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Physicians' Perceptions of Factors Influencing the Treatment Decision-Making Process for Men with Low-Risk Prostate Cancer

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Abstract

Objective—To assess physicians' attitudes regarding multiple factors that may influence recommendations for AS vs. AT given the central role physicians play in the treatment-decision making process.

Methods—We conducted semi-structured interviews to assess factors that physicians consider important when recommending AS vs. AT, as well as physicians' perceptions of what their patients consider important in the decision. Participants included urologists (N=11), radiation oncologists (N=12), and primary care physicians (N=10), from both integrated and fee-for-service healthcare settings.

Results—Across the specialties, quantitative data indicated that most physicians reported that their recommendations for AS were influenced by patients': older age, willingness and ability to follow a surveillance protocol, anxiety, comorbidities, life expectancy, and treatment preferences. Qualitative findings highlighted physicians' concerns about malpractice lawsuits, given the

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possibility of disease progression. Additionally, most physicians noted the role of the healthcare setting, suggesting that financial incentives may be associated with AT recommendations in fee-for-service settings. Finally, most physicians reported spouse/family opposition to AS due to their own anxiety or lack of understanding of AS.

Conclusions—We found that patient and physician preferences, healthcare setting and family/spouse factors influence physicians' treatment recommendations for men with low-risk PCa. These were consistent themes across physician sub-specialties in both an HMO and in fee-for-service settings.

Keywords

Low Risk Prostate Cancer; Treatment-Decision-Making; Physicians' Perceptions; Quantitative and Qualitative Methods

INTRODUCTION

The overdiagnosis and overtreatment of indolent, low-risk prostate cancer (PCa) is a significant public health problem.^{1,2} In light of evidence indicating the overtreatment of low-risk PCa,^{3–5} active surveillance (AS) has been recommended by the National Comprehensive Cancer Network (NCCN) and the American Urological Association (AUA) as an important management strategy for appropriately selected patients.^{6–8} AS is a strategy that defers active treatment (AT; e.g., surgery, radiation therapy), which often place men at risk for urinary, bowel, and sexual dysfunction and poorer quality of life (QOL).^{9,10} AS involves closely monitoring patients with low-risk disease (defined as having a PSA < 10 and a Gleason score of ≤ 6) using serial PSA tests, digital rectal exams and biopsies so that curative treatment can be initiated if there are signs of disease progression. Despite data indicating low rates of disease progression and mortality following AS for low-risk PCa, it continues to be underutilized among men with low-risk disease.^{1,11–16}

Due to the lack of consensus regarding an optimal treatment strategy for low-risk PCa, the treatment decision-making process for patients is complex. To assess this process, we conducted a prospective, observational cohort study to measure patient and clinical predictors of the treatment decision and the long-term patient reported outcomes among low-risk PCa patients.^{17,18} As physicians have a significant impact on the final treatment choice,^{19–22} in the present study we assessed physicians' perceptions of the factors influencing the treatment decision-making process for men with low-risk disease.

MATERIAL AND METHODS

Participants and Recruitment

Eligible participants were physicians: 1) who were urologists, radiation oncologists or primary care physicians (PCPs); 2) from Kaiser Permanente Northern California (KPNC) or from the Washington, DC metro area; and 3) who were involved in the treatment decision-making process for men with low-risk PCa. Within KPNC, all urologists and radiation oncologists at the East Bay and Santa Clara facilities, and all the PCPs at the East Bay facility were sent an email that described the study and requested that physicians contact the

researchers if they were willing to participate. Two rounds of email announcements were sent. The facilities were chosen because of their large department sizes and geographic location facilitating arrangement of in-person interviews. All DC metro area physicians were also emailed a study description and asked to contact the researchers if they were willing to participate in the study.

Procedures

Following IRB approval at KPNC and Georgetown University Medical Center (GUMC), two authors (KD and KT) conducted in-person, semi-structured interviews from October 2014 through March 2015. Physicians signed consent forms allowing the researchers to audio-record the interviews and participants received a \$50 gift card for participating. All interviews were transcribed verbatim and coded using the qualitative analysis software, NVivo.²³

Interviews

We developed quantitative and qualitative questions about the treatment decision-making process for men with low-risk PCa. Three urologists and one medical oncologist who treat PCa patients reviewed early drafts of the interview and modifications were made based on their feedback. Both quantitative and qualitative questions addressed two broad topics related to the management of low-risk PCa: 1) factors that influence physician practices of recommending AS for men with low-risk PCa, and 2) physicians' perceptions of their patients' treatment decision-making process.

Quantitative Questions—Physicians rated the extent to which patient characteristics influenced their recommendation for AS, including patient age, comorbidities, race, family history, patient anxiety, risk of disease progression, and risk of side effects. Response options ranged from 1 to 4: 1 “not at all important to my recommendation” to 4 “extremely important to my recommendation.” We assessed physicians' understanding of what characteristics influenced patients to initially choose AS vs. AT, from the patient's point of view. Response options ranged from 1 to 3: 1 “makes patient's selection of AS less likely,” 2 “does not affect patient's selection of AS,” and 3 “makes patient's selection of AS more likely.” The characteristics included: older age, higher education and income, being married, being African American, being sexually active, being afraid of side effects, having a high tolerance for uncertainty, having comorbidities, being willing to have repeat biopsies, having had negative treatment experiences, and having a baseline PSA closer to 4 than to 10 (Figure 1).

We also used the Degner shared decision making scale, which was modified for use with physicians.²⁴ We asked, “How often do your patients want to make the decision on their own?”, “How often do your patients want to make a shared decision?”, and “How often do your patients want you to make the final decision?” Response options included: 1 “rarely/never,” 2 “sometimes,” 3 “often,” and 4 “always.”

Qualitative Questions—The qualitative questions were open-ended and addressed the following topics: patient characteristics that influence treatment recommendations, physician

characteristics that influence treatment recommendations, involvement of spouses/family in the treatment decision, and factors associated with patients' long-term satisfaction with their treatment decision. Qualitative questions included: 1) In what ways do patient preferences, attitudes, or beliefs impact your treatment recommendations for men with low-risk PCa? 2) Has your discussion with patients regarding AS changed over the past few years? If so, how has it changed? 3) How involved are spouses/family members in making treatment decisions? 4) What factors are associated with men's long-term satisfaction or dissatisfaction with their treatment decision? 5) To what extent do you think that concerns about malpractice play a role in physicians' willingness to recommend AS to their patients? 6) Do you think that treatment recommendations for low-risk PCa vary in different healthcare settings (e.g., VA vs. HMO vs. fee-for-service)?

Data Analysis

Quantitative Data—We compared participants' demographic characteristics and responses by physician specialty and by site (KPNC vs. DC), but due to the small sample sizes, no significance testing was conducted. As there were not any clear site differences, all quantitative results focused on comparisons between the physician specialties.

Qualitative Data—Three independent coders (CH, PB, KD) used an iterative process to identify recurring themes. The coders independently identified themes based on three interviews and then came to consensus on an initial list of themes. The coders independently coded the remaining interviews in sets of three to four interviews, meeting after completing each new set to come to consensus and to modify the list of themes. The coded themes and exemplar quotes are presented in Table 3. Every interview was coded by at least two of the researchers.

RESULTS

Sample Characteristics

We invited 27 eligible physicians from the Washington, DC area to participate, from academic medical centers, the VA, and private practices. Of those, N=6 never responded to calls or emails and N=4 expressed interest but did not have time to complete the interview. At KPNC, 17 urologists, 12 radiation oncologists and 165 PCPs were identified as eligible participants. Of those, 18 physicians expressed an interest in participating and two were unable to complete the interview due to time constraints. Ultimately, thirty-three physicians participated: (N=17 from Washington, DC and N=16 from KPNC). Of these 33 physicians, 12 were radiation oncologists, 11 were urologists, and 10 were PCPs, with an approximately equal number of specialists from each geographic area.

Physician characteristics are presented in Table 1. PCPs were slightly younger than the urologists and radiation oncologists. Urologists and radiation oncologists reported similar percentages of low-risk PCa patients in their practices.

Quantitative Data

Factors Influencing Physicians' Treatment Recommendations for Active Surveillance

(Table 2): Age and comorbidities were the only patient characteristics that *all* physicians reported as “somewhat” or “very” influential to their recommendation of AS, and a majority endorsed patient willingness to follow a surveillance protocol (89%–100%), patient ability to follow a surveillance protocol (89%–100%), patient anxiety about having PCa (80%–91%), life expectancy (89%–100%), risk of disease progression (78%–91%), patient treatment preferences (92%–100%), and risk of treatment side effects (83%–91%).

Differences between the three specialties were noted regarding the influence that pretreatment symptoms had on treatment recommendations. Of note, 88.9% of PCPs reported that the presence of erectile dysfunction, urinary incontinence, and bowel problems influenced their treatment recommendations for AS, however, less than 28% of urologists reported being influenced by these symptoms. Additionally, 75% of radiation oncologists endorsed lower-urinary tract symptoms as an influential factor when recommending AS more often than the other two specialties. Finally, 77.8% of PCPs reported that opinions from other doctors influenced their own recommendations, while less than 45% of urologists and radiation oncologists said the same.

Physicians' Perceptions of Factors that are Important to Low-Risk Patients' Initial

Selection of AS vs. AT (Figure 1): Physicians indicated their opinions about patients' demographic, clinical, and psychological characteristics that are often associated with men's treatment preferences. Across all specialties, physicians indicated that the following three factors were associated with a *lower* likelihood of men selecting AS: high PCa-related anxiety, being African American, and being married. In contrast, factors that *increased* men's likelihood of selecting AS were: older age, fear of treatment side effects, having comorbidities, knowledge of others' negative treatment experiences, and being sexually active. Physicians also stated that patients with higher levels of education and a willingness to have repeat biopsies were more likely to select AS.

Qualitative Data

Patient Characteristics That Influence Physician Treatment

Recommendations: Twenty-five percent of the physicians said that they always recommend AS for patients who meet low-risk criteria. More PCPs than urologists and radiation oncologists said they always recommend AS for low-risk men. Notably, these physicians tended to be from KPNC compared to Washington, DC. Only radiation oncologists from Washington, DC said they always recommend AS for low-risk men. Physicians also reported that they consider the patient's age, anxiety level, risk for aggressive disease, and preference for a specific treatment. (See Table 3, quotes 1 and 2)

Many physicians reported that their treatment recommendations were influenced by patient anxiety about the cancer. However, when physicians were asked to think of any characteristics that would prevent them from recommending AS, only a few mentioned patient anxiety. (See Table 3, quotes 3 and 4)

Some physicians said that reducing patient anxiety by educating them on the lack of urgency may help patients take more time to decide. (See Table 3, quote 5)

Physicians were asked how comfortable they felt recommending AS to men at higher risk for aggressive disease, such as African American men and those with a positive family history. Of the three specialties, urologists were most likely to say that they still recommend AS for these men. (See Table 3, quotes 6, 7 and 8)

Physicians also indicated that patient preferences were very important to their treatment recommendation. (See Table 3, quotes 9 and 10)

Physician Preferences and Healthcare Setting Characteristics that Influence Treatment

Recommendation: Most physicians reported that they had no personal concerns about recommending AS to low-risk patients. However, several physicians did mention their concerns about a malpractice lawsuit, particularly if there is disease progression. (See Table 3, quotes 11, 12 and 13)

Some physicians also expressed that *other* doctors have concerns about recommending AS. (See Table 3, quotes 14, 15 and 16)

Several physicians reported being more comfortable recommending AS now than they were in years past. This level of increased comfort appears to be related to a greater acceptance among physicians of AS as a viable management strategy. (See Table 3, quotes 17)

Most physicians said that treatment recommendations are influenced by the healthcare setting of the physician. Some suggested that financial incentives increase the rates of AT in fee-for-service settings. (See Table 3, quotes 18, 19 and 20)

Involvement of Family/Spouses in the Treatment Decision: Only two physicians said that family and spouses were typically not involved in the treatment decision. Half of all physicians said that the level of involvement varies by family. (See Table 3, quote 21)

Almost all physicians reported that family/spouses were more often in support of AT and opposed to AS. Some felt this opposition was largely due to their own anxiety about the cancer. (See Table 3, quotes 22 and 23)

Some physicians also believed that the spouse/family opposition to AS was due to a lack of understanding. In order to educate the spouses/family, most physicians reported that they include them in the discussion with their patient. (See Table 3, quotes 24 and 25)

Factors Associated with Long-Term Treatment Satisfaction: Several physicians mentioned that treatment side effects impacted patients' long-term satisfaction with their treatment decision. (See Table 3 quotes 26 and 27) Other physicians specifically indicated that disease progression affects whether or not patients are satisfied with the decision. (See Table 3, quotes 28 and 29)

COMMENT

We assessed physicians' perspectives about the factors involved in the treatment decision-making process for men with low-risk PCa. Both the quantitative and qualitative data showed that patient preferences, physician preferences, healthcare setting, and spouse/family factors influence physicians' treatment recommendations for men with low-risk disease. These themes were fairly consistent across urologists, radiation oncologists, and PCPs in both an HMO and fee-for-service settings.

Physicians reported weighing a host of clinical and demographic factors, as well as patient preferences prior to making a treatment recommendation. This involves having a discussion with patients about their preference for AT or AS, assessing their willingness/ability to follow surveillance protocols, and evaluating their level of anxiety about living with untreated PCa.

Physicians clearly factored patient anxiety into their treatment recommendations. Some physicians explained that anxiety can be reduced by educating patients about the lack of urgency to make an immediate treatment decision. This need for low-risk patients to understand that they can and should take their time with a treatment decision suggests that decision aids and other educational materials may be useful for this population. Additionally, providing men with a decision tool after an abnormal PSA test but prior to a PCa diagnosis may reduce anxiety.²⁵

Holmes-Rovner et al.²⁶ emphasized the need to focus more attention on patient preferences as a way of increasing shared decision-making between patients and their physicians. Therefore, it may be useful to educate physicians about the importance of using a standardized measure of anxiety to ensure concordance between the patient's actual level of anxiety and the physician's perception of it. A standardized measure may improve patient-physician communication and improve the likelihood that the ultimate treatment decision is in line with the patient's actual preferences.

As prior studies have demonstrated,^{20,21} physician beliefs influence their treatment recommendations regarding treatment. In the current study, most physicians indicated that they did not personally have concerns about recommending AS for low-risk patients. However, many stated that they were concerned about malpractice lawsuits, but continued to recommend AS in spite of these concerns. Some participants noted that other physicians had fears of malpractice lawsuits, particularly when or if a patients' disease progressed. Interestingly, several physicians noted a shift in recent years regarding their level of acceptance of AS as a viable management option for low-risk PCa. This change appears to be due to the increased evidence that AS is associated with low rates of disease progression and that national guidelines are now recommending that AS be considered a legitimate management option.

Additionally, some physicians reported that they believed healthcare settings influence treatment recommendations, particularly if there is a financial incentive to recommend AT in fee-for-service settings compared to integrated healthcare settings. This was indicated more by KPNC vs. DC physicians.

Physicians believed that spouse/family involvement varied across patients, and that married men had a lower likelihood of selecting AS. Physicians noted a tendency for spouses/family members to be opposed to AS, often due to their own anxiety about cancer and a lack of understanding of the AS protocol. Some physicians stated that spousal/familial education may be similarly beneficial to patient education in reducing anxiety and preventing a rapid treatment decision. Patient navigators as well as family members/friends should be increasingly considered as important resources during the treatment decision making process. They may be useful in assisting men in evaluating their treatment options and figuring out which option best matches with their own personal values and preferences.

Physicians reported that long-term treatment satisfaction is associated with experiencing treatment side effects^{27–30} and with disease progression. Not surprisingly, physicians stated that long-term satisfaction was greater when men experienced fewer side effects. Other physicians said that disease progression was more highly associated with patients' satisfaction. Ultimately, physicians indicated that, regardless of their treatment decision, men tend to be satisfied with their treatment choice if they felt they were presented with all available treatment options and were aware of the associated impact of each treatment. This speaks again to the need to educate patients about all available treatment options, including AS, and let patients determine with their physician what is best for them.

Limitations, Strengths and Implications for Practice

Study limitations include the small sample size of each of the specialties, limiting generalizability. However, we reached a point of thematic saturation with the physicians who were interviewed. Future studies with a larger sample size are needed to more accurately quantify potential differences across different settings and types of practices. A second limitation is that this study focused exclusively on physicians' perceptions as opposed to those of patients or families/spouses. A third limitation is the lack of race/ethnicity, gender and geographic setting diversity among the physicians interviewed. The mixed method approach was a study strength providing both quantitative and qualitative data to examine physicians' perceptions. The results of this study may prove useful for other physicians to better understand the complexity of the treatment decision-making process for men with low-risk PCa as they help men evaluate the best decision for them.

CONCLUSION

The present study highlights the very complex nature of treatment decision-making for men with low-risk PCa. Additionally, this study illustrates the importance of understanding the perspectives of all involved in the process: patients, families/spouses, and physicians. These results revealed themes that should be further examined in a larger, more comprehensive study concerning the role of physicians in improving men's understanding of active surveillance, level of anxiety about prostate cancer, and their long-term treatment satisfaction.

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Figure 1.
Physicians' Perceptions of Factors that are Important to Patients' Initial Selection of AS (vs. AT).

Note: Bars represent physicians' mean rating for each patient characteristic

Table 1

Physician Characteristics by Specialty

Characteristic	KPNC N=16 (48.48%)			DC N=17 (51.51%)		
	Urologists (N=5)	Rad. Onc. ¹ (N=6)	PCPs ² (N=5)	Urologists (N=6)	Rad. Onc. (N=6)	PCPs (N=5)
Age						
Mean (SD)	44.60 (7.96)	47.17 (12.29)	39.20 (6.69)	52.67 (13.71)	47.17 (11.62)	44.80 (6.26)
	0	0	0	0	0	0
Gender %						
Female	1 (20%)	2 (33.3%)	4 (80%)	2 (33.3%)	1 (16.7%)	0 (0%)
	0	0	0	0	0	0
Race						
% White	2 (40%)	4 (66.7%)	1 (25%)	3 (50%)	4 (80%)	4 (80%)
% Black	0 (0%)	0 (0%)	0 (0%)	3 (50%)	0 (0%)	0 (0%)
% Asian	3 (60%)	2 (33.3%)	3 (75%)	0 (0%)	1 (20%)	1 (20%)
	0	0	1	0	1	0
Academic institution affiliation						
% Yes	0 (0%)	1 (16.7%)	2 (40%)	6 (100%)	3 (50%)	5 (100%)
	0	0	0	0	0	0
Fellowship						
% Yes	2 (40%)	2 (33.3%)	0 (0%)	1 (33.3%)	0 (0%)	1 (100%)
	0	0	0	3	4	4
Years since residency						
Mean (SD)	13.00 (8.75)	17.00 (12.85)	9.20 (5.89)	20.67 (14.09)	15.50 (12.23)	16.00 (6.67)
	0	0	0	0	0	0
Patients seen annually						
<25	0 (0%)	1 (16.7%)	5 (100%)	2 (33.3%)	0 (0%)	4 (100%)
25–50	1 (20%)	2 (33.3%)	0 (0%)	1 (16.7%)	1 (16.7%)	0 (0%)

Characteristic	KPNC N=16 (48.48%)				DC N=17 (51.51%)			
	Urologists (N=5)	Rad. Onc. ¹ (N=6)	PCPs ² (N=5)		Urologists (N=6)	Rad. Onc. (N=6)	PCPs (N=5)	
50-75	2 (40%)	2 (33.3%)	0 (0%)		1 (16.7%)	2 (33.3%)	0 (0%)	
>75	2 (40%)	1 (16.7%)	0 (0%)		2 (33.3%)	3 (50%)	0 (0%)	
	0	0	0		0	0	1	
% low risk ³ PCa patients								
<50	2 (40%)	5 (83.3%)	3 (100%)		5 (83.3%)	6 (100%)	2 (40%)	
50	3 (60%)	1 (16.7%)	0 (0%)		1 (16.7%)	0 (0%)	3 (60%)	
	0	0	2		0	0	0	

Note.

¹Rad. Onc. Signifies radiation oncologists;

²PCPs signifies primary care physician;

³Low risk defined as PSA less than 10 and Gleason of 6 or less.

Table 2

Quantitative Data: Factors Influencing Physicians' Treatment Recommendations for Active Surveillance

Factors	Urologists (N=11)	Radiation Oncologists (N=12)	Primary care Physicians (N=10)
Patient demographic and clinical characteristics			
Patient's age	11 (100%)	12 (100%)	9 (100%)
African American race	3 (30%)	4 (36.4%)	8 (80%)
Family history of PCa	3 (30%)	5 (45.5%)	8 (80%)
Patient comorbidities	11(100%)	12(100%)	9(100%)
Life expectancy	8(88.9%)	10(90.9%)	10(100%)
Patient's risk of disease progression	10(90.9%)	11(91.7%)	7(77.8%)
Patient Variables			
Patient preference for a particular treatment	11 (100%)	11 (91.7)	9 (100%)
Patient willingness to follow surveillance protocol	11 (100%)	11 (91.7%)	8 (88.9%)
Patient ability to follow surveillance protocol	11 (100%)	9 (75%)	8 (88.9%)
Patient's level of anxiety	8 (80%)	10 (90.9%)	9 (90%)
Baseline Symptoms			
Pre-diagnosis lower-urinary tract symptoms	6 (54.5%)	9 (75%)	5 (55.5%)
History of erectile dysfunction	3 (27.3%)	7 (58.3%)	8 (88.9%)
History of urinary incontinence	2 (18.2%)	7 (58.3%)	8 (88.9%)
History of bowel problems	2 (20%)	8 (72.7%)	8 (88.9%)
Other Factors			
Patient's risk of treatment side effects	10 (90.9%)	10 (83.3%)	8 (88.9%)
Recommendation patients receive from other MDs	4 (36.4%)	5 (41.7%)	7 (77.8%)

Note: No more than 2 missing response per cell.

Note: Percentages include ratings of 'somewhat' or 'very much' on a 4-point scale.

Table 3

Common Themes and Exemplar Quotes from Physicians

Topic	Themes	Exemplar Quotes
Patient Characteristics That Influence Physician Treatment Recommendations	Patient age influences the physician's treatment recommendation	Q1[Regarding the definition of 'young'] <i>Yeah, under 60. And then you know it really starts to – 'young' starts to become a more nebulous term. It really depends on what their overall health is like. I saw an 85-year-old yesterday who I would define as young, and I've seen 50-year-olds who I think are old.</i> [Radiation Oncologist, KPNC] Q2[Regarding patients for whom AS is not recommended] <i>Yes. Age, less than 40 and with a positive family history, that's probably it.</i> [Urologist, DC]
	Patient anxiety influences the physicians' treatment recommendation	Q3 <i>"I think the main thing is the patient's tolerance for uncertainty. If the patient feels like they would not be able to live with just knowing if the cancer was going to get them, then even if they are a good candidate for AS, I usually say, "it would be probably psychologically better for you to be treated despite the possibility of treatment side effects."</i> [Urologist, DC] Q4 <i>"I guess it's primarily patient anxiety that sort of drives that. If I have someone who seems overly anxious and worries about, and [is] impacted by how worried they are about their cancer, whether it's high risk or low-risk, I think those are patients that I would probably advise or lean more towards treatment versus someone who has low-risk disease and seems pretty comfortable and understands that risk factor."</i> [Urologist, KPNC]
	Educating patients on the lack of urgency may help them decide	Q5 <i>"I think that after they're educated, like I think when I see them back after 3 months or 4 months, and we do a PSA and they see that there hasn't been that much significant change, they kind of are not as fearful of the time element."</i> [Urologist, DC]
	Recommending AS for men at higher risk for aggressive disease (i.e. African American men, men with a positive family history)	Q6 <i>"So generally, I'm ok with active surveillance for everybody, assuming that your PSA is stable. So I use the same criteria."</i> [Radiation Oncologist, DC]
		Q7 <i>"...I mean I still recommend active surveillance but I mean if they're relatively young, I would tell them you have high risk factors so you're likely gonna need to be treated but it doesn't have to be now. As long as you pursue and follow the active part of surveillance then we can decide when that is. But if you're 55 and African American with a family history you're going to need to be treated at some point, I mean this is going to progress but it might be 5 or 10 or 15 years."</i> [Urologist, DC] Q8 <i>"I would say I don't remove it from the table. But it's factored in that discussion when we're talking about the likelihood-you know there's not great data on the likelihood of progressing – at least at present that I am aware of...But I try to give people my idea – hopefully that is a reasonably honest way to do it of how likely I think that they would be to progress. So that would enter into that part of the conversation. But I will say no, that really hasn't entered into my thoughts on whether or not I should be offering it [AS] as an option."</i> [Radiation Oncologist, KPNC]
	Patient preferences influence the physician's treatment recommendation	Q9 <i>"Or if you have a guy that says, "you know what doc, I have cancer and you're going to treat it period, there's no way I'm watching my cancer." So that actually is usually the reason that people don't do watchful waiting is they say, "you've got the wrong guy doc, I'm not doing 'nothing' for this cancer." So I've spent a lot of effort talking to people trying to sell it, and I really do try to sell it, it's just amazing how many patients are not buying it."</i> [Radiation Oncologist, DC] Q10 <i>"I think patient preferences, tends to be the push. I really try to do shared decision making, so I sort of give the options and say, "what sounds appealing to you?"...There are a lot of patients who have strong preferences and I would rather not necessarily be in a confrontational situation with the patient, especially if they have other beliefs, strong beliefs about it. But their beliefs, I would say, strongly influence my recommendation."</i> [PCP, DC]
Physician Preferences and Healthcare Setting Characteristics that Influence Treatment Recommendation	Some physicians have concerns about malpractice lawsuits when recommending AS	Q11 <i>"...I think it [malpractice concerns] has a role. How great a role? It's hard for me to tell you. I think I have thought [about malpractice] in my head sometimes when I am talking to patients, and it is always addressed by documentation. I will re-contact the patient in two weeks for...for the discussion, but does it enter into the thinking? Yeah. It enters into your thinking: you're letting that patient go with a cancer diagnosis."</i> [Radiation Oncologist, KPNC]
		Q12 <i>"I mean the anxiety, we always have is, is it really the low grade prostate cancer, and we have our core biopsies which just represents a sample of the prostate, are we missing something that's more aggressive? That's the fear that's always sort of in the back of people's minds, but personally I take reassurance that if we're following the PSAs over time and they're not changing that's much less likely to be going on in the background."</i> [PCP, DC]

Topic	Themes	Exemplar Quotes
		<p>Q13“I actually don’t have any concerns about it. I actually think it’s a good modality and it spares a lot of people morbidity associated with treatment so I am pro AS. The only reservations I have are for people who are noncompliant and who will not adhere to it. Because it is not an easy thing to adhere to it because we do lose a lot of patients. So if somebody is not adhering to AS, I’m going to be like, “that’s it, you should just get treated because you’re not following up appropriately.”[Urologist, KPNC]</p>
	Other doctors have concerns about recommending AS	<p>Q14“Not among the ones [physicians] I work with but for sure, I mean, some referrals that I get you know from older [doctors] for the prostatectomy that are clearly active surveillance candidates, then I feel bad writing them that I’m going to do active surveillance. So yeah I guess they [physicians] have a hard time.”[Urologist, DC]</p> <p>Q15“I think there is some worry about that...I don’t worry about that...I’ve just assumed that I am going to get sued, and I try and do the right thing for my patients.... I think that’s what’s really important. I think that to do active surveillance and to do it well, continuity is really important.”[PCP, DC]</p> <p>Q16“Well, I guess that kind of gets to the whole philosophy of active surveillance. The issue is that prostate cancer is such a heterogeneous disease that even if we classify patients as having low-risk, intermediate risk and high risk, there’s still a vast array of disease within this group...So I think that is one of the obstacles that goes through a physician’s mind. We want to treat by the literature, we want to be evidence-based. But you have anecdotal cases that can often color our attitudes.”[Radiation Oncologist, DC]</p>
	Physicians are more comfortable recommending AS now than in the past	<p>Q17“I have become more of an advocate—not an advocate, but I’ve accepted AS more now than I used to. Earlier in my career, I was... more likely to recommend active treatment than now and I’m more likely now to recommend AS.”[Radiation Oncologist, KPNC]</p>
	Treatment recommendations are influenced by healthcare settings	<p>Q18“So I think that in fee-for-service, AS tends to get used less, because there is a financial incentive to do more....The counter is I think in this environment [KPNC], it [AS] is both easier to do in a relatively safe way and it’s encouraged because it’s more... fiscally responsible”[Radiation Oncologist, KPNC]</p> <p>Q19“Financial incentives being one where you are on a PPO model where you are financially incentivized to, therefore you want to treat as many patients as you could. Whereas in a model like ours, we don’t have – we’re not incentivized either way- to treat or to encourage patients to pursue AS”[Radiation Oncologist, KPNC]</p> <p>Q20“I would say fee-for-service models inherently drive more procedures, because that’s where the incentive is...As a result of that, I think that a patient who will fit into an active surveillance category is less likely to be offered or receive active surveillance in that setting than in value based, I don’t want to use the word value based, in non-fee-for-service setting. So I want to try and sound as nonjudgmental as possible about this. [Urologist, DC]</p>
Involvement of family/spouses in the treatment decision	Level of familial involvement varies by family	<p>Q21“Well that varies dramatically, sometimes men will show up without their spouse, sometimes the spouse will be answering for the patient during the consultation or the spouse will call later on, “my husband had this question” instead of the husband asking so that really it goes the whole spectrum from complete uninvolvement to so much involvement that you’d think it was the woman who has the prostate cancer.”[Radiation Oncologist, DC]</p>
	Family/spouses are more often in support of AT and opposed to AS	<p>Q22“I think in general, spouses are less likely to want it [AS], and I have to talk to them too because they’re worried that I’m going to let their husband die. Yeah, so there’s almost more anxiety in the spouse.”[Urologist, KPNC]</p> <p>Q23“So the spouses, I think are loathe to want to do watchful waiting....the wives are like, ‘no treat now, don’t mess around with it.’”[Radiation Oncologist, DC]</p>
	Physicians educate family/spouses by including them in the treatment discussion with the patient	<p>Q24“I think in general spouses are more in favor of treating...I think it’s a lack of understanding.”[Urologist, KPNC]</p> <p>Q25“I think more often they [spouses] are against it,...they need to be educated on it.” [Urologist, DC]</p>
Factors associated with long-term treatment satisfaction	Treatment side effects impact patients’ long-term satisfaction with their treatment decision	<p>Q26“...Prostate patients that have severe incontinence and ED are remorseful. I think radiation on the short-term at least doesn’t have as much of that. They’re not remorseful unless they have some bowel issues.”[Urologist, KPNC]</p> <p>Q27“Any side effects. If they did not have erectile dysfunction [prior to treatment], did they develop it as a result [of treatment] and same thing for urinary incontinence and the other one that I see often is from radiation, bowel damage.... So not experiencing any of those things, typically men are pretty satisfied.”[PCP, DC]</p>
	Disease progression impacts patients’ long-term satisfaction with their treatment decision	<p>Q28“I think the biggest factor is non-progression of their cancer.”[Urologist, DC]</p> <p>Q29“...they’re more concerned about their life, their mortality. They tend to want it out. Get this cancer out of me. They’re easier to follow PSA-wise, they love seeing an undetectable PSA.”[Urologist, DC]</p>