

Using digital health interventions to improve access to sexual and reproductive health services in British Columbia

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Sexual and reproductive health service barriers

Increasing rates of sexually transmitted and blood borne infections (STBBI) are of significant public health concern. Rates of chlamydia (317.6 per 100,000 population in 2016), gonorrhea (68.8 per 100,000 population in 2016) and syphilis (18.4 per 100,000 population in 2018) have increased in British Columbia (BC) over the last two decades.¹ These infections are often asymptomatic, but if detected early through screening, can be easily managed or treated. Another very common STBBI is human papillomavirus (HPV), which is the primary cause of cervical cancer. More than 75% of all sexually active adults will have had an HPV infection at some point in their lifetime.² Through cervical cancer screening, cell changes caused by HPV can usually be detected and treated early, preventing progression to cervical cancer. However, approximately 30% of the BC population is under-screened for cervical cancer—an enduring gap that standard practice has yet been unable to address.³ As a result, it comes as no surprise that those who face barriers or lack access to sexual and reproductive health (SRH) services and screening (Table 1) also experience a higher burden of STBBI and cervical cancer.³⁻⁵ This article discusses two internet-based testing services developed to improve access to SRH care in BC, and the opportunities for and challenges to implementation in a primary care context.

Table 1 | Access barriers to SRH services in BC, adapted from a multi-level framework for testing barriers and facilitators.⁶

Barrier Level	Examples
Individual-level	Lack of awareness of the need for screening
Provider-level	Not having a primary care provider, not wanting to discuss SRH with available healthcare provider for fear of judgement, or preference for another provider (e.g., a female provider, or one who specializes in sexual health)
Healthcare system	Inconvenient clinic hours or location
Social and structural	Stigma, embarrassment, cultural taboo, trauma, or mistrust of the healthcare system

Digital health solutions in BC to improve access to services

There is increasing public interest in, access to, and use of health services online in Canada.⁷ The number of Canadians who accessed their medical records online in the last year doubled from 2016 to 2018, with lab testing being the most common type of health

information accessed.⁷ Digital health interventions are appealing for their convenience and reduce the need for interactions with the healthcare setting or providers. Digital sexual health tools such as internet-based testing offer low-barrier approaches with the potential to improve access for priority populations, and increase efficiencies within primary care.^{8,9} In BC, partnerships within the Provincial Health Services Authority including the BC Centre for Disease Control (BCCDC), BC Cancer, and the BC Public Health Laboratory, along with regional health authorities, have led to the development of two digital health interventions, GetCheckedOnline and CervixCheck, to address barriers to SRH screening in BC.

GetCheckedOnline (GCO) is an internet-based testing service for STBBIs developed by BCCDC that lets individuals test for chlamydia, gonorrhea, syphilis, HIV, and hepatitis C without needing to see a clinician in person.¹⁰ GCO users create their own laboratory requisitions on the website, visit a participating lab to provide specimens, and receive results online (if negative) or by phone (if positive). All users are offered gonorrhea and chlamydia urine testing, plus HIV and syphilis serology testing. Some are additionally offered gonorrhea and chlamydia throat and/or rectal swabs, or hepatitis C serology if indicated by the assessment. Clients can opt out of any of the recommended tests if they choose to. Testing through GCO is done centrally through the BC Public Health Laboratory, and treatment and follow up is managed by the Provincial STI Clinic at the BCCDC. To reduce barriers related to concerns about confidentiality of testing, clients do not need to use their real name and are not asked to provide their personal health number (PHN) when they register for GCO, with tests conducted using a unique alphanumeric code. GCO launched in Vancouver in September 2014, and in February 2016 expanded to Island Health (Victoria, Langford, Duncan) and Interior Health (Kamloops, Nelson), with over 800 test episodes per month since January 2018. Research has demonstrated that GCO reaches people at a higher risk of STBBI and helps to mitigate known barriers to accessing traditional clinic-based testing. Compared to STI clinic clients, people who used GCO were more likely to report that they previously delayed testing due to distance and wait times, felt discomfort discussing sexual health issues, and feared judgement from any healthcare provider.⁶ GCO also may facilitate a higher rate of repeat testing, which in individuals at ongoing risk of STBBI can facilitate earlier diagnosis and treatment.¹¹ A recent chart review found that 98.8% of GCO users completed treatment, which is comparable to the treatment uptake among BCCDC STI clinic clients.

CervixCheck is an online service for at-home cervical cancer screening for women who do not regularly attend screening. It was developed by BC Cancer and UBC researchers in partnership with the team that developed GCO, and builds on the GCO platform by being integrated within primary care (i.e., results are returned to primary care providers). CervixCheck uses HPV testing, which is an evidence-based, effective way to screen for cervical cancer. Compared to cervix screening with the Pap test, HPV testing allows the opportunity for

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self-sampling, where women can collect their own vaginal specimens. To use CervixCheck, participants must be registered with MSP and be a patient of a collaborating healthcare provider. The participants' screening results are available online for the participant, in addition to being sent to a pre-identified primary healthcare provider to help ensure linkage to care in the event of an abnormal or positive result. CervixCheck launched in May 2019, and is being piloted as a research project in select communities with low screening rates in the Fraser and Northern Health regions, with plans for eventual scale up to other areas. CervixCheck will evaluate uptake of self-collected cervical cancer screening and acceptability of the service. Attendance among those that were recommended follow-up care will be a key outcome that will be measured to determine whether the CervixCheck model can support participants throughout the full continuum of care.

Opportunities and challenges for integration with primary care

These innovative digital health solutions hold great potential for improving SRH, and there is even more potential for further adaptation to improve access (e.g., incorporating telemedicine services for prescribing HIV pre-exposure prophylaxis, and incorporating digital tools for notifying sexual partners to get tested).¹² However, bringing these innovations to scale across BC has many challenges, not least of which is rising costs due to increasing utilization. In smaller cities and rural and remote communities, there may be limited or no access to laboratories for specimen collection. People may also have inconsistent or multiple healthcare providers, which can be a challenge for follow-up of lab results. There are also concerns that services like GCO and CervixCheck risk creating a parallel or siloed system of care that exacerbates health inequities by reaching people who are already engaged in existing in-person primary care health services. It is reassuring that early evidence suggests that this is likely not the case, and that these programs may instead connect people to the healthcare system who might otherwise not be engaged. For example, up to one in five GCO clients report never having previously tested for STBBI, a high proportion of whom live in suburban or rural areas.¹³

With the BC government's renewed prioritization and funding towards improving primary care,¹⁴ ensuring that digital health tools are integrated with primary care networks and useful to the practice of primary care physicians will be key to their successful scale-up. Both GCO and CervixCheck programs continue to consider how best to do this through iterative cycles of evaluation and adaptation. One approach currently planned for GCO that will facilitate this is adopting the CervixCheck model of giving users the option to use their PHN for testing and to identify their primary care provider for receipt of test results—an option valued by providers in early research¹⁵ and which does not pose a barrier for a majority of GCO clients surveyed.¹⁶ The team is also looking at ways to offer CervixCheck to under-screened women who do not have a primary healthcare provider, and offer access to clinics or clinicians who can support them through follow-up.

Indeed, the importance of digital technologies to accelerate primary and community care while empowering patients in their own care are core pillars of digital health strategies in BC.¹⁷ As digital health services for SRH continue to evolve in BC, it will be important to continue evaluating their impact to ensure that they are reaching individuals facing the greatest barriers to access.

Conflict of interest

The authors have declared no conflict of interest.

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