Editor's key points

- Effective management of sexually transmitted infections (STIs) requires timely diagnosis and treatment of both index patients and their partners. Partner notification (PN) reduces overall STI incidence and prevalence by preventing reinfection and onward transmission; however, PN is highly resource intensive. This study aimed to explore British Columbian FPs' experiences with, perceived barriers to, and perceived facilitators of FP-initiated PN.
- Most FPs surveyed always or usually told patients diagnosed with STIs to inform their partners, but few physicians performed PN. Two-thirds thought that PN should not be done by FPs. Time and compensation were among the most commonly cited barriers. Respondents expressed concern that FP partner services could be less consistent than those offered by public health. Others thought that given the sensitive nature of STIs patients would prefer PN be conducted through an external third party. Several FPs indicated that it might be inappropriate to treat a partner who could have their own FP, and thought it might lead to poorer continuity.
- Physicians serving rural populations were more likely than those serving urban populations to collect partner information for those diagnosed with chlamydia and to contact partners (odds ratio of 3.85, 95% CI 1.15 to 12.91). There were no statistically significant associations between population served and current PN practices for gonorrhea, syphilis, and HIV.

Partner notification by family physicians for sexually transmitted infections

Facilitators and barriers

Alexandra Choi MD MHSc CCFP FRCPC Audrey Campbell MD CCFP FRCPC
Theodora Consolacion PhD Jasmine Pawa MD MSc CCFP FRCPC
Brian Ng MD MPH CCFP Jason Wong MD MPH CCFP FRCPC

Abstract

Objective To explore Canadian FPs' experiences with, perceived barriers to, and perceived facilitators of FP-initiated partner notification (PN) for HIV and other sexually transmitted infections (STIs), as well as to inform the development of tools that might enhance this work.

Design Online survey.

Setting British Columbia.

Participants A total of 146 FPs recruited through the Divisions of Family Practice community-based networks of FPs throughout the province.

Main outcome measures Family physicians' current STI and PN practices, opinions regarding FP-initiated PN, perceived barriers to and facilitators of FP-initiated PN, and preferred PN resources.

Results More than 90% of FPs had diagnosed an STI within the past year, and most (60.3% to 96.6%, depending on the STI) told patients to inform their partners. Two-thirds (66.4%) felt that PN should not be done by FPs, and fewer than 10% reported contacting partners. Reported barriers included inaccurate or incomplete lists of partners (67.1%), poor compensation (54.1%), and insufficient time (54.1%). Facilitators chosen by respondents included another health professional assigned to follow up with PN (77.4%) and improved remuneration (74.7%). Electronic PN tools directed at patients (eg, PN slips) were favoured over resources directed at providers.

Conclusion Family physicians regularly manage STIs and currently take part in PN primarily through educating index cases. However, most do not feel that PN should be conducted by FPs, and most believe that FP-initiated PN would require additional personnel, remuneration, and legal guidance.

Notification des partenaires par les médecins de famille concernant les infections transmises sexuellement

Facilitateurs et obstacles

Alexandra Choi MD MHSc CCFP FRCPC Audrey Campbell MD CCFP FRCPC
Theodora Consolacion PhD Jasmine Pawa MD MSc CCFP FRCPC
Brian Ng MD MPH CCFP Jason Wong MD MPH CCFP FRCPC

Résumé

Objectif Explorer les expériences des MF canadiens entourant leur perception des obstacles et des facteurs facilitants de la notification des partenaires (NP) initiée par les MF, dans les cas de VIH ou d'autres infections transmises sexuellement (ITS), et orienter l'élaboration d'outils susceptibles d'améliorer ce travail.

Type d'étude Un sondage en ligne.

Contexte La Colombie-Britannique.

Participants Un total de 146 MF recrutés par l'intermédiaire des réseaux communautaires de MF des divisions de pratique familiale dans l'ensemble de la province.

Principaux paramètres à l'étude Les pratiques actuelles des MF en matière d'ITS et de NP, les opinions concernant la NP initiée par le MF, les obstacles et les facteurs facilitants de la NP initiée par les MF, et les ressources privilégiées pour la NP.

Résultats Plus de 90 % des MF avaient diagnostiqué une ITS durant l'année précédente, et la plupart (de 60,3 à 96,6 %, selon l'ITS) d'entre eux avaient dit à leurs patients d'informer leurs partenaires. Les deux tiers (66,4 %) étaient d'avis que la NP ne devrait pas être faite par les MF, et moins de 10 % avaient signalé avoir communiqué avec des partenaires. Les obstacles mentionnés incluaient les listes inexactes ou incomplètes des partenaires (67,1 %), l'insuffisance de la rémunération (54,1 %) et le manque de temps (54,1 %). Parmi les facteurs facilitants choisis par les répondants figuraient l'affectation d'un autre professionnel de la santé au suivi de la NP (77,4 %) et une meilleure rémunération (74,7 %). Des outils électroniques de NP s'adressant aux patients (p. ex. feuillets de NP) étaient préférés aux outils s'adressant aux professionnels.

Conclusion Les médecins de famille prennent régulièrement des ITS en charge et participent couramment à la NP, surtout par l'éducation des cas de référence. Toutefois, la plupart croient que la NP ne devrait pas être faite par les MF et que la NP initiée par les MF nécessiterait du personnel supplémentaire, une meilleure rémunération et des conseils juridiques.

Points de repère du rédacteur

- Une gestion efficace des infections transmises sexuellement (ITS) exige un diagnostic et un traitement en temps opportun autant des patients de référence que de leurs partenaires. La notification des partenaires (NP) réduit l'incidence et la prévalence globales des ITS en prévenant une réinfection et une transmission en aval; toutefois, la NP nécessite beaucoup de ressources. Cette étude visait à explorer les expériences des médecins de famille (MF) de la Colombie-Britannique entourant leur perception des obstacles et des facteurs facilitants de la NP initiée par les MF.

- La plupart des MF qui ont répondu au sondage disaient toujours ou habituellement aux patients ayant reçu un diagnostic d'ITS d'en informer leurs partenaires, mais rares étaient ceux qui procédaient à la NP. Les deux tiers d'entre eux étaient d'avis que la NP ne devrait pas être faite par les MF. Le temps requis et la rémunération insuffisante comptaient parmi les obstacles les plus souvent mentionnés. Les répondants se sont dit préoccupés par le fait que les services des MF aux partenaires puissent être moins uniformes que ceux offerts par la santé publique. D'autres croyaient que, compte tenu de la nature délicate des ITS, les patients ayant une ITS préféreraient que la NP se fasse par l'intermédiaire d'un tiers. Plusieurs MF ont indiqué qu'il pourrait être inapproprié de traiter des partenaires qui ont déjà leur propre MF, ce qui pourrait nuire à la continuité des soins.

- Les médecins qui desservaient des populations rurales étaient plus enclins que ceux des populations urbaines à recueillir des renseignements sur les partenaires pour les personnes ayant reçu un diagnostic de chlamydia et à communiquer avec les partenaires (rapport de cotes de 3,85, IC à 95 % de 1,15 à 12,91). Il n'y avait pas d'associations statistiquement significatives entre la population desservie et les pratiques actuelles de NP pour la gonorrhée, la syphilis et le VIH.

Effective management of sexually transmitted infections (STIs) requires the timely diagnosis and treatment of both index patients and their partners. Partner notification (PN) is the process of identifying, screening, treating, and counseling partners potentially exposed to an STI.[1] Partner notification reduces overall STI incidence and prevalence by preventing reinfection and onward transmission.[2,3] However, PN is highly resource intensive. This effect is compounded by the growing burden of bacterial STIs in Canada.[4,5] Between 2007 and 2016, rates of chlamydia, gonorrhea, and infectious syphilis increased by 24% (10,060 cases to 15,057 cases), 135% (1224 to 3259), and 123% (301 to 759), respectively, in British Columbia (BC).[6]

Partner notification can be initiated by patients or providers. In patient-initiated PN, index cases notify their partners. In provider-initiated PN, health care providers (eg, nurses, physicians, or public health practitioners) collect information about partners from index cases and notify those partners. In contract or conditional referral, index cases initially notify partners, but health care providers become involved if patient referral is not completed within an agreed-upon time frame.[7,8] While patient-initiated PN is common, provider-initiated PN is associated with higher rates of partners receiving medical evaluation.[9,10]

In many jurisdictions public health providers perform provider-initiated PN. However, resources have not kept pace with the increasing burden of disease,[11,12] resulting in a minority of patients receiving formal partner referral services.[13,14] One proposed solution has been extending the involvement of primary care providers and FPs (FP-initiated PN) who already assess, diagnose, and treat STIs. In some jurisdictions clinicians have responded favourably to this proposal[15]; however, in others attitudes have been mixed.[16,17]

Partner notification programs for HIV in BC generally use provider referral and are the responsibility of the Medical Health Officer or designated nurses.[18] Following diagnosis of gonorrhea or chlamydia, the diagnosing provider completes a surveillance form on which clinician-, patient-, or public health–initiated PN can be selected.[19] However, there is no provincial standard for PN for bacterial STIs, there is no routine physician training, there are no fee codes, and it is not clear how FPs practise PN. The primary objective of this study was to explore Canadian FPs' current PN practices, their attitudes toward FP-initiated PN, their perceptions of barriers to and facilitators of FP-initiated PN, and their preferences for FP-initiated PN tools. Secondarily, we sought to determine how these findings differed by regions of practice, years in practice, and populations served, potentially to guide the tailoring of resources. Ultimately, this work was intended to inform the development of tools and resources to support FPs in PN.

Methods

Participants

The Divisions of Family Practice (DoFP) are community-based networks of FPs in BC that include more than 90% of the 6372 FPs in BC.[20,21] We distributed an online, self-administered survey through several DoFP mailing lists using a survey link. While we could not track how many FPs received the link, we followed up with each DoFP to confirm that the survey invitation was communicated to its members.

Eligibility criteria were competence in English and membership in a DoFP, which requires current licensure as an FP in BC. The survey was conducted from December 8, 2016, to February 14, 2017.

The survey included information on consent, and ethics approval was received from the University of British Columbia Behavioural Research Ethics Board. Survey participants were compensated based on a standard sessional rate.

Survey

The content of our questionnaire was informed by previously published surveys detailing physicians' opinions regarding PN practices.[15,16,22] Our 17-item questionnaire (available from **CFPlus***) included 3 sections. The first pertained to personal, educational, and practice characteristics and experience diagnosing STIs. The second focused on PN attitudes and practices. The third focused on expedited partner therapy and is not within the scope of this article.

Before rollout, the online survey was pilot-tested by 5 FPs to improve content and clarity. Questions were structured in multiple-choice, dichotomous, or rank-order formats. Survey participants were also able to create a free-text response for most questions.

Analysis

We used descriptive statistics to understand current PN practices, attitudes toward PN, and facilitators of and barriers to PN via FP referral. We used χ^2 tests to explore differences in practices, attitudes, and perceptions of facilitators and barriers by regions,[23] populations served (urban vs rural), and years in practice (above vs below the median).

We described physician preferences for different tools and resources to support FPs and patients in performing PN by calculating the proportions who ranked the tool useful, neutral, and not useful. We assessed preferences for the different tools by calculating the median ranking of each tool, finding the tool ranked most highly by FPs based on their regions, populations served, and years in practice.

We considered $P<.05$ to be statistically significant. Univariate logistic regressions were used to calculate

*The **survey instrument** is available from **https://www.cfp.ca**. Go to the full text of the article online and click on the **CFPlus** tab.

odds ratios [ORs] for associations found to be statistically significant. All analyses were performed using SAS, version 9.4.

Results

A total of 181 clinicians started the survey; 146 answered at least 10 questions and were retained in the sample for analysis (81% completion rate). **Table 1** describes the demographic characteristics of respondents. Two-thirds were female (67.8%) and most (80.8%) were between the ages of 30 and 59. About three-quarters served urban or suburban populations (73.3%). Most were FPs with a general practice (74.0%). Participants had been in practice for a median (interquartile range) of 9 (4 to 21) years.

A total of 93.2% (n=136) of respondents had diagnosed at least 1 patient with an STI within the past year. Respondents were most likely to have diagnosed chlamydia (n=133, 91.1%), followed by genital herpes (n=110, 75.3%), genital warts (n=107, 73.3%), and gonorrhea (n=67, 45.9%). A minority of physicians had diagnosed syphilis (n=22, 15.1%) or HIV (n=11, 7.5%) within the past year.

Current PN practices

Table 2 presents the PN actions respondents stated they took for specific STIs. For chlamydia or gonorrhea, most FPs told patients to inform their partners and instruct those partners to seek care. Approximately half of FPs instructed patients to provide public health providers with partner information. Fewer than 10% of FPs personally collected partners' information and contacted partners.

There were no statistically significant associations between region of practice and stated PN practices for any of the reportable STIs.

Physicians serving rural populations were more likely than those serving urban populations to collect partner information for those diagnosed with chlamydia and to contact partners (OR=3.85, 95% CI 1.15 to 12.91). There were no statistically significant associations between population served and current PN practices for gonorrhea, syphilis, or HIV.

Physicians in practice 9 or more years were more likely than physicians in practice fewer than 9 years to instruct patients diagnosed with HIV to provide public health providers with partner information (OR=3.57, 95% CI 1.25 to 10.18). There were no statistically significant associations between median years in practice and current PN practices for chlamydia, gonorrhea, or syphilis.

Attitudes toward PN and perceived barriers and facilitators

Two-thirds of physician respondents (n=97, 66.4%) thought that PN should not be done by FPs. There were no statistically significant associations between attitudes toward FP-initiated PN and region, population served, or years in practice.

Table 1. Demographic characteristics of survey respondents: *N=146.*

CHARACTERISTIC	RESPONDENTS, n (%)
Sex	
• Female	99 (67.8)
• Male	38 (26.0)
• No data	9 (6.2)
Region of practice	
• Interior	21 (14.4)
• Fraser	23 (15.8)
• Vancouver Coastal	87 (59.6)
• Island Health	15 (10.3)
Age group, y	
• 20-29	6 (4.1)
• 30-39	64 (43.8)
• 40-49	31 (21.2)
• 50-59	23 (15.8)
• 60-69	12 (8.2)
• 70-79	4 (2.7)
• No data	6 (4.1)
Population served	
• Geographically isolated or remote	1 (0.7)
• Rural	16 (11.0)
• Small town	15 (10.3)
• Urban or suburban	107 (73.3)
• No data	7 (4.8)
Type of practice*	
• Family physician with general practice	108 (74.0)
• Family physician with focused practice	28 (19.2)
• Other	14 (9.6)
Work settings*	
• Solo private office or clinic	14 (9.6)
• Group practice private office (physicians only)	87 (59.6)
• Group practice private office (physicians and other health professionals)	37 (25.3)
• Community clinic or community health centre	14 (9.6)
• STI clinic	18 (12.3)
• Youth clinic	12 (8.2)
• Free-standing walk-in clinic	28 (19.2)
• Academic health sciences centre or hospital	7 (4.8)
• Non-academic health sciences centre teaching hospital	1 (0.7)
• Community hospital	19 (13.0)
• ED in community hospital or academic centre	11 (7.5)
• Nursing home, long-term care facility, or seniors' residence	18 (12.3)
• Occupational health	1 (0.7)

Table 1 *continued on page e186*

Table 1 *continued from page e185*

CHARACTERISTIC	RESPONDENTS, n (%)
• University	9 (6.2)
• Free-standing laboratory or diagnostic clinic	2 (1.4)
• Other	6 (4.1)
Undergraduate medical training	
• Canada	116 (79.5)
• United States	2 (1.4)
• Other	22 (15.1)
• Missing	6 (4.1)
Graduate medical training	
• Canada	123 (84.2)
• United States	5 (3.4)
• Other	10 (6.8)
• Missing	8 (5.5)

ED—emergency department, STI—sexually transmitted infection.
*Respondents could select more than 1 answer. Percentages do not add up to 100%.

In the free text responses, participants expressed concern that FP-delivered partner services could be less consistent than those offered by public health, while others thought that given the sensitive nature of STI testing and treatment, patients would prefer PN be conducted through an external third party. Several FPs indicated that it might be inappropriate to treat a partner who could have their own FP, and they thought it might lead to poorer continuity of care.

The most frequently cited barriers to PN included challenges in having patients provide accurate lists of partners and their contact information (67.1%), poor compensation (54.1%), and insufficient time (54.1%) (**Table 3**). There were no statistically significant associations between the barriers cited and regions, populations served, or years in practice.

The factors that respondents thought would most effectively facilitate FP-initiated PN were the availability of another health professional (eg, a nurse) assigned to follow up with PN (77.4%), followed closely by improved remuneration (74.7%). There were no statistically significant associations between the facilitators cited and regions, populations served, or years in practice.

Tools and resources to support PN

Survey respondents favoured tools directed at patients over those designed for providers, and they preferred electronic resources to printed materials (**Figure 1**).

The highest ranked resource was referral to a public health employee for PN (median rank of 1), followed by information and notification slips for partners (median rank of 4). Practice guidelines were ranked last (median rank of 5). This was consistent across both rural and urban settings.

Discussion

Most FPs surveyed had diagnosed an STI within the past year. A high proportion of practitioners always or usually told patients to inform their partners, but few physicians performed PN.

Partner notification practices

As in previous studies, we found that PN practices differed by STI.[13] In contrast to previous surveys,[22] a greater proportion of FPs instructed patients to contact public health for PN following chlamydia and gonorrhea diagnoses, compared with syphilis and HIV diagnoses. This likely relates to the intensive centralized public health support (including for PN) for those newly diagnosed with syphilis or HIV in BC.[24,25]

Relative to international comparators, there were higher levels of reporting to the provincial public health agency.[16,22] Of interest, rural physicians were more likely to initiate PN for patients diagnosed with chlamydia compared with their urban counterparts. Contributory factors could include variations in scope of practice and practice expectations in rural versus urban communities, and proximity and connection to public health.

Table 2. Current partner notification practices: *N=146.*

CURRENT PRACTICE	SURVEY RESPONDENTS WHO ALWAYS OR USUALLY PERFORMED THE PRACTICE FOR PATIENTS DIAGNOSED WITH A REPORTABLE STI, n (%)			
	CHLAMYDIA	GONORRHEA	SYPHILIS	HIV
Tell patient to inform partners	141 (96.6)	124 (84.9)	88 (60.3)	91 (62.3)
Instruct patient to tell partners to seek care	144 (98.6)	128 (87.7)	91 (62.3)	90 (61.6)
Collect partners' information and contact partners	13 (8.9)	10 (6.8)	12 (8.2)	13 (8.9)
Instruct patients to provide PH with partner information	87 (59.6)	78 (53.4)	62 (42.5)	58 (39.7)
Complete chlamydia or gonorrhea case report form	119 (81.5)	102 (69.9)	NA	NA
Report patients' names to PH another way	9 (6.2)	9 (6.2)	9 (6.2)	11 (7.5)

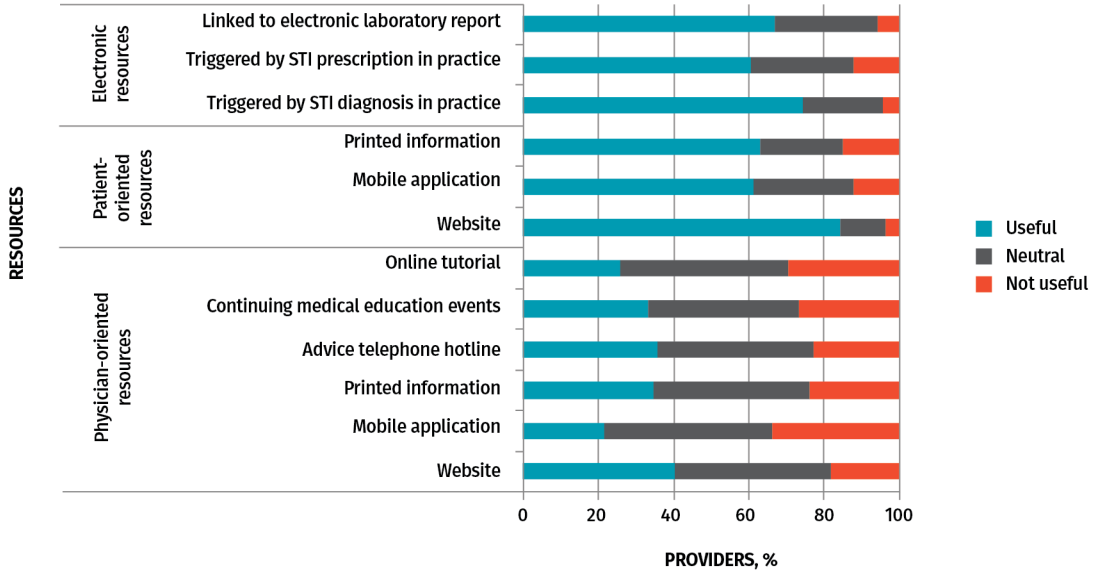
NA—not applicable, PH—public health, STI—sexually transmitted infection.

Table 3. Barriers to and facilitators of FP-led partner notification: *N=146.*

ITEM	YES, n (%)	NO, n (%)
Barriers		
• Patient unable to give accurate list of sex partners or contact information	98 (67.1)	48 (32.9)
• Insufficient time	79 (54.1)	67 (45.9)
• Poor compensation for physician-led partner notification	79 (54.1)	67 (45.9)
• Focus on treating of patient, not necessarily partners	70 (47.9)	76 (52.1)
• Concern for patient privacy	69 (47.3)	77 (52.7)
• Patient could not be reached or required follow-up	50 (34.2)	96 (65.8)
• No feedback on effectiveness of partner notification	48 (32.9)	98 (67.1)
• Patient does not attend treatment	47 (32.2)	99 (67.8)
• Negative impacts on the physician-patient relationship	43 (29.5)	103 (70.5)
• Unclear clinical guidelines	39 (26.7)	107 (73.3)
• None of the above	2 (1.4)	144 (98.6)
Facilitators		
• Health professional (eg, RN, RPN, LPN, RN[C]) assigned to follow up with partner notification	113 (77.4)	33 (22.6)
• Improved remuneration for STI follow-up or counseling	109 (74.7)	37 (25.3)
• A clear legal framework for clinicians to perform partner notification	94 (64.4)	52 (35.6)
• Clear clinical guidelines	83 (56.8)	63 (43.2)
• Education and practical support for health professionals	56 (38.4)	90 (61.6)
• Raising awareness of STIs in the community and among patients	42 (28.8)	104 (71.2)
• Other	10 (6.8)	136 (93.2)

LPN—licensed practical nurse, RN—registered nurse, RN(C)—certified registered nurse, RPN—registered practical nurse, STI—sexually transmitted infection.

Figure 1. Provider assessment of potential resources for partner notification



STI —sexually transmitted infection.

Attitudes toward PN and perceived barriers and facilitators

Rising STI rates have created an increased need for partner services; however, two-thirds of survey respondents thought that PN was not the role of FPs. In keeping with the findings of previous studies, time and compensation were among the most consistent themes cited, suggesting that PNs' operational resource intensity could be the key limiting factor.[16,26] Current public health resources are insufficient to meet the need for PN; however, our study suggests that FP operational resources (both human and financial) are also insufficient to support taking on this work. It is therefore essential that we identify better ways to support the PN system, whether it is initiated by FPs or by other providers. This will likely require additional human and financial investments.

Tools and resources to support PN

More than half of respondents thought that clearer clinical guidelines could facilitate FP-initiated PN, yet guidelines achieved the lowest median rank among potential resources. At present, there are no FP-oriented provincial PN guidelines. This seemingly contradictory result suggests that while guidelines could support this work, a lack of familiarity with procedures was not the chief impediment to implementation. Instead, FPs favoured tools that could help support patients in performing PN, consistent with our findings that missing partner information and inadequate time for PN were identified as barriers. Acknowledging preferences for both electronic and patient-initiated PN, tools such as websites, e-mails, text messages, and social media or chatroom-based outreach have increased PN in other jurisdictions.[27-30] Work on patient-oriented resources, including Internet-based notification tools, is currently under way in BC.

Our survey also found concerns regarding patient privacy and legality to be consistent themes. More extensive ethical and legal guidance may be necessary to enable FPs to become increasingly involved in PN initiation.[31]

Study strengths and limitations

Strengths of our study include the diversity of responding physicians' practice settings, populations, geographic locations, and experiences. However, while we sampled a large number of practitioners, our overall response rate was low, as is typical for studies of physicians.[32-34] A precise response rate could not be calculated, as DoFPs confirmed distribution of the link but could not track how many FPs received it. Moreover, in contrast to other surveys addressed to specific physicians, ours was intentionally anonymous and widely shared through general distribution methods (eg, newsletters). Volunteer bias could also have affected results. Respondents were more likely to be 30 to 59 years of age and practising in an urban or suburban setting, potentially reflecting the higher burden of STIs in urban areas.[35] More female than male FPs responded, as is frequently seen in survey-based studies of physicians.[36] Since the survey was primarily quantitative, there was a limited set of response options.

Conclusion

As STI rates increase, there is a need to increase the overall capacity for PN. Our study adds specific information regarding BC FPs' practices, attitudes, and opinions regarding FP-initiated PN.

Although most FPs' practices included some form of PN, most commonly through the education of index cases, most believed that PN should not be conducted by FPs. Insufficient time, poor compensation, and challenges in gathering partner information were commonly reported barriers. Better support for PN through a separate health care provider to follow up with partners, improved remuneration, and clearer clinical and legal guidance could increase uptake of FP-initiated PN. Development of PN resources for patients and reminders or resources linked to FPs' electronic medical records or laboratory reports might also support engagement. These findings can be used to develop tools most useful to FPs in the effort to reduce the burden of STIs in our communities.

Dr Alexandra Choi is a family physician and a resident in the Public Health and Preventive Medicine program at the University of British Columbia in Vancouver. **Dr Audrey Campbell** is a family physician and public health physician, Clinical Assistant Professor with the Department of Family Practice at the University of British Columbia, and Program Director for the Public Health and Preventive Medicine program at NOSM University. **Dr Theodora Consolacion** is an epidemiologist at the BC Centre for Disease Control in Vancouver. **Dr Jasmine Pawa** is a family physician, a public health physician, and Adjunct Lecturer at the Dalla Lana School of Public Health at the University of Toronto in Ontario. **Dr Brian Ng** is a family physician, Site Faculty for Research and Evidence-based Medicine for the University of British Columbia Vancouver Fraser Family Practice residency program, Lead Faculty for the Distributed Health Research Methods Course for family medicine residents at the University of British Columbia, and an instructor at the University of British Columbia. **Dr Jason Wong** is a public health physician at the BC Centre for Disease Control and Clinical Assistant Professor with the School of Population and Public Health at the University of British Columbia.

Acknowledgment

Funding for this project was provided by the Provincial Health Services Authority Shared Care and Specialist Services Committee's Health Authority.

Contributors

Drs Choi, Campbell, Pawa, Ng, and **Wong** contributed to the concept and design of the study, data collection, analysis, and interpretation. **Dr Consolacion** completed the statistical analyses. All authors contributed to writing or editing the manuscript and approving the final version for submission.

Competing interests

None declared

Correspondence

Dr Alexandra Choi; e-mail **alexandra.choi1@vch.ca**

References

1. *Canadian guidelines on sexually transmitted infections.* Ottawa, ON: Public Health Agency of Canada; 2006. Available from: **http://publications.gc.ca/collections/collection_2011/aspc-phac/HP40-1-2010-eng.pdf**. Accessed 2018 Jun 26.
2. Isfeld-Kiely H. *A review of evidence on partner notification practices for chlamydia.* Winnipeg, MB: National Collaborating Centre for Infectious Diseases; 2014. Available from: **https://nccid.ca/publications/a-review-of-evidence-on-partner-notification-practices-for-chlamydia/**. Accessed 2017 Dec 23.
3. Althaus CL, Heijne JCM, Herzog SA, Roellin A, Low N. Individual and population level effects of partner notification for *Chlamydia trachomatis. PLoS One* 2012;7(12):e51438. Epub 2012 Dec 12.
4. Huston P. Are we losing the battle against sexually transmitted diseases in Canada? *Can Fam Physician* 2018;64:199 (Eng), 200 (Fr).
5. *Report on sexually transmitted infections in Canada: 2013-2014.* Ottawa, ON: Public Health Agency of Canada; 2017. Available from: **https://www.canada.ca/content/dam/phac-aspc/documents/services/publications/diseases-conditions/report-sexually-transmitted-infections-canada-2013-14/report-sexually-transmitted-infections-canada-2013-14-eng.pdf**. Accessed 2018 Jun 26.

6. *STI in British Columbia: annual surveillance report 2016*. Vancouver, BC: BC Centre for Disease Control; 2018. Available from: **http://www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/STI/STI_Annual_Report_2016.pdf**. Accessed 2019 Feb 19.
7. Carré H, Boman J, Österlund A, Gärdén B, Nylander E. Improved contact tracing for *Chlamydia trachomatis* with experienced tracers, tracing for one year back in time and interviewing by phone in remote areas. *Sex Transm Infect* 2008;84(3):239-42. Epub 2008 Jan 23.
8. Ferreira A, Young T, Mathews C, Zunza M, Low N. Strategies for partner notification for sexually transmitted infections, including HIV. *Cochrane Database Syst Rev* 2013;(10):CD002843.
9. Gorbach PM, Aral SO, Celum C, Stoner BP, Whittington WL, Galea J, et al. To notify or not to notify: STD patients' perspectives of partner notification in Seattle. *Sex Transm Dis* 2000;27(4):193-200.
10. Mathews C, Coetzee N, Zwarenstein M, Lombard C, Guttmacher S, Oxman A, et al. A systematic review of strategies for partner notification for sexually transmitted diseases, including HIV/AIDS. *Int J STD AIDS* 2002;13(5):285-300.
11. Hogben M. Partner notification for sexually transmitted diseases. *Clin Infect Dis* 2007;44(Suppl 3):S160-74.
12. Lee CQT, Pritchard J. *Expedited partner therapy for chlamydia infections*. Toronto, ON: Public Health Ontario; 2012.
13. Magaziner S, Montgomery MC, Bertrand T, Daltry D, Jenkins H, Kendall B, et al. Public health opportunities and challenges in the provision of partner notification services: the New England experience. *BMC Health Serv Res* 2018;18(1):75.
14. Potterat JJ. Partner referral tools and techniques for the clinician diagnosing a sexually transmitted infection. *Int J STD AIDS* 2007;18(5):293-6. Epub 2007 May 1.
15. Bilardi JE, Hopkins CA, Fairley CK, Hocking JS, Tomnay JE, Pavlin NL, et al. Innovative resources could help improve partner notification for chlamydia in primary care. *Sex Transm Dis* 2009;36(12):779-83.
16. Hogben M, St Lawrence JS, Montaño DE, Kasprzyk D, Leichliter JS, Phillips WR. Physicians' opinions about partner notification methods: case reporting, patient referral, and provider referral. *Sex Transm Infect* 2004;80(1):30-4.
17. Van den Broek IVF, Donker GA, Hek K, van Benthem BHB, van Bergen JEAM, Götz Hm. Partner notification and partner treatment for chlamydia: attitude and practice of general practitioners in the Netherlands [abstract]. *Sex Transm Infect* 2017;93(Suppl 2):A177.
18. Chapter 5. Sexually transmitted infections. Guidelines for testing, follow up, and prevention of HIV. In: *Communicable disease control manual*. Vancouver, BC: BC Centre for Disease Control; 2016. p. 1-49. Available from: **http://www.bccdc.ca/resource-gallery/Documents/Communicable-Disease-Manual/Chapter 5 - STI/HIV_Guidelines_Testing_FollowUp_Prevention.pdf**. Accessed 2022 Apr 22.
19. *Confidential notification of sexually transmitted infection. HLTH 208 case report form*. Vancouver, BC: BC Centre for Disease Control; 2018. Available from: **http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Forms/STI/HLTH208-BCCDC.pdf**. Accessed 2019 Sep 22.
20. Divisions of Family Practice [website]. *About us*. Vancouver, BC: Divisions of Family Practice; 2015. Available from: **https://divisionsbc.ca/provincial/about-us**. Accessed 2017 Dec 23.
21. *Physician information*. Ottawa, ON: Canadian Institute for Health Information. Available from: **https://www.cihi.ca/en/physicians#_Reports_and_Analyses**. Accessed 2019 Sep 2.
22. St Lawrence JS, Montaño DE, Kasprzyk D, Phillips WR, Armstrong K, Leichliter JS, et al. STD screening, testing, case reporting, and clinical and partner notification practices: a national survey of US physicians. *Am J Public Health* 2002;92(11):1784-8.
23. Province of British Columbia [website]. *Regional health authorities*. Victoria, BC: Province of British Columbia. Available from: **https://www2.gov.bc.ca/gov/content/health/about-bc-s-health-care-system/partners/health-authorities/regional-health-authorities**. Accessed 2018 Jun 26.
24. Canadian AIDS Treatment Information Exchange [website]. *The Vancouver STOP Project*. Toronto, ON: Canadian AIDS Treatment Information Exchange. Available from: **https://www.catie.ca/the-vancouver-stop-project**. Accessed 2018 Jun 26.
25. Deonarine A, Ogilvie G, Montgomery C, Makaroff S, Holgerson N, Grennan T, et al. Trends in syphilis partner notification among gay, bisexual, and other men who have sex with men in British Columbia, 2010 to 2013. *Sex Transm Dis* 2016;43(8):489-93.
26. *Public health benefits of partner notification for sexually transmitted infections and HIV*. Stockholm, Sweden: European Centre for Disease Prevention and Control; 2013. Available from: **https://www.ecdc.europa.eu/sites/default/files/media/en/publications/Publications/Partner-notification-for-HIV-STI-June-2013.pdf**. Accessed 2019 Feb 19.
27. Clark JL, Segura ER, Oldenburg CE, Salvatierra HJ, Rios J, Perez-Brumer AG, et al. Traditional and web-based technologies to improve partner notification following syphilis diagnosis among men who have sex with men in Lima, Peru: pilot randomized controlled trial. *J Med Internet Res* 2018;20(7):e232.
28. Rietmeijer CAM. Using social media for partners services in adolescents [abstract]. *Sex Transm Infect* 2013;89(Suppl 1):A12.
29. Tomnay JE, Pitts MK, Fairley CK. General practitioners' use of internet-based patient materials for partner notification. *Sex Transm Dis* 2007;34(8):613-6.
30. Fairley CK. Using information technology to control STIs. *Sex Transm Infect* 2011;87(Suppl 2):ii25-7.
31. Rivas JD, Sulmasy DP. Sexually transmitted disease: a private matter? *Am Fam Physician* 2002;66(7):1351-6.
32. Wiebe ER, Kaczorowski J, MacKay J. Why are response rates in clinician surveys declining? *Can Fam Physician* 2012;58:e225-8. Available from: **https://www.cfp.ca/content/cfp/58/4/e225.full.pdf**. Accessed 2022 May 19.
33. Sibbald B, Addington-Hall J, Brenneman D, Freeling P. Telephone versus postal surveys of general practitioners: methodological considerations. *Br J Gen Pract* 1994;44(384):297-300.
34. Barclay S, Todd C, Finlay I, Grande G, Wyatt P. Not another questionnaire! Maximizing the response rate, predicting non-response and assessing non-response bias in postal questionnaire studies of GPs. *Fam Pract* 2002;19(1):105-11.
35. Deering KN, Tyndall MW, Koehoorn M. Regional patterns of risk for sexually transmitted infections in British Columbia. *Health Rep* 2010;21(3):37-44.
36. Cunningham CT, Quan H, Hemmelgarn B, Noseworthy T, Beck CA, Dixon E, et al. Exploring physician specialist response rates to web-based surveys. *BMC Med Res Methodol* 2015;15:32. Epub 2015 Apr 9.

This article has been peer reviewed.
Cet article a fait l'objet d'une révision par des pairs.
Can Fam Physician 2022;68:e182-9. DOI: 10.46747/cfp.6806e182