Our Vision of Better Health for All

The Better Health for All Series highlights a number of key findings about the status of our health. We envision a community in which everyone has a chance to live a healthy life and where everyone has the same opportunities to reach their full health potential. Our series highlights what actions are being taken to make this vision a reality and what more we can do to create better opportunities for everyone in our community to achieve better health.

Series 4 provides a snapshot of the Health Region’s rates of bloodborne and sexually transmitted infections. It provides information about how Saskatoon Health Region residents compare to the province and the country, the trends in rates of infection, comparisons by gender and age, and a summary of most frequently reported risks related to each infection type. Actions taken to date as well as a renewed call for action are also included.

Better Health for All Series 4: Bloodborne and Sexually Transmitted Infections

Bloodborne infections are caused by viruses (HIV and Hepatitis C) that are transmitted by blood or body fluids that contain blood. A person who is infected with the virus may spread the virus from their blood, semen or vaginal fluids to another person through a break in the skin or mucous membranes. Sexually transmitted infections (STIs) (chlamydia, gonorrhea and syphilis) are bacterial infections usually passed on during unprotected sex with an infected partner. This can be vaginal, oral or anal sex.

Bloodborne and sexually transmitted infections have high health, social and economic costs. Left untreated, chronic infections can spread to other parts of the body and cause pelvic inflammatory disease (PID) in women, infertility in both sexes, and complications in babies of infected mothers. Bloodborne infections increase the risk of certain types of cancers and premature death.

What did we find?¹

Saskatoon Health Region has historically had high rates of bloodborne and sexually transmitted infections compared to our national counterparts².

¹ See CommunityView Collaboration www.communityview.ca for detailed definitions of these indicators.
Findings show promise, but we have more work to do:

**Bloodborne Infections:** Our latest findings reveal that HIV and hepatitis C rates continue to steadily decline, but there is still much room to improve. For example, the Region’s 2013 Hepatitis C rate was 43.7 per 100,000, 28 percent lower than the last available provincial rate but still 50 percent higher than the last available national rate. The HIV rate has been on a steady decline since its peak in 2009. Despite this progress in our Region, HIV incident rates are still twice the national average and preventable deaths in HIV positive patients still occur, (13 percent have died since 2005). This means that more work in needs to be done, particularly around early testing and more durable linkage and adherence to HIV care and treatment.

**Sexually Transmitted Infections:** While declines in Hepatitis C and HIV rates show promise, STI rates for our Region are less encouraging. Chlamydia rates have remained stable since 2010. Gonorrhea and syphilis rates have sharply increased since 2011.

**Transmission risk factors are changing for HIV, staying same for other infections:** In the past, injection drug use (IDU) was clearly the highest risk factor for contracting HIV; today, with greater participation of clients in harm reduction strategies other disease transmission risk factors have proportionately gained prominence, including increased transmission through unprotected sex. In the case of hepatitis C, although overall disease transmission rates have reduced, unsafe needle use still leads among all risks. The top two risks for gonorrhea include unprotected sex, new partners. For syphilis, risks include unprotected sex, new sexual partners, anonymous partners and unprotected sex between men.

**Health inequalities and inequities persist:** This data highlights a number of gaps in health outcomes between various segments of our population. For example, more than twice as many men reported hepatitis C than women; nine out of 10 syphilis cases reported are in men; and the majority of the Region’s HIV cases were also reported in males in 2013. In contrast, the Region’s rate of chlamydia in females was 40 percent higher than the male rate in 2013. There is also a disproportionate difference in many rates by age. For example, for HIV and hepatitis C, 30 to 39 year olds tend to have higher rates than any other age group. For chlamydia, 15 to 24 year old females show extremely high rates compared to the same male counterparts. In addition, our recently released report on Advancing Health Equity in Health Care highlights that a number of very large gaps in health outcomes have persisted over a long period of time between those living in the most and least advantaged areas of Saskatoon. From 2004-2010, 66 percent of hepatitis C cases, 45 percent of chlamydia infections and 62 percent of gonorrhea cases were reported in individuals living in the highest area of deprivation\(^3\), which makes up about 20 percent of the total population.

**What’s being done to decrease infection rates?**

Over the past number of years, the Region has worked with key partners including the provincial government and local community agencies to tackle our high rates through a variety of strategies and approaches. For example, the Region has implemented a number of key strategies intended to increase testing among high-risk populations; prevent new HIV infections through HIV “treatment as prevention” (as per the British Columbia model of treatment as prevention); expand harm reduction services, and provide better prenatal care for HIV mothers; support HIV-positive clients with improved access to

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\(^3\) Deprivation in Saskatoon was identified using an index of six socioeconomic variables (income, education, employment, marital status, single-parent families, and living alone). The index divides Saskatoon into five categories ranging from highest to lowest deprivation and each area contains approximately one fifth of the population.
addictions treatment, multidisciplinary care teams and intensive case management; and measure outcomes to monitor progress and improve services.

Achieving Better Health for All – A Renewed Call to Action for Public Health and its Partners

While there is clearly progress being made in reducing the rates of HIV and hepatitis C, and many efforts are in place to reduce sexually transmitted infections, there is more that should be done. For many, reproductive and sexual health services are the entry point into the medical care system. These services improve health and reduce costs by not only covering pregnancy prevention, HIV and STD testing and treatment, and prenatal care, but also by screening for intimate partner violence and reproductive cancers, providing substance abuse treatment referrals, and counseling on nutrition and physical activity.

Building on the success of its intervention strategies to date, Saskatoon Health Region should continue its targeted approach toward providing opportunities for better health for all. Specifically, the Region should continue to work with its partners to:

1. Improve diagnosis and treatment
   - Continue to identify opportunities for HIV testing. This might include the expansion of community sites, testing known clients connected with outreach services, offering testing routinely in family physician offices and in-patient settings.
   - Explore innovative approaches to deliver STI testing and treatments as described in the draft provincial STI strategy e.g., Expedited partner treatment, a role for alternate service providers in STI care
   - Fully develop the SHR treatment as prevention model, and develop measurable indicators for the HIV treatment cascade.

2. Increase health promotion and prevention efforts
   - Advocate for the overall improvement in sexual health and reproductive health services for community members in Saskatoon Health Region of all ages and in particular to adolescents and young people.
   - Continue to adopt best practices and link prevention to care whenever possible.
   - Expand preventative health promotion strategies such as Break the Cycle (a harm reduction model used in the United Kingdom), and Know Your Status. Know Your Risk (an approach used by Population and Public Health Street Health) and It’s different now”.
   - Complete the Street Health 2014 Harm Reduction Survey and implement the selected recommendations.
   - Work with partners to address upstream contributors to risk taking behaviours including early childhood trauma.

4 HIV case management involves providing support along a continuum of care for persons who are newly diagnosed with HIV, pregnant women or those who have difficulty engaging or have disengaged from care. Clients are typically involved in substance abuse (primarily injection drug use) and are impacted by poverty. A multidisciplinary team comprised of public health nurses, a surveillance nurse, social case manager, addictions counselors and community outreach and education workers utilize a harm reduction approach to care. This includes, conducting psychosocial assessments on intake, the provision of harm reduction supplies, addiction assessments and referral for support, client goal setting and skill building, and coordination and support of health and social services. A model of recovery services is utilized for those challenged with an addiction.

3. **Target action to narrow the gap in health equity**
   - Explore strategies that would further narrow the equity gap in disease rates for chlamydia, gonorrhea, HIV and hepatitis C, e.g., by promoting innovative access to clinics and treatment and outreach activities for particular high risk communities.
   - Work more closely with the communities and agencies that represent those most affected by these illnesses such as the Aboriginal community, injection drug users, men who have sex with men and youth.

4. **Increase efforts to integrate service support:**
   - Develop innovative approaches for hepatitis C intervention, including integration with HIV care.
   - Increase mental health and addiction support for HIV and hepatitis C clients, including peer support.

5. **Improve surveillance:**
   - Improve STI surveillance to better understand causality and transmission risk factors with opportunities for prevention. This should include the social determinants of health.
   - Participate in behavioral risk assessment efforts and apply the knowledge gained to address local factors.

**Learn More about the Better Health for All Series**

We invite you to consider the information that we have presented in this message and through CommunityView. It is our hope that you will use the Better Health for All series to inform the decisions you make towards advancing the vision of a community in which everyone has the opportunity to live healthy lives. Available reports include:

- **Series 1, March 26 2014**  
  **Our Population**- A high level look at who lives in our Region. Differences in health outcomes by socioeconomic conditions will be released in upcoming series.

- **Series 2, May 21 2014**  
  **Immunization**- Examines a selected set of immunization indicators to report on progress and gaps in coverage rates. Proposes further action to ensure equal opportunities for access to immunization.

- **Series 3, June 23 2014**  
  **Advancing Health Equity in Health Care**- Examines a range of health inequalities and proposes health care system action to create equal opportunities for all to achieve better health.

- **Series 4, July 28, 2014**  
  **Bloodborne and Sexually Transmitted Infections** - Focuses on communicable disease such as human immunodeficiency virus (HIV), and sexually transmitted infections (STIs).

**Upcoming Planned Releases Include:**

**Fall 2014**: More on HIV, Health Behaviours, and Maternal and Child Health.

**Release date to be determined**: A report on Community Wellbeing- Developed in partnership with the Saskatoon Regional Intersectoral Committee discusses, in greater detail, the social determinants of health and wellbeing.
Acknowledgements:
Many people were involved in the production of this report. The authors wish to thank the following individuals for their contributions: Disease Control, Population and Public Health including Karen Grauer, Brenda Lindberg, Janice Seebach, and the Public Health Observatory including Terry Dunlop, Lara Murphy, Dr. Julie Kryzanowski, Josh Marko and Cristina Ugolini.

Suggested Citation:
Bloodborne Infection – Human Immunodeficiency Virus (HIV)

Why Is This Important?
HIV is a virus that affects the immune system. Without treatment, HIV can progress to a symptomatic, life-threatening acquired immunodeficiency syndrome disease (AIDS). HIV transmission occurs through exposure to blood and body fluids from an HIV-infected person, including blood, semen, vaginal fluids, and breast milk. An HIV positive mother can pass the virus to her baby before or during childbirth, or through breastfeeding.

In the early stages many people with HIV infection have no symptoms. In Canada it is estimated that one in four people currently infected do not know they are HIV positive.⁴ With treatment, HIV is now managed as a chronic disease, allowing HIV positive individuals who are on antiretroviral treatment to live long and healthy lives.

What Is Being Done?

What’s Being Done In Saskatoon Health Region to Reduce STIs and Bloodborne Illnesses? Saskatchewan and Regional HIV Strategies

To Learn More:
Maggie’s Story [YouTube]: a personal story of HIV by an individual living in our Region.
Chief Medical Health Officer’s Call to Action: HIV Report (pending)

Highlights
HIV has decreased in the Region for the past four years.
- HIV rates increased in Saskatoon Health Region between 2004 to 2009, peaking at 31.3 per 100,000 population in 2009, two to three times the national rate (Figure 1).
- HIV cases totaled 43 in 2013, with 32 cases in males and 11 in females (Figure 2).
- The Region’s 2013 HIV rate fell to 12.8 per 100,000, a 59% decrease since 2009.
- Rates vary by age group, with the highest rates in the 30 to 39 year-old age group for both genders. See case and rates by gender and age group.
- The primary transmission risk was injection drug use. Unprotected heterosexual sex and sex between men were the next highest risks (see HIV transmission risks).
- A total of 558 confirmed cases of HIV have been reported in our Region since 2005 (not shown). Thirteen percent of these individuals are now deceased (cause of death not necessarily HIV-related; see About the Data).
- Since 2004, 80 cases of AIDS have been reported (not shown). Forty-five percent are deceased.
- It is estimated that 63% of HIV positive individuals in the Region are also infected with hepatitis C and 2.4% have been infected with tuberculosis (not shown).

Figure 1: HIV Rates per 100,000 Population, Saskatoon Health Region, Saskatchewan, and Canada, 2004 to 2013

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate per 100,000</th>
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<td>25.8</td>
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<td>2009</td>
<td>31.3</td>
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<td>2010</td>
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<td>2011</td>
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<tr>
<td>2012</td>
<td>17.0</td>
</tr>
<tr>
<td>2013</td>
<td>12.8</td>
</tr>
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</table>

SHR: Saskatchewan Health Region
SK: Saskatchewan
Canada: Provincial/territorial and national rates

Source: PHAC, iPHIS

Figure 2: HIV Cases and Rates per 100,000 by Gender, Saskatoon Health Region, 2004 to 2013

<table>
<thead>
<tr>
<th>Year</th>
<th>Male cases</th>
<th>Female cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
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<tr>
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<td>2011</td>
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<td>2012</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>2013</td>
<td>11</td>
<td>5</td>
</tr>
</tbody>
</table>

Male cases: Male HIV cases per 100,000 population.
Female cases: Female HIV cases per 100,000 population.
Male rates: Male HIV cases per 100,000 population.
Female rates: Female HIV cases per 100,000 population.

Source: iPHIS

For more information: www.communityview.ca
HIV Rates by Gender and Age Group
Saskatoon Health Region, 2009 to 2013

Highlights

- While the highest HIV rates are among males 30 to 39 years old, at 39.8 per 100,000 population in 2013, the rate has decreased by 52% from 2009 (Figure 2).
- The highest HIV rate among females is also in the 30 to 39 year-old age group at 24.9 per 100,000 in 2013. This rate has decreased 70% since 2009 (Figure 1).
- Rates have decreased in almost all age groups. The age groups showing the least amount of decrease are the 20 to 24 year-old males (Figure 2) and the 15 to 19 year-old females (Figure 1).
- In the past five years there were fewer than five cases in children under fifteen years old (not shown).

Figure 1: Female HIV Rates per 100,000 Population by Selected Age Groups, Saskatoon Health Region, 2009 to 2013

<table>
<thead>
<tr>
<th>Age Group</th>
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<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
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<td>9.7</td>
<td>9.7</td>
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<tr>
<td>20-24</td>
<td>60.1</td>
<td>51.5</td>
<td>8.3</td>
<td>16.5</td>
<td>0.0</td>
</tr>
<tr>
<td>25-29</td>
<td>61.3</td>
<td>35.0</td>
<td>39.1</td>
<td>30.9</td>
<td>14.6</td>
</tr>
<tr>
<td>30-39</td>
<td>85.5</td>
<td>60.4</td>
<td>46.0</td>
<td>22.1</td>
<td>24.9</td>
</tr>
<tr>
<td>40-59</td>
<td>16.6</td>
<td>7.1</td>
<td>23.0</td>
<td>20.5</td>
<td>2.2</td>
</tr>
<tr>
<td>60+</td>
<td>0.0</td>
<td>0.0</td>
<td>3.2</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Figure 2: Male HIV Rates per 100,000 Population by Selected Age Groups, Saskatoon Health Region, 2009 to 2013

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>9.1</td>
<td>0.0</td>
<td>9.3</td>
<td>9.4</td>
<td>0.0</td>
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<tr>
<td>20-24</td>
<td>25.5</td>
<td>17.0</td>
<td>8.0</td>
<td>0.0</td>
<td>23.6</td>
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<tr>
<td>25-29</td>
<td>77.2</td>
<td>42.9</td>
<td>30.4</td>
<td>30.0</td>
<td>28.4</td>
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<tr>
<td>30-39</td>
<td>84.3</td>
<td>109.1</td>
<td>62.3</td>
<td>43.0</td>
<td>39.8</td>
</tr>
<tr>
<td>40-59</td>
<td>54.4</td>
<td>40.2</td>
<td>29.4</td>
<td>33.7</td>
<td>28.5</td>
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<tr>
<td>60+</td>
<td>0.0</td>
<td>8.3</td>
<td>7.8</td>
<td>7.5</td>
<td>7.2</td>
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</table>

Source: iPHIS
HIV Rates and Cases by Gender
Saskatoon Health Region, 2004 to 2013

Highlights

- HIV rates rapidly increased from 2004 to 2009 for both genders and decreased since 2009 more rapidly for females than males (Figure 3).
- The number of male and female cases was proportionately equal between 2004 and 2006 and since 2007 more male cases have been reported than female cases (Figure 4).
- The total number of cases in 2013 decreased by 54% since 2009.

Figure 3: HIV Rates per 100,000 Population by Gender, Saskatoon Health Region, 2004 to 2013

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</thead>
<tbody>
<tr>
<td>Female</td>
<td>5.5</td>
<td>13.7</td>
<td>20.0</td>
<td>16.3</td>
<td>19.9</td>
<td>27.0</td>
<td>17.1</td>
<td>19.4</td>
<td>13.8</td>
<td>6.5</td>
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<tr>
<td>Male</td>
<td>5.6</td>
<td>13.3</td>
<td>17.1</td>
<td>23.0</td>
<td>31.8</td>
<td>35.6</td>
<td>32.2</td>
<td>22.1</td>
<td>20.5</td>
<td>19.1</td>
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Figure 4: HIV Cases by Gender, Saskatoon Health Region, 2004 to 2013

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<td>30</td>
<td>41</td>
<td>26</td>
<td>31</td>
<td>22</td>
<td>11</td>
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</tbody>
</table>

Source: iPHIS

For more information: www.communityview.ca
HIV Transmission Risk
Saskatoon Health Region, 2009 to 2013

Highlights

- When multiple risks are reported some risk behaviors are considered more likely to be responsible for HIV transmission than others. For example where injection drug use and heterosexual sex are both reported, injection drug use (IDU) is considered more likely to be responsible for transmission of HIV than heterosexual sex, and therefore IDU is reported as the primary risk. Of the 333 infections reported since 2009, 75% reported IDU as the primary transmission risk, 18% heterosexual sex, 6% male sex with men (MSM) (Figure 1). Less than one percent reported MSM and injection drug use, perinatal transmission, or unknown risk.

- Primary risk is changing over time as indicated by the percentage of individuals reporting HIV transmission risks each year (Figure 2). In 2013, 20.9% of HIV infected individuals reported heterosexual sex as the primary risk compared to 13% in 2009. IDU was reported by 65.1% of individuals compared to 80% in 2009.

Figure 1: Primary HIV Transmission Risk, Saskatoon Health Region, 2009 to 2013

Figure 2: Primary HIV Transmission Risk Trend, Saskatoon Health Region, 2009 to 2013

Source: iPHIS
In 2010/11 Saskatchewan’s HIV Strategy was launched in response to substantial increases in new cases of HIV in the province. The strategy formed the framework for current and planned efforts to address HIV/AIDS issues in Saskatchewan, building on the current knowledge and providing an outline to steps to address issues fueling the epidemic. A provincial leadership team was convened to provide guidance to the Regional Health Authorities in implementing the strategy.

In 2010, Saskatoon Health Region launched a Regional HIV Strategy to help operationalize specific goals of HIV prevention, treatment and support.

The initiatives of the HIV strategies included:

- expansion of HIV testing to high risk populations;
- increased HIV prevention and expansion of harm reduction services;
- coordination of Public Health and HIV care providers for special supports to increase linkage of patients to HIV care and treatment;
- coordination and integration of care with tuberculosis and hepatitis C care;
- intensive case management;
- prenatal care of HIV positive mothers and testing and treatment in labor and delivery;
- programs to de-stigmatization HIV and increasing community awareness of HIV;
- education and capacity building among health care professionals;
- multidisciplinary care teams and other supports to improve retention of HIV patients in care;
- increasing addictions treatment and methadone-assisted therapy; and,
- increased surveillance and the use of lean tools and processes for target setting and quality improvement.

Achievements of the HIV strategies include:

- successful multidisciplinary interagency case management processes;
- HIV testing increased more than 50% above the 2009 baseline;
- free condom distribution expanding to new locations serving at risk population;
- improved needle exchange rates;
- community based organizations addressing the HIV epidemic including outreach work, public education and testing; and,
- educational opportunities for health care providers and the general public.

Why Is This Important?
Hepatitis C is a virus transmitted through exposure to blood from an infected person. Common routes of infection include the sharing of injection drug equipment, tattoo & piercing equipment, and personal hygiene items like razors and toothbrushes. Some people with hepatitis C can clear the virus but most become chronic carriers of the virus and are at risk for developing liver damage or liver cancer. Hepatitis C may have no signs and symptoms and therefore poses a risk for ongoing transmission.

Based on several equity measures a gap in hepatitis C infection rates persists within the Region’s population. From 2004 to 2010, 66% of hepatitis C cases were reported in individuals living in the least advantaged areas of Saskatoon (see Advancing Health Equity in Health Care – Hepatitis C).

What Is Being Done?
What’s Being Done in Saskatoon Health Region to Reduce STIs and Bloodborne Illness?: Summary of Targets and Benchmarks (Pending )

To Learn More:
Destiny’s Story (YouTube): a personal story from a hepatitis C positive individual living in our Region.
Chief Medical Health Officer’s Call to Action: Advancing Health Equity in Health Care—What is Health Equity?

Highlights
Hepatitis C rates are declining but are still high in the Region.

- Hepatitis C rates have steadily decreased in the Region but are still higher than national rates (see latest available published rates, Figure 1).
- Hepatitis C cases totaled 147 in the Region in 2013, with 102 cases in males and 45 cases in females (Figure 2).
- The Region’s 2013 rate, 43.7 per 100,000 population, fell by 30% from the previous year (Figure 1).
- Rates vary by age group with the highest rates occurring in the 25 to 39 year-old age group. See cases and rates by gender and age group.
- It is estimated that 5% of individuals with hepatitis C in 2013 were co-infected with HIV (see About the Data).
- Seven of ten individuals with hepatitis C reported injection drug use as a transmission risk. See transmission risk for hepatitis C.

Figure 1: Hepatitis C Rates per 100,000 Population, Saskatoon Health Region, Saskatchewan, and Canada, 2004 to 2013

<table>
<thead>
<tr>
<th>Year</th>
<th>SHR Rate</th>
<th>SK Rate</th>
<th>Canada Rate</th>
</tr>
</thead>
<tbody>
<tr>
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<td>91.2</td>
<td>65.8</td>
<td>45.7</td>
</tr>
<tr>
<td>2005</td>
<td>76.0</td>
<td>63.7</td>
<td>40.4</td>
</tr>
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<td>2006</td>
<td>81.9</td>
<td>60.9</td>
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<tr>
<td>2007</td>
<td>73.2</td>
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<td>35.8</td>
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<td>2008</td>
<td>76.1</td>
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<td>31.1</td>
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<td>2011</td>
<td>58.5</td>
<td>28.9</td>
<td>29.3</td>
</tr>
<tr>
<td>2012</td>
<td>62.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>43.7</td>
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</tbody>
</table>

Source: PHAC, iPHIS

Figure 2: Hepatitis C Cases and Rates per 100,000 by Gender, Saskatoon Health Region, 2004 to 2013

Source: iPHIS

For more information: www.communityview.ca
Hepatitis C Rates by Gender and Age Group
Saskatoon Health Region, 2009 to 2013

Highlights

- Rates have decreased in almost all female age groups but have remained the same or increased in males under 40 years old.
- The highest rates among females are in 25 to 29 year-olds at 51.2 per 100,000 in 2013 (Figure 1). This rate decreased by 63% from the previous year. Hepatitis C, while rare in children, was reported in six females under fifteen years old in the last five years (not shown).
- The highest hepatitis C rates among males are in the 30 to 39 year-old age group at 123.3 per 100,000 population in 2013. This rate decreased by 38% from 2012 (Figure 2). No hepatitis C has been reported in male children under fifteen years old since 2009 (not shown).

Figure 1: Female Hepatitis C Rates per 100,000 Population by Selected Age Groups, Saskatoon Health Region, 2009 to 2013

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 to 19</td>
<td>77.4</td>
<td>29.0</td>
<td>9.7</td>
<td>69.2</td>
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</tr>
<tr>
<td>20 to 24</td>
<td>85.9</td>
<td>85.9</td>
<td>91.3</td>
<td>74.1</td>
<td>40.9</td>
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<tr>
<td>25 to 29</td>
<td>87.6</td>
<td>70.1</td>
<td>109.6</td>
<td>138.8</td>
<td>51.2</td>
</tr>
<tr>
<td>30 to 39</td>
<td>115.7</td>
<td>109.4</td>
<td>101.2</td>
<td>92.7</td>
<td>49.7</td>
</tr>
<tr>
<td>40 to 59</td>
<td>38.0</td>
<td>26.1</td>
<td>48.2</td>
<td>34.1</td>
<td>33.5</td>
</tr>
<tr>
<td>60+</td>
<td>10.1</td>
<td>3.4</td>
<td>6.4</td>
<td>6.2</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Figure 2: Male Hepatitis C Rates per 100,000 Population by Selected Age Groups, Saskatoon Health Region, 2009 to 2013

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 to 19</td>
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<tr>
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<td>76.6</td>
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<td>96.7</td>
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<td>30 to 39</td>
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<tr>
<td>40 to 59</td>
<td>99.3</td>
<td>127.7</td>
<td>129.0</td>
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<td>0.0</td>
<td>15.5</td>
<td>41.3</td>
<td>10.8</td>
</tr>
</tbody>
</table>

Source: iPHIS
Hepatitis C Rates and Cases by Gender
Saskatoon Health Region, 2004 to 2013

Highlights

- Hepatitis C rates have decreased in the Region more rapidly for females than males (Figure 3).
- The female rate in 2013 was 26.7 per 100,000 population and the male rate 60.8 per 100,000. These rates reflect a ten year decrease in females and males of 68% and 36% respectively. The increase in the rate among males in 2008 reflects an outbreak of acute hepatitis C that year.
- The number of hepatitis C cases in 2013 was 147, with 102 in males and 45 in females (Figure 4).

Figure 3: Hepatitis C Rates per 100,000 Population by Gender, Saskatoon Health Region, 2004 to 2013

Figure 4: Hepatitis C Cases by Gender, Saskatoon Health Region, 2004 to 2013

Source: iPHIS
Hepatitis C Transmission Risk
Saskatoon Health Region, 2013

Highlights

- Among individuals with hepatitis C infection in 2013, more than seventy percent (103/144) reported a history of injection drug use.
- The second most frequently reported transmission risk was other drug use (non-injection), and the third was tattoos. See About the Data for definitions.
- Among those who did not report injection drug use as a transmission risk, 63% reported having high risk sexual partners (with hepatitis C, from a country where hepatitis C is endemic, or partners at high risk for injection drug use) and 32% reported other non-injection drugs that can cause transmission (for example, sharing crack pipes). About 10% of individuals who did not report any drug use did not report sexual risks but reported tattoos as transmission risks (not shown).

Figure 1: Top Five Reported Hepatitis C Transmission Risks, Saskatoon Health Region, 2013

Source: iPHIS
**Why Is This Important?**

Chlamydia is the most commonly reported sexually transmitted infection (STI) and is spread through unprotected sex. Untreated chlamydia in women can cause pelvic inflammatory disease (PID) and infertility and, though rare, may be passed to a baby during childbirth.

Most infections do not show any signs and symptoms. More cases are reported in females than males. Females are more likely to be tested, for example, during PAP tests.

Based on several equity measures, a gap in STI infection rates persists within the Region’s population. The inequity gap is very high but shows signs of decreasing over time. From 2004 to 2010 45% of individuals with chlamydia reported lived in the least advantaged areas of Saskatoon (see [Advancing Health Equity in Health Care - Chlamydia](#)).

**What Is Being Done?**

**What’s Being Done In Saskatoon Health Region to Reduce STIs and Bloodborne Illness?**; Summary of Targets & Benchmarks (Pending)

**To Learn More:**

Chief Medical Health Officer’s [Call to Action](#)

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### Highlights

**Chlamydia rates are high and unchanging**

- Chlamydia rates in Saskatoon Health Region are higher than national rates and lower than provincial rates (latest available published rates). While trends have generally increased for all jurisdictions over time, the Region’s rates have leveled off since 2010 (Figure 1).
- Chlamydia cases totaled 1,389 in 2013, with 858 cases in females and 531 in males (Figure 2).
- The Region’s 2013 rate, 412.9 per 100,000, is almost unchanged since 2010.
- Rates vary by age group with the highest rates occurring in the 15 to 24 age group in females and 20 to 29 years in males. See [by gender and age group](#).
- Among individuals with chlamydia in 2013, almost one in ten (8.5%) were co-infected with another STI, similar to the previous year (not shown).
- Multiple sexual partners and partners with STIs are the main risks associated with chlamydia. See [transmission risks for chlamydia](#).

---

**Figure 1: Chlamydia Rate per 100,000 Population, Saskatoon Health Region, Saskatchewan, Canada, 2004 to 2013**

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate per 100,000</th>
</tr>
</thead>
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<td>2004</td>
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<tr>
<td>2012</td>
<td>298.7</td>
</tr>
<tr>
<td>2013</td>
<td>412.9</td>
</tr>
</tbody>
</table>

![Figure 1: Chlamydia Rate per 100,000 Population](source: PHAC, iPHIS)

**Figure 2: Chlamydia Cases and Rates per 100,000 by Gender, Saskatoon Health Region, 2004 to 2013**

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate per 100,000</th>
</tr>
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<tbody>
<tr>
<td>2004</td>
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<tr>
<td>2012</td>
<td>200</td>
</tr>
<tr>
<td>2013</td>
<td>210</td>
</tr>
</tbody>
</table>

![Figure 2: Chlamydia Cases and Rates by Gender](source: iPHIS)
Chlamydia by Gender and Age Group
Saskatoon Health Region, 2009 to 2013

Highlights

- The highest chlamydia rates are among females 20 to 24 years old followed by 15 to 19 year-olds. Since 2009 the rate has increased by 16% among 15 to 19 year-olds (Figure 1).
- The rate among 10 to 14 year-old females has increased by 45% since 2009 (Figure 1).
- The highest chlamydia rate among males was in 20 to 24 year-olds followed by 25 to 29 year-olds (Figure 2). The rates have increased in these age groups by about 10% since 2009 (Figure 2).

Figure 1: Female Chlamydia Rates per 100,000 Population by Age Group, Saskatoon Health Region, 2009 to 2013

![Female Chlamydia Rates per 100,000 Population by Age Group, Saskatoon Health Region, 2009 to 2013](image1)

Figure 2: Male Chlamydia Rates per 100,000 Population by Age Group, Saskatoon Health Region, 2009 to 2013

![Male Chlamydia Rates per 100,000 Population by Age Group, Saskatoon Health Region, 2009 to 2013](image2)
Highlights

- Chlamydia rates increased in both males and females in the Region until 2008. In 2009, the year of influenza pandemic, testing and diagnosis of reportable disease decreased. Since 2010, rates have leveled off and remained stable (Figure 3).
- The female chlamydia rate was 509.1 per 100,000 in 2013, a 5% decrease from 2012. The male rate was 316.3 per 100,000, similar to the previous year (Figure 3).
- The total number of chlamydia cases in 2013 was 1,389, with 858 in females and 531 in males. Since 2004 the number of cases increased in females and males by 73% and 60% respectively but has remained stable the last few years (Figure 4).

Figure 3: Chlamydia Rates per 100,000 Population by Gender, Saskatoon Health Region, 2004 to 2013

Figure 4: Chlamydia Case Counts by Gender, Saskatoon Health Region, 2004 to 2013

Source: iPHIS
Chlamydia Transmission Risk by Gender
Saskatoon Health Region, 2013

Highlights

- New partners, multiple partners and partners with an STI are leading transmission risks associated with chlamydia infection among both males and females (Figures 1 and 2). Multiple risks are reported by infected clients (see About the Data).
- Anonymous partners and partners sought through the internet are risks reported more frequently in infected males than females (not shown).

Figure 1: Top Five Female Chlamydia Transmission Risks, Saskatoon Health Region, 2013

- New partner within the last 3 months
- More than 2 partners in the last 3 months
- Sex with a known STI case
- Alcohol/Drug use
- Previous STI

Figure 2: Top Five Male Chlamydia Transmission Risks, Saskatoon Health Region, 2013

- Sex with a known STI case
- New partner within the last 3 months
- More than 2 partners in the last 3 months
- Alcohol/Drug use
- Unknown/Anonymous Partner

Source: iPHIS
Sexually Transmitted Infection - Gonorrhea

Why Is This Important?
Gonorrhea is the second most commonly reported sexually transmitted infection (STI), after chlamydia and is often a co-infection with chlamydia. It is spread through unprotected sex with an infected partner, and, rarely, from a pregnant woman to her baby during childbirth. Untreated gonorrhea can cause pelvic inflammatory disease (PID) and infertility.

Unlike chlamydia, where females outnumber male cases, almost equal number of female and males cases are reported, as gonorrhea is more likely than chlamydia to be symptomatic in males.

Based on several equity measures a gap in STI infection rates persists within the Region’s population. From 2004 to 2010, 62% of gonorrhea cases were reported in individuals living in the least advantaged areas of Saskatoon (See Advancing Health Equity in Health Care - Gonorrhea).

What Is Being Done?
What’s Being Done In Saskatoon Health Region to Reduce STIs and Bloodborne Illness?; Summary of Targets & Benchmarks (Pending)

To Learn More:
Chief Medical Health Officer’s Call to Action

Highlights
While still below the 10 year peak, gonorrhea has increased since 2010.
- Gonorrhea rates in Saskatoon Health Region have varied above or on par with national rates, but are consistently below provincial rates (Figure 1). In 2013, rates rose dramatically.
- Gonorrhea cases totaled 207 in the Region in 2013, with 111 in females and 96 in males (Figure 2).
- The Region’s 2013 rate increased by 35% from the previous year to 61.5 per 100,000 population (Figure 1).
- Rates vary by age group, with the highest in the 19 to 24 year-old age group in females and 20 to 29 year-old age group in males. See by gender and age group.
- Among individuals with gonorrhea, more than one in four (26.5%) was co-infected with another STI in 2013, compared to less than one in five (18%) in the previous year (not shown).
- New partners and alcohol/drug use are the two main risks associated with gonorrhea. See transmission risks for gonorrhea.

Figure 1: Gonorrhea Rate per 100,000 Population, Saskatoon Health Region, Saskatchewan, and Canada, 2004 to 2013

Figure 2: Gonorrhea Cases and Rates per 100,000 Population by Gender, Saskatoon Health Region, 2004 to 2013

Source: PHAC and iPHIS

For more information: www.communityview.ca
Gonorrhea Rates by Gender and Age Group
Saskatoon Health Region, 2009 to 2013

Highlights

- The highest gonorrhea rate since 2009 is among females 20 to 24 years old at 335 per 100,000 population in 2013. Rates have almost tripled in five years in this age group. The rate among 10 to 14 year-old females has doubled (Figure 1). There have been no cases in children under 10 years old in the past ten years (not shown).
- The highest gonorrhea rate among males is also in 20 to 24 year-olds at 235.6 per 100,000 in 2013. The rate has more than doubled since 2009 (Figure 2).

Figure 1: Female Gonorrhea Rates per 100,000 Population by Selected Age Groups, Saskatoon Health Region, 2009 to 2013

Figure 2: Male Gonorrhea Rates per 100,000 Population by Selected Age Groups, Saskatoon Health Region, 2009 to 2013

Source: iPHIS
Gonorrhea Rates and Cases by Gender
Saskatoon Health Region, 2004 to 2013

Highlights

- Gonorrhea rates have risen and fallen cyclically in the Region over the past ten years (Figure 3).
- Female and male gonorrhea rates have been fairly equal over time. The female gonorrhea rate was 65.9 per 100,000 in 2013, an increase of 58% from 2012. The male rate was 57.2 in 2013, an increase of 15% (Figure 3).
- The number of gonorrhea cases in females and males was 111 and 96 respectively in 2013 (Figure 4).

Figure 3: Gonorrhea Rates per 100,000 Population by Gender, Saskatoon Health Region, 2004 to 2013

![Gonorrhea Rates Graph]

Figure 4: Gonorrhea Cases by Gender, Saskatoon Health Region, 2004 to 2013

![Gonorrhea Cases Graph]

Source: iPHIS
Highlights

- New sexual partners and use of alcohol/drugs are leading transmission risks associated with gonorrhea among both males and females (Figures 1 and 2).
- While more than two partners in the last three months is a commonly reported risk for both females and males, unknown/anonymous partners are a risk reported more frequently in infected males than females (Figure 2).
- Unprotected sex with the same sex and partners who met through the Internet are reported more frequently in males with gonorrhea than females (not shown).

Figure 1: Top Five Reported Female Gonorrhea Transmission Risks, Saskatoon Health Region, 2013

Figure 2: Top Five Reported Male Gonorrhea Transmission Risks, Saskatoon Health Region, 2013
Why Is This Important?
Syphilis is a sexually transmitted infection (STI) spread through direct contact with a painless syphilis sore or rash through unprotected sex. Syphilis can also be transmitted from a pregnant woman to her baby during pregnancy or childbirth and, if left untreated, causes birth defects or death to the fetus. Untreated syphilis leads to organ damage and may cause death.

Infectious syphilis, reported here, includes primary, secondary or early latent syphilis cases (See About the Data).

What Is Being Done?
What's Being Done In Saskatoon Health Region to Reduce STIs and Bloodborne Illness?

To Learn More:
Chief Medical Health Officer’s Call to Action

Highlights
After a period of decline syphilis rates are increasing again in the Region.

- Infectious syphilis rates in Saskatoon Health Region have been lower than national rates historically and lower than provincial rates in the past four years (Figure 1).
- The Region’s 2013 infectious syphilis rate was 1.2 per 100,000 in 2013, a doubling since the previous year (Figure 1).
- The leading transmission risks for infectious syphilis since 2009 were new sexual partners, anonymous partners and unprotected sex between men (Figure 2).
- Of the total infectious cases reported since 2009, nine out of ten individuals were male. Two thirds of infected males were under thirty years of age (not shown).
- Reports of non-infectious (late latent) cases exceed infectious syphilis cases. See percentage syphilis by stage of disease.

Figure 1: Infectious Syphilis Rate per 100,000 Population, Saskatoon Health Region, Saskatchewan, and Canada, 2002 to 2013

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CAN</td>
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<td>2.9</td>
<td>3.5</td>
<td>3.3</td>
<td>4</td>
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<td>3.4</td>
<td>2.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: PHAC, iPHIS

Figure 2: Number of Reported Infectious Syphilis Transmission Risks, Saskatoon Health Region, 2009 to 2013

New partner within the last 3 months  
Unprotected sex between men  
Unknown/Anonymous Partner  
Alcohol/Drug use  
Internet partnering (specify which website)  
Previous STI  
More than 2 partners in the last 3 months  
Sex with a known STI case  
Casual sex while travelling outside Canada  
Street Involved/Homeless  
Sex with a sex trade worker

Source: iPHIS
Syphilis by Disease Stage
Saskatoon Health Region, 2009 to 2013

Highlights

- A total of 45 new cases of syphilis, including infectious and non-infectious cases, have been reported since 2009.
- Syphilis is reported by stage of the disease. Infectious syphilis includes primary, secondary and early latent infection. Non-infectious syphilis are late-latent cases. Late-latent cases receive treatment if they have not already been successfully treated. Figure 1 shows the majority of syphilis cases in the past five years (60%) was non-infectious late-latent infections, and did not pose a risk for ongoing transmission at the time of diagnosis.
- Less than one in five of the total cases reported (18%) were primary infections, detected at the earliest stages of the disease.
- Secondary and early latent cases are infectious cases that have gone undetected beyond the primary stage. The proportion of infectious cases that are secondary or early latent infections (more than half of all infectious cases) is an important indicator of delayed diagnosis and ongoing transmission in the community. The longer the period between early (primary) infection and the secondary or early latent stage, the more likely infection is to be transmitted to other individuals (up to one year).

Figure 1: Percent Syphilis Cases by Disease Stage, Saskatoon Health Region, 2009 to 2013

Source: iPHIS
What’s Being Done in Saskatoon Health Region to Reduce STIs and Bloodborne Illness?

Service Delivery
- To streamline STI testing, the Region implemented a urine drop-off service for asymptomatic clients. The Region is also exploring an express test option to include a blood test, along with urine sample. Continue to offer standard service by drop-in and booked appointment.
- Initiated, as a standard work, testing for blood borne illness in conjunction with all STI testing (as per client consent).
- Implemented a service plan to meet the educational and STI testing needs of youth who are residing in Kilburn facility.
- Implemented a service plan to offer testing services, along with an educational session to all youth at Yarrow Facility.
- Delivered HIV social case management programming to link engage and retain new HIV cases to early care/treatment and ongoing care.
- Increased testing sites for STIs and blood borne illness by initiating services to Methadone clinic at Mayfair, Friendship Inn, second clinic at Saskatoon correctional Centre (SCC) as well as a service to Urban Camp at SCC.

Quality Improvement
- Incorporated LEAN principles to STI clinical service to improve clinic infrastructure efficiencies as well as key messaging to standardize appointments and increase clinic capacity for STI service provision.
- Collected and analyzed home visiting data to establish priority STI visits as well as identify visit outcomes, which correlate with improved STI testing and treatment completion (ie: letter left, demographics confirmed, invited to clinic)
- Developed syphilis care planning tools and follow up letters to improve syphilis care management.
- Developed an alternate engagement plan for new HIV cases who were resistant to linking for care and treatment. New model based on behavior change principles and motivational interviewing to try and link with a supportive agency (of the clients choice) as a starting point.

Health Promotion and Protection
- Provided detailing to identified primary care providers to promote concurrent HIV testing with all STI testing services. ( Detailing done by Medical Health Officer and Nurse Clinician).
- Participated in identifying and providing free condoms and condom dispensers to community agencies/organization who provide service and support to individuals who are at increased risk for STIs.
- Developed a STI testing services trifold business card to inform clients of Saskatoon STI testing locations, services and associated informational websites. (Population and Public Health Sexual Health Clinic, Sexual Health Centre, Avenue Community Centre)

Enhanced Surveillance and Monitoring
- Collected and analyzed data reflecting the timeliness of STI reports received from primary care providers. New strategies have been implemented, with a goal to improve STI reporting timelines and therefore, earlier follow up of STI cases and contacts
- Delivered enhanced surveillance and contact tracing to newly reported Hepatitis C clients.
- Participated in the Enhanced Hepatitis Strain Surveillance System Study to learn more about Hepatitis B and Hepatitis C epidemiology.
- Participated in the Enhanced HIV Surveillance Study which to understand the contributing factors for HIV infection and to identify service gaps.
Definitions

Selected Risk Definitions

- Sex with a known STI case: Sexual contacts of individuals with STI infection are commonly tested and treated as part of standard contact tracing follow up. The risks of these contacts once they become cases is “sex with a known STI case” and does not infer the individual was aware their partner had an STI at the time of intercourse.
- Spent time in Jail (Proxy): incarceration is a proxy for other high risk behaviours.
- Sexual Contact with Confirmed Case: risks for contacts to cases who are tested as part of contact tracing and found positive as above (sex with a known STI case).

Co-infectivity

- HIV was reported non-nominally until 2009. After 2009 individuals with HIV can be linked to hepatitis C reports since 2005, including the case status of confirmed, previously reported and cases transferred and counted in other Health Regions. This does not completely capture hepatitis C status that was reported elsewhere or earlier than 2005, so the hepatitis C co-infection percentage published here should be considered an underestimate.
- Tuberculosis co-infection includes only infection reported after or at the same time as HIV infection was reported. It does not include tuberculosis that was reported in another Health Region and therefore should be considered an underestimate.

HIV Mortality

- Population and Public Health receives notification of death for HIV and AIDS. Causes of death in HIV infected individuals are often complex, and contributing factors may be incompletely reported. The metrics presented here do not attempt to differentiate if HIV infection was a contributing factor.
- Age at mortality is reported by the age at which individuals were first reported, not age at death.

Risk frequencies

- Information about risk exposures are self-reported in Saskatchewan. For infections other than HIV, risk frequencies are reported by the number of times the risk was reported over the years stipulated. Risk categories are those listed verbatim in PHIS. Multiple risks are reported for the same individuals where numbers (frequency) is presented. HIV is reported by primary risk only. The primary risk is determined by a hierarchy of risks and assigns the most likely route of transmission, for example, where an individual reports both heterosexual sex and injection drug use, the most likely route of transmission is injection drug use.
Calculations

Crude rates are presented. Case counts are divided by covered population and multiplied by 100,000. Regional rates are based on case counts by encounter date (lab reported date) divided by Covered Population. Cases with confirmed case status only are counted. Residence at time of testing is used to assign the Regional Health Authority who reports and follows up the case. The Ministry of Health reviews STIs and hepatitis C cases to ensure no double counting occurs between Regional authorities.

Sources


Limitations

Case counts and rates do not include First Nations individuals living on reserves at the time of testing. These cases are reported to FNIH (First Nations & Inuit Health). Covered populations include Reserve populations, however these numbers are not removed from the population estimates, as many individuals registered on reserve live off-reserve at the time of testing. This may result in a very slight underestimate of true rate of infection.

In 2011 the Region changed annual counts to counts by encounter date for STIs from counts by diagnosis status date, used in previous years. This may result in slight changes in annual counts given in previous reports. Occasionally cases reported in a given year are found to belong to another RHA or vice-versa; this can also result in a change of annual counts of cases.

In 2011 significant changes were made to the risk categories in iPHIS, including inactivations of formerly used risk categories, making this data unavailable in data extracts. This may result in miscounts of risk frequencies for some STIs before 2011.

Interpretation of rates

Factors influencing the testing, diagnosis and reported rates include physician screening practices and testing methods, patient access to testing, education and awareness of symptoms and risks, competing priorities of daily life. The upward trend of STIs nationally and internationally since the 1990s in part reflects the expansion of screening efforts and increased use of more sensitive diagnostic tests as well as an actual increase in infections (Centers for Disease Control and Prevention: [http://www.cdc.gov/std/stats05/trends2005.htm](http://www.cdc.gov/std/stats05/trends2005.htm) accessed July 2014).

References