

# The Syphilis Outbreak in Alberta

Office of the Chief Medical Officer of Health

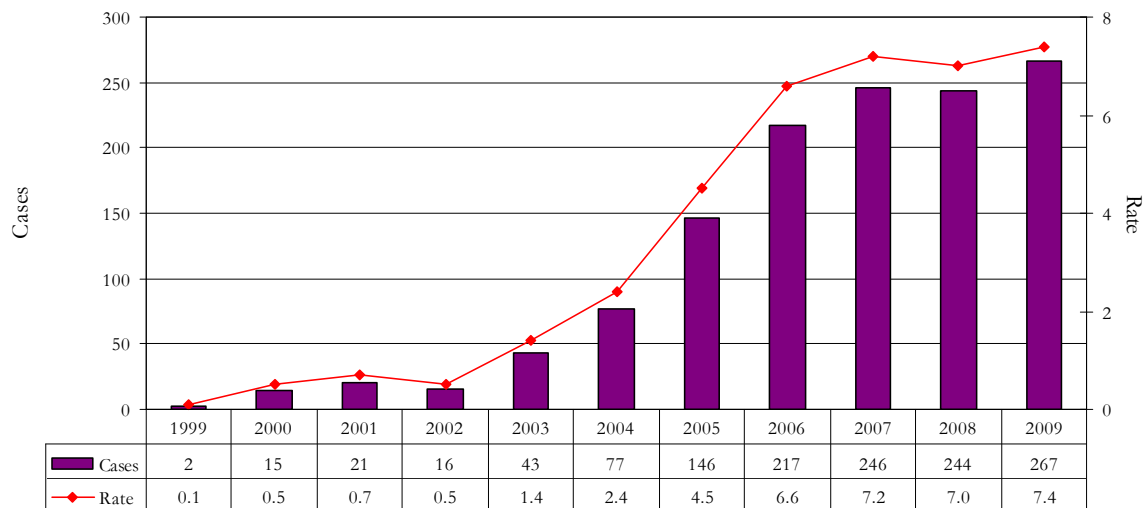
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## THE SYPHILIS OUTBREAK IN ALBERTA

### We Have a Problem

Alberta continues to experience a sustained outbreak of syphilis which shows no signs of abating. The number of cases has dramatically increased in the province since 2000, and in the past few years has spread outside known high risk groups to the general population. The urgent need to interrupt this outbreak is compounded by the occurrence of babies being born with congenital syphilis, a situation that is completely preventable.

**Figure 1: Number of infectious syphilis cases and rates per 100,000 by year in Alberta, 2009.**



### Why We Should Care

Syphilis is a serious bacterial infection that is passed from an infected person to an uninfected person during intimate sexual contact. Syphilis often doesn't cause any symptoms in the early stages, or if there are symptoms many are indistinguishable from those of other diseases. This means someone can transmit syphilis without any knowledge they are infected.

Left untreated, the infection can progress to affect the entire body causing severe damage to the brain, heart and blood vessels, and bones. It can eventually lead to death. Syphilis transmission can occur from an infected pregnant woman to her unborn child. Untreated, the outcome of the pregnancy may be profoundly affected. Approximately 40 per cent of babies will die either through miscarriage, stillbirth or within a few days of birth.

Infants born with congenital syphilis are at risk for serious long-term debilitating physical defects including extensive damage to the baby's bones, teeth, vision and hearing. These babies can also experience delayed mental development and slowed physical growth. In Alberta in 2009, there have been seven confirmed cases of infants born with congenital syphilis; another six infants remain under investigation. By contrast, in 2009 there has been one case of congenital syphilis reported in one other Canadian province.

While the current syphilis outbreak is a major concern, adding to the seriousness of the infection are increased infection rates for other sexually transmitted infections (STIs), including human

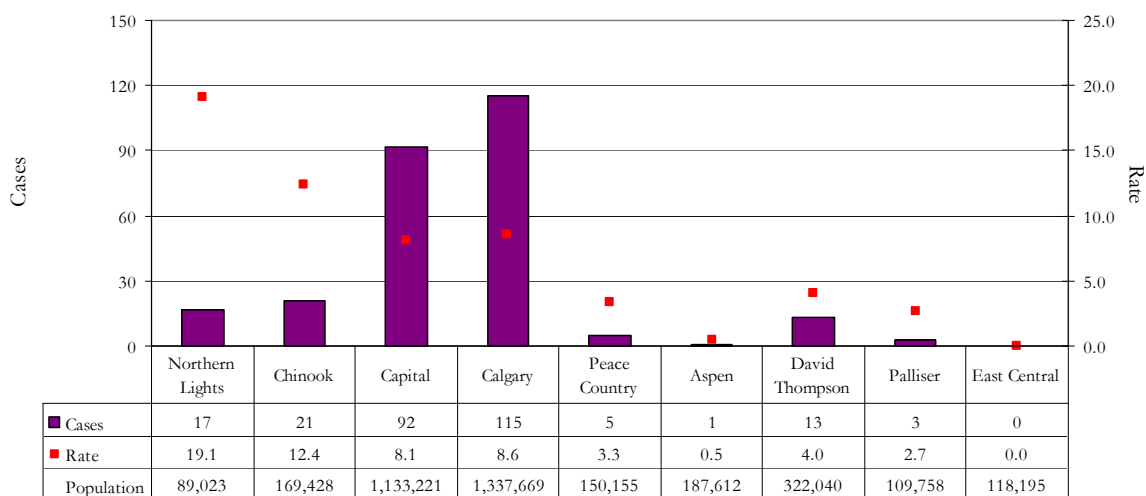
immunodeficiency virus (HIV). There is an estimated two-to-five-fold increase in risk of acquiring HIV when syphilis is present. In 2009, there were 219 newly diagnosed cases of HIV. The number of cases of gonorrhoea and chlamydia also remain high in the province: there were 1,537 cases of gonorrhoea and 13,430 cases of chlamydia diagnosed in Alberta in 2009. Both of these infections continue to be the highest among those 20-24 years of age.

### Albertans at Risk

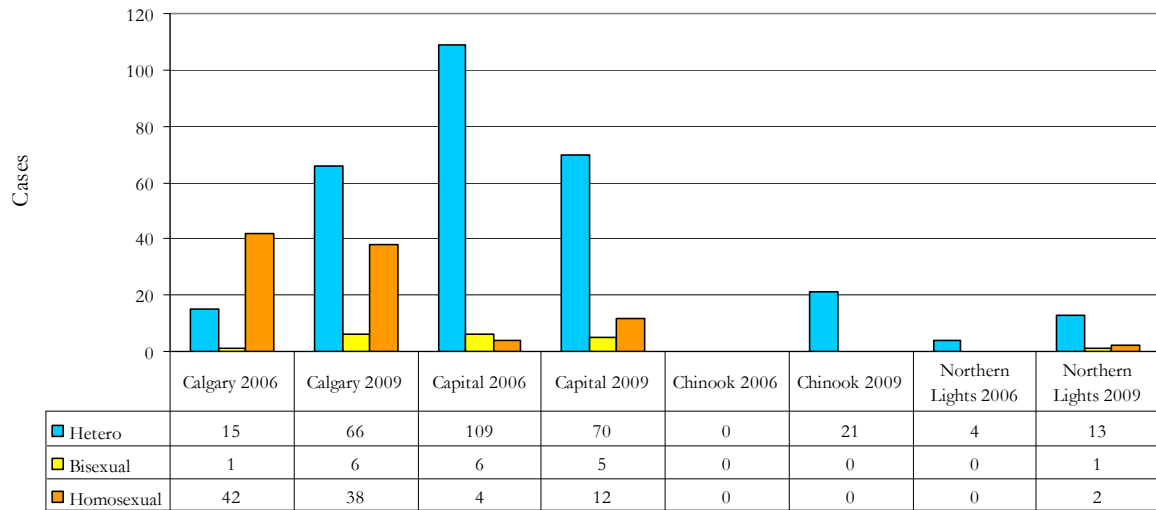
No segments of the population are spared from contracting syphilis. The disease is being found in young children under one year of age; teenagers as young as 14; seniors as old as 84; university students and professionals. A “core” or small sub-population of individuals, however, contributes to a disproportionately high percentage of encounters resulting in syphilis transmission, and this is important. Traditionally, these sub-populations include people who have multiple sexual partners; men who have sex with men; sex trade workers; users of injection drugs; and the sexual partners of individuals in these groups.

The demographics of the current outbreak have shifted since 2000 when most syphilis cases were associated with men having sex with men, and were solely reported in the larger urban centres of Edmonton and Calgary. Today the outbreak has spread throughout the entire province. Edmonton and Calgary continue to report the highest number of cases; however, Fort McMurray and Lethbridge have emerged as new “hot spots” with rates that exceed those of Edmonton and Calgary. The outbreak is now largely among those identifying their sexual orientation as heterosexual, although a significant number of cases still involve men having sex with men. Many ethnic groups are represented; however, infection rates are reported to be 18.6 times higher among young Aboriginal women and 2.8 times higher in Aboriginal men compared to their Caucasian counterparts. A recent development is the high rate of infection among Alberta’s Black male population, thought to be related to increases in refugee immigration over the past few years. Approximately 27 per cent of women infected with syphilis describe themselves as sex trade workers and 18 per cent of infected men admit to having had sex with a sex trade worker.

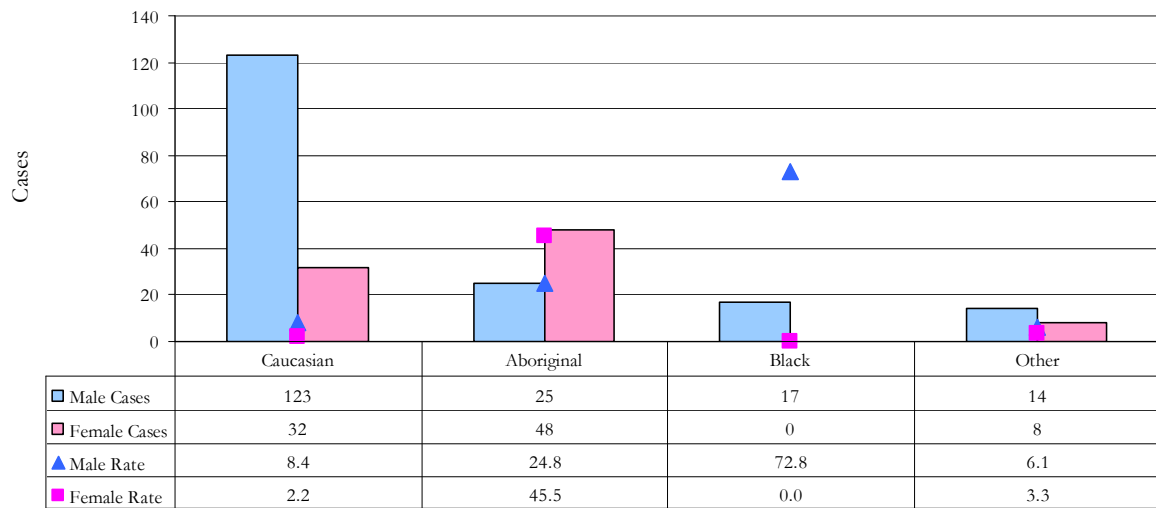
**Figure 2: Number of infectious syphilis cases and rates per 100,000 by region in Alberta, 2009.**



**Figure 3: Number of infectious syphilis cases by known sexual preference and region for 2006 and 2009.**



**Figure 4: Number of infectious syphilis cases and rates per 100,000 by ethnicity and gender, 2009.**



**Table 1: Relative risk ratios of infectious syphilis for different ethnicities compared to Caucasians, Alberta 2009. (2009 data as of April 2010)**

Ethnicity	Male	Female	Total
Caucasian	1	1	1
Aboriginal	2.9	20.5	7.3
Black	8.6	No Cases	0.9
Other	0.7	1.5	6.6

## Congenital Syphilis

The risk of syphilis transmission to infants by their infected mothers is of major concern. Since 2000, 26 babies are confirmed to have been born with congenital syphilis. Several of these infants have died while others are severely affected by debilitating long-term physical effects; many will grow up with life-long development problems.

The goal in Alberta is to have all pregnant women tested for syphilis during their first trimester. In 2008 the province also implemented prenatal re-screening at mid-trimester and again at delivery. It is hoped this testing will allow for earlier intervention if a woman is found to be infected, thus preventing infection in the infant and eliminating the serious consequences of congenital syphilis. A sobering statistic remains, however; only three of the 26 mothers who delivered babies with a confirmed diagnosis of congenital syphilis had accessed any pre-natal care in Alberta until delivery.

### What Can We Do to Contain the Outbreak?

#### Where do we start?

There is not a “one size fits all” solution to this problem, but we can begin with what we know to be high risk behaviours and high risk groups in our population. Targeting the high risk sub-populations for prevention of transmission should reduce or eliminate transmission to the larger community. Our aim is to reduce the risk of getting the disease, either by preventing infection in the first place or preventing transmission by already infected individuals. Key to achieving this goal is decreasing the number of sex partners; the correct and consistent use of condoms which greatly reduce the risk of transmission; encouragement of abstinence or mutual monogamy where both partners are free of infection. Screening for syphilis and early treatment for those infected and their partners will also contribute to a reduction in transmissions, as well as lessen the risk of serious consequences if infected with the disease.

#### What are the challenges?

The unique characteristics of syphilis present their own challenges. It is possible to be infected with syphilis and have no symptoms. This means continuing to expose each sexual partner with no indication that the infected individual should seek treatment; or in the case of symptoms which are painless, there is little motivation to seek treatment. This is compounded in high risk groups who are also less likely to seek regular medical care.

Condoms, although clearly effective in preventing the transmission of sexually transmitted infections (STIs), are not used regularly by persons at risk. Among the men having sex with men population, the relatively high level of co-infection with HIV shows that safer sexual practices, including the use of condoms, is declining. A high percentage of sex trade workers are drug users. Accepting drugs as payment for sex, particularly unprotected sex appears to be common practice.

The disproportionately higher percentage of young Aboriginal women infected with syphilis is a cause of major concern. These young women are largely linked to the “street based” sex trade, are often involved with problematic substance use, and are poor. As is the case for many rural communities, STIs are often difficult to manage on reserves for a number of reasons, including the challenge of maintaining confidentiality in a small community and high turn-over of health centre staff.

The ability to track individuals who test positive for syphilis, as well as track and notify their sexual partners, directly affects our success in containing the outbreak. Anonymous encounters associated with commercial sex trade work, the Internet, bar and bathhouse connections are a challenge to

conventional methods for contact tracing and partner notification. Compounding these challenges is the high percentage of infected individuals who report a history of drug and alcohol abuse, which frequently impairs their ability to identify partners. Additionally, a large number of those infected with syphilis through heterosexual contact have reported no stable housing or employment. The transient nature of some populations contributes to a continuous “mixing” between populations, but also makes tracking of contacts more difficult. Some examples are rural gay men and men from Ft. McMurray work camps travelling to larger urban centres.

### **How can we improve on our current efforts?**

Our response needs to be bold, innovative and compassionate. While the syphilis outbreak is deeply entrenched in the population as a whole, considerable effort must be made to target interventions to specific high risk groups – in particular street-based outreach that allows for screening of high risk individuals, and to settings where transmission is more likely to be happening. Strategies must be tailored to the unique characteristics of each high risk group, but the core approach is to stop transmission of syphilis by improving personal protection behaviors, including widespread condom use, and through rapid intervention, by testing and treating early.

### **Reduce the risk of getting the disease:**

#### **Educating populations at higher risk:**

The seriousness of the outbreak and the high risk of transmission require a higher profile.

- Continue to target education and awareness information with a focus on where contacts are happening such as sex trade worker “strolls,” bathhouses, massage parlors, the Internet, and special venues such as the gay rodeo.
- Expand links with the grassroots gay community, which is somewhat organized and build on lessons learned from the 2000 Calgary outbreak.
- Continue to engage with HIV community organizations.
- Work with bathhouse and massage parlor operators to “get the message out” and strengthen in-roads that have been established with escort agencies.
- Work with “gay.com” to get access to website content and target other Internet venues such as Craigslist and Facebook.
- Continue to engage bars, particularly in high morbidity locations to distribute materials such as bar coasters, posters in bathrooms, etc.
- Continue to work with employing companies, for example Fort McMurray work camps, to promote widespread condom use and increase awareness about the seriousness of the outbreak in the community.

#### **Explore more innovative ways to promote condom use. Examples include:**

- Explore options to link the issuance of a liquor licence by the Alberta Gaming and Liquor Commission to the availability of condom dispensers in the bathrooms of bars, lounges and restaurants.
- Work with inner city agencies and massage parlor operators to provide free “health packs” that include condoms. Install condom dispensers in these areas.
- Provide free condoms in STI drug packs. This is particularly important because transmission of syphilis is still possible up to seven days following treatment. Drugs are being wasted if individuals continue to have unprotected sex before treatment is effective.

- Continue to offer free condoms and education to all STI patients at every clinic visit.
- Provide condoms and education to persons enrolled at drug rehabilitation centres, “Johns’ schools”, prisons, etc.
- Provide condoms for distribution by local businesses in areas of high morbidity.

### Reduce transmission through screening and early prophylactic treatment

Mass screening has not been shown to be cost-effective in terms of the benefits of case finding and interruption of transmission. Instead case finding can be significantly improved with social network analysis and by focusing screening efforts on high risk groups. Prompt treatment that is inexpensive, simple and effective is also key to minimizing further disease transmission and reducing complications.

#### Sex trade workers:

- The greatest challenge remains finding screening opportunities for those at highest risk. In the case of sex trade workers, community outreach groups offer the best opportunity to develop relationships of trust. A nationally recognized example is the Community Health Representative model introduced by the former Capital Health Region which could be expanded as appropriate to other centres in the province.
- Increase screening opportunities through such venues as the Calgary Drop-In Centre that provide food and shelter. Focus must be to develop a trusting relationship, “we are here because of syphilis – not to bust you for cocaine”.
- A barrier to reaching these women for screening is that they fear their children will be apprehended if they are found to be drug users or involved in the sex trade. We need to collaborate with Children and Youth Services and addiction counseling and treatment partners to find a solution to these issues.
- Outreach programs such as Edmonton’s Streetworks and Safeworks Calgary could be used to explore with sex trade workers – “how can we bring this service to you?”
- Expand opportunities for pre-natal care; for example, Edmonton’s *Women in the Shadows: Pre-natal Care for Street Involved Women*.
- Work with such venues as massage parlors and escort services with the aim to have regular reproductive health exams for sex trade workers.
- We need to acknowledge there is more than one ‘inner city’ in Edmonton and Calgary. Outreach programs that traditionally target the known inner city should be expanded to other “inner city” areas often linked to locations of massage parlors and money marts.

#### Aboriginal Communities:

- The increasing risk among the aboriginal population accents the need to develop partnerships with the aboriginal community in order to heighten awareness and screen this vulnerable group. Since urban Aboriginals don’t have a designated community, the challenge of working with these individuals is more difficult. A possible solution is improved outreach through Native Friendship Centres and other supports such as the Boyle McCauley Health

Centre, the Calgary Urban Project Society, and the Elbow Valley Healing Lodge.

- A successful model has been the Aboriginal Women's Wellness Clinic which was established to address the high number of women from the Hobbema reserve who did not access pre-natal care prior to delivery. The clinic provided culturally appropriate liaison between the Hobbema reserve and city of Wetaskiwin where Aboriginal women and their families access prenatal care and other related services. Such a program could offer the opportunity for STI screening and treatment.
- We need to enhance our collaboration with First Nations and Inuit Health to explore how to improve testing, partner notification and treatment on-reserve.

#### Examples of Other Screening and Prophylactic Treatment Opportunities:

- Screening and prophylactic treatment in remand centres and other correctional facilities. Intervene quickly as individuals are picked up and released.
- Expand syphilis screening on site in organizations supporting the homeless and disadvantaged such as the John Howard Society, Salvation Army, homeless shelters. Screening on site should also occur in parks adjacent to areas with high morbidity.
- Due to the transient nature of these high risk individuals and the difficulty in finding them, prophylactic treatment should be provided before diagnosis is confirmed, particularly if individuals report a high number of sexual partners, use illicit drugs, have had sex with prostitutes or are positive for any other STI including HIV.
- Expand collaboration with community agencies and businesses to introduce "incentives" that will encourage individuals to be tested (i.e. coupons for food or bus passes) or that would help to reduce barriers to being tested.
- Work with organizations throughout the province that provide services to new immigrants, such as the Edmonton and Calgary Mennonite Centres for Newcomers, to provide information and screening.

#### Tracking Infected Individuals and Partner Notification

Tracking those who test positive followed by notification of their partners, treatment and follow up has historically been essential to limit the spread of disease. This process remains important; however, among many high risk groups this method does not yield significant results. Alternative methods for case finding need to be considered.

- Cluster interviewing in some instances, rather than interviewing one-on-one, followed by partner notification may be more useful. Cluster interviewing is a technique in which individuals and their contacts are asked to provide information not only on their sexual partners but also on people they think should be screened for syphilis.
- High risk individuals are often known to STI caseworkers. However, keeping in touch with them could be improved. A possible solution is to schedule regular follow-up visits with these individuals.
- Partner notification may be improved by scheduling second interviews with contacts testing positive. If more of a relationship becomes established, the

individual may remember names not thought of at the time of the first interview.

- Explore use of newer communication mediums to warn/inform potential contacts. Examples of two innovative approaches include: inSPOT.org is a unique online partner notification system which is client-centered and allows individuals diagnosed with a STI to send an anonymous e-card to their partner. This system is largely based in the U.S., but does have two sites in Canada; one in Toronto and one in Ottawa <http://inspot.org/gateway.aspx>; Cyber Outreach Nurses is an Outreach Nursing Program of the British Columbia Centre for Disease Control that uses the Internet to reach at risk populations.

### Improve Access to STI Services Province-Wide

The public health system can improve its overall performance with syphilis management. The STI management system has become decentralized resulting in inconsistencies in the way STI services are offered and managed throughout the province. Despite the increase in complex syphilis cases, the capacity of the system has not kept pace with the scope of the outbreak. For example, staffing levels for Partner Notification Nurses (PNN) and STI Services data entry staff have not increased for several years resulting in significant gaps in timely followup. Recommendations are as follows:

- Build on the current STI system to establish a centralized, efficient, provincial system including a “core” lead group with a strong physician leader. A physician leader is needed to ensure consistency in policies and best practices, standardization of treatment guidelines, case definitions, and resistance monitoring. Most importantly the system needs leadership and a champion.
- Increase access to STI clinics. There are STI clinics in Edmonton, Calgary, Lethbridge and Fort McMurray. Explore whether the services provided through the STI Clinic in Lethbridge (Chinook Sexual Health Centre) are adequate to meet the growing number of syphilis cases being reported in this region of the province. Smaller scale STI clinics working in conjunction with existing services in Jasper and Banff should be considered.
- Hours of operation at STI clinics should accommodate evening and weekend availability of services. An increase in ability for “walk-ins” and decrease in need for appointments is also warranted.
- Until the outbreak has waned, increase the number of partner notification nurses (PNN) as well as additional resources to support their travel to more remote communities. Since most of the PNN report to different managers there is a need to address reporting inconsistencies throughout the province, as well as inconsistencies in hours of work.
- Strengthen surveillance capacity. Although mandatory reporting of core data elements occurs, consideration needs to be given to collecting and reporting additional information that would help to inform strategies to contain the outbreak. For example, identifying the setting where contacts occur; determining the degree of infection occurring in correctional facilities.
- Syphilis has been called “the great imitator” because its early symptoms are similar to those of many other diseases. Although Alberta is in the midst of a syphilis outbreak, there is still incomplete knowledge among family medicine practitioners and others who are too often not recognizing the disease. We must build on education/awareness among general practitioners and other

providers. Practitioners need to be “thinking” syphilis as a possible diagnosis for their patients.

- Engage Primary Care Networks, particularly in high morbidity areas of the province, to reduce barriers to accessing pre-natal care for vulnerable pregnant women.
- Schedule regularly occurring regional forums to support training and sharing of best practices. Re-introduce the “STI Info Link” publication to support on-going communication.

### Partnerships that Would be Valuable

Education: provide information to junior high and high schools to inform where transmissions are taking place and enhance targeted information on high risk behaviors.

Children and Youth Services: develop a plan to support mothers who are sex trade workers and their children. We need to address the fear that children will be apprehended and ensure that regular reproductive health exams, testing and treatment occur.

Advanced Education and Technology: provide information on healthy relationship development as well as high risk behaviours and locations.

AHS, including their Addictions and Mental Health staff: work with sex trade workers who are addicted; target methadone programs.

Solicitor General: explore screening and prophylactic treatment in correctional facilities, particularly in remand centres where individuals are generally not detained long enough to complete the testing and treatment cycle.

Employment and Immigration: encourage industries such as oil/gas camps, tourism centres to include STI prevention in their general health messaging and wellness programs for staff.

### Moving Forward

Alberta’s current STI system has many strengths, including passionate and dedicated staff who work tirelessly to address the many challenges brought about by this outbreak. However, breaking the chain of this syphilis infection will require concerted immediate and long-term actions.

AHS is planning a general awareness campaign for syphilis and STI prevention. While such campaigns serve to remind the general population of the importance of healthy sexual behaviors, it is not a substitute for the initiatives targeted to high risk populations discussed here.

The province needs a strengthened centralized STI system with a core lead group responsible for provincial coordination of all components of STI management, as well as recruitment of a physician leader with expertise in the continuum of STI management who can provide a voice and a presence at the provincial and national level. Hiring of additional staff to increase the capacity of the STI system is likely required until the outbreak has been successfully contained.

The Office of the Chief Medical Officer of Health will provide leadership and oversight for an integrated provincial approach to address the syphilis outbreak by working with AHS, the Community and Population Health Division of AHW, other essential Alberta ministry partners and relevant community organizations and professional groups. The goal will be to reduce syphilis rates to pre-2000 levels and to ensure that no more infants are born in Alberta with congenital syphilis.