



A Multidimensional View of Racial Differences in Access to Prostate Cancer Care

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BACKGROUND: Racial disparities in prostate cancer treatment and outcomes are widespread and poorly understood. In the current study, the authors sought to determine whether access to care, measured across multiple dimensions, contributed to racial differences in prostate cancer. **METHODS:** The Philadelphia Area Prostate Cancer Access Study (P² Access) included 2374 men diagnosed with localized prostate cancer between 2012 and 2014. Men were surveyed to assess their experiences accessing care (response rate of 51.1%). The authors determined appointment availability at 151 urology practices using simulated patient telephone calls and calculated travel distances using geospatial techniques. Multivariable logistic regression models were used to determine the association between 5 different domains of access (availability, accessibility, accommodation, affordability, and acceptability) and receipt of treatment, perceived quality of care, and physician-patient communication. **RESULTS:** There were 1907 non-Hispanic white and 394 black men in the study cohort. Overall, approximately 85% of the men received definitive treatment with no differences noted by race. Black men were less likely to report a high quality of care (69% vs 81%; $P < .001$) and good physician-patient communication (60% vs 71%; $P < .001$) compared with white men. In adjusted models, none of the 5 domains of access were found to be associated with definitive treatment overall or with radical prostatectomy. All access domains were associated with perceived quality of care and communication, although these domains did not mediate racial disparities. **CONCLUSIONS:** To the authors' knowledge, the current study presents the first comprehensive assessment of prostate cancer care access, treatment, and patient experience, demonstrating that although access was related to overall perceived quality of care and better physician-patient communication, it did not appear to explain observed racial differences. *Cancer* 2017;123:4449-57. © 2017 American Cancer Society.

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INTRODUCTION

Racial disparities in cancer treatment are well described but poorly understood. It is estimated that 161,360 men will have been diagnosed with prostate cancer in 2016, with 26,730 dying of the disease.¹ Black men are more likely to be diagnosed with prostate cancer² and are more than twice as likely to die of the disease compared with white men.³ In addition, black men are less likely to receive definitive treatment overall⁴ and experience a lower quality of care.⁵

Access to care may be an important, and potentially modifiable, factor contributing to racial disparities in cancer treatment and outcomes. The leading definition of access, as developed by Andersen et al,⁶⁻⁸ defines access as “those dimensions which describe the potential and actual entry of a given population group to the health care delivery system.” Prior research regarding access to cancer care has focused primarily on cost-related and travel-related barriers facing underserved populations.⁹⁻¹³ These studies generally have found that patients experiencing cost barriers have worse cancer outcomes, and patients who travel farther are more likely to be diagnosed with later-stage disease, have worse prognoses, and receive less definitive treatment.^{10,11,14} Multiple other factors also can influence access, including the ability to get to an appointment, office waiting time, and cultural norms of providers and patients.¹⁵ To our knowledge, these factors have not been examined in combination to create a more comprehensive picture of how access may influence racial disparities.

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Using both patient surveys and an inventory of urology practice attributes, we created spatial measures of geographic access in which men could have accessed care as well as individual measures of the access men actually experienced. We sought to: 1) examine whether patient race is associated with access to prostate cancer care; 2) assess whether differences in access are associated with differences in treatment, perceived quality of care, and physician-patient communication; and 3) test whether access mediates racial disparities in these outcomes. We hypothesized that black men would experience greater difficulties accessing care, which would be associated with lower odds of treatment. Because lower access may constrain choices, we further hypothesized that less access would be associated with a lower reported perceived quality of care and physician-patient communication.

MATERIALS AND METHODS

The Philadelphia Area Prostate Cancer Access Study (P² Access) is a mixed method study of men diagnosed with localized prostate cancer in the greater Philadelphia region. The study was approved by the Institutional Review Boards at the University of Pennsylvania and Johns Hopkins University.

Data Sources

Pennsylvania Cancer Registry data

Pennsylvania Cancer Registry (PCR) data were used to identify black and white men diagnosed with localized prostate cancer between January 2012 and December 2014 in the greater Philadelphia region. The PCR data provided information regarding patient sociodemographics, cancer characteristics, treatment, and insurance at the time of diagnosis.

Patient survey

We surveyed men identified from the PCR between February 2014 and August 2015 to understand their experiences accessing cancer care. Pilot testing was conducted with patients with prostate cancer who were recruited from a university clinic to ensure comprehension of the items. Men received up to 2 mailings of the survey followed by telephone calls to remind nonresponders to complete the mailed survey and give them the opportunity to complete the survey by telephone. All recipients received an incentive of \$2 with the first mailed survey, followed by \$15 mailed upon completion of the survey. The response rate for the survey was 51.1%. Patients were geocoded to their home address using ArcGIS (version 10.2; ESRI, Redlands, California).

Practice inventory and audit survey

We obtained information regarding all urology and radiation oncology clinics in the Philadelphia area and all adjacent counties (25 total counties) using data from the National Provider Identifier database and SK&A's proprietary commercial database located in Irvine, CA. For the audit survey, research assistants posed as schedulers from a primary care office and requested the next available appointment for a patient with private insurance with an elevated prostate-specific antigen level.¹⁶ We linked patients to their primary urologist as identified in the survey; 96% of survey respondents were linked successfully.

American Community Survey data

American Community Survey data from 2008 through 2012 were used for census tracts characteristics.

Patient Cohort

Inclusion criteria for the patient survey included a new prostate cancer diagnosis (eg, not secondary to another cancer and not a disease recurrence), adenocarcinoma histology, resident of 8 specified counties within the greater Philadelphia area (Berks, Bucks, Chester, Delaware, Lancaster, Lehigh, Montgomery, and Philadelphia), and black or white race as indicated in the PCR data. Of the 2437 men who responded to the survey, 63 were excluded because they had metastatic disease at the time of presentation (51 men), had received chemotherapy for treatment (4 men), or had military insurance (TRICARE and Veterans Administration; 8 men) because it may impact their choice set of providers. The final analytic sample included 2374 men.

Access Measures

We included 12 measures of access grouped into the 5 domains developed by Penchansky and Thomas,¹⁷ updating them based on pilot testing with cancer survivors and physicians (see Supporting Information Table 1). For each domain, we created a summary score by first adding the measures and then creating a dichotomous measure of low versus high access. Low access was defined as having at least 1 measure in a domain meeting measure-specific criteria for low access versus higher access.

Availability describes the adequacy of supply. Patients were asked, "When choosing your urologist, how much choice did you have based on: (a) where you live? and (b) your insurance plan?." We dichotomized responses as "a great deal of choice" versus "some choice," "a little choice," and "no choice." For each patient, we calculated the number of urology practices within a 30-

minute drive of their home address using the ArcGIS Network Analyst. We dichotomized this measure as those with the fewest number of clinics (lowest quartile) versus the upper 3 quartiles.

Accessibility defines the location of supply, taking into account factors such as transportation and travel. On a 5-point scale, patients were asked how easy or difficult it was for them to get to their urologist's office. Responses were dichotomized as "easy" versus all other categories. Respondents also were asked about how many minutes it took them to get their urologist's office with responses dichotomized as those with the longest reported times (highest quartile) versus all others.

Accommodation refers to how the supply is organized to accept clients. We obtained time to a new appointment from the results of the audit survey and dichotomized responses as the longest time to a new appointment (top quartile) versus the bottom 3 quartiles. From the survey, on a 5-point scale from easy to difficult, we asked patients how easy or difficult it was 1) "getting an appointment on a day and time that was convenient for you" and 2) "getting in touch with your urologist outside of an appointment (for example, calling your urologist if you had a question)." Responses to both were dichotomized as easy versus all others. Respondents also were asked "About how many minutes did you usually wait after arriving at your urologist's office before you were seen by the urologist" with results dichotomized as the longest wait times (top quartile) versus the bottom 3.

Affordability describes the costs relative to a person's ability to pay. We asked how easy or difficult (5-point scale) it was to get approval from your insurance company to see your urologist, with responses dichotomized as easy versus all others. We further asked "Since you were diagnosed with prostate cancer, was there a time you had a hard time affording your urologist's bills?" Responses were either yes or no.

Acceptability indicates the clients' attitudes compared with a client's characteristic. This was assessed through a single survey measure of "how would you rate the appearance of your urologist's office?" on a 5-point scale from poor to excellent with responses dichotomized as excellent versus less than excellent.

Treatment

Definitive treatment was classified as having undergone either radical prostatectomy or radiotherapy (including external beam radiotherapy or seed brachytherapy) as abstracted from PCR data.

Perceived Quality of Care and Physician-Patient Communication

Perceived quality of care was assessed from the patient survey item: "Overall, how would you rate the quality of health care for your prostate cancer?" with responses ranging from poor to excellent on a 5-point scale as previously described.¹⁸ We dichotomized answers as excellent versus all other categories. We included 4 previously validated measures from the patient survey on physician-patient communication, which came from the Consumer Assessment of Healthcare Providers and Systems, based on whether the patient's urologist explained things in a way that was easy to understand, listened carefully, showed respect, and spent enough time.¹⁹ Items were answered on a 4-point scale (never, sometimes, usually, and always). Responses to each item were converted into binary indicators (1 indicating always vs 0 indicating all others) and summed to create a composite measure that ranged from 0 to 4. Poor communication was defined as a composite score <4.

Patient Characteristics

Patient sociodemographic characteristics from the survey included race/ethnicity, age, educational level, and marital status. Survey data also were used to construct a validated mortality index based on age, body mass index, tobacco use, comorbidity, and functional status.²⁰ Insurance at the time of diagnosis, Gleason score, and clinical tumor stage based on the American Joint Committee on Cancer's clinical tumor stages were derived from PCR data. We created risk categories based on National Comprehensive Cancer Network (NCCN) criteria classified as low, intermediate, and high risk.²¹

Neighborhood Characteristics

Neighborhood socioeconomic status was based on 6 American Community Survey census tract variables including median household income and the percentage of: 1) adults aged >25 years with less than a high school education; 2) unemployed males; 3) households living in poverty; 4) households receiving public assistance; and 5) female-headed households.²² Population density was defined as the total population divided by the area in square miles (log transformed for analyses).

Statistical Analysis

To examine whether access was associated with patient race, we used chi-square tests to compare the 5 access domains for white and black men. We then constructed multivariable logistic regression models adjusting for sociodemographic and neighborhood characteristics for

TABLE 1. Descriptive Statistics of the Sample: Overall and by Race^a

Characteristic ^b	Overall	Non-Hispanic White	Non-Hispanic Black	P
	N = 2374	N = 1907	N = 394	
Age, y				<.001
<60	699 (29.4%)	517 (27.1%)	155 (39.3%)	
60-64	508 (21.4%)	401 (21.0%)	89 (22.6%)	
65-69	558 (23.5%)	472 (24.8%)	72 (18.3%)	
70-74	347 (14.6%)	288 (15.1%)	48 (12.2%)	
≥75	262 (11.0%)	229 (12.0%)	30 (7.6%)	
Insurance				<.001
Private	1309 (55.1%)	1070 (56.1%)	205 (52.0%)	
Medicaid	72 (3.0%)	23 (1.2%)	42 (10.7%)	
Medicare	956 (40.3%)	787 (41.3%)	138 (35.0%)	
Income				<.001
<\$25,000	306 (12.9%)	130 (6.8%)	152 (38.6%)	
\$25,000-\$49,999	389 (16.4%)	306 (16.1%)	76 (19.3%)	
\$50,000-\$74,999	365 (15.4%)	309 (16.2%)	44 (11.2%)	
\$75,000-\$99,999	313 (13.2%)	261 (13.7%)	45 (11.4%)	
≥\$100,000	740 (31.2%)	691 (36.2%)	37 (9.4%)	
Educational level				<.001
Some high school	176 (7.4%)	91 (4.8%)	68 (17.3%)	
High school graduate/GED	588 (24.8%)	437 (22.9%)	134 (34.0%)	
Some college/2-y degree	509 (21.4%)	390 (20.5%)	101 (25.6%)	
4-y college graduate	381 (16.1%)	336 (17.6%)	37 (9.4%)	
>4-y college degree	665 (28.0%)	609 (31.9%)	45 (11.4%)	
Marital status				<.001
Married	1895 (79.8%)	1603 (84.1%)	232 (58.9%)	
Not married	444 (18.7%)	282 (14.8%)	149 (37.8%)	
Life expectancy				<.001
<25% mortality	739 (31.1%)	606 (31.8%)	110 (27.9%)	
25%-50% mortality	743 (31.3%)	639 (33.5%)	85 (21.6%)	
50%-75% mortality	532 (22.4%)	409 (21.5%)	108 (27.4%)	
>75% mortality	216 (9.1%)	154 (8.1%)	52 (13.2%)	
Gleason score				.02
<7	940 (39.6%)	776 (40.7%)	131 (33.3%)	
7	946 (39.9%)	741 (38.9%)	175 (44.4%)	
>7	413 (17.4%)	331 (17.4%)	73 (18.5%)	
AJCC Clinical tumor stage				.10
I	1695 (71.4%)	1346 (70.6%)	294 (74.6%)	
II	573 (24.1%)	477 (25.0%)	79 (20.1%)	
III	58 (2.4%)	45 (2.4%)	12 (3.1%)	
Receipt of definitive treatment				.09
Yes	2028 (85.4%)	1639 (90.0%)	330 (83.8%)	
No	295 (12.4%)	224 (11.8%)	59 (15.0%)	
Radical prostatectomy				.40
Yes	1223 (51.5%)	992 (52.0%)	192 (49.8%)	
No	1053 (44.4%)	838 (43.9%)	182 (46.2%)	
Communication				<.001
Good	1631 (68.7%)	1346 (70.6%)	237 (60.2%)	
Not good	718 (30.2%)	542 (28.4%)	152 (38.6%)	
Perceived quality				<.001
Good	1860 (78.4%)	1538 (80.7%)	270 (68.5%)	
Not good	438 (18.5%)	310 (16.3%)	111 (28.2%)	

Abbreviation: AJCC, American Joint Committee on Cancer; GED, General Educational Development.

^a Race-stratified columns exclude 73 men of Hispanic ethnicity or not white or black race.

^b Certain characteristics do not add up to 100% due to missing data.

each access domain with patient race as the primary predictor. We accounted for clustering at the census tract level using generalized estimating equations methodology.²³ Separate models were constructed for each access domain and the results presented as predicted probabilities.

We next examined whether access was associated with receipt of definitive treatment overall and with radical prostatectomy. We performed multivariable logistic regression models in which we included all access domains in the same model adjusting for patient socioeconomic and neighborhood characteristics and clinical factors (life

TABLE 2. Comparison of Access Measures and Domains by Race

	Non-Hispanic White N = 1907	Non-Hispanic Black N = 394	P P
Availability			
Less choice based on where you live	591 (31.0%)	143 (36.3%)	<.001
Less choice based on your insurance plan	488 (25.6%)	138 (35.0%)	<.001
Lower geographic availability	508 (26.6%)	34 (8.6%)	<.001
Summary score for lower availability	835 (43.8%)	157 (39.9%)	.55
Accessibility			
Less easy getting to your physician's office	538 (28.2%)	88 (22.3%)	.02
Self-reported longer time to get to physician	431 (22.6%)	73 (18.5%)	.19
Summary score for lower accessibility	687 (36.0%)	119 (30.2%)	.12
Accommodation			
Longer time to a new appointment	289 (15.2%)	63 (16.0%)	.45
Less easy to get a convenient appointment	698 (36.6%)	120 (30.5%)	.02
Longer wait to be seen	381 (20.0%)	88 (22.3%)	.25
Less easy getting in touch outside an appointment	851 (44.6%)	161 (40.9%)	.13
Summary score for lower accommodation	921 (48.3%)	174 (44.2%)	.26
Affordability			
Less easy getting insurance approval	254 (13.3%)	83 (21.1%)	<.001
Hard time affording bills	143 (7.5%)	87 (22.1%)	<.001
Summary score for lower affordability	351 (18.4%)	123 (31.2%)	<.001
Acceptability			
Less than excellent office appearance	607 (31.8%)	119 (30.2%)	.55

expectancy, Gleason score, and clinical tumor stage) and accounting for clustering of patients within census tracts using generalized estimating equation methodology. We repeated the analyses for perceived quality of care and physician-patient communication outcomes; however, in these models, we also adjusted for receipt of definitive treatment. We then assessed whether access measures mediate racial differences in these associations using the 4-stage regression approach.²⁴ Finally, in subgroup analyses, we examined the association between access and receipt of definitive treatment for men with NCCN low-risk and intermediate-risk/high-risk disease. For covariates with missing data, we used multiple imputation via multiple chained equations, creating 5 imputed data sets. Analyses were conducted using SAS statistical software (version 9.4; SAS Institute Inc, Cary, NC).

RESULTS

Of the 2374 men in the study sample, 1907 were non-Hispanic white and 394 were non-Hispanic black (Table 1). Black men were slightly younger and more likely to have Medicaid insurance, lower income, and a high school education or less compared with white men. Overall, 71.4% of the men had stage I disease based on the American Joint Committee on Cancer's clinical tumor stages, although black men were more likely to have a Gleason score of ≥ 7 (63.0% vs 56.2%). There were no differences noted by race with regard to the receipt of definitive treatment overall or for radical prostatectomy alone. Black men were found to be

significantly less likely to report high levels of perceived quality of care (69% vs 81%; $P < .001$) and less likely to report good physician-patient communication (60% vs 71%; $P < .001$) compared with white men.

Racial Differences in Access to Prostate Cancer Care

Comparing unadjusted measures of access between white and black men (Table 2), we found that black men reported less availability, including less choice based on where they lived (36.3% for black men vs 31.0% for white men; $P < .001$) and less choice based on their insurance plan (35.0% for black men vs 25.6% for white men; $P < .001$). In contrast, black men tended to have more clinics within a 30-minute drive (8.6% of black men in the low-access category vs 26.6% of white men; $P < .001$). Black men reported less difficulty in getting to their physician's office (22.3% of black men reported difficulty vs 28.2% of white men; $P = .015$), but similar travel times. There were no significant differences noted in the 4 accommodation items with the exception that black men reported more ease in getting a convenient appointment. With regard to affordability, black men reported greater difficulty getting insurance approval (21.1% for black men vs 13.3% for white men; $P < .001$) and affording medical bills (22.1% for black men vs 7.5% for white men; $P < .001$). We did not find any racial differences in the acceptability access domain. In adjusted analyses, we did not observe black-white differences in any of the 5

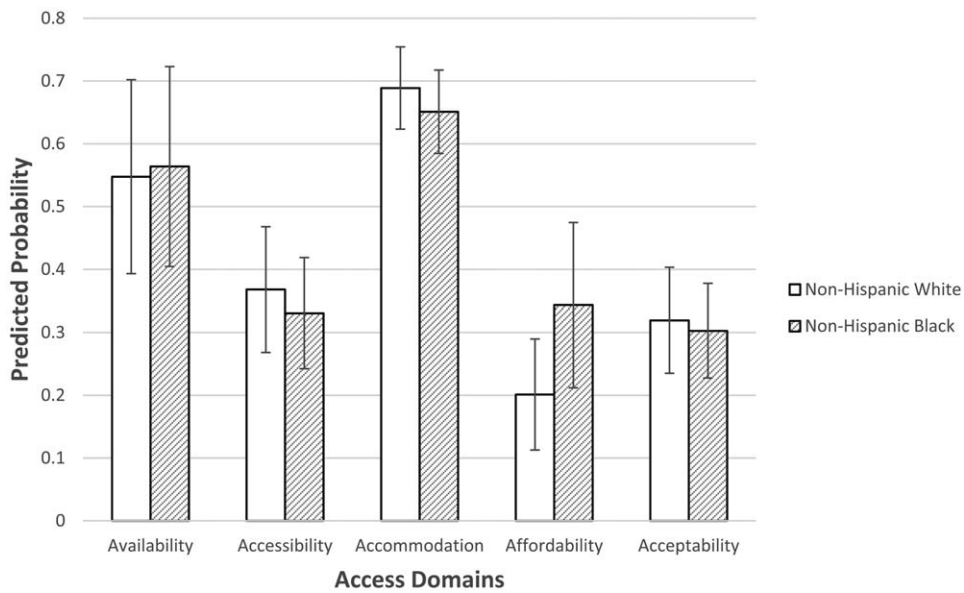


Figure 1. Predicted probability of reporting lower access to care by race. Predicted probability (with the standard deviation) was derived from a logistic generalized estimating equations model adjusting for patient age, income, educational level, insurance coverage, and marital status as well as census tract socioeconomic status and natural log-transformed population density.

access domains (Fig. 1) (full models shown in Supporting Information Table 2).

Association Between Access to Care and Outcomes

None of the 5 access domains were found to be associated with receipt of definitive treatment overall or with radical

prostatectomy alone (Table 3). In contrast, we found that worse access in each access domain was independently associated with both lower perceived quality of care and worse communication. For example, men with lower acceptability measures were approximately 3 times more likely to report lower perceived quality of care (odds ratio

TABLE 3. Adjusted Relationship Between Access Domains and Treatment, Perceived Quality, and Communication^a

	Outcome					
	Receipt of Definitive Treatment			Receipt of Surgery	Lower Perceived Quality	Worse Communication
	Overall	Low Risk Only N = 622	Not Low Risk N = 1423			
Availability						
Higher	Reference	Reference	Reference	Reference	Reference	Reference
Lower	0.97 (0.72-1.31)	1.34 (0.87-2.05)	0.83 (0.49-1.39)	1.12 (0.89-1.40)	1.47 (1.14-1.89)	1.56 (1.26-1.94)
Accessibility						
Higher	Reference	Reference	Reference	Reference	Reference	Reference
Lower	0.76 (0.56-1.04)	0.55 (0.35-0.85)	0.96 (0.58-1.57)	1.22 (0.99-1.49)	1.59 (1.23-2.06)	1.26 (1.01-1.57)
Accommodation						
Higher	Reference	Reference	Reference	Reference	Reference	Reference
Lower	0.81 (0.58-1.13)	0.94 (0.56-1.56)	1.01 (0.54-1.89)	0.78 (0.60-1.00)	2.10 (1.51-2.92)	2.96 (2.30-3.81)
Affordability						
Higher	Reference	Reference	Reference	Reference	Reference	Reference
Lower	1.06 (0.73-1.55)	1.08 (0.66-1.77)	1.26 (0.69-2.30)	0.85 (0.66-1.09)	1.57 (1.19-2.08)	1.48 (1.15-1.90)
Acceptability						
Higher	Reference	Reference	Reference	Reference	Reference	Reference
Lower	1.10 (0.81-1.49)	1.58 (0.97-2.55)	0.78 (0.45-1.34)	0.99 (0.80-1.22)	3.35 (2.61-4.30)	3.40 (2.77-4.18)

^a Models simultaneously included all 5 access domains and were adjusted for patient age, race, income, educational level, insurance coverage, marital status, Gleason score, clinical tumor stage, and life expectancy, as well as census tract socioeconomic status and natural log-transformed population density. For perceived quality and communication analyses, receipt of definitive treatment also was included as a covariate. **Bold** indicates statistical significant at $P < .05$. Values are shown as the odds ratio (95% confidence interval).

[OR], 2.81; 95% confidence interval [95% CI], 2.16-3.66) and worse physician-patient communication (OR, 3.08; 95% CI, 2.49-3.81). In subgroup analyses, among men with NCCN low-risk disease (Table 3), access was not found to be associated with the receipt of definitive treatment. However, among men with higher risk disease, those with lower levels of accessibility had significantly lower odds of definitive treatment compared with men with higher levels of accessibility (OR, 0.55; 95% CI, 0.35-0.85).

Mediation of Racial Differences in Care

In unadjusted models, black men reported lower levels of perceived quality of care and worse physician-patient communication (see Supporting Information Table 3). Communication remained lower among black men compared with white men in adjusted models (OR, 1.49; 95% CI, 1.03-2.16). We did not find evidence that differences in the access domains mediated racial differences in these outcomes.

DISCUSSION

To the best of our knowledge, the results of the current study provide the first multidimensional picture of access to prostate cancer care, underscoring the importance of access to care and its limits with respect to understanding prostate cancer disparities. The current study has 3 main findings. First, contrary to our expectations, we did not observe significant black-white differences in access across multiple domains, after accounting for socioeconomic characteristics. Second, lower access was not found to be associated with differential rates of definitive treatment or with radical prostatectomy overall, although men with intermediate-risk and high-risk disease and lower accessibility were less likely to receive definitive treatment. Less access across all access domains was associated with lower perceived quality of care and physician-patient communication. Third, racial differences in these outcomes were not mediated by access to care measures.

Although overall access measures did not appear to differ by patient race in models adjusting for socioeconomic status, black men reported less availability based on where they lived. In contrast, a geographically constructed measure of availability (number of clinics within a 30-minute drive) demonstrated that black men tended to have a higher number of clinics. The contradictory patterns based on self-report versus calculated measures suggest important discrepancies between potential and realized access for cancer care and underscore how

different approaches to measurement may lead to different results.

Contrary to expectations, we did not find access domains to be associated with receipt of definitive treatment for localized prostate cancer. However, 1 domain, lower accessibility, was found to be associated with definitive treatment of intermediate-risk and high-risk disease. We would have anticipated that, because definitive treatment of low-risk disease is more controversial, it would have been more likely to be related to access. The possibility that accessibility could be associated with undertreatment of higher risk disease warrants further investigation.

Multiple dimensions of access are associated with patients' overall experience with cancer care, including perceived quality of care and physician-patient communication. The mechanisms underlying these findings warrant further investigation. One possibility is that physicians in areas with lower access may feel less competitive pressure to improve communication and quality, or perhaps these providers disproportionately lack the appropriate resources and training with which to improve on these measures. Another possible explanation is that lower access may limit patients' perceived or actual ability to change physicians with whom they were less satisfied and/or have poorer communication. At the same time, access did not appear to mediate racial differences in these outcomes, thereby raising the need to examine other factors, such as distrust in the health care system, to disentangle racial disparities.

The current study has several limitations. First, the findings are susceptible to nonresponse bias because white men were more likely than black men to respond to the P² Access survey, as were men who received definitive treatment (see Supporting Information Table 4). Second, patient-reported measures may be subject to recall and social desirability biases. However, we are not certain of the direction of these biases or how they may impact our associations. Third, geographically derived access measures were based on estimated drive times using patients' home addresses as the starting location. Patients may travel from other locations (eg, work), experience different traffic conditions, and use alternative modes of transportation. Fourth, the use of a simulated scheduler from a physician's office may yield a higher rate of appointments than if the patient or family member tried to make an appointment. Furthermore, whether the referral comes from within or outside the same health care system and potentially the type of health care system of the appointment scheduler may affect appointment acquisition for actual patients. Fifth, we did not examine whether there

were differences in the next available appointment for patients with specific types of insurance. In addition, the current study data do not include measures that may help to explain some of the observed associations, such as patient-physician race concordance, which has been associated with communication,²⁵ and the physician's patient volume, which has been linked with surgical outcomes.²⁶ Sixth, we focused on accessibility to urologists rather than radiation oncologists. With black men more likely to receive radiotherapy, examining racial differences in access to different cancer specialists is an important next step. Finally, data were obtained for 1 geographic area, which may limit generalizability. The study area includes 5.3 million residents across urban and suburban locales, with 29% of the area's population being nonwhite. Focusing on a single area allowed us to obtain a large sample size and a rich collection of data sources; however, the results may be different in more rural areas or with respect to different cancers for which there may be greater clinical urgency to treat quickly.

The recent expansion of health insurance coverage offers the promise of improving access by helping to address financial barriers. However, access also requires addressing nonfinancial access barriers. The results of the current study suggest that for men with prostate cancer, less access across several domains is associated with lower patient-reported quality of physician-patient communication and perceived quality of care. Measuring and addressing various dimensions of access can identify modifiable factors associated with improved outcomes, but may still be insufficient for addressing racial differences in prostate cancer care delivery.

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CONFLICT OF INTEREST DISCLOSURES

Katrina A. Armstrong serves as a consultant for GlaxoSmithKline for work performed outside of the current study. David T. Grande reports his spouse has received grants from Pfizer.

AUTHOR CONTRIBUTIONS

Conceptualization of this project was led by **Craig Evan Pollack**, **Katrina A. Armstrong**, and **David T. Grande**. Development of the methodology was a team effort, with **Craig Evan Pollack**, **Katrina A. Armstrong**, **Justin E. Bekelman**, **Charles C. Branas**, **Karin V. Rhodes**, and **David T. Grande** contributing significantly to the design, and **Nandita Mitra** and **Xinwei Chen** constructing models and performing statistical analysis. **Xinwei Chen** and

Katelyn R. Ward managed the data sets. **Craig Evan Pollack** and **David T. Grande** supervised the project, and **Katelyn R. Ward** was responsible for project management and coordination. **Katrina A. Armstrong** acquired the National Institutes of Health grant that supported this project. **Craig Evan Pollack** and **David T. Grande** prepared the initial article draft, but all authors were critically involved in editing and reviewing the article.

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