Prostate cancer screening among family physicians in Ontario: An update on attitudes and current practice

Jason Paul Akerman, MD; Christopher B. Allard, MD; Camilla Tajzler, BA, CCRA; Anil Kapoor, MD

McMaster Institute of Urology, McMaster University, Hamilton, ON, Canada

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Abstract

Introduction: This study serves as an update of prostate cancer screening practices among family physicians in Ontario, Canada. Since this population was first surveyed in 2010, the Canadian Task Force on Preventive Health Care (CTFPHC) and the United States Preventive Services Task Force (USPSTF) released recommendations against prostate cancer screening.

Methods: An online survey was developed through input from urologists and family practitioners. It was distributed via email to all members of the Ontario Medical Association's Section on General and Family practice (11 657 family physicians). A reminder email was sent at two weeks and the survey remained active for one month.

Results: A total of 1880 family physicians completed surveys (response rate 16.1%). Overall, 80.4% offered prostate cancer screening compared to 91.7% when surveyed in 2010. Physicians new to practice (two years or less) were the most likely to not offer screening (24.6%). A combination of digital rectal exam (DRE) and prostate-specific antigen (PSA) remained the most common form of screening (58.3%). Following the release of the CTFPHC recommendations, 45.6% of respondents said they now screen fewer patients. Participants were less familiar with national urological society guidelines compared to task force recommendations. The majority (72.6%) of respondents feel PSA screening leads to overdiagnosis and treatment. Those surveyed remained split with respect to PSA utility.

Conclusions: Data suggest a decline in screening practices since 2010, with newer graduates less likely to offer screening. CFTPHC and USPSTF recommendations had the greatest impact on clinical practice. Those surveyed were divided with respect to PSA utility. Some additional considerations to PSA screening in the primary care setting, including patient-driven factors, were not captured by our concise survey.

Introduction

Since its introduction in 1988, the prostate-specific antigen (PSA) test has become the most widely adopted form of prostate cancer screening in North America.[1] Despite a decline in prostate-specific mortality, there has been growing concern that the benefits of PSA-based screening do not outweigh the potential harms of overdiagnosis and treatment-associated morbidity.[2-7]

Current evidence on the utility of PSA testing is dominated by two randomized controlled trials published in 2009. The Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial (PLCO) found no difference in prostate cancer death rates among men randomized to the screening group.[8] The same year, the European Randomized Study of Screening for Prostate Cancer (ERSPC) showed a modest decline in death from prostate cancer in the screening group, particularly among men aged 55–69.[9] Subsequent criticisms of both studies have made them more difficult to interpret in the context of PSA utility.[10,11]

Following the release of PLCO and ERSPC data, our centre conducted a survey of over 900 primary care physicians (PCPs) in Ontario with respect to their prostate cancer screening practices. Although the vast majority of physicians offered some form of prostate cancer screening (91.7%), there was significant variability in screening protocols. PCPs in Ontario were also divided with respect to the utility of screening.[12]

Since then, the United States Preventive Services Task Force (USPSTF) recommended against PSA-based screening in 2012.[2] The Canadian Task Force on Preventive Health Care (CTFPHC) followed in 2014 with a strong recommendation against screening with PSA in men less than 55 years and among those 70 years and older. For men 55–69, the CTFPHC also recommended against screening, citing inconsistent evidence of a small potential benefit to PSA screening.[3] These task force statements deviate from recommendations put forth by the American Urological Association (AUA) and the Canadian Urological Association (CUA), who

advocate for shared decision-making in PSA screening for men aged 55–69 and those at high risk for prostate cancer.[13,14] Interpretation of these conflicting recommendations is left to Canadian PCPs, who perform the vast majority of prostate cancer screening in the country.

The impact of the CTFPHC, as well as the USPSTF recommendations, on screening practices among Canadian PCPs has yet to be determined. Our present study seeks to re-evaluate prostate cancer screening practices among PCPs in Ontario since the publication of new Canadian and American task force recommendations.

Methods

An online survey was developed to assess prostate cancer screening practices among Ontario's PCPs. The questions address four primary domains: 1) demographics; 2) beliefs and attitudes with respect to the utility of prostate cancer screening; 3) current screening practices for prostate cancer; and 4) awareness and knowledge of North American recommendations/guidelines for prostate cancer screening.

The survey is a modified version of a previously established questionnaire. The original survey was developed by members of the McMaster Institute of Urology with input from four urologists and four family physicians. Modifications to the original questionnaire were made with input from a urologist and a uro-oncology fellow. Answer formats consist of either multiple choice or rating in the form of a Likert scale. A final question provides respondents the opportunity to provide optional feedback.

Distribution of the survey consisted of an email invitation with URL link to the Survey Monkey (*www.surveymonkey.com*) hosted questionnaire. The Ontario Medical Association Section on General and Family Practice facilitated distribution of the survey through their email database of members. A reminder email was sent to all invited respondents at two weeks. The survey remained active on the Survey Monkey site for one month.

Family physicians currently practicing in Ontario were invited to participate. Survey data was analyzed in the form of descriptive statistics using Microsoft Excel.

Results

A total of 11 657 family physicians in Ontario received an invitation to complete the survey via email. Completed surveys were submitted by 1880 physicians (response rate 16.1%).

Demographics

The majority of respondents have been in practice for over 20 years (1011; 53.7%). The remaining responses were divided amongst those practicing two years or less (149; 7.9%), 3–5 years (186; 9.9%), 6–10 years (227; 12.0%), 11–15 years (171; 9.0%), and 16–20 years (139; 7.4%). Of those

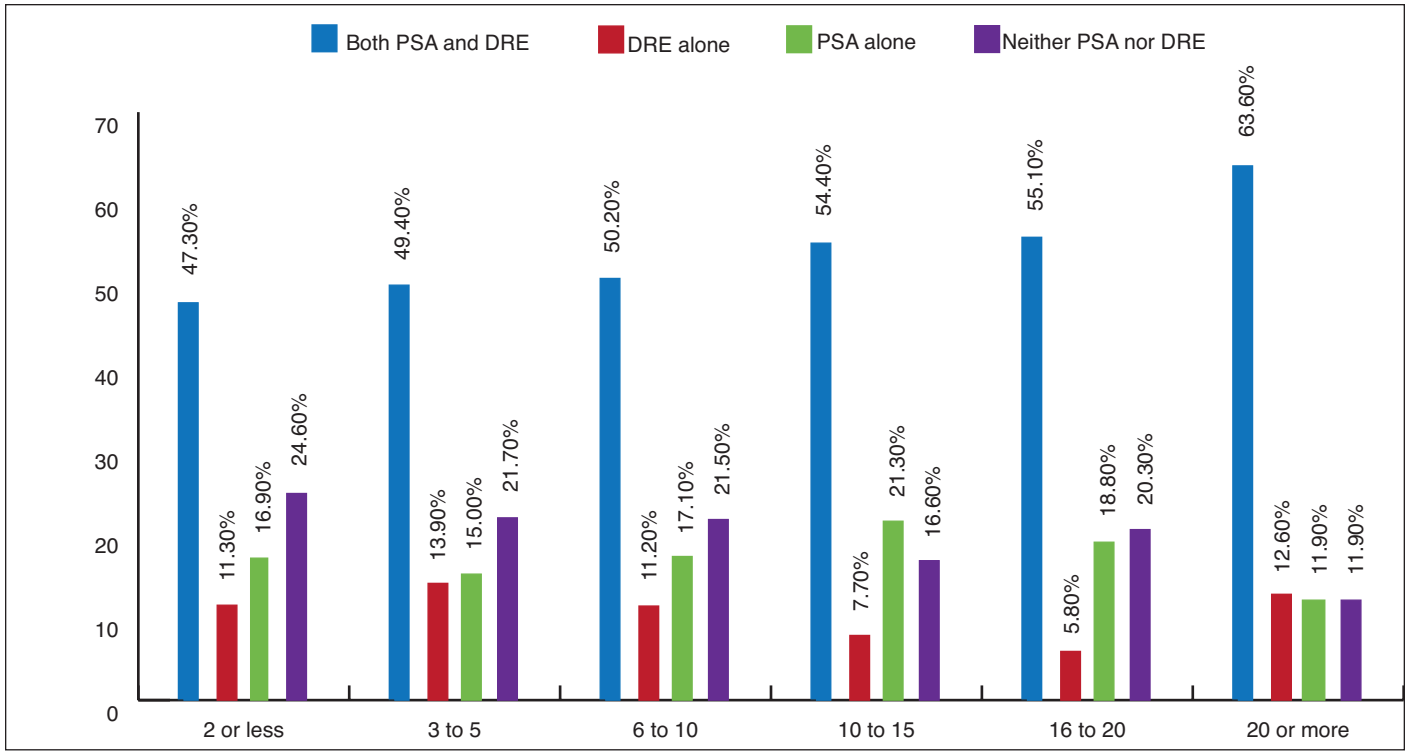

Fig. 1. Screening regimen by years in practice. DRE: digital rectal exam; PSA: prostate-specific antigen.

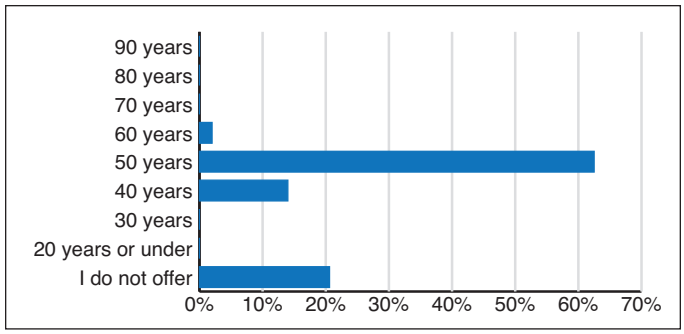

Fig. 2. At what age do you begin to offer prostate cancer screening?

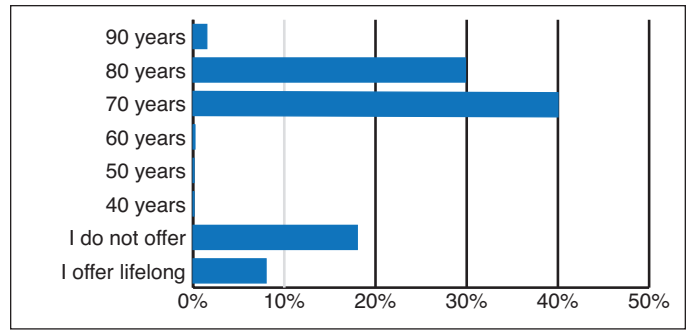

Fig. 3. At what age do you stop offering prostate cancer screening?

who completed the survey, 53.6% (1007) were male and 46.4% (873) were female.

Screening practices

Routine screening was not offered by 19.4% (358) of respondents. Those in practice for two years or less were the most likely group to not offer screening (24.6%). Physicians practicing for over 20 years were more likely to offer screening to patients (11.9% did not offer screening; Fig. 1). A combination of PSA and digital rectal exam (DRE) remained the most common form of screening (1069; 58.3%), followed by PSA alone (272; 14.8%), and DRE alone (213; 11.62%).

Of those PCPs who offered prostate cancer screening, the most common patient age to initiate screening was 50 (78.8%), followed by 40 (18.2%; Fig. 2). Screening was terminated at age 70 by 69% of physicians surveyed. Lifelong screening was offered by 9.1%, while 29.5% of those surveyed extended screening to age 80. Screening to 90 years of age was offered by 1.74% of physicians (Fig. 3).

Influence of guideline and task force publications

Following the publication of the 2012 USPSTF, 40.3% (702) of respondents said they screen fewer patients, while screening practices were unchanged in 58.1% (1012). Twenty-seven respondents (1.5%) now screen more patients (Fig. 4). With respect to the CTFPHC, 45.6% said they now screen fewer patients, 1.4% screen more patients, and 53.1% have not changed their practice (Fig. 5).

Prostate cancer task force recommendations had the greatest influence on screening practice. Those surveyed were less familiar with national urological association guidelines. Of those surveyed, 42.6% were unfamiliar with the CUA's prostate cancer recommendations, 50.8% were unfamiliar with Prostate Cancer Canada recommendations, and 53.49% were unfamiliar with the AUA's recommendations. This was much lower among task force recommendations, with 29.1% unfamiliar with the USPSTF and 12.6% unfamiliar with the CTFPHC (Fig. 6). When asked about the influence of various prostate cancer guidelines/recommendations, 64.9% of survey participants said their practice was either "somewhat influenced" or "influenced to a great extent" by the CTFPHC. This was followed by 42.7% for the USPSTF, 28.8% for CUA, 21.0% for Prostate Cancer Canada, and 15.4% for the AUA guidelines (Fig. 6).

Beliefs about the utility of screening

Physicians were asked to respond to a series of five questions with respect to the utility of PSA screening. Each question was rated using a Likert scale. Fig. 7 illustrates a clear division in perceived utility of prostate cancer screening.

Discussion

Despite the recommendations put forth against prostate cancer screening by the USPSTF and CTFPHC, the vast majority of our respondents continued to offer screening (80.4%). This is lower than our 2010 survey of Ontario PCPs, which had a screening rate of 91.7%. Newer family physicians were less likely to offer screening. Nearly a quarter (24.6%) of newly practicing physicians (<2 years) do not offer routing screening. This corresponds to the group of physicians who

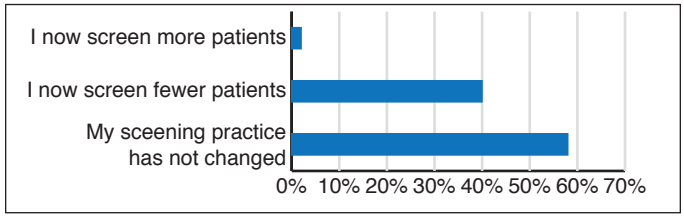

Fig. 4. Following the release of the United States Preventive Services Task Force (2012), how have your screening practices for prostate cancer changed?

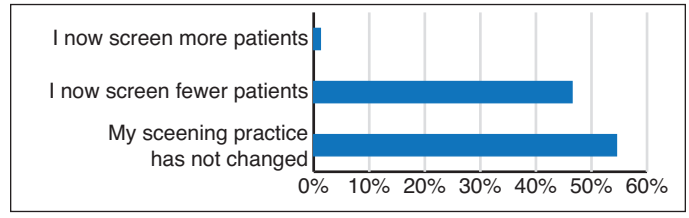

Fig. 5. Following the release of Canadian Task Force on Preventive Health Care (2014), how have your screening practices for prostate cancer changed?

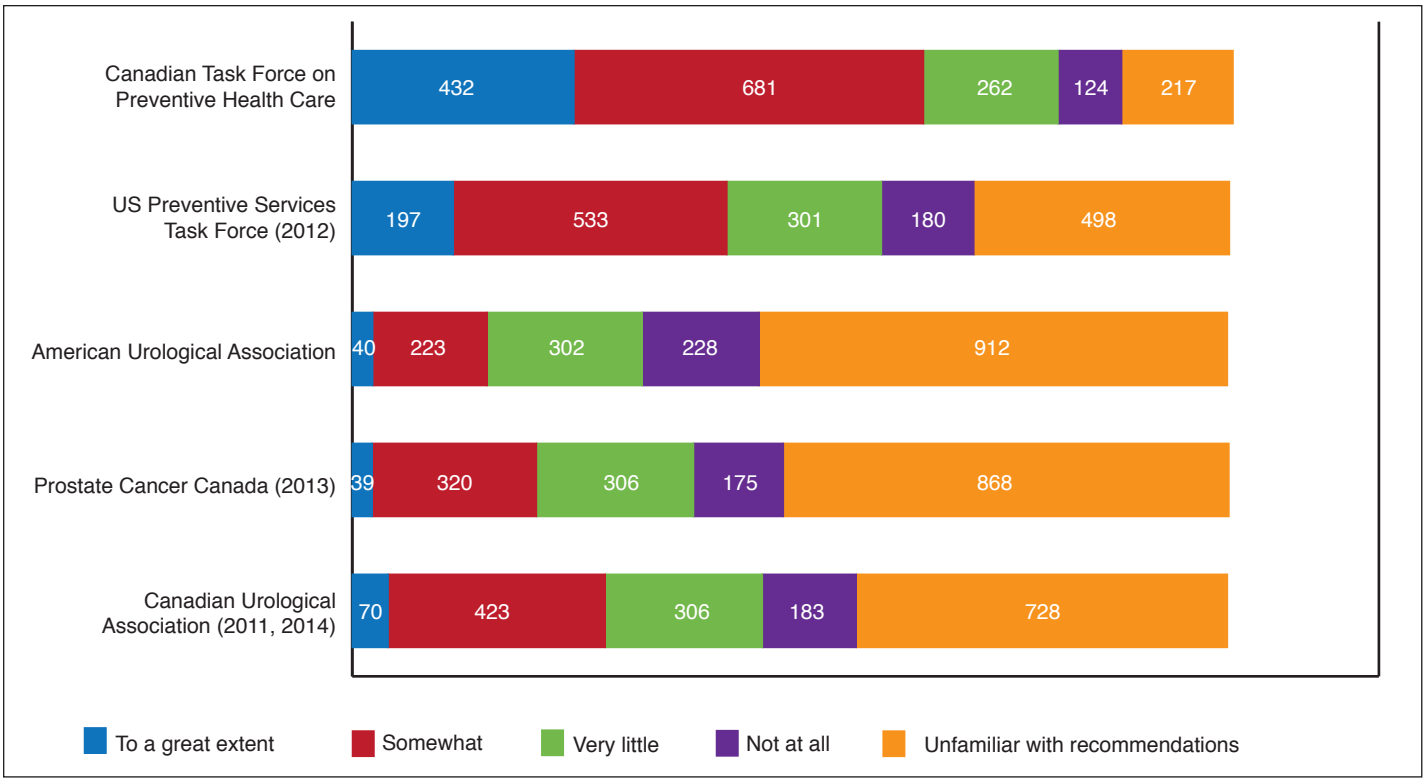

Fig. 6. How have the following statements/recommendations influenced your prostate cancer screening practice?

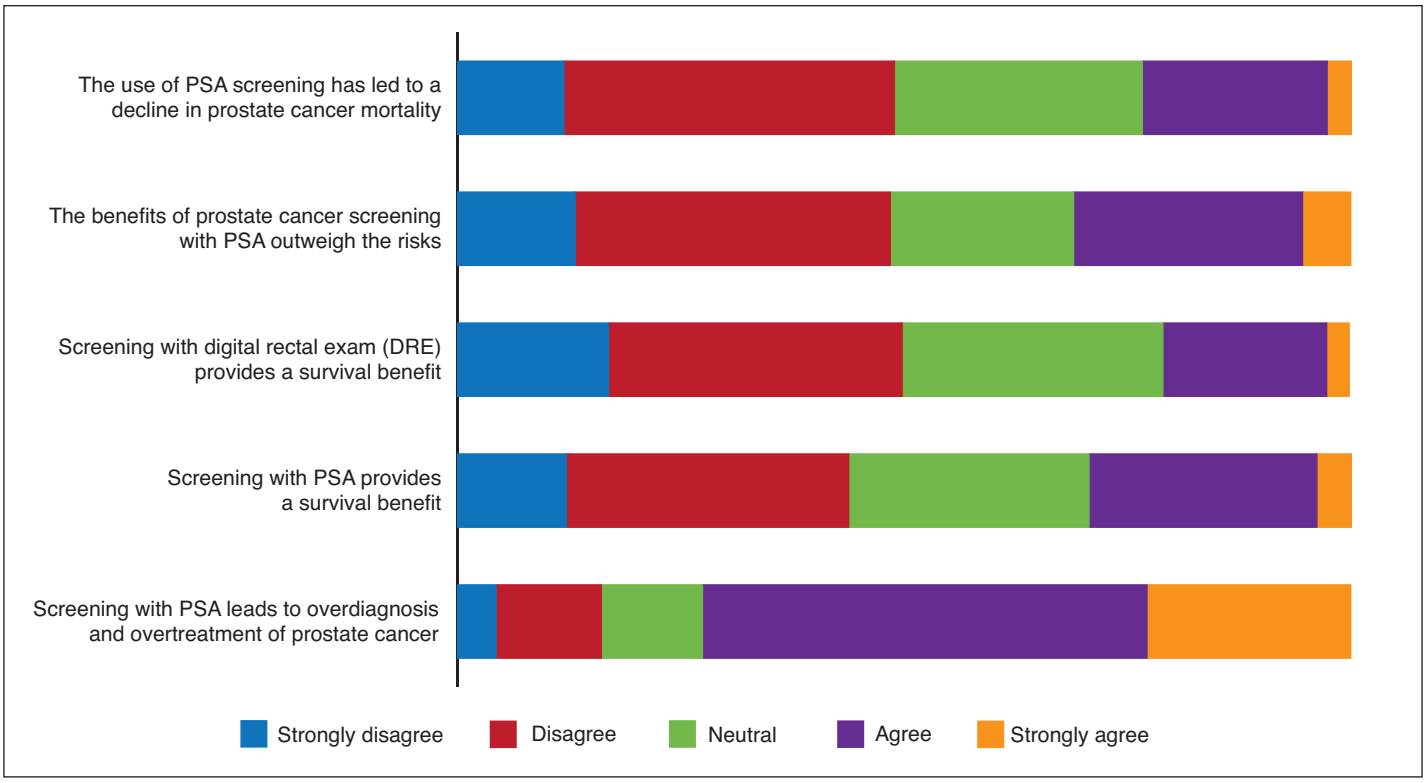

Fig. 7. Prostate-specific antigen (PSA) utility.

were trained following the publication of the USPSTF and CTFPHC recommendations (2012 and 2014, respectively). There were similar rates among those in practice for 3–20 years. PCPs in practice for more than 20 years were the most likely to offer screening.

Our study suggests that the CTFPHC and USPSTF have had a significant effect on clinical practice, with 45.6% of respondents answering that they screen fewer patients since the publication of the CTFPHC. Similarly, 40.3% began screening fewer patients following the 2012 USPSTF recommendations. The extent to which this decline in screening rates translates to changing referral patterns in Canada has not been extensively evaluated. A study preformed at University Health Network, Toronto, found a reduction in the number of prostate biopsies preformed at their centre following the 2012 USPSTF recommendation.[15] This may suggest a decrease in PSA screening and subsequent referrals by PCPs in their catchment area.

Changes to prostate cancer screening practices among PCPs in the U.S. have been more extensively evaluated. Surveys of PCPs following the 2008 USPSTF and the 2009 PLCO/ERSPC trials found evidence of declining prostate cancer screening rates.[16-20]Since the 2012 USPSTF recommendation, there is evidence of further drops in PSA testing by PCPs and reductions in early stage prostate cancer cases seen by urologists. From 2010–2013, an 18% decrease in screening was reported;[20] however, changes in primary care referral patterns have not been universally observed by U. S. tertiary centres. Perez et al found no difference in the number of referrals or clinical characteristics of patients referred by PCPs following the 2012 USPSTF recommendations.[21]

Among those who offered routine screening, practice patterns were in keeping with previously published guidelines by national urological associations and cancer societies (AUA, CUA, Prostate Cancer Canada). The vast majority of screening was done on men between the ages of 50 and 70. None of the respondents offered screening to patients under 40 years of age. Few respondents continued to screen patients lifelong (9.11%) or beyond the age of 90 years (1.74%). This is in contrast to the 24.2% of respondents surveyed in 2010 who continued to offer screening at ages 90 or greater. Our findings are in keeping with an American survey of primary care physicians by Cohn et al, which found the greatest decline in screening rates among the youngest and oldest patients following the USPSTF.[17]

Although practices were more in keeping with national urological association guidelines, respondents were more familiar with the CTFPHC and USPSTF (Fig. 6). Publications by the CUA, AUA, and Prostate Cancer Canada were less well-recognized. This discrepancy between familiarity of guidelines and practice patterns may be a reflection established screening regimens put in place prior to the CTFPHC and USPSTF publications.

As seen in our 2010 survey, a growing concern that the benefits of PSA screening may not outweigh the potential harms of overdiagnosis is reflected among our respondents (Fig. 7). The majority of respondents (72.6%) feel that screening with PSA leads to overdiagnosis and overtreatment of prostate cancer. A greater number of respondents (48.9%) felt that prostate cancer screening with PSA did not confer a mortality benefit. The remaining respondents had a neutral response (27.7%) or believed that PSA screening leads to a decline in prostate cancer mortality (23.4%). This reflects the emphasis of the CTFPHC and USPSTF on findings from the PLCO, which declared no clear benefit to PSA and DRE screening.[8] Further analysis and criticism of the PLCO and ERSPC trials suggest a significant mortality benefit among those screened for prostate cancer. In a subset analysis of the PLCO data, the screening arm produced a significant decrease in the risk of prostate cancer-specific death among men with no or minimal comorbidity.[22] This is in keeping with updated ERSPC data showing a 21% decrease in prostate cancer-specific mortality in the screening arm at 11 years.[23] PSA screening has also been shown to reduce advanced cases of prostate cancer by 41% and lower prostate cancer-specific mortality by 44% among men ages 50–64.[24]

This study has a number of limitations. The survey delivery via email distribution through a large database may incur a selection bias towards those with strong opinions on the subject. In an attempt to keep the survey brief, much of the complexity of patient counselling in a family physician's office was lost. Some respondents felt that their approach to screening was not represented in our multiple choice options. This led them to select "do not screen" despite the fact that they do offer some form of screening. Many survey participants commented on a shift in patient requests for PSA, with fewer patients electing to be screened since the publication of the CTFPHC. This was not captured in our survey.

Conclusion

This study is the first analysis of attitudes and prostate cancer screening practices of a group of Canadian primary care providers following the release of the CTFPHC and USPSTF recommendations. Our findings suggest a decline in screening for prostate cancer and a lack of emphasis and awareness of national urological association guidelines. As primary care providers preform the majority of prostate cancer screening in the country, changes to their practice patterns have wide-reaching effects on the detection and eventual treatment of prostate cancer. A significant decline in screening rates would have considerable public health implications for Canadian men in the form of increased selectivity of screening practices, healthcare disparities among men not well-informed enough to acquire about PSA screening, and

missed opportunities to detect biologically significant disease at an early stage. Since the completion of our study, the USPSTF and CUA have both produced either revisions or new guidelines for prostate cancer screening. More in keeping with guidelines by national urological associations, the revised USPSTF calls for physicians to inform men aged 55–69 of the harms and benefits of PSA testing.[25,26]

Data from this study suggest a need for knowledge translation tools beyond the CTFPHC to assist PCPs in navigating current conflicting Canadian PSA guidelines. This would help to ensure that those men who may benefit from the PSA test are properly selected. With a proposed shift back to PSA screening in appropriately selected men, the latest USPSTF and CUA publications further highlight the need for revision and unification of current Canadian prostate cancer guidelines by the CTFPHC.

Competing interests: Dr. Kapoor has been an advisor and speaker for and has participated in clinical trials supported by Amgen, Astellas, GSK, Janssen, Novartis, Pfizer, and Sanofi. The remaining authors report no competing personal or financial interests related to this work. This paper has been peer-reviewed.

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Correspondence: Dr. Jason Paul Akerman, McMaster Institute of Urology, McMaster University, Hamilton, ON, Canada; jason.akerman@medportal.ca