A Neighborhood Based Intervention to Reduce Prostate Cancer Disparities

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A. BACKGROUND

Prostate cancer (PCa) is the most prevalent malignant cancer among men in the U.S. and 233,000 cases are expected in 2014.[1] Although PCa survival has improved over the years via PSA testing and early treatment, socioeconomic (SES) and racial disparities persist in the US.[2] Highest mortality rates for PCa have been observed for African Americans and men living in high poverty areas. [1, 2] Surveillance, Epidemiology and End Results (SEER) data indicate that late stage diagnosis has been associated with low SES across cancers.[3] In a meta-analysis, studies adjusting for SES and clinical factors show that while racial differences in all-cause mortality decrease, differences in prostate cancer recurrence and prostate-specific mortality persists.[4] These disparities are believed to be a result of interactions among genes, health behaviors, and environmental factors. Developing strategies that will eliminate these disparities and lay the ground work for reducing other health disparities requires multidisciplinary approaches.

A.1.Specific Aims and Hypotheses

Building on our previous research on the complex etiology and progression of PCa, we propose to develop and test the effects of a targeted intervention focused on increasing decision making about PCa screening compared to a healthy lifestyle intervention. We will build on substantial resources developed over the last fifteen years at two collaborative institutions in inner-city Philadelphia to understand the contribution of residential environment and neighborhood-level barriers to early PCa screening and later clinical manifestation of the disease.

Specific aims of the study are:

(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

Hypothesis 1a: Neighborhoods with the highest prevalence of advanced PCa will also present with poor prostate-specific survival compared to other neighborhoods.

Hypothesis 1b: Neighborhoods with the highest prevalence of advanced PCa will have a higher prevalence of risk factors including older age at diagnosis, African American residents and low neighborhood SES compared to other neighborhoods.

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

No hypothesis is being tested for this aim.

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

Hypothesis 3a: Men in the prostate-specific intervention group will have higher levels of knowledge about PCa screening than those who receive the healthy lifestyle control intervention

Hypothesis 3b: Men who express a greater number of barriers to PCa screening will have higher levels of anxiety about PCa and PCa screening

Hypothesis 3c: Men in the prostate-specific intervention group will have higher levels of informed decision making about PCa screening than those who receive the healthy lifestyle control intervention

Sub-aim: To examine if there are differences in outcomes by intervention setting

(4) To observe the rates of PCa screening in the intervention and control groups

B. RESEARCH STRATEGY

B.1. Experimental Design

The proposed design is a mixed-methods study including quantitative analyses of state registry data, survey data and Philadelphia health statistics, qualitative analyses of focus group results, and the test of a targeted intervention to improve key factors associated with shared decision making and potential uptake of prostate cancer screening in high-risk neighborhoods. Table 2 provides a brief summary of the study populations, study outcomes, traits to be measured, and analytical methods proposed to accomplish each specific aim.

Table 2: Summary of Specific Aims and Study Methods

	Aim 1: Identify high risk neighborhoods	**Aim 2: Develop intervention via mixed-methods approach**	**Aim 3: Test intervention in high risk neighborhoods**
Sample Population	*Estimates from 1995-2005 data:* ~4,500 African-Amer. cases ~4,000 European Amer. Cases		200 At-Risk Men
Primary Outcomes	Prostate cancer mortality; tumor stage and grade		Prostate cancer knowledge, anxiety, intention to screen, PSA screening
Neighborhood Data	Demographics, PCa screening, other health behaviors, health conditions, SES		
Patient-Level Data	Race, age, marital status	Focus Group Results	
Major Analytical Approaches	Descriptive analyses (t-tests, frequency tables, nonparametric tests), Correlations, Trend tests, EpiQMS (online tool), GIS mapping	Thematic coding	Descriptive analyses (t-tests, frequency tables, nonparametric tests), Correlations, Regression Models

B.2. Aim 1: To identify neighborhoods with disproportionately high rates of advanced PCa and describe patient- and neighborhood-level risk factors associated with the high risk neighborhoods

To address Aim 1, we will use data from the Pennsylvania State Cancer Registry to select four neighborhoods in Philadelphia with the highest population-adjusted rates of late-stage PCa and the lowest rates of PCa screening. This will provide the research team with 4 neighborhoods with the highest concentration of men who are at risk for poor PCa outcomes in Philadelphia. We will also analyze data from the 2010 U.S. Census and Philadelphia's Community Health Database (CHDB) to identify additional insights about the characteristics of the 4 selected neighborhoods. In addition to collecting self-reported health outcomes, the CHDB conducts annual surveys of residents' cancer screening behavior, healthcare utilization, access to care, and demographic information.

B.2.a. PA Cancer Registry Data

Dr. Zeigler-Johnson will obtain updated anonymized cancer registry PCa data for Philadelphia (5 most recent years) from the Pennsylvania Department of Health, including patient addresses, age, race, marital status, tumor stage and grade and treatment type

EpiQMS (Epidemiologic Query and Mapping System) is a new interactive tool available on the PA Health Department Website to compute disease rates and generate general maps for various diseases and health outcomes. Output includes age-adjusted and age-specific rates. Most output can also be broken down for various demographics such as age, sex and race/ethnicity. Maps include rates based on Bayes smoothing techniques and on nearest neighbor calculations to diminish the negative effects of small numbers.

State Cancer Registry Outcome Variables. Our primary outcome variables will be indicators of prostate cancer severity that are associated with differences in long-term survival. [5] These variables include tumor stage, with low stage defined as stages 1 and 2 (localized disease) and high stage is defined as stages 3 and 4 (non-localized.); tumor grade, with low grade is defined as tumor Gleason score of 6 or below and high grade is defined as a tumor score of 7 or greater; and tumor aggressiveness, defined as a combined high tumor stage (stage 3 or 4) and high tumor grade (grade 7+) compared to those with other combinations of these variables. High risk neighborhoods will be defined as census tracts in Philadelphia with highest incidence rates of advanced prostate cancer at diagnosis (PCa Gleason score ≥ 7 and/or tumor stage III/IV.)

B.2.b. Geocoding Methods

Patient addresses will be geocoded using ArcGIS and methods outlined by The Public Health Disparities Geocoding Project. [6] We will geocode patient addresses to determine the Philadelphia neighborhoods, at the census tract level, with the highest population-adjusted PCa rates. Census tracts are one of the preferred area-based units to use when attempting to capture economic deprivation. Census tract (and smaller block-group) boundaries are intended to combine individuals that tend to be similar with regard to social and economic characteristics. [7] Census tracts are U.S. Census Bureau defined, standardized, and relatively permanent geographical units. They are constructed specifically to include on average 4,000 people of fairly homogeneous population characteristics, economic position, and living conditions. [8] We will map population-adjusted rates of advanced prostate cancer, screening rates, and other demographics by neighborhood census tract. We will use these maps to select the 4 neighborhoods with the highest risk of PCa morbidity and mortality in Philadelphia. Adjacent high risk census tracts that fall into a given Philadelphia neighborhood will be considered part of one high risk neighborhood and will be used to recruit men into focus and intervention groups for aims 1 and 2 of this proposal.

B.2.c. Description of the CHDB

The CHDB is a random digit dial telephone survey of more than 10,000 households biannually to examine the health and social well-being of residents in the Greater Philadelphia Region. The survey is conducted as part of Philadelphia Health Management Corporation's (PHMC) CHDB, which contains information about local residents' health status, use of health services, and access to care. PHMC is a nonprofit, public health organization committed to improving the health of the community through outreach, education, research, planning, technical assistance, and direct services.

The most recent CHDB survey was conducted in 2012 and included questions about PCa screening, other health screening, utilization of healthcare services, health insurance, barriers to care, neighborhood factors (nearby parks and social capital), and lifestyle factors. The survey's response rate averages about 30% over the years. The CHDB also maintains U.S. Census and all-cause mortality data. These data can be examined by different levels of geography, including census tract, health district, Minor Civil Division, and ZIP code, as well as by county and region.

B.2.d. General Analytical Considerations

After the completion of data entry and data checking, a series of standard exploratory data examination steps will be undertaken before the formal analytical methods are applied. First, exploratory analyses will be undertaken to identify any data errors or inconsistencies. This will include generating plots of frequency distributions of all measured traits to identify outlier points that may be outliers or data errors. The distributions of the variables will also be checked to insure that the assumptions of the analytical methods to be applied are not violated. Transformations of the data to normality will be made based on the outcome of these exploratory steps if necessary. Once these exploratory steps have been completed, descriptive statistics will be computed. Continuously distributed variables will be summarized by estimating values of the mean, median, and standard deviation, and by determining the range of the observed values. Variables with a discrete distribution will be summarized by frequencies and standard deviations. STATA/SE 13.1 and SAS version 9.4 will be used to analyze the data for the completion of this study. P-values less than 0.05 will be considered statistically significant.

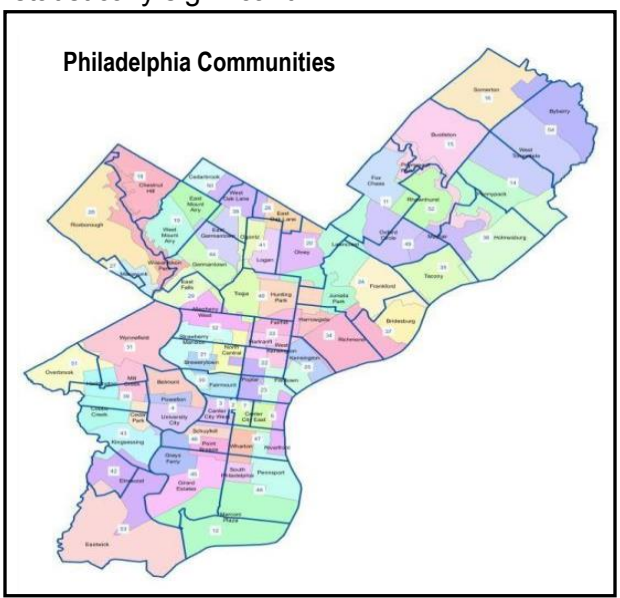

Figure 2: A Map of Philadelphia Neighborhoods

B.2.e. Aim 1 Analytical Methods

Descriptive analyses will be conducted to characterize high risk PCa census tracts compared to lower risk census tracts. Mapping the high risk census tracts will help us to determine how they are distributed within and around pre-defined Philadelphia neighborhoods (commonly used community names for each section of the city, Figure 2.) Those Philadelphia neighborhoods will become the target

neighborhoods for aims 2 and 3. Continuous variables will be analyzed with t-tests (or nonparametric alternative tests for variables without normal distributions) and categorical variables will be analyzed with frequency tables and chi square tests or Fisher's exact tests if any expected cell frequencies are small. Patient–level and neighborhood variables will be summarized for comparisons between high risk and lower risk neighborhoods to highlight factors that may be central topics of focus groups and intervention development. Correlations will be computed to examine the relationship between percent of cases with advanced disease and prostate-specific mortality rates. Regression modeling will allow us to determine significant trends in PCa incidence and mortality over time with and without adjustment for covariates such as the prevalence of risk factors including older age at diagnosis, African American residents and low neighborhood SES. We will also use the EpiQMS tool provided on the PA Department of Health website to determine age-specific incidence and mortality rates for Philadelphia. Generating maps of these data along with maps showing highest prevalence of PCa screening (CHDB data) will indicate where should target our focus groups and interventions for aims 2 and 3.

B2.f. Designation of Neighborhoods for Study Condition

Based on the GIS mapping results, the four neighborhoods in Philadelphia with the highest rates of late-stage PCa will be chosen to serve as study sites. Study condition (intervention or control) will be designated at the neighborhood level. Therefore, two of the sites will be designated as intervention neighborhoods and two will be designated as control neighborhoods. All men who live in the same neighborhood will receive the same intervention. All efforts will be made to ensure that the designations are done in a way that Intervention and Control neighborhoods are not geographically adjacent to each other, to avoid contamination of study messages among participants.

B.3. Aim 2: To develop a targeted PCa screening intervention for the high risk neighborhoods using a mixed-methods approach.

The study team will develop a behavioral intervention informed by neighborhood-level data and the health experiences of men living in the pre-selected neighborhoods. The intervention will be developed to be culturally sensitive to the context of high risk urban populations using data from previous research, local context, and pilot testing to refine intervention components. [9]

B.3.a.Theoretical Framework

The Theory of Planned Behavior (TPB) posits that an individual's intention to perform a given behavior, in this case one's intention to be screed for prostate cancer, is based on one's attitudes toward the behavior (positive or negative evaluation of performing the behavior), subjective norms (perception of the social pressures to perform or not perform the behavior), and one's perceived behavioral control (perception of the ability to perform the behavior. [10] Behavioral beliefs produce a favorable or unfavorable attitude toward the behavior; normative beliefs result in perceived social pressure or subjective norm; and control beliefs give rise to perceived behavioral control. The TPB is a useful model for predicting a wide range of behaviors and behavioral intentions [11] and has been used in the context of prostate cancer education in the past. [12-14] Therefore, the messages in the health education curriculum will aim to increase positive attitudes towards prostate cancer screening, create favorable subjective norms related to screening, and improve perceptions of behavioral control over the screening decision.

B.3.b. Development of Study Materials

MEE's Creative Team will develop a series of educational materials for use during participant recruitment and the health education sessions. These materials may include: a summary presentation to outline the project and its incentives to participants; a one-page, formal Partnership Agreement signed by each participating study site; posters and "Ask Me About Prostate Health" buttons that can be prominently displayed and worn by members of partner sites, helping to publicize the project; a customized, user-friendly curriculum booklet for the small group education sessions; and a project Facebook page and Website.

MEE will adapt and graphically design the curriculum booklet for the health education sessions (both the intervention and control groups) using content from credible, trusted organizations such as the American Cancer Society, the National Cancer Institute, and the Centers for Disease Control and Prevention. We will

develop the curriculum booklet so that it is culturally sensitive and of an acceptable health literacy level for study participants. Although MEE will leverage its two decades of health communications research and expertise, we will also work closely with the TJU Team, in order to ensure accuracy and consistency of the educational information. The booklet will capture key facts and "need to know" messages about prostate cancer or men's health, be written at a low literacy level, and have only one or two main points per page so that it is easily comprehended by the target audience.

MEE will focus on message content that will promote optimal health among African-American men. MEE will also draft a graphic theme (look-and-feel), logos and other branding components for the study's educational materials. In addition, MEE will create two short educational videos: one for the intervention group and one for the control group. For the intervention group, the prostate education video will feature interviews with prostate cancer survivors and a health professional and will provide men with important health information in a format they view as appealing and entertaining. For the control group, MEE will design a general healthy lifestyle video that discusses health issues that impact African American men. Throughout both videos, MEE will use a variety of creative techniques to engage the target audience. The use of state-of-the-art editing techniques, voiceover narration and computer graphics and sound effects will allow us to create a high-quality video and incorporate various images and text in an innovative fashion. The two videos, each 7 to 10-minutes long, will be produced in a format that can be easily: streamed on the Internet; uploaded to YouTube, Hulu, Vimeo and other social media destinations for viewing videos; and put on DVDs/mini-disks for use by the health educators at the study-session participants. MEE will provide the final digital master to TJU at the end of the project.

B.3.c. Focus Groups to Pre-Test Study Materials and Protocol

MEE will conduct 4 focus groups with African American men who reside, work, or worship in the targeted neighborhoods (i.e., have important ties to the neighborhood). The goal of the focus groups will be to gather neighborhood-specific data about social, health and environmental challenges facing the study's target population, along with determining the effectiveness of the MEE-drafted educational materials (curriculum, videos, fact sheets, recruitment materials, etc.) with the target audiences. We will also attempt to identify the best outlets for disseminating recruitment materials to each of the target audiences.

Each focus group will be audio recorded and transcribed by a professional transcriptionist. The transcriptions will be verified for accuracy by someone who attended ach particular focus group. Transcripts will be analyzed by iterative rounds of coding by at least two members of the research team, where specific themes and trends will be identified within each transcript and discussed by the research team until final consensus is reached. Themes will be identified as topics that consistently occur across transcripts, as well as similarities and differences between transcripts. [15]

B.3.d. Recruitment and Training of Health Educators

We expect to recruit 6 health educators to work with the study team to deliver the educational component of the intervention. The health educators will be recruited from multiple sources and venues. Dr. Leader has experience working with a team of community health educators from previous research studies, and she will invite interested educators to work on this project. The Penn Center for Community Health Workers will disseminate position information among their network sources, in hopes of reaching potential health educators. MEE has experience working with health educators and will draw upon its organizational network to identify potentially interested workers. Health educators may also be identified to us by our cancer survivor consultants. Ideally, a health educator for this project would be an African American male who either has experience working or living in the study-selected neighborhoods or is a prostate cancer survivor. Either one of these background characteristics would ensure that the educators have similar life experiences to the study participants. Prior experience as a health educator, either in a community setting or in a clinical setting, will be required. However, no specific knowledge about prostate cancer is required, as all health educators will be trained prior to the start of the study.

Dr. Leader, receiving assistance from Dr. Glanz and the consultants at the Penn Center for Community Health Workers, will develop a training manual for the health educators that will outline the policies and procedures

related to the position. It will include detailed information about prostate cancer and screening, as well as the purpose of the study and study-specific details. The manual will outline the informed consent process, survey administration, and a guide for delivering the educational content of the intervention. A diagram will outline the study flow and a FAQ section will be a quick reference section for solutions to often-incurred problems or common questions. Copies of all study documents will be included in the manual for easy reference.

The training manual will be the guide for the health educator training sessions. Dr. Leader will lead the training sessions with assistance from Drs. Johnson and Glanz and the Penn Center for Community Health Workers as necessary. It is anticipated that each health educator will attend 3 sessions, each 3 hours long. The first session will cover topics in men's health, with a special emphasis on prostate cancer and screening. The second session will include study-specific information such as the study aims and details of the intervention, the informed consent process, a review of the study surveys, and roles and responsibilities of a health educator. The third session will be entirely interactive and will allow the health educators to practice with others and receive feedback from study staff. There will also be an opportunity for the educators to ask questions and receive clarifications. At the end of the third session, it is our expectation that the health educators would be sufficiently trained and competent to deliver the intervention. However, if study staff determine that an educator needs more training, opportunities will be made to provide additional training.

B.3.e. Recruitment of Study Sites

It is anticipated that the small-group educational sessions will occur at sites that frequently draw middle-aged and senior men from the target population in each pre-selected neighborhood. This will include churches, barbershops, recreational centers, community development corporations, employment centers, and neighborhood restaurants. [54] MEE will identify and engage these types of establishments in each target neighborhood by drawing upon its vast network of community partners in Philadelphia. MEE will also conduct phone book and Internet searches to identify potential recruiting locations and sites for educational sessions. They will introduce the study to the leadership of each location and explain the requirements of holding a study intervention session at their facility. MEE will create informational packets for interested study sites to aide in the discussion. The only requirement of a study site is to provide a space for which the research team can conduct a study session. Recruitment for the study session will be done by the study team, although a site is welcome and encouraged to invite eligible men who it has contact with. Sites may agree to hold more than one session, provided that the study team leadership feels that an adequate number of participants can be recruited at that site. Study sites will be compensated based on the number of study sessions that occur on their premises.

B.4. Aim 3: To test the impact of the targeted intervention on levels of knowledge, anxiety, and informed decision making about PCa screening

B.4.a. Participant Recruitment

MEE will develop an e-mail blast, flyers for study site partners and recruiting information to recruit eligible men from the neighborhoods for participation. If these efforts need to be augmented, MEE will also conduct canvassing of key transportation corridors in the selected Philadelphia neighborhoods, to recruit potential study participants. The study team will also draw upon the community contacts and resources of the Penn Center for Community Health Workers to identify men eligible for participation. The goal is to enroll 200 men in the study over a period of 18 months. We anticipate, based on our previous experience in community-based research, that we will have to screen about 10 times that number, or about 2000 men, to reach our study recruitment goals.

B.4.b. Study Eligibility

Inclusion Criteria: Men ages 40-69 who currently reside in one of the four selected high risk neighborhoods will be eligible to participate in the study. This age range was selected based upon current screening recommendations for high-risk men. Additionally, the literature suggests that, when asked what age group might be most in need of prostate health information, men in this age group were frequently identified because they may not understand that they are susceptible to prostate cancer. [16, 17]

Exclusion Criteria: Men who do not reside in one of the four neighborhoods, who self-report that they have previously been diagnosed with prostate cancer, or who have had prostate cancer screening (PSA or DRE) within the past 12 months will be excluded from participating in the study.

B.4.c. Study Intervention

Because the level of designation for study condition will be at the neighborhood level, all men who reside in the same neighborhood will be in the same condition (intervention or control). Community health educators will go to participating study sites within the selected neighborhoods in pairs and will complete the following steps:

Informed Consent and Baseline Survey: The health educator will obtain informed consent from each participant by reviewing the consent document and answering any questions about the study. After signing the consent document, participants will complete a brief pencil-and-paper baseline questionnaire. Items to be assessed at baseline include knowledge about prostate cancer and screening, attitudes towards screening, subjective norms about screening, decisional conflict about screening, and intentions to screen. Knowledge about prostate cancer and screening will be measured with a 17-item scale, recently validated with a sample of African American males. [18] The measure for decisional conflict will be constructed from O'Connor's Decisional Conflict Scale, a frequently used assessment for anxiety about decision making.[19] This scale includes a self-efficacy subscale that pertains to whether the participant feels 'a lot confident', 'a little confident', or 'not at all confident' about making an informed health decision. Demographic data related to age, race/ethnicity, family history of prostate or other cancer, and other pertinent health information will be collected. Additionally, contact information (telephone number(s), email address, and mailing address) for each participant will be collected to aid in maintaining communication with enrolled participants for post-survey completion.

Study Intervention: Men who live in the Intervention Group Neighborhoods: After obtaining informed consent and administering the baseline survey, the health educator will show the short introductory video on a tablet computer. Then, the educator will use the curriculum booklet, one given to each participant, to review general information about the prostate gland, prostate incidence and development, risk factors, screening options, screening guidelines and the importance of repeat screening.[20] The educational session is meant to be interactive, with men feeling comfortable to ask questions and engage in a discussion with the educator and the other men at the session. Men Who Live in the Control Group Neighborhoods: After obtaining informed consent and administering the baseline survey, the health educator will show the short introductory video on a tablet computer. Then, the educator will use the curriculum booklet, one given to each participant, to review topics about health promotion actions related to diet, exercise, tobacco, general cancer screening and cardiovascular risk. The educational session is meant to be interactive, with men feeling comfortable to ask questions and engage in a discussion with the educator and the other men at the session. It is anticipated that the educational sessions for both groups will last about 15 minutes.

Post-Survey(s): Immediately following the intervention, men will complete a brief paper-and-pencil endpoint survey. The majority of items on the baseline survey, except for the demographic and contact information, will be repeated on the endpoint survey. Additionally, the study research assistant will call each enrolled participant at 1 month and 4 months after their enrollment date to administer the same endpoint survey. Participants who are not reached by telephone will be contacted by mail and by email to attempt to retain the maximum number of participants over time.

Participant Compensation: Participants will be compensated $25.00 after completing the endpoint survey on the day of the intervention and $25.00 for the completion of each follow-up survey.

Referral to Screening

Men from both groups who decide that they want to be screened for prostate cancer will be linked with medical care at Thomas Jefferson University Hospital (TJUH) if the participant does not have a primary care physician for medical care. Participants will be encouraged to contact their primary care physician for screening, or in the absence of a primary care physician, Dr. Veda Giri at TJUH, a study co-investigator and oncologist who specializes in high-risk populations, will provide screening at TJUH. In addition, Dr. Giri will care for any male who completes screening and requires follow-up medical care based on his test results. A letter of support

from Dr. Giri attesting her commitment to provide thorough medical care for any male who screens for prostate cancer as a result of this project is included in the application.

B.4.d. Analysis Plan

Since Aim 3 will not be addressed by a randomized trial design and we anticipate clustering of observations from the same neighborhood, linear and generalized linear mixed models having random intercepts corresponding to neighborhood will be applied to test the quantitative hypotheses. This approach will allow us to account for the correlation between participants from the same neighborhood and adjust the parameters of interest for potential confounding variables. Potential confounders will be identified and choices about specific models will be made after computing descriptive statistics to compare the distributions and identify imbalances of study variables between the groups (i.e., intervention vs. control) or variables (e.g., the number of barriers to screening) of interest for the given hypothesis. If substantial clustering also exists at the site level, this hierarchical correlation will also be incorporated into the models.

A sub-aim of this study will be to determine whether there are differences in results based on where the intervention is implemented. As neighborhoods often attract certain demographics of the population, so do various gathering places for men. Some gathering places may prove to be better for achieving the goals of this study – increasing PCa knowledge and shared decision making about PC a screening among high risk men. During aim 2, the content will be optimized for each setting and suggestions will be made for future interventions in these settings.

B.4.e. Power Analysis

The target sample size is n=200 men. Since we anticipate 20% attrition, we will recruit and consent 240 evenly distributed across each of the 4 neighborhoods. In a local population similar to our target population, a previous prostate cancer screening decision making study [21] found that, compared to standard intervention controls, their decision support enhanced intervention lead to a 0.8 point increase (SD = 1.5) in knowledge on a 10-point scale. Assuming this in our target population, a type I error rate of 0.05, an intra-neighborhood correlation of 0.005 to 0.01, and that 4 to 10 neighborhoods will be sampled per group, the planned study should have approximately 80% to 94% power to detect this difference. In a similar prostate cancer screening shared decision making article [22], investigators found that their intervention lead to a 22% reduction (SD = 0.15) in prostate screening. Making similar assumptions as for the knowledge endpoint, we may be somewhat underpowered for detecting this difference in screening rates as the expected power would be approximately 50% to 67%. However, the primary goal is to increase knowledge about screening so that each man will make an informed decision taking into account his risk factors and personal preferences.

B.4.f. Results Dissemination

The study results will be disseminated to the neighborhood at the end of the project by multiple methods. Town hall meetings will be held in the targeted neighborhoods to explain the goals of the study and to provide a summary of results and additional PCa education to the community at-large. Next steps will be discussed, as well as ways to improve, sustain and expand targeted educational interventions around the Philadelphia region. Project newsletters and brochures will be made available to be shared with family and community members. The video developed during aim 2 for educational purposes will be shared at the town halls and will be made available on the internet for public education.

C. Potential Problems and Alternative Approaches

C.1. Geocoding

We have found that most addresses in the state cancer registry will have a generated census tract number with the exception of incorrect addresses, P.O. box numbers, and private gated condominium communities. Where there is no available census tract number, none will be entered, and these individuals will be excluded from the analysis. The problem of incomplete addresses for geocoding has been minimized by looking up the addresses with online resources (USPS.com, switchboard.com, whitepages.com and online maps for street interactions) and a book of street names for Philadelphia (Philadelphia: ADC The Map People: Greater Philadelphia 3rd Edition). We also compare the street names and zip codes to others in the dataset to make

sure that we have correct spellings, complete addresses, and correct census tract assignments. Once there is a geocoded file, we will check for any discrepancies in the geocoding.

C.2. Neighborhood Risk Factors

There are a number of other risk factors that could be considered in our study, including proximity to healthcare facilities, insurance status, and additional demographics. The most consistent associations in the literature are related to SES, which we will have access to through the CHDB census data. We will also have access to CHDB survey data regarding screening rates, healthy and risk behaviors, and a number of demographics. One of our collaborators in the Center for Excellence in PCa Disparities (UPENN) is studying access to care issues related to PCa outcomes for the Philadelphia region. Future analyses may combine the data from that study and our proposed study to examine additional neighborhood factors.

C.3. Study Recruitment and Retention

As with many research studies, and particularly with community-based research studies, often participant recruitment and retention is difficult. In this study, the research team members have substantial experience in recruiting community-based samples, particularly in low-income/low-resource neighborhoods. Dr. Glanz works closely with the Center for Community Engagement at the University of Pennsylvania, and Dr. Leader collaborates with the Center for Urban Health at Thomas Jefferson University; both of these centers have strong inroads into the neighborhoods of interest for this study. Additionally, MEE Productions has a network of community based partners in Philadelphia that will be useful in recruiting study sites and participants. The Center for Community Health Workers is extremely involved in local and grass-roots in Philadelphia and we can utilize their partner and organizational connections for recruitment. In terms of retention, participants will be compensated $25 for each follow-up survey that they complete. We will maintain a database of contact information for each participant and will attempt to contact each participant via multiple methods to increase our retention rate. Lastly, our PCa survivors, who are study consultants, will offer suggestions for alternative recruitment and retention strategies.

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