HIV/AIDS in Saskatchewan to December 31, 2002

This epidemiological report describes the profile of HIV and AIDS in Saskatchewan from the commencement of documented surveillance activities in 1984 to the end of December, 2002. Extensive data cleaning was performed on the database over the summer of 2002 at which time epidemiological information on HIV and AIDS cases notified prior to 1994 were added to the existing electronic database. Duplicate records were removed and case information was validated. As a result, over 40 previously counted cases were removed from the database after being identified as either not meeting the case definition for HIV and AIDS or as being previously reported in Saskatchewan or in another jurisdiction where reporting of HIV is legislated. Ongoing maintenance of the database may result in records being assigned a different year of diagnosis or risk exposure category as updated information becomes available.

This report is based on the number of HIV and AIDS cases diagnosed by laboratory confirmation while resident in this province. Out-of-province residents testing positive for HIV in Saskatchewan are not counted in provincial statistics nor are residents who tested positive while living in a jurisdiction where HIV was reportable at the time.

Several provincial jurisdictions did not require reporting of AIDS when Saskatchewan began surveillance for the syndrome. Some people living with AIDS in Saskatchewan were tested positive in jurisdictions where HIV was non-reportable and are counted among the AIDS cases in this report. Individuals from jurisdictions where HIV was not reportable are attributed to the year when re-testing took place in this province.

AIDS morbidity and mortality

One hundred ninety-two (192) cases of AIDS comprising 160 males and 32 females have been reported since notifications were first received in 1984 (Fig 1). The annual incidence pattern is erratic and does not necessarily reflect the year in which the client was infected but rather the year in which he/she first sought health care for their illness and was diagnosed with an AIDS defining illness. Eleven (11) new AIDS cases were identified in 2002. With an incubation period of 11 to 15 years, the epidemiological profile of AIDS best describes the pattern of HIV infection approximately one to one and a half decades prior to the trends displayed in the charts accompanying this report.

Because of earlier and better treatment for patients with AIDS defining illness, the proportion of those living with AIDS and the length of life following diagnosis with AIDS is increasing (Fig 2). Close to one-third (30%, 58 cases) of all AIDS cases are presumed to be living. Thirty-three cases (63%) diagnosed with an AIDS-defining illness between 1998-2002 are alive. Half (50%, 16 cases) of the total 32 female AIDS cases are presumed still living. Eleven of those living were diagnosed within the years 1998-2002. One-quarter (26%, 42 cases) of the 160 males diagnosed with AIDS are presumed still alive.

HIV morbidity – lab testing

Of the 245,183 specimens submitted to Provincial Laboratory since testing for HIV began in late 1984, 426 individuals (0.17%) tested positive for the antibody (Table 1). A

small number of cases can be identified only by specimen number. While the annual number of tests rose steadily from 3,319 in 1989 to 26,341 in 2002, the positivity rate, that is, the number of positive specimens per 100 tests done, was 0.09%, the lowest since testing began compared to the 0.14% to 0.17% over the previous nine years. A slight upward trend in positive HIV tests, evident in the three years between 1999 and 2001 with an increase of 4-5 newly identified cases per year, was reversed in 2002. There were 26 laboratory confirmed HIV cases reported during 2002 (2.5/100000) compared to 36 in 2000 (3.5/100,000) and 40 in 2001 (3.9/100000). The incidence of laboratory-confirmed HIV cases fluctuated between 14 and 44 cases from 1989 to 1997)(Fig 3). Because of the small number of reported cases of HIV, crude rates for HIV in Saskatchewan fluctuate considerably from year to year.

HIV morbidity – age and sex profile

Individuals between 20 to 49 years comprise 84% of total cases reported to the province since 1984 for cases where age and sex data are available (Fig 4). Of these, 74 % are male. Total female cases fluctuated between 6 and 17 cases in the five years, 1998-2002, providing an unclear pattern regarding increase in female cases (Fig 5). In 2002, eleven female and fifteen male HIV cases were identified. The male:female sex ratio varies widely over the years between 13**:**1 in 1989 and 1.4**:**1 in 2002.

HIV morbidity – ethnicity profile

Ethnicity data is important as it further characterizes populations to support targeted program planning and resource allocation. The fluctuating upward trend among Aboriginal cases appears to have plateaued in the years since 1999 (Fig. 6). Slightly less than one-half of HIV cases in 2002 were of Aboriginal ethnicity (46%; 12 of 26 cases) while non-Aboriginal cases comprised 54% (14 of 26 cases) (Table 2). This compares to an average of 45% of Aboriginal cases and 54% non-Aboriginal over the previous five years, 1997-2001 (1% unknown). For purposes of this report, Aboriginal persons comprise Inuit, Metis, and Native Indians (i.e. First Nations). The non-Aboriginal classification includes Caucasian, African-Canadian, Latin American, Asian, South Asian and Arabic ethnicity. Caucasians comprised 12 of the 14 non-aboriginal cases in 2002.

HIV morbidity – self reported risk exposure to infection

The self-reported risk exposures shown in Figure 7 and Tables 3 and 4 depict trends for the most likely risk for acquiring HIV infection. Some individuals disclosed additional risk exposures, however these are deemed to be a less likely source of infection and are not displayed. In the early years of HIV/AIDS notification, risk exposure was often not known or was not reported consistently. The percentage of cases declaring men engaging in sex with other men as their primary risk exposure declined from a high of 82% (14/17) of HIV cases in 1991 to 4% (1/26) in 2002.

Injection drug use (IDU) is one of the major risk exposures reported by HIV infected cases. The incidence of 14 notified cases with this risk in 2002 is comparable to the 12 cases in 2001, 11 cases in 2000 and represents a decrease from 17 cases in 1999 (Table 3). Fig. 7 depicts a fluctuating upward trend since 1994 in the proportion of HIV cases with IDU risk exposures to 56% of total cases in 2002. Nine cases self-disclosing injection drug use also self-identified as Aboriginal.

Only one person self-disclosed their risk for acquiring HIV as having sex with another male. This compares with ten cases in 2000 (28 % of total cases) to twelve cases in 2001 (25% of total) (Tables 3, 4). This is a marked reversal of the past upward pattern and is not consistent with national projections indicating an increase in MSM as a re-emerging risk exposure. However, the small number of cases makes any prediction about future trends in this province difficult.

Trends in heterosexual exposure continue to fluctuate with an average of eight cases since 1997. Seven cases were identified in 2002, compared to eight cases in 2001 and ten cases in 2000. Heterosexual exposure is acquired through sexual relations with a known HIV positive partner or with a partner from a country where HIV infection is endemic, or where the case has had only heterosexual relations and has no identifiable risk exposure for HIV. This risk exposure was self-reported twice as frequently among non-Aboriginal cases (5 cases) as Aboriginal (2 cases).

Three HIV cases were identified as having contracted HIV through heterosexual exposure in countries where HIV and AIDS is endemic. This is lower than the seven cases reported in 2001 and is comparable to the numbers of cases among those from endemic countries in previous years ranging from zero to three cases per year.

Infants born to HIV infected mothers are tested routinely to determine if perinatal transfer has taken place. A child whose test remains positive at 18 months is considered an HIV positive case. Seven HIV cases were infected at birth through perinatal transfer of the HIV antibody between 1984 and 2000. Five of these were born to women from endemic countries who did not declare their HIV positive status at the time of birth. No cases of perinatal transfer were reported among children born in 2001 or 2002.

None of the cases reported between 2000 and 2002 had a history of receiving a blood transfusion or blood product. One HIV positive case in 2002 has not identified a risk exposure at this time.

HIV morbidity – national profile

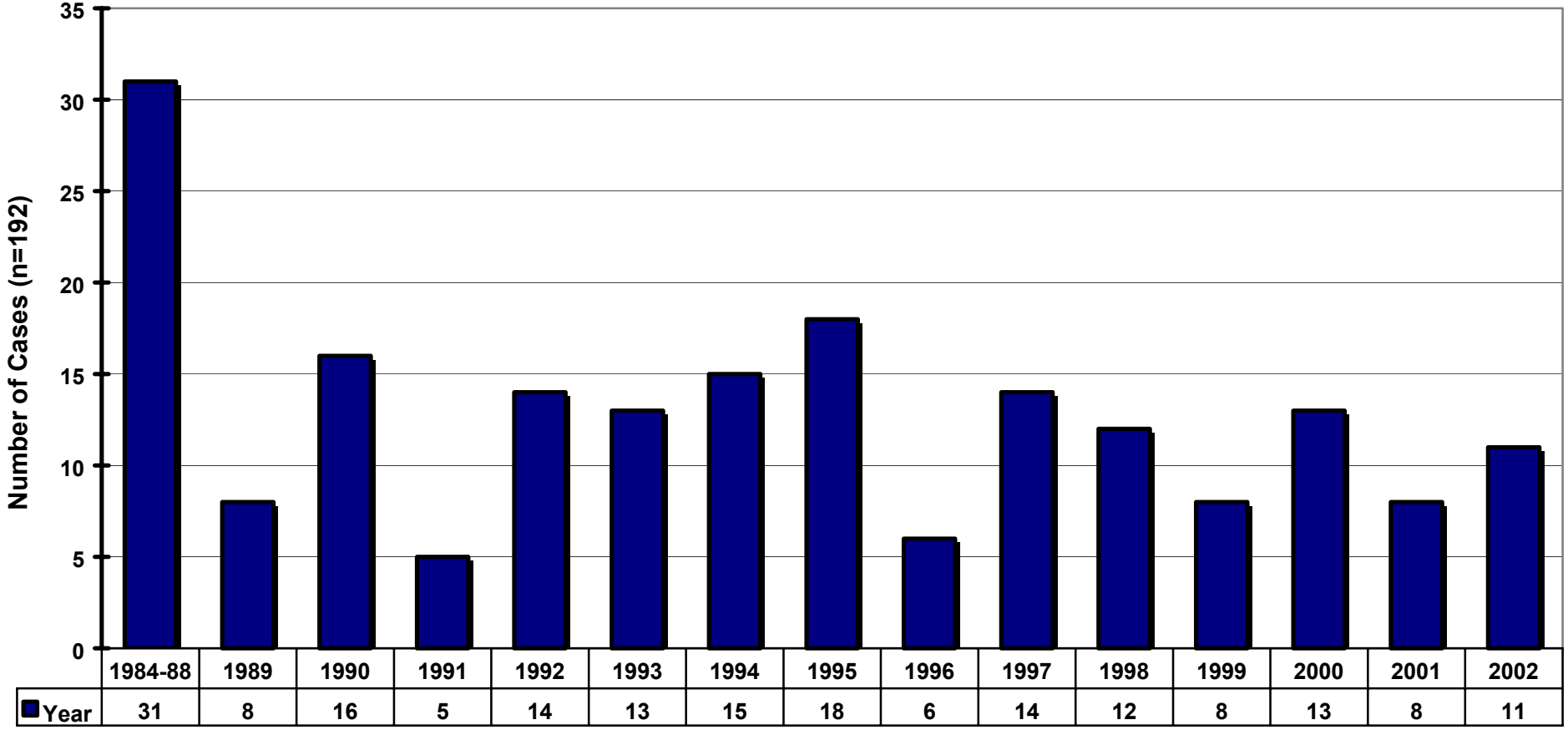
At the end of 2002, an estimated 56 000 (46 000-66 000) people in Canada were living with HIV infection (including AIDS), which represents an increase of about 12% from the point estimate of 49,800 at the end of 1999. In terms of exposure category, these prevalent infections in 2002 comprised 32 500 MSM (58% of total), 11 000 IDU (20% of total), 10 000 heterosexuals (18% of total), 2200 MSM-IDU (4% of total), and 300 attributed to other exposures (< 1% of total) The largest absolute increase was in the MSM exposure category, which had 2900 more prevalent infections than in 1999 (10% relative increase). There were an estimated 2000 more prevalent infections in the heterosexual exposure category (25% increase) and 1300 more among IDU (13% increase). Canadian HIV statistical reports may be viewed on-line at http://www.hc-sc.gc.ca/pphb-dgspsp/hast-vsmt/public_e.html

Acknowledgements

This epidemiological report was prepared by Helen Bangura, CD Epidemiologist, with the assistance of Lindsay Hembroff, Communicable Disease Information Consultant, and Sonia Harmen, Federal Field Surveillance Officer, CDC Unit, Population Health Branch, Saskatchewan Health. The report acknowledges the assistance of the Provincial Laboratory in providing laboratory data, Dr Ross Findlater,

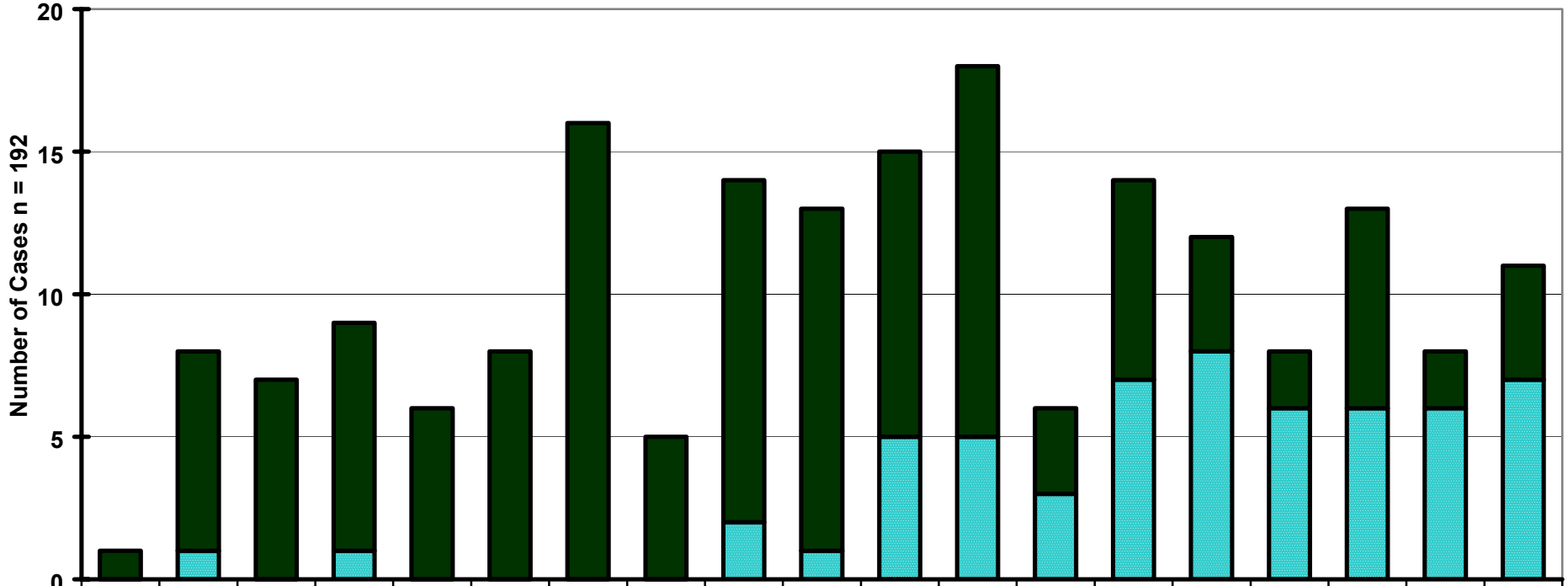
Chief Medical Health Officer, for reviewing the document and the public health services of regional health authorities and First Nations jurisdictions in providing epidemiological information. This report was prepared based on information in the HIV/AIDS database as of May, 2004.

Fig 1. Incidence of AIDS in Saskatchewan
Cases by year, 1984 - 2002



	1984-88	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Year	31	8	16	5	14	13	15	18	6	14	12	8	13	8	11

Fig 2. AIDS Cases in Saskatchewan
Life Status by Year of Diagnosis, 1984 - 2002



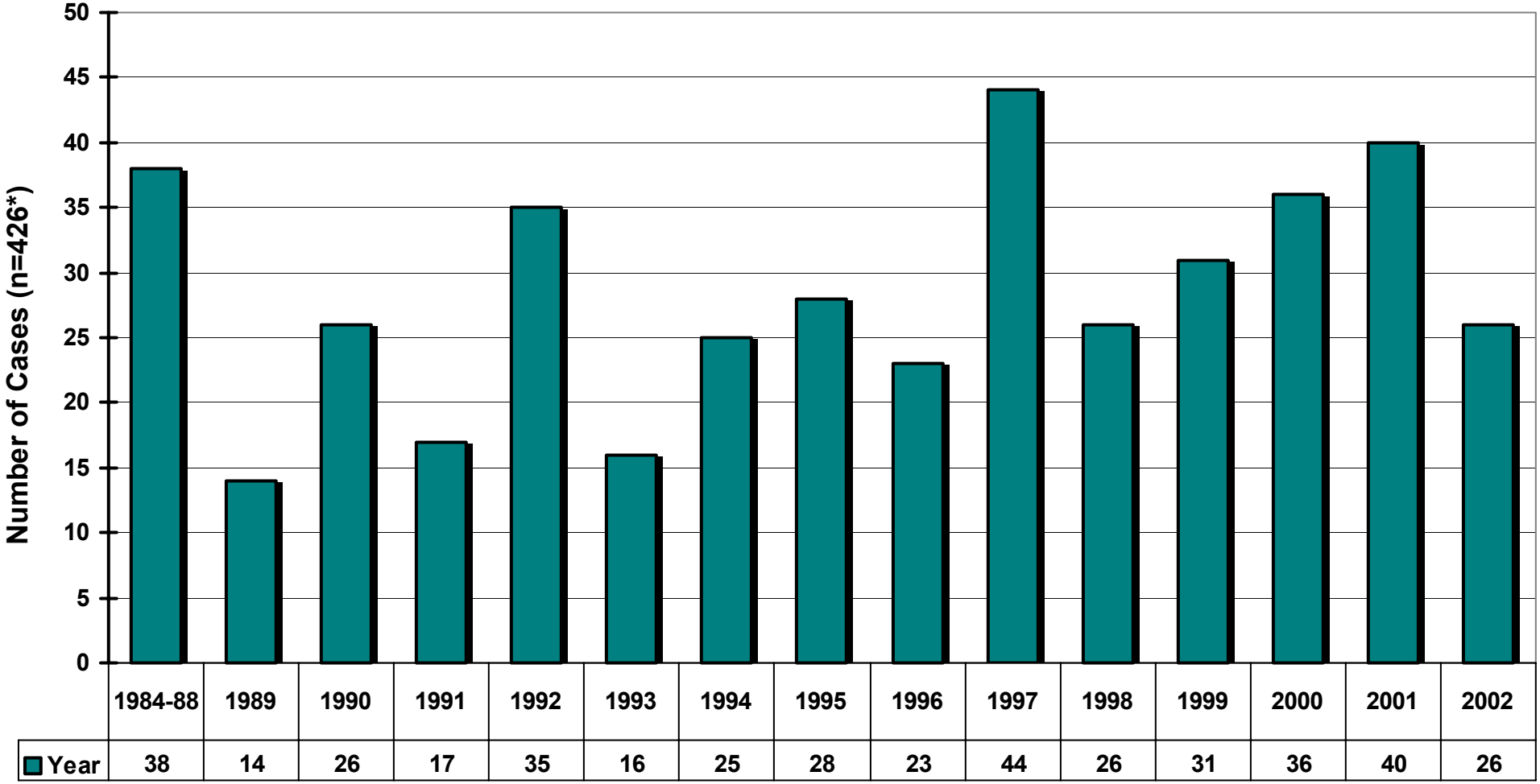
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Dead	1	7	7	8	6	8	16	5	12	12	10	13	3	7	4	2	7	2	4
Alive		1		1					2	1	5	5	3	7	8	6	6	6	7

Table 1 - Positive HIV Antibody Tests in Saskatchewan, 1984 - 2002

Year	# Specimens Tested	Positive Individuals	% Positive Specimens
1984 - 88	7,602	38	0.50%
1989	3,319	14	0.42%
1990	4,615	26	0.56%
1991	6,440	17	0.26%
1992	12,152	36	0.30%
1993	13,390	16	0.12%
1994	17,814	25	0.14%
1995	16,100	28	0.17%
1996	17,883	23	0.13%
1997	29,664	44	0.15%
1998	22,015	26	0.12%
1999	20,827	31	0.15%
2000	21,954	36	0.16%
2001	25,067	40	0.16%
2002	26,341	26	0.10%
TOTAL	**245,183**	**426**	**0.17%**

Adjustments have been made to eliminate repeat positive test results

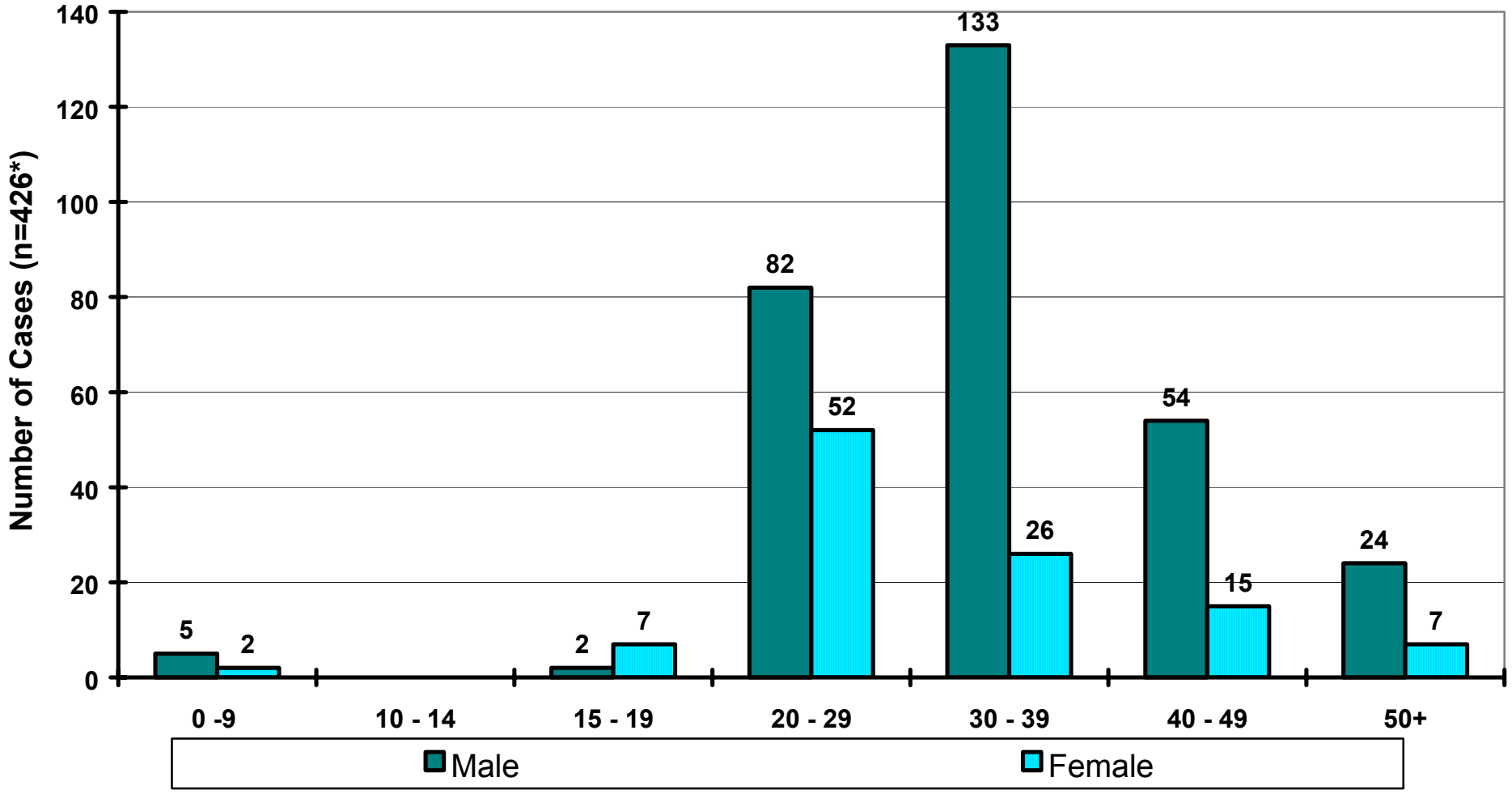
Fig 3. Incidence of HIV in Saskatchewan, Cases by year, 1984 - 2002



	1984-88	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Year	38	14	26	17	35	16	25	28	23	44	26	31	36	40	26

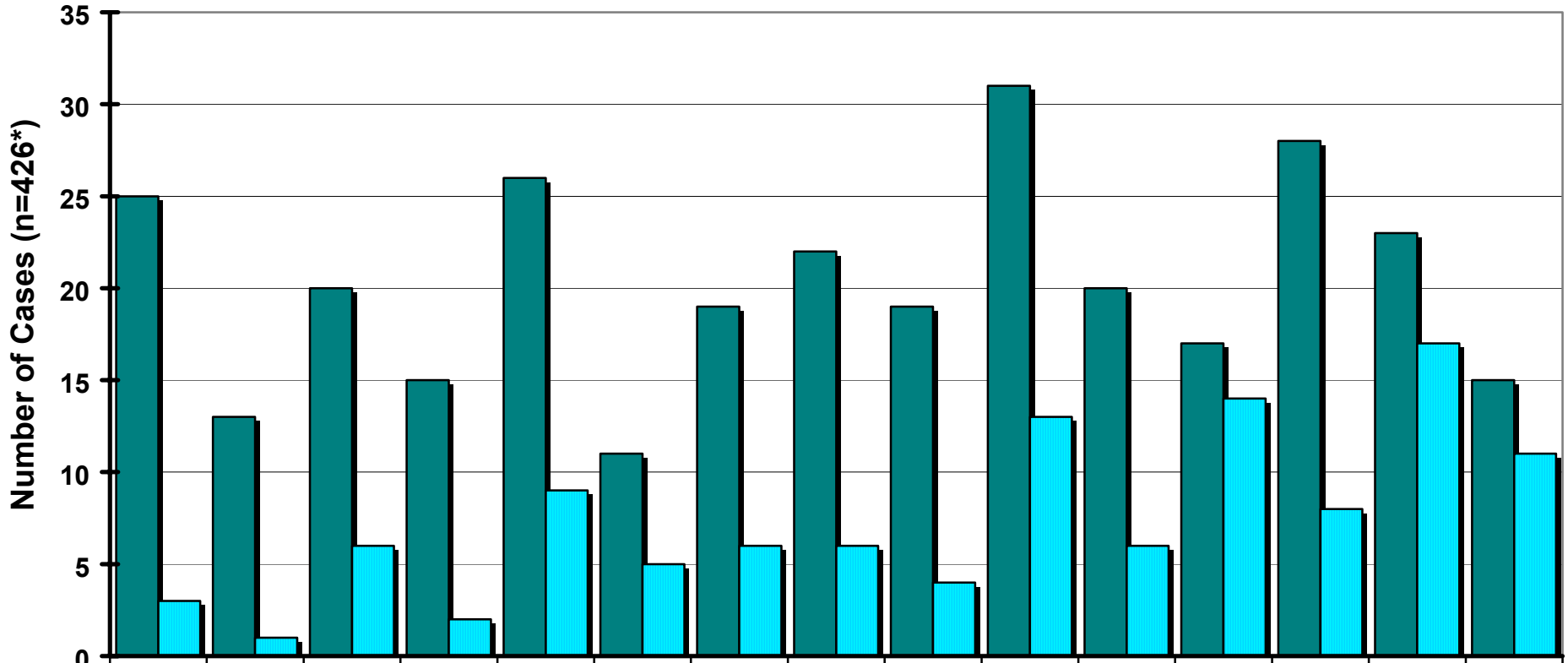
* 1988 has 10 cases with unknown gender

Fig 4. HIV Cases in Saskatchewan
Age Group by Sex, 1984 - 2002



* 1988 has 10 cases with unknown gender

Fig 5. HIV Cases in Saskatchewan By Gender, 1984 - 2002



	1984-88	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Male	25	13	20	15	26	11	19	22	19	31	20	17	28	23	15
Female	3	1	6	2	9	5	6	6	4	13	6	14	8	17	11

* 1988 has 10 cases with unknown gender

Table 2 - Total Saskatchewan HIV Cases by Ethnicity
1984 - 2002

	84-88	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Total
Aboriginal	2	4	3	3	5	5	1	9	8	21	12	21	12	14	12	132
Non - Aboriginal	20	8	16	10	19	10	20	18	15	23	14	10	23	25	14	245
Unspecified	16	2	7	4	11	1	4	1					1	1		48
Total	38	14	26	17	35	16	25	28	23	44	26	31	36	40	26	425

Aboriginal: (e.g., Metis, Inuit, Non-Registered and Registered Indian)
Non - Aboriginal : (e.g., Caucasian, African-Canadian, Latin American, Asian, South Asian, Arb/West Asian.)

Fig 6. Saskatchewan HIV Cases by Selected Ethnicity, 1984 - 2002

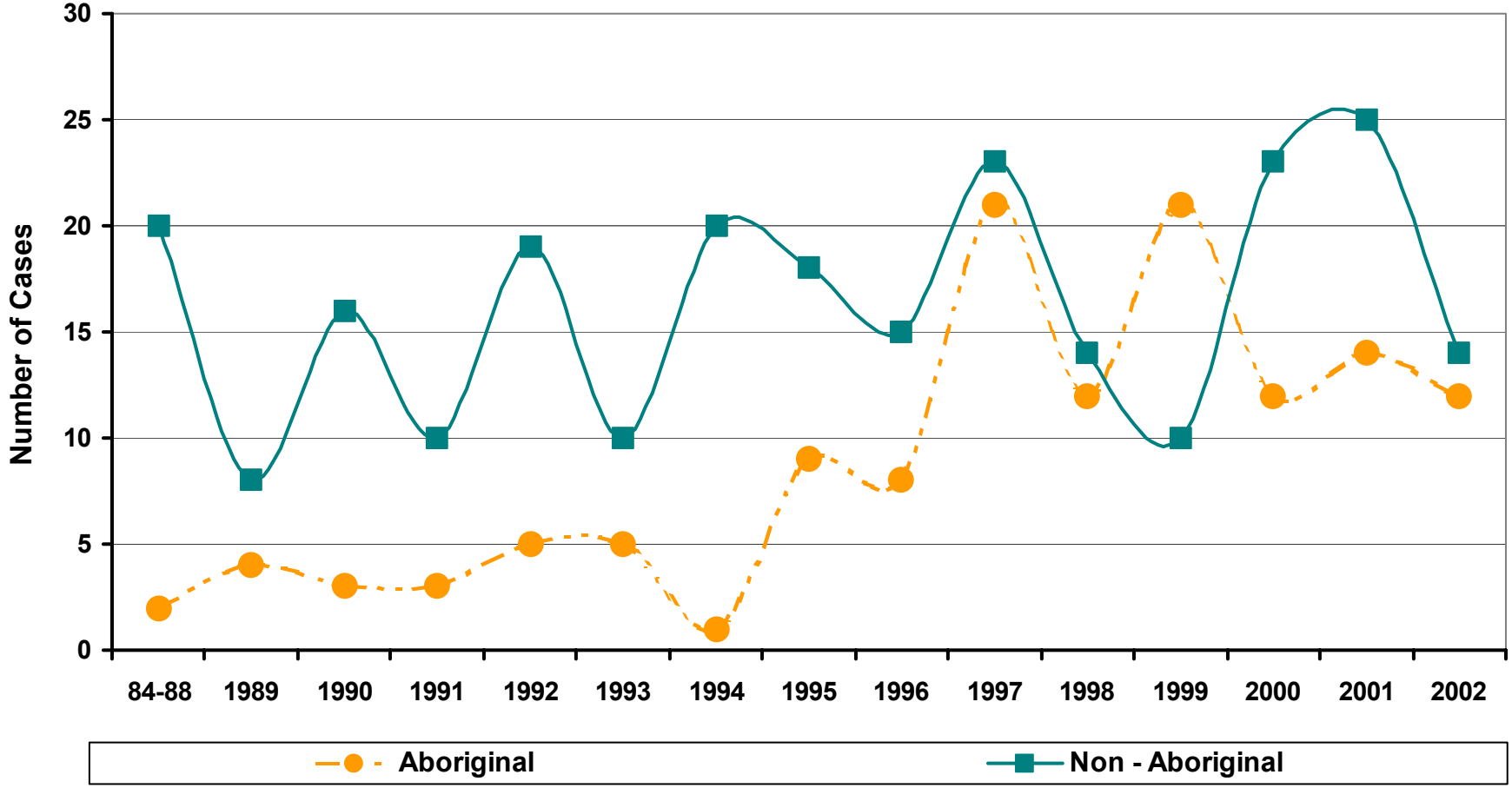


Table 3 - Saskatchewan HIV Cases by Risk Factor
1984 - 2002

	Men Who Have Sex With Men (MSM)	Injection Drug Use (IDU)	Both MSM & IDU	Heterosexual Exposure	Recipient of Blood/Products	Endemic	Perinatal Transfer	Other*
1984-88	20	2	1		2	2	1	10
1989	6		3	2	1	1		1
1990	11	2	1	3	3	1	2	3
1991	13		1	2				1
1992	12	4	2	7	1	2		7
1993	4	6		3	2			1
1994	8	3	2	6		3		3
1995	12	7	5	2		1	1	
1996	10	6	4	2		1		
1997	9	18	4	8	1	2	2	
1998	5	11	1	6		2		1
1999	3	16	1	8	1	2		
2000	10	11		10		1	1	3
2001	10	10	2	8		7		3
2002	1	14		7		3		1
Cumulative Total	**134**	**110**	**27**	**74**	**11**	**28**	**7**	**34**

***Other Includes**: No Identified Risk, Occupational Exposure

Date Prepared: May, 2004
Source: Saskatchewan HIV/AIDS Integrated Surveillance Data Base

Table 4 - Saskatchewan HIV Cases as a Percentage by Risk Factor

1984 - 2002

	Men Who Have Sex With Men (MSM)	Injection Drug Use (IDU)	Both MSM & IDU	Heterosexual Exposure	Recipient of Blood/Products	Endemic	Perinatal Transfer	Other*
	%	%	%	%	%	%	%	%
1984-88	53	5	3		5	5	3	26
1989	43		21	14	7	7		7
1990	42	8	4	12	12	4	8	12
1991	76		6	12				6
1992	33	11	6	19	3	6	3	19
1993	25	38		19	13			6
1994	32	12	8	24		12		12
1995	43	25	18	7		4	4	
1996	43	26	17	9		4		
1997	20	41	9	18	2	5	5	
1998	19	42	4	23		8		4
1999	10	52	3	26	3	6		
2000	28	31		28		3	3	8
2001	25	25	5	20		18		8
2002	4	56		24		12		4
% of Cumulative Total Cases	**32**	**26**	**6**	**17**	**3**	**7**	**2**	**8**

***Other Includes**: No Identified Risk, Occupational Exposure

Date Prepared: May, 2004

Source: Saskatchewan HIV/AIDS Integrated Surveillance Data Base

Fig 7. Selected Risk Factors as a Percentage of Saskatchewan HIV Cases, 1984 - 2002