

HIV and AIDS in Alberta

2011 Annual Report

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Introduction

Acquired Immunodeficiency Syndrome (AIDS) was first recognized in 1981 and became reportable in Alberta in 1983. Human immunodeficiency virus (HIV), the cause of AIDS, became a notifiable disease in Alberta in 1998.

Both AIDS and HIV are often associated with what are considered high risk behaviours. These risk factors include, but are not limited to, unprotected sex for heterosexuals, men who have sex with men, and needle sharing for intravenous drug users. Immigration patterns to our province also affect the number of new cases; foreign workers and refugees from HIV endemic countries (where a disease is present on a continuous basis) can also increase the number of new cases.

Source of all data in this report is from:

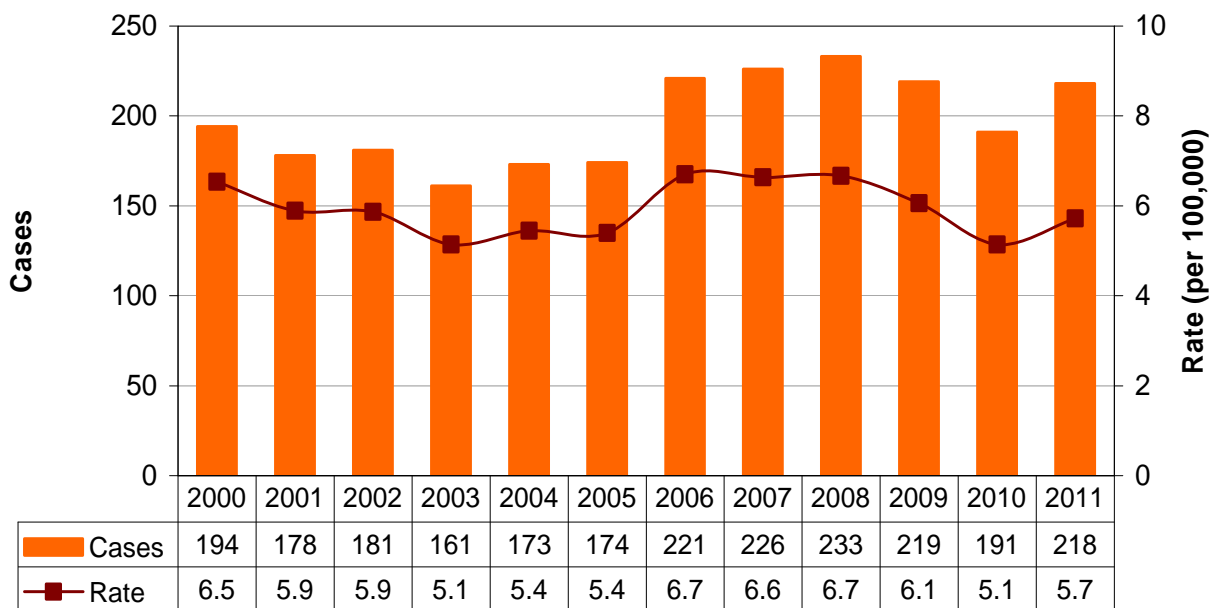
Alberta Health,

- 1) Communicable Disease Reporting System, as of September 5, 2012
- 2) Alberta Health Care Insurance Plan Stakeholder Registry

HIV in Alberta, 2000 to 2011

The number of cases of HIV in Alberta between 2000 and 2011 has ranged between 161 cases per 100,000 persons, with the highest rates in 2006 and 2008. In 2011, the rate of HIV was 5.7 cases per 100,000 persons, the third lowest rate since 2000 (Figure 1). The lowest rate was in 2003 and 2010 with 5.1 cases per 100,000 persons.

Figure 1: Number and Crude Rate of Newly Diagnosed HIV Cases in Alberta by Year of Diagnosis, 2000 to 2011



Gender

Table 1 and Figure 3 below show that the average age of newly diagnosed HIV cases for males ranged from 37 to 40 years while the average age of cases for females has been steadily increasing from 31 to 38 years over the past 12 years.

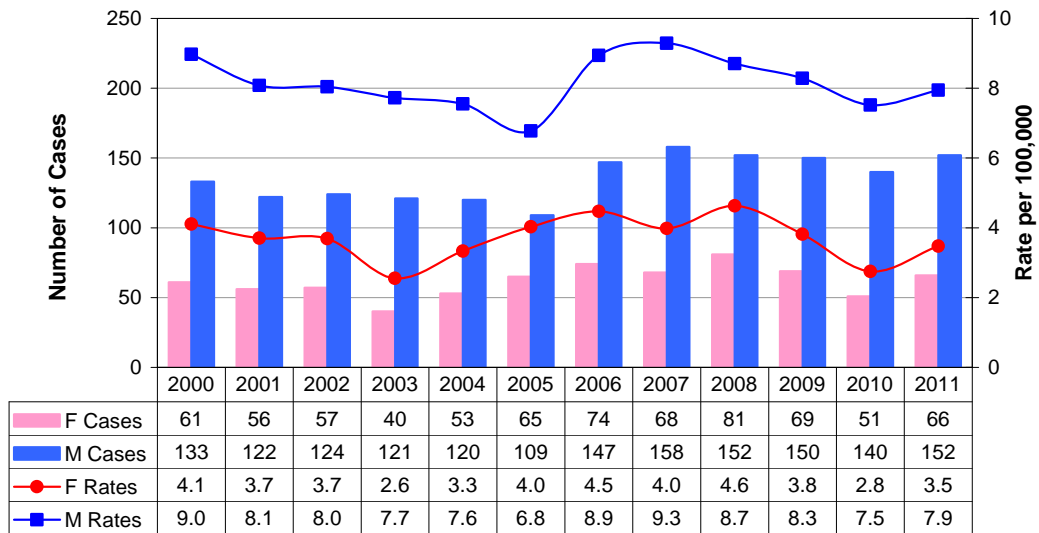
Table 1:

Newly Diagnosed HIV Cases by Age Group & Gender in Alberta by Year of Diagnosis, 2000 to 2011

FEMALE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
<i>Mean</i>	32.7	31.8	33.1	34.5	34.2	34.6	34.1	34.6	35.0	36.0	37.5	35.0
<i>Median</i>	31.0	32.0	33.0	33.0	32.0	33.0	33.0	33.0	34.0	34.0	38.0	35.0
<i>Range</i>	37	39	39	42	61	40	55	59	71	50	62	46
<i>Lowest</i>	18	15	17	18	4	19	1	2	1	17	2	10
<i>Highest</i>	55	54	56	60	65	59	56	61	72	67	64	56
<15	0	0	0	0	1	0	1	3	3	0	1	1
15-19	3	4	4	1	4	1	3	1	4	2	1	3
20-24	10	11	7	7	9	9	6	5	2	7	4	9
25-29	9	9	10	8	3	8	14	12	11	11	8	6
30-39	24	20	25	12	17	27	29	26	39	25	18	28
40-59	15	12	11	11	17	20	21	20	20	21	16	19
60+	0	0	0	1	2	0	0	1	2	3	3	0
ALL AGES	61	56	57	40	53	65	74	68	81	69	51	66
MALE	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
<i>Mean</i>	37.8	38.4	38.8	38.3	40.0	38.0	40.0	40.3	39.2	37.6	38.4	38.9
<i>Median</i>	37.0	37.0	38.0	38.0	39.5	38.0	40.0	40.5	39.5	37.5	38.0	37.0
<i>Range</i>	45	56	47	44	53	46	51	79	74	56	48	79
<i>Lowest</i>	22	19	21	21	21	21	22	1	4	16	15	0
<i>Highest</i>	67	75	68	65	74	67	73	80	78	72	63	79
<15	0	0	0	0	0	0	0	1	1	0	0	2
15-19	0	1	0	0	0	0	0	1	1	3	3	1
20-24	8	4	4	10	5	10	7	11	16	18	14	16
25-29	16	17	16	12	12	11	17	23	14	21	17	24
30-39	60	49	47	51	43	41	43	36	44	42	44	41
40-59	45	46	56	42	56	44	77	79	68	60	54	57
60+	4	5	1	6	4	3	3	7	8	6	8	11
ALL AGES	133	122	124	121	120	109	147	158	152	150	140	152

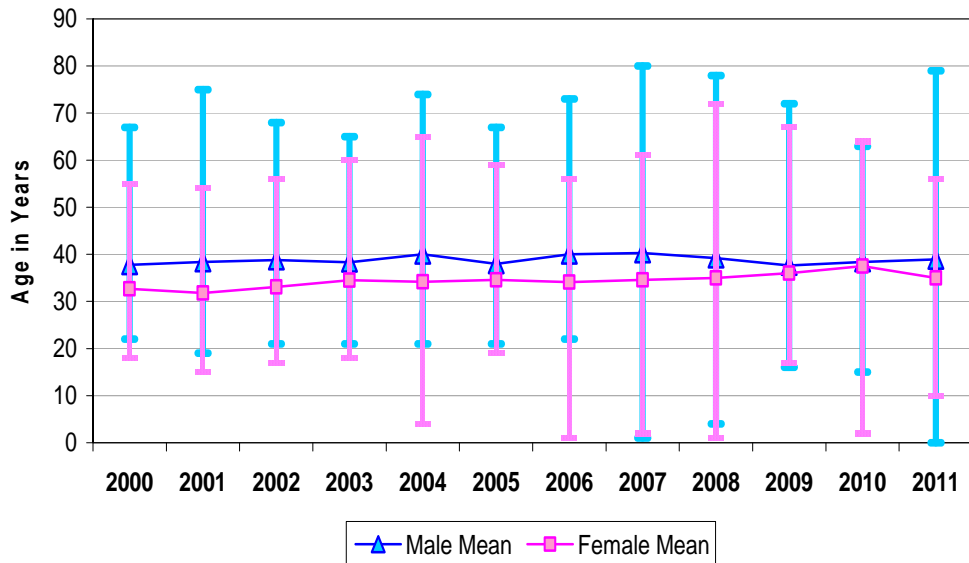
Figure 2 shows that historically in Alberta, males have had higher rates of HIV infection than females. In the past 12 years, males have had more than twice as many HIV cases annually per 100,000 persons than females. In 2011, the rate of HIV was 3.5 cases per 100,000 persons for females and 7.9 cases per 100,000 persons for males.

Figure 2: Gender Distribution of Newly Diagnosed HIV Cases and Rates, Alberta by Year of Diagnosis, 2000 to 2011



During the years 2000 to 2005, with the exception of 2004, the range of ages between the youngest and oldest cases did not fluctuate significantly. Since 2006, infants diagnosed with HIV were related to vertical transmission. At the same time, the ages of the oldest cases were as high as 72 years (females) and 80 years (males).

Figure 3: Age Range and Mean Age of Newly Diagnosed HIV Cases, Alberta, 2000 to 2011



Risk Exposure-Males

Table 2 shows that prior to 2003, for males the most common risk exposure among newly diagnosed HIV cases was intravenous drug use (IDU). The lowest percentage of IDU exposure reported from males after 2003 was 10 per cent in 2010. In 2011, 16 per cent of males had IDU as the risk exposure for newly diagnosed HIV cases.

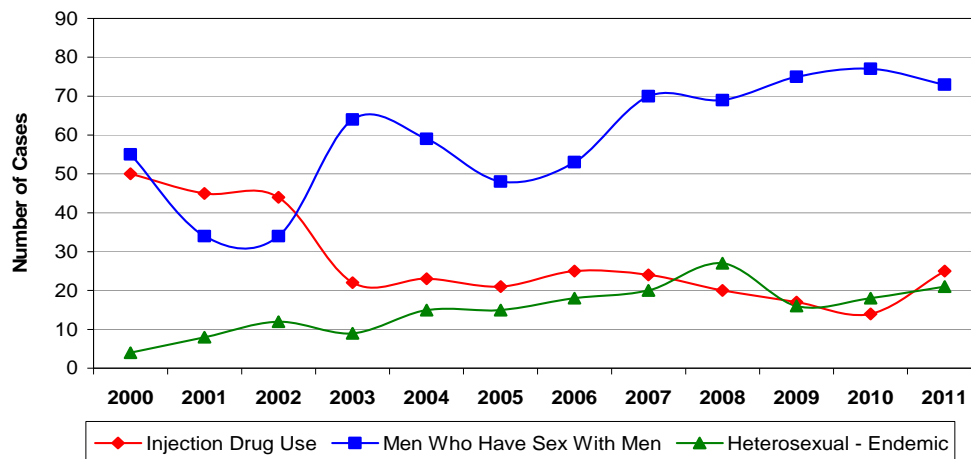
Table 2

Proportion of Newly Diagnosed HIV Cases in Alberta by Risk Exposure Category Among Males by Year of Diagnosis, 2000 to 2011

Exposure Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Blood/Blood Products	0	0	0	1	0	0	0	0	1	1	0	1
Heterosexual - Endemic	4	8	12	9	15	15	18	20	27	16	18	21
Heterosexual - Partner at Risk	8	12	10	13	3	11	14	11	11	11	15	11
IDU	50	45	44	22	23	21	25	24	20	17	14	25
MSM	55	34	34	64	59	48	53	70	69	75	77	73
MSM and IDU	3	6	4	3	1	1	7	3	4	5	3	1
NIR - Heterosexual	13	15	12	8	15	10	23	23	14	20	10	7
NIR - Other	0	2	8	0	2	2	5	6	5	5	3	10
Occupation	0	0	0	0	1	0	1	0	0	0	0	0
Perinatal	0	0	0	0	0	0	0	1	1	0	0	2
Unknown	0	0	0	1	1	1	1	0	0	0	0	1
TOTAL	133	122	124	121	120	109	147	158	152	150	140	152

Men having sex with men (MSM) has been a predominant risk exposure. The proportion of cases with MSM as an risk exposure ranges from 27 per cent in 2002 to 55 per cent in 2010. In 2011, 48 per cent of male cases were attributed to the risk exposure category of MSM.

Figure 4: Newly Diagnosed HIV Cases in Alberta by Selected Risk Exposure among Males by Year of Diagnosis, 2000 to 2011



Risk Exposure-Females

Table 3 and Figure 5 show that among females, IDU exposure was the most common risk exposure until 2003. After 2002, the number of IDU exposed cases decreased, then increased to 17 per cent in 2011.

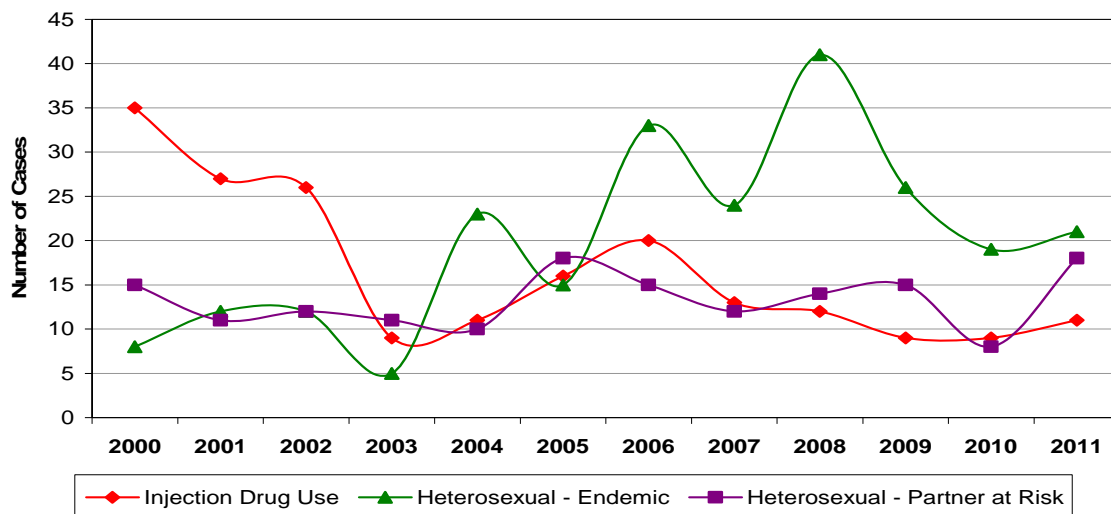
Table 3

Proportion of Newly Diagnosed HIV Cases in Alberta by Risk Exposure Category Among Females by Year of Diagnosis, 2000 to 2011

Exposure Category	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Blood/Blood Products	0	0	0	0	0	0	0	0	0	0	0	0
Heterosexual - Endemic	8	12	12	5	23	15	33	24	41	26	19	21
Heterosexual - Partner at Risk	15	11	12	11	10	18	15	12	14	15	8	18
IDU	35	27	26	9	11	16	20	13	12	9	9	11
MSM	0	0	0	0	0	0	0	0	0	0	0	0
MSM and IDU	0	0	0	0	0	0	0	0	0	0	0	0
NIR - Heterosexual	2	6	7	14	7	14	4	14	10	15	14	14
NIR - Other	0	0	0	0	0	2	1	3	2	4	0	0
Occupation	0	0	0	0	0	0	0	0	0	0	0	0
Perinatal	0	0	0	0	1	0	1	2	2	0	1	2
Unknown	1	0	0	1	1	0	0	0	0	0	0	0
TOTAL	61	56	57	40	53	65	74	68	81	69	51	66

The number of female cases from endemic countries increased from 2003, when 13 per cent of female cases were from endemic countries to 43 per cent in 2004. The percentage of female heterosexual cases from endemic countries was 32 per cent in 2011.

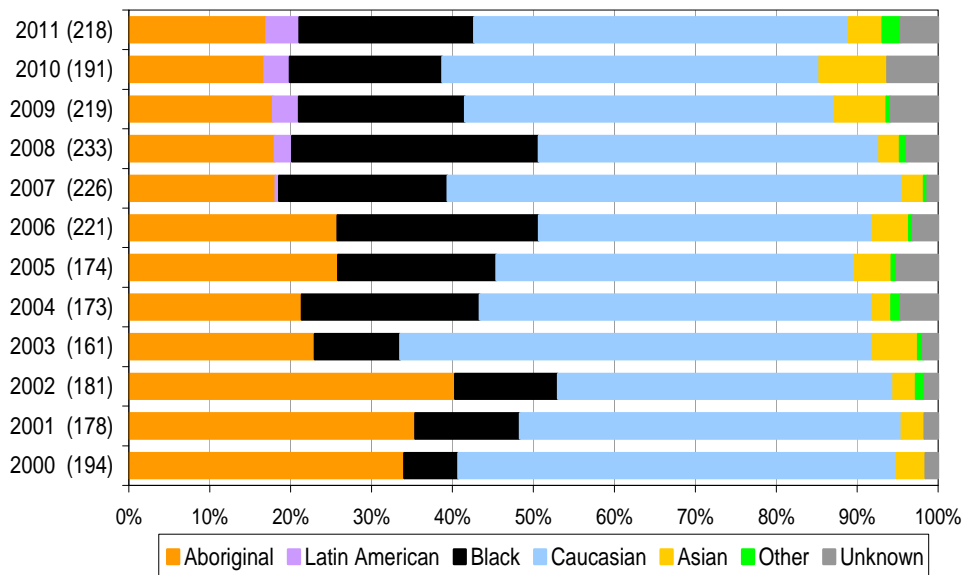
Figure 5: Newly Diagnosed HIV Cases in Alberta by Selected Risk Exposure, Females by Year Of Diagnosis, 2000 to 2011



Ethnicity

Figure 6 shows that the ethnic background of newly diagnosed HIV cases has changed over the past twelve years. In the first half of the decade, Aboriginals made up the second largest group of HIV cases with known ethnicity. After 2006 there have been more blacks diagnosed with HIV than aboriginals in Alberta. Caucasians have consistently represented the largest ethnic group newly diagnosed with HIV during this time period.

Figure 6: Proportion of Newly Diagnosed HIV Cases in Alberta by Ethnicity and Year of Diagnosis, 2000 to 2011



HIV in Alberta, 2011

In 2011, 218 Albertans were newly diagnosed with HIV. The age range was between 0 and 79 years of age, with 70 per cent total cases (152/218 cases) being between 25 and 49 years of age. The male to female ratio of HIV cases in Alberta was 2.3:1 (152 males to 66 females). The highest HIV rates for both males and females were among 35 to 39 years olds with 16 cases (males) and 11 cases (females) per 100,000 persons in 2011 (Figure 7.1, 7.2).

Figure 7.2 shows the change in rates from 2000 to 2011. The most significant difference within this time was that females under 25 years of age had higher rates than males. In addition, the highest rates of newly diagnosed HIV cases for males in 2000 were in the 30 to 34 age group, whereas in 2011 it was in the 40 to 44 age group.

Figure 7.1: Newly Diagnosed HIV Cases in Alberta by Age Group and Gender
 2011 (n=218) vs. 2000 (n=194)

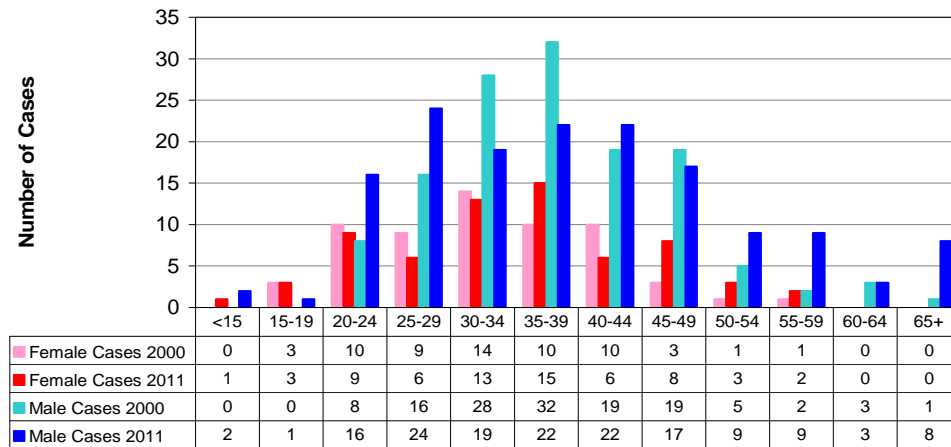
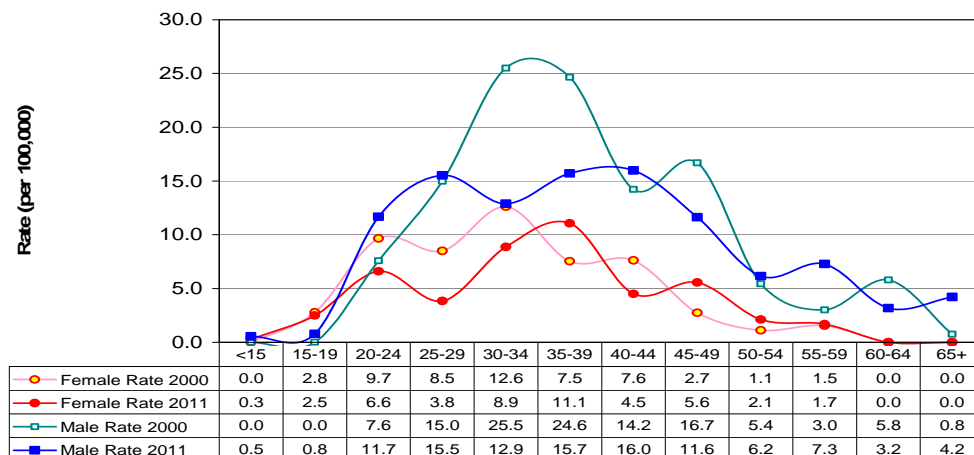


Figure 7.2: Newly Diagnosed HIV Rate per 100,000 in Alberta by Age Group and Gender
 2011 (n=218) vs. 2000 (n=194)

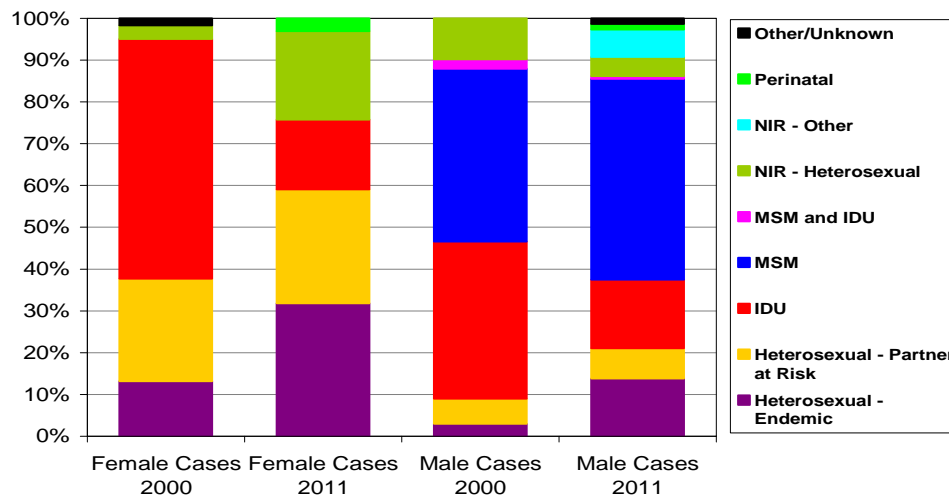


HIV 2011-Gender and Risk Exposure

In 2011, Figure 8 shows that 48 per cent of male cases reported their risk exposure as MSM. The most common risk exposure category for females was heterosexual endemic followed by heterosexual partner at risk.

Since 2000, the proportion of newly diagnosed HIV cases related to the various risk exposures has changed. In 2000, the most common risk exposure for females was IDU (57 per cent). IDU was the second most common reported exposure in males (38 per cent) in 2000. The most common male risk exposure in the year 2000 was MSM, with 41 per cent or 55/133 cases per 100,000 persons.

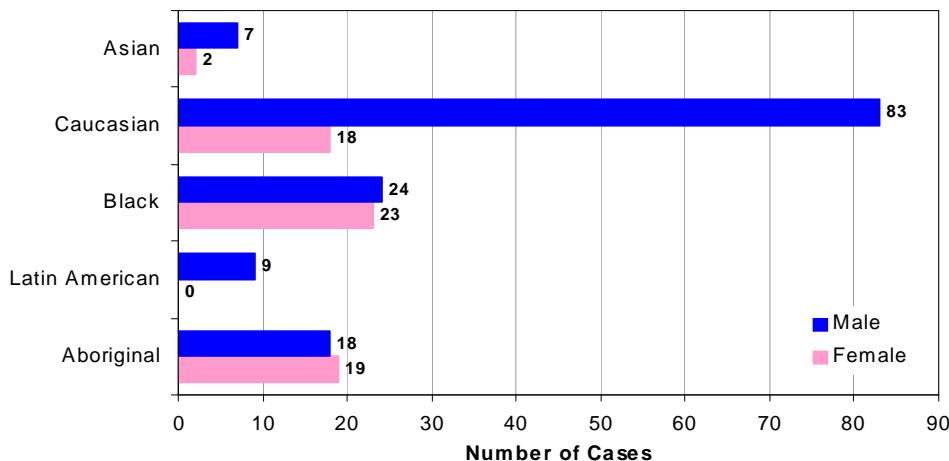
Figure 8: Newly Diagnosed HIV Cases in Alberta by Risk Exposure Category and Gender, 2011 vs. 2000



*NIR refers to No Identified Risk

In 2011, there is a difference in ethnicity between males and females with HIV. The vast majority of male cases with known ethnicity were Caucasian, while the largest ethnic group for females was black, followed by aboriginal (Figure 9).

Figure 9: Newly Diagnosed HIV Cases in Alberta by Sex and Known Ethnicity, 2011



HIV 2011-Gender and Risk Exposure

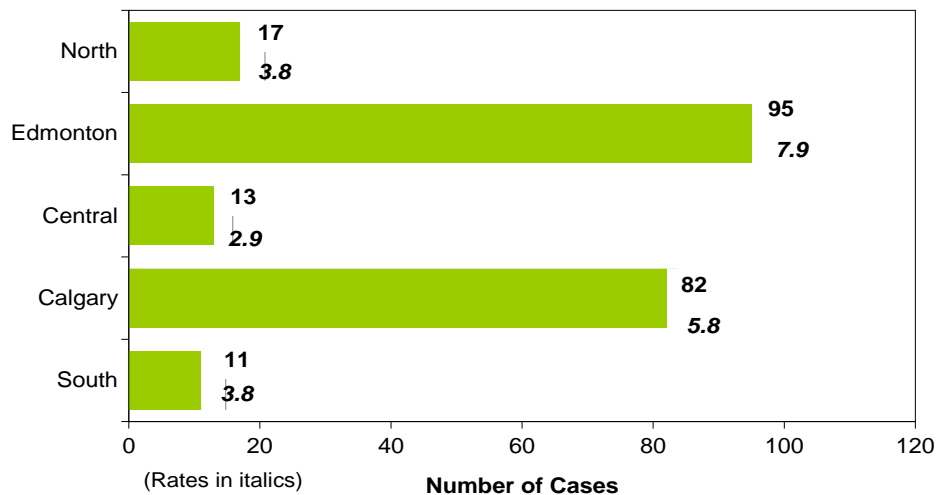
Table 4 shows that two-thirds of male caucasians reported MSM as the risk exposure in 2011. Eighty seven per cent of Black female cases reported heterosexual – endemic as the risk exposure category. The most common risk exposure for aboriginal female cases was IDU. The remaining aboriginal female cases reported either partner at risk or no identified risk.

	Aboriginal	Latin America	Black	Caucasian	Asian	Other	TOTAL
Female	19	0	23	18	2	1	63
Heterosexual - Endemic	0	0	20	0	0	0	20
Heterosexual - Partner at Risk	4	0	1	11	2	0	18
IDU	7	0	0	3	0	0	10
MSM	0	0	0	0	0	0	0
MSM and IDU	0	0	0	0	0	0	0
NIR - Heterosexual	8	0	0	4	0	1	13
NIR - Other	0	0	0	0	0	0	0
Perinatal	0	0	2	0	0	0	2
Male	18	9	24	83	7	4	145
Heterosexual - Endemic	0	1	19	0	1	0	21
Heterosexual - Partner at Risk	2	0	0	7	0	1	10
IDU	10	0	1	11	1	0	23
MSM	2	7	1	55	4	2	71
MSM and IDU	1	0	0	0	0	0	1
NIR - Heterosexual	1	0	1	4	1	0	7
NIR - Other	1	1	1	6	0	1	10
Perinatal	1	0	1	0	0	0	2
Both	37	9	47	101	9	5	208

HIV 2011-HIV by Health Zone

The HIV cases by Alberta Health Services Zone shows the differences in newly diagnosed HIV cases and their risks by smaller geographic regions. This may help focus prevention programs to certain sub-populations depending on the zone.

Figure 10: Cases and Rates (per 100,000 persons) of HIV by Alberta Health Zones, 2011 (n=218)



In 2011, the zones with the greatest population (Edmonton and Calgary) had higher rates of HIV than the provincial rate of 5.7 cases per 100,000 persons (Figure 11).

Breaking down the zones by sex and known ethnicity of cases, male Caucasians made up the largest number of cases in the two urban Zones in 2011 (Figure 12).

Figure 11: Newly Diagnosed HIV Cases in Alberta by Gender Known Ethnicity and Zone, 2011

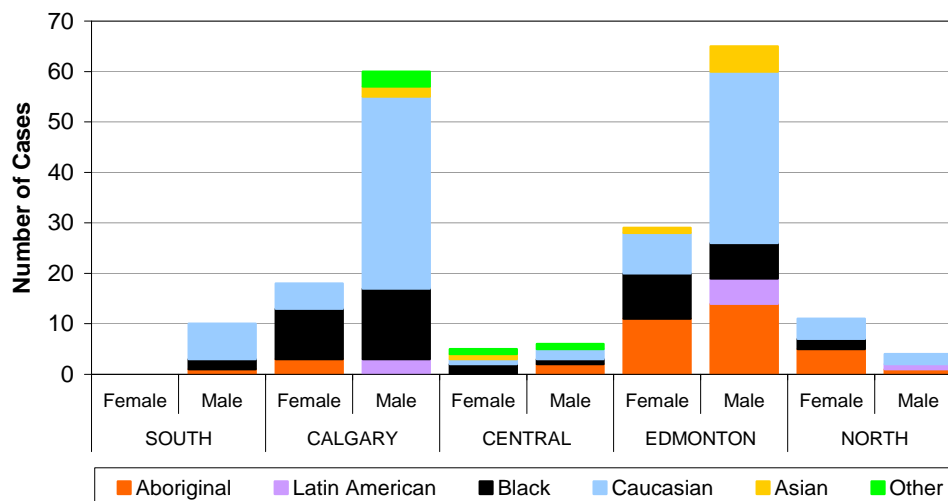
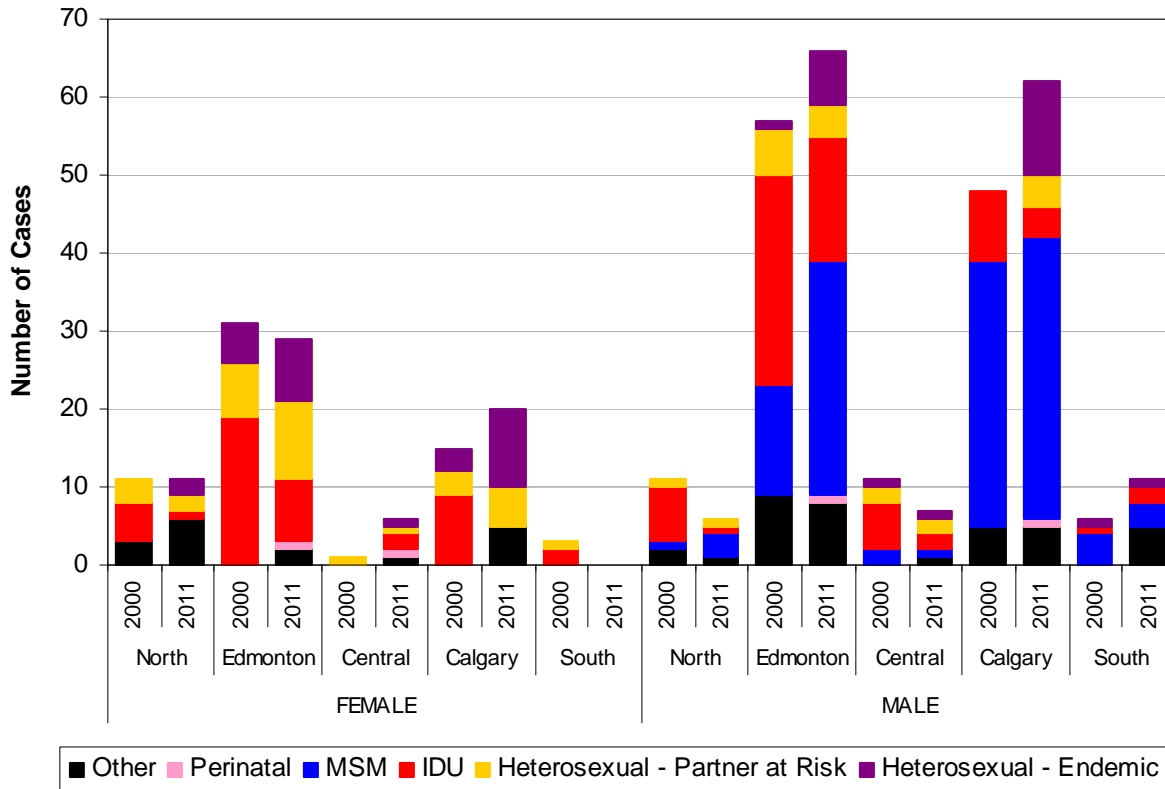


Figure 12 shows HIV cases by gender for each health zone in 2011. Cases with the risk exposure heterosexual endemic are seen in all health zones and in both females and males. Risk exposure from IDU was reported in all health zones for males only. MSM was the risk exposure for the largest proportion of male HIV cases. MSM was the risk exposure for the largest proportion of male HIV cases in the Calgary zones. In 2000, IDU was the predominant risk exposure for both males and females.

Figure 12: Newly Diagnosed HIV Cases in Alberta by Risk Exposure Category, Gender and Zone, 2000 (n=194) vs. 2011 (n=218)



HIV 2011-HIV among First Nations in Alberta

The rate of HIV among First Nations populations is higher than for non-First Nations populations. In 2011, the rate of newly diagnosed HIV is 25.4 cases per 100,000 persons. This is down from 54.8 cases per 100,000 persons in 2000 to (Figure 13).

Figure 13: Number and Crude Rate of Newly Diagnosed HIV Cases of First Nations Populations vs. Non-First Nations Populations in Alberta by Year of Diagnosis, 2000 to 2011

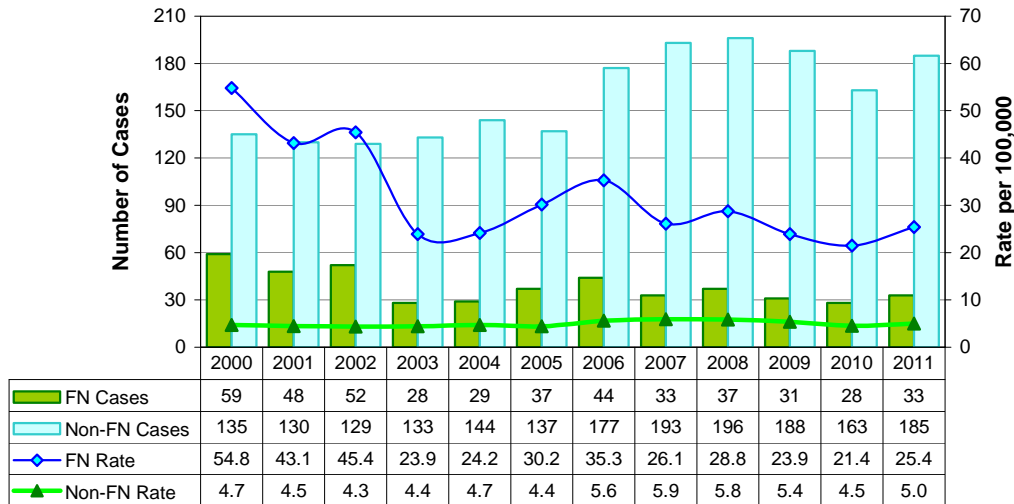


Figure 14: Crude Rate of Newly Diagnosed HIV Cases for First Nations, Alberta by Gender And Year of Diagnosis, 2000 to 2011

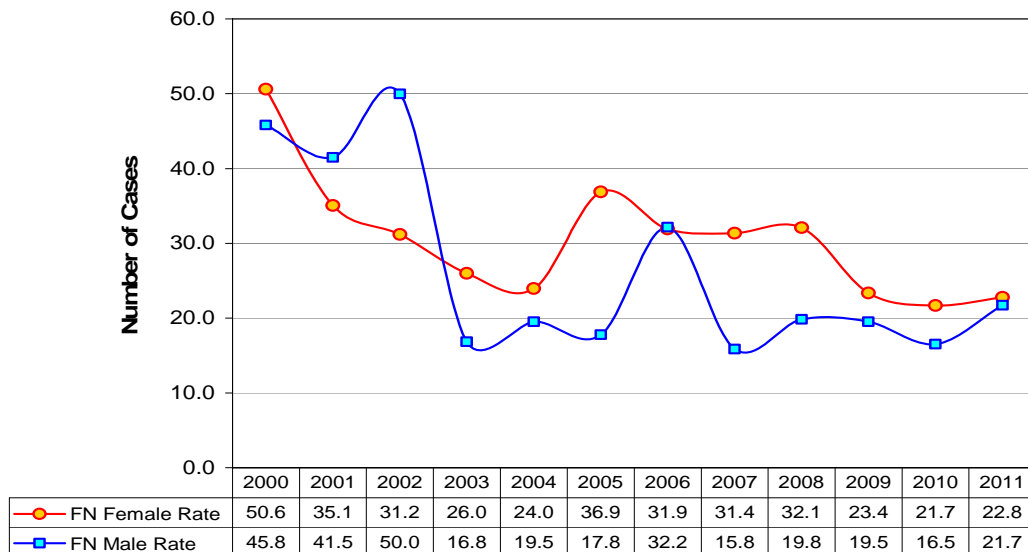
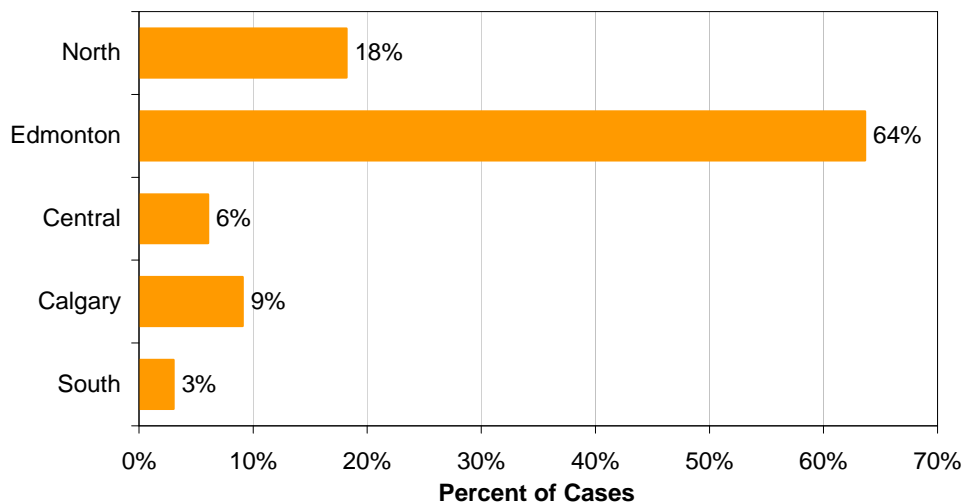


Table 5 shows that the rate of HIV among First Nations has decreased since 2000, but the rate is still higher than among the non-First Nations population in Alberta.

Table 5 Number and Crude Rate of Newly Diagnosed HIV Cases for First Nations Populations in Alberta by Gender and Year of Diagnosis, 2000 to 2011												
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
FN Female												
Cases	31	22	20	17	16	25	22	22	23	17	16	17
Rate per 100,000	50.6	35.1	31.2	26.0	24.0	36.9	31.9	31.4	32.1	23.4	21.7	22.8
FN Male												
Cases	28	26	32	11	13	12	22	11	14	14	12	16
Rate per 100,000	45.8	41.5	50.0	16.8	19.5	17.8	32.2	15.8	19.8	19.5	16.5	21.7
FN Both												
Cases	59	48	52	28	29	37	44	33	37	31	28	33
Rate per 100,000	48.2	38.3	40.6	21.4	21.7	27.4	32.0	23.6	26.0	21.5	19.1	22.3

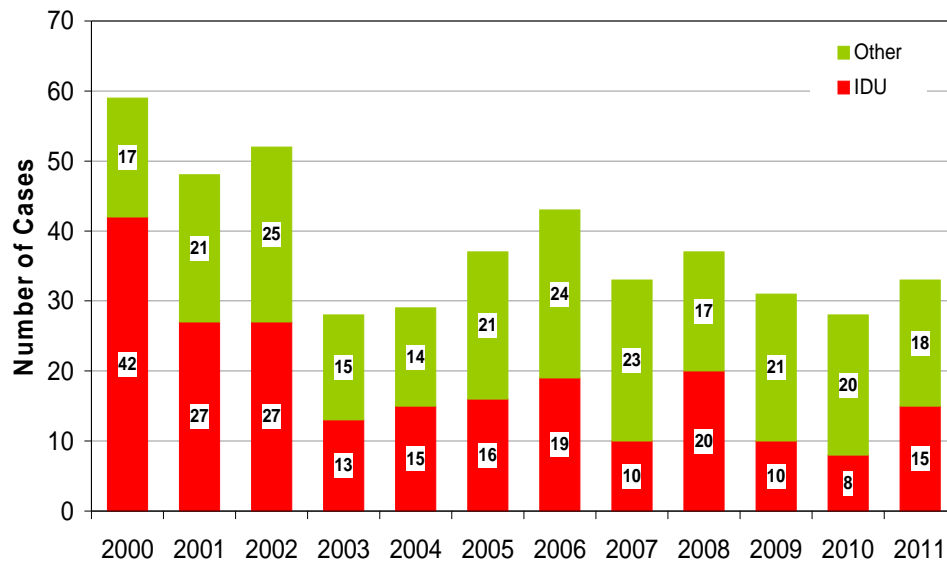
In 2011, the largest proportion of newly diagnosed HIV cases among First Nations populations was in the Edmonton Zone (Figure 15).

Figure 15: Newly Diagnosed HIV Cases by Zone in Alberta, First Nations, 2011



In the past 12 years, the First Nations populations with HIV have been different from that of non-First Nations populations in Alberta. Even though IDU identified as a risk exposure has decreased from the start of the decade, it still remains the most common risk factor among First Nations (Figure 16).

Figure 16: Newly Diagnosed HIV Cases by Year and Risk Exposure as IDU in Alberta First Nations Persons, 2000 to 2011



AIDS in Alberta

Figure 17 shows that AIDS cases in Alberta have declined since peaking in 1994. In 2011, there were 31 newly diagnosed cases of AIDS. The rate of AIDS in Alberta for 2011 was 0.8 cases per 100,000 persons.

Figure 17: Number of Newly Diagnosed AIDS Cases in Alberta by Year of Diagnosis, 1986 to 2011

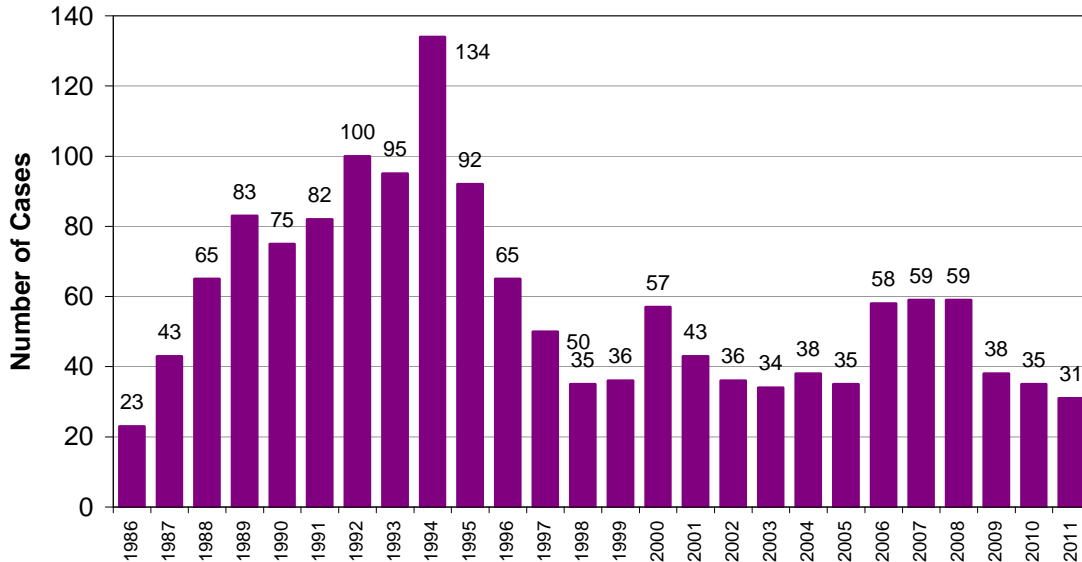


Figure 18 shows that in 2011, the number of AIDS cases decreased predominantly in the Calgary zone while slightly increasing in Edmonton.

Figure 18: Newly Diagnosed AIDS Cases in Alberta by Alberta Health Services Zone, 2009 to 2011

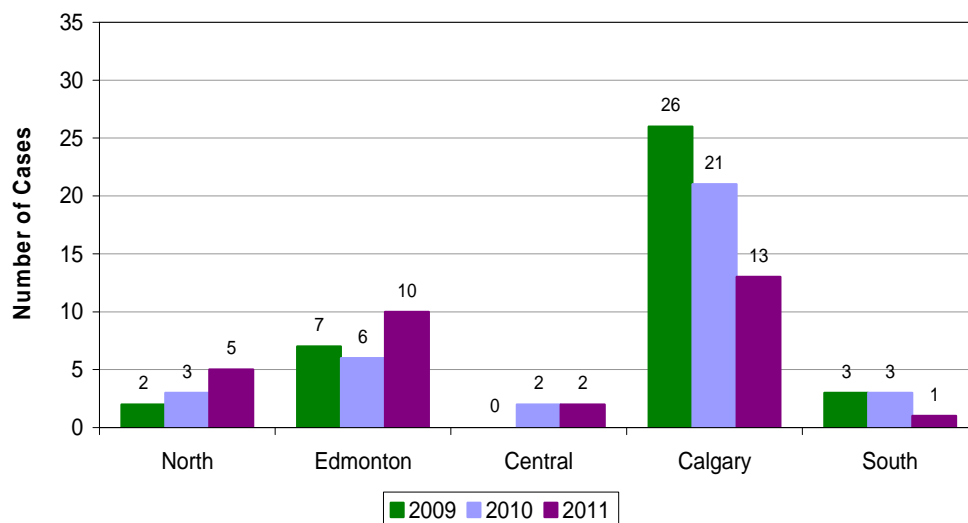


Figure 19 shows the newly diagnosed AIDS cases by ethnicity in the past three years. The proportion of AIDS among Caucasians and Aboriginal decreased while the proportion of black cases increased. In 2011, 57 per cent of cases with known ethnicity were Caucasian.

Figure 19: Newly Diagnosed AIDS Cases in Alberta by Known Ethnicity, 2009 to 2011

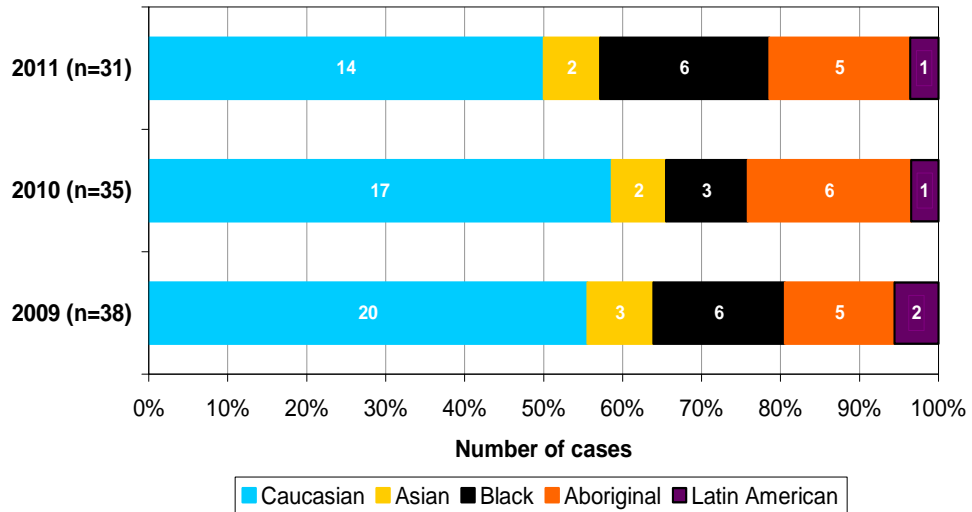


Figure 20 shows that for AIDS cases in Alberta, males continue to have a higher rate of disease than females. Overall, in 2011, the disease rate for males was 1.3 cases per 100,000 persons and 0.3 cases per 100,000 persons for females. Among those in the age group of 35-44 years, males had the highest disease rate (4.0 cases per 100,000 persons), followed by males in the age group of 45-54 with the rate of 3.8 cases per 100,000 males.

Figure 20: Newly Diagnosed AIDS Rates per 100,000 in Alberta by Gender and Age Group, 2011 (n=31)

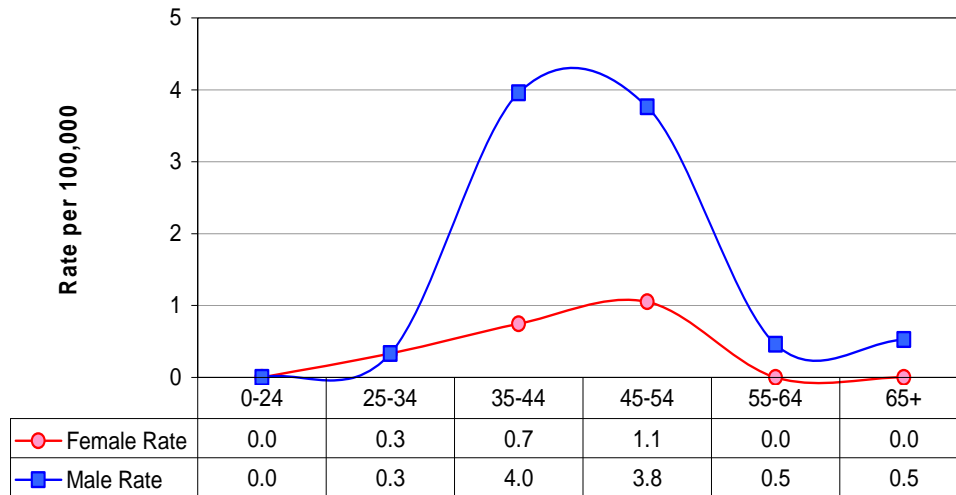


Figure 21 shows the newly diagnosed AIDS cases by gender and risk exposure category in 2011. In Alberta in 2011, ninety per cent of newly diagnosed AIDS cases were male; of which 28 per cent reported their risk exposure category as MSM. The second most common risk category for all AIDS cases was IDU.

Figure 21: Newly Diagnosed AIDS Cases in Alberta by Gender and Risk Exposure Category, 2011 (n=31)

