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Accessing needed sexual health services during the COVID-19 pandemic in British Columbia, Canada: a survey of sexual health service clients

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ABSTRACT

Objectives We assessed COVID-19 pandemic impacts on accessing needed sexual health services, and acceptability of alternative service delivery models, among sexual health service clients in British Columbia (BC), Canada.

Methods We administered an online survey on 21 July–4 August 2020 to clients using a provincial STI clinic or internet-based testing service, GetCheckedOnline, in the year prior to March 2020. We used logistic regression to identify factors associated with having unmet sexual health needs (ie, not accessing needed services) during March–July 2020 and the likelihood of using various alternative service models, if available.

Results Of 1198 survey respondents, 706 (59%) reported needing any sexual health service since March 2020; of these 706, 365 (52%) did not access needed services and 458 (66%) had avoided or delayed accessing services. GetCheckedOnline users (univariate OR (uOR)=0.62; 95% CI 0.43 to 0.88) or clients with more urgent needs (eg, treatment for new STI, uOR 0.40 (95% CI 0.21 to 0.7)) had lower odds of unmet sexual health needs. The most common factors reported for avoiding or delaying access were public messaging against seeking non-urgent healthcare (234/662, 35%), concern about getting COVID-19 while at (214/662, 32%) or travelling to (147/662, 22%) a clinic or lab and closure of usual place of accessing services (178/662, 27%). All factors were positively associated with having unmet sexual health needs, with public messaging showing the strongest effect (adjusted OR=4.27 (95% CI 2.88 to 6.42)). Likelihood of using alternative sexual health service models was high overall, with the most appealing options being home self-collection kits (634/706, 90%), receiving test kits or antibiotics at home (592/700, 85%) and express testing (565/706, 80%).

Conclusions Of BC sexual health service clients needing services during March–July 2020, many had unmet needs. Offering alternative service delivery methods may help to improve access during and beyond the COVID-19 pandemic.

BACKGROUND

Decreases in tests and diagnoses of sexually transmitted and blood-borne infections (STBBIs) seen in

many jurisdictions during the COVID-19 pandemic have not been fully explained.^{1–3} During the first wave of COVID-19 cases in March–May 2020 in British Columbia (BC), Canada, provincial syphilis and HIV tests and reported diagnoses decreased,^{4,5} a pattern also observed for STBBI testing through GetCheckedOnline, BC's internet-based STBBI testing service (H Pedersen, personal communication, 2020). Elsewhere at the time there were reports of decreased or changed use of sexual health services for testing, HIV pre-exposure prophylaxis (PrEP) or emergency contraception.^{6–8} Common hypotheses attributed these trends to reduced service demands as a result of changes in sexual behaviours among individuals (eg, fewer casual partners)^{7,8} or closure of sexual health services and/or diversion of staff to support COVID-19 related work.^{1,6,9} In a recent survey conducted by our team, one-third of BC sexual health service clients reported decreases in partner numbers during the initial phases of the pandemic, which may be consistent with reduced demand for sexual health services.¹⁰ In this paper, we analysed the same survey data to understand the perceived need for and access to sexual health services during the initial phases of BC's COVID-19 pandemic.

Sexual health services are available at multiple access points in BC's universal healthcare system at no or low cost, including dedicated sexual health clinics, primary care services, walk-in clinics and emergency rooms. In March 2020, many dedicated sexual health clinics in the province either closed or reduced their available services, with most clinics prioritising essential services for in-person care (eg, for symptomatic clients or treatment services).^{11–14} As elsewhere, sexual health services in BC may have been considered non-essential,¹⁵ impacted by additional protocols or measures taken to minimise staff risk,¹⁶ or redeployed staff resources for COVID-19 contact tracing.⁹ As a result of the pandemic, sexual health providers in BC started to place greater emphasis on alternative models of service delivery, including telemedicine or virtual health.^{17,18} However, in-person visits are still necessary, for example, postexposure prophylaxis for high-risk sexual exposures, injectable medications and



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provider-collected specimens for diagnostic testing.¹⁸ By summer 2020, BC was in the process of 're-starting' and resuming health services previously put on hold.¹⁹ Some sexual health services began to resume in-clinic, non-urgent services dependent on the availability of clinical staff and ability to meet physical distancing requirements.¹¹

Our primary objective was to understand the impact of the COVID-19 pandemic on access to needed sexual health services. We aimed to characterise existing service clients who did not access needed services during the initial phases (March–July 2020) of BC's COVID-19 pandemic and to assess the effect of pandemic-related factors on service access. We hypothesised that pandemic-related barriers to service access included: service closure/restriction; perceived stigma related to having sex during the pandemic outside of household members; public messaging to avoid non-essential health services; and worry about exposure to COVID-19 if accessing health services. We also hypothesised that being a GetCheckedOnline client would be associated with accessing needed sexual health services by reducing the need for in-person clinic visits for testing. Our secondary objective was to understand the acceptability of alternative models of sexual health service delivery. Our overarching goal was to inform service provision during the COVID-19 pandemic and the ongoing adaptation of sexual health services.

METHODS

Design and setting

As previously described,¹⁰ we conducted a cross-sectional online survey of sexual health service clients between 21 July and 4 August 2020 during gradual lifting of public health measures following the initial wave of COVID-19 cases in BC (online supplemental figure 1). Using previously established methods,²⁰ we recruited participants from a high-volume provincial STI clinic (>10 000 clients per year) in Vancouver, BC, operated by BC Centre for Disease Control (BCCDC). Starting in mid-March 2020, non-urgent services such as routine STI testing or vaccinations were no longer available at the clinic, a situation largely unchanged by the time of the survey with the exception of taking on new HIV PrEP patients in July.²¹ Additionally, we recruited clients from GetCheckedOnline.com, also operated by BCCDC and available in eight communities across BC, with 66% of clients residing in the Greater Vancouver region and over 11 000 tests conducted in 2019. In brief, GetCheckedOnline allows users to get tested for STBBIs (chlamydia, gonorrhoea, syphilis, HIV and hepatitis C) without visiting a clinic. Clients create an online account, complete a risk assessment to inform test recommendations, print or download a lab requisition and take it to a laboratory for specimen collection.²² Results are provided online (if negative) or over the phone to arrange appropriate follow-up (if positive or indeterminate). There were no restrictions on GetCheckedOnline use during the COVID-19 pandemic. Clients of these two services overlap; in 2016, 30% of GetCheckedOnline clients had also tested at the provincial STI clinic.²⁰

Survey development

Survey items were adapted from literature and prior research^{20 23} and developed with input from service providers, and our community advisory board comprised of agency representatives and members of communities affected by STBBI. The final survey contained 33 items in total (one per page, online supplemental material) and used adaptive questioning to minimise the number of items for completion. Participants could review, edit and save answers. The survey was available in English only.

We included questions related to need for sexual health services during the pandemic and interest in alternative sexual health services distinct from in-person clinic visits. Participants were asked if, since the start of the pandemic, they wanted or needed to: (1) get tested for STIs or (2) access sexual health services for another reason (eg, contraception or PrEP). Participants were then asked whether they had accessed the service(s) or not. We asked questions to assess whether our hypothesised factors described previously led participants to avoid or delay seeking services during the pandemic and included Likert scale questions about likelihood of use of a variety of alternative methods of sexual health service delivery (eg, video visits with providers, home specimen self-collection kits).

Recruitment and data collection

During registration or account creation, STI clinic and GetCheckedOnline clients are asked to consent to be contacted for research and approximately 21% and 26% consent, respectively.²⁰ We emailed a study participation invitation to all consenting clients 16 years and older who had visited the STI clinic or tested using GetCheckedOnline in the year prior to the pandemic (from 15 March 2019 to 17 March 2020). The invitation contained a generic recruitment message with a link to an online survey and described additional eligibility criteria: ability to complete surveys in English and not having completed the survey previously. Participants were offered an opportunity to enter into a draw for a \$C200 gift card. The initial recruitment email was sent on 21 July 2020, with three follow-up reminders before survey closure on 4 August 2020. Data were collected using REDCap, with no personal identifiers collected. The email address was not tracked for survey submission.

Analysis

Data from all submitted questionnaires were imported into R V.3.52 for analysis. Characteristics of the overall sample have been previously reported.¹⁰ For analyses of this paper, we included participants who reported needing an STI test and/or another sexual health service since March 2020. Our primary outcome of interest was having an unmet service need, defined as not accessing testing and/or another sexual health service. We estimated univariate ORs and 95% CIs using binary logistic regression to identify characteristics associated with the primary outcome. To measure the effect of each hypothesised barrier on the primary outcome, we used multiple multivariable logistic regressions to estimate adjusted ORs (aORs) and 95% CI, adjusting for potential confounders identified through use of a causal diagram.

Our secondary outcomes were the likelihood of using alternative sexual health service delivery models, for which we collapsed these Likert scale questions into binary responses: very likely/likely versus other (neutral/unlikely/very unlikely). We conducted a second bivariate analysis using logistic regression between these secondary outcomes and an explanatory variable of avoiding or delaying accessing sexual health services, defined as reporting at least one factor leading the participant to avoid or delay seeking testing or sexual healthcare during the COVID-19 pandemic.

RESULTS

Recruitment outcomes

Overall 4212 clients were invited to participate, of which 1518 (36%) started and 1198 (28%) submitted the survey. The response rate among GetCheckedOnline clients (2618 invited, 851 (33%)

submitted) was higher than for the STI clinic clients (1594 invited, 347 (22%) submitted). Fifty-nine per cent (706/1198) of survey participants reported wanting or needing to access a sexual health service since the beginning of the pandemic. More GetCheckedOnline clients (521/851 (61%)) reported needing sexual health services than the STI clinic clients (185/347 (53%)).

Of the 706 participants reporting a sexual health need that comprised our final analytic sample, the median age was 32 years, with 47% identifying as men, 47% women and 5% non-binary, gender-fluid or other gender (online supplemental table 1). Half (56%) of the sample identified as gay/lesbian, bisexual, queer, pansexual or another sexual minority (of which 59% identified as men, 32% as women and 9% identified as non-binary, gender-fluid or other gender). The majority of participants were white (72%), with 4% identifying as Indigenous (First Nation, Métis or Inuit) and 23% as another racialised minority. Most participants (87%) had greater than high school education, and 45% noted greater difficulty meeting their own or their household's financial needs during the pandemic. Most participants were users of GetCheckedOnline (77%, 545/706).

Access to needed sexual health services

Of those who reported wanting or needing to access one or more sexual health services, 341/706 (48%) accessed the service while 365/706 (52%, 95% CI 48% to 55%) did not and were defined as having an unmet sexual health need. Significant findings

from our univariate logistic regression on characteristics associated with having an unmet sexual health need are presented in table 1, with the full analysis available in online supplemental table 1.

Having an unmet sexual health need was more likely among participants identifying as a woman and participants needing routine testing, and less likely among men having sex with men only, participants needing birth control, HIV PrEP or STI treatment, participants comfortable accessing in-person services and GetCheckedOnline users. Worry about getting COVID-19 during the first wave in BC was common in our sample as was perceived stigma about sex; however, neither factor was associated with having an unmet sexual health need.

Among those with complete data, 67% (441/662) indicated avoiding or delaying accessing sexual health services during the pandemic. The most common factors for avoiding or delaying access were public messaging against seeking non-urgent healthcare (234/662, 35%), concern about getting COVID-19 while at (214/662, 32%) or travelling to (147/662, 22%) a clinic or lab and closure of usual place of accessing services (178/662, 27%; table 2). All factors were positively associated with having an unmet sexual health need, including worry about being judged by a healthcare provider for having sex during the pandemic. Public messaging against seeking non-urgent healthcare showed the strongest effect on having sexual health needs unmet. Participants reporting one or more factors for avoiding or delaying

Table 1 Sociodemographic and other factors significantly associated with having unmet sexual health needs

Variable	Total with sexual health need n=706	At least one need unmet n=365	All needs met n=341	Unadjusted OR (95% CI)
Gender identity				
Man	332/704 (47%)	158/364 (43%)	174/340 (51%)	Ref
Woman	334/704 (47%)	185/364 (51%)	149/340 (44%)	1.37 (1.01 to 1.86)
Non-binary/gender-fluid/other	38/704 (5%)	21/364 (6%)	17/340 (5%)	1.36 (0.69 to 2.70)
Gender of sex partners prior to the pandemic				
Men who have sex with women only	103/693 (15%)	64/359 (18%)	39/334 (12%)	Ref
Men who have sex with men and women	28/693 (4%)	16/359 (4%)	12/334 (4%)	0.81 (0.35 to 1.93)
Men who have sex with men only	187/693 (27%)	71/359 (20%)	116/334 (35%)	0.37 (0.23 to 0.61)
Women who have sex with men only	242/693 (35%)	127/359 (35%)	115/334 (34%)	0.67 (0.42 to 1.07)
Women who have sex with men and women	73/693 (11%)	49/359 (14%)	24/334 (7%)	1.24 (0.67 to 2.35)
Women who have sex with women only	6/693 (1%)	3/359 (1%)	3/334 (1%)	0.61 (0.11 to 3.43)
Other	54/693 (8%)	29/359 (8%)	25/334 (7%)	0.71 (0.36 to 1.38)
Type of sexual health service need				
Testing for a new, specific reason (eg, symptoms)	183/706 (26%)	79/365 (22%)	104/341 (30%)	1.27 (0.79 to 2.04)
Testing as per usual testing routine	403/706 (57%)	241/365 (66%)	162/341 (48%)	2.48 (1.64 to 3.79)
Speak with a healthcare provider about a sexual health concern	149/692 (22%)	87/355 (25%)	62/337 (18%)	1.44 (1.00 to 2.08)
Access birth control	95/692 (14%)	34/355 (10%)	61/337 (18%)	0.48 (0.30 to 0.75)
Access to HIV pre-exposure prophylaxis	68/692 (10%)	21/355 (6%)	47/337 (14%)	0.39 (0.22 to 0.66)
Access treatment for a new STI	45/692 (7%)	14/355 (4%)	31/337 (9%)	0.40 (0.21 to 0.76)
Access treatment for ongoing symptoms (eg, warts)	36/692 (5%)	17/355 (5%)	19/337 (6%)	0.84 (0.43 to 1.65)
Get a pregnancy test	25/692 (4%)	9/355 (3%)	16/337 (5%)	0.52 (0.22 to 1.17)
Access to condoms	31/692 (4%)	16/355 (5%)	15/337 (4%)	1.01 (0.49 to 2.10)
Access to harm reduction supplies	7/692 (1%)	5/355 (1%)	2/337 (1%)	2.39 (0.51 to 16.79)
Comfortable accessing in-person sexual health and testing services during the COVID-19 pandemic				
Strongly agree/agree	418/700 (60%)	152/363 (42%)	266/337 (79%)	0.19 (0.14 to 0.27)
Neither/disagree/strongly disagree	282/700 (40%)	211/363 (58%)	71/337 (21%)	Ref
GetCheckedOnline user	545/706 (77%)	267/365 (73%)	278/341 (82%)	0.62 (0.43 to 0.88)

Denominators for each variable exclude missing values. Column percentages were calculated excluding missing values per variable.

Bold: 95% CI excludes 1.

Table 2 Association between factors for avoiding or delaying seeking testing or sexual healthcare during the COVID-19 pandemic and unmet sexual health needs

Factor	Total with sexual health need n=662*	At least one need unmet n=345	All needs met n=317	Unadjusted OR (95% CI)	Adjusted† OR (95% CI)
Any factor	441/662 (67%)	310/345 (90%)	131/317 (41%)	12.58 (8.40 to 19.29)	10.38 (6.63 to 16.64)
Public messaging that was not supposed to seek non-urgent healthcare	234 (35%)	181 (52%)	53 (17%)	5.50 (3.85 to 7.96)	4.27 (2.88 to 6.42)
Concern about getting COVID-19 while at a clinic/lab	214 (32%)	160 (46%)	54 (17%)	4.21 (2.95 to 6.08)	2.63 (1.73 to 4.04)
Place usually go for testing/care was closed or had reduced services	178 (27%)	119 (34%)	59 (19%)	2.30 (1.61 to 3.31)	2.52 (1.68 to 3.82)
Concerned about getting COVID-19 while travelling to a clinic/lab	147 (22%)	112 (32%)	35 (11%)	3.87 (2.58 to 5.95)	2.21 (1.38 to 3.58)
Worried that healthcare provider might judge me for having sex during the COVID-19 pandemic	82 (12%)	59 (17%)	23 (7%)	2.64 (1.61 to 4.46)	2.56 (1.47 to 4.57)
Didn't know where to access services	77 (12%)	55 (16%)	22 (7%)	2.54 (1.53 to 4.35)	2.46 (1.38 to 4.48)
Live/close contact with someone at risk of COVID-19	36 (5%)	28 (8%)	8 (3%)	3.41 (1.60 to 8.13)	2.64 (1.11 to 6.92)

Bold: 95% CI excludes 1.

*Excluding individuals with missing data for any variable included in adjusted models.

†Adjusted for age, gender, sexual orientation (behaviour), race/ethnicity, education, comfort accessing in-person services, and being a GetCheckedOnline user.

access had about 10 times the odds of having an unmet sexual health need, compared with those reporting none.

Interest in alternative sexual health service delivery methods

Likelihood of using alternative models to in-person sexual health services if available was high among participants (table 3). The most appealing options were home self-collection kits (ie, receiving kits for specimen self-collection and mailing the specimens to a lab; 634/706, 90%), receiving test kits or antibiotics at home (592/700, 85%) and express testing (ie, phone/video triage to specimen collection only at a clinic site; 565/706, 80%). Likelihood of using most services was not associated with avoiding or delaying seeking sexual health services during the pandemic, with the exception of a text messaging service providing STI results. Likelihood of use did not differ between STI clinic and GetCheckedOnline clients, with the exception of phone calls with providers to discuss sexual health, text messaging for reminders and express testing, where odds were higher for STI clinic clients (online supplemental table 2).

DISCUSSION

Our study suggests that reductions in STBBI testing in BC during the initial phases of the COVID-19 pandemic are in part related to avoiding or delaying use of needed sexual health services in this time period. Among our sample of sexual health service clients reporting needing STBBI testing or another service during March–July 2020, over half (52%) reported not accessing care and two-thirds (66%) reported delaying or avoiding seeking needed sexual healthcare as a result of the pandemic. Our study adds to literature regarding client experiences of barriers to accessing sexual healthcare during the initial phases of the COVID-19 pandemic. All of our hypothesised barriers to accessing care were associated with unmet sexual health service needs.

While closure or reduction of usual services was an important factor impeding access, more common factors for delaying or avoiding care were public messaging to avoid non-essential healthcare and concern about getting COVID-19 while at a clinic or lab. However, we found that participants with potentially

Table 3 Acceptability of alternative models to in-person sexual health services and association with avoiding/delaying seeking testing or sexual healthcare during the COVID-19 pandemic

Variable	Total with sexual health need n=706	At least one factor leading to avoiding/delaying seeking testing or sexual healthcare n=458	No factors reported n=231	Unadjusted OR (95% CI)
Likelihood of using the following services (very likely/likely vs other)				
Home self-collection kits for testing	634/706 (90%)	417/458 (91%)	202/231 (87%)	1.46 (0.86 to 2.41)
Receiving test kits or antibiotics at home, in plain packaging	592/700 (85%)	390/454 (86%)	188/230 (82%)	1.36 (0.88 to 2.08)
Express testing service, where after a phone/video assessment go to a clinic to have specimens collected	565/706 (80%)	361/458 (79%)	189/231 (82%)	0.83 (0.55 to 1.23)
Text messaging service that provides STI results	530/700 (76%)	360/457 (79%)	159/227 (70%)	1.59 (1.10 to 2.28)
Phone call with a sexual healthcare provider to discuss sexual health	481/704 (68%)	312/458 (68%)	160/230 (70%)	0.93 (0.66 to 1.31)
Sending a picture of a rash or lesion to a healthcare provider	461/702 (66%)	308/457 (67%)	145/229 (63%)	1.20 (0.86 to 1.67)
Text messaging service for reminders (eg, medications, appointments)	473/701 (67%)	307/455 (67%)	152/229 (66%)	1.05 (0.75 to 1.47)
Video visit with a sexual healthcare provider to discuss sexual health	405/703 (58%)	269/457 (59%)	130/230 (57%)	1.10 (0.80 to 1.52)
Texting with a sexual healthcare provider to discuss sexual health	374/699 (54%)	253/455 (56%)	110/228 (48%)	1.34 (0.98 to 1.85)

Denominators for each variable exclude missing values. Column percentages were calculated excluding missing values per variable.

Bold: 95% CI excludes 1.

more time-sensitive issues such as needing contraception, HIV PrEP or STI treatment had lower odds of having unmet service needs. These findings suggest clients may have weighed the potential harm of not accessing needed services against their risk of acquiring COVID-19 infection and deferring services that they perceived as non-urgent. Deferring asymptomatic STBBI screening has been noted among sexual health service clients in Australia and among men who have sex with men in the USA and has been recommended as a short-term strategy for reducing in-person clinic visits during the pandemic.^{18 24} While it has been proposed that the impact of service closures during the pandemic may be greatest for those most disadvantaged, exacerbating existing health inequities,^{25 26} in our study, most sociodemographic measures were not associated with unmet sexual health needs. We did find a significantly greater proportion of clients with unmet sexual health needs were women compared with men, and a lower proportion were men who have sex with men compared with men who have sex with women only. However, the composition of our sample was likely skewed towards individuals with resources to access health services, being predominantly white, with higher education and having sufficient digital and English literacy to complete an email survey.

Timely access to sexual healthcare is a well-recognised determinant of sexual health and STBBI prevention and control. It is concerning that many individuals who accessed sexual health services prior to the pandemic have avoided or delayed sexual healthcare they perceived as needed during the initial phases of the COVID-19 pandemic in BC. Possible outcomes of these delays include unintended pregnancies related to reduced access to contraception, the consequences of delayed diagnosis and treatment of STBBI leading to secondary transmission or morbidity related to complications of untreated bacterial STIs (eg, neurosyphilis and pelvic inflammatory disease). These findings reinforce the importance of maintaining sufficient access to in-person sexual health services from the outset of a pandemic. GetCheckedOnline users were less likely to have unmet sexual health needs, suggesting that internet-based STBBI testing services with reduced need for in-person care can mitigate access barriers during the COVID-19 pandemic. We found high acceptability of potential alternative models for delivering sexual health services among participants in our survey, with options for testing and treatment that avoid or minimise time in clinics being most acceptable (home self-collection or testing kits and express testing services). Our study reinforces recommendations to develop alternative methods for sexual health services delivery during the COVID-19 pandemic to minimise in-person interactions, including expansion of telemedicine and virtual care,^{17 18 27} scale-up of existing services such as GetCheckedOnline and implementation of new options found most acceptable. We note, however, that this is an added rationale for these services, given their established role in overcoming the many existing barriers to accessing sexual healthcare prior to the pandemic, such as those that originally led to the development of GetCheckedOnline.^{20 22}

We surveyed existing sexual health service clients in BC about their perceived need for sexual health services, aiming to reflect a sexually active population where sexual health needs may likely arise during the COVID-19 pandemic. As such, our findings may not be generalisable to individuals not previously engaged in sexual healthcare, or to jurisdictions where the availability of sexual health services during the initial phases of the pandemic may have differed. Another limitation of our study is our inability to examine whether access changed in relation to different pandemic phases, as our survey questions did not

differentiate between the two initial phases of BC's pandemic. By the time of our survey in late July/early August 2020, public health restrictions had eased and some sexual health services had reopened or loosened restrictions. Finally, we did not collect information to allow us to compare the characteristics of STI clinic and GetCheckedOnline clients who did and did not consent to be contacted for research or participate in the study and as such cannot describe potential recruitment biases. A prior study conducted by our team using the same recruitment methods did find sociodemographic differences between consenting and non-consenting clients in these two samples, yet few differences between participants and non-participants.²⁰

In conclusion, our study contributes to the growing body of evidence regarding the unintended consequences of the COVID-19 pandemic on access to needed sexual health services.²⁸ Access delays can have serious individual and public health impacts, and we echo others in highlighting the importance of maintaining sexual health access during the COVID-19 pandemic.²⁹ Ongoing research is needed to monitor access over time given the protracted nature of the pandemic, to more carefully examine access issues among women and to assess the long-term impact of deferred access to and closures of sexual health services. Rapid deployment and scale-up of alternatives to in-person sexual healthcare should also be an important part of the pandemic response, which are justified by addressing COVID-19 specific access barriers and by effecting long-lasting service changes that may address barriers pre-dating—and persisting beyond—the pandemic.

Key messages

- ▶ Of clients of sexual health services in British Columbia identifying a need for sexual health services since the start of the COVID-19 pandemic, many did not access services, which may be influenced by perceived urgency of need.
- ▶ The most common factors behind avoiding or delaying access to services include messaging to avoid non-essential healthcare, concern about getting COVID-19 while at a clinic or laboratory and service closures.
- ▶ Users of internet-based STI testing (GetCheckedOnline) were less likely to report unmet sexual health needs, suggesting the service may mitigate access barriers during the pandemic.
- ▶ Alternative models of sexual healthcare that reduce potential in-person exposures including home self-collection or test kits and express testing are highly acceptable.

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REFERENCES

- National Coalition of STD Directors. COVID-19 & the state of the STD field, 2020. Available: https://www.ncsddc.org/wp-content/uploads/2020/05/STD-Field.Survey-Report.Final_5.13.20.pdf [Accessed 8 Feb 2020].
- Public Health England. The impact of the COVID-19 pandemic on prevention, testing, diagnosis and care for sexually transmitted infections, HIV and viral hepatitis in England, 2020. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/943657/Impact_of_COVID-19_Report_2020.pdf [Accessed 8 Feb 2020].
- Hoffman J. People are still having sex. So why are S.T.D. rates dropping?, 2020. Available: <https://www.nytimes.com/2020/10/28/health/covid-std-testing.html> [Accessed 8 Feb 2020].
- Clinical Prevention Services Epidemiology and Surveillance, BC Centre for Disease Control. Cps monthly surveillance report: infectious syphilis, HIV, hepatitis C, and tuberculosis, 2020. Available: <http://www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/STI/CPS%20Monthly%20Surveillance%20Report%20December%202020.pdf> [Accessed 8 Feb 2020].
- BC Centre for Excellence in HIV/AIDS, BC Ministry of Health. HIV monitoring semi-annual report for British Columbia, second quarter 2020, 2020. Available: <http://stophivids.ca/qmr/2020-Q2/#/bc> [Accessed 8 Feb 2020].
- Chow EPF, Hocking JS, Ong JJ, *et al.* Sexually transmitted infection diagnoses and access to a sexual health service before and after the National lockdown for COVID-19 in Melbourne, Australia. *Open Forum Infect Dis* 2021;8:ofaa536.
- Chow EPF, Hocking JS, Ong JJ, *et al.* Changing the use of HIV pre-exposure prophylaxis among men who have sex with men during the COVID-19 pandemic in Melbourne, Australia. *Open Forum Infect Dis* 2020;7:ofaa275.
- Thomson-Glover R, Hamlett H, Weston D, *et al.* Coronavirus (COVID-19) and young people's sexual health. *Sex Transm Infect* 2020;96:473–4.
- Currie S. COVID-19 contact tracing using sexual health services in Cumbria. *Sex Transm Infect* 2020;96:395.
- Gilbert M, Chang H-J, Ablona A, *et al.* Partner number and use of COVID-19 risk reduction strategies during initial phases of the pandemic in British Columbia, Canada: a survey of sexual health service clients. *Can J Public Health* 2021. doi:10.17269/s41997-021-00566-9. [Epub ahead of print: 03 Nov 2021].
- Options for Sexual Health. COVID-19 update, 2020. Available: <https://www.optionsforsexualhealth.org/covid-19-update/> [Accessed 31 May 2020].
- Island Sexual Health Community Health Centre. Important update to clinic services. island sexual health, 2020. Available: <https://www.islandsexualhealth.org/2020/05/important-update-to-clinic-services/> [Accessed 31 May 2020].
- Health Initiative For Men. HIM's response to Coronavirus (COVID-19), 2020. Available: <https://checkhimout.ca/covid19/> [Accessed 31 May 2020].
- Wyton M. It's hard to get tested for STIs right now. Here's why that's risky. *The Tyee* 2020.
- Harkness A, Behar-Zusman V, Safren SA. Understanding the impact of COVID-19 on Latino sexual minority men in a US HIV hot spot. *AIDS Behav* 2020;24:2017–23.
- Napoleon SC, Maynard MA, Almonte A, *et al.* Considerations for STI clinics during the COVID-19 pandemic. *Sex Transm Dis* 2020;47:431–3.
- Nagendra G, Carnevale C, Neu N, *et al.* The potential impact and availability of sexual health services during the COVID-19 pandemic. *Sex Transm Dis* 2020;47:434–6.
- Barbee LA, Dombrowski JC, Hermann S, *et al.* "Sex in the Time of COVID": clinical guidelines for sexually transmitted disease management in an era of social distancing. *Sex Transm Dis* 2020;47:427–30.
- Government of British Columbia. BC's Restart Plan: Next steps to move BC through the pandemic, 2020. Available: <https://www2.gov.bc.ca/gov/content/covid-19/info/restart> [Accessed Jun 2 2020].
- Gilbert M, Thomson K, Salway T, *et al.* Differences in experiences of barriers to STI testing between clients of the Internet-based diagnostic testing service GetCheckedOnline.com and an STI clinic in Vancouver, Canada. *Sex Transm Infect* 2019;95:151–6.
- Grennan T. BCCDC provincial STI clinic announcement regarding COVID-19, 2020. Available: <https://smartsexresource.com/health-providers/blog/202003/bccdc-provincial-sti-clinic-announcement-regarding-covid-19> [Accessed 31 May 2020].
- Gilbert M, Haag D, Hottes TS, *et al.* Get checked... where? the development of a comprehensive, integrated Internet-based testing program for sexually transmitted and blood-borne infections in British Columbia, Canada. *JMIR Res Protoc* 2016;5:e186.
- Sanchez TH, Zlotorzynska M, Rai M, *et al.* Characterizing the impact of COVID-19 on men who have sex with men across the United States in April, 2020. *AIDS Behav* 2020;24:2024–32.
- de Sousa AFL, Oliveira LB, Schneider G. Casual sex among MSM during the period of social isolation in the COVID-19 pandemic: Nationwide study in Brazil and Portugal. *MedRxiv* 2020:20113142.
- Hussein J. COVID-19: what implications for sexual and reproductive health and rights globally? *Sex Reprod Health Matters* 2020;28:1746065.
- Armbruster M, Fields EL, Campbell N, *et al.* Addressing health inequities exacerbated by COVID-19 among youth with HIV: expanding our toolkit. *J Adolesc Health* 2020;67:290–5.
- Quirke S, Quinn L, Hegarty D, *et al.* Virtual HIV pre-exposure prophylaxis outpatient service in the era of COVID-19. *Int J STD AIDS* 2021;32:100–3.
- Mmeje OO, Coleman JS, Chang T. Unintended consequences of the COVID-19 pandemic on the sexual and reproductive health of youth. *J Adolesc Health* 2020;67:326–7.
- Tang K, Gaoshan J, Ahonsi B, *et al.* Sexual and reproductive health (SRH): a key issue in the emergency response to the coronavirus disease (COVID-19) outbreak. *Reprod Health* 2020;17:59.