**Why Is This Important?**
The HIV test is a simple blood test. When people know their HIV status, they can get the treatment they need to stay healthy and avoid passing HIV on to others. The only way to know your HIV status is to get tested.

In Saskatoon Health Region, HIV testing is ordered by health care providers in primary care clinics, prenatal care clinics, physician offices, community health centres, sexual health clinics, and hospitals.

Expanding testing and screening practices and introducing new rapid tests (point of care or POC tests) allows early identification of HIV before disease has progressed. Early antiretroviral treatment improves health outcomes and allows HIV to be managed as a chronic disease. With treatment, it is possible to live a long and healthy life with HIV.¹

**References:** [About the Data](http://www.communityview.ca)

---

**What Is Being Done?**

[Saskatchewan and Regional HIV Strategies](http://www.communityview.ca)

[HIV Strategy 2013 Annual Report](http://www.communityview.ca)

[Front Line Testing Prevention Success](http://www.communityview.ca)

**To Learn More:**

[Call to Action](http://www.communityview.ca)

[It’s Different Now--Government of Saskatchewan video](http://www.communityview.ca)

[HIV Testing](http://www.communityview.ca)

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**Highlights**

* More people are getting tested for HIV than ever before.

- The Region conducted 24,414 HIV blood tests in 2013, a 50.3% increase over testing volumes in 2011 (Figure 1).
- Twenty two percent of tests were done by prenatal care providers (5366 tests), 11% were offered to high risk populations (2760 tests) by Population and Public Health and selected testing sites (About the Data), and 67% were done by other health providers (16288 tests) in 2013 (Figure 1, and HIV Prenatal Testing and Babies Born to HIV Positive Mothers).
- Since 2011, testing for high risk populations increased by 28% for standard tests and 12% for point of care (POC) tests (Figure 2). In 2013, 21% of tests for high risk populations were POC tests (582 tests).
- A total of 1162 male and 1052 female HIV tests in high risk populations were done in 2013, an increase of 125% over 2011 high risk test volumes totals for both genders (Figure 2).
- The percent of positive tests in high risk populations has decreased from 3.5% in 2009 to 1.1% in 2013 (Figure 2).

---

**Figure 1: HIV Tests, Saskatoon Health Region, 2011 to 2013**

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other HIV testing</td>
<td>14272</td>
<td>14641</td>
<td>16288</td>
</tr>
<tr>
<td>POC tests</td>
<td>264</td>
<td>305</td>
<td>582</td>
</tr>
<tr>
<td>High risk population*</td>
<td>1700</td>
<td>2022</td>
<td>2178</td>
</tr>
<tr>
<td>Prenatal screens</td>
<td>3546</td>
<td>4977</td>
<td>5366</td>
</tr>
<tr>
<td>Total Tests</td>
<td>16,236</td>
<td>21,945</td>
<td>24,414</td>
</tr>
</tbody>
</table>

---

**Figure 2: HIV Tests* for High-Risk Populations, Saskatoon Health Region, 2011 to 2013**

*Standard & POC tests combined by Population and Public Health, Saskatoon Health Region

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female tests</td>
<td>487</td>
<td>700</td>
<td>1052</td>
<td>1622</td>
<td></td>
</tr>
<tr>
<td>Male tests</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
<td>3.5</td>
</tr>
<tr>
<td>Percent female positive</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Percent male positive</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Overall positivity</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: Population and Public Health, Saskatchewan Disease Control Laboratory

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**Visit**

[pho@saskatoonhealthregion.ca](mailto:pho@saskatoonhealthregion.ca) | 306.655.4679

For more information: [www.communityview.ca](http://www.communityview.ca)
Why Is This Important?
Prenatal testing is key to identifying mothers at risk of transmitting HIV to their infants. Prenatal testing ensures mothers know their HIV status, are aware of the appropriate treatment to remain healthy, and ensures anti-retroviral treatment will be part of their birth plans.

As rates of HIV have increased in Saskatchewan, the number of HIV positive women in childbearing years has also increased. Perinatal, or mother-to-infant, transmission of HIV is preventable if mothers receive adequate prenatal care and HIV antiretroviral treatment during labour and delivery.

What Is Being Done?
Saskatchewan and Regional HIV Strategies
HIV Strategy 2013 Annual Report
Front Line
Pediatric Care
Formula Program
Prenatal support
Monitoring baby
Child Apprehensions

To Learn More:
Call to Action
Luvynn’s Story: A personal story of living with HIV in our Region.
It’s Different Now: Government of Saskatchewan video

Highlights
Prenatal care and treatment has prevented perinatal HIV transmission since 2012.

- More women are being screened for HIV during pregnancy. Prenatal testing increased by 51% between 2011 and 2013 (Figure 1).
- Prenatal testing increased from 10.5% of the total HIV tests in 2011 to 22% in 2013 (Figure 2). For overall HIV by testing sector see HIV testing.
- Since 2004, three cases of perinatal HIV transmission were reported. There have been no cases of perinatal transmission since 2011 (not shown, About the Data for reporting parameters).
- Sixty-one babies were born to HIV positive mothers between 2009 and 2013 in Saskatoon Health Region. This represents about half of all the babies born to HIV mothers in Saskatchewan (not shown).
- Of the 13 babies born to HIV positive mothers in 2013, 84.6% received prenatal care and 92.3% received antiretroviral treatment (ARV) (Figure 2).

Figure 1: Prenatal Tests and Percentage of Total HIV Testing, Saskatoon Health Region, 2011 to 2013

Figure 2: Babies Born to HIV Positive Mothers, Saskatoon Health Region, 2009 to 2013
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. 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 Illness2; Saskatchewan and Regional HIV Strategies

HIV Front Line

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:

Bloodborne Infection – Human Immunodeficiency Virus (HIV)

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>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>5.6</td>
</tr>
<tr>
<td>2005</td>
<td>13.5</td>
</tr>
<tr>
<td>2006</td>
<td>18.2</td>
</tr>
<tr>
<td>2007</td>
<td>19.6</td>
</tr>
<tr>
<td>2008</td>
<td>25.8</td>
</tr>
<tr>
<td>2009</td>
<td>31.3</td>
</tr>
<tr>
<td>2010</td>
<td>24.6</td>
</tr>
<tr>
<td>2011</td>
<td>20.7</td>
</tr>
<tr>
<td>2012</td>
<td>17.0</td>
</tr>
<tr>
<td>2013</td>
<td>12.8</td>
</tr>
</tbody>
</table>

SHR: Saskatoon Health Region, SK: Saskatchewan, Canada: national rate

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>
<th>Male rates</th>
<th>Female rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>32</td>
<td>11</td>
<td>19.1</td>
<td>6.5</td>
</tr>
<tr>
<td>2005</td>
<td>32</td>
<td>11</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>32</td>
<td>11</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>32</td>
<td>11</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>32</td>
<td>11</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>32</td>
<td>11</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>32</td>
<td>11</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>32</td>
<td>11</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>32</td>
<td>11</td>
<td>6.5</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>32</td>
<td>11</td>
<td>6.5</td>
<td></td>
</tr>
</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
**Why Is This Important**
Understanding risks helps us understand how HIV is spread in the community. Risks are self-reported. Primary risk is the risk behavior most likely to be responsible for HIV transmission.

Age influences human behavior, especially sexuality and lifestyle. Attitudes towards risk and disease prevention that are influenced by age may increase risk for HIV transmission.

Adolescents who contract HIV may be vulnerable socially and economically. A growing body of research reveals a link between violence and young people’s risk for HIV. In 2009, the Saskatoon Enhanced Street Youth Study found that 5% (one in 20) of street-involved youth were HIV positive. Discomfort and stigma were the second most frequently reported barriers to youth accessing health services, after location of service.

References: [About the Data](#)

**What Is Being Done?**
- Saskatchewan and Regional HIV Strategies
- HIV Strategy 2013 Annual Report
- [Front Line](#)

**To Learn More:**
- [Call to Action](#)
- Maggie’s Story: A personal story of HIV and the sex trade in our Region.
- [Front Line – Diagnosis Stigma](#)

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**Highlights**

Risks for HIV transmission change with age.

- Of the 333 HIV cases reported since 2009, injection drug use (IDU) was the most common primary HIV transmission risk for all age groups (Figure 1, and [HIV Transmission Risk](#)).
- Over half of adolescents reported injection drug use as the primary risk, followed by heterosexual sex and male sex with men (Figure 1).
- Among individuals whose primary risk was injection drug use, more than half were over the age of 30 when first reported (Figure 2). Men over 30 also comprised three quarters of the primary risk group reporting male sex with men.
- Heterosexual sex was the primary risk reported by individuals aged 60 and over (Figure 1).
- Since 2004, 14 HIV cases have been reported in children younger than 18 years of age; 3 were infants at the time HIV was reported and the remaining were adolescents aged 14 to 17 (see Pediatric HIV below).
- HIV rates for both males and females are highest among 30 to 39 year olds (HIV by Gender and Age Group).

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**Figure 1:** Age Group by Primary HIV Transmission Risk, Saskatoon Health Region, 2009 to 2013*

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Injection Drug Use</th>
<th>Male Sex with Men</th>
<th>Heterosexual Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>60+ yrs</td>
<td>1%</td>
<td>1%</td>
<td>11%</td>
</tr>
<tr>
<td>45-59 yrs</td>
<td>22%</td>
<td>24%</td>
<td>27%</td>
</tr>
<tr>
<td>30-44 yrs</td>
<td>53%</td>
<td>35%</td>
<td>39%</td>
</tr>
<tr>
<td>&lt;18 yrs</td>
<td>18-29 yrs 5%</td>
<td>18-29 yrs 5%</td>
<td>30-44 yrs 18-29 yrs 23%</td>
</tr>
</tbody>
</table>

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*<18 years data 2004 to 2013*
Why Is This Important?
Pediatrics encompasses children under 17 years of age. Children represent one of our most vulnerable age groups. Children infected with HIV will require life-long treatment and monitoring. Children of all age groups face stigmatization.

Adolescents who contract HIV may experience special challenges. Adolescents continue to be vulnerable socially and economically. A growing body of research reveals a link between violence and young people’s risk for HIV. Sex and age influence risk behavior. In 2009, the Saskatoon Enhanced Street Youth Study found that 5% (one in 20) of street-involved youth were HIV positive. Discomfort and stigma were the second most frequently reported barriers to youth accessing health services, after location of service.

References in About the Data

What Is Being Done?
Saskatchewan and Regional HIV Strategies
HIV Strategy 2013 Annual Report
Front Line - Pediatric Care

To Learn More:
A Call to Action
Maggie’s Story: A personal story of HIV and sex trade by a person living with HIV in our Region.
Front Line - Stigma with Child HIV

Highlights
Since 2004 three out of four children with HIV were between 14 and 17 years old when diagnosed.

- Fourteen HIV positive children were reported from 2004 to 2013 (under 18 years of age). Sixty-four percent were female (not shown).
- Half of the children were in the 16 to 17 year-old age group at the time of HIV diagnosis, 29% were 14 to 15 years old, and 21% were infants at diagnosis (Figure 1).
- Twenty-one percent of all children, and 100% of all infants (<1 year) acquired HIV through mother to child transmission (perinatal infection) (Figure 1 and 2, HIV-Prenatal testing and Babies Born to HIV Positive Mothers).
- Half of 14 to 15 year-olds and 71% of 16 to 17 year olds reported injection drug use as the primary transmission risk (Figure 2, see Primary Risk by Age above).
- Fifty percent of 14 to 15 year-olds and 14.3% of 16 to 17 year olds reported only heterosexual sex as a transmission risk factor (Figure 2).
- Fourteen percent of 16 to 17 year-olds reported male sex with men (Figure 2).

Figure 1: Pediatric HIV by Age Group at Diagnosis, Saskatoon Health Region, 2004 to 2013

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1 yr</td>
<td>21%</td>
</tr>
<tr>
<td>14-15 yrs</td>
<td>29%</td>
</tr>
<tr>
<td>16-17 yrs</td>
<td>50%</td>
</tr>
</tbody>
</table>

Figure 2: Pediatric HIV by Primary Transmission, Saskatoon Health Region, 2004 to 2013

<table>
<thead>
<tr>
<th>Transmission Type</th>
<th>16-17 yrs</th>
<th>14-15 yrs</th>
<th>&lt;1 yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perinatal infection</td>
<td>71</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>IDU</td>
<td>14</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Heterosexual sex</td>
<td></td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>MSM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: iPHIS

For more information: www.communityview.ca
Why Is This Important?
Without treatment, HIV infection will progress to AIDS, a condition defined by certain illnesses.1 AIDS has declined steadily in Canada since 1993, largely as a result of highly active antiretroviral therapy (HAART) in 1996.

Mortality in HIV positive individuals is not necessarily directly attributed to HIV infection or AIDS. The complications leading to death may be complex, and are incompletely reported (About the Data).

Many factors influence AIDS and HIV mortality rates including late diagnosis, late treatment, non-adherence to antiretroviral treatment, age, comorbidities, and ongoing risk behaviors. Age group and ethnicity may be markers of economic status, risk behaviors, awareness of treatment options, access to culturally sensitive health care, and cultural beliefs about illness.5,13 In 2012, 19.2% of all AIDS cases in Canada were reported in Saskatchewan.5,6 AIDS is preventable and should not occur in people engaged in care.

References in About the Data

What Is Being Done?
Saskatchewan and Regional HIV Strategies
HIV Strategy 2013 Annual Report
The Front Line

To Learn More:
Call to Action

Highlights
AIDS has increased in the Region. Since 2005 more than one in every ten HIV positive individuals has died.

- The rate of AIDS is increasing in Saskatchewan, due in part to better reporting practices (About the Data). The AIDS rate in Saskatoon Health Region decreased in 2013 but remains higher than the provincial rate (Figure 1).
- A total of 17 AIDS cases were reported in the Region in 2013 (Figure 1). Since 2005, 67 cases of AIDS have been reported in the Region.
- More than 1 in 5 (21.4%) AIDS cases were diagnosed within one month of HIV diagnosis, indicating advanced disease (HIV Treatment). The median time from HIV diagnosis to AIDS diagnosis was one year (About the Data).
- Of the 558 new cases of HIV reported between 2005 and 2013, 13% (75) are deceased (About the Data). Thirty of these deaths were individuals with AIDS. For the past three years, approximately 12% of newly reported cases each year were deceased within one year of diagnosis (not shown).
- Mortality among HIV positive individuals reflects the epidemiology of HIV infection. Over half of the deaths were individuals 30 to 44 years old (Figure 2), and 63% were First Nations (Figure 3) Social Determinants of HIV and AIDS-Ethnicity and Gender.
Why Is This Important?
Ethnicity influences the socially determined circumstances in which people are born, grow, live, work and age. Ethnicity has an important influence on health status and health seeking behaviours. Ethnicity affects social position in our society through factors such as racism, discrimination, oppression and poverty, all of which contribute to conditions that lead to higher disease rates and poorer health outcomes. Ethnicity may be a marker of economic status, risk behaviors, awareness of treatment options, access to culturally sensitive health care, and cultural beliefs about illness.12,13,14

References: About the Data

What Is Being Done?
Saskatchewan and Regional HIV Strategies
HIV Strategy 2013 Annual Report
Front Line

To Learn More:
Call to Action
Cultural Considerations
Front Line
Treatment Coverage
Diagnosis Stigma
Transportation
Provincial HIV Awareness Campaign
HIV testing

Highlights
Almost seven in every ten newly reported HIV and AIDS cases since 2009 were First Nations and Métis individuals. Proportions are decreasing.

- Of the 333 new cases of HIV reported from 2009 to 2013, 57% were First Nations, 21% were White (Caucasian), 12% were Métis, and 3% were other ethnicities (Figure 1).
- More HIV positive females were First Nations (70%) or Métis (12%) than males (49% and 11%). More males (28%) than females (11%) were White (not shown).
- Of the 67 cases of AIDS reported since 2009, 55% were First Nations, 22% were White, 9% were Métis, and 2% were Black (African) (Figure 2).
- More females with AIDS were First Nations (64%) or Métis (11%) than males (49% and 8%). More males with AIDS cases were White (31%) than females (11%) (data not shown).
- Overall, the percentage of First Nations and Métis HIV positive individuals has decreased slightly since 2009, and the percentage of White cases has increased. The percentage of other ethnicity has also increased (Figure 3).

Figure 1: HIV by Ethnicity, Saskatoon Health Region, 2009 to 2013

Figure 2: AIDS by Ethnicity, Saskatoon Health Region, 2009 to 2013

Figure 3: Percent Newly Reported HIV Cases by Ethnicity, Saskatoon Health Region, 2009 to 2013

Source: iPHIS
Why Is This Important?
 Gender influences human behavior, especially sexuality and lifestyle. Attitudes towards risk and disease prevention that are influenced by gender may increase risk for HIV transmission.

Gender norms related to masculinity or femininity may influence the number of sexual partners, stigma around testing, homophobia, fear of violence, and other characteristics that put people at risk for HIV. 9,11

When multiple risks are reported, some risk behaviours are more likely to be responsible for HIV transmission than others. Primary risk is the risk behavior most likely to be responsible for HIV transmission.

Primary transmission risk gives important clues about how the infection is spreading in the population and what factors will support prevention and treatment. For example, when injection drug use is the main transmitter, prevention measures focus on harm reduction programming in order to reduce sharing of contaminated needles, and addictions treatment becomes part of prevention work.

References: About the Data

What Is Being Done?
 Saskatchewan and Regional HIV Strategies
 HIV Strategy 2013 Annual Report
 Front Line

To Learn More:
 Call to Action
 Provincial HIV Awareness Campaign
 HIV testing

Almost half of female AIDS cases are younger than 30.

- Of the 333 HIV cases reported since 2009, injection drug use (IDU) was the most common primary HIV transmission risk for both females (83%) and males (68%) (Figure 1, HIV Transmission Risk).
- Male sex with men was the primary risk for 10% of male cases (Figure 1).
- Since 2009, 28 females and 39 males have been reported with AIDS (not shown).
- A greater proportion of young women 18 to 29 years old have been reported with AIDS; almost half of female AIDS cases are younger than 30 compared to 13% of males (Figure 2). Eight percent of male AIDS cases are 60 years or older.
- Since 2004, 14 HIV cases have been reported in children younger than 18 years of age. Sixty-four percent were female (HIV Risk by Age).
- HIV rates have decreased more rapidly for females than males since 2009 (HIV Rates and Cases by Gender).
- Multiple risks show HIV is a risk in sex trade workers of both genders. Past history of sexually transmitted infection also confers risk (Risk Frequencies by Gender).

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

Figure 2: AIDS by Age Group and Gender, Saskatoon Health Region, 2009 to 2013

Source: iPHIS
Multiple HIV Transmission Risks by Gender
Saskatoon Health Region, 2013

Highlights

- **Primary risk** identifies the most likely transmission risk. Most HIV positive persons have multiple risks. Figures 1 and 2 show the frequency of specific risks reported in 237 female and 327 male HIV positive individuals in our Region between 2005 and 2013.
- Twelve percent of females (28) and 5% of males (16) reported sex trade work (Figures 1 and 2), indicating risk in heterosexual and male sex with men (MSM) populations who access the sex trade. The frequency of this reported risk also indicates vulnerable individuals living with HIV relying on the sex trade to meet daily needs.
- Almost one in 10 females (9%) and one in 20 males (5%) reported a history of STIs. This shows the importance of testing for HIV in combination with other STIs.
- Twenty six percent of females (62) and 32% of males (106) indicated sexual contact with persons confirmed or suspected of being HIV positive, suggesting dependencies and vulnerabilities for individuals who are unable or unwilling to protect themselves.

![Figure 1: Female HIV Transmission Risks, Saskatoon Health Region, 2005 to 2013](image)

![Figure 2: Male HIV Transmission Risks, Saskatoon Health Region, 2005 to 2013](image)

Source: iPHIS
Why Is This Important?
The clinical management of HIV infection involves a spectrum of care from testing and diagnosis to linkage, engagement and initiation of antiretroviral therapy through to successful treatment and retention in care. This spectrum of care is often referred to as the HIV “treatment cascade.” The viral load (vL) test measures the amount of HIV in blood by counting the number of copies of the virus. HIV is monitored by taking vLs and CD4 blood tests at intervals throughout ongoing treatment. CD4 cells are a type of white blood cell that fights infection. Low CD4 levels (< 200 copies per mL) are important predictors of acquired immunodeficiency syndrome (AIDS) and its complications, including death.

Effective antiretroviral therapy reduces vL to undetectable levels, maintains high CD4 cell levels, and also reduces the transmissibility of HIV. This means people can live healthier lives with HIV. Scaling up early antiretroviral therapy has thus been proposed as a strategy to lower the number of new HIV infections at the population level.

References:  
About the Data

What Is Being Done?

Saskatchewan and Regional HIV Strategies
HIV Strategy 2013 Annual Report
Front Line
HIV Case Management
Clinical Care
Nursing Care

To Learn More:
Call to Action
Luvlynn’s Story: A personal story of living with HIV in our Region.

Highlights
More HIV positive patients are receiving effective treatment, but many are diagnosed late, with advanced disease.

- The cumulative percentage of HIV positive patients with undetectable viral loads (vL) has increased since 2011. By the end of 2013, 35.2% of all new HIV patients diagnosed since 2011 had suppressed vL (Figure 1), representing 50 individuals in total.
- One third of patients (33.3%) had initial CD4 cell counts of 500 or more, an increase over the previous two years (Figure 2). This trend indicates that a slightly greater proportion of individuals are being diagnosed with HIV while they are still healthy.
- Nearly one in four (23.8%) patients’ initial CD4 level was < 200 in 2013, indicating advanced disease at the time of diagnosis. This was a slightly lower percentage than in the two previous years (Figure 2), but is still high.
- With treatment, the percentage of HIV positive patients with low CD4 levels has decreased (see About the Data). In mid-2014, 16.2% of patients diagnosed in 2013 had a CD4 level < 200 (Figure 2).
- Thirty eight of 43 (88.4%) new HIV patients reported in 2013 were linked to care within three months of diagnosis, compared to 60.7% in 2011. Sixty-five percent of new HIV patients reported in 2011 and 69.4% reported in 2012 were retained in care 16 months after diagnosis (HIV Care Cascade).

Figure 1: Cumulative Percent of HIV Positive Patients with Undetectable vL*, Saskatoon Health Region, 2011 to 2013

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Patients</th>
<th>Percent of Total Patients (Cumulative)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

*Most recent vL as measured by end of December for each calendar year

Figure 2: Initial and Current** CD4 Cell Count Test Results by Year of HIV Diagnosis, Saskatoon Health Region, 2011 to 2013

** Current as measured July 2014

Source: Population and Public Health

For more information:  
www.communityview.ca
Linkage to care for new cases of HIV is a key indicator that measures the beginning of the HIV treatment cascade (About the Data). Of the persons newly reported HIV positive in 2013, 88.4% were linked to care (accessed medical care through clinic or hospital) within three months of diagnosis. The absolute percent increase since 2011 was 27.7% (Figure 1). Thirty-eight of the 43 newly reported HIV positive individuals were linked in 2013.

Engagement in care (accessed medical care twice and having two repeated blood tests within six months) is also monitored. Sixty-two percent (61.9%) of patients diagnosed in 2013 were engaged in care within six months of diagnosis, an improvement of 25% from 2011.

Of the newly reported clients in 2012, 69.4% were retained in care (accessed medical care three times and had multiple tests) within 16 months of diagnosis. This represents an absolute increase of 4.2% from the percentage in 2011. Thirty-four of the 49 eligible clients diagnosed in 2012 were retained in care (latest complete year at the time of this report).

See Front Line - Case Management for the story behind Link, Engage & Retain.

Figure 1: Care Cascade for Newly Reported HIV Positive Individuals by Year of Diagnosis, Saskatoon Health Region, 2011 to 2013

*2013 data for Retention to Care are unavailable at time of this report

Source: Population and Public Health
Why Is This Important?
Housing is a basic human need and has a significant impact on health. Lack of safe and adequate shelter, overcrowding, substandard dwellings, and homelessness can increase stress, social exclusion, and cause physical and mental illness which contribute to higher disease rates and poorer health outcomes. Without appropriate housing, people living with HIV and AIDS often cannot make healthcare a priority. Having a fixed address allows individuals to communicate for medical appointments, receive referrals and social supports, store and keep their medications in a private space, and receive adequate rest. Many patients with HIV and AIDS require home care after hospitalization for illness and having a home to return to is a prerequisite to receiving appropriate care during recovery.

References in About the Data

What Is Being Done?
Saskatchewan and Regional HIV Strategies
HIV Strategy 2013 Annual Report
Front Line
Case Management
Social work support
Multi-million dollar federal investment in housing
CumFi- New housing

To Learn More:
Call to Action
Front Line

The Ripple Effect
Inappropriate Housing
Low Threshold Housing

Highlights
Many HIV positive individuals live in unstable or inadequate housing.

- Forty percent of 94 respondents to questions about housing indicated they had more than one type of housing in the year prior to HIV diagnosis; 6% reported four or more housing types (not shown).
- Twenty-three percent of women and 34% of men did not live in their own apartment or house at the time of HIV diagnosis. More men reported living in a correctional institution (4%) or in a public place (2%) than women (Figure 1).
- Among respondents without their own apartment or house, young adults less than 30 years old were most often living with a parent or relative (60%), while older adults were most often living in a hotel, shelter, or rooming/boarding house (Figure 2).
- Forty-five percent of Métis respondents and 30% of First Nations respondents were not living in their own apartment or house at the time of HIV diagnosis (not shown, HIV Housing at HIV Diagnosis by Ethnicity).

Figure 1: Housing at Time of HIV Diagnosis by Gender, Saskatoon Health Region, 2011 to 2013

Figure 2: Percent of HIV Positive Individuals Without Own Apartment or House at HIV diagnosis by Age Group and Housing Type, Saskatoon Health Region, 2011 to 2013

Source: Population and Public Health, Saskatoon Health Region
A higher proportion of Métis clients were living without their own apartment or house at time of HIV diagnosis than any other ethnicity group.

Métis clients also reported a higher percentage living with parent or relative (36.4%) and in a hotel/shelter or rooming/boarding house (9.1%).

Twelve percent of First Nations clients reported living with a parent or relative, 6.3% with friends/couch surfing, 6.3% in a hotel/shelter/rooming/boarding house, and 2.1% in a public place at time of diagnosis.

Sixteen percent of Other Ethnicity/White (Caucasian) reported housing other than own apartment or house.

Figure 1: Percent Newly Reported HIV Clients by Housing at Diagnosis, Saskatoon Health Region, 2011 to 2013
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.


Despite efforts to improve Aboriginal health, in general, there remain substantial inequities in the health of Aboriginal peoples in Canada compared to the rest of the population. These inequities are due to a combination of economic, political and social disparities that have resulted from the complex history of relations between Aboriginal peoples and Canada.5

Local Geography: Of particular concern within our local geography are the existing health inequities between Aboriginal and non-Aboriginal peoples. Saskatoon has the second highest percentage of Aboriginal residents of all major cities in Canada at just over 9% of the population, and this population is expected to increase. Unfortunately, over 45% of the Aboriginal peoples living in Saskatoon are living in poverty (below the Low Income Cut-Off) and likely in areas of highest deprivation (Q5) where health inequities are most persistent [The Deprivation Index].

A History of Colonization: The colonial legacy is engrained in the identity of Aboriginal Peoples and continues to act as a social determinant of health today. At the core of the colonization experience is the loss of culture, which includes the loss of language, land, resources, spiritual practices, political and personal autonomy. Aboriginal peoples were subjected to a system of forced assimilation that sought to destroy cultural identity through such things as residential schooling. Over 150,000 First Nation, Métis and Inuit children attended these schools between 1857 and 1996. The stress, isolation and abuse that stemmed from residential schools has affected generations of Aboriginal peoples and resulted in problems such as family dysfunction, addictions, homelessness, and violence, all of which contribute to poor health status.

Beyond Poverty: While there is a clear link to poverty and health, studies suggest that the severe health inequities between Aboriginal and non-Aboriginal peoples cannot be solely attributed to socio-economic status (SES) due to the complex history of relations. Individual choices and lifestyles that contribute to health risk behaviours are also unable to account for such inequity. Research suggests that the historical stressors from colonization have led to intergenerational trauma and post-traumatic stress response (PTSR), collectively referred to as historical trauma, throughout the Aboriginal population. Such negative emotional states can have detrimental effects on the immune system and can change behavioural patterns affecting disease risk, leading to a greater burden of physical and mental disease and shortened life expectancy.

Microaggressions: A common form of racism faced by many Aboriginal peoples are microaggressions, “brief and commonplace daily verbal, behavioral, or environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative racial slights and insults toward people of color.” Microagressions are commonly found in our society and many people are often unaware that they use them. Over time, being the target of frequent microagressions can make people more vulnerable to mental health concerns, substance abuse, and alienation.

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1 Within the local context, the term Aboriginal is used to refer primarily to First Nations and Métis peoples, given the geography and demographic composition of Saskatoon Health Region. Nationally, however, the term Aboriginal includes all of Canada’s first peoples including First Nations, Métis, and Inuit peoples.
Institutional & Systemic Racism: Institutional racism involves polices, practices and procedures of institutions that have an unfairly negative effect on racial minorities' access to and quality of services and opportunities. Systemic racism is the value system that is embedded in a society that supports and allows discrimination. These types of racism distort our social and economic systems, including education, health, employment, community, housing, and criminal justice. As such, institutional and systemic racism are a direct cause of poverty. Poverty greatly influences all of the social determinants of health and thus contributes to creating health inequities. While many different population groups face racism, studies suggest, “there is an invisible hierarchy of racism in Canada with Aboriginal people at the bottom of the order and Aboriginal people receive the most intense and frequent racism”.

Health-Seeking Behaviour: The erosion of culture has created ongoing oppression and disempowerment that has silenced the voice of many Aboriginal peoples and adversely affected the way in which they seek out care. Stemming from contemporary institutionalized racism and discrimination, both overt and unconscious, poor communication experiences between Aboriginal peoples and health care providers are common. These experiences often result in distrust of the health care system leading to avoidance of care, reluctance to disclose personal information and reluctance to return.

Looking to the Future
To improve the health of all Canadians we must work to decrease gaps in health, which are particularly concerning among our Aboriginal population. It is clear that the health of Aboriginal peoples is complex. Moving forward, it is important that we consider the collective emotional and psychological injury that has occurred over the lifespan and across generations of Aboriginal peoples when observing the inequities still present in many aspects of Aboriginal health and well-being. Greater understanding of social determinants of health that include the unique experiences of Aboriginal peoples can help facilitate the change that is necessary to overcome persistent health inequities. In addition, we must work in partnership with the full spectrum of First Nations and Métis agencies and organizations to improve health equity and the social determinants of health, as each group has a unique experience that needs to be honoured.

For references, please see: Technical Appendix
Definitions

AIDS
- The diagnosis of AIDS requires diagnosis of one of more AIDS-defining illnesses. For a complete list see [http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5710a2.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5710a2.htm) See Limitations below
- AIDS deaths are measured as of the preparation date of this report, July 2014.

Care Cascade
- The care cascade (sometimes referred to as the treatment cascade) reflects the different services someone living with HIV needs to achieve and undetectable viral load and optimal health outcomes. The cascade begins with counseling and testing, followed by linkage to care, engagement in care and treatment, and long term retention in care with adherence to anti-retroviral treatment. The care cascade indicators used by Saskatoon Health Region does not presently include anti-retroviral treatment.

Linkage to Care
Linkage to care is defined as accessed medical care through physician appointment or hospitalization within 91 days of a new positive HIV lab result.

Engagement in Care
Engagement is defined as two or more medical appointments or care events and two or more CD4 and viral load tests within six months of a new positive HIV lab result. Persons deceased before 6 months and persons never tested are excluded from the numerator and denominator.

Retention in Care
Retention in care is defined as having three or more medical appointments within 16 months of diagnosis, including one appointment one year after diagnosis, and two or more CD4 and viral load tests within 16 months of diagnosis. Persons deceased before 16 months and persons never tested are excluded from the numerator and denominator.

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 necessarily reflect HIV infection as a contributing factor.
- Age at mortality is reported by the age at which individuals were first reported HIV or AIDS positive, not age at death.
Pediatric HIV

- Babies born to HIV positive mothers are followed for 18 months after birth to confirm their HIV status. Perinatal (mother to child) cases of HIV are reported in the year they are confirmed, not in the year of transmission or birth year.

Patient

- Patients denote that the HIV positive person has been the patient of a medical care provider at least once.

Primary Risk Definitions

- Information about risk exposures are self-reported in Saskatchewan. HIV is reported by primary risk. 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.
- Risk frequencies are the number of times the risk was reported over the time period indicated. Multiple risks are reported for the same individuals. Risk categories are those listed in PHIS (see Data Source).

Data Sources

- Population and Public Health (PPH), Saskatoon Health Region
  Enhanced HIV database – housing and clinical data
  Clinic database – high risk population test volumes
- Integrated Public Health Information System (iPHIS) is the provincial database for communicable diseases.
- Saskatchewan Disease Control Laboratory (SDCL): overall test volumes

Rate Calculations and Statistics

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 client to a Regional Health Authority which then reports and follows up the case. Rates and case counts are presented by calendar year.

Averages are presented where normal distribution of scores apply. Median is presented when distribution is not normal and/or counts are small enough to make averages distorted by outlier values.
Test Statistics

- Test volumes from Saskatchewan Disease Control Laboratory for prenatal screens, Population and Public Health and POC are deducted from total SDCL to estimate the relative contribution to overall testing by each sector. Where data from SDCL was missing, data was extrapolated based on available monthly data. For example, SDCL totals did not differentiate prenatal screens until 2012. Prenatal screens for 2011 were estimated based on the percentage of total that were prenatal screens in 2012; this percentage was applied to 2011 totals to estimate the number that were prenatal screens.

- High risk populations are clients seen by Population and Public Health. There may be other high risk clients seen by general practitioners; these are not included in the designation High Risk Populations.

- Point of care test (POC) are offered primarily to high risk populations and include tests by Population & Public Health, West Side Community Clinic (after Jan 2012) and the Sexual Health Center (after Jan 2012)

Co-infectivity Calculations

- HIV was reported non-nominally until 2009. After 2009 individuals with HIV can be linked to hepatitis C reports (data in iPHIS from 2005 to present), including cases confirmed, previously reported and cases transferred and counted in other Health Regions. This does not completely capture hepatitis C status 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.

Housing indicators

- Not all clients reported since 2011 responded to housing questions. Less than five individuals of “Other” ethnicity were reported, so these numbers were added to the White (caucasion) category. Those clients whose ethnicity was missing were removed from the analysis of housing type by ethnicity.

- The number of HIV clients without own apartment or house from 2011 to 2013 was 19 or 23% of total respondents.

Clinical Indicators Calculations

CD4 cell counts

- Most recent CD4 cell count proportions are based on active clients only, and are measured as a point in time in July 2014. Of the 66 cases reported in 2011, 74.2% were active; of the 55 cases reported in 2012 70.9 were active; of the 43 cases reported in 2013 86% were active. Clients are inactive who are deceased, moved out of Region or lost to follow up or refused contact. Of the 39 clients in total that were inactive 49% were deceased and 41% moved out of Region.

- CD4 cell counts ranged from 2 to 1660 in the three year period. Median and average values were compared and were not significantly different; averages are reported here.
Viral Loads (vL)

- HIV vLs are the most recent available viral load at the time specified (end of calendar year for cumulative reporting, and July 2014 for point in time by year of diagnosis).
- Deceased persons and persons without a test are excluded from the denominator. The designation "patient" is used to differentiate between all HIV positive individuals (all newly reported cases since 2011) and those who have tests.
- "Patients" suggests they have received health care and are patients of one or more physicians.
- Viral load categories are suggested by the BC treatment cascade, see http://www.catie.ca/sites/default/files/1030%20-Day%20Workshop%206Monitoring%20Evaluation.pdf, accessed July 2014)

Data Limitations

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 accessed July 2014).

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.

AIDS reporting is improving in recent years but is considered incomplete. While AIDS is a reportable condition some jurisdictions in Canada do not collect and submit data on AIDS to the Public Health Agency of Canada (see reference #4 below). Canadian rates are considered under-reported and are not included in this report.

Linkage & Retention in Care are not adjusted for clients who move out of the Region as the dates of moving out of the Saskatoon Health Region jurisdiction are often unknown.
References


14 Saha, S, Korthuis, PT, Cohn, JA, Sharp, VL, Moore, RD, Beach, MC (2013). Primary care provider cultural competence and racial disparities in HIV care and outcomes. Journal of General Internal Medicine, published online 10 January 2013. DOI:10.1007/s11606-012-2298-8