Barriers to STI testing among youth in a Canadian oil and gas community

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Received 7 June 2007; received in revised form 14 November 2007; accepted 21 November 2007

Abstract

Northeastern British Columbia, Canada, is undergoing in-migration of young people attracted by jobs in the oil/gas sectors. Chlamydia rates among youth ages 15–24 are increasing and exceed the provincial average by 22%. Testing for sexually transmitted infections (STIs) reduces the disease burden, contributing to prevention. We conducted ethnographic fieldwork, including interviews with 25 youth and 14 service providers, to document their perceptions regarding youth’s access to STI testing. Five key barriers to access were identified: limited opportunities for access, geographic inaccessibility, local social norms, limited information, and negative interactions with providers. To address youths’ needs, we recommend active STI prevention and testing service delivery models that incorporate a locally tailored public awareness campaign, outreach to oil/gas workers, condom distribution, expanded clinic hours and drop-in STI testing, specialized training for health care providers, and inter-sectoral partnerships between public health, non-profit organizations, and industry.

Keywords: Sexually transmitted infections; STI testing; Barriers; Youth sexual health; Resource-extraction

Introduction

Sexually transmitted infection (STI) rates in Canada are high and on the rise. In the province of British Columbia (BC), Chlamydia rates among youth have doubled since 1997 and exceed the national average (BC Centre for Disease Control, 2005). In particular, young people in remote, northeastern BC, are undergoing in-migration of young people attracted by jobs in the oil/gas sectors. Chlamydia rates among youth ages 15–24 are increasing and exceed the provincial average by 22%. Testing for sexually transmitted infections (STIs) reduces the disease burden, contributing to prevention. We conducted ethnographic fieldwork, including interviews with 25 youth and 14 service providers, to document their perceptions regarding youth’s access to STI testing. Five key barriers to access were identified: limited opportunities for access, geographic inaccessibility, local social norms, limited information, and negative interactions with providers. To address youths’ needs, we recommend active STI prevention and testing service delivery models that incorporate a locally tailored public awareness campaign, outreach to oil/gas workers, condom distribution, expanded clinic hours and drop-in STI testing, specialized training for health care providers, and inter-sectoral partnerships between public health, non-profit organizations, and industry.

Although Chlamydia rates do not provide the best indicator of STIs in many contexts due to their sensitivity to testing practices, the disproportionate increase in Chlamydia rates observed in Northeastern BC is unlikely to be attributable to increased screening and testing. In comparison to the rest of the province, this region has not launched initiatives (e.g., targeted STI testing awareness campaigns) to substantially increase these STI control activities. Additionally, while Chlamydia is often asymptomatic and is most frequently screened for in young women, the ratio of positive tests for males versus females has increased in Northeast BC. In light of this, we suspect that in-migrating males may be disproportionately contributing to the increase (despite the fact that no targeted efforts have been put into place to recruit them for STI testing). Lastly, Gonorrhea...
rapidly urbanizing resource-extraction communities in Northeastern BC experience disproportionately high and increasing rates of STIs. In 2005, Chlamydia rates among youth ages 15–24 exceeded the provincial average by 22% (1168 per 100,000 in the Northeast compared with the BC average of 955 per 100,000) and represented a 21% increase since 2000.2

This region is experiencing massive in-migration of young people (mostly men) who are attracted by jobs in the oil/gas sectors. Oil/gas workers spend long periods of time in remote work camps (Coates, 2001; Bowser, 2006; Harden, 2006), and their brief holidays in adjacent towns are often characterized by binges on alcohol and/or drugs (Brown et al., 2003; Cullen, 2006). The resultant demographic and social disruptions (Freudenberg, 1984; Brown et al., 2005; Langfitt, 2006) pose serious public health problems related to STIs (Health Canada, 2006; Sharpe-Staples, 2006; Harding, 2007). Evidence from oil/gas and mining communities in developing countries (Desmond et al., 2005; Steen et al., 2000; Palmer et al., 2002; Campbell and Williams, 1999; Clift et al., 2003; Meekers, 2000) also substantiates the need to address STIs in resource-extraction communities.

A strong public health impetus exists to address the STI epidemic by providing access to STI testing for young people in resource-extraction communities. STIs are largely preventable and treatable, and testing is an effective means of reducing the disease burden (Miller, 2005; Patrick, 1997). Undetected and/or untreated, STIs pose serious health consequences, including pelvic inflammatory disease, infertility, and ectopic pregnancy. Moreover, STIs are synergistic, in that acquiring one increases the risk of others, including HIV. Consequently, detection and treatment contribute to prevention. Transient populations that experience high rates of STIs, concurrent relationships, and partner change represent vectors that can spread STIs to the broader population (Wasserheit and Aral, 1996; Elliott et al., 2002; Potterat et al., 2002; Potterat et al., 1999; Rothenberg et al., 2005). While targeting STI testing and prevention resources at this population is therefore expected to have a disproportionately large impact on STI prevention (Elliott et al., 2002; Jolly and Wylie, 2002; Potterat et al., 2002), previous research in remote communities suggests that youth often experience significant barriers to accessing sexual health services as a result of socio-cultural and structural conditions in their community (Shoveller et al., 2004, 2007; Shoveller and Johnson, 2006; Langille et al., 2001; Bendall et al., 2007).

Barriers to STI testing

Stigma, shame, and social discomfort have been identified as barriers to STI testing (Fortenberry et al., 2002; Scoular et al., 2001; Evans et al., 2002; Uuskula et al., 2006; Merzel et al., 2004; McKay, 2006; Cunningham et al., 2002; Gotz et al., 2005), as have young people’s concerns about anonymity and confidentiality (Ackard and Neumark-Sztainer, 2001; Klein and Wilson, 2002; Bethell et al., 2001; Blake et al., 2003; Nwokolo et al., 2002). Limited access to information (e.g., about symptoms, testing and treatment procedures) also poses barriers (Evans et al., 2002; Tilson et al., 2004; Uuskula et al., 2006), especially the lack of age- and place-appropriate information (e.g., locations of youth clinics are not always well advertised) (DiCenso et al., 2001; Fortenberry et al., 2001). Characteristics of health service delivery systems can also inhibit testing. These include inconvenient hours of operation of clinics and long waiting times (Uuskula et al., 2006; Moses and Elliott, 2002; Nwokolo et al., 2002; Tilson et al., 2004), gender of health care providers (Langille et al., 2001; Kapphahn et al., 1999), and clinic location, including issues associated with transportation (Evans et al., 2002; Fortenberry and Zimet, 1999). Judgmental behavior of health care providers and inadequate training in sexual health service provision (e.g., difficulties in taking sexual histories, low awareness of STI prevalence, unfamiliarity with urine-based testing) have also been cited as barriers (McKay, 2006; Langille and Rigby, 2006; Nwokolo et al., 2002; Shafer et al., 2002; McNulty et al., 2004).

Although a substantial body of literature regarding barriers to STI testing exists, most previous research pertains to urban youth, typically recruited from STI clinics (Fortenberry, 1997; Scoular et al., 2001). Authors have emphasized the need to

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(footnote continued)

2Data provided by the Division of STI/HIV Prevention and Control, British Columbia Centre for Disease Control (2006).
evaluate barriers to STI services in the wider population (Tilson et al., 2004). Moreover, the relevance of these barriers to youth living in remote, rapidly urbanizing resource-extraction communities (such as those in Northeastern BC) is unknown. Evidence indicates the importance of social context and structural factors as determinants of young people’s utilization of sexual health services (Shoveller et al., 2004; Gunatilake, 1998; Rhodes et al., 1996; Waldo and Coates, 2000). To the best of our knowledge, no other research has explored STI testing for young people in North American resource-extraction communities.

The current study aimed to: (1) document young people’s experiences with STI testing in an oil/gas community; (2) gather service providers’ perspectives on local sexual health service delivery; and (3) develop recommendations to improve the accessibility of STI testing in North American resource-extraction communities.

Methods

Study setting

The study was conducted in Fort St. John (FSJ) (pop: 17,402), which is located in Northeastern British Columbia (BC), Canada. This remote city is located 1237 km from Vancouver (BC’s largest city). It is the center of BC’s oil/gas industry. Built as a trading post for the fur industry, the construction of transportation infrastructure and the discovery of oil in the region in 1951 set the city in a favorable position for trading with distant markets. Today, FSJ is the largest city in Northeastern BC and serves a regional population of 69,245 (BC Stats, 2005). Religious affiliations are similar to those across BC, with 20% of residents identifying as Catholic; 35% as Protestant; and 35% identifying with no religious affiliation. Approximately 11% of the population identify as Aboriginal (compared to 4% across BC).

Since 2001, the city has been experiencing an economic boom in the natural gas sector. The local and regional economy is highly dependent on oil, gas, and mining, as indicated by an income dependency of 32% on these sectors (BC Stats, 2006). Rapid economic expansion has boosted median family income 15% above the provincial median (BC Stats, 2006). Real estate prices have increased drastically and young people often experience difficulties in finding affordable housing (City Spaces Consulting, 2007; CanWest News Services, 2007). Employers in the oil/gas sectors lodge workers (e.g., drillers, pipeliners) for 20–28 day shifts in camps located several hours’ driving distance from town. Workers travel to urban centers (mainly FSJ) on their time off. Despite its rapid urbanization, the city maintains a mix of locals and newcomers; its social fabric features elements of urbanity (e.g., fast pace of life, potential for high earnings, growing presence of multinationals) mixed with rurality (e.g., remoteness, lack of anonymity).

FSJ’s population has grown 8.4% from 2001 to 2006 (Statistics Canada, 2007). In particular, the population aged 15–29 has grown at three times the provincial rate (BC Stats, 2006). The male-dominated nature of the oil/gas industries is reflected by a male-biased sex ratio (e.g., 107.2 males per 100 females, compared with 98.3 across BC) (BC Stats, 2006). Upon migration to FSJ, many young people experience important transitions into adulthood (e.g., entry into the full-time workforce; earning unprecedented wages; living away from friends and family) (Freudenberg, 1984). Since the boom, rates of STIs such as Chlamydia have been 2–3 times higher than the provincial average. In 2005, among youth in FSJ ages 15–24, there were 2014 cases per 100,000 compared with the BC average of 955 per 100,000 (see Footnote 1). Chlamydia rates by gender (632 per 100,000 females compared with 353 per 100,000 males), although in part likely an artifact of the low probability of testing among males, suggest that increasing rates of STIs extend beyond the population of transient oil/gas workers.

Data collection and analysis

Ethics approval was obtained from the University of British Columbia (UBC) and the local health authority. The study was informed by ethnographic research techniques (Fetterman, 1998; Wolcott, 1999). Data were collected by a trained interviewer (SG) during 8 weeks of periodic fieldwork, which included participant observation and in-depth interviews with 25 youth and 14 health and social service providers. Field trips (3–10 days per trip) encompassed all seasons, in an attempt to capture seasonal barriers to STI testing (e.g., related to transportation) as well as the seasonal nature of industry-based migration.

Fieldwork included observations and informal conversations with young people, service providers, and other adults (e.g., business owners, taxi drivers, police). It also included attending functions that
were relevant to sexual health services (e.g., parent meetings on sex education; public health meetings) and spending time at youth hangouts (e.g., youth center, coffee shops). Data collected during fieldwork helped contextualize the information gathered during in-depth interviews. Fieldwork provided opportunities to recruit youth and service providers for interviews, as did posters at clinics, youth centers, restaurants, coffee shops, gyms, community centers, and community agencies. Eligible service providers were employed as health or social service providers in the community. Participants were purposively selected to capture a diverse range of experiences with STI testing (Strauss and Corbin, 1998). We interviewed youth of different ages, ethnicities, occupations (e.g., students, oil/gas workers, stay-home mothers), testing status (tested for STIs/never tested for STIs), and relationship status. Service providers who worked with youth in a variety of capacities were interviewed, including those who provided STI testing (e.g., nurses, physicians) and those who did not (e.g., social workers).

On average, each interview took 1 h and each youth received a $25 honorarium. Interviews were semi-structured and consisted of open-ended questions, which were modified to pursue emergent concepts as data collection and analysis progressed (Glaser, 1978). In this way, data collection and analysis advanced in an iterative fashion, with early interviews and analysis informing future decisions on sampling and interview questions. Youth were asked to describe their experiences seeking and/or accessing testing services. Service providers were asked about their perspectives on sexual health service delivery characteristics and, if applicable, their experiences providing STI testing to youth. Questions were posed to gather perspectives on how socio-cultural and structural conditions (e.g., social norms; privacy; hours of operation; availability of testing services; transportation) constrain or facilitate youth’s access to STI testing. Participants completed a brief socio-demographic survey that was used to describe the general characteristics of the sample.

Follow-up interviews were conducted with a subsample of youth (n = 5) which provided an opportunity for participants to reflect on relevant issues and to clarify and/or add to their stories regarding concepts that emerged during initial interviews and fieldwork. SG followed up with service providers, gathering their feedback on the interim results and collaborating to develop recommendations for intervention. As well, SG engaged in informal follow-up interviews by discussing emergent findings with other community members (e.g., taxi drivers, community organizations).

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Interview recordings were transcribed and personal identifiers were removed from the transcripts. Interview transcripts were checked for accuracy against original audiotapes. The software QSR NVivo was used to manage data coding, which was led by SG. During the analysis, an audit trail was kept to document how and why analytic decisions were made. The analysis was conducted by reading through transcripts and field notes to develop a set of codes that organized and described the structure of the data. As data collection and writing progressed, the data were analyzed to understand the ways in which socio-cultural and structural features of place are perceived to affect young people’s access to STI testing in FSJ.

Results

Sample characteristics

Fifty-two percent (n = 13) of youth participants were female, and their average age was 20 years. A mix of newcomers and locals participated; but, on average, youth had spent 8 years in the community. Fifty-six percent identified their ethnicity as White (n = 14) and 40% as Aboriginal (n = 10). Sixty percent (n = 15) of youth were students, many of whom worked part-time. A third (32%, n = 8) of youth participants had worked in the oil/gas industry; 16% (n = 4) identified as currently employed in the service sector, 12% (n = 3) as stay-home mothers, and 8% (n = 2) as education providers. Forty-eight percent (n = 12) lived with their families, 24% (n = 6) with friends, and 16% (n = 4) with others (e.g., university residence, work camps). Twelve percent (n = 3) lived with a partner. Most (72%, n = 18) had been tested for STIs, almost half of whom were men (44%, n = 8). On average, youth participants had been tested four times. Thirty-six percent (n = 9) of participants were recruited from the local college campus, 32% from the youth center (n = 8), 16% (n = 4) from a community organization, and 16% (n = 4) from other locations (e.g., medical clinic, gym, coffee shop).
Ten health care workers were interviewed: four public health staff, and six medical clinic staff. Four social service providers employed at youth organizations also participated. Most providers were female (71%, n = 10) and White (78%, n = 11). The mean age of service providers was 44 years and they had spent an average of 14 years in FSJ. Service providers were recruited through their places of work (e.g., public health, medical clinics).

**STI testing among youth in FSJ**

Study participants identified five key socio-cultural and structural barriers to STI testing for youth in FSJ: limited opportunities for youth to access STI testing; geographic inaccessibility of clinics; local social norms; lack of information regarding STIs and testing options; and negative interactions with service providers.

**Limited opportunities for youth to access STI testing**

STI testing is provided through three venues in FSJ: the public health unit, three walk-in medical clinics, and the hospital emergency room. STI testing is available through public health during four appointments per week (during school hours), although few youth use this service. Public health staff expressed concerns regarding expanding services due to staff shortages. Most youth participants had never heard of the STI testing services offered through the public health unit and/or were unfamiliar with its location. The health unit is located in a high-income area, far from downtown and other services. No drop-in appointments are available, and staff reported often being booked up for weeks in advance. Many youth described the lack of a drop-in service as a substantial barrier to testing, explaining that in many cases they have an urgent need for STI testing (e.g., when symptoms appear; the morning after a high-risk sexual encounter).

Instead, most youth use walk-in medical clinics for STI testing. Clinics are conveniently located in the downtown core. However, hours of operation pose barriers to access, as these clinics also operate during school hours and shut down during lunch. Youth employed as oil/gas workers explained the difficulties in taking time off work to get tested during these hours. Walk-ins involve lengthy waits in a crowded waiting room and brief appointments. Clinics are staffed almost entirely by male physicians, which was perceived as a barrier to testing by many young women who preferred a female provider. Most youth who participated did not have a family physician, and among those who did, many had privacy concerns related to seeking out sexual health services from them. As well, participants discussed dependence on walk-in medical clinics as a barrier to getting tested for STIs, since the clinical interactions they had experienced within these settings did not involve the time necessary to develop a trusting relationship with their health care providers. For example, 23-year-old James explained: “Well, it just seemed like he doesn’t really care. But that’s part of the problem with a walk-in clinic: they don’t form a relationship with the people at all, so it’s basically just dollars and cents to them.”

**Geographic inaccessibility of clinics**

Employees—mostly males—involved in the oil/gas industry typically spend 20–28 days in remote oil/gas camps. Workdays are long, with just enough time to eat and sleep before the next workday begins. No STI testing is available at oil/gas sites, although youth and service providers strongly felt that there is a need for it. As one worker explained, he had wanted to get tested for STIs after a sexual encounter with a woman he had met in a bar; but, he had to return to camp before he could access testing: “You’re living out in camp, you come to town and you’ve got maybe three hours to do stuff—cause you gotta be back by curfew and... yeah, if you gotta sit in the hospital for four hours just to get tested, most guys I know would just be like, ‘Fuck it’” (Kyle, 22 years old). Workers explained that taking the day off work to drive to town for an STI test would mean losing a day’s pay and could involve risking one’s job. In addition, we learned that many young oil/gas workers lack access to their own transportation.

Participants also described geographic barriers to testing for youth living in town, particularly transportation to clinics. Public transit is limited, involving long waits in cold weather—consequently few youth used public transportation. Most described depending on others for transportation, which—particularly among teens concerned about privacy—created an additional barrier to getting tested. For example, a college student living in university residence cited her lack of transportation as a main reason for not getting tested for STIs.
She described herself as relying entirely on friends and family for rides.

Service providers perceived significant geographic barriers to testing as well, as the following quote regarding the location of the public health unit illustrates: “They’d have to walk three or four miles. A cab ride is $15 one-way from where they live on the other side of town. They don’t have that kind of money. It’s not even downtown, it’s a little hike up. Especially when it’s 30 below. And the teens just aren’t going to be going by there” (Social service provider).

Local social norms

Overall, youth perceived STI testing as a highly stigmatized behavior that is further marginalized through local social norms. Youth described being exposed to a plethora of place-based stereotypes related to ‘rigger’ culture (e.g., hyper-masculinity, sexism, apathy towards self-care). One participant described how the dominant attitudes of riggers pose barriers to STI testing: “There are a lot of guys who are riggers and they’re here for six months, or three weeks, and then they’re gone. Who knows where they’ve been? I’m sure with a lifestyle like that, they don’t take time to be like, I should go and get myself checked, right? Especially with the mentality that’s forced among a lot of these guys—it’s not cool to be weak at all. So, to have to go and test for STDs is not a merit badge you want to wear” (Joel, 24 years old).

Local women were frequently stereotyped in ways that may inhibit testing. For example, male participants frequently referred to them as ‘nasty’, ‘sluts’, ‘campies’, or ‘questionable’ based on their dress or sexual reputations. Young women were also concerned about being negatively labeled as a result of being seen accessing STI testing: “In smaller towns, you get labeled fast. […] If it’s out in the open, they’d be like, ‘Oh, you have this! Blah, blah, blah, you’re a slut’” (Shaylene, 16 years old). Shaylene reckoned that if youth were able to privately access information and testing, they would be less afraid of being labeled by their peers and the community-at-large.

The social mores that young people in our study are exposed to tend to create unrealistic and unhelpful expectations about the ways in which young women and young men should behave sexually, which in turn potentially affects their experiences with STI testing, as illustrated during an interview with a local service provider who said: “One [young] guy comes in [to our clinic] every seven or eight months [to get tested]. [Another staff member] said to me that, ‘Man, he must be leading a really crazy life’. […] There is a mentality that only ‘those kind of people’ are coming in for testing” (Health care provider). Many youth feared the specter of being stereotyped and judged by health care providers during STI testing appointments, including one young woman who explained that the main reason she avoided testing was because she feared the response of her service provider upon disclosing the number of sexual partners she had had.

Lack of information about STIs and testing options

Youth cited a lack of information about STIs as a barrier to testing, illustrating how this perpetuates silence around sexual health issues and increases taboos associated with testing. Participants frequently discussed the invisibility of STI testing services in FSJ: “You never hear of any advertisements for testing or anything like that, so […] if you don’t hear about it then it’s out of your mind” (Kaylee, 21 years old). Some youth consulted friends, family, and/or media sources for information about symptoms, risks, testing, and treatment, but highlighted the challenges in acquiring such knowledge in a place where very few opportunities exist for young people to openly ask questions about sexuality and sexual health. Overall, youth and service providers described the local context of sexual health service provision as one which youth were expected to take the initiative to seek out information about STIs and testing options.

Young men and women wanted to receive more information about STIs and testing and treatment procedures (e.g., that common bacterial STIs can be cured with free antibiotics), which they said would facilitate testing. For example, Brody, a 15-year-old participant, explained: “If you have more information, it does make it easier, like, if you know it’s not that bad to go and get yourself checked out, it’s not that bad to have the treatment for the symptoms.”

Youth stressed the need to increase the availability of information about STIs and local testing options which could be accessed in privacy. For example, some youth who had been recruited from the local youth center noted the provision of free condoms and STI information in the center’s washrooms as an effective means of raising
awareness and facilitating discussions with center staff about testing. Service providers also recognized youth’s needs for more information about STIs and testing options and suggested that increased outreach activities would reduce some of these barriers. We were told that oil/gas workplaces are particularly devoid of sexual health information. Moreover, young workers highlighted how this reinforced the idea that STIs should not be discussed openly: “It’s not a popular topic of conversation [on the rigs]. It’s just not something you’d talk about, so if you don’t really talk about it, it’s not really on your mind and [you] don’t really see posters or anything” (Kyle, 22 years old). Young men explained that they did not know where they could go to access testing and did not feel comfortable consulting others for such information, something they described as a widespread concern among people in FSJ and surrounding oil/gas camps.

Negative interactions with service providers

Service providers and youth indicated that the current models of service provision did not facilitate the establishment of rapport and often shut down opportunities for youth to ask questions and/or develop skills related to STI prevention. For example, one teenager described an occasion where she had accompanied a friend for testing after a sexual encounter with an oil/gas worker: “They [the health care providers] printed off this piece of paper and then we looked at it. They just kind of pushed us away and we had to go. They didn’t—they didn’t talk about STDs or anything” (Rose, 16 years old). Another participant also described how interactions with clinicians can pose barriers: “I felt like she [the nurse] was almost judging me. Like, you need an STD test? If you were a moral person, you wouldn’t need one. […] This is the attitude I felt from her. She didn’t make eye contact with me, there was no ‘walk me through’ anything, I was scared and I didn’t feel that she helped me at all” (Joel, 24 years old). Shame and embarrassment were widely perceived to decrease the likelihood that youth would return for testing or would recommend STI testing to their friends. In a community with limited STI testing options, negative interactions with clinicians (even a few) present a serious concern.

Health care providers’ perceptions about the quality and impact of clinical interactions with youth varied. Some argued that youth had all the information that they needed regarding STIs and testing (e.g., through the schools, internet). Their descriptions of clinical interactions for STI testing also were found to vary widely. For example, a local health care provider commented: “It depends on what you’re capable or willing to do, or the time that they’re [physicians] willing to spend. A lot of physicians, there would just not be a lot of time to get the counseling through. Also, most of the time you expect the patients [to have information]. It’s not like they’re in a Third World country where information is not available. Everyone is educated and information is widely available. We can only do so much for them.”

Another health care provider described her frustrations regarding what she perceived to be youth’s disinterest in protecting their sexual health: “The young people down here, they don’t seem to care. Some get an STD [and think], “Oh well, it’s no big deal.” Some of them come in at least three times a year to get tested, which is crazy. It’s very expensive. Takes a lot of everybody’s time. You’ll see, ‘Oh, they were tested two months ago. Why are they in here doing this now again?’ There are ways to prevent this, you know.”

A few youth discussed service providers’ refusals to provide testing upon request. One young man reported: “I actually went to him [my doctor] and told him I needed it [STI testing]. […] I wanted to get tested, but he told me to pull my pants up [laughs] and he’s not doing it” (Cole, 25 years old). Service providers also described similar situations. For example, one provider described an occasion where a young man presented at the hospital emergency room with a severe case of herpes. He was told that he had an STI, but was sent away, without receiving testing or treatment. Instead, he was advised to make an appointment at public health.

Discussion

In this paper, we documented five key barriers to STI testing for youth in a Canadian resource-extraction community. Our data are consistent with previous research on barriers to STI testing experienced by youth (e.g., hours of operation, privacy, stigma, negative interactions with service providers are common concerns). However, they address an important gap in our understanding of how these barriers may be exacerbated or mitigated by place, by illustrating how circumstances in a
remote, rapidly urbanizing resource-extraction communities tend to exacerbate them.

**Barriers for oil/gas workers:** Inconveniently located clinics with limited hours of operation are commonly cited barriers by youth in other places. However, long periods of time spent in the oil patch and substantial distances between oil/gas camps and STI testing facilities illustrate how the barriers faced by these youth are likely to be more pronounced than those experienced by their southern, urban counterparts. Evidence suggests that STI testing and treatment aimed at transient populations that experience high rates of STIs, concurrent relationships, and partner change (e.g., oil/gas workers) may have the greatest effect on reducing STI prevalence (Elliott et al., 2002; Jolly and Wylie, 2002; Steen et al., 2000). However, circumstances in FSJ imply severely limited access to STI testing and prevention resources for oil/gas workers. While some resource-extraction companies (e.g., Total Oil, 2007; Chevron Corporation, 2005) provide such resources to their workers in other parts of the world (e.g., sub-Saharan Africa, South East Asia, South America), we are unaware of such initiatives in North America.

**Barriers for youth living in town:** While youth in other communities commonly experience barriers related to social norms (e.g., stigma and embarrassment), our data suggest that those at play in resource-extraction communities like FSJ may be more difficult to overcome. For example, privacy concerns pose barriers which were described as insurmountable due to the small size and remote location of FSJ. Additionally, cold weather, lack of transportation, and clinic hours of operation (other features of place) exacerbate barriers for youth living in FSJ. Walk-in and evening/weekend STI testing services have been frequently cited as overcoming barriers to STI testing related to hours of operation (Nwokolo et al., 2002; Scoular et al., 2001; Tilson et al., 2004). Self-testing and/or self-specimen collection represent promising testing options for geographically and socially marginalized populations (Cook et al., 2007; Auerswald et al., 2006; Lippman et al., 2007).

**Barriers related to negative interactions with health care providers:** Unfortunately, studies have shown that primary care providers in many places feel poorly trained to comfortably obtain sexual histories from youth who may be seeking STI testing (Langille et al., 2001; Shafer et al., 2002). In particular, physicians in rural and remote BC have reported that they lack sufficient information on STI/HIV risk and prevention (Hansen et al., 2005). These challenges appear to be amplified by the resource-extraction industries in FSJ. For example, the health care system in Northeastern BC has been overwhelmed by the demographic changes associated with the influx of transient workers (i.e., staff shortages are common in clinics and health departments; effective STI contact tracing is hindered by the transient nature of many clients). It is also likely that the same social norms that pose barriers to STI testing for youth may inhibit some health care providers from broaching the subject with young clients. Service providers who feel trained to address the sexual health needs of the youth they serve (e.g., non-judgmental, assure confidentiality, provide opportunities for youth to openly ask questions) have been shown to improve young people’s likelihood to present and/or return for STI testing (Uuskula et al., 2006; Brindis et al., 2005; Worthington and Myers, 2002).

Given the extent of the barriers to STI testing documented in this study, current STI surveillance rates likely represent an underestimate of the propagation of STIs in Northeastern BC, since youth (especially male oil/gas workers) are even more unlikely than in other places to be tested for STIs. These findings provide evidence suggesting that place-based barriers must be incorporated into public health service delivery.

**Corresponding actions**

Current service delivery models require youth to overcome several barriers to seek out STI testing and preventative resources. Since young people often experience difficulties doing this, we suggest that an active model of service delivery could benefit youth, especially those who live in resource-extraction communities. These types of interventions could have significant public health benefit in light of the rapidly expanding urban populations linked to resource-extraction ‘boombtowns’ across North America (e.g., Fort. McMurray, Alberta; Sublette County, Wyoming) (Langfit, 2006; Harden, 2006).

**Inter-sectoral partnerships** represent a means of bolstering local capacities to provide health services that meet the needs of young people in under-resourced communities. In Northeastern BC, public health has recently partnered with a non-profit sexual health organization to jointly provide sexual health services for local youth. This initiative aims
to facilitate the delivery of youth-friendly sexual health services using existing infrastructure by providing instructional resources, updated sexual health information, professional development training, and contraceptive products. Oil/gas companies also represent opportunities to build local health services. In other nations, they have partnered with non-profit organizations and public health to provide services such as STI/HIV testing and treatment, community health clinics, STI awareness campaigns, and condom distribution.

Through these partnerships, outreach to oil/gas workers should be launched by providing information, testing, and free condoms at oil/gas camps. We recommend that a public awareness campaign be launched to promote sexual health, reduce stigma, and increase the availability of information. This would include the use of local media and community organizations to promote local testing options, and the training of youth to provide public education and peer-to-peer outreach. As well, we recommend increased hours of operation and the provision of walk-in services at clinics offering STI testing, especially on the evenings and weekends. Free condoms must also be made much more accessible by increasing their distribution (e.g., they should be advertised and made available through as many places as possible, including schools, community organizations, night clubs). Facilitating STI testing and prevention must support local service providers to address the barriers that pertain to clinical interactions with youth. To do so, we recommend that youth-oriented sexual health service delivery training be offered to local health care providers.

**Strengths and limitations**

The purpose of this study was not to generalize the findings to a larger population, but to elicit insights to develop action that is sensitive to local circumstances. Self-reported data in epidemiology are often cited as vulnerable to recall and reporting biases. However, the insights of youth and their providers are precisely what we were interested in. Since these are not easily uncovered by traditional epidemiological methods, we used participant observation and in-depth interviews to gather the perspectives of youth and service providers. This enabled SG to develop trusting relationships with participants over time and to obtain insights about local realities (e.g., SG gained a good understanding of the workings of the local public health system by participating in sexual health planning meetings).

Some key aspects of the demographic composition of our sample should be understood in interpreting our results. Firstly, the self-reported testing rate among youth participants (72% were tested for STIs) is higher than what would be expected among 15–25 year olds in FSJ. Although we made many efforts to recruit them, youth facing common barriers to STI testing (i.e., stigma, embarrassment) may have been less likely to participate in our study. Thus, barriers to STI testing among the general population of youth are likely to be more pronounced than our findings describe, representing an even greater impetus for action. Secondly, a higher proportion of Aboriginal youth (40%) participated than is reflected in the general population (11%). However, the barriers to STI testing that they described closely echoed the concerns of non-Aboriginal youth participants, suggesting that our findings resonate with Aboriginal and non-Aboriginal populations.

During data collection, SG’s presence in the community provided a catalyst for discussions among service providers (e.g., by instigating debate within a community organization about whether they should provide condoms to youth). As well, the ways in which she was perceived by participants shaped the data. As a young woman herself, by incorporating de-stigmatizing information (e.g., that the majority of young women are exposed to HPV) into the discussion and providing opportunities to ask questions before/after the interview, SG attempted to create an open and reciprocal interview environment. The rich and detailed stories gathered suggest that using such techniques enabled us to tap into deeper insights than would have been documented using traditional methods.

Our analysis is based on interpretations of data. To address this, we kept an audit trail documenting data analysis; completed follow-up interviews; sought analytic consensus among the research team; and compared our data with previous and ongoing research on STI testing among youth in other locations. Lastly, this study does not aim to produce a classical ethnography, which typically involves extended fieldwork periods of months to years (Wolcott, 1999). Our modified approach enabled us to engage with a community given the limitations of available resources (Fetterman, 1998).
Conclusion

Little is known about youth’s access to STI testing in remote, resource-extraction communities, where the need for testing is high. In this study, we documented youth’s perspectives on socio-cultural and structural barriers to STI testing in an oil/gas community and elicited health/social service providers’ perspectives on characteristics of local sexual health services. We also developed recommendations to improve the accessibility of STI testing in this context. Study participants identified five key socio-cultural and structural barriers to STI testing for youth in this context: limited opportunities to access testing; geographic inaccessibility of clinics; local social norms; lack of information; and negative interactions with service providers. To address the needs of youth, we recommend STI prevention and testing service delivery models that incorporate a locally tailored public awareness campaign, outreach to oil/gas workers, condom distribution, expanded clinic hours and drop-in STI testing, specialized training for health care providers, and inter-sectoral partnerships between public health, non-profit organizations, and industry.

Acknowledgments

This study was supported by the BC Medical Services Foundation. This work would not have been possible without the youth and service providers who enthusiastically participated. Thanks also to the Northern Health Authority, the North East Native Advancing Society, and the community organizations and clinics that participated. Goldenberg holds a Trainee Award from the Michael Smith Foundation for Health Research and Shoveller, Koehoorn and Ostry each hold a Senior Scholar Award from the same organization. Shoveller also holds the Canadian Institute of Health Research’s Applied Public Health Chair in Improving Youth Sexual Health. Ostry holds a Canada Research Chair in the Social Determinants of Community Health.

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