Multiple physician recommendations for prostate cancer treatment: a Pandora's box for patients?

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Objective: *Patients turn to their physicians for information and guidance when making a prostate cancer treatment decision. The objectives of this study were to determine the likelihood of men consulting with and receiving treatment recommendations from different providers (urologists, radiation oncologists, and primary care physicians), the content of these recommendations, the perceived influence of recommendations and which recommendations, if any, were associated with prostate cancer treatment decisions.*

Methods: *One hundred and fifty-eight participants with localized prostate cancer completed a survey regarding their treatment decision-making process. Associations between treatment choice and urologist recommendations, consultations with radiation oncologists and primary care physicians, potential side effects and other factors were examined using regression analysis.*

Results: *Among men consulting multiple providers, more than half received at least one treatment recommendation. Most men chose a treatment recommended by at least one provider. The likelihood of choosing a treatment increased when the urologist recommended it. Consulting a radiation oncologist decreased and increased likelihood of choosing a radical prostatectomy and radiation, respectively.*

Conclusion: *Most men consulted multiple providers and received multiple treatment recommendations. Recommendations appear to play a significant role in prostate cancer treatment decision-making.*

Key Words: treatment decision-making, treatment recommendations, prostate cancer

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Introduction

Prostate cancer accounts for approximately 25% of all newly diagnosed cancers in men in the United States, with an estimated incidence of 217,730 and an estimated 32,050 deaths in 2010.[1] The most common treatments for clinically localized cancers include four definitive treatments, radical prostatectomy (RP), external beam radiation, brachytherapy, combination therapy, and watchful waiting, where patients are monitored for disease progression.[2-5] Currently, there is insufficient evidence to support the superiority of one definitive treatment modality over another;[6-8]

however, each treatment option is associated with different benefits and risks.[2,4,9]

Upon receiving a diagnosis of prostate cancer, men have to choose a treatment plan under the possible influence of uncertainty, shock, and/or fear.[10-14] Prostate cancer patients' receive varied and sometimes conflicting information stemming from a lack of consensus regarding the optimal treatment for clinically localized prostate cancer and a tendency for physicians to recommend the treatment that they themselves deliver.[2,4,5,15,16] Prostate cancer patients' treatment decision-making has been reported to be often hurried, based upon misconception and anecdotes, and even irrational.[17-19] Seeking opinions from multiple physicians from different specialties (e.g., urologists, radiation oncologists, and primary care physicians) may increase the breath of information prostate cancer patients receive and reduce the bias of this information by providing alternate points of view.[20]

Physician recommendations exert a primary influence on treatment decisions,[21-25] however, little research has explored the treatment decision-making experiences of patients with prostate cancer who consult multiple providers and who potentially receive multiple treatment recommendations. This study reports the findings of a survey of men diagnosed with clinically localized prostate cancer, the majority of whom consulted more than one provider about treatment for their prostate cancer. The objectives of this study were to determine patient's perceived physician recommendations and their potential impact on prostate cancer treatment decisions. To this end, men newly diagnosed with clinically localized prostate cancer (after they made their decision but before receiving treatment) were surveyed regarding their prostate cancer treatment decision-making.

Methods

Questionnaire development

An expert panel of urologic oncologists, radiation oncologists and health service researchers developed a set of baseline topics to initiate and facilitate the investigation of factors that may influence treatment decisions. Focus groups were held with men diagnosed with clinically localized prostate cancer where these topics were explored and the responses were used to improve understanding of prostate cancer treatment decision-making. A review of the literature identified previously used and/or validated instruments to measure specific themes identified from the focus group transcripts. Additional items were generated to address themes for which previously developed items were not available. Patients, their spouses, and two expert panels were asked to evaluate the ease of readability and content validity of questionnaire items. Twenty men consecutively diagnosed at a tertiary care hospital with clinical localized prostate cancer were asked to complete the questionnaire. This was a highly appropriate sample, as men receiving their care at this facility were demographically similar to cohort studied. On average, it took the men 15 minutes to complete the questionnaire. After completing the questionnaire, respondents were asked to evaluate the survey's readability, length, vocabulary, and style and the appropriateness of the questions. Of the 20 men, two men raised issues regarding two questions. The items were rephrased and the above procedure was repeated with 20 additional men diagnosed with prostate cancer. The second set of respondents did not find any of the items difficult to understand. Relevant questions from the more comprehensive survey were utilized for this project.

Sample recruitment

Two-hundred and two men diagnosed with clinically localized prostate cancer were recruited from two large Midwestern academic medical centers between June 2003 and December 2004. Men with newly diagnosed prostate cancer were informed of the possibility of enrolling in the study at the conclusion of the initial office consultation with a urologist. Participants were informed that the purpose of the study was to evaluate how men make their treatment decision. The men were asked to complete the survey after they made their treatment decision. All participants were 40 years of age or older and needle biopsy-confirmed clinically localized prostate cancer. The study protocol was approved by the Institutional Review Boards of both institutions. After providing written informed consent participants who agreed to participate were mailed a survey packet. Demographic data was obtained by patient self reporting in the questionnaire.

Measures

Perceived physician recommendations

Single-item questions were used to ascertain the type(s) of physician(s) that participants consulted regarding their prostate cancer diagnosis, which treatment (if any) they believe their physician(s) (urologist/radiation oncologist/primary care physician) recommended, and the influence of the recommendation(s) on their treatment decision. The influence of physician recommendation on the treatment decision was assessed by asking people, "How much was your decision

influenced by your… (urologist/radiation oncologist/primary care physician's recommendation)?" using 4-point Likert-type response formats.

Benefits, risks, and barriers of treatment

Several studies indicate that treatment benefits, risks, and barriers of treatment may impact prostate cancer patients' treatment decisions.[23,24,26-28] Participants rated the extent to which their treatment decision was influenced by expectations that the treatment would have side effects (interference with one's sex life over the long term, leakage of urine, and burning with urination or defecation), would remove the cancer and would be inconvenient or interfere with daily life, using 4-point Likert-type response formats.

Treatment choice

Participants were asked: "What treatment have you decided on?" Participants chose between no treatment (watchful waiting), surgery to remove the prostate, external beam radiation, brachytherapy (seed implant), and hormone therapy. For the purpose of this study the term watchful waiting was used to represent no initial definitive therapy (surgery or radiation). The study was not designed to differentiate between neoadjuvant/concurrent/adjuvant hormone therapy in association with EBRT and hormone therapy as a primary treatment modality for localized disease.

Reasons for not considering a specific treatment option

Participants were asked to identify which treatment options (radiation therapy, radical prostatectomy, brachytherapy, and hormone therapy) they had considered and not considered as a primary treatment course. After identifying the treatment option(s) they had not considered they were asked to indicate why they had not considered that option. Participants selected reasons that applied from a list of 10 possible explanations (e.g., "My doctor did not recommend it," "I was worried about the side effects").

Statistical analysis

Prior to analysis, the data were examined for inconsistent responses and potential errors in data entry. The demographic characteristics of the patient sample, treatment choices, reasons for not considering specific treatments, perceived physician recommendations, strength of recommendations, and influence of recommendations were analyzed using standard frequency table analyses, some of which were restricted to particular subsets of participants (e.g., those participants perceiving recommendations from a urologist, or those participants *not* considering a specific treatment). Three primary outcome variables were computed from the participants data, representing mutually exclusive indicators of treatment choices: an indicator (1 = yes, 0 = no) of choosing a radical prostatectomy (RP), an indicator of choosing external beam radiation therapy (EBRT), and an indicator of choosing watchful waiting (WW). Three multiple logistic regression models were then fitted to these primary outcome variables, considering the following predictor variables in each model: urologist recommendation (the treatment being modeled, an alternative treatment, or no treatment), an indicator of consultation with a radiation oncologist, an indicator of consultation with a primary care physician, and ordinal measures representing the influences of potential side effects, the potential for the treatment to remove the cancer, and the inconvenience of the treatment on the treatment decision. Separate models were fitted to identify the factors associated with a preference for each of the three treatment options. Given sample size restraints, it was not possible to include the actual treatment recommendations of the radiation oncologists and primary care physicians as additional predictors in the model; therefore consultation with the radiation oncologists and primary care physicians were used as a surrogate for treatment recommendation in the multiple logistic regression models. All statistical analyses were performed using procedures in the Stata statistical software package (Version 9.2, College Station, TX, USA).

Results

Two hundred and two participants were initially enrolled and 158 completed and returned the questionnaire (78.71%). Seventy-nine percent of participants self-classified as white, 49% reported having more than one comorbid disease, and 64% were unemployed or were retired. Almost 70% had an income less than $30,000 per year, while 60% had at least some college education and 60% were married or living with a partner, see Table 1.

All participants had been evaluated by a urologist. As shown in Table 2, 58.2% perceived that they had received a treatment recommendation from their urologists. Among these participants, 63.0% reported that the recommendation was for RP. Forty-two participants also consulted a radiation oncologist, among which, 60.0% reported that they received a treatment recommendation. The most commonly reported treatment recommendation by radiation oncologists was external beam radiation (62.1%).

TABLE 1. **Sociodemographic characteristics**

Ethnicity	
White	125 (79%)
Black	33 (21%)
Comorbidities	
0-1	80 (51%)
2-3	71 (45%)
> 3	7 (4%)
Employment	
Full-time	36 (23%)
Part-time	19 (12%)
Retired	79 (52%)
Unemployed	19 (12%)
Income	
< 30K	100 (69%)
30K-50K	24 (16%)
> 50K	21 (15%)
Education	
< High school	15 (11%)
High school	45 (29%)
Some college	70 (45%)
College graduate and greater	24 (15%)
Marital status	
Married/living with someone	94 (60%)
Unmarried	61 (40%)

*Percentages adjusted due to missing values (subcategory N not equal to 158)

Sixty-four participants consulted a primary care physician regarding their prostate cancer. Among these participants, 54.7% perceived that they had received a recommendation. The most commonly reported recommendation from primary care physicians was RP (57.1%). Among those who reported receiving a treatment recommendation from a physician, a greater proportion of participants reported that their treatment decision was influenced either "quite a bit" or "very much" by their urologists' (80.43%) or radiation oncologists' (62.1%) recommendations compared to their primary care physicians' recommendations (51.4%) ($X^2 > 4.9$, $p < 0.05$).

Among men consulting a urologist only and receiving one recommendation, 5.7% chose a treatment other than that which was recommended. Among those who consulted both a urologist and a radiation oncologist, both a urologist and a primary care physician, or all three physicians, 10.0%, 11.8%, and 20.0% chose a treatment other than the one that was recommended, respectively. When participants consulted multiple physicians and received multiple recommendations, the majority of people received consistent recommendations, see Table 3.

Three multiple logistic regression models were fit to determine the odds of choosing a specific treatment over other treatments, Table 4. The three outcomes were binary indicators of each of the three treatment options: RP (Y/N), external beam radiation (Y/N), and watchful waiting (Y/N). Treatment risks, benefits, and

TABLE 2. **Physician recommendations and self-reported influence of recommendations**

	Urologist	**Radiation oncologist**	**Primary care physician**
% perceiving recommendation	58.23% (n = 92/158)	60.05% (n = 29/42)	54.69% (n = 35/64)
Treatment recommended*			
Watchful waiting	14.1%	10.3%	11.4%
Radical prostatectomy	**63.0%**	10.3%	**57.1%**
External beam radiation	19.6%	**62.1%**	20.0%
Brachytherapy	6.5%	24.1%	11.4%
Hormone therapy	5.4%	24.2%	0.0%
Influence of recommendation on treatment decision-making			
Not at all	8.7%	20.7%	25.7%
A little	10.9%	5.08%	22.9%
Quite a bit	**48.9%**	**37.9%**	**28.6%**
Very much	**31.5%**	**24.1%**	**22.9%**
Missing	0.0%	6.9%	0.0%

*Total percentage greater than 100% due to combination therapies recommended

TABLE 3. **Summary of the relationship between physicians' recommendation and treatment chosen**

Physicians	Received at least 1 recommendation	Multiple recommendations	% consistent recommendation	Chose treatment other than that recommended
Only Urologist (n = 72)	48.6%	N/A	N/A	5.7%
Uro + Rad* (n = 22)	95.4%	59.1%	69.2%	10.0%
Uro + PC** (n = 44)	79.5%	36.4%	93.7%	11.8%
All 3 (n = 20)	75.0%	70.0%	71.4%	20.0%

*Uro + Rad = Men consulting both a urologist and radiation oncologist
**Uro + PC = Men consulting both a urologist and primary care physician

barriers also were included in the regression models. Urologist recommendation for the treatment was an independent predictor of choosing RP and external beam radiation therapy. For RP, the adjusted odds ratio of choosing an RP increased significantly (OR 4.8; 95% CI 1.3, 13.8) if the urologist recommended RP and decreased significantly (OR 0.1, 95% CI 0.1-0.3) if the urologist recommended an alternative treatment. Similarly, the odds of choosing external beam radiation therapy increased significantly (OR 23.6; 95% CI 5.0, 112.5) if the urologist recommended it. Consulting a radiation oncologist significantly reduced the odds of choosing RP (OR 0.2; 95% CI 0.1, 0.6) and increased the likelihood of choosing external beam radiation (OR 2.5; 95% CI 1.3, 4.8). Consulting a primary care physician was not associated with a significant increase in the odds of choosing a treatment.

Treatment risks, benefits, and barriers also predicted treatment choice. Giving greater importance to possible treatment side effects when making the decision was associated with a significant reduction in the adjusted odds of choosing RP (OR 0.4; 95% CI 0.2, 0.8) and a significant increase in the adjusted odds of choosing watchful waiting (OR 5.0; 95% CI 1.7, 14.3). Giving greater importance to the potential for the treatment to "remove the cancer" was associated with a significant increase in the adjusted odds of choosing RP (OR 4.2; 95% CI 2.2, 7.9) and a reduction in the adjusted odds of choosing watchful waiting (OR 0.2; 95% CI 0.1, 0.4). Giving greater importance to the treatment

TABLE 4. **Results of multiple logistic regression analysis predicting treatment choice**

Predictor	Outcome: RP	Outcome: EBRT	Outcome: WW
Urologist recommendation	OR (95% CI)	OR (95% CI)	OR (95% CI)
Recommended this treatment	4.2 (1.3, 13.8)	23.6 (5.0, 112.5)	17.0 (1.5, 193)
Recommended other treatment	0.1 (0.1, 0.3)	1.0 (0.3, 3.4)	0.5 (0.1, 2.0)
Recommended nothing	REF	REF	REF
Consultation with radiation oncologist	0.2 (0.1, 0.6)	2.5 (1.3, 4.8)	1.4 (0.6, 3.0)
Consultation with primary care physician	1.8 (0.6, 5.1)	0.6 (0.3, 1.5)	0.7 (0.2, 2.2)
Influence of other factors on the treatment decision*			
Side effects	0.4 (0.2, 0.7)	1.2 (0.6, 2.4)	5.3 (1.8, 16.2)
Remove the cancer	4.2 (2.2, 7.9)	0.6 (0.4, 1.1)	0.2 (0.1, 0.4)
Time efficient/convenient	0.9 (0.6, 1.4)	1.3 (0.8, 2.2)	0.3 (0.1, 0.7)

*Influence of other factors is based on a continuous scale from no influence to greatly influenced treatment decision

being efficient and convenient was associated with a significant reduction in the adjusted odds of choosing watchful waiting (OR 0.3; 95% CI 0.1, 0.7).

Participants reported many reasons for not considering a given treatment option, Table 5. The most common reason given for not considering external beam radiation was: "I was worried about the side effects/complications". The most common reason for not considering RP, brachytherapy or hormonal therapy was: "My doctor did not recommend it". Collapsing across all treatment modalities, the most commonly cited reason for not considering a treatment were: "My doctor did not recommend it" (45.4%) and "I was worried about the side effects/complications," (31.0%) (Data not shown).

Discussion and Conclusions

Seeking opinions of multiple physicians from different specialties (e.g., urologists, radiation oncologists, and primary care physicians) may serve to increase the information prostate cancer patients receive and reduce the bias of this information.[20] In this sample, many men had done just this; over half of our participants had consulted with two or more providers. When prostate cancer patients consult physicians about prostate cancer treatment, they not only receive information about their disease but also treatment recommendations. Patients who consult multiple physicians may receive multiple recommendations. This study was conducted to examine the extent to which patients report receiving multiple physician recommendations, the self-reported influence of the recommendations as a function of provider type, and the association between perceived physician recommendations and treatment choice.

Among patients who consulted two or more physicians, half the men perceived that they received multiple recommendations. One can imagine that whether these recommendations are for the same or for different treatments could significantly impact the treatment decision-making process. How often do men who consult multiple providers perceive that they receive discordant recommendations? While the literature documents a tendency for physicians to recommend the treatment modality they themselves deliver, in this study the majority of patients who received both a recommendation from a urologist and a radiation oncologist perceived that they had received concordant recommendations (70%). The vast majority of men who received recommendations from both a urologist and a primary care physician perceived that they had received concordant recommendations (94%). Presumably, the majority of the recommendations were driven more by patient and disease characteristics than specialist bias. However, a sizeable minority of the men, 30%, did receive discordant recommendations. Furthermore, many of the patients may have consulted radiation oncologists upon the advice of their urologist who believed that they were better candidates for radiation therapy than surgery. The high proportion of concordance found in this study may believe the fact that if all prostate cancer patients consulted both a urologist and a radiation oncologist, the proportion

TABLE 5. **Reasons for not considering a given treatment**

	EBRT (n = 89)	**Prostatectomy (n = 44)**	**Brachytherapy (n = 95)**	**Hormonal therapy (n = 98)**
My doctor did not recommend it	37.1%	54.5%	42.1%	48.0%
It was too inconvenient	16.8%	2.3%	3.2%	4.1%
I was worried about the side effects or complications	41.6%	43.2%	20.0%	19.4%
I didn't think it would be helpful	15.7%	0.0	12.6%	15.3%
I was worried that it would cost too much	2.2%	0.0	2.1%	1.0%
I didn't know about it	0.00	2.3%	7.4%	11.2%
I couldn't have it for medical reasons	3.4%	18.2%	1.0%	0.0
It was too aggressive	6.7%	29.5%	4.2%	1.0%
It will not cure me	14.6%	0.0	10.5%	12.2%
Other	15.7%	6.8%	19.0%	7.1%

Note: The N is for men not selecting that option

of discordant recommendations would be considerably higher, making recommendation discordance a significant dimension of the prostate cancer treatment decision-making process. While it was beyond the scope of the present project, the results suggest that it will be important to address whether receiving multiple and discordant recommendations impacts how men think about prostate cancer treatment information, and whether discordant recommendations are associated with negative psychological consequences such as decision-making distress or regret.

There has been considerable interest in the relative influence of a number of factors including physician recommendations, side-effects, treatment convenience, and influence of friends and family, on prostate cancer patients' treatment decisions.[19,21,22,24,27,28] Results of the present study as well as previous research[22] indicate that physician recommendations may be the most important factor influencing many men's prostate cancer treatment decision. In a retrospective study of men previously treated for prostate cancer, Hall et al[29] reported that 70% of their sample listed their urologist as the most important source of information about prostate cancer treatment and 65% reported that the urologist was the most influential factor impacting their treatment choice. In the present study, multiple forms of converging evidence indicate that perceived physician recommendations influence patient prostate cancer treatment decision-making. In the present study, among men who perceived that they received one or more recommendations, the vast majority (90%) made decisions that were consistent with at least one recommendation. Most participants also reported that their decisions were influenced "quite a bit" or "very much" by their physicians,' and in particular the urologist and radiation oncologist recommendation(s). To facilitate truly informed treatment consent, it is important for physicians to provide full and objective information about treatment options, along with the rationale for their treatment recommendations.

In the present study it was not only found that physician recommendations appear to be important to men's treatment choices, it was also found that the lack of a recommendation for a given treatment modality also influenced patients' choices. In the present study, the most commonly cited reason for not considering a treatment modality was the fact that patients did not perceive that it had been recommended by a physician. Understanding is built not only on what people say, but what people do not say. One of Grice's maxims describing conversational pragmatics is that 'you do not say what you believe to be false or for what you lack adequate evidence.[30] Therefore, one can speculate that the absence of a recommendation for a given treatment modality may be viewed as a vote of no confidence for that treatment. Physicians may influence patients as much by the recommendations they do not make as the recommendations that they do make. Further research is required to better understand how patients interpret the lack of a physician recommendation in treatment decision-making process.

The present work takes a logical next step by examining not just whether perceived physician recommendations are predictive of prostate cancer treatment choices, but the relative importance of urologist, radiation oncologist and physician recommendations for predicting patients' treatment choices. On average, people reported that recommendations from urologists and radiation oncologists were more influential than recommendations from primary care physicians. A greater proportion of patients reported that urologists' recommendations were highly influential than patients reporting that radiation oncologists were influential, but the difference between the proportions was not significant. The relative predictive strength of perceived recommendations for all three providers was not directly compared due to sample size constraints. Therefore radiation oncology and primary care physician consultations were used as a proxy for recommendations, given that the majority of consultations resulted in perceived treatment recommendations. Multiple regression models revealed urologists' recommendations were a stronger predictor of treatment choice compared to having consulted a radiation oncologist or primary care physician. Urologist recommendations were also a stronger predictor of treatment choice compared to beliefs about side effects, potential for removing the cancer and time efficiency and convenience of the treatment. However, it was also the case that men's beliefs regarding the treatment side effects, potential for removing the cancer and time efficiency and convenience of the treatment were important to their treatment decision.

Another aspect of the fact that men are consulting multiple providers is that they are consulting their primary care physicians about their prostate cancer. In this study 40% percent of the sample reported consulting their primary care physician about their prostate cancer. Hall et al[29] similarly reported that 49% of men with prostate cancer listed their primary care physician as a source of information regarding their treatment decision. Given that it is estimated that 20% of men do not have regular sources of medical care and an additional 2.5% of men report that their usual source of care is an emergency room or outpatient department[31] this percentage likely under-estimates the number of men who might consult a primary care

physician about prostate cancer treatment if all men had a usual source of care or medical home. Little is known about the interactions between primary care physicians and their patients about prostate cancer treatment. The results of the present study indicate that roughly half of the patients who consulted with their primary care physicians perceived that they influenced their decision either "Very Much" or "Quite a bit"; these proportions were somewhat lower than for urologists and radiation oncologists. As urologists and radiation oncologists may be more likely to recommend the prostate cancer treatment that they themselves deliver,[15] primary care physicians may be a useful resource to men diagnosed with prostate cancer because, unlike urologists and radiation oncologists, primary care physicians do not have an inherent financial interest in the treatment that is chosen and may be less biased in their presentation of treatment-related information. In this study perceived recommendations from primary care physicians were nearly always concordant with those of urologists raising questions about how much new information primary care physicians provide to patients. Finally, if primary care physicians are to be a resource for men in the prostate cancer treatment decision-making process, one issue of concern is that primary care physicians may not have the time or expertise to adequately advise their patients on the risks, benefits, and side effects of the various treatment options. Although they may be less biased, they may be less knowledgeable and have limited time to commit to and address their patient's questions, concerns, and issues.

This study had a number of limitations that should be taken into consideration. First, physician recommendation as reported by the patient may or may not reflect physician intentions and physicians' actual communication behavior. However, while future research should examine concordance between physician intentions and patient perceptions, the present research remains important because it examines the proximal determinant of patient behavior: patient cognitions regarding physician recommendations. Second, the ability to determine the appropriateness of the physician recommendation is not within the scope of this study. The findings of this study, by no means, questions the appropriateness of recommendation based upon the participants health status and cancer severity (tumor grade, PSA and stage). However, it does give insight into the influence that physician(s) have on the prostate cancer treatment that men receive. In many ways this study asks more questions than it answers; future work needs to address the possibility that multiple recommendations might have unintended consequences for men's psychological well-being and decision-making ability depending on whether the recommendations are concordant or not. A third limitation of the study sample was relatively small (158 men) and findings may not generalize to the general population of black and white men diagnosed with clinically localized prostate cancer. A larger, multi-center study is required to confirm these findings and test the relative influence of urologists', radiation oncologists' and primary care physicians' treatment recommendations. The fourth limitation is that the participants were asked to complete the survey after they made their treatment decision and time from initial diagnosis to survey completion was not measured. It is not known if participation in the study influenced whether or not men sought additional recommendation or took additional time to make their decision. However since the men were asked to fill the survey out after they made their treatment decision, there is no reason to believe that the findings in this study have been systematically biased the study methodology.

In summary, men newly diagnosed with prostate cancer may find themselves making a treatment decision in the face of uncertainty, of living with treatment side effects, or of dying from prostate cancer. Many men consulted more than one provider about their prostate cancer and therefore made their treatment decisions having received information and, frequently, recommendations from multiple providers. Men were likely to have selected a treatment that was recommended by at least one provider, with treatment decisions most likely to have been consistent with urologists' recommendations. Other factors such as beliefs regarding treatment side effects, and potential for removing the cancer were also important to men when making their treatment decision.

There has been considerable discussion about the value and impact of physician recommendations in treatment decision-making,[32] but there has been little systematic attention to cases in which people consult with multiple providers (a situation that may become normative for prostate cancer patients).

Further research is required to better understand why one physician's recommendation might be more influential than another's, whether discordant recommendations increase decision-making distress and/or regret and how patients interpret a perceived absence of physician recommendation. The fact that patients receive multiple physician recommendations may also need to be taken into account when developing patient centered prostate cancer treatment decision-making tools.

One approach to help decrease the discordance between treatment recommendations is the implementation of a multidisciplinary clinic (MDC). MDCs have been shown to improve patient satisfaction for a variety of oncologic diseases.[33] This improved satisfaction is in part due to improved logistics of office visits but also due to a coordination of treatment recommendations. It provides an opportunity for patients to discuss their cancer diagnosis and treatment options with a variety of providers at the same time/day and location. More specifically, studies have also described successful implementation of MDCs for prostate cancer.[34-36] Valicenti et al[34] described improved patient satisfaction for patients with newly diagnosed prostate cancer presenting to their MDC. □

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