location of the 4 selected neighborhoods for our focus groups and intervention. The neighborhoods include the high risk census tracts identified with the risk composite score. They are located in the Northwest (East Mount Airy, West Oak Lane, Germantown), North (Tioga, West Allegheny, Strawberry Mansion), and West (Wynnefield, Overbrook and Cobbs Creek, Cedar Park) regions of the city.

- Tables were created to characterize prostate cancer patients in the PA Cancer Registry (Philadelphia, Table 1). Frequencies and median values of patient characteristics were computed. The total number of patients was 10,802. The median age was 65. Fifty-seven percent were married at diagnosis. The majority of patients were Black (44%), White (33%), and Hispanic (9%). The remainder was Asian, mixed race, or other. The majority of patients (54%) had an intermediate or high Gleason score at diagnosis. Seventeen percent was diagnosed with regional or distant stage prostate cancer. Table 2 compares data from the PA Cancer Registry across the three primary race/ethnic groups in Philadelphia. The Kruskal-Wallis test was used to examine age medians. Chi-square tests were used to examine categorical variables. Significant differences were observed for all variables of interest ($p<0.001$). Black and Hispanic patients were younger and less likely to be married compared to White patients. Tumor grade and stage were highest among Black patients.

- Graphs were created to examine prostate cancer trends by race for Philadelphia. Age-adjusted incidence and mortality rates were obtained from the PA Cancer Registry website. The percent change over time was calculated by our team members. Trends in proportions were calculated from geocoded data. Logistic regression models adjusting for age were calculated to determine significant changes in proportions over time. Interactions between race and year were used to examine differences over time for proportion of advanced stage and grade.

Figure 4 shows comparable decreases in prostate cancer incidence rates for all race/ethnic groups over time (percent change for All cases=-31%; White=-28%; Black=-33%; Hispanic=-38%). For mortality, there were some differences. Prostate cancer mortality was rare among Hispanics, so mortality rates were not calculated. While there was a 32% decrease in prostate cancer-specific mortality for white men and 14% decrease among all men, only a 5% decrease was observed for Black men. (Figure 5)

While the proportion of White patients in Philadelphia did not differ over time (OR=0.99, 95% CI=0.97-1.00), the proportion of African Americans increased (OR= 1.03, 95% CI=1.02-1.05) and the proportion of Hispanics decreased (OR=.0.95, 95% CI=0.93-0.97). (Figure 6) Over time, there was an increase in the proportion of high grade (Gleason score 7-10) Hispanic cases (OR=1.11, 95% CI=1.05-1.18), but no significant changes for high tumor stage (regional and distant). (Figures 7-8) Among older men (age 65+), there were no significant differences in the proportions over time. However, among younger men, we observed that a significant increase in Black high stage cases (OR=1.07, 95% CI=1.01-1.13) and Hispanic high grade cases (OR=1.14, 95% CI=1.05-1.23). (Figures 9-10)

A request has been sent to the PA Cancer Registry to update tumor grade data for 2014. Per conversations with the PA Cancer Registry, data collection/updating may not yet be complete for 2014.

- Tables comparing features of census tracts grouped by SIR and SMR were created using Kruskal-Wallis for continuous variables and chi-square tests for categorical variables. Higher (>1.00) SIR and SMR indicated that rates were higher than expected. Lower (≤ 1.00) SIR and SMR indicated lower than expected rates. We examined patient-level and neighborhood-level variables by SIR and SMR. Census tracts with higher SIR were younger at diagnosis (p=0.015), had a higher proportion of Black patients (<0.001), and higher tumor grade (<0.001). (Figure 3) There was also a lower number of men and lower median income in highest SIR census tracts. The percent of residents living in poverty was highest among the lowest SIR census tracts. (Table 3)

  Regarding low and high SMR areas, there were no differences in patient age. (Table 4) However, all other variables of interest were significantly different (p<0.001). High SMR areas were more Black and unmarried. There was a higher percentage of high grade and high stage prostate cancer at diagnosis. There were fewer men, lower median income, and higher poverty among high SMR census tracts.

Figure1. Number of High Stage Cases per Census Tract in Philadelphia (2005-2014)

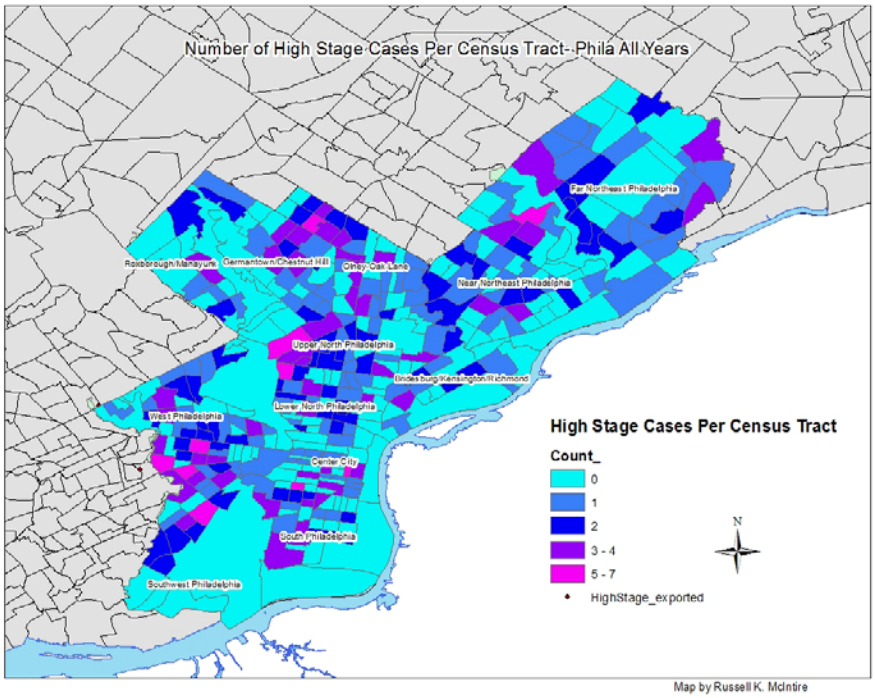

Figure 2. Risk Composite Scores for Philadelphia Census Tracts (2005-2014)

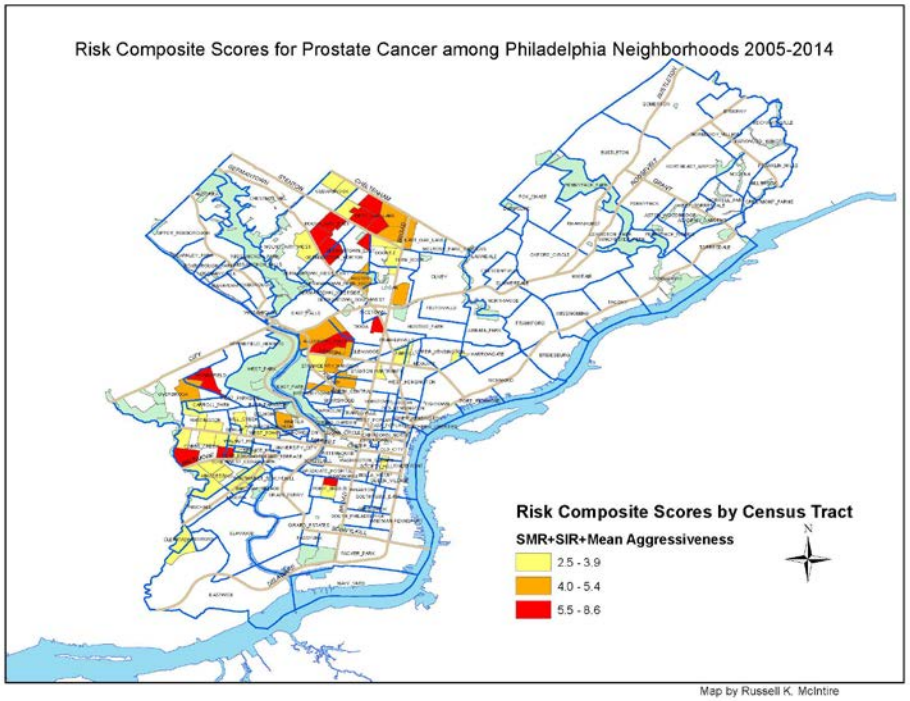

Figure 3. Identification of 4 High Risk Neighborhoods

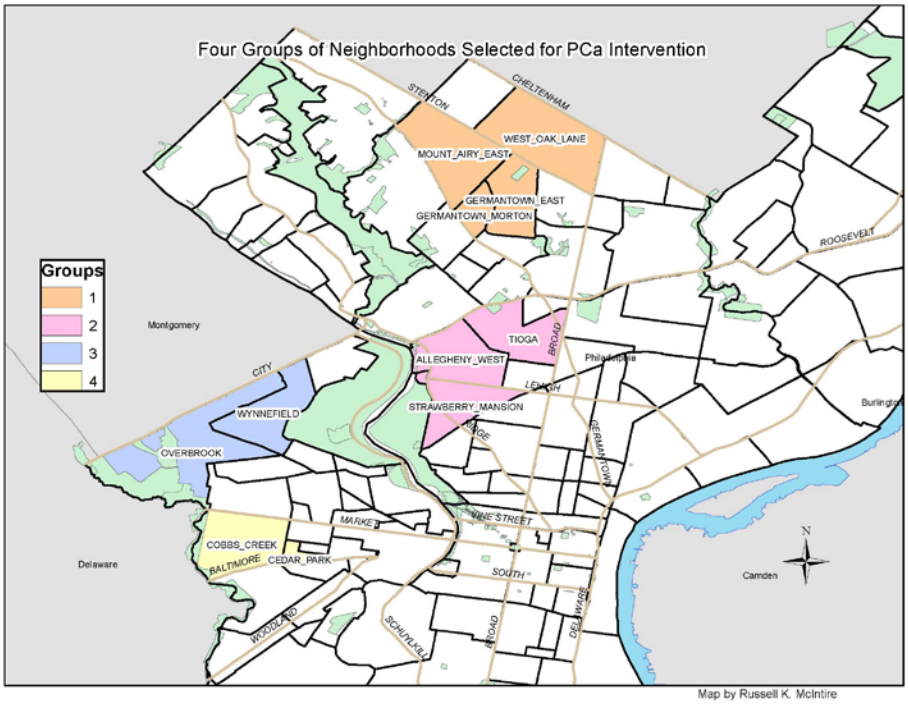

Table 1: Demographics of Philadelphia Prostate Cancer Patients (2005-2014)

Preliminary Results from PA Cancer Registry (2005-2014) -- Demographics

Variables		All Cases N=10,802
Median age		65 (range 31-103)
Married		2692 (57%)
Race	White	3575 (33%)
	Black	4711 (44%)
	Hispanic	993 (9%)
Tumor Grade 7-10		5271 (54%)
Tumor Stage	Regional and Distant	1615 (17%)
Tumor Stage	Distant	605 (6%)
Aggressive Tumor	regional+ high grade; distant stage	1193 (14%)

Table 2: Demographics of Philadelphia Prostate Cancer Patients by Race

Demographics of Philadelphia Prostate Cancer Patients: Major Race Groups

Characteristics	White (n=3575)	Hispanic (n=993)	African American (n=4711)	P-value
Median Age (y)	67	63	64	<0.001
% Married	65%	57%	51%	<0.001
% Tumor Grade≥7	49%	55%	58%	<0.001
% Tumor Stage Regional or Distant	16%	16%	21%	<0.001
% Tumor Stage Distant	6%	3%	9%	<0.001
% Aggressive Tumor (regional+ high grade; distant stage)	12%	13%	16%	<0.001

Figure 4: Trends in Prostate Cancer Incidence among Philadelphians

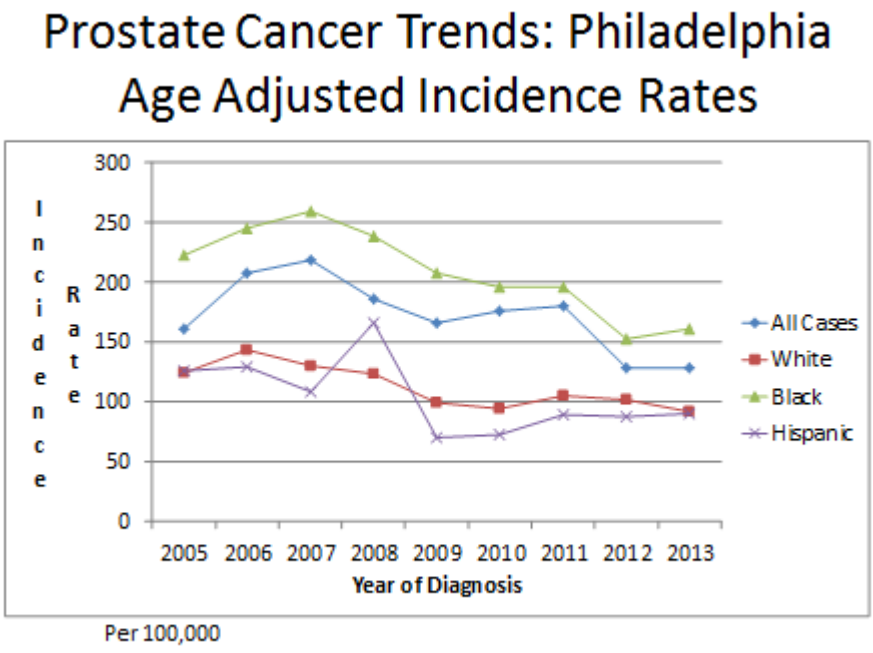

Figure 5: Trends in Prostate Cancer Mortality among Philadelphians

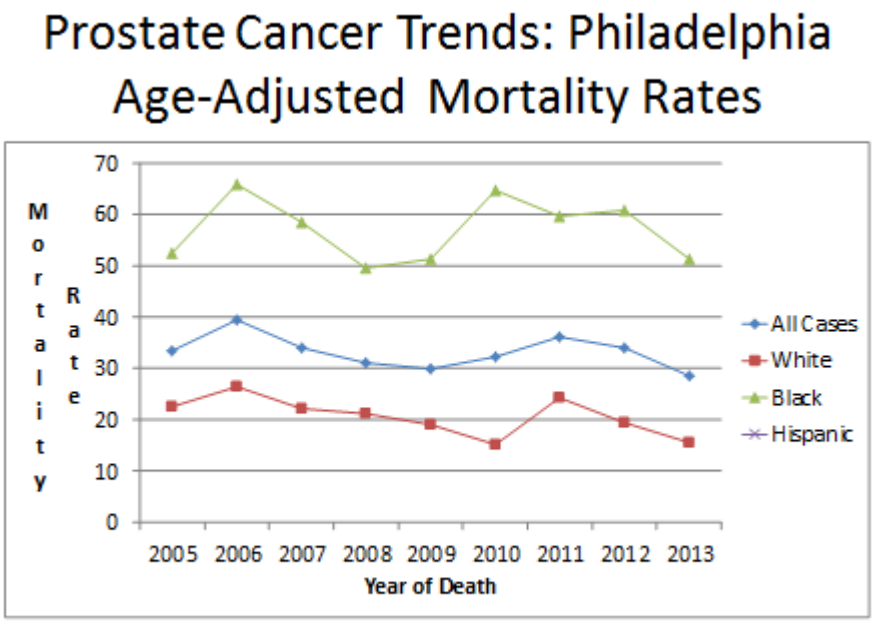

Figure 6: Proportion of Incident Cases by Race/Ethnic Group (Philadelphia)

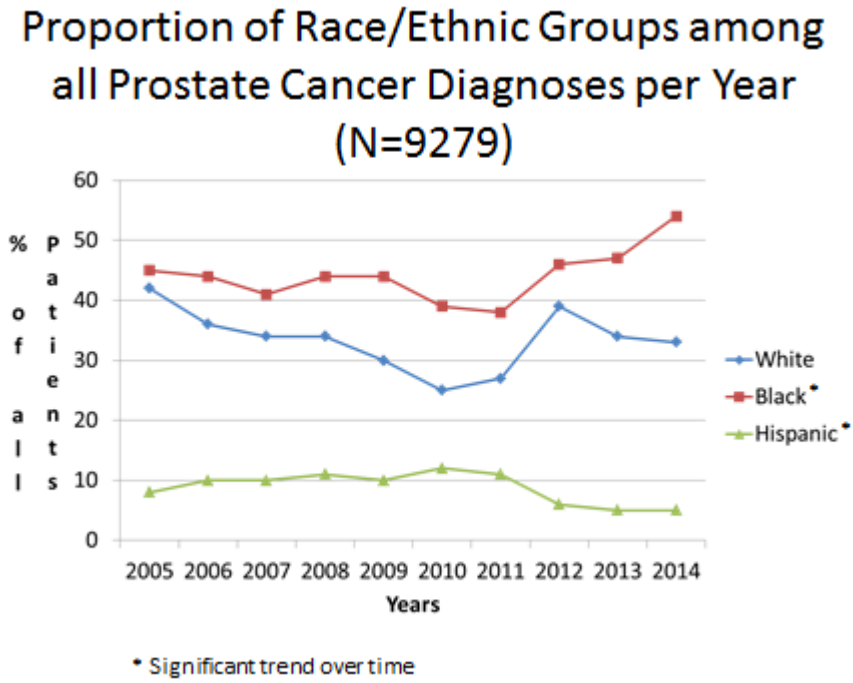

Figure 7: Proportion of Patients Diagnosed with High Grade Prostate Cancer

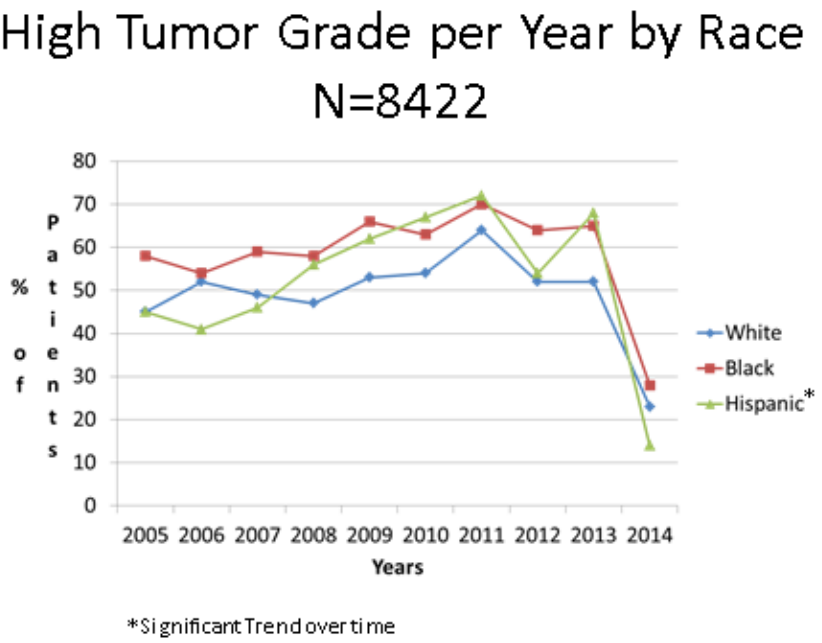

Figure 8: Proportion of Patients Diagnosed with High Stage Prostate Cancer

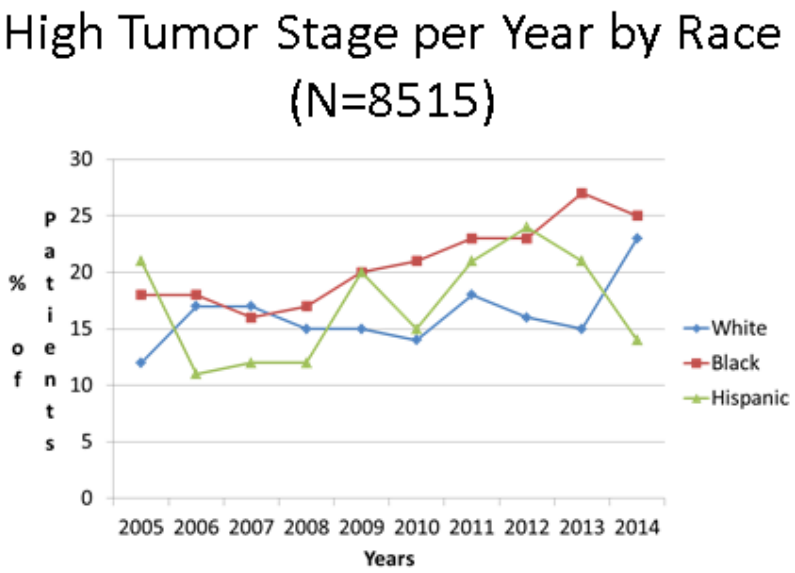

Figure 9: Proportion of Patients <65 Years Diagnosed with High Stage Prostate Cancer

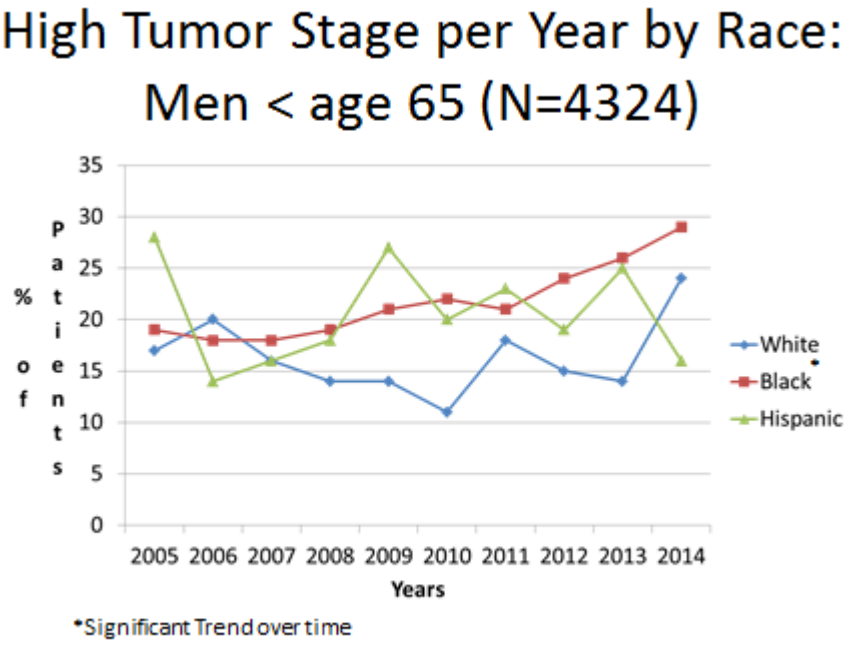

Figure 10: Proportion of Patients <65 years Diagnosed with High Grade Prostate Cancer

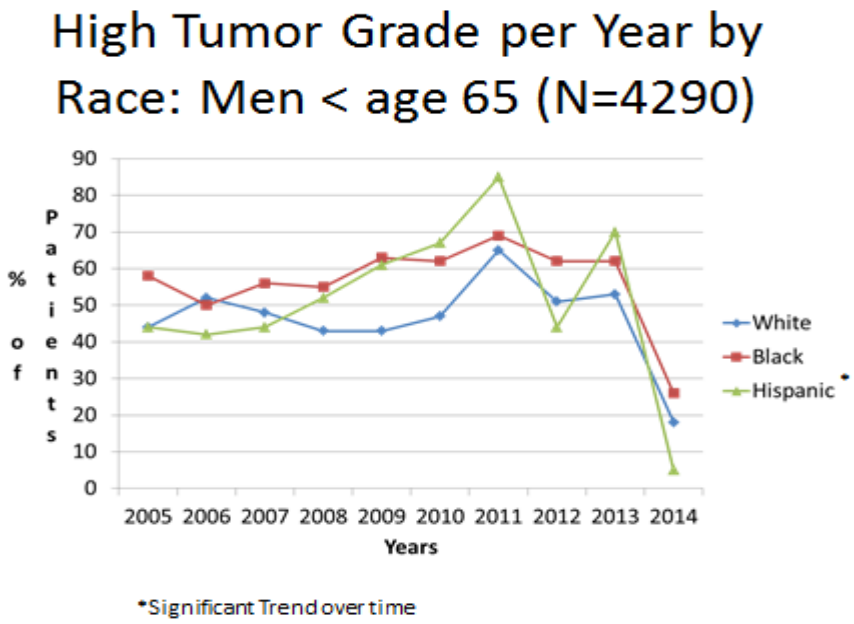

Table 3: Comparison of SIR groups, PA Cancer Registry 2005-2014, Philadelphia

Variables of Interest		Standardized Incidence Rates				p-value
		0.14-0.50 (N=34)	0.51-1.00 (N=1970)	1.01-2.00 (N=7047)	2.01-5.00 (N=949)	
Median Age, years (IQR)		67 (58-70)	66 (59-73)	65 (58-72)	65 (58-71)	**0.015**
Race/Ethnicity	White	8 (24%)	1107 (56%)	2103 (30%)	58 (6%)	**<0.001**
	Black	20 (59%)	345 (18%)	3332 (47%)	699 (74%)	
	Native American	0	1 (<1%)	3 (<1%)	0	
	Asian	0	76 (4%)	71 (1%)	1 (<1%)	
	Hispanic	3 (9%)	193 (10%)	628 (9%)	103 (11%)	
	Other	0	22 (1%)	80 (1%)	1 (<1%)	
	Unknown	3 (9%)	226 (11%)	830 (12%)	86 (9%)	
Married		7 (39%)	507 (51%)	1740 (48%)	251 (47%)	0.061
PCa-specific mortality		1 (3%)	117 (6%)	446 (6%)	71 (7%)	0.507
All mortality		4 (12%)	341 (17%)	1294 (18%)	192 (20%)	0.249
Tumor Grade	High	17 (55%)	881 (49%)	3462 (54%)	505 (59%)	<0.001
Tumor Stage	Localized	28 (88%)	1417 (83%)	5064 (83%)	684 (80%)	0.468
	Regional	2 (6%)	180 (11%)	650 (11%)	102 (12%)	
	Distant	2 (6%)	108 (6%)	375 (6%)	66 (8%)	
Tumor Stage	High	4 (13%)	288 (17%)	1025 (17%)	168 (20%)	0.192
Tumor Aggressiveness	Localized stage and High Grade	11 (37%)	765 (46%)	2589 (45%)	328 (39%)	**0.005**

	Regional stage or High Grade	16 (53%)	633 (38%)	2518 (44%)	351 (43%)	
	Regional stage and High grade	1 (3%)	144 (9%)	517 (9%)	88 (11%)	
	Distant Stage	2 (7%)	108 (7%)	375 (6%)	66 (8%)	
Neighborhood Variables	Median number of males in census tract (IQR)	850 (623-850)	1045 (790-1361)	1010 (775-1276)	848 (653-931)	**<0.001**
	Median income (IQR)	37716 (35862-39419)	44696 (36214-56912)	38862 (32297-47120)	34196 (31646-38109)	**<0.001**
	Percent Poverty (IQR)	40 (23-40)	17 (11-27)	21 (11-34)	27 (19-36)	**<0.001**

Table 4: Comparison of SMR groups, PA Cancer Registry 2005-2014, Philadelphia

Variables of Interest		Standardized Mortality Rates				p-value
		0-0.50 (N=4926)	0.51-1.00 (N=3052)	1.01-2.00 (N=2001)	2.01-6.00 (N=624)	
Median Age, years (IQR)		66 (59-72)	65 (58-72)	65 (58-72)	65 (58-72)	0.244
Race/Ethnicity	White	2317 (48%)	870 (29%)	283 (14%)	49 (8%)	**<0.001**
	Black	1292 (27%)	1494 (49%)	1288 (64%)	455 (73%)	
	Native American	1 (<1%)	2 (<1%)	1 (<1%)	0	

	Asian	98 (2%)	39 (1%)	17 (<1%)	2 (<1%)	
	Hispanic	385 (8%)	309 (10%)	215 (11%)	58 (9%)	
	Other	65 (1%)	21 (1%)	21 (1%)	7 (1%)	
	Unknown	668 (14%)	316 (10%)	176 (9%)	53 (8%)	
Married		1237 (49%)	783 (50%)	455 (44%)	142 (43%)	**<0.001**
PCa-specific mortality		141 (3%)	224 (7%)	205 (10%)	100 (16%)	**<0.001**
All mortality		699 (14%)	592 (19%)	459 (23%)	177 (28%)	**<0.001**
Tumor Grade	High	2291 (51%)	1508 (54%)	999 (56%)	314 (58%)	**<0.001**
Tumor Stage	Localized	3464 (85%)	2210 (83%)	1411 (80%)	443 (80%)	**<0.001**
	Regional	442 (11%)	289 (11%)	200 (11%)	49 (9%)	
	Distant	190 (5%)	178 (7%)	151 (9%)	64 (12%)	
Tumor Stage	High	632 (15%)	467 (17%)	351 (20%)	113 (20%)	**<0.001**
Tumor Aggressiveness	Localized stage and High Grade	1775 (45%)	1089 (42%)	678 (40%)	203 (38%)	**<0.001**
	Regional stage or High Grade	1644 (41%)	1091 (42%)	710 (42%)	233 (43%)	
	Regional stage and High grade	356 (9%)	237 (9%)	159 (9%)	38 (7%)	
	Distant Stage	190 (5%)	178 (7%)	151 (9%)	64 (12%)	
Neighborhood Variables	Median number of males in census tract (IQR)	1071 (796-1365)	1018 (761-1321)	909 (727-1180)	780 (609-991)	**<0.001**

	Median income (IQR)	44596 (35793-52182)	38862 (32480-44375)	36116 (31414-39714)	31833 (30950-40408)	**<0.001**
	Percent Poverty (IQR)	15 (8-27)	21 (11-31)	28 (16-37)	34 (25-40)	**<0.001**

- Milestones
    - Achieved: Identification of 4 high risk neighborhoods (in Northwest, North and West Philadelphia); Creation of maps of high risk neighborhoods; Characterization of high risk neighborhoods
    - In progress: Manuscript of prostate cancer and neighborhood characteristics. Major Goal 2: Elicitation Phase

- Establish contacts in Community Settings
    - Community settings were established during the summer of 2016. We reached out to and established relationships with community organizations in each of the 4 identified neighborhoods in Philadelphia. Working with MEE Productions, Inc. and the Penn Center for Community Health Workers, we were able to use these community contacts (churches, non-profits, etc.) as sites for conducting the focus groups.
- Recruit for Focus Groups
    - MEE Productions, Inc. served as the recruitment coordinating center for the focus groups. Flyers announcing the focus groups with their times and locations were circulated through our community contacts and other spaces throughout the neighborhoods in Philadelphia where eligible men might see them. All men lived within (or within 1 mile of) the borders defined by the research team, based on the home addresses provided during the screening process. Participants were required to be between 40 and 69 years of age. Men with a previous diagnosis (and/or treatment) for prostate cancer were excluded from participation in the groups. In total, 26 men were recruited to and attended one of the four focus groups.

- Develop Focus Group Questions
    - The focus group script and survey questions were developed during the summer of 2016. The goals of the focus group were to: (1) understand the current attitudes, cultural influences, social values and barriers around prostate health, (2) understand how men view their neighborhood and its influence on their health, and (3) gather input from men about how an intervention should "look and feel" in their neighborhood. All members of the research team, as well as the study consultants, had input on the questions being asked in the focus groups.
- Conduct Focus Groups
    - Focus groups were completed September 2016. Twenty-six men participated in the focus groups: 7 from West Philadelphia/Overbrook, 7 from Lower North Philadelphia, 7 from Germantown/West Oak Lane, and 5 from Southwest Philadelphia/Cobbs Creek. The mean age of the men was 52 years old and all were African American (reflecting the population of the neighborhoods). Seventeen were single and 9 were married or living with a partner. Eleven had a high school diploma, while the remainder (n=16) had completed some college, vocational training, or technical school. Six men were employed full time, 6 were retired, 5 were on disability coverage, and the remainder (n=10) were employed part time or were looking for work. This group of men was generally health conscious, with 19 of the 27 reporting that they see their health care provider regularly. Fifteen of the 27 reported having no family history of prostate cancer (those with a personal history of prostate cancer were excluded), while 12 had a brother, father, or uncle who had experienced prostate cancer.
    - Preliminary qualitative analysis is underway. Through this research, the team now begins to understand both the arguments and the effective counter-arguments that need to be reflected in the intervention's educational messages. The audience research has uncovered men's knowledge and attitudes about prostate cancer and the cultural/ environmental realities that impact their health behaviors and decision-making about prostate cancer screenings and treatment. The research team has gathered in-depth information that could increase the number of Philadelphia men who understand their personal risk of prostate cancer and who access community-based screening and treatment programs, with the ultimate goal of increasing their survival rates.

3.b. OPPORTUNITIES FOR TRAINING AND PROFESSIONAL DEVELOPMENT

Nothing to report.

3.c. DISSEMINATION TO COMMUNITIES OF INTEREST

Nothing to report.

3.d. PLANS FOR THE NEXT REPORTING PERIOD

We plan to continue analyses related to Aim 1 to further characterize the neighborhoods of interest and compare them to low risk areas. We will also code and analyze the qualitative data from the focus groups. The next steps of the project include selecting and training community health educators and developing/piloting the intervention.

4. Impact

4.a. IMPACT ON THE DEVELOPMENT OF THE PRINCIAL DISCIPLINE OF THE PROJECT

Individual patient characteristics do not fully explain the occurrence of advanced disease among prostate cancer cases, and only a subset of patients is at risk for advanced disease and related mortality. Studying prostate cancer within the context of environmental factors may help to elucidate prostate cancer causes and progression and provide additional information about the groups of men that are at highest risk for advanced disease. To date, targeting populations for interventions has been determined by race or income characteristics of communities. However, all members of a particular race/ethnic or socioeconomic group are not at the same risk for poor cancer outcomes. The creation of a composite score to objectively identify high risk areas for prostate cancer is novel and can be used by other epidemiologists to study cancer risk and target highest risk communities for interventions.

4.b. IMPACT ON OTHER DISCIPLINES

Nothing to report.

4.c. IMPACT ON TECHNOLOGY TRANSFER

Nothing to report.

4.d. IMPACT ON SOCIETY BEYOND SCIENCE AND TECHNOLOGY

Nothing to report.

5. Changes/problems

There were no significant changes in any aspect of this project.

6. Products

6.a. JOURNAL PUBLICATIONS

Although no products related to this work have been published, two manuscripts are in progress. They will focus on the work described in section 6.c. of this report.

6.b. BOOKS OR OTHER NON-PERIODICAL, ONE-TIME PUBLICATIONS

6.c. OTHER PUBLICATIONS, CONFERENCE PAPERS, AND PRESENTATIONS

Two abstracts/presentations have developed thus far from the analyses for Aim 1:

- McIntire RK, Keith SW, Leader A, Glanz K, Zeigler-Johnson C. Where to Intervene? Methods for Selecting Neighborhoods for a Prostate Cancer Intervention in Philadelphia. National Cancer Institute Geospatial Conference, Bethesda, MD. September 2016 Notes: Oral Presentation.

- Zeigler-Johnson C, Keith SW, McIntire R, Leader A, Glanz K. Local Trends in Prostate Cancer: The Role of Race. The Science of Global Prostate Cancer Disparities in Black Men Conference, Orlando, FL. November 2016 Notes: Oral and Poster Presentation.

6.d. WEBSITES OR INTERNET SITES

Nothing to report.

6.e. TECHNOLOGIES OR TECHNIQUES

Nothing to report.

6.f. INVENTIONS, PATENT APPLICATIONS, AND/OR LICENSES

Nothing to report.

6.g. OTHER PRODUCTS

Nothing to report.

7. Participating and Other Collaborating Organizations

Name:	Charnita Zeigler-Johnson
Project Role:	PI
Researcher Identifier (ORCID ID)	
Nearest Person Month Worked	4
Contributions to Project	Dr. Zeigler-Johnson leads the project's epidemiology components. She maintains, manages, and analyzes data from the PA Cancer Registry, US Census, and other sources that are used to identify and characterize high risk communities. She also leads weekly and monthly meetings with project staff and consultants.
Funding Support	
Name:	Amy Leader
Project Role:	Co-PI
Researcher Identifier (ORCID ID)	
Nearest Person Month Worked	3
Contributions to Project	Dr. Leader leads the project's outreach and focus group components. She coordinates participant involvement in the focus groups and works with outreach consultants to identify community sites for focus groups. She also leads weekly and monthly meetings with project staff and consultants.
Funding Support	

Name:	Karen Glanz
Project Role:	Collaborator
Researcher Identifier (ORCID ID)	
Nearest Person Month Worked	1
Contributions to Project	Dr. Glanz contributes her expertise in epidemiology and intervention development to the study. She provides guidance on data analysis, abstracts/presentations, and focus group conduct.
Funding Support	
Name:	Russell McIntire
Project Role:	GIS/mapping expert
Researcher Identifier (ORCID ID)	
Nearest Person Month Worked	1
Contributions to Project	Dr. McIntire provides geocoding and mapping for this project. He provides datasets to describe high risk and low risk communities. He also conducts data analysis as part of the epidemiological team.
Funding Support	
Name:	Scott Keith
Project Role:	biostatistician

Researcher Identifier (ORCID ID)	
Nearest Person Month Worked	1
Contributions to Project	Dr. Keith provides biostatistical expertise for this study. He guides the analytical design and works with the epidemiological team on abstracts and manuscripts.
Funding Support	
Name:	Anna Marie Quinn
Project Role:	Project Manager
Researcher Identifier (ORCID ID)	
Nearest Person Month Worked	4
Contributions to Project	Mrs. Quinn coordinates schedules and meetings related to the study. She provides expertise in working with the IRB and with collaborators at the University of Pennsylvania. She established and manages the REDCAP database that is used to collect data from our focus group participants.
Funding Support	
Name:	Sara Grossman
Project Role:	Project Coordinator
Researcher Identifier (ORCID ID)	
Nearest Person Month Worked	1
Contributions to Project	Ms. Grossman provides background in conducting prostate cancer focus groups in

	Philadelphia. She assists the project manager with multiple tasks and coordinates the completion of tasks for the IRB at the University of Pennsylvania.
Funding Support	

7.a. CHANGE IN ACTIVE OTHER SUPPORT OF THE PI/SENIOR PERSONNEL

Nothing to report.

7.b. OTHER ORGANIZATIONS INVOLVED AS PARTNERS

- Organization name: University of Pennsylvania

  Location of Organization: Philadelphia, PA

  Partner's Contribution to the Project: In-kind support (computers), Community Outreach Core support, Community Health Workers (training and support), meeting rooms, and collaboration.

- Organization name: MEE Productions, Inc.

  Location of Organization: Philadelphia, PA

  Partner's Contribution to the Project: In-kind support (computers), videography equipment, focus group leaders, and collaboration.

8. Special Reporting Requirements

Collaborative Award – Both the Initiating PI and Partnering PI will provide a copy of this report.

9. Appendices

Appendix 1 -- Abstracts

Local Trends in Prostate Cancer: The Role of Race

C. Zeigler-Johnson[1], Scott W. Keith[1], Russell McIntire[1], Amy Leader[1], K. Glanz[2],

Thomas Jefferson University[1], University of Pennsylvania[2], Philadelphia, PA

Background: Although efforts have been made to decrease prostate cancer (PCa) disparities, individual and population changes may influence emerging local PCa trends. The goal of this study is to determine how trends in PCa vary by race over time.

Methods: We used PA Cancer Registry data for Philadelphia (2005-2014) to conduct descriptive analyses. Race was categorized as the most prevalent groups of cases, including white/Caucasian (33%), black/African American (44%), and Hispanic (9%). Outcomes included PCa incidence, advanced tumor stage, advanced tumor grade and tumor aggressiveness. Frequency tests and logistic regression models were used to describe trends by race group over time. Median age of 65 was used to examine trends in younger vs. older patients.

Results: The percentage of Hispanic cases declined ($p<0.001$), and the percentage of black cases increased over time ($p<0.001$). Odds of high tumor grade (OR=1.57, 95% CI=1.35-1.83) and aggressiveness (OR=1.55, 95% CI=1.33-1.82) were consistently higher among blacks compared to whites and Hispanics over time. For Hispanics, odds of high tumor grade ($p<0.001$) and aggressiveness ($p=0.003$) increased significantly over time compared with whites and blacks. Similar patterns were observed for younger men. Among older men, odds of high tumor grade, stage and aggressiveness for blacks were consistently higher than for whites and Hispanics. However, among younger blacks, there was a significant increase in stage over time. ($p=0.023$)

Conclusions: Local trends in PCa incidence indicate that black men remain at high PCa risk. Increases in advanced PCa at diagnosis are occurring, particularly among younger black and Hispanic men.

Where to Intervene? Methods for Selecting Neighborhoods for a Prostate Cancer Intervention in Philadelphia

Russell K. McIntire[1], Scott W. Keith[1], Amy Leader[1], K. Glanz[2], and C. Zeigler-Johnson[1]

Thomas Jefferson University[1], University of Pennsylvania[2], Philadelphia, PA

Background: This study presents the methods by which the Project Team chose neighborhoods in which to conduct prostate cancer (PCa) educational interventions in Philadelphia.

Methods: We geocoded PCa patient data (n=10750) from the Pennsylvania cancer registry from 2005-2014 by address and aggregated it by Philadelphia Census Tract (CT) to create inverse standard error-weighted standardized incidence ratios (SIRs) and mortality ratios (SMRs). For each patient, we combined PCa stage and grade into an aggressiveness variable, and aggregated by CT to create a mean aggressiveness variable. For CTs containing 300 or more men age 35+, we created a PCa composite variable by adding the SMR, SIR, and mean aggressiveness variables, each centered and scaled by their respective means and standard deviations. We mapped CTs with the highest composite scores in order to choose neighborhoods.

Results: Of the CTs with the top 13 PCa composite scores (Composite > 5.4), 11 were in one of four neighborhoods in the Lower North or West sections of Philadelphia. We chose these four neighborhoods for the PCa interventions.

Conclusion: We selected neighborhoods by 1) ranking of CTs using a PCa composite score determined by combining SIR, SMR, and mean aggressiveness, 2) visual analysis of the geographic location of CTs within neighborhoods, and 3) local knowledge of Philadelphia by researchers and PCa survivors on the Project Team.

Impact: These novel methods could be utilized by public health decision-makers when tasked to select a limited number of neighborhoods in which to intervene, due to limited resources.