Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

HHS Public Access

Author manuscript

J Cancer Educ. Author manuscript; available in PMC 2019 September 26.

Primary Care Providers' Intended Use of Decision Aids for Prostate-Specific Antigen Testing for Prostate Cancer Screening

Sun Hee Rim[1], **Ingrid J. Hall**[1], **Greta M. Massetti**[1], **Cheryll C. Thomas**[1], **Jun Li**[1], and **Lisa C. Richardson**[1]

[1]Division of Cancer Prevention and Control, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 4770 Buford Highway, NE, MS F-76, Atlanta, GA 30341, USA

Abstract

Decision aids are tools intended to help people weigh the benefits and harms of a health decision. We examined primary care providers' perspective on use of decision aids and explored whether providers' beliefs and interest in use of a decision aid was associated with offering the prostate-specific antigen (PSA) test for early detection of prostate cancer. Data were obtained from 2016 DocStyles, an annual, web-based survey of U.S. healthcare professionals including primary care physicians ($n = 1003$) and nurse practitioners ($n = 253$). We found that the majority of primary care providers reported not using (patient) decision aids for prostate cancer screening, but were interested in learning about and incorporating these tools in their practice. Given the potential of decision aids to guide in informed decision-making, there is an opportunity for evaluating existing decision aids for prostate cancer screening for clinical use.

Keywords

Prostate cancer; Prostate specific antigen; Decision aids; Prostate cancer screening

Introduction

The prostate-specific antigen (PSA) test is a blood test commonly used to screen for prostate cancer [1]. Professional organizations generally agree that if an asymptomatic man is considering a PSA test, then he should discuss his preferences for receiving the test with his healthcare provider and be informed about the potential benefits and harms of PSA testing before receiving the test [1, 2]. In addition to consideration of the patient's age, health status, and life expectancy, providers should discuss risk factors such as African-American race and having a family history of prostate cancer [1, 2].

Correspondence to: Sun Hee Rim.

Compliance with Ethical Standards

Conflict of Interest The authors declare they have no conflict of interest.

Disclaimer The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Decision aids, or tools intended to help people weigh the benefits and harms related to a health decision, can enhance dialog between patients and healthcare providers and help patients make more informed decisions consistent with their values [3, 4]. However, receptivity and use of decision aids vary among clinicians and other experts [5]. The purpose of this study was to examine current primary care providers' perspectives on use of decision aids. We also explored how beliefs and interest in use of a decision aid might affect PSA ordering practices and shared decision-making.

Method

We analyzed DocStyles, an annual web-based survey of U.S. healthcare providers' attitudes, counseling behaviors, and practices related to various health issues, administered online by Porter Novelli (PN) (Porter Novelli Washington, DC; www.porternovelli.com) with technical guidance provided by federal public health agencies and other organizations. Survey participants were drawn from SERMO's Global Medical Panel, a global market research company medical panel (www.sermo.com), which includes over 350,000 medical professionals in the United States (U.S.). To ensure that targeted provider specialties were adequately represented, quotas were set by PN to reach 1000 primary care physicians and 250 nurse practitioners. The survey was fielded from June 9 to July 1, 2016. Respondents were given an incentive ($21–$90) for completing the survey. Detailed description of the survey is provided elsewhere [6].

All participants were verified through a double opt-in sign-up process, where respondents signed up for the survey and verified their sign-up/participation, and SERMO then confirmed the basic demographics and respondent's place of work by phone. Providers were eligible to participate in the 2016 DocStyles survey if they actively saw patients, worked in an individual, group, or hospital setting, and practiced medicine for at least 3 years in the U.S. Respondent participation was voluntary. To protect respondent confidentiality, no individual identifiers were included in the data provided to the authors. The Centers for Disease Control and Prevention (CDC) licenses the results of the DocStyles survey from PN. Analysis of these results was exempt from CDC International Review Board approval as it involved secondary data analysis and no personal identifiers were included in the dataset provided to the CDC.

Analysis

Participants responded to questions regarding beliefs and attitudes about using the PSA test for screening, factors affecting a provider's decision to recommend (or not recommend) screening among asymptomatic men, and providers' use of patient decision aids to assist with decision-making. In this analysis, we examined survey items on provider perspectives about decision aids, their decisional role, and perceived helpfulness or intended use of a decision aid for PSA testing.

Questions pertaining to prostate cancer screening (i.e., PSA use) were limited to primary care physicians (PCPs; family medicine, internal medicine) and nurse practitioners (NPs). NPs were included given their increasing role in delivering efficient primary care [7, 8]. The

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

analytic sample included 1003 PCPs (480 family practitioners and 523 internists) and 253 NPs. Response rates by specialty were 70.5% for PCPs and 41.3% for NPs.

We used descriptive statistics to summarize survey items and characterize the analytic sample in terms of sociodemographic and clinical variables. We conducted two separate multinomial logistic regression models on outcomes of (1) practice patterns and (2) decisional role. The first model examined outcomes of (1a) routinely offering and recommending PSA tests for all asymptomatic patients, regardless of whether the patient asks about the test, (1b) offering and recommending a PSA test to some patients, taking into account individual risk and other factors, and (1c) not offering the PSA test (unless the patient asks for it or regardless of risk or other patient factors). The second model examined outcomes of the decisional role, namely (2a) the provider (mostly) decides, (2b) provider decides together with patient/family member, and (2c) patient/family member(s) (mostly) decide. All models were controlled for provider specialty, sex, race/ethnicity, years in practice, and volume of patients seen weekly. Analyses were conducted in STATA version 14.0 (College State, TX). Results are presented as predicted margins, which can be interpreted as adjusted percentages [9].

Results

PCPs were mostly male (72%), non-Hispanic white (59%), and practiced in group outpatient settings (65%), and more than half worked in a group of six or more providers. NPs were mostly women (88%), non-Hispanic white (81%), practiced in group outpatient settings (60%), and worked in practices with two or more providers. The median number of patients seen per week was 100 for PCPs and 60 for NPs. Median time for practicing medicine was 15 years for PCPs and 14 years for NPs. About 39% of PCPs and 40% of NPs had been practicing medicine for 11–20 years, and 31% of PCPs and 23% of NPs were long-term practitioners of > 20 years. Demographic characteristics of PCPs are similar to that recently reported by Hall et al. [10].

Only 11% of providers indicated that they currently use a decision aid when discussing PSA testing with patients; 35% did not currently use a decision aid and were not interested, and 54% did not currently use a decision aid but were interested in learning about incorporating it into practice. Of the providers who were using a decision aid ($n = 135$), more than half (58% or $n = 78/135$) were satisfied with it, and 46% (or $n = 62/135$) felt that a newer/improved decision aid was needed.

Overall, about 25% of providers “routinely offer and recommend PSA for all asymptomatic patients, regardless of whether the patient asks;” 59% “offer then recommend PSA based on individual risk and other factors;” and 16% “do not offer the PSA test” (Table 1). Most providers responded that they would consider individual risk and other patient factors before offering and recommending the PSA test, regardless of whether they used a decision aid. Male and female providers did not significantly differ in probability of using a decision aid overall, but among providers not currently using a decision aid, women were more likely than men (57.9% [95% CI 53.2, 62.7] vs. 51.3% [95% CI 47.5, 55.1], $p = 0.04$) to state an interest in learning about decisions aids and incorporating them into practice. Moreover,

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

providers who were open to learning about decision aids and incorporating it into practice more frequently indicated that using a decision aid during a patient visit would “definitely” help with discussions about the harms and benefits of prostate cancer screening (data not shown).

About 52% of providers responded that they decide together with their patients/family member about PSA testing; 41% said that they decide. Providers who said that they decided were more likely to “routinely offer and recommend the PSA test.” Providers who said that they decided together with the patient and family had greater probability of recommending based on individual risk and other factors (data not shown). Women providers (PCPs and NPs) in this survey sample had a higher probability of indicating that they decide together with the patient/family members (i.e., shared approach) compared with men (59.3% [95% CI 55.0, 63.7] vs. 48.0% [95% CI 44.4, 51.6], controlling for race/ethnicity, number of years in practice, and number of patients seen weekly). Overall, providers who engaged in shared decision-making were also more likely to respond that they were interested in using a decision aid, even though not currently using one (Table 1). The likelihood of the effect was greater in family practitioners than internists (65.5 vs. 59.5%, respectively) (data not shown).

Discussion

Despite the potential of decision aids to improve clinical decision-making [4, 11], PCPs and NPs stated that they use decision aids infrequently when discussing PSA testing for prostate cancer screening with their patients. However, more than half of survey respondents were interested in learning about decision aids and incorporating them into practice, although not currently using a decision aid. Among the providers who indicated using a decision aid, more than half were “satisfied” (78 of 135 respondents) but nearly half (62 of 135 respondents) still felt that newer and improved decision aids were needed. Our findings suggest that the clinical community might benefit from evaluating existing decision aids for prostate cancer screening to assess whether they are meeting the needs of providers and patients and how improvements might be considered so that decision aids become better integrated into clinical practice.

While decision aids can serve as a tool in facilitating provider-patient discussions, it should not be a replacement to direct provider dialog. In a recent randomized controlled trial conducted by Stamm et al., the authors found that providing patients a decision aid without a personal conversation and clinical encounter resulted in a greater likelihood of a patient having a PSA test without improved knowledge of the test and the potential benefits/harms of the decision [12]. While clinicians need to continue to be informed on the evidence of prostate cancer screening- and PSA testing-related potential benefits/harms in order to have effective dialog with their patients, it is also important to understand how to improve self-reported knowledge among clinicians about PSA testing. Provider receptivity towards tools can assist in and supplement these conversations about PSA testing. These issues are salient in light of the 2017 updated draft recommendations from the U.S. Preventive Services Task Force (USPSTF)— currently being finalized [13]—that emphasize discussions with a clinician and individualized decision-making about screening for prostate cancer so that

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

each man has an opportunity to understand the potential benefits/harms and incorporate his preferences into the screening decision.

Our data provide a cross-sectional perspective of provider practices around PSA testing for early detection of prostate cancer. While the most recent USPSTF (2012) guidelines do not recommend the use of PSA tests for routine screening, there is concern among some practitioners that no PSA testing for early detection of prostate cancer will result in diagnosis of prostate cancer at a later stage when the disease is more difficult and costly to treat. This may be a motivating factor among some practitioners to continue routine screening. All major guideline-issuing organizations, including the USPSTF [14–16], encourage decision-making for PSA testing on an individual case-by-case basis and also encourage informed discussions about the test, particularly if the patient asks about the test. Our data reveal that 59% of providers would consider individual risk and other patient factors before "offering and recommending the PSA test." Given the time limitations of the typical patient visit [17, 18] and the pressure to conduct thorough discussions within the time allotted, the reported willingness of providers in this sample to explore decision tools for prostate cancer screening is noteworthy. Randomized controlled trials have shown that use of decision aids does improve patient knowledge about prostate cancer screening [4, 11]. However, in the specific context of PSA testing, the current survey suggests the need to evaluate and improve upon existing decision aids to ensure that they are optimally suitable to promote value-based decisions and minimize decisional regret. Research on better implementation strategies is needed to increase adoption of decision aids in the context of PSA testing [19]. Our analysis suggests that the biggest impact in increasing PCP use may be in targeting family practitioners who were most likely to not currently use a decision aid but were most interested in using one; however, additional research to investigate differences by provider characteristics to understand how to promote the use of decision aids in clinical practice may also be warranted [20, 21].

There are several limitations to our study that need to be considered. First, there is some inherent bias in the non-probabilistic sampling strategy of the DocStyles survey, where respondents are turned away after the quota for the specific specialty had been met. Selection bias (with opt-in option and incentives) as well as small sample size compared to the number of practicing primary care providers may limit the ability to generalize our findings to the larger group of PCPs/NPs practicing in the U.S. Another limitation is that the survey items did not differentiate between the use of a patient decision aid and a physician decision aid. Thus, it is difficult to determine if there was a distinction in the physicians' mind at the time the survey was administered. Social desirability bias is also possible as physicians could have responded according to what they think they "should" vs. actually do.

In our 2016 snapshot of provider practices, we found a willingness of primary care providers to consider the use of updated and improved decision aids to facilitate informed discussion of patient considerations prior to the PSA test. Ideally, such a tool would be suitable for use across provider specialties (family medicine, internal medicine, and nursing), by patients and their families, and would accurately convey the best evidence across varied patient groups (race/ethnicity, age, and family history). Although this brief report describes a perceived need for new tools that would definitely help discussion, work also will be needed to

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

determine best ways to implement new tools in provider practice and adoption by those providers reporting no interest in their use.

Any future provider education about decision aids should take into account profession, avenues for education, building in professions' espoused values (e.g., NP's strong belief in a holistic approach to health), and any other messaging characteristics that could improve an educational program.

Acknowledgments

Funding All authors are federal government employees, and the preparation of the manuscript was entirely funded by the U.S. government.

References

1. Moyer VA. Screening for prostate cancer: U.S. Preventive Services Task Force recommendation statement. Ann Intern Med. 2012; 157(2):120–134. [PubMed: 22801674]
2. Wolf AM, Wender RC, Etzioni RB, Thompson IM, D'Amico AV, Volk RJ, Brooks DD, Dash C, Guessous I, Andrews K, DeSantis C, Smith RA, American Cancer Society Prostate Cancer Advisory Committee. American Cancer Society guideline for the early detection of prostate cancer: update 2010. CA Cancer J Clin. 2010; 60(2):70–98. [PubMed: 20200110]
3. Stacey D, Legare F, Col NF, Bennett CL, Barry MJ, Eden KB, Holmes-Rovner M, Llewellyn-Thomas H, Lyddiatt A, Thomson R, et al. Decision aids for people facing health treatment or screening decisions. Cochrane Database Syst Rev. 2014; (1):CD001431. [PubMed: 24470076]
4. Taylor KL, Williams RM, Davis K, Luta G, Penek S, Barry S, Kelly S, Tomko C, Schwartz M, Krist AH, Woolf SH, Fishman MB, Cole C, Miller E. Decision making in prostate cancer screening using decision aids vs usual care: a randomized clinical trial. JAMA Intern Med. 2013; 173(18):1704–1712. [PubMed: 23896732]
5. Carlsson S, Leapman M, Carroll P, Schroder F, Albertsen PC, Ilic D, Barry M, Frosch DL, Vickers A. Who and when should we screen for prostate cancer? Interviews with key opinion leaders. BMC Med. 2015; 13:288. [PubMed: 26612204]
6. Bornstein M, Ahmed F, Barrow R, Risley JF, Simmons S, Workowski KA. Factors associated with primary care physician knowledge of the recommended regimen for treating gonorrhea. Sex Transm Dis. 2017 Jan; 44(1):13–16. [PubMed: 27898574]
7. Poghosyan L, Lucero R, Rauch L, Berkowitz B. Nurse practitioner workforce: a substantial supply of primary care providers. Nurs Econ. 2012; 30(5):268–274. 294. [PubMed: 23198609]
8. Martinez-Gonzalez NA, Djalali S, Tandjung R, Huber-Geismann F, Markun S, Wensing M, et al. Substitution of physicians by nurses in primary care: a systematic review and meta-analysis. BMC Health Serv Res. 2014; 14:214. [PubMed: 24884763]
9. Graubard BI, Korn EL. Predictive margins with survey data. Biometrics. 1999; 55(2):652–659. [PubMed: 11318229]
10. Hall IJ, Rim SH, Massetti GM, Thomas CC, Li J, Richardson LC. Prostate-specific antigen screening: an update of physician beliefs and practices. Prev Med. 2017; 103:66–69. [PubMed: 28793236]
11. Ilic D, Jammal W, Chiarelli P, Gardiner RA, Hughes S, Stefanovic D, Chambers SK. Assessing the effectiveness of decision aids for decision making in prostate cancer testing: a systematic review. Psychooncology. 2015; 24:1303–1315. DOI: 10.1002/pon.3815 [PubMed: 25873433]
12. Stamm AW, Banerji JS, Wolff EM, Slee A, Akapame S, Dahl K, Massman JD, Soung MC, Pittenger KR, Corman JM. A decision aid versus shared decision making for prostate cancer screening: results of a randomized, controlled trial. Can J Urol. 2017; 24(4):8910–8917. [PubMed: 28832310]
13. United States Preventive Services Task Force. Prostate cancer screening draft recommendations. https://screeningforprostatecancer.org, Accessed date: 1 Nov 2017

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

14. Chou R, Dana T, Bougatsos C, Fu R, Blazina I. , et al. Treatments for localized prostate cancer: systematic review to update the 2002 US Preventive Services Task Force Recommendation Evidence Synthesis No 91. Rockville, MD: Agency for Healthcare Research and Quality; 2011. AHRQ Publication No. 12-05161-EF-2
15. Carter HB, Albertsen PC, Barry MJ, Etzioni R, Freedland SJ, Greene KL, Holmberg L, Kantoff P, Konety BR, Murad MH, Penson DF, Zietman AL. Early detection of prostate cancer: AUA guideline. J Urol. 2013; 190(2):419–426. [PubMed: 23659877]
16. Smith RA, Manassaram-Baptiste D, Brooks D, Cokkinides V, Doroshenk M, Saslow D, Wender RC, Brawley OW. Cancer screening in the United States, 2014: a review of current American Cancer Society guidelines and current issues in cancer screening. CA Cancer J Clin. 2014; 64(1): 30–51. [PubMed: 24408568]
17. Gutierrez JC, Terwiesch C, Pelak M, Pettit AR, Marcus SC. Characterizing primary care visit activities at Veterans Health Administration clinics. J Healthc Manag. 2015; 60(1):30–42. [PubMed: 26529991]
18. Bruen BK, Ku L, Lu X, Shin P. No evidence that primary care physicians offer less care to Medicaid, community health center, or uninsured patients. Health Aff (Millwood). 2013 Sep; 32(9):1624–1630. DOI: 10.1377/hlthaff.2012.1300 [PubMed: 24019368]
19. Herrmann A, Mansfield E, Hall AE, Sanson-Fisher R, Zdenkowski N. Willfully out of sight? A literature review of the effectiveness of cancer-related decision aids and implementation strategies. BMC Med Inform Decis Mak. 2016 Mar 15.16:36. [PubMed: 26979236]
20. Tasian GE, Cooperberg MR, Potter MB, Cowan JE, Greene KL, Carroll PR, Chan JM. PSA screening: determinants of primary-care physician practice patterns. Prostate Cancer Prostatic Dis. 2012; 15:189–194. [PubMed: 22343837]
21. Kim HL, Benson DA, Stern SD, Gerber GS. Practice trends in the management of prostate disease by family practice physicians and general internists: an internet-based survey. Urology. 2002; 59:266–271. [PubMed: 11834400]

Author Manuscript Author Manuscript Author Manuscript Author Manuscript

Table 1

Multinomial regression examining decision aid use and physician PSA practice patterns (model 1) and decisional role (model 2), DocStyles 2016 (n = 1256)

	Model 1			**Model 2**		
	Routinely offer/recommend Patient/family PSA test for allasymptomatic patients, regardless of whether the patient asks (24.8%)	**Offer/recommend PSA test based on individual risk and other factors (59.2%)**	**Do not offer PSA* (15.9%)**	**I(mostly) decide (41.3%)**	**Decide together with patient/family member(s) (52.5%)**	**Patient/family member(s) (mostly) decide (6.2%)**
Total n = 1256	Percentage (95% CI)	Percentage (95% CI)	Percentage (95% CI)	Percentage (95% CI)	Percentage (95% CI)	Percentage (95% CI)
Currently using decision aid	35.4 (27.3, 43.4)	52.8 (44.4, 61.2)	11.8 (6.3, 17.4)	59.4 (51.2, 67.6)	36.7 (28.6, 44.7)	3.9 (0.6, 7.3)
Currently NOT using a decision aid AND not interested	24.6 (20.7, 28.5)	54.2 (49.6, 58.8)	21.2 (17.4, 24.9)	48.9 (44.4, 53.5)	42.4 (37.9, 47.0)	8.6 (6.0, 11.2)
Currently NOT using a decision aid BUT interested	22.8 (19.7, 26.0)	63.8 (60.2, 67.4)	13.4 (10.9, 15.9)	32.7 (29.1, 36.2)	62.2 (58.5, 65.8)	5.2 (3.5, 6.8)

Data were obtained from 2016 DocStyles survey, an annual, web-based survey of U.S. healthcare professionals including primary care physicians (n = 1003) and nurse practitioners (n = 253). Model controls for provider specialty, sex, race/ethnicity, number of years in practice, and number of patients seen weekly (continuous). Predictive margins are expressed as percentage

*Combined survey responses for “do not offer PSA test unless the patient asks for it” and “do not offer PSA test to any patient, regardless of risk or other patient factors”