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HIV Surveillance Report, 2007

Minnesota Department of Health
HIV/AIDS Surveillance System

MINNESOTA MDH DEPARTMENT OF HEALTH

Introduction (I)

- These two introduction slides provide a general context for the data used to create this slide set. If you have questions about any of the slides please refer to the *Companion Text to the Minnesota HIV Surveillance Report, 2007* or *HIV Surveillance Technical Notes.*

- This slide set describes new HIV infections (including AIDS at first diagnosis) in Minnesota by person, place, and time.

- The slides rely on data from HIV/AIDS cases diagnosed through 2007 and reported to the Minnesota Department of Health (MDH) HIV/AIDS Surveillance System.

- The data are displayed by year of HIV diagnosis.

Introduction (II)

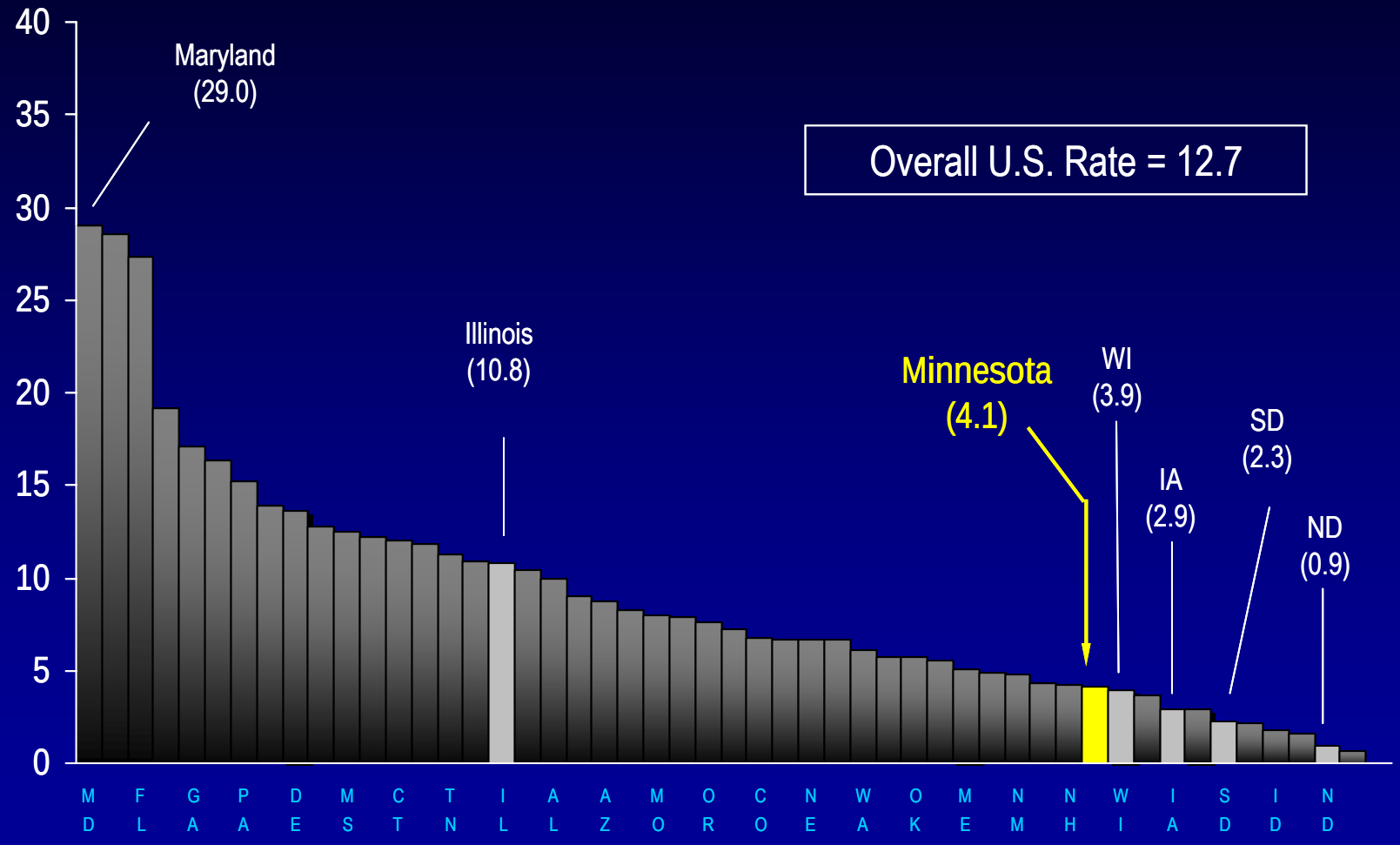
- Data analyses exclude persons diagnosed in federal or private correctional facilities, but include state prisoners (number of state prisoners believed to be living with HIV/AIDS = 115).

- Data analyses for new infections exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program (total primary refugees in this program since its inception in August 2000 = 183), as well as, other refugees/immigrants reporting a positive test prior to their arrival in Minnesota (n=60).

- Some limitations of surveillance data:
  - Data do not include HIV-infected persons who have not been tested for HIV
  - Data do not include persons whose positive test results have not been reported to the MDH
  - Data do not include HIV-infected persons who have only tested anonymously
  - Case numbers for the most recent years may be undercounted due to delays in reporting
  - Reporting of living cases that were not initially diagnosed in Minnesota is known to be incomplete

National Context

U.S. State-Specific AIDS Rates per 100,000 Population Year 2006



SOURCE:
U.S. HIV/AIDS Surveillance Report, Year-end 2006
National Center for HIV, STD, and TB Prevention, CDC

Overview of HIV/AIDS in Minnesota

Minnesota HIV/AIDS Surveillance: *Cumulative Cases*

- As of December 31, 2007, a cumulative total of 8,504* persons have been diagnosed and reported with HIV infection in Minnesota. Of these:
  - 3,353 persons have been diagnosed with HIV infection (non-AIDS)
  - 5,151 have progressed to AIDS
- Of these 8,504 persons, 2,912 are known to be deceased

** This number includes only persons who reported Minnesota as their state of residence at the time of their HIV and/or AIDS diagnosis.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Estimated Number of Persons *Living with HIV/AIDS in Minnesota*

- As of December 31, 2007, 5,950* persons are assumed alive and living in Minnesota with HIV/AIDS
  - 3,312 living with HIV infection (non-AIDS)
  - 2,638 living with AIDS

- This number includes 1,036 persons who were first reported with HIV or AIDS elsewhere and subsequently moved to Minnesota

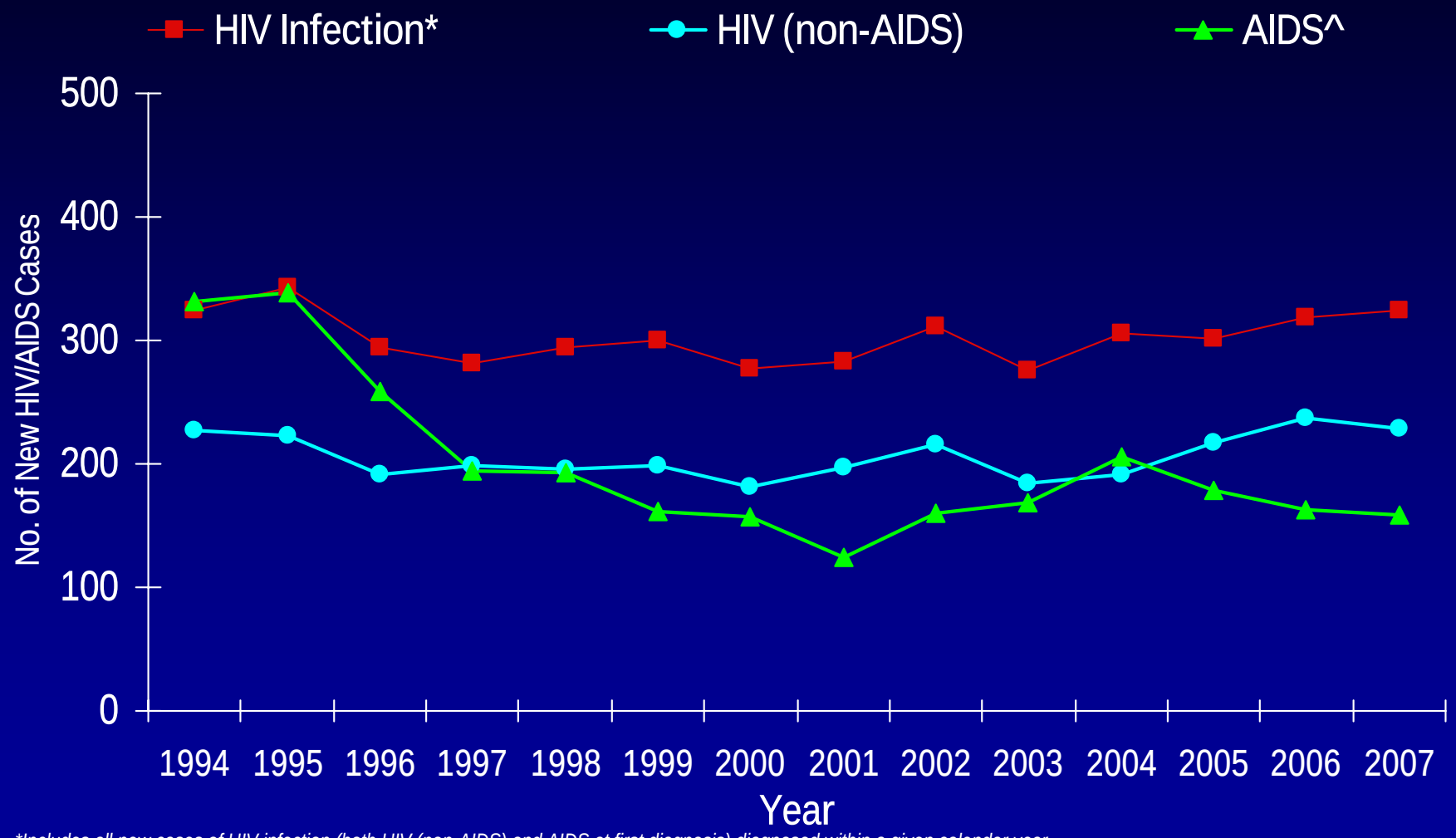
- This number excludes 894 persons who were first reported with HIV or AIDS in Minnesota and subsequently moved out of the state

** This number includes persons who reported Minnesota as their current state of residence, regardless of residence at time of diagnosis. Includes state prisoners and refugees arriving through the HIV+ Refugee Resettlement Program, as well as, HIV+ refugee/immigrants arriving through other programs.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV/AIDS in Minnesota:

New HIV Infection, HIV (non-AIDS) and AIDS Cases by Year, 1994-2007



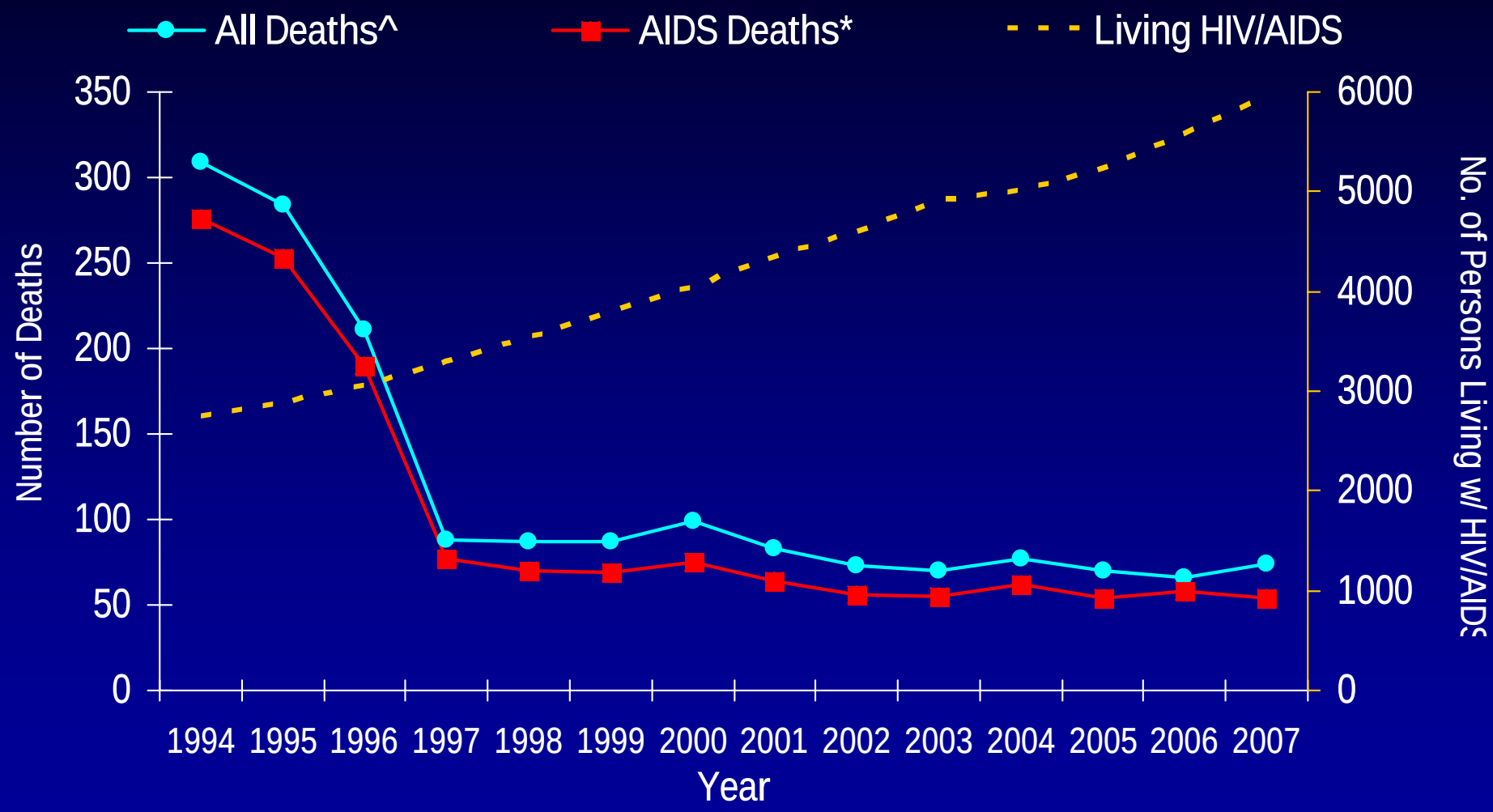
**Includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) diagnosed within a given calendar year.*

^Includes all new cases of AIDS diagnosed within a given calendar year, including AIDS at first diagnosis. This includes refugees in the HIV+ Resettlement Program, as well as, other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the United States.

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV/AIDS in Minnesota:

Number of Prevalent Cases, and Deaths by Year, 1994-2007



**Deaths among MN AIDS cases, regardless of location of death and cause.*

^Deaths in Minnesota among people with HIV/AIDS, regardless of location of diagnosis and cause.

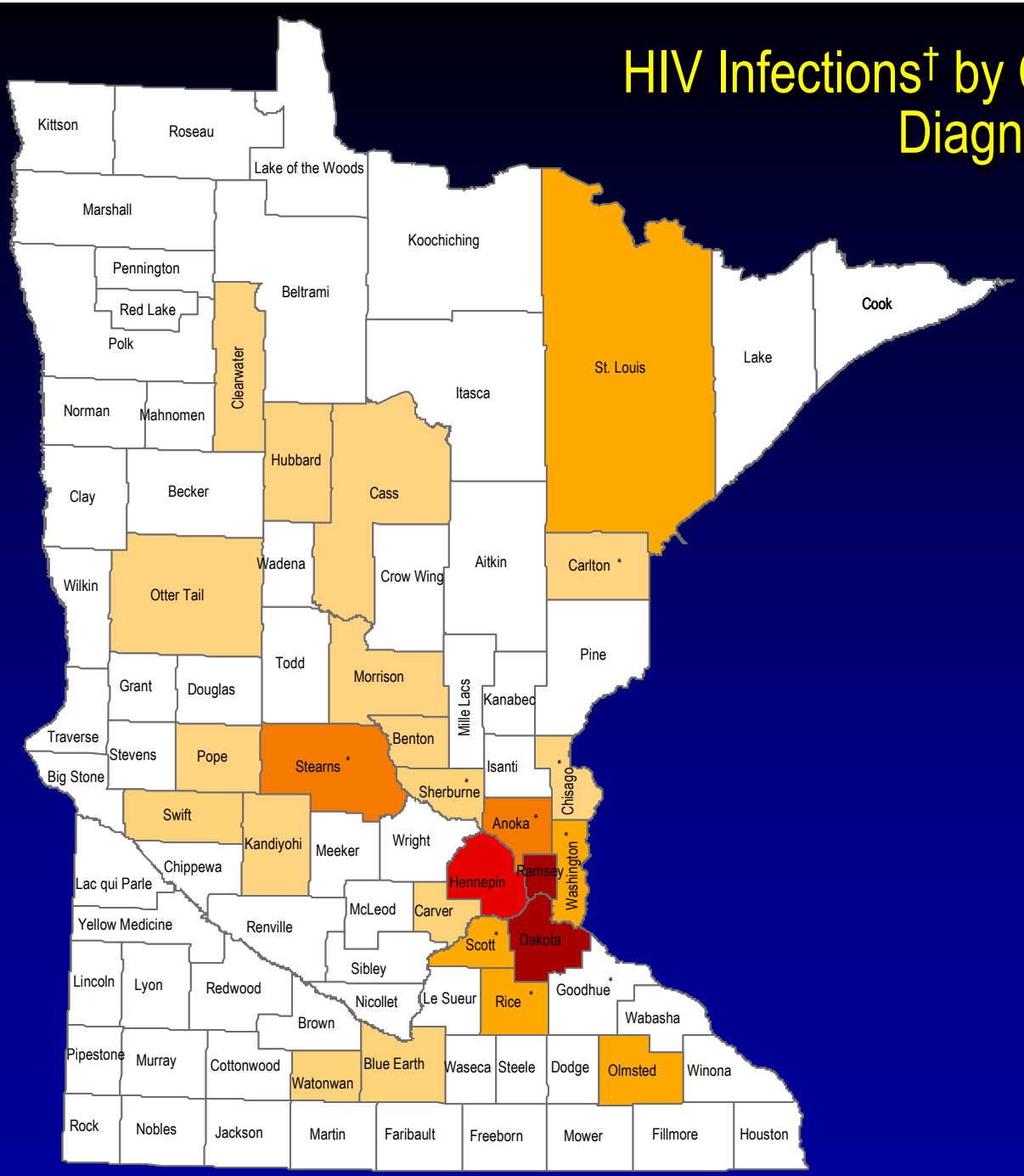
Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* in Minnesota by Person, Place, and Time

** HIV or AIDS at first diagnosis*

Place

HIV Infections† by County of Residence at Diagnosis, 2007



Number of Infections

- None
- 1 - 2
- 3 - 6
- 7 - 15
- 16 - 54
- 55 - 190

City of Minneapolis – 124
City of St. Paul – 42
Suburban# – 119
Greater Minnesota - 40

Total number = 325

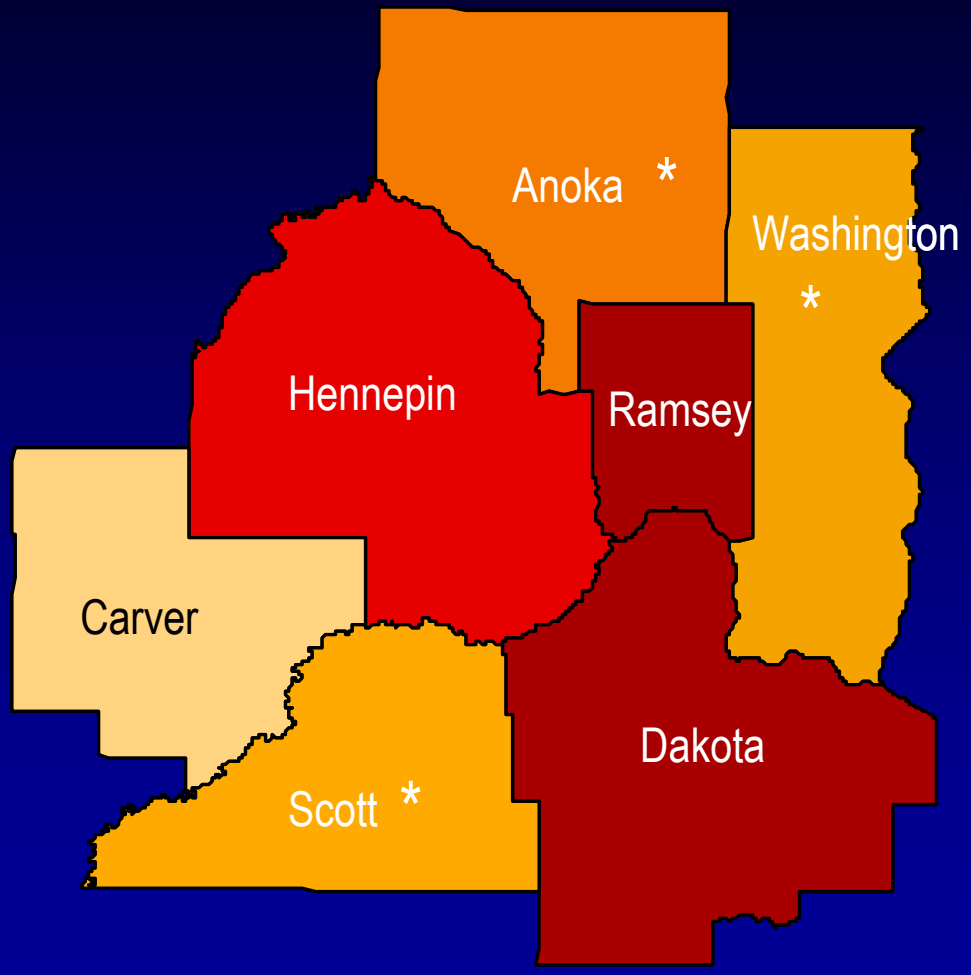
* Counties in which a state correctional facility is located

7-county metro area, excluding the cities of Minneapolis and St. Paul

†HIV or AIDS at first diagnosis

Data Source: *Minnesota HIV/AIDS Surveillance System*

Map of Metro Area:
HIV Infections† by County of Residence at Diagnosis, 2007



Number of Infections

- None
- 1 - 2
- 3 - 6
- 7 - 15
- 16 - 54
- 55 - 190

City of Minneapolis – 124
City of St. Paul – 42
Suburban# – 119

Total number (Metro only) = 285

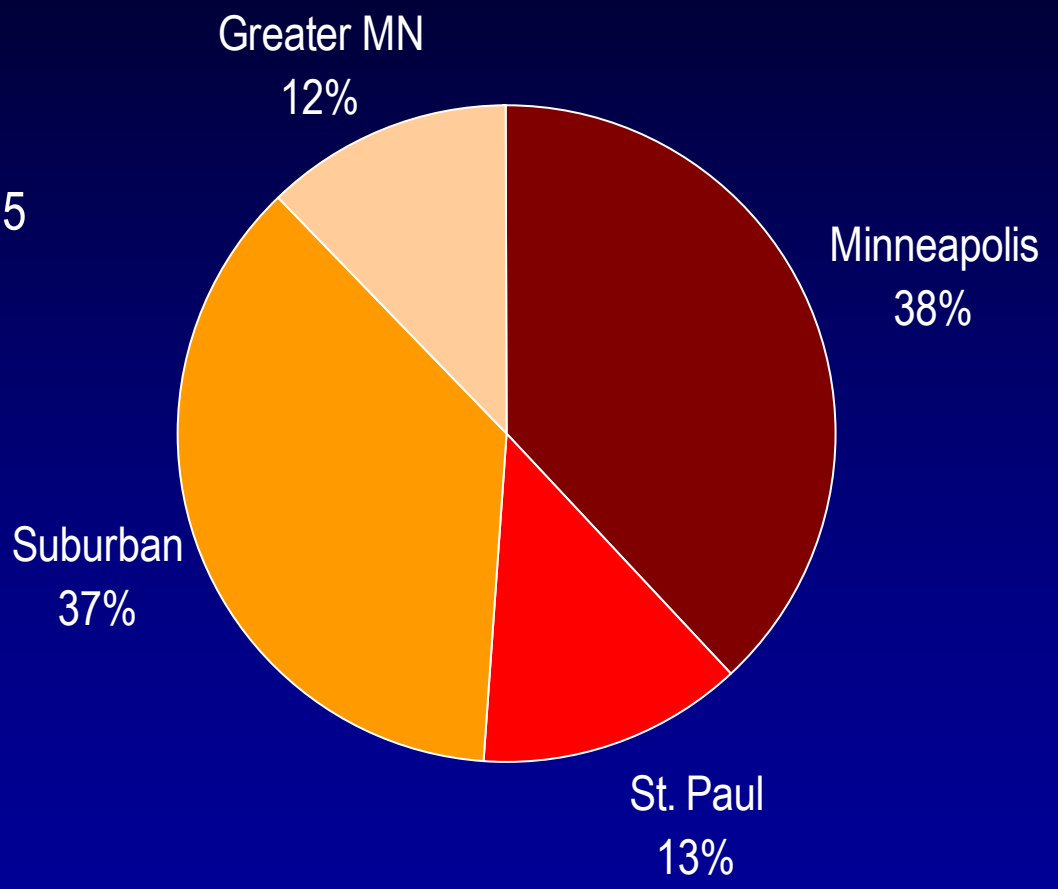
* Counties in which a state correctional facility is located

7-county metro area, excluding the cities of Minneapolis and St. Paul

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* in Minnesota by Residence at Diagnosis, 2007

Total Number = 325



Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (except Minneapolis), Ramsey (except St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties, outside the seven-county metro area.

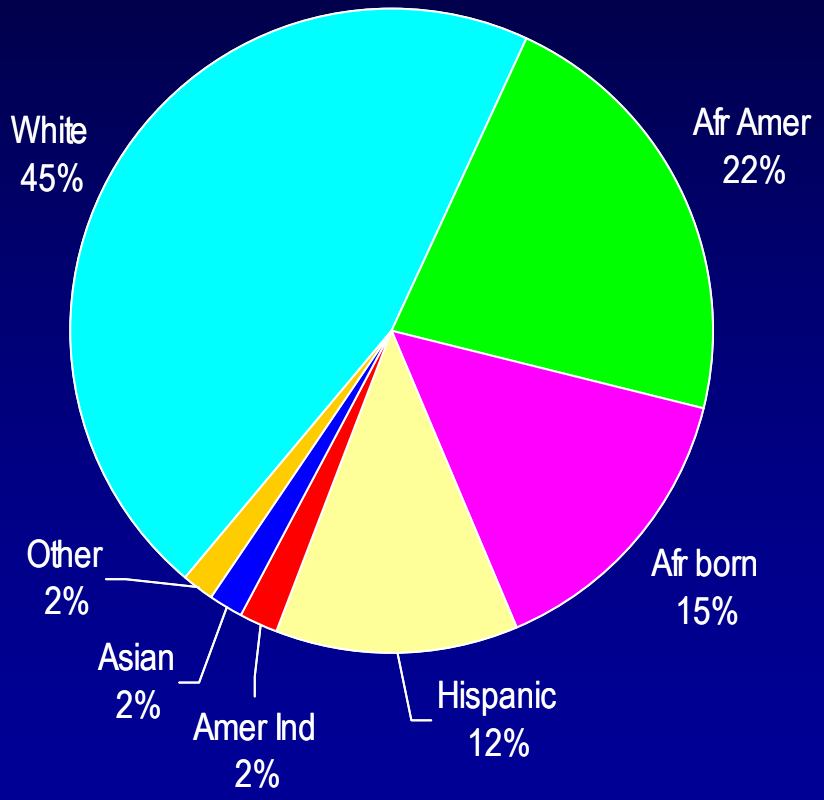
* *HIV or AIDS at first diagnosis*

Data Source: *Minnesota HIV/AIDS Surveillance System*

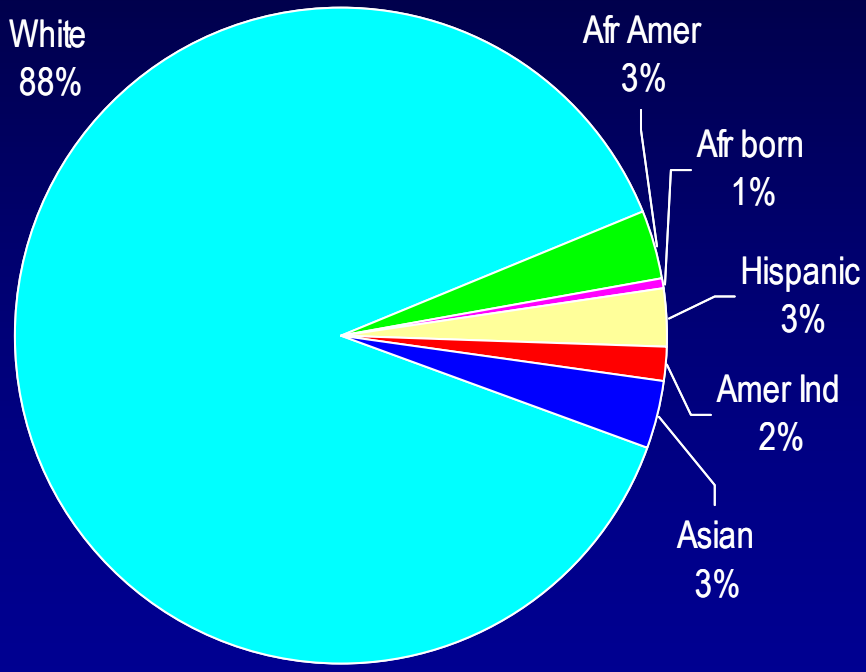
Gender and Race/Ethnicity

HIV Infections* Diagnosed in Year 2007 and General Population in Minnesota by Race/Ethnicity

HIV Diagnoses (n = 325)



Population† (n = 4,919,479)



** HIV or AIDS at first diagnosis*

† Population estimates based on 2000 U.S. Census data.

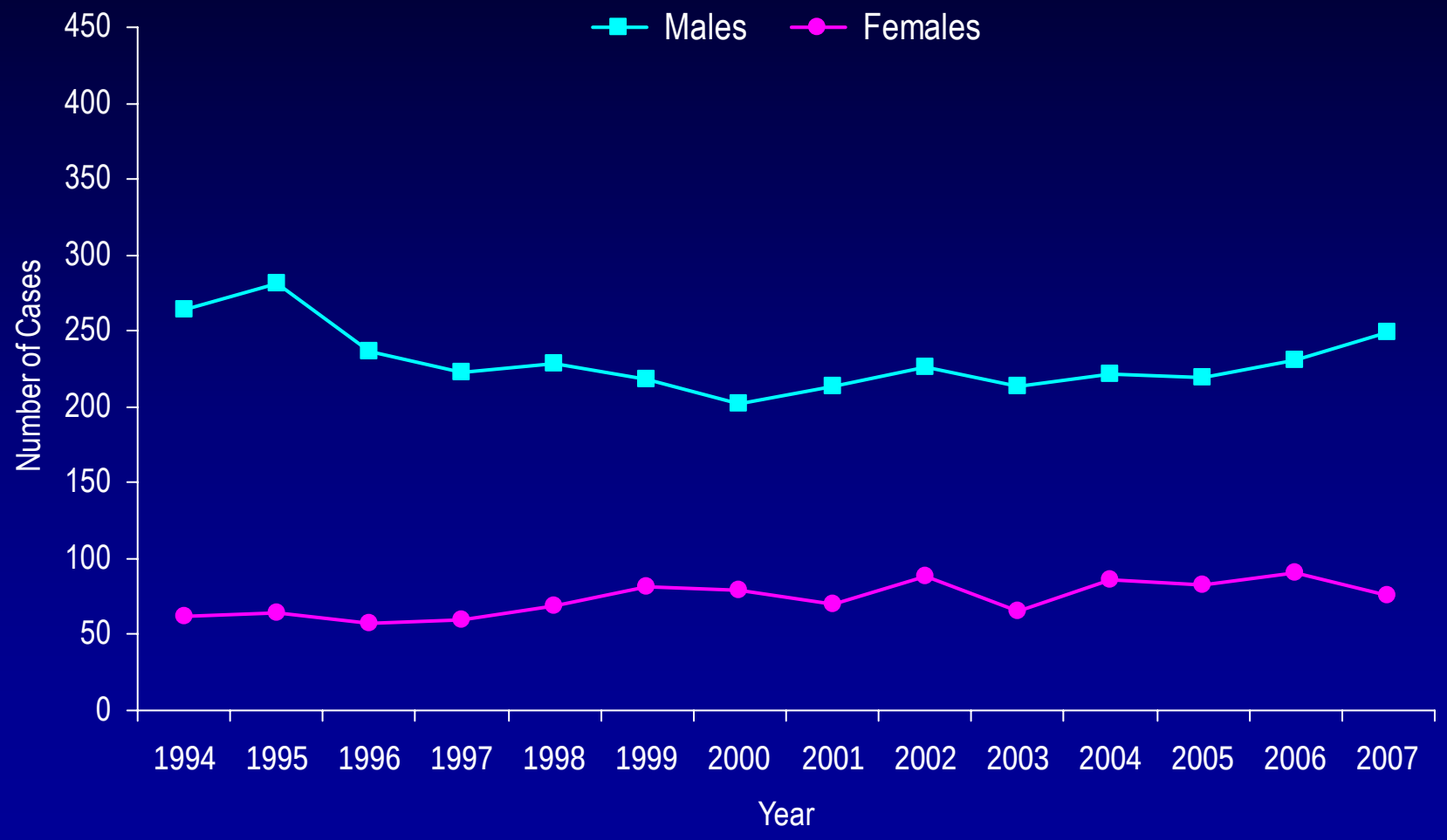
Data Source: *Minnesota HIV/AIDS Surveillance System*

n = Number of persons Amer Ind = American Indian

Afr Amer = African American (Black, not African-born persons)

Afr born = African-born (Black, African-born persons)

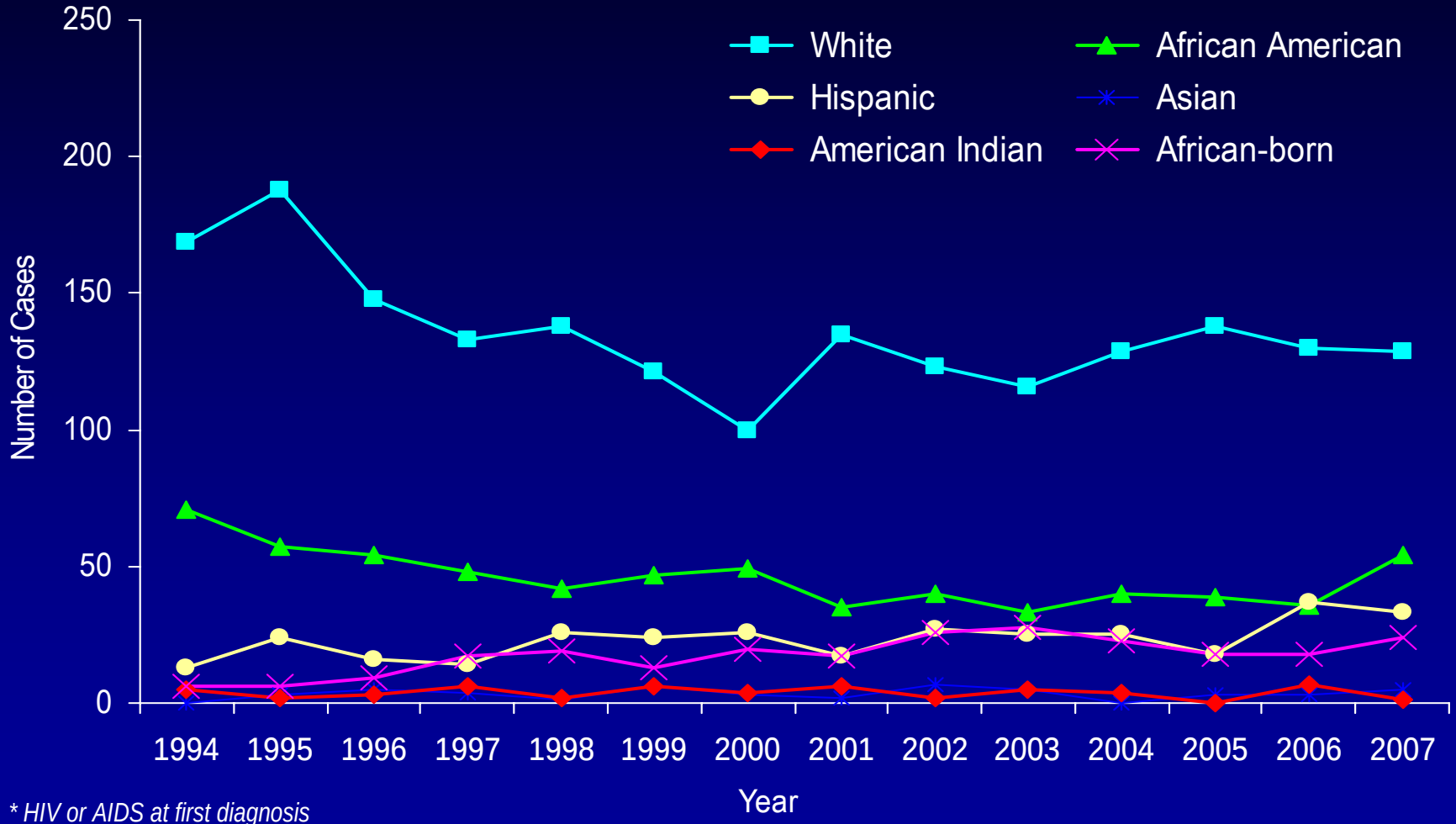
HIV Infections* by Gender and Year of Diagnosis, 1994-2007



** HIV or AIDS at first diagnosis*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Males by Race/Ethnicity† and Year of Diagnosis, 1994-2007

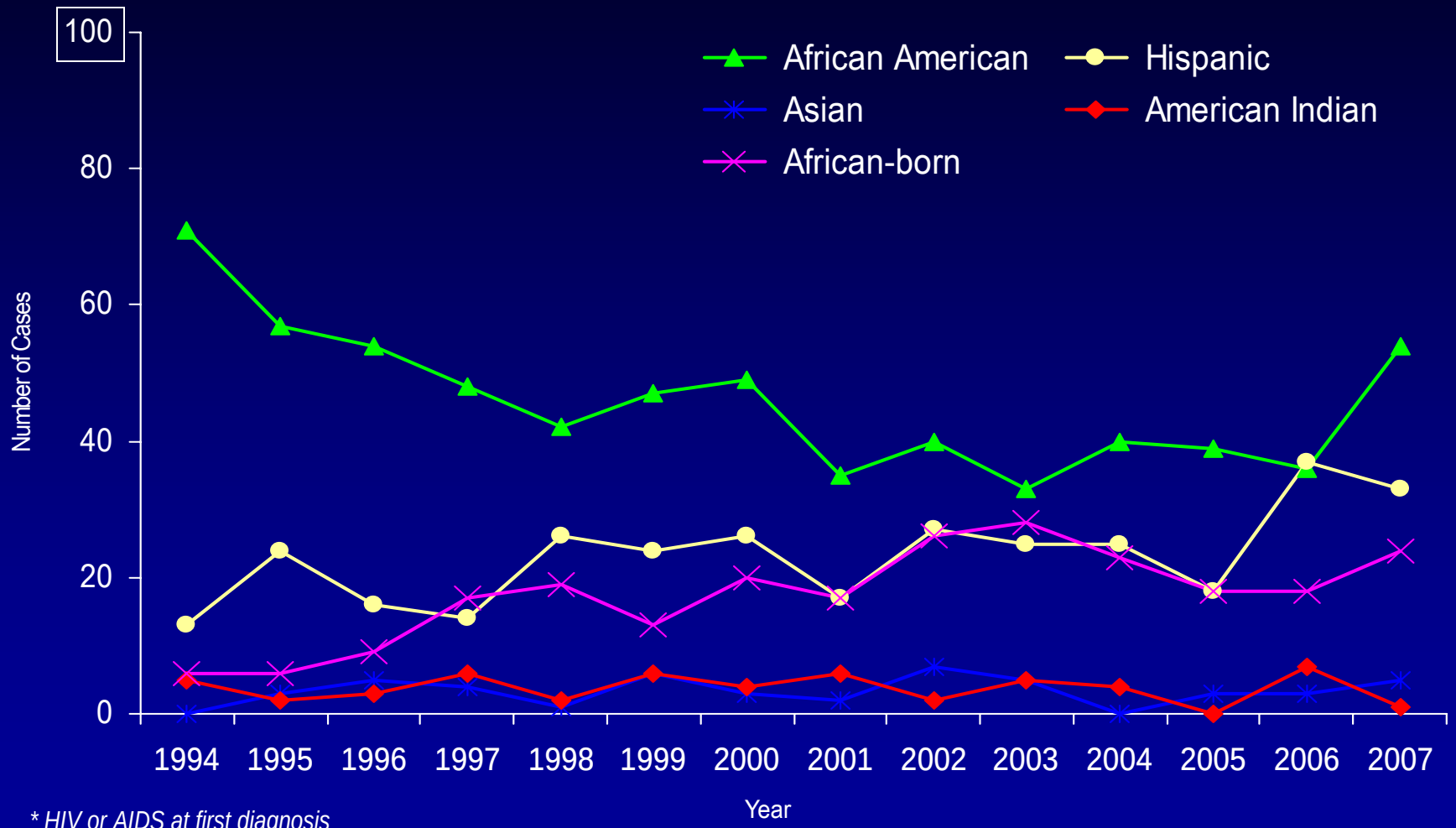


** HIV or AIDS at first diagnosis*

† "African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks. Cases with unknown race are excluded.

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Males by Race/Ethnicity† and Year of Diagnosis, 1994-2007 (excluding Whites)

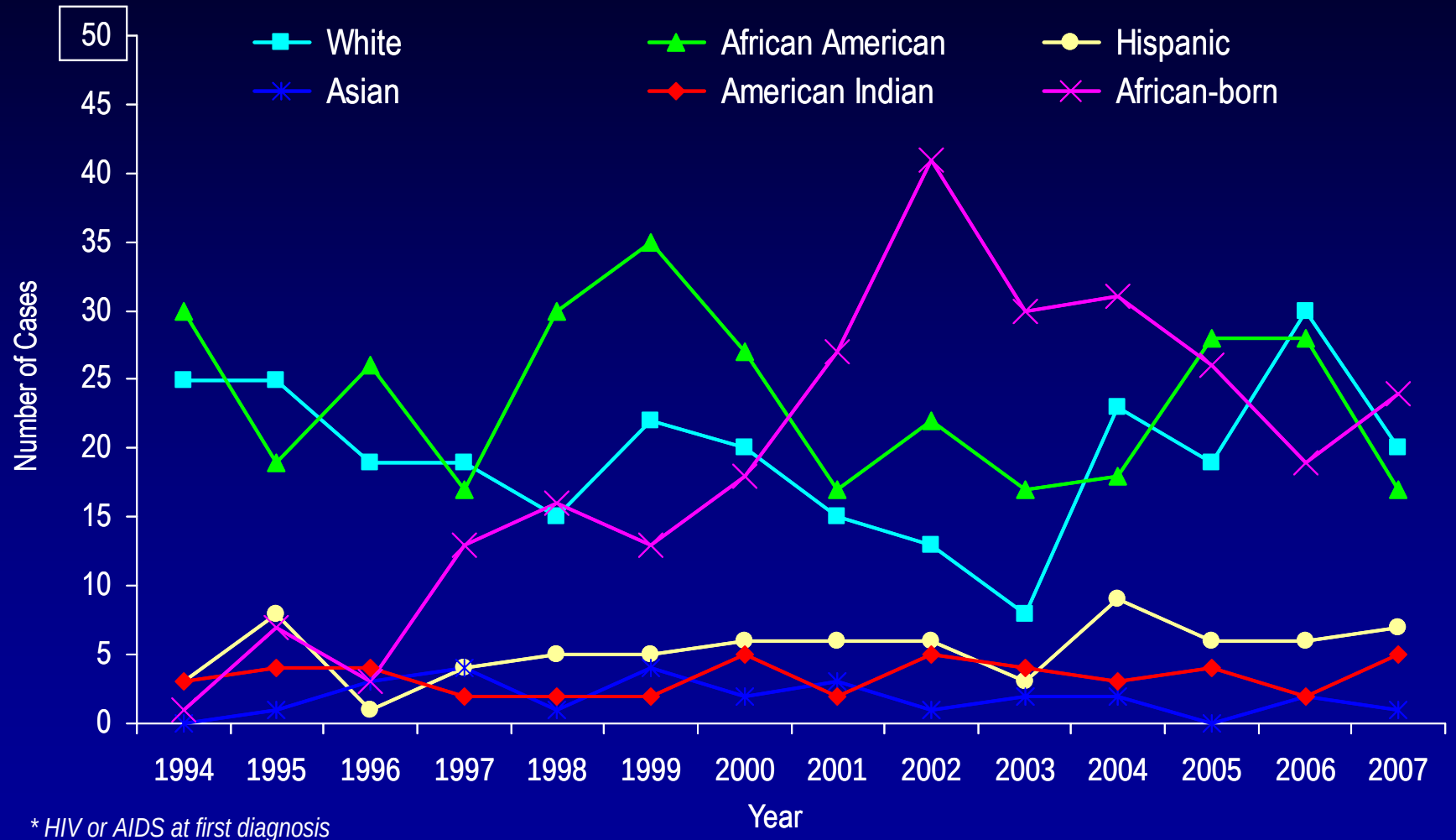


** HIV or AIDS at first diagnosis*

† "African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks. Cases with unknown race are excluded.

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Females by Race/Ethnicity† and Year of Diagnosis, 1994-2007

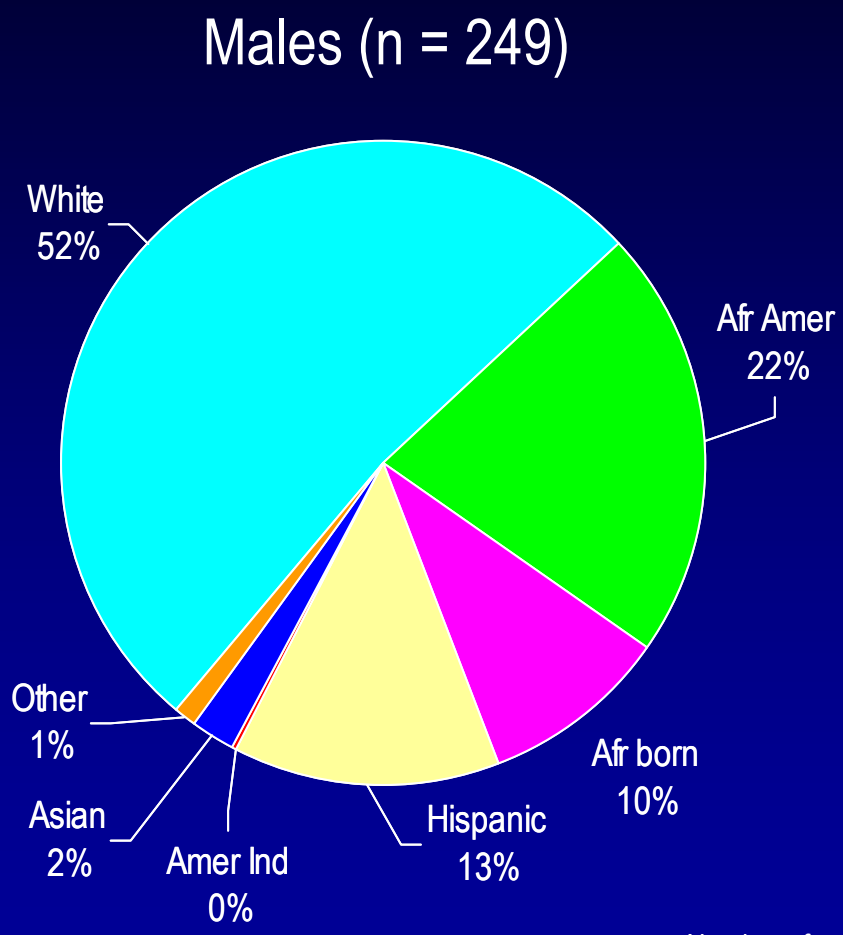


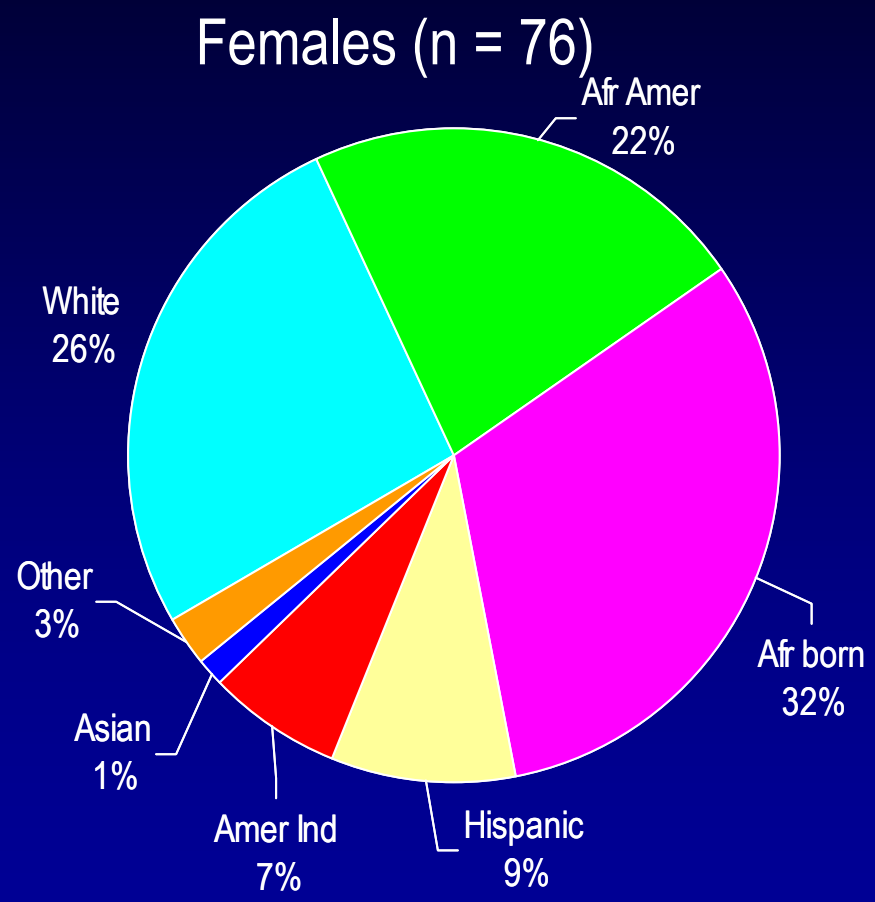
** HIV or AIDS at first diagnosis*

† "African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks. Cases with unknown race are excluded.

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Diagnosed in Year 2007 by Gender and Race/Ethnicity





n = Number of persons Afr Amer = African American (Black, not African-born persons)

Afr born = African-born (Black, African-born persons) Amer Ind = American Indian

Other = Multi-racial persons or persons with unknown race

** HIV or AIDS at first diagnosis*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Number of Cases and Rates (per 100,000 persons) of HIV Infection* by Race/Ethnicity† – Minnesota, 2007

Race/Ethnicity	*Cases*	*%*	*Rate*
White, non-Hispanic	**149**	**46%**	**3.4**
Black, African-American	**71**	**22%**	**42.3**
Black, African-born	**48**	**15%**	**96-136.4††**
Hispanic	**40**	**12%**	**27.9**
American Indian	**6**	**2%**	**7.4**
Asian/Pacific Islander	**6**	**2%**	**3.6**
Other^	**5**	**2%**	**X**
Total	***325***	***100%***	***6.6***

** HIV or AIDS at first diagnosis; 2000 U.S. Census Data used for rate calculations.*

† "African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks. Cases with unknown race are excluded.

†† Accurate population estimates for African-born persons living in Minnesota are unavailable – anecdotal (50,000) and 2000 US Census data (35,188) were used to create the range of rates reported for African-born.

^ Other = Multi-racial persons or persons with unknown race

Age

Average Age at HIV Diagnosis Among Males by Race/Ethnicity† : Three-Year Averages

Race/Ethnicity	Average age in years (No. of cases)		
	1995-1997	2000-2002	2005-2007
White	36 (469)	38 (358)	37 (397)
Black			
African American	34 (159)	37 (124)	34 (129)
African-born	34 (32)	37 (63)	35 (60)
Hispanic	33 (54)	32 (70)	33 (88)
Asian	35 (12)	39 (12)	37 (11)
American Indian	36 (11)	35 (12)	36 (8)

Cases with unknown or multiple race or unknown age were excluded.

† *"African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Average Age at HIV Diagnosis Among Females by Race/Ethnicity†: Three-Year Averages

Race/Ethnicity	Average age* in years (No. of cases)		
	1995-1997	2000-2002	2005-2007
White	32 (63)	31 (48)	36 (69)
Black			
African American	33 (62)	33 (66)	34 (73)
African-born	32 (23)	32 (86)	35 (69)
Hispanic	29 (13)	29 (18)	34 (19)
Asian	22 (8)	34 (6)	----
American Indian	28 (10)	36 (12)	30 (11)

* *Average age not displayed for subgroups with less than 5 cases.*

Cases with unknown or multiple race or unknown age were excluded.

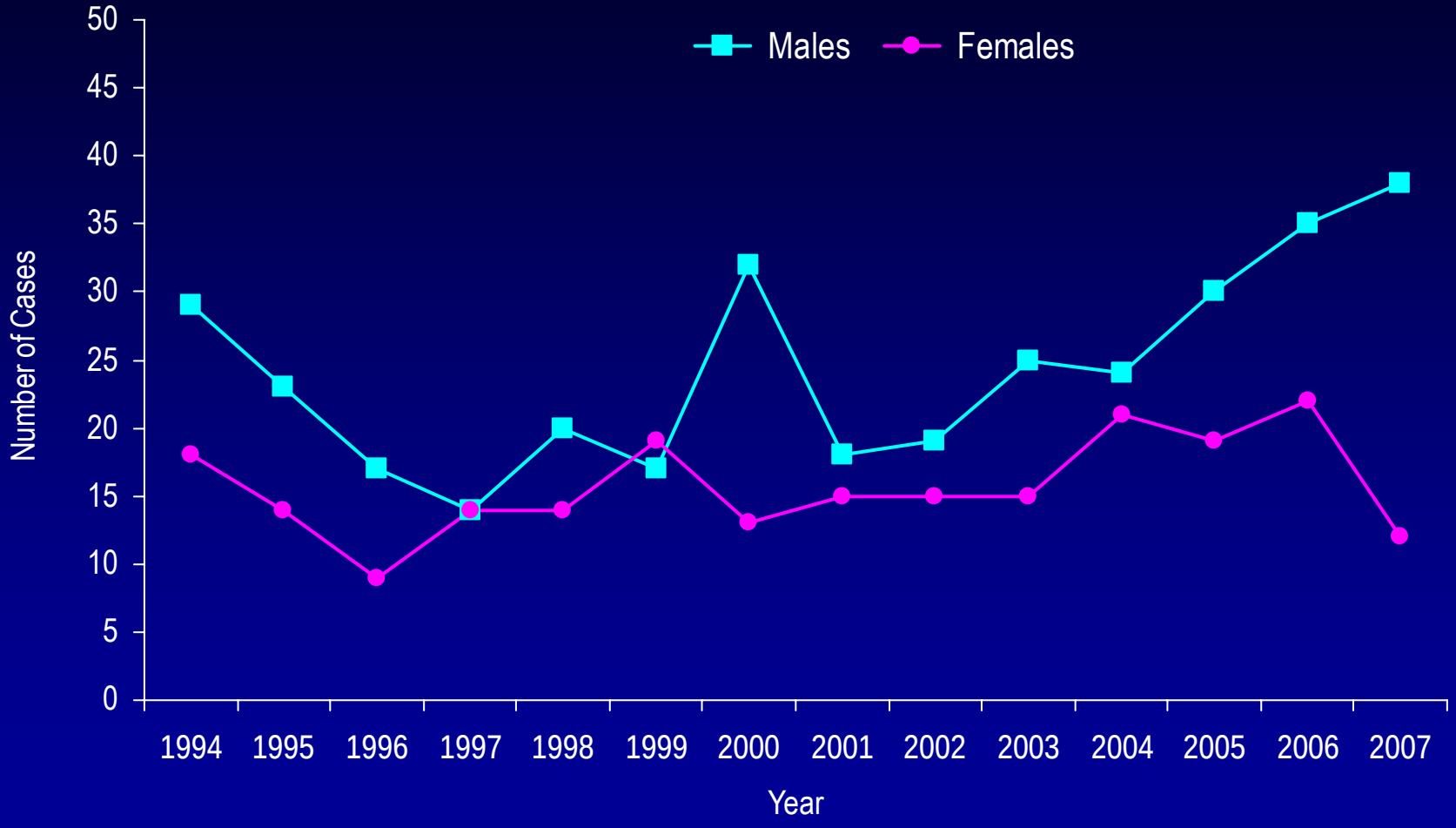
† *"African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Adolescents & Young Adults (Ages 13-24)*

** Case numbers are too small to present meaningful data separately for adolescents and young adults.*

HIV Infections* Among Adolescents and Young Adults† by Gender and Year of Diagnosis, 1994-2007

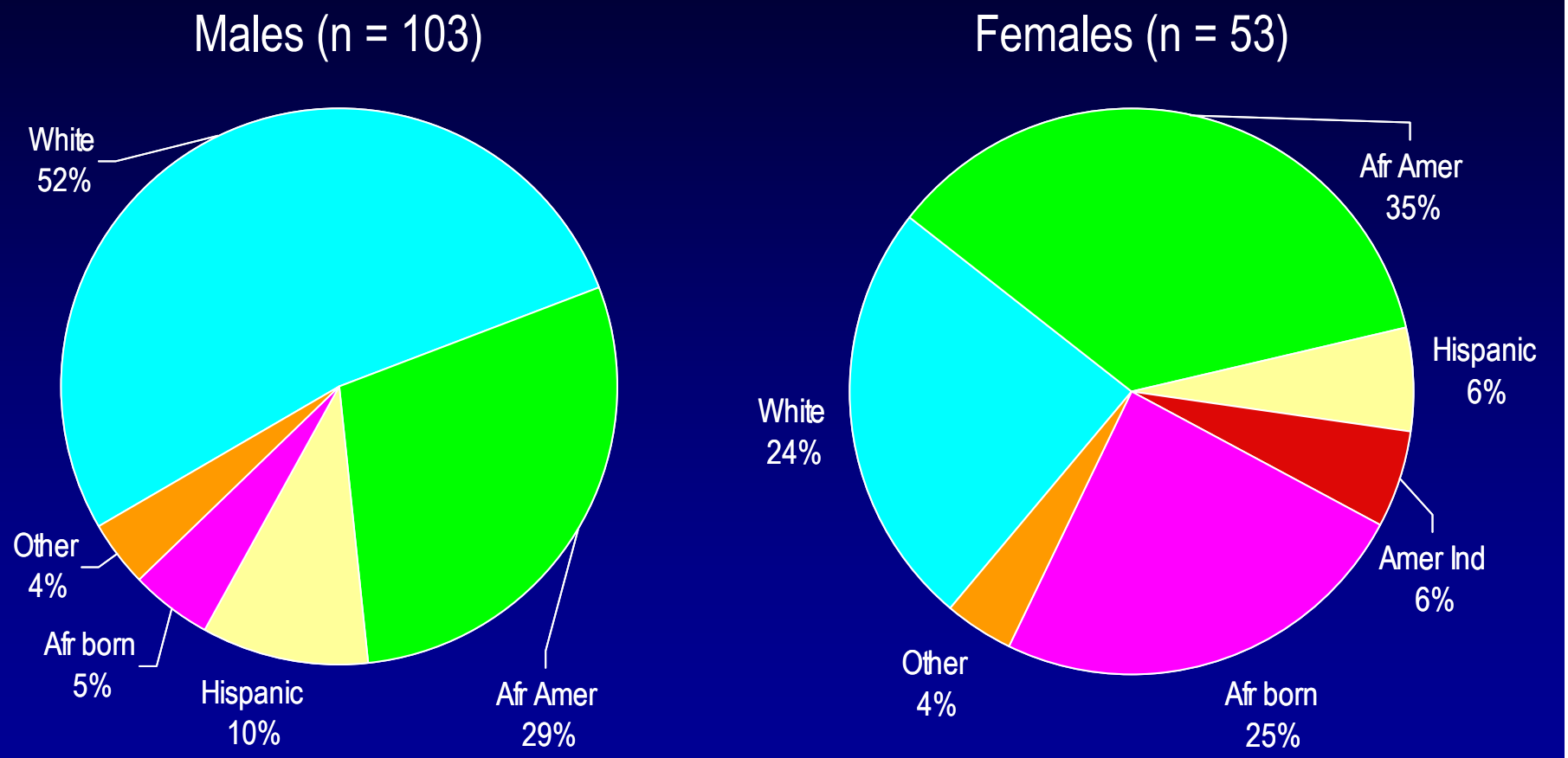


* *HIV or AIDS at first diagnosis*

† *Adolescents defined as 13-19 year-olds; Young Adults defined as 20-24 year-olds.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Adolescents and Young Adults† by Gender and Race/Ethnicity, 2005-2007 Combined



n = Number of persons Amer Ind = American Indian

Afr Amer = African American (Black, not African-born persons)

Afr born = African-born (Black, African-born persons)

Other = Multi-racial persons or persons with unknown race

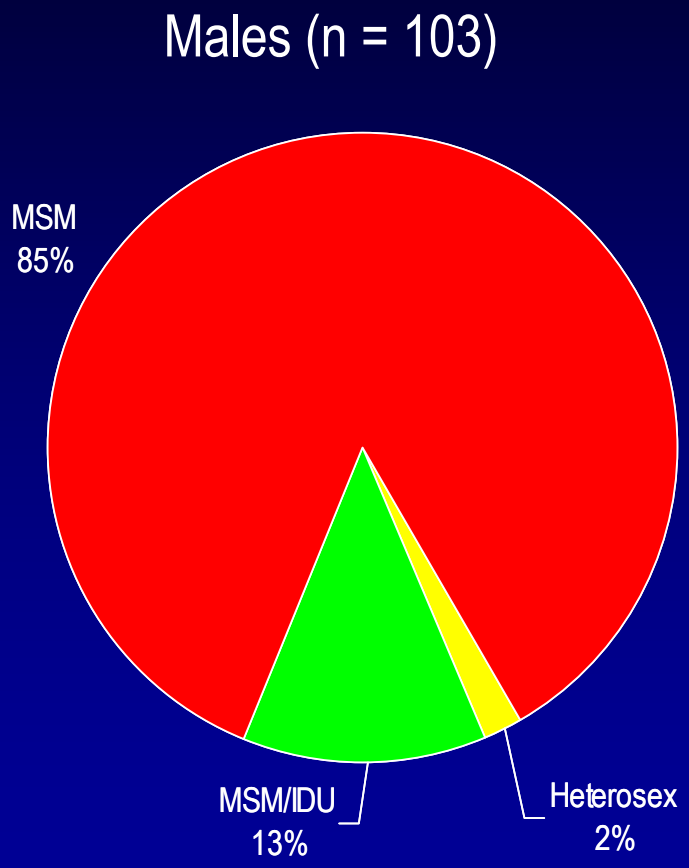
** HIV or AIDS at first diagnosis*

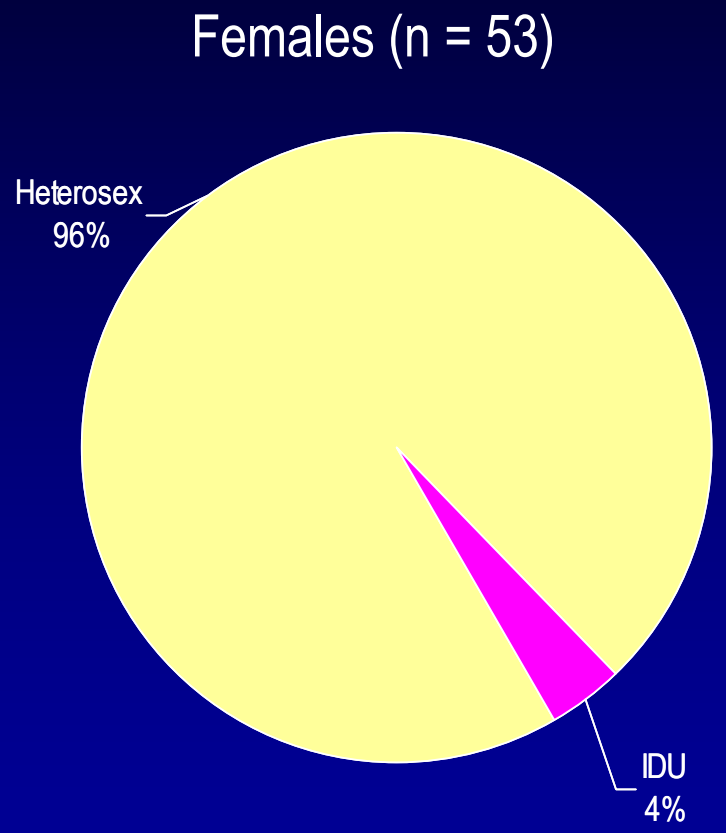
† Adolescents defined as 13-19 year-olds;

Young Adults defined as 20-24 year-olds.

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Adolescents and Young Adults† by Gender and Estimated Exposure Group#, 2005-2007 Combined





* *HIV or AIDS at first diagnosis*

† *Adolescents defined as 13-19 year-olds; Young Adults defined as 20-24 year-olds.*

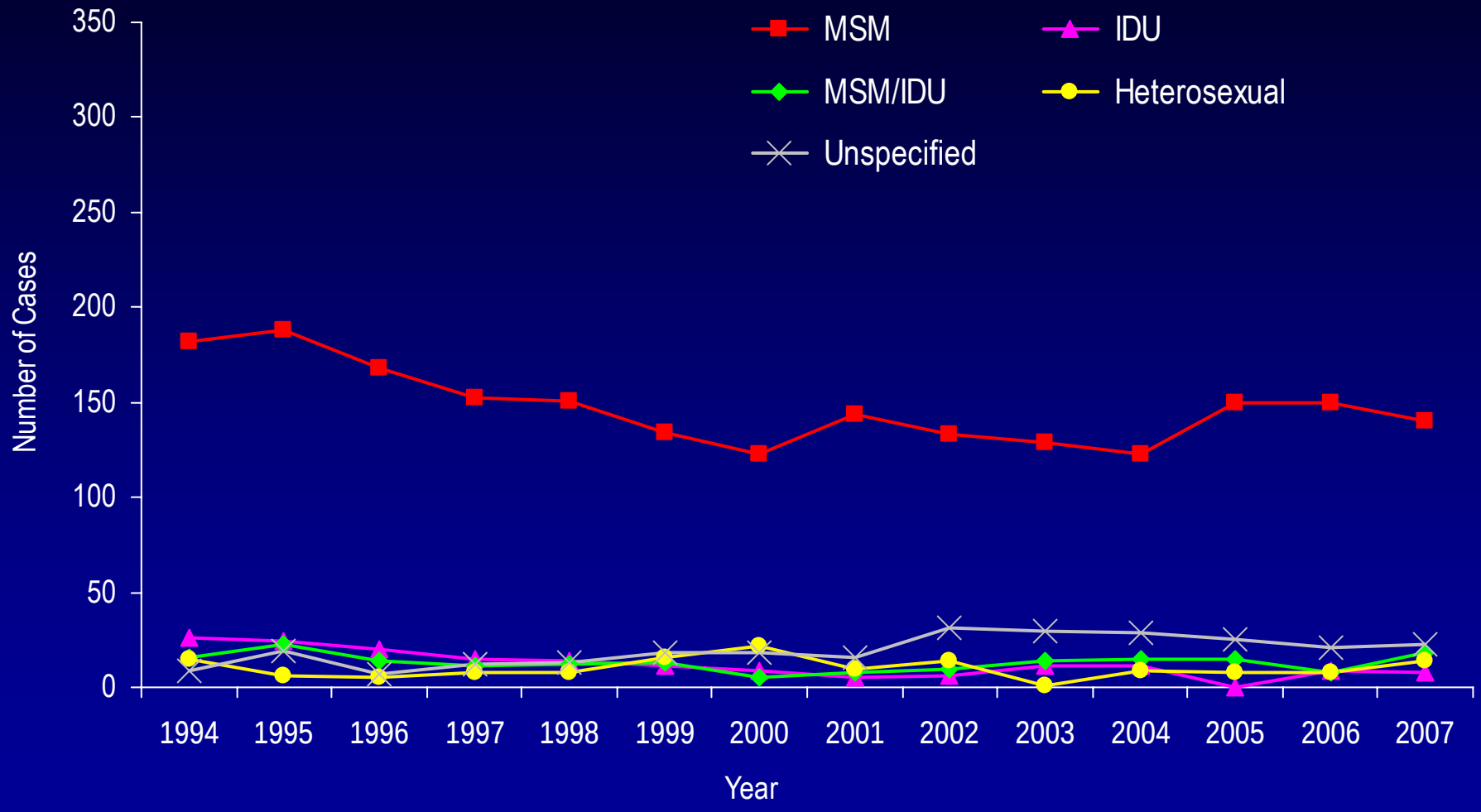
n = Number of persons
IDU = Injecting drug use
MSM = Men who have sex with men
Heterosex = Heterosexual contact

Mode of Exposure proportions have been estimated using cases for 2005-2007 with known risk. For more detail see the HIV Surveillance Technical notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Mode of Exposure

HIV Infections* Among Males by Mode of Exposure and Year of Diagnosis, 1994-2007

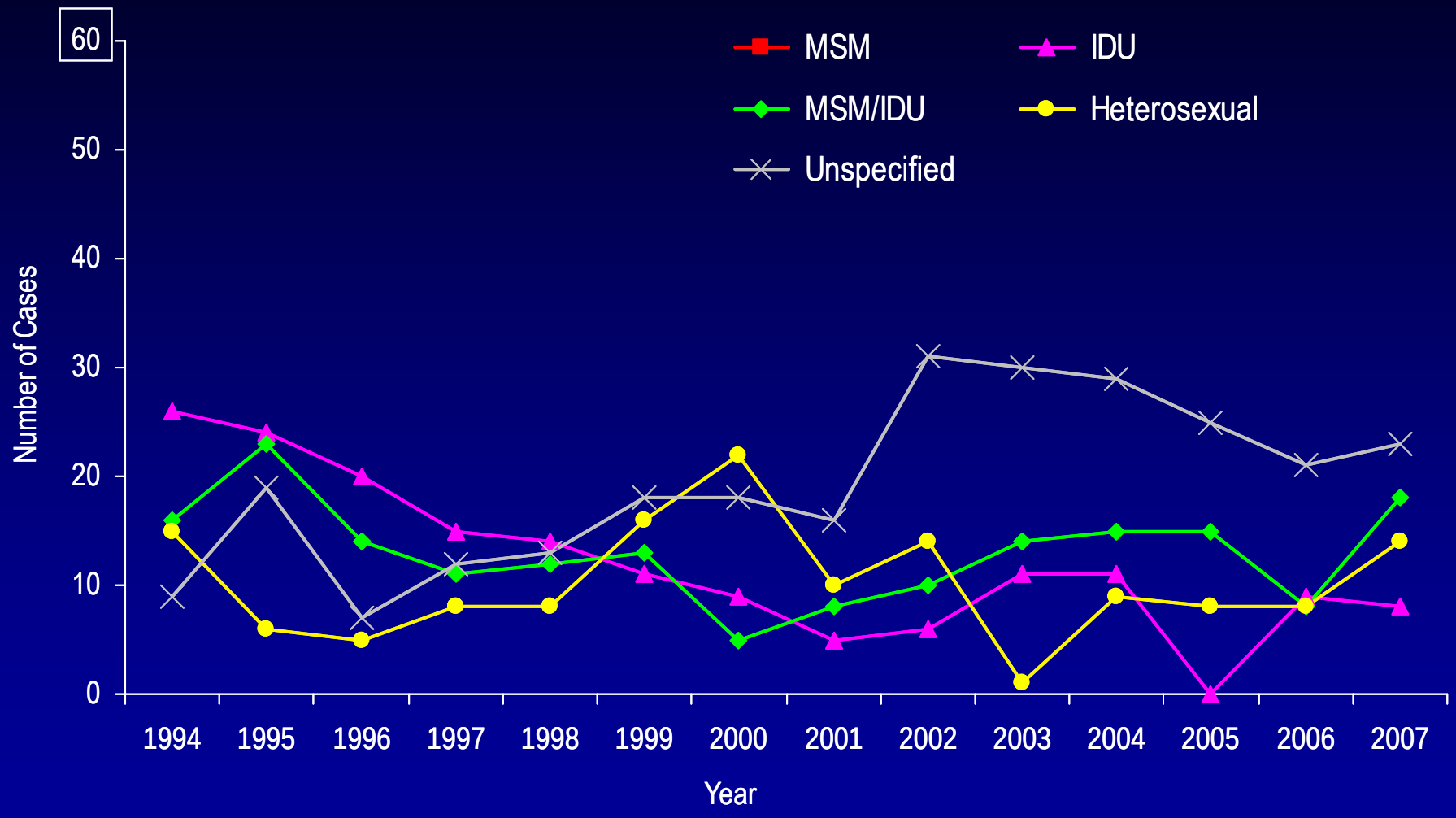


MSM = Men who have sex with men IDU = Injecting drug use Heterosexual = Heterosexual contact

* *HIV or AIDS at first diagnosis* Unspecified = No mode of exposure ascertained

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Males by Mode of Exposure and Year of Diagnosis, 1994-2007 (excluding MSM)

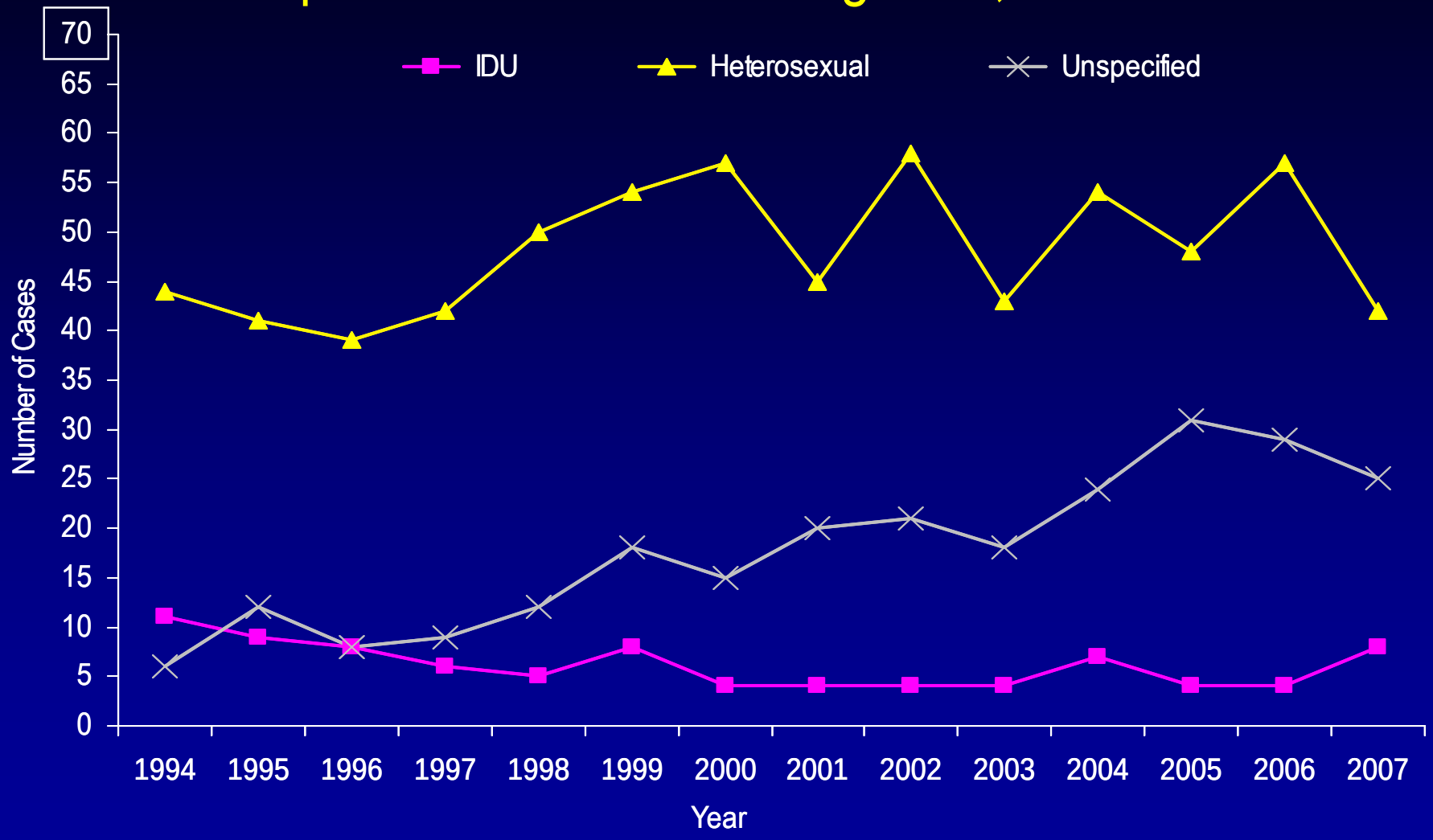


MSM = Men who have sex with men IDU = Injecting drug use Heterosexual = Heterosexual contact

* *HIV or AIDS at first diagnosis* Unspecified = No mode of exposure ascertained

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Females by Mode of Exposure and Year of Diagnosis, 1994-2007



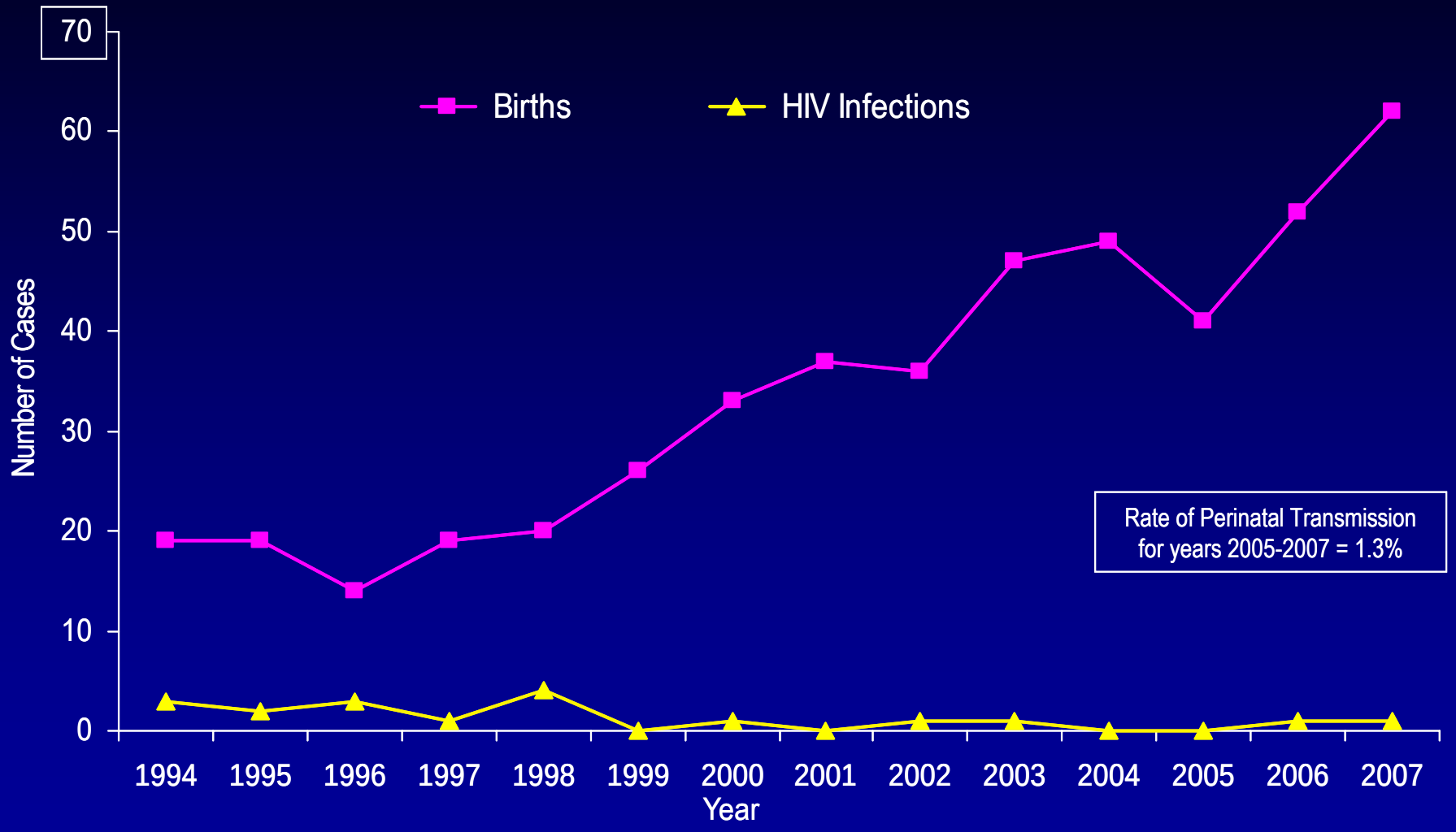
IDU = Injecting drug use Heterosexual = Heterosexual contact with HIV+ , with IDU, with partner with unknown risk

Unspecified = No mode of exposure ascertained

** HIV or AIDS at first diagnosis*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Births to HIV-Infected Women and Number of Perinatally Acquired HIV Infections* by Year of Birth, 1994-2007

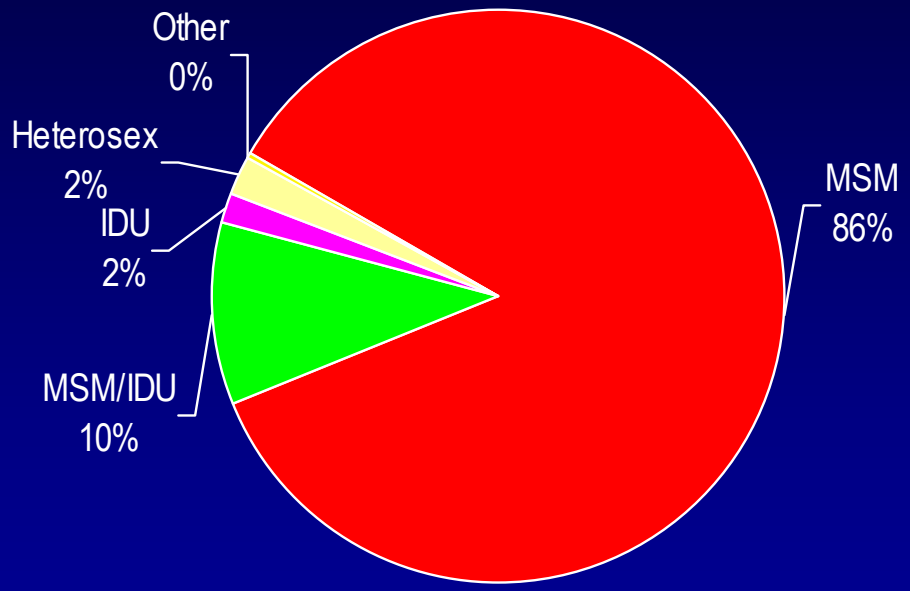


** HIV or AIDS at first diagnosis for a child exposed to HIV during mother's pregnancy, at birth, and/or during breastfeeding.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined

White Males (n = 397)



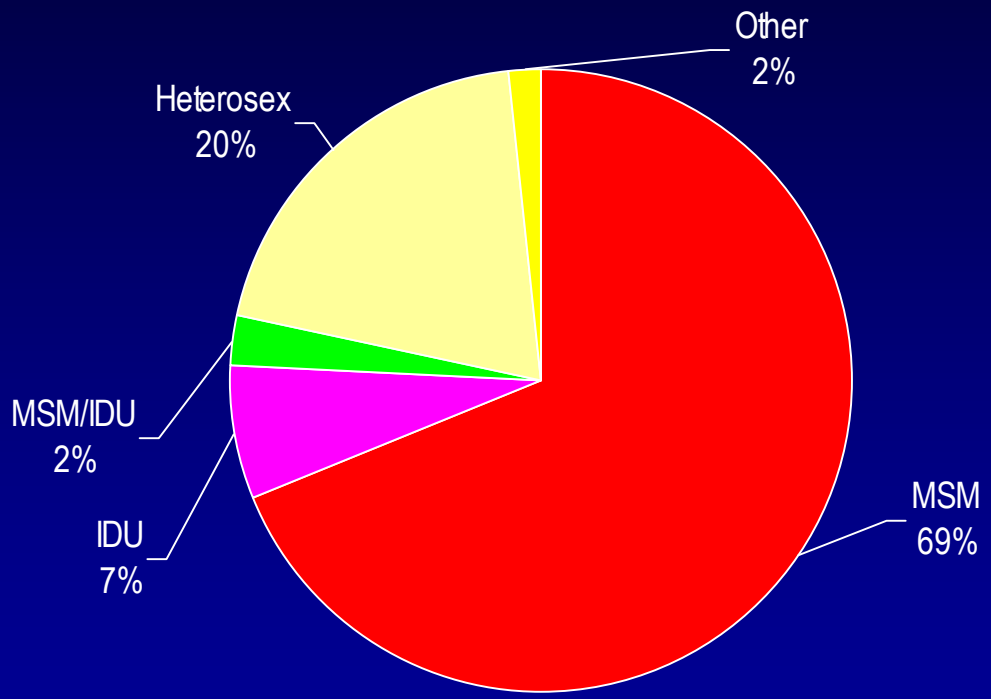
n = Number of persons MSM = Men who have sex with men IDU = Injecting drug use Heterosex = Heterosexual contact
Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2005-2007 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined

African American Males†† (n = 129)



n = Number of persons MSM = Men who have sex with men IDU = Injecting drug use Heterosex = Heterosexual contact

Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

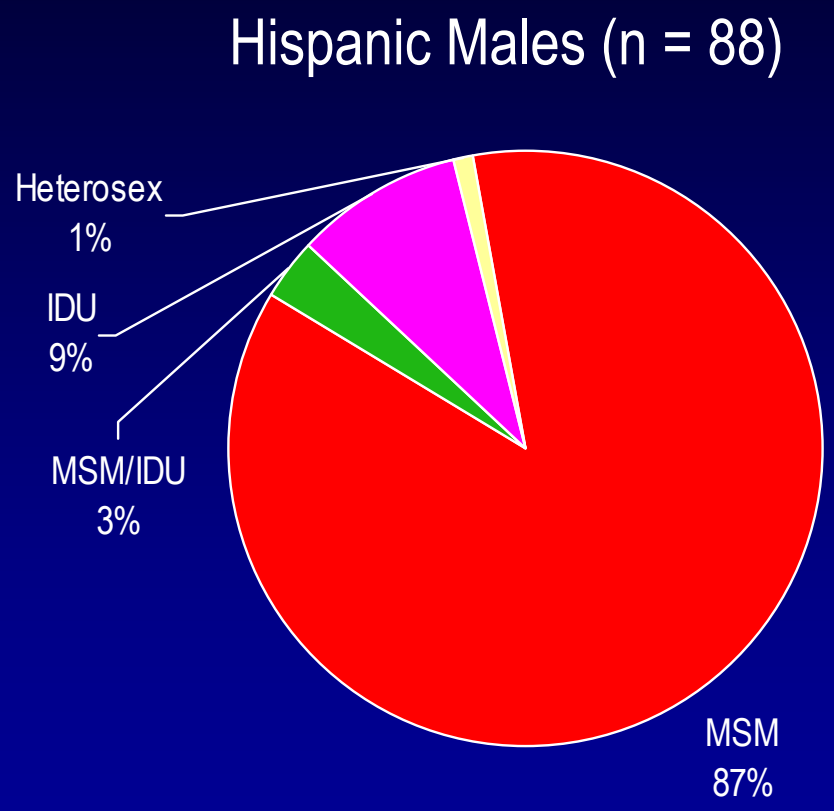
** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2005-2007 with known risk. For more detail see the HIV Surveillance Technical notes.

†† *Refers to Black, African American (not African-born) males.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined



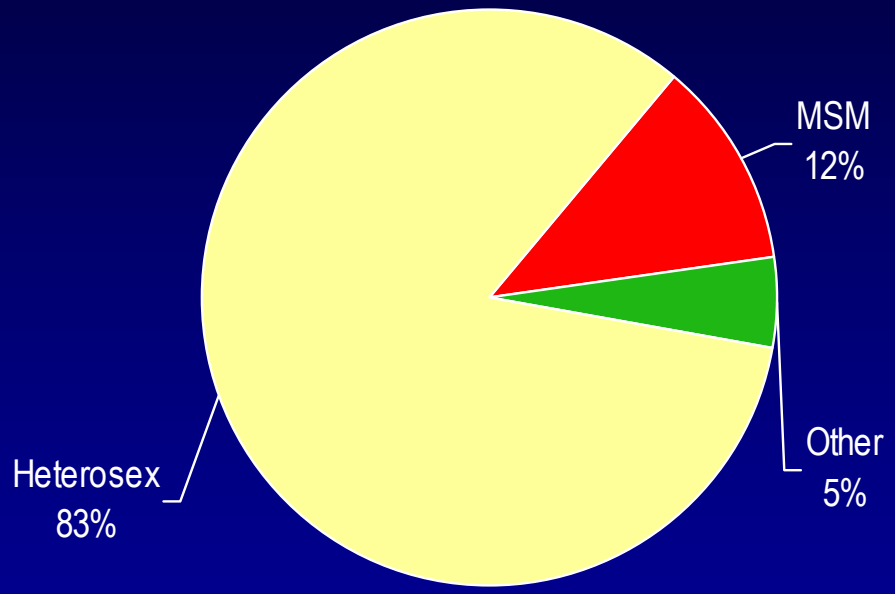
n = Number of persons MSM = Men who have sex with men IDU = Injecting drug use Heterosex = Heterosexual contact

** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2005-2007 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined

African-born Males†† (n = 60)



MSM = Men who have sex with men Heterosex = Heterosexual contact Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

n = number of persons

* *HIV or AIDS at first diagnosis*

† Mode of Exposure has been estimated for cases with unknown risk using the following: 5% - MSM, 90% - Heterosexual, and 5%-Other. For more detail see the HIV Surveillance Technical notes.

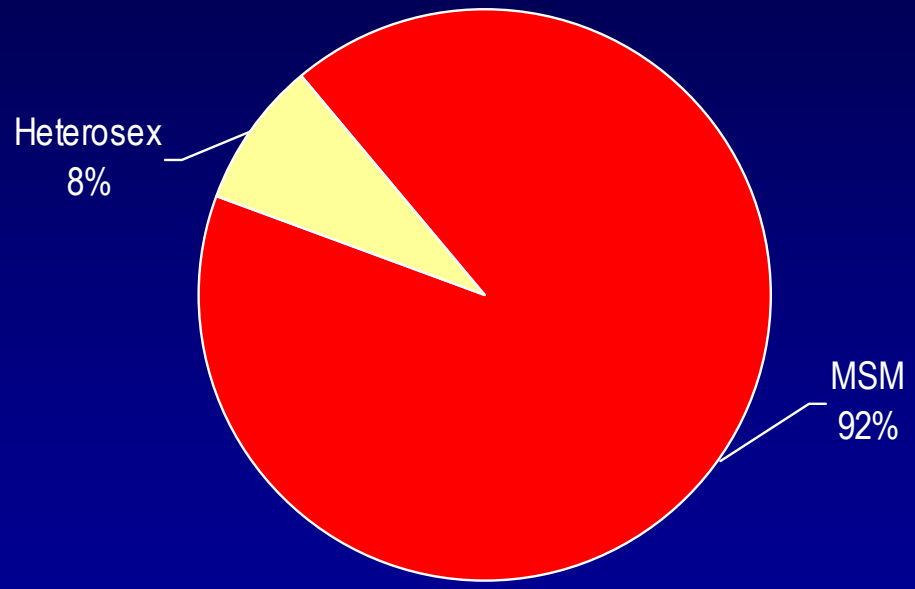
†† *Refers to Black, African-born males.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined

Asian Males (n = 11)

CAUTION: Small number of cases – interpret carefully.



n = Number of persons MSM = Men who have sex with men IDU = Injecting drug use Heterosex = Heterosexual contact

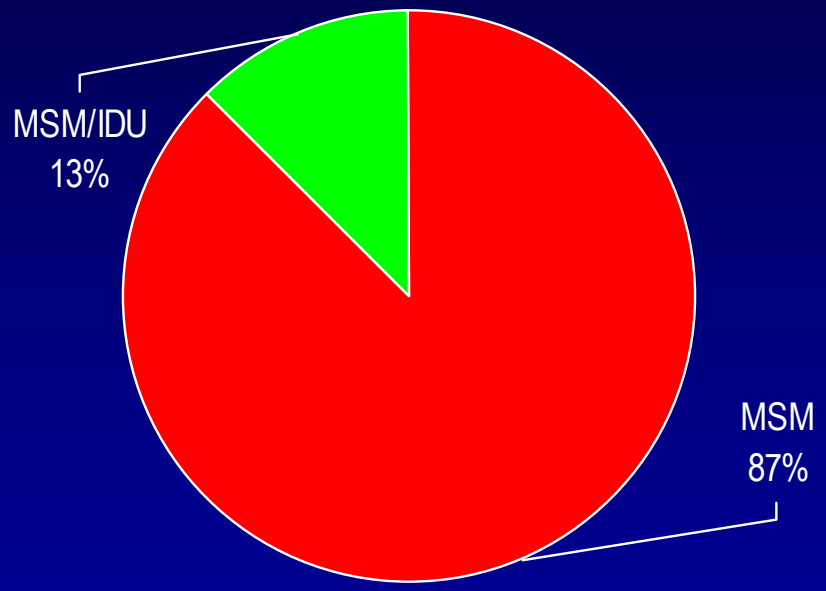
** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2005-2007 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined

American Indian Males (n = 8)

CAUTION: Small number of cases – interpret carefully.



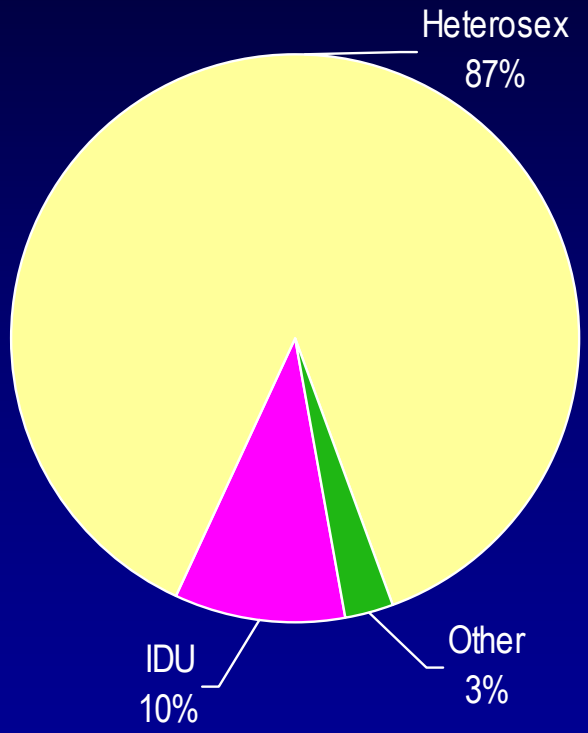
n = Number of persons MSM = Men who have sex with men IDU = Injecting drug use Heterosex = Heterosexual contact

** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2005-2007 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined

African American Females†† (n = 73)



IDU = Injecting drug use Heterosex = Heterosexual contact Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

n = Number of persons

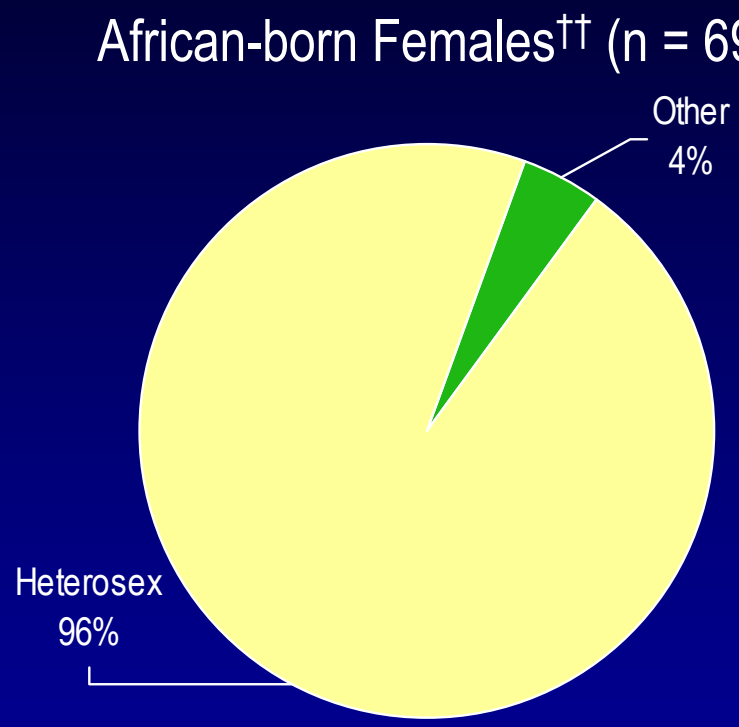
** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2005-2007 with known risk. For more detail see the HIV Surveillance Technical notes.

†† *Refers to Black, African American (not African-born) females.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined



n = Number of persons Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk Heterosex = Heterosexual contact

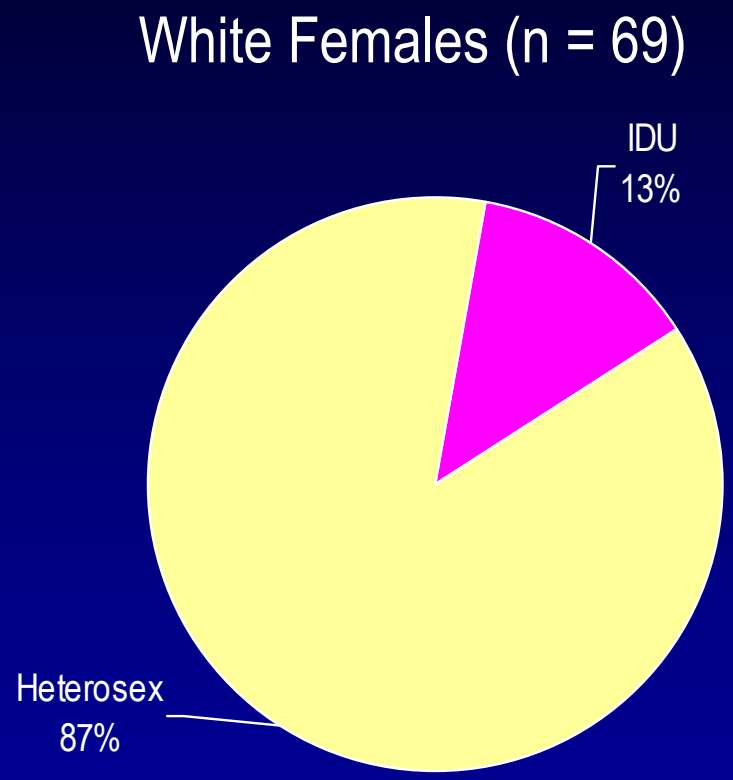
* *HIV or AIDS at first diagnosis*

† Mode of Exposure has been estimated for cases with unknown risk using the following: 95% - Heterosexual and 5%-Other. For more detail see the HIV Surveillance Technical notes.

†† *Refers to Black, African-born females.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined



n = Number of persons IDU = Injecting drug use Heterosex = Heterosexual contact Other = Other risk, including perinatal

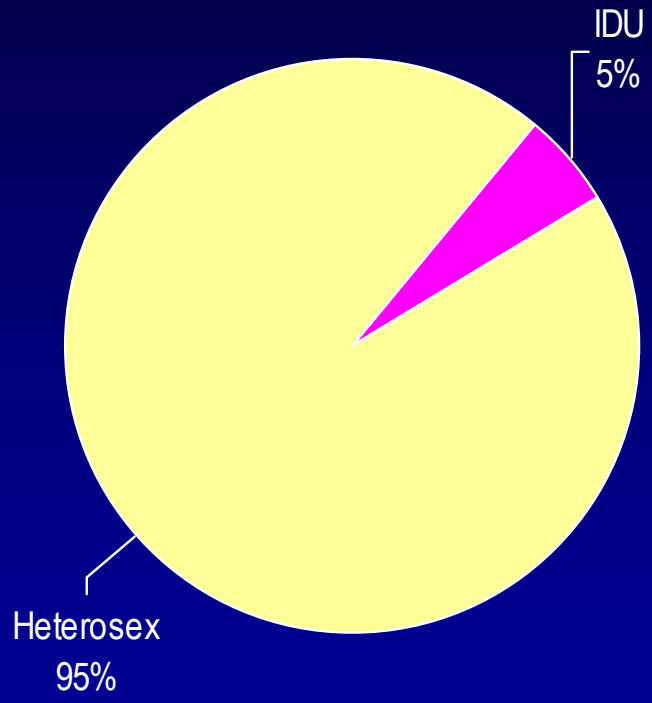
** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2005-2007 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined

Hispanic Females (n = 19)

CAUTION: Small number of cases – interpret carefully.



IDU = Injecting drug use Heterosex = Heterosexual contact Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

n = Number of persons

** HIV or AIDS at first diagnosis*

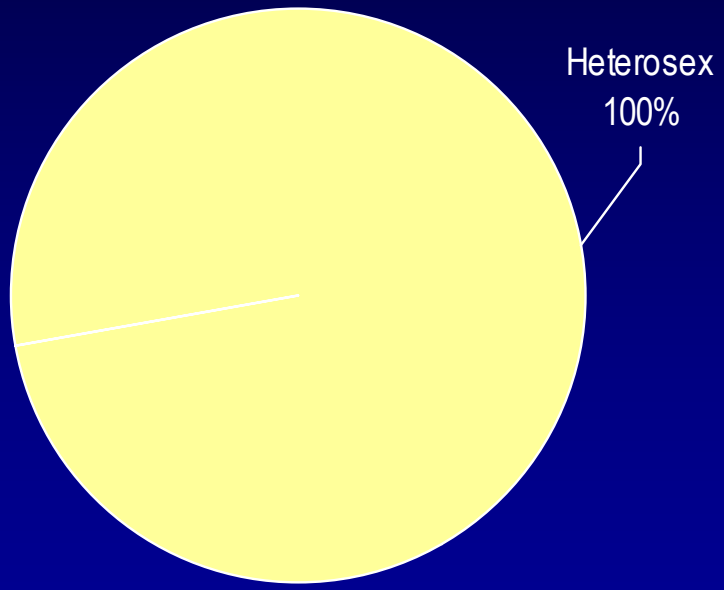
† Mode of Exposure proportions have been estimated using cases for 2005-2007 with known risk. For more detail see the HIV Surveillance Technical notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined

American Indian Females (n = 11)

CAUTION: Small number of cases – interpret carefully.



IDU = Injecting drug use Heterosex = Heterosexual contact Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

n = Number of persons

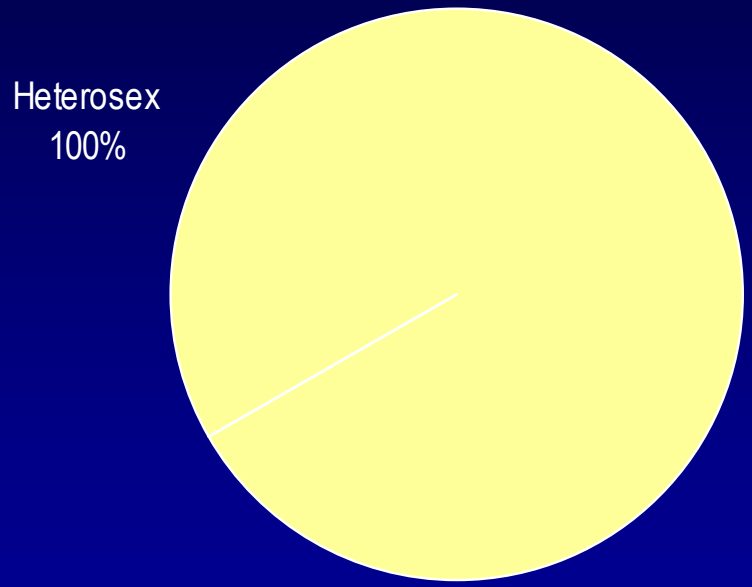
** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2005-2007 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2005-2007 combined

Asian Females (n = 3)

CAUTION: Small number of cases – interpret carefully.



n = Number of persons Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk Heterosex = Heterosexual contact

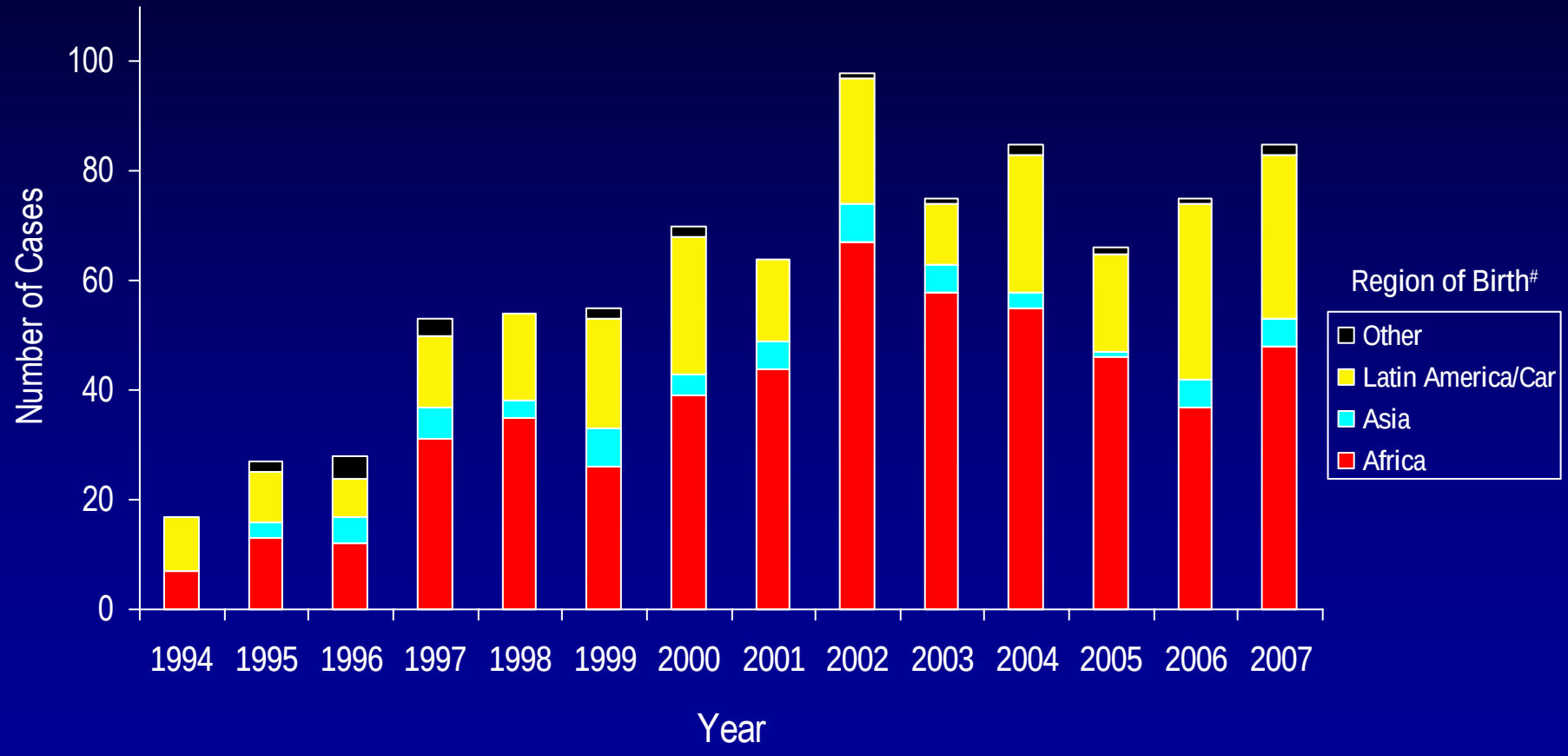
* *HIV or AIDS at first diagnosis*

† Mode of Exposure has been estimated for cases with unknown risk using the following: 95% - Heterosexual and 5%-Other.
For more detail see the HIV Surveillance Technical notes.

Special Populations

Foreign-born Cases

HIV Infections* among Foreign-Born Persons† in Minnesota by Year of Diagnosis and Region of Birth, 1994-2007



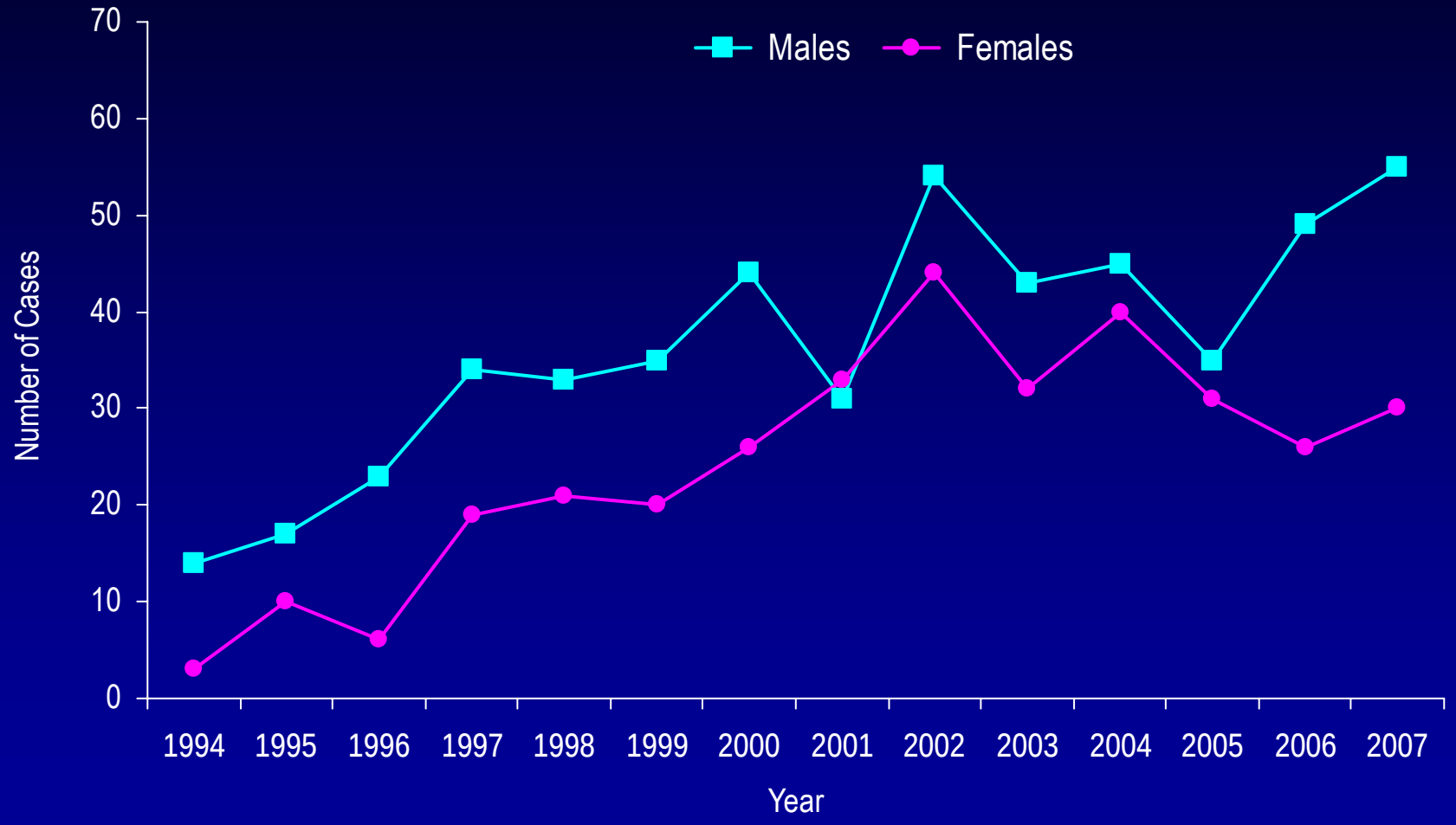
** HIV or AIDS at first diagnosis*

† Excludes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as, other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

 # Latin America/Car includes Mexico and all Central, South American, and Caribbean countries.

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Foreign-Born Persons† by Gender and Year of Diagnosis, 1994-2007

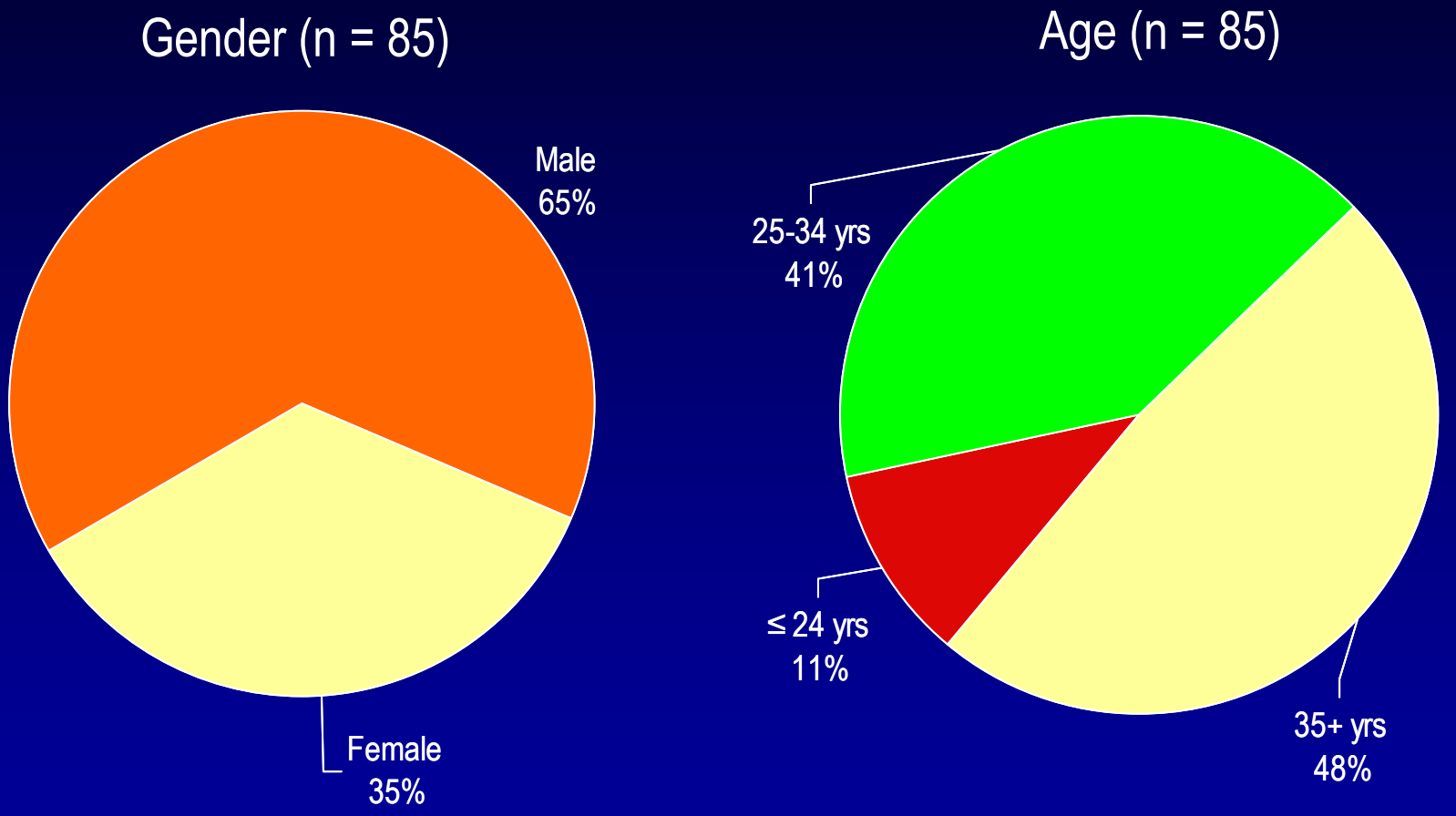


•HIV or AIDS at first diagnosis

†Excludes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as, other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota..

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Foreign-Born Persons† by Gender and Age, 2007



* *HIV or AIDS at first diagnosis*

† *Excludes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as, other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota..*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Countries of Birth Among Foreign-Born Persons† Diagnosed with HIV*, Minnesota, 2007

- **Mexico** (n=20)
- **Kenya** (n=12)
- **Liberia** (n=9)
- **Somalia** (n=6)
- **Ethiopia/Oromia** (n=5)
- **Guatemala** (n=5)
- **Other^** (n=28)

** HIV or AIDS at first diagnosis*

† Excludes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as, other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota..

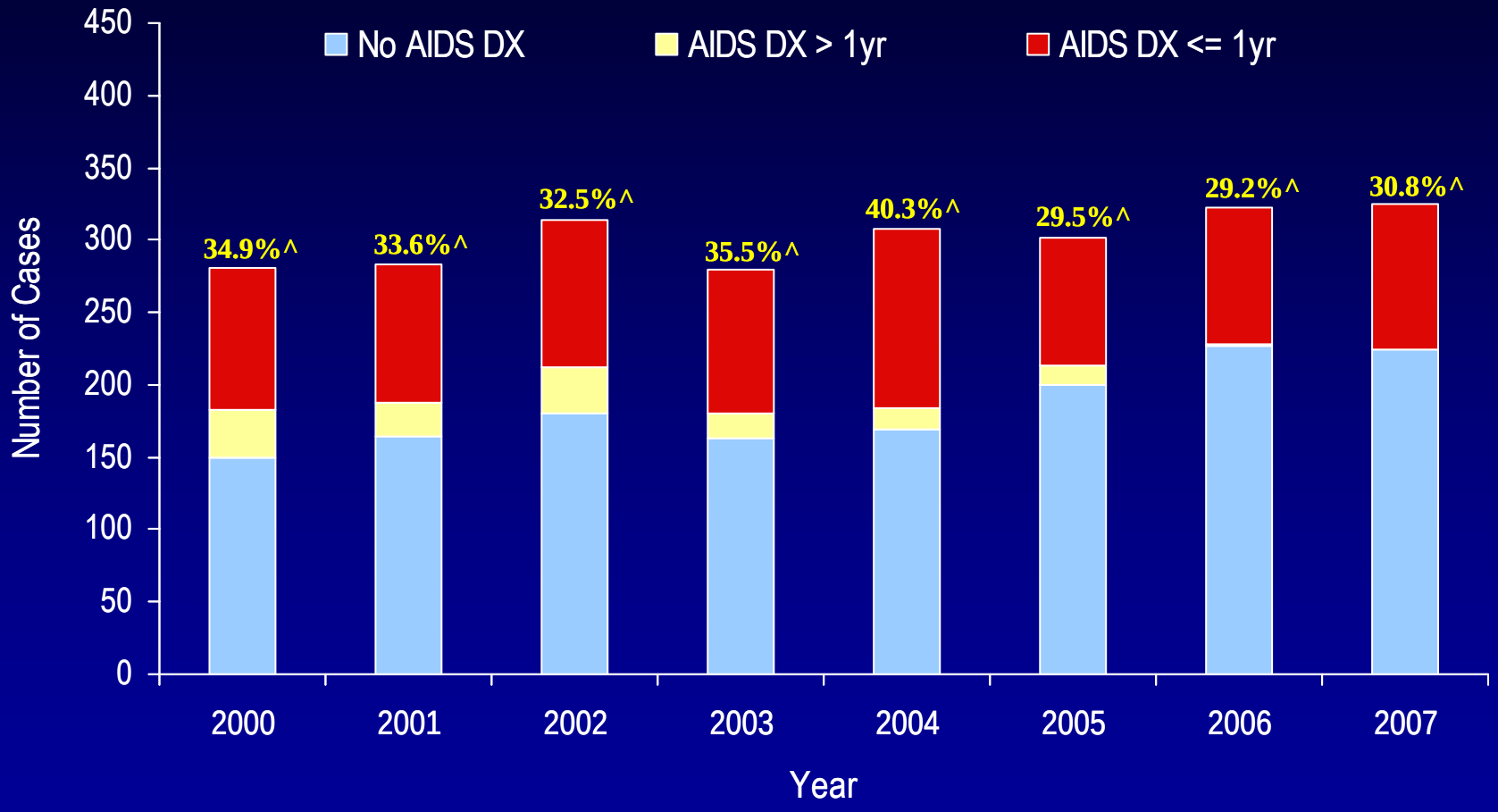
^ Includes 21 additional countries.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Late Testers

(AIDS Diagnosis within one year of initial HIV Infection Diagnosis)

Time of Progression to AIDS for HIV Infections Diagnosed in Minnesota*, 2000 - 2007†



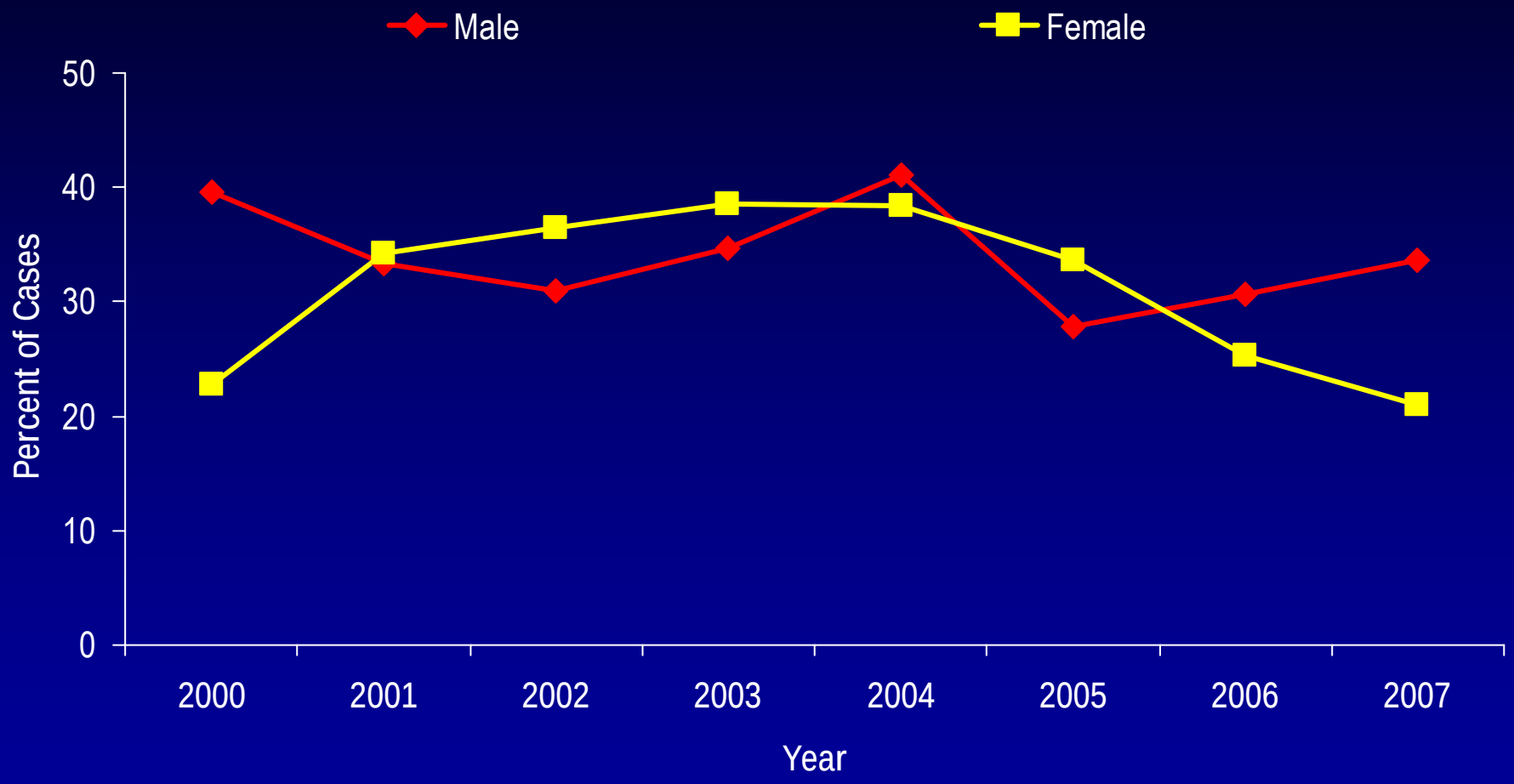
**Numbers include AIDS at 1st report and refugees in the HIV+ Refugee Resettlement Program, as well as, other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.*

^ Percent of cases progressing to AIDS within one year of initial diagnosis with HIV Infection.

† Numbers/Percent for cases diagnosed in 2007 only represents cases progressing to AIDS through March 2008

Data Source: *Minnesota HIV/AIDS Surveillance System*

Progression to AIDS within 1 year of initial HIV Infection* Diagnosis by Gender, 2000-2007†

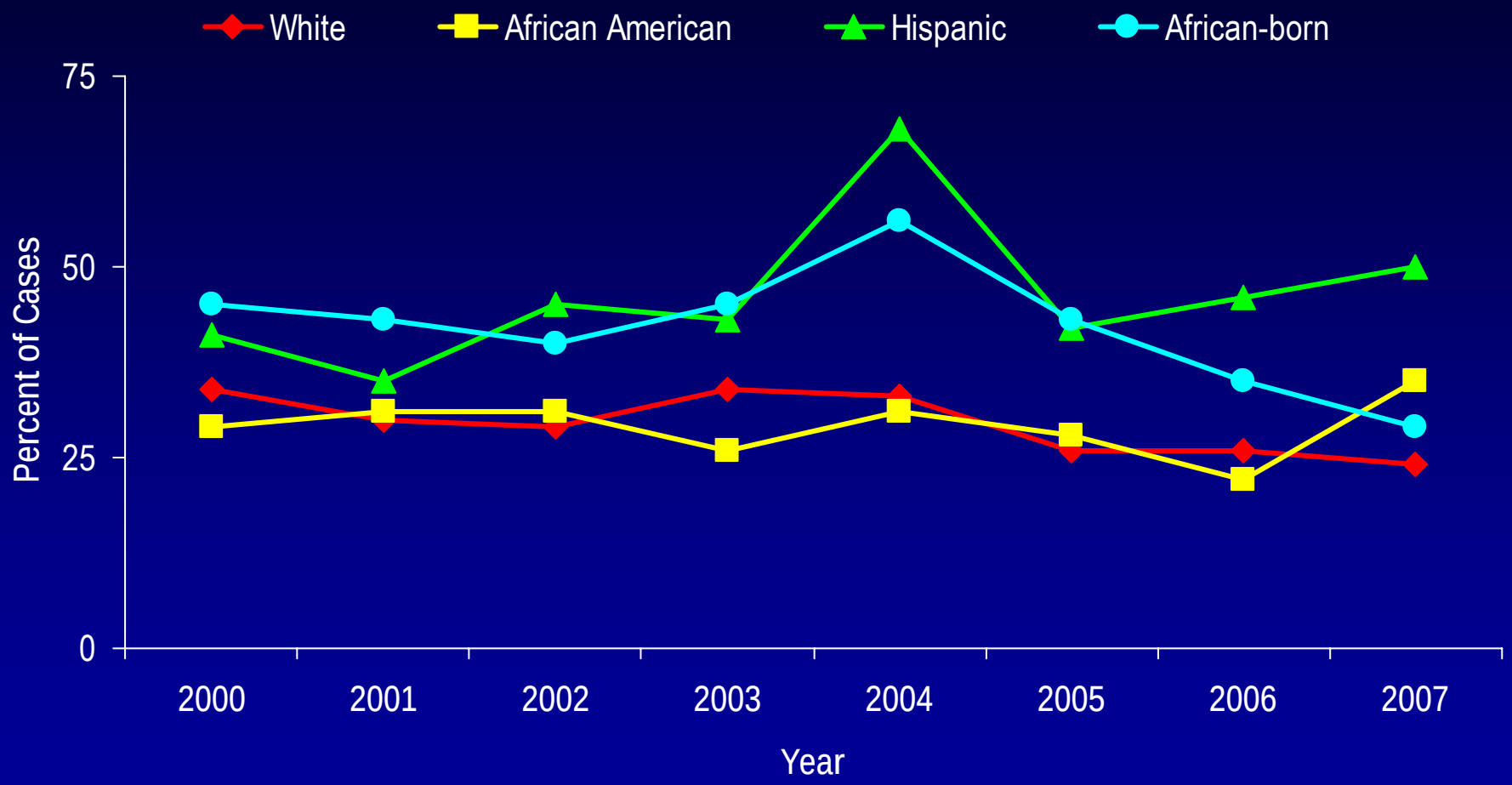


**Numbers include AIDS at 1st report and refugees in the HIV+ Refugee Resettlement Program, as well as, other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.*

† Numbers/Percent for cases diagnosed in 2007 only represents cases progressing to AIDS through March 2008

Data Source: *Minnesota HIV/AIDS Surveillance System*

Progression to AIDS within 1 year of initial HIV Infection* Diagnosis by Race/Ethnicity^, 2000-2007†



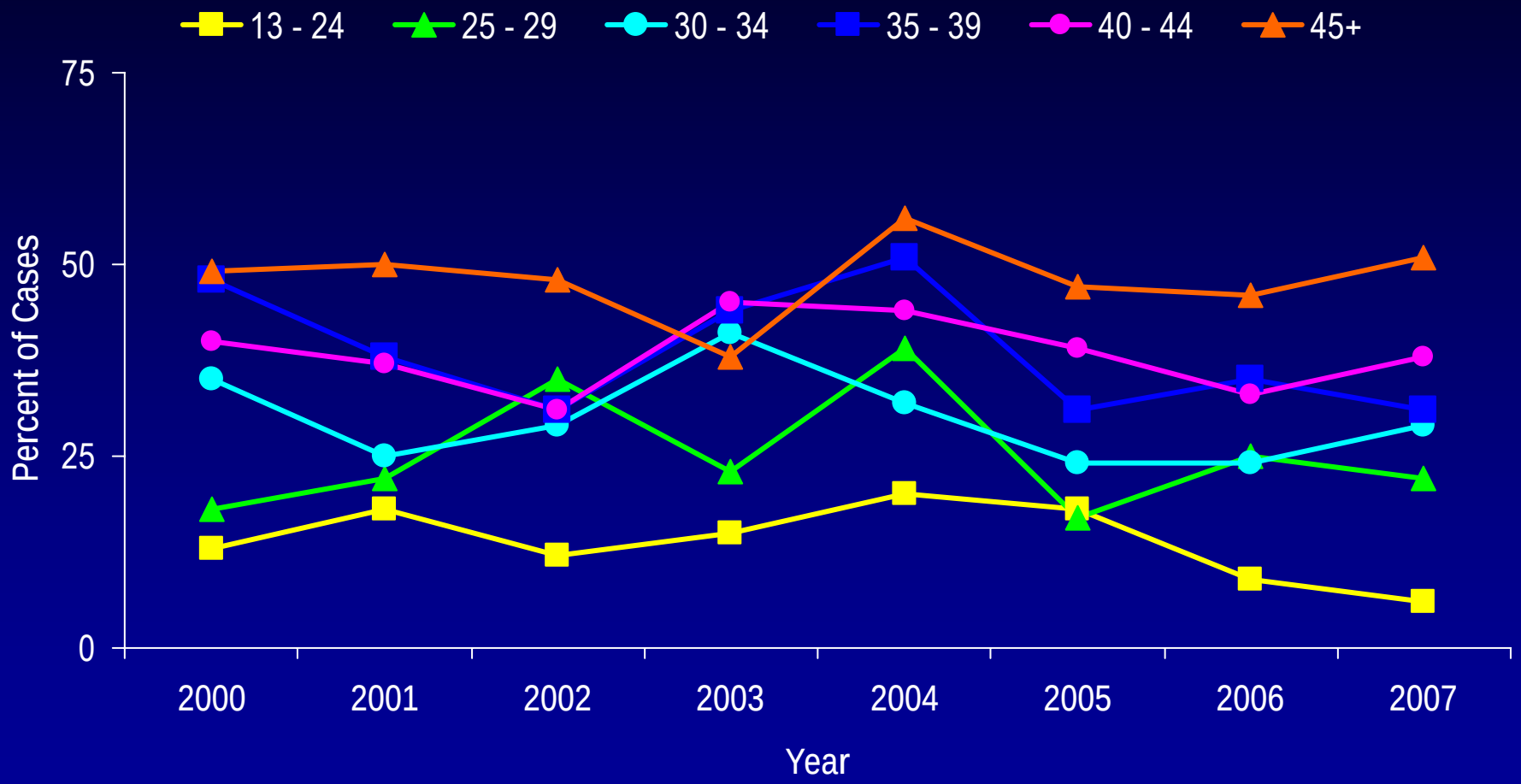
**Numbers include AIDS at 1st report and refugees in the HIV+ Refugee Resettlement Program, as well as, other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.*

† Numbers/Percent for cases diagnosed in 2007 only represents cases progressing to AIDS through March 2008

^Percentage not calculated if less than 10 cases diagnosed per year

Data Source: *Minnesota HIV/AIDS Surveillance System*

Progression to AIDS within 1 year of initial HIV Infection* Diagnosis by Age^, 2000-2007†



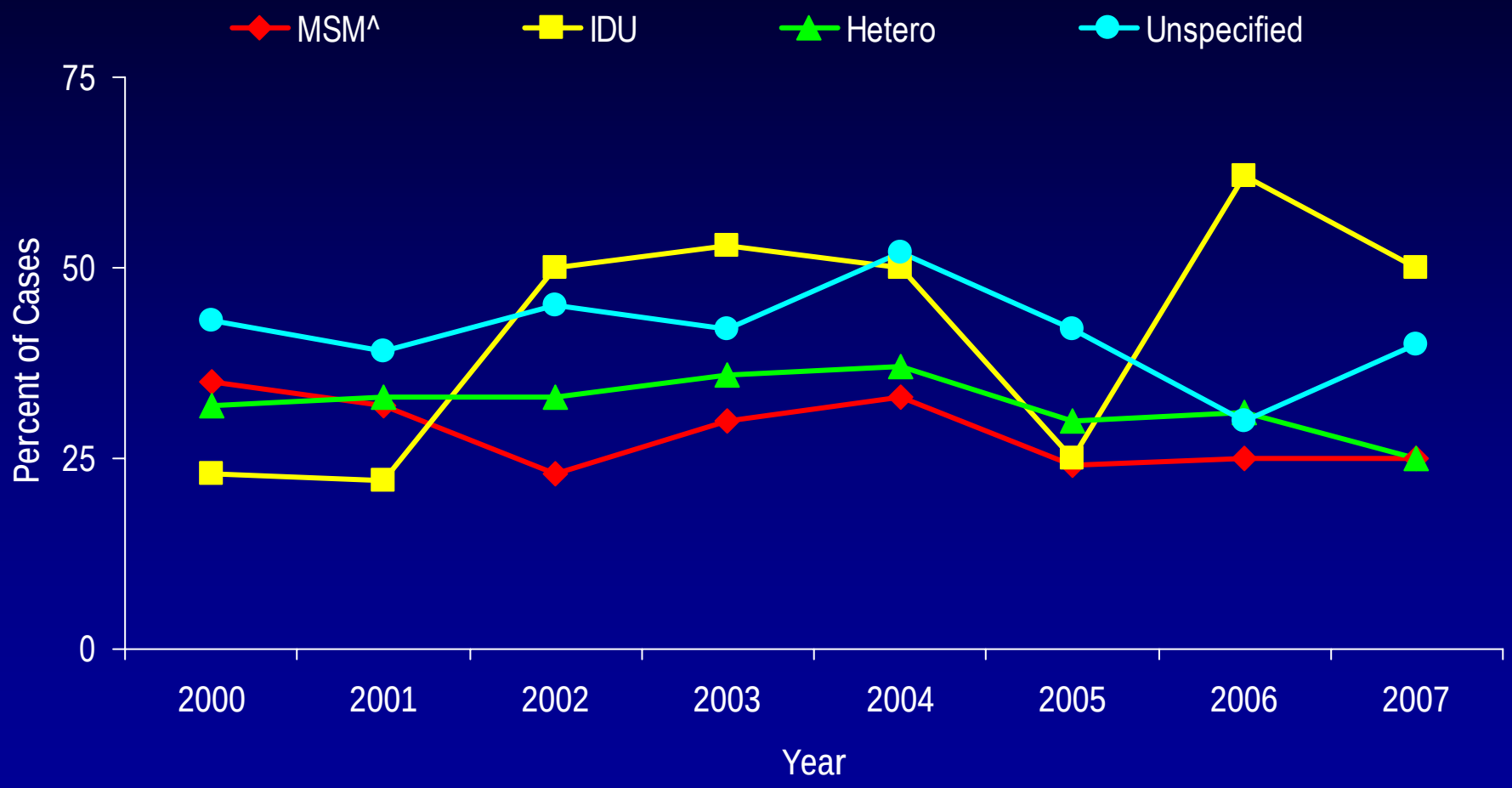
**Numbers include AIDS at 1st report and refugees in the HIV+ Refugee Resettlement Program, as well as, other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.*

† Numbers/Percent for cases diagnosed in 2007 only represents cases progressing to AIDS through March 2008

^Percentage not calculated if less than 10 cases diagnosed per year

Data Source: *Minnesota HIV/AIDS Surveillance System*

Progression to AIDS within 1 year of initial HIV Infection* Diagnosis by Mode of Transmission, 2000-2007†



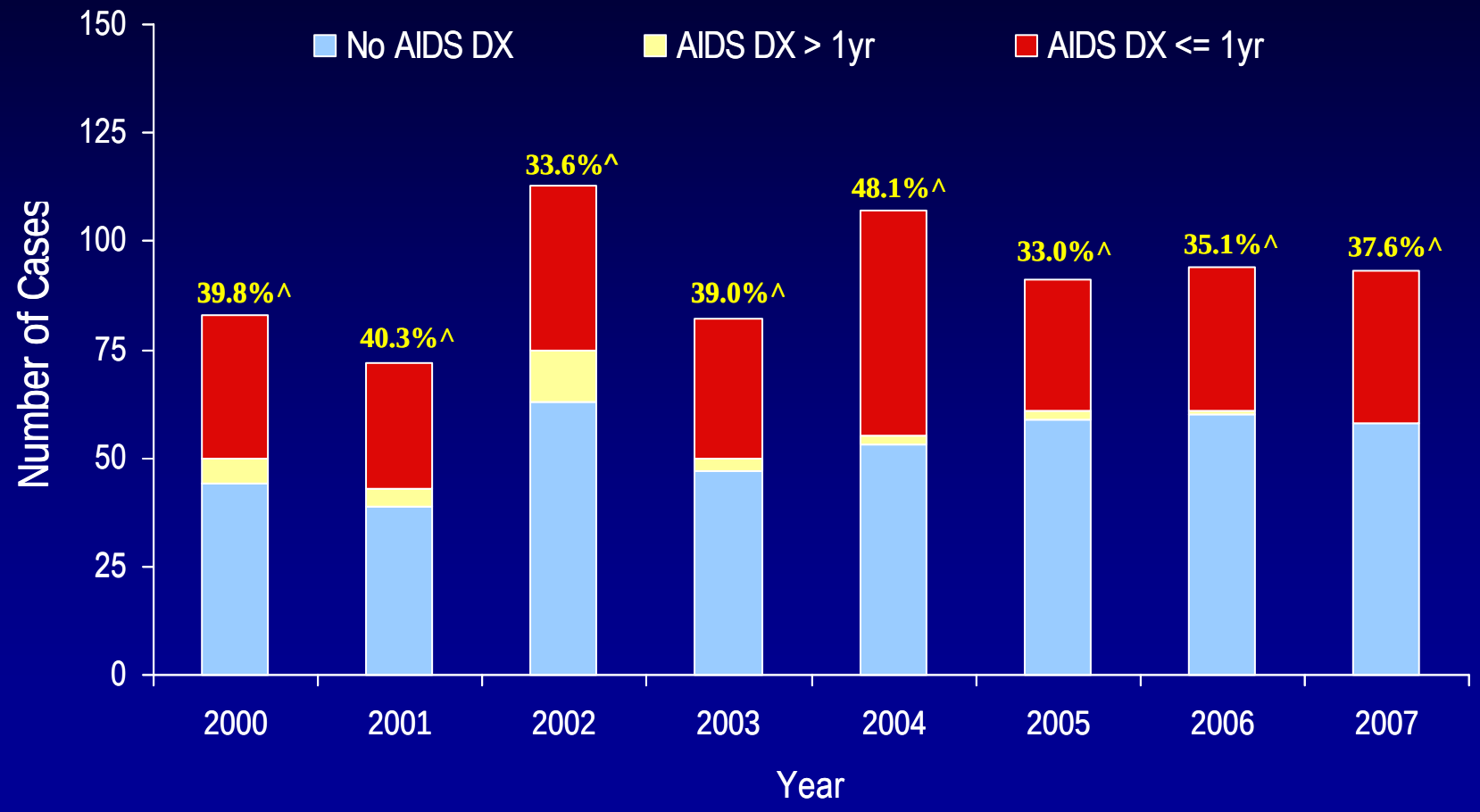
**Numbers include AIDS at 1st report and refugees in the HIV+ Refugee Resettlement Program, as well as, other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.*

† Numbers/Percent for cases diagnosed in 2007 only represents cases progressing to AIDS through March 2008

^Includes MSM/IDU

Data Source: *Minnesota HIV/AIDS Surveillance System*

Time of Progression to AIDS for HIV Infections* Diagnosed Among Foreign-Born Persons, Minnesota 2000 - 2007†



**Numbers include AIDS at 1st report and refugees in the HIV+ Refugee Resettlement Program, as well as, other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.*

^ Percent of cases progressing to AIDS within one year of initial diagnosis with HIV Infection.

† Numbers/Percent for cases diagnosed in 2007 only represents cases progressing to AIDS through March 2008

Data Source: *Minnesota HIV/AIDS Surveillance System*

Companion Text for the Slide Set: *Minnesota HIV Surveillance Report, 2007*

INTRODUCTION

Overview

The *Minnesota HIV Surveillance Report, 2007* describes the occurrence of reported HIV infections in Minnesota by person, place, and time through December 31, 2007. Such data provide information about where and among whom HIV transmission is likely occurring. This knowledge can in turn be used to help educate, target prevention efforts, plan for services, and develop policy.

Data Source

In Minnesota, laboratory-confirmed infections of human immunodeficiency virus (HIV) are monitored by the Minnesota Department of Health (MDH) through an active and passive surveillance system. State rules (Minnesota Rule 4605.7040) require both physicians and laboratories to report all cases of HIV infection (HIV or AIDS) directly to the MDH (passive surveillance). Additionally, regular contact is maintained with several clinical sites to ensure completeness of reporting (active surveillance).

Data in this report include cases diagnosed with HIV infection[1] as of December 31, 2007 and reported to the MDH as of April 2007. All data are displayed by earliest date of HIV diagnosis. Refer to the *HIV Surveillance Technical Notes* for a more detailed description of data inclusions and exclusions.

Data Limitations

Factors that impact the completeness and accuracy of the available surveillance data on HIV/AIDS include the level of screening and compliance with case reporting. Thus, any changes in numbers of infections may be due to one of these factors, or due to actual changes in HIV/AIDS occurrence.

[1] HIV (non-AIDS) or AIDS at first report.

The data presented in this report are not adjusted for reporting delays. Thus, the case number presented for the most recent reporting year can be viewed as a minimum and will likely increase in the future as further case reports are received. However, the number of cases diagnosed within a calendar year changes relatively little after two years have passed.

HIV/AIDS in the UNITED STATES

Compared with the rest of the nation, Minnesota is considered to be a low to moderate HIV/AIDS incidence state. In 2006, state-specific AIDS rates ranged from 0.7 per 100,000 persons in Montana to 29 per 100,000 persons in Maryland. Minnesota had the 11th lowest AIDS rate (4.1 AIDS cases reported per 100,000 persons)[2]. Compared with states in the Midwest region, Minnesota had a moderate AIDS rate. At this time all states have confidential name-based HIV case reporting. However, since some states have just implemented name-based reporting it is not possible to compare state-specific HIV rates.

HIV/AIDS IN MINNESOTA

MDH HIV/AIDS Surveillance: Cumulative cases

AIDS has been tracked in Minnesota since 1982. In 1985, AIDS officially became a reportable disease to state and territorial health departments nationwide. Also in 1985, when the Food and Drug Administration approved the first diagnostic test for HIV, Minnesota became the first state to make HIV infection a reportable condition. As of December 31, 2007, a cumulative total of 8,504 cases of HIV infection have been reported among Minnesota residents.[3] This includes 5,151 AIDS cases and 3,353 HIV, non-AIDS cases. Of these 8,504 HIV/AIDS cases, 2,912 are known to be deceased

[2] Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report* 2006:18

[3] This number includes persons who reported Minnesota as their state of residence at the time of their HIV and/or AIDS diagnosis. It also includes persons who may have been diagnosed in a state that does not have HIV reporting and who subsequently moved to Minnesota and were reported here. HIV-infected persons currently residing in Minnesota, but who resided in another HIV-reporting state at the time of diagnosis are excluded.

through correspondence with the reporting source, other health departments, review of death certificates, active surveillance, and matches with the National Death Index.

Overview of HIV/AIDS in Minnesota, 1990-2007

The annual number of new AIDS cases increased steadily from the beginning of the epidemic to the early 1990s, reaching a peak of 361 cases in 1992. Beginning in 1996, both the number of newly diagnosed AIDS cases and the number of deaths among AIDS cases declined sharply, primarily due to the success of new antiretroviral therapies including protease inhibitors. These treatments do not cure, but can delay progression to AIDS among persons with HIV (non-AIDS) infection and improve survival among those with AIDS. Thus between 2001 and 2004 the number of AIDS cases diagnosed increased from 124 in 2001 to 206 in 2004, a 66 percent increase. However, since 2004 the number of AIDS cases diagnosed has once again steadily declined, with 159 AIDS cases diagnosed in 2007. The number of HIV (non-AIDS) diagnoses has remained fairly constant since the mid 1990s at approximately 200 cases per year. However, over the past 4 years there has been a moderate increase from 185 cases in 2003 to 229 cases in 2007, a 24 percent increase. By the end of 2007, an estimated 5,950 persons with HIV/AIDS were assumed to be living in Minnesota.[4]

NEW HIV INFECTIONS IN MINNESOTA

In this report, the term "new HIV infections" refers to HIV-infected Minnesota residents who were diagnosed in a particular calendar year and reported to the MDH. This includes persons whose first diagnosis of HIV infection is AIDS (AIDS at first diagnosis). HIV infection data are displayed by earliest known date of HIV diagnosis.

New HIV Infections by Geography

Historically, about 90% of new HIV infections diagnosed in Minnesota have occurred in Minneapolis, St. Paul and the surrounding seven-county metropolitan area. This has not changed over time. Although HIV infection is more common in

[4] This number includes persons whose most recently reported state of residence was Minnesota, regardless of residence at time of diagnosis. This estimate does not include persons with undiagnosed HIV infection.

communities with higher population densities and greater poverty, HIV or AIDS has been diagnosed in over 90% of counties in Minnesota.

New HIV Infections by Gender

Since the beginning of the epidemic, males have accounted for a majority of new HIV infections diagnosed per year. However, the number and the proportion of cases among females have increased over time. In 1990, males accounted for 89% of new HIV infections. In 2007, 77% of new infections occurred among males and 23% among females.

New HIV Infections by Race/Ethnicity[5]

Trends in the annual number of new HIV infections diagnosed among males differ by racial/ethnic group. New cases among White males drove the epidemic in the 1980s and early 1990s. Although Whites still account for the largest number of new infections among males, this number decreased steadily between 1991 and 2000 when it reached a low of 100. Since 2001 the number of new cases diagnosed has stayed steady at around 130.

The annual number of cases for African American males peaked in 1992 at 81 and gradually decreased to 33 in 2003. Since 2004 the number of cases among African American males has been stable at around 40 cases per year. This number increased dramatically in 2007 with 54 cases diagnosed compared to 38 cases in 2006 (42% increase). It is too early to tell whether this is a trend that will continue or a one year jump.

The numbers of new cases in all other racial/ethnic groups during this same time remained stable or increased. Increases in the annual number of HIV infections diagnosed among Hispanic and African-born males, in particular, have been recorded since the late 1990s. In 2006, the number of cases diagnosed among Hispanic males was the highest ever recorded in Minnesota, doubling the number seen in 2005. This number remained high in 2007. The percentage of new HIV infections diagnosed among men of color as a

[5] Black race was broken down into African-born and African American (Black, not African-born). The numbers exclude persons arriving through the HIV-Positive Refugee Resettlement Program and other refugee/immigrants with an HIV diagnosis prior to arrival.

whole has been increasing over time as the number of cases among White males has dropped.

Similarly, trends in the annual number of HIV infections diagnosed among females differ by racial/ethnic group. In the beginning of the epidemic, White women accounted for a majority of newly diagnosed cases among females. Since 1991, the number of new infections among women of color has exceeded the number among White women. Since 2000, the annual number of new infections diagnosed among African American females had been stable at around 20 cases per year. In 2005 and 2006 that number had increased slightly but decreased again in 2007 with 17 new cases diagnosed. Between 1999 and 2002 the number of cases among African-born females increased significantly, from 18 to 41 cases. However, starting in 2003 the number decreased steadily, and 18 new cases were diagnosed in 2006. In 2007, the number of African-born females diagnosed increased slightly to 24. The annual number of new infections diagnosed among Hispanic, American Indian, and Asian females continues to be quite small (10 cases or fewer per year for each of these groups).

The most recent data illustrate that men and women of color continue to be disproportionately affected by HIV/AIDS. Men of color make up approximately 12% of the male population and 48% of the infections diagnosed among men in 2007. Whites make up approximately 88% of the male population in Minnesota and 52% of the new HIV infections diagnosed among men in 2007. Similarly for females, women of color make up approximately 11% of the female population and 74% of the new infections among women. Whites make up approximately 89% of the female population and 26% of new infections among women in 2007.[6]

Note that race is not considered a biological reason for disparities in the occurrence of HIV experienced by persons of color. Race, however, can be considered a marker for other personal and social characteristics that put a person at greater risk for HIV exposure. These characteristics may include, but are not limited to, lower socioeconomic status, less education, and greater prevalence of drug use.

[6] Population estimates based on U.S. Census 2000 data.

New HIV Infections among Adolescents and Young Adults[7], 1990-2007

Many people are infected with HIV for years before they actually seek testing and become aware of their HIV status as seen in the number of new cases diagnosed as AIDS at first report. This phenomenon especially affects the observed case counts for younger age groups. As a result, the reported number of HIV infections among youth[5] (with few or no reports of AIDS at first diagnosis) is likely to underestimate the *true* number of new infections occurring in the population more than the reported number of cases in older age groups does.

In 1990, 10% (45/436) of new HIV infections reported to the MDH were among youth. In 2007 this percentage was 15% (50/325). Among young men, the number of new HIV diagnoses peaked in 1991 at 41 cases and then declined through the mid 1990s to a low of 14 cases in 1997. Since 1997 the annual number of cases diagnosed among young men increased steadily to 32 in 2000, but then dropped to 18 cases in 2002. However, that number is again increasing steadily from 18 cases in 2002 to 38 cases in 2007 (111% increase).

Unlike young men, the annual number of new HIV infections diagnosed among young women has remained relatively consistent over time. For example, 19 cases of HIV infection were diagnosed among young women in 1992 and 12 cases in 2007. Females accounted for 24% (12/50) of new HIV infections diagnosed among adolescents and young adults in 2007. In addition, young women accounted for 16% (12/76) of new infections among females, while young males accounted for 15% (38/249) of new infections among males.

Similar to the adult HIV/AIDS epidemic, persons of color account for a disproportionate number of new HIV infections among adolescents and young adults. Among young men, Whites accounted for 52% of new HIV infections diagnosed between 2005 and 2007, African Americans accounted for 29%, Hispanics 10%, and African-born 5% of the cases. Among young women, Whites accounted for 24%, African Americans 35%, African-born 25%, and Hispanics 6% of the new infections diagnosed during the same time period.

[7] In this report, adolescents are defined as 13-19 year-olds and young adults as 20-24 year-olds; these two groups are jointly referred to as "youth." Analyses are performed for adolescents and young adults combined because case numbers are too small to present meaningful data separately for each.

Starting in 2004, MDH has used a risk re-distribution method to estimate mode of exposure among those cases with unknown risk. For additional details on how this was done please read the *HIV Surveillance Technical Notes*. All mode of exposure numbers referred to in the text are based on the risk re-distribution.

Men having sex with men (MSM) was the predominant mode of HIV exposure among adolescent and young adult males, accounting for an estimated 85% of the new HIV infections diagnosed between 2005 and 2007. The joint risk of MSM and injecting drug use (IDU) accounted for an estimated 13%, and heterosexual contact accounted for an estimated 2% of the cases in the same time period.

Heterosexual contact accounted for an estimated 96% of new HIV infections diagnosed among adolescent and young adult females between 2005 and 2007, while IDU accounted for an estimated 4% of the cases.

New HIV Infections by Mode of Exposure

Since the beginning, men have driven the HIV/AIDS epidemic in Minnesota and male-to-male sex has been the predominant mode of exposure reported. The number and proportion of new HIV infections attributed to MSM have been decreasing since 1991 reaching an apparent plateau in 2000 at just under 130 cases per year. However, MSM still accounted for 43% of all new infections (56% among males) in 2007, with 140 cases diagnosed. On a much smaller scale, the numbers of male cases attributed to IDU and MSM/IDU also have been decreasing over the past decade, while the number of cases attributed to heterosexual contact has been increasing. The number of cases without a specified risk has also been increasing.

Throughout the epidemic, heterosexual contact has been the predominant mode of HIV exposure reported among females. IDU is the second most common mode of transmission making up 8% of cases among women in 2007. Unspecified risk has been designated for a growing percentage of cases for the past several years. In 1996, 7% of women diagnosed with HIV infection did not have a specified mode of transmission. This percentage grew to 33% in 2007. Most of these cases would not agree to or could not be

interviewed by a Disease Intervention Specialist[8] from the MDH. Some cases may yet be interviewed, thus, a portion of these women will later have an identified mode of transmission. This explains *part* of the higher percentage of cases in recent years with an unspecified mode of exposure. According to a study conducted by the Centers for Disease Control and Prevention (CDC)[9], it is likely that at least 80% of women with unspecified risk acquired HIV through heterosexual contact. Heterosexual contact as a mode of HIV transmission is currently only assigned to a female case if she knows that a male sexual partner of hers was HIV-infected or at increased risk for HIV. As mentioned above, in starting in 2004 MDH has used a risk re-distribution method to estimate mode of exposure among those with no risk and the numbers below reflect the risk re-distribution (see *HIV Surveillance Technical Notes* for further details).

The proportion of cases attributable to a certain mode of exposure differs not only by gender, but also by race. Of the new HIV infections diagnosed among males between 2005 and 2007, MSM or MSM/IDU accounted for an estimated 96% of cases among White males, 90% of cases among Hispanic males, 71% of cases among African American males, and 12% of cases among African-born males. The latter three also had the highest proportions of cases with unspecified risk (35%, 34%, and 85%, respectively – this includes cases for whom no interview has been obtained; see *HIV Surveillance Technical Notes* for further information about re-distribution of mode of exposure categories). It is hypothesized that due, in part, to social stigma many of the cases with unspecified risk were unclassified MSM cases and is reflected in the risk re-distribution. This may not hold as true for African-born cases given that heterosexual contact and contaminated medical equipment have been established modes of HIV exposure in their countries of origin. IDU was estimated as a risk in 7% of male African American cases, 9% of Hispanic cases and 2% of male White cases diagnosed during 2005-2007. The number of cases among Asian and American Indian men during the years 2005-2007 was insufficient to make generalizations regarding risk (less than 20 cases in each group), but male-to-male sex appears to be the most prominent mode of exposure among both groups.

[8] Disease Intervention Specialists attempt to contact all persons recently diagnosed with HIV in order to provide HIV education, partner notification, and connect the person with medical care or other resources.
[9] MMWR 2001; 50(RR-6):31-40.

Heterosexual contact with a partner who has or is at increased risk for HIV infection accounted for an estimated 87% of cases among African American and White females, and 96% of cases among African-born females between 2005 and 2007. The percent of cases with unspecified risk among African-born and African American females, 62% and 32% respectively, was higher than for White females (16%) (see *HIV Surveillance Technical Notes* for further information about re-distribution of mode of exposure categories). IDU was estimated as a risk for 13% of cases among Whites, 10% among African Americans, and 0% among African-born. The small number of cases in 2005-2007 among Hispanic, Asian, and American Indian women (less than 20 cases in each group) is insufficient to make generalizations regarding risk.

Mother-to-Child HIV Transmission

The ability to interrupt the transmission of HIV from mother to child via antiretroviral therapy and appropriate perinatal care is an important accomplishment in the history of the HIV/AIDS epidemic. Newborn HIV infection rates range from 25-30% without antiretroviral therapy, but decrease to 1-2% with appropriate medical intervention. Unfortunately, these benefits have largely only been realized in the developed world where antiretroviral therapies are more accessible than in undeveloped countries.

Over the past 10 years the number of births to HIV-infected women has increased steadily from 19 in 1994 to 61 in 2007. During the same time period the rate of transmission has decreased from 15% between 1994 and 1996 to 1% in the past three years. However in the same time period the rate of transmission for foreign-born mothers was 3%.

The rate of transmission in Minnesota between 1982 and 1994 (before widespread use of zidovudine[10] to prevent mother-to-child HIV transmission) was 25%. Proper prenatal care, including HIV screening for all pregnant women and appropriate medical intervention for those infected, is a vital element in preventing the spread of HIV.

[10] A common antiretroviral drug.

Special Populations:

New HIV Infections among Foreign-born Persons

The number of new HIV infections diagnosed among foreign-born persons in Minnesota has steadily increased from 19 cases in 1990 to 85 cases in 2007. This increase has been largely driven by the increase of cases among African-born persons from 7 cases in 1990 to 48 cases in 2007, as well as, persons from Mexico, Central and South America from 6 cases in 1990 to 30 cases in 2007. Among new HIV infections diagnosed in 2007, 26% were among foreign-born persons. Based on U.S. Census 2000 data, foreign-born persons make up 5% of the total Minnesota population and are, therefore, disproportionately affected by HIV[11]. Among African-born this disparity is even more evident, while African-born persons make up less that 1% of the Minnesota population they accounted for 15% of new HIV infections in 2007.

Females account for a greater percentage of foreign-born cases (35%) than of overall cases (23%), and on average foreign-born cases are slightly younger (median age at diagnosis: 33) than US-born cases (median age at diagnosis: 35).

Six countries (Ethiopia, Guatemala, Kenya, Liberia, Mexico, and Somalia) accounted for a majority (67%) of new infections among foreign-born persons, however there are over thirty countries represented among the 85 new infections in 2007.

Late Testers: Progression to AIDS within one year of HIV diagnosis

Since 2000, approximately one third of all new HIV infection cases diagnosed in Minnesota have either been AIDS at first diagnosis, or have progressed to an AIDS diagnosis within one year of initial diagnosis with HIV (non-AIDS) infection. As with other characteristics of the HIV epidemic in Minnesota, the proportion of late testers varies by demographic characteristics. The most significant differences occur by race/ethnicity, with the proportion of late testers between 2000 and 2007 among Hispanics (47%) and African-born (33%) being higher than that among Whites (29%) and African Americans (29%). Differences by age are as expected with the percentage of

[11] Based on U.S. Census 2000 data, 260,463 foreign-born persons, including 35,188 African-born persons are living in Minnesota out of a total population of 4,919,479. Because there are many reasons foreign-born persons may not be included in the census count (e.g. difficulties with verbal or written English), these numbers are likely an underestimate of the actual size of the foreign-born population living in Minnesota.

late testers increasing with age at time of diagnosis. In 2007[12], 6% of those diagnosed between the ages of 13 and 24 were late testers compared to 51% of those 45 years and older. Finally, the percentage of late testers is also significantly higher among foreign-born cases compared to other cases. In 2007, 38% of foreign-born cases were late testers compared to 29% of US-born cases.

[12] Percentage of late testers for 2007 includes only those progressing to AIDS through March 2008. As such, this percentage is likely through increase as additional reports are made to the MDH.

HIV SURVEILLANCE TECHNICAL NOTES

Surveillance of HIV/AIDS

The Minnesota Department of Health (MDH) collects case reports of HIV infection and AIDS diagnoses through a passive and active HIV/AIDS surveillance system. Passive surveillance relies on physicians and laboratories to report new cases of HIV infection or AIDS directly to the MDH in compliance with state rules[1]. Active surveillance conducted by MDH staff involves routine visits and correspondence with select HIV clinical facilities to ensure completeness of reporting and accuracy of the data.

Factors that impact the completeness and accuracy of HIV/AIDS surveillance data include: availability and targeting of HIV testing services, test-seeking behaviors of HIV-infected individuals, compliance with case reporting, and timeliness of case reporting.. Certain events have also impacted trends in HIV/AIDS surveillance data. For example changes over time in the surveillance case definition (most notably the 1993 expansion of the case definition for adults and adolescents[2]) have resulted in artificial jumps in AIDS case counts at the time the new definition went into effect or in the preceding year because changes in case definition allowed for retrospective diagnoses.

New HIV Infections

New HIV infections refer to persons who are diagnosed with HIV infection and newly reported to the MDH. This includes case-patients that meet the CDC surveillance definition for AIDS at the time they are initially diagnosed with HIV infection (AIDS at first diagnosis). Cases of new HIV infection are displayed by year of earliest HIV diagnosis. The number of new HIV infections in Minnesota includes only persons who were first reported with HIV infection while residents of Minnesota. Persons moving to Minnesota already infected with HIV are excluded if they were previously reported in another state.

[1] Minnesota Rule 4605.7040
[2] MMWR 1992;41[no.RR-17]:1-19

Vital Status of HIV/AIDS Cases

Persons are assumed alive unless the MDH has knowledge of their death. Vital status information is updated by monthly visits to select reporting facilities, correspondence with other health departments, annual death certificate reviews, and periodic matches with the National Death Index. "AIDS deaths" refers to all deaths among AIDS cases regardless of the cause of death. "All deaths" refers to all deaths among HIV/AIDS cases regardless of the cause of death.

Place of Residence for HIV/AIDS Cases

Persons are assumed to be residing in Minnesota if their most recently reported state of residence was Minnesota and the MDH has not received notice of relocation outside of the state. Likewise, a person's county or city of residence is assumed to be the most recently reported value unless the MDH is otherwise notified. Residence information is updated through standard case reporting, monthly visits to select reporting facilities and/or correspondence with other state health departments. Persons diagnosed with HIV infection while imprisoned in a state correctional facility are included in the data presented unless otherwise noted (federal and private prisoners are excluded). Residential relocation, including release from state prison, is difficult to track and therefore data presented by *current* residence must be interpreted in this light. Data on residence *at time of diagnosis* are considered more accurate, limited only by the accuracy of self-reported residence location.

Data Tabulation and Presentation

The data displayed are not adjusted to correct for reporting delays, case definition changes, or other factors.

MDH surveillance reports published before 2000 displayed data by year of report while subsequent reports display the data by earliest date of HIV diagnosis. The report date is a function of reporting practices and may be months or years after the date of diagnosis and the date of infection. The date of diagnosis is temporally closer to the date of infection. Displaying data by year of diagnosis more closely approximates when infection occurred. Readers should bear in mind that diagnosis date is also an

approximation for infection date. Many years may pass between time of infection and diagnosis; the incubation period[3] for HIV/AIDS is approximately 10 years. It should also be noted that because of delays in reporting, the annual number of cases reportedly diagnosed in recent years is slightly lower than actual. This discrepancy corrects itself over time. The number of cases diagnosed within a calendar year changes relatively little after two years have passed.

Unless otherwise noted, data analyses exclude persons diagnosed in federal or private correctional facilities (inmates generally are not Minnesota residents before incarceration and do not stay in Minnesota upon their release), infants with unknown or negative HIV status who were born to HIV positive mothers, HIV-infected refugees who resettled in Minnesota as part of the HIV-Positive Refugee Resettlement Program, and other refugees/immigrants with an HIV diagnosis prior to their arrival in Minnesota. However, refugees in the HIV-Positive Refugee Resettlement Program, as well as, other refugees/immigrants diagnosed with AIDS subsequent to their arrival in the U.S. are included in the number of new AIDS cases.

Mode of Exposure Hierarchy

All state and city HIV/AIDS surveillance systems funded by the Centers for Disease Control and Prevention use a standardized hierarchy of mode of exposure categories. HIV and AIDS cases with more than one reported mode of exposure to HIV are classified in the exposure category listed first in the hierarchy. In this way, each case is counted as having only one mode of exposure. The only exception to this rule is the joint risk of male-to-male sex (MSM) and injection drug use (IDU), which makes up a separate exposure category in the hierarchy. The following is a list of the hierarchy for adolescent/adult HIV/AIDS cases:

(1) MSM
(2) IDU
(3) MSM/IDU
(4) Hemophilia patient

[3] Incubation period is the time between initial infection with the virus and the development of disease symptoms.

(5) Heterosexual contact

(6) Receipt of blood transfusion or tissue/organ transplant

(7) Other (e.g. needle stick in a health care setting)

(8) Risk not specified.

The following is the list of the hierarchy for pediatric HIV/AIDS cases:

(1) Hemophilia patient

(2) Mother with HIV or HIV risk

(3) Receipt of blood transfusion or tissue/organ transplant

(4) Other

(5) Risk not specified.

Heterosexual contact is only designated if a male or female can report specific heterosexual contact with a partner who has, or is at increased risk for, HIV infection (e.g. an injection drug user). For females this includes heterosexual contact with a bisexual male (mainly due to the elevated prevalence of HIV infection among men who have sex with men).

"Risk not specified" refers to cases with no reported history of exposure to HIV through any of the routes listed in the hierarchy of exposure categories. These cases include persons who have not yet been interviewed by MDH staff; persons whose exposure history is incomplete because they died, declined to be interviewed, or were lost to follow-up; and persons who were interviewed or for whom follow-up information was available but no exposure was identified/acknowledged.

The growing number of cases with unspecified risk in recent years is, in part, artificial and due to interviews that have not yet been completed. In time, a number of these will be assigned a mode of exposure category. However, part of the observed increase is real. As stated above, a person must have intimate knowledge about his/her partner to meet the criteria for heterosexual mode of exposure. Often cases will not be certain about their partners' HIV status or risk. Additionally, the perception of social stigma presumably decreases the likelihood that a person will acknowledge certain risk behaviors, particularly male-to-male sex or injection drug use. Thus, if the *true* numbers of cases due to heterosexual contact, MSM, and/or IDU increase, a larger number of cases without a specified risk would be expected.

A recent study by the Centers for Disease Control and Prevention used statistical methods to redistribute risk among female HIV/AIDS cases with unspecified risk[4]. The results are helpful but are based on national data and are not necessarily applicable at the state or local level. Speculation regarding the distribution of risk behaviors among those with unspecified risk is difficult, especially in men, for whom even a national study is not available.

Re-distribution of Mode of Exposure

In 2004 the Minnesota Department of Health began estimating mode of exposure for cases with unspecified risk in its annual summary slides. For 2007, estimation was done by using the risk distribution for cases reported between 2005 and 2007 with known risk by race and gender and applying it to those with unspecified risk of the same race and gender. For females an additional step was added to the process. If females were interviewed by a Disease Intervention Specialist and injecting drug use and receipt of blood products were eliminated as possible causes of transmission and the female reported sex with males, then she was placed in a new category named "Heterosexual – with unknown risk". The same was not done for males given the high level of stigma associated with male-to-male sex in certain communities.

When applying the proportions from those with known risk to those with unspecified risk there were two exceptions to the method, African-born cases and Asian/Pacific Islander women. For both African-born and Asian/Pacific Islander women a breakdown of 95% heterosexual risk and 5% other risk was used. For African-born males a breakdown of 5% male-to-male sex, 90% heterosexual risk, and 5% other risk was used. These percentages are based on epidemiological literature and/or community experience.

Below is an example of how the process worked for white, African American and African-born females:

[4] MMWR 2001; 50(RR-6):31-40.

Reported Female cases 2005 - 2007

Race/Risk	Heterosexual n (%†)	IDU n (%†)	Other[5] n (%†)	*Unspecified n*	Total N
White	50 (86)	8 (14)	0 (0)	*11*	69
African-American	44 (88)	5 (10)	1 (2)	*23*	73
African-born	25 (96)	0 (0)	1 (4)	*43*	69

† Percent of those with known risk.

Female Cases for 2005 - 2007 with Estimated risk:

Race/Risk	Heterosexual	IDU	Other	*Unspec.*	Total N
White	(.86*11) + 50 = **60**	(.14*11) + 8 = **9**	0	*0*	69
African-American	(.88*23) + 44 = **64**	(.10*23) + 5 = **7**	(.02*23) + 1 = **2**	*0*	73
African-born‡	(.95*43) + 25 = **66**	0	(.05*43) + 1 = **3**	*0*	69

‡ Used a distribution of 95% heterosexual and 5% other.

Definitions Related to Race/Ethnicity

When data are stratified by race, Black race is broken down into African-born and African American (not African-born) based on reported country of birth.

The terms “persons of color” and “non-Whites” refer to all race/ethnicity categories other than White (Black, Hispanic, American Indian, and Asian/Pacific Islander).

Routine Interstate Duplicate Review (RIDR)

The Minnesota Department of Health (MDH) continues to participate in RIDR. RIDR is a CDC project aimed at eliminating duplicate reports of HIV and AIDS cases among states. Each case of HIV and AIDS is assigned to the state (or states when the

[5] Other includes Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

diagnosis of HIV and AIDS occurs in two different states) where a person was first diagnosed. RIDR was the second such de-duplication initiative by CDC. The first initiative, IDEP, looked at cases reported through December 31, 2001. RIDR is now an ongoing activity that all states are expected to undertake. The latest de-duplication effort included cases from July 1, 2005 through June 30, 2006. Through this project, MDH identified 18 cases of HIV infection (including AIDS at first report) and no AIDS cases whose first diagnosis was not in Minnesota. These cases were previously considered as diagnosed in Minnesota and were counted in the cumulative number of cases diagnosed in Minnesota. As such, the change of "ownership" (where the case was diagnosed) has reduced both cumulative and yearly totals for Minnesota. Additionally, MDH also identified 47 cases that no longer live in Minnesota. CDC has just released the next RIDR report which covers cases from July 1, 2006 through June 30, 2007.

Table 1. Number of New Cases and Rates (per 100,000 persons) of HIV Infection, HIV (non-AIDS), and AIDS[I] Minnesota, 1982-2007

Year	HIV Infection[III]		HIV (non-AIDS)[III]		AIDS[IV]	
	Cases	Rate	Cases	Rate	Cases	Rate
1982-1994	*4573*	--	*3332*	--	*2386*	--
1995	345	7.4	224	4.8	339	7.3
1996	293	6.2	192	4.1	258	5.5
1997	283	6.0	201	4.2	194	4.1
1998	297	6.2	198	4.1	193	4.0
1999	299	6.1	198	4.1	161	3.3
2000	281	5.7	185	3.8	157	3.2
2001	283	5.8	197	4.0	124	2.5
2002	314	6.4	218	4.4	161	3.3
2003	279	5.7	188	3.8	171	3.5
2004	308	6.3	194	3.9	210	4.3
2005	302	6.1	218	4.4	182	3.7
2006	322	6.5	240	4.9	170	3.5
2007	325	6.6	229	4.7	159	3.2
Cumulative Total[II]	*8,504*	*172.9*	*6,014*	*122.2*	*4,865*	*98.9*

[I] HIV Infection = New cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) diagnosed within a given calendar year. HIV (non-AIDS) = New cases of HIV infection (excluding AIDS at first diagnosis) diagnosed within a given calendar year. AIDS = All new cases of AIDS diagnosed within a given calendar year, including AIDS at first diagnosis.

[II] The cumulative rate is calculated by dividing the cumulative number of cases by the estimated current state population and multiplying by 100,000. Rates for individual calendar years were calculated using 2000 U.S. Census population data (2000-2007) and 1995-1999 population estimates were calculated using interpolation between U.S. Census 1990 data and U.S. Census 2000 data.

[III]Numbers and rates exclude federal and private prisoners and refugees in the HIV-Positive Refugee Resettlement Program, as well as, refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

[IV] Numbers and rates include refugees in the HIV-Positive Refugee Resettlement Program, as well as, other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.

Please Note: The sum of HIV (non-AIDS) cases and AIDS cases will be greater than the number of cases of HIV Infection in a given year. The difference occurs because, unlike the HIV Infection category, the AIDS category includes both cases that are AIDS at first diagnosis as well as those cases that progress from HIV (non-AIDS) to AIDS during the year (see above definitions).

Table 2. Number of Cases and Rates (per 100,000 persons) of HIV Infection by Residence, Age, and Gender[I] -- Minnesota, 2007

Group	Males		Females		*Total*		*HIV*
	Cases	%	Cases	%	*Cases*	*%*	*Infection Rate*
Residence[II]							
Minneapolis	105	42%	19	25%	*124*	*38%*	*32.4*
St. Paul	33	13%	9	12%	*42*	*13%*	*14.6*
Suburban	81	33%	38	50%	*119*	*37%*	*6.0*
Greater Minnesota	30	12%	10	13%	*40*	*12%*	*1.8*
Total	*249*	*100%*	*76*	*100%*	*325*	*100%*	*6.6*
Age							
<13 yrs	0	0%	1	1%	*1*	*0%*	*0.1*
13-19 yrs	11	4%	6	8%	*17*	*5%*	*3.2*
20-24 yrs	27	11%	6	8%	*33*	*10%*	*10.2*
25-29 yrs	37	15%	12	16%	*49*	*15%*	*15.3*
30-34 yrs	46	18%	12	16%	*58*	*18%*	*16.4*
35-39 yrs	43	17%	15	20%	*58*	*18%*	*14.1*
40-44 yrs	29	12%	8	11%	*37*	*11%*	*9.0*
45-49 yrs	30	12%	7	9%	*37*	*11%*	*10.2*
50-54 yrs	7	3%	5	7%	*12*	*4%*	*4.0*
55-59 yrs	8	3%	2	3%	*10*	*3%*	*4.4*
60+ yrs	11	4%	2	3%	*13*	*4%*	*1.7*
Total	*249*	*100%*	*76*	*100%*	*325*	*100%*	*6.6*
StateTotals	*249*		*76*		*325*		*6.6*

[I] HIV Infection includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2007.

[II] Residence at time of diagnosis with HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis).

Suburban = Seven-county metropolitan area except Minneapolis & St. Paul (Anoka, Carver, Dakota, Hennepin (except Minneapolis), Ramsey (except St. Paul), Scott, and Washington counties). Greater Minnesota = Remaining 80 counties outside of the seven-county metropolitan area.

Numbers and rates exclude federal and private prisoners and refugees in the HIV-Positive Refugee Resettlement Program, as well as, refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota. State prisoners are included (two diagnoses in 2007).

Rates calculated using U.S. Census 2000 data. Percentages may not add to 100 due to rounding

Table 3. Number of Cases and Rates (per 100,000 persons) of HIV Infection by Race/Ethnicity & Mode of Exposure[I] -- Minnesota, 2007

	Males			Females			*Total*		
Group	**Cases**	**%**	***Rate*** [IV]	**Cases**	**%**	***Rate*** [IV]	***Cases***	***%***	***Rate*** [III]
Race/Ethnicity									
White, non-Hispanic	129	52%	#	20	26%	#	*149*	*46%*	*3.4*
Black[II], African-American	54	22%	#	17	22%	#	*71*	*22%*	*42.3*
Black[II], African-born	24	10%	#	24	32%	#	*48*	*15%*	*96-136.4*
Hispanic	33	13%	#	7	9%	#	*40*	*12%*	*27.9*
American Indian	1	0%	#	5	7%	#	*6*	*2%*	*7.4*
Asian/PI	5	2%	#	1	1%	#	*6*	*2%*	*3.6*
Other[II]	3	1%	#	2	3%	#	*5*	*2%*	*X*
Total	*249*	*100%*	*10.2*	*76*	*100%*	*3.1*	*325*	*100%*	*6.6*
Mode of Exposure									
MSM	140	56%	X	--	--	X	*140*	*43%*	X
IDU	8	3%	X	8	11%	X	*16*	*5%*	X
MSM/IDU	18	7%	X	--	--	X	*18*	*6%*	X
Heterosexual (Total)	(14)	6%	X	(42)	55%	X	*(56)*	*17%*	X
with IDU	*2*	--	X	*2*	--	X	*4*	--	X
with Bisexual Male	--	--	X	*4*	--	X	*4*	--	X
with Hemophiliac/other	*0*	--	X	*0*	--	X	*0*	--	X
with HIV+	*12*	--	X	*16*	--	X	*28*	--	X
Hetero, unknown risk[V]	--	--	X	*20*	--	X	*20*	--	X
Perinatal	0	0%	X	1	1%	X	*1*	*0%*	X
Other	0	0%	X	0	0%	X	*0*	*0%*	*X*
Unspecified	23	9%	X	1	1%	X	*24*	*7%*	*X*
No Interview, Unspecified	46	18%	X	24	32%	X	*70*	*22%*	*X*
Total	*249*	*100%*	*10.2*	*76*	*100%*	*3.1*	*325*	*100%*	*6.6*

[I] HIV infection includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2007.

[II] African-born Blacks are reported separately from other Blacks (born in the U.S. or elsewhere). "Other" includes multi-racial persons and persons with unknown race.

[III] Rates calculated using U.S. Census 2000 data. Accurate population estimates for Black, African-born persons living in Minnesota are unavailable – anecdotal (50,000) and 2000 U.S. Census data (35,188)) were used to create the range of rates reported for African-born persons. The population estimate for Black, African-American persons (167,784) was calculated by subtracting the U.S. Census estimate for African-born persons (35,188) from the total Black population (202,972). Note that this assumes that all African-born persons are Black (as opposed to another race).

[IV] U.S. Census 2000 data necessary to calculate race-specific rates by gender are not available.

Numbers exclude federal and private prisoners and refugees in the HIV-Positive Refugee Resettlement Program, as well as, refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

[V] Hetero, unknown risk - Females who were interviewed and whose only risk is heterosexual contact but who were not able to provide information on the sexual partner's risk.

MSM = Men who have sex with men. IDU = Injecting drug use. Heterosexual = For males: heterosexual contact with a female known to be HIV+, an injecting drug user, or a hemophiliac/blood product or organ transplant recipient. For females: heterosexual contact with a male known to be HIV+, bisexual, an injecting drug user, or a hemophiliac/blood product or organ transplant recipient. Perinatal = Mother to child HIV transmission; birth may have occurred in a previous year. Unspecified = Cases who did not acknowledge any of the risks listed above. No Interview, Unspecified = Cases who refused to be, could not be or have not yet been interviewed.

Percentages may not add to 100 due to rounding.

Table 4. Number of Cases and Rates (per 100,000 persons) of HIV Infection by County of Residence[I] -- Minnesota, 2007		
County[II]	**HIV Infection Cases**	**HIV Infection Rate[III]**
Aitkin	0	-
Anoka	12	4.0
Becker	0	-
Beltrami	0	-
Benton	2	-
Big Stone	0	-
Blue Earth	1	-
Brown	0	-
Carlton	1	-
Carver	2	-
Cass	1	-
Chippewa	0	-
Chisago	1	-
Clay	0	-
Clearwater	1	-
Cook	0	-
Cottonwood	0	-
Crow Wing	0	-
Dakota	18	5.1
Dodge	0	-
Douglas	0	-
Faribault	0	-
Fillmore	0	-
Freeborn	0	-
Goodhue	0	-
Grant	0	-
Hennepin	190	17.0
Houston	0	-
Hubbard	2	-
Isanti	0	-
Itasca	0	-
Jackson	0	-
Kanabec	0	-
Kandiyohi	1	-
Kittson	0	-
Koochiching	0	-
Lac Qui Parle	0	-
Lake	0	-
Lake of the Woods	0	-
Le Sueur	0	-
Lincoln	0	-
Lyon	0	-
McLeod	0	-
Mahnomen	0	-
Marshall	0	-
Martin	0	-
Meeker	0	-
Mille Lacs	0	-
Morrison	2	-
Mower	0	-

Table 4. Number of Cases and Rates (per 100,000 persons) of HIV Infection by County of Residence[I] -- Minnesota, 2007		
County[II]	**HIV Infection Cases**	**HIV Infection Rate[III]**
Murray	0	-
Nicollet	0	-
Nobles	0	-
Norman	0	-
Olmsted	4	-
Otter Tail	1	-
Pennington	0	-
Pine	0	-
Pipestone	0	-
Polk	0	-
Pope	2	-
Ramsey	54	10.6
Red Lake	0	-
Redwood	0	-
Renville	0	-
Rice	3	-
Rock	0	-
Roseau	0	-
St. Louis	6	3.0
Scott	5	5.6
Sherburne	2	-
Sibley	0	-
Stearns	8	6.0
Steele	0	-
Stevens	0	-
Swift	1	-
Todd	0	-
Traverse	0	-
Wabasha	0	-
Wadena	0	-
Waseca	0	-
Washington	4	-
Watonwan	1	-
Wilkin	0	-
Winona	0	-
Wright	0	-
Yellow Medicine	0	-
State Total"	*325*	*6.6*

[I] HIV infection includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2007.

[II] Residence at time of diagnosis with HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis).

[III] Rates calculated using U.S. Census 2000 data. Rates not calculated for counties with fewer than 5 cases. Numbers and rates exclude federal and private prisoners and refugees in the HIV-Positive Refugee Resettlement Program, as well as, refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota. HIV infection was diagnosed among two state prisoners during 2007 (State correctional facilities are located in the following counties: Anoka, Carlton, Chisago, Goodhue, Rice, Scott, Sherburne, Stearns, and Washington).

Perinatal HIV Exposure[I]

Table 5a. Number of Births to HIV-Infected Women[II] by Year of Child's Birth and Mother's Race/Ethnicity, Minnesota 1982-2007

Year(s)	Race/Ethnicity of Mother							*Total*	Foreign-born Mothers[IV]	
	White	Black, African-American[III]	Black, African-born[III]	Hispanic	American Indian	Asian/PI	Multi-racial		Number	(% of total in time period)
1982-1994	46	32	3	3	7	1	0	*92*	5	5%
1995	8	8	0	1	2	0	0	*19*	1	5%
1996	8	2	0	2	1	1	0	*14*	3	21%
1997	8	8	1	1	0	1	0	*19*	2	11%
1998	8	6	3	1	2	0	0	*20*	4	20%
1999	7	12	3	1	1	1	1	*26*	5	19%
2000	12	10	7	2	1	1	0	*33*	9	27%
2001	1	20	13	1	2	0	0	*37*	15	41%
2002	9	7	13	2	3	0	2	*36*	14	39%
2003	6	14	18	5	2	1	1	*47*	21	45%
2004	8	13	22	3	2	1	0	*49*	24	49%
2005	7	7	21	3	0	2	1	*41*	25	61%
2006	7	13	22	6	1	1	2	*52*	26	50%
2007	16	14	24	2	2	1	2	*61*	29	48%
Cumulative Total	151	166	150	33	26	11	9	546	183	34%

NOTE: A birth to an HIV-infected woman was only included in the table if her residence at the time of child's birth was reported as Minnesota.

[I] Exposure of child to HIV during pregnancy, at birth, and/or during breastfeeding.

[II] HIV-infected women may or may not have progressed to an AIDS diagnosis.

[III] African-born Blacks are reported separately from other Blacks (born in the U.S. or elsewhere).

[IV] Mothers' places of birth include: Africa (150), Asia/Pacific Islands (11), Latin America/Caribbean (21), and Europe (1).

Perinatal HIV Transmission[I]

Table 5b. Number of Perinatally-Acquired HIV/AIDS Cases by Year of Child's Birth and Mother's Race/Ethnicity, Minnesota 1982-2007

Year(s)	Race/Ethnicity of Mother							*Total*	Foreign-born Mothers[III]	
	White	Black, African-American[II]	Black, African-born[II]	Hispanic	American Indian	Asian/PI	Multi-racial		Number	(% of total in time period)
1982-1994	17	3	0	1	0	1	0	*22*	1	5%
1995	0	0	0	1	1	0	0	*2*	0	0%
1996	0	1	0	1	0	1	0	*3*	2	67%
1997	0	0	1	0	0	0	0	*1*	1	100%
1998	1	1	2	0	0	0	0	*4*	2	50%
1999	0	0	0	0	0	0	0	*0*	0	-
2000	0	1	0	0	0	0	0	*1*	0	0%
2001	0	0	0	0	0	0	0	*0*	0	-
2002	0	0	0	1	0	0	0	*1*	1	100%
2003	0	0	1	0	0	0	0	*1*	1	-
2004	0	0	0	0	0	0	0	*0*	0	-
2005	0	0	0	0	0	0	0	*0*	0	-
2006	0	0	1	0	0	0	0	*1*	1	100%
2007	0	0	1	0	0	0	0	*1*	1	100%
Cumulative Total	18	6	6	4	1	2	0	*37*	10	27%
Rate of Transmission 2005 - 2007	0%	0%	3%	0%	0%	0%	0%	1%	3%	--
Cumulative Rate of Transmission[IV]	12%	4%	4%	12%	--	--	--	7%	5%	--

NOTE: Cases of perinatally-acquired HIV/AIDS were only included in the table if the child's residence at the time of birth was reported as Minnesota.

[I] Transmission of HIV from mother to child during pregnancy, at birth, and/or during breastfeeding.

[II] African-born Blacks are reported separately from other Blacks (born in the U.S. or elsewhere).

[III] Mothers' places of birth include: Africa (6), Asia/Pacific Islands (2), Latin America/Caribbean (2).

[IV] The cumulative rate of HIV transmission is calculated by dividing the total number of perinatally-acquired HIV infections by the total number of births in a category and multiplying by 100. Rates calculated only for categories where the cumulative number of births is 30 or greater.

HIV/AIDS Prevalence & Mortality Report, 2007

Minnesota Department of Health
HIV/AIDS Surveillance System

MINNESOTA MDH DEPARTMENT OF HEALTH

Introduction (I)

- These three introduction slides provide a general context for the data used to create this slide set. If you have questions about any of the slides please refer to the ***Companion Text*** *to the Minnesota HIV/AIDS Prevalence & Mortality Report, 2007 or HIV/AIDS Prevalence & Mortality* ***Technical Notes****.*

- This slide set displays estimates of the number of persons living with HIV/AIDS (**prevalence**) and mortality in Minnesota by person, place, and time.

- The slides rely on data from HIV/AIDS cases diagnosed through 2007 and reported to the Minnesota Department of Health (MDH) HIV/AIDS Surveillance System.

Introduction (II)

- Data analyses exclude persons diagnosed in federal or private correctional facilities, but include state prisoners (n=115) and persons arriving to Minnesota through the HIV+ Refugee Resettlement Program (n=165 prevalent cases) and other immigrants reporting a positive test prior to their arrival in Minnesota (n=54 prevalent cases).

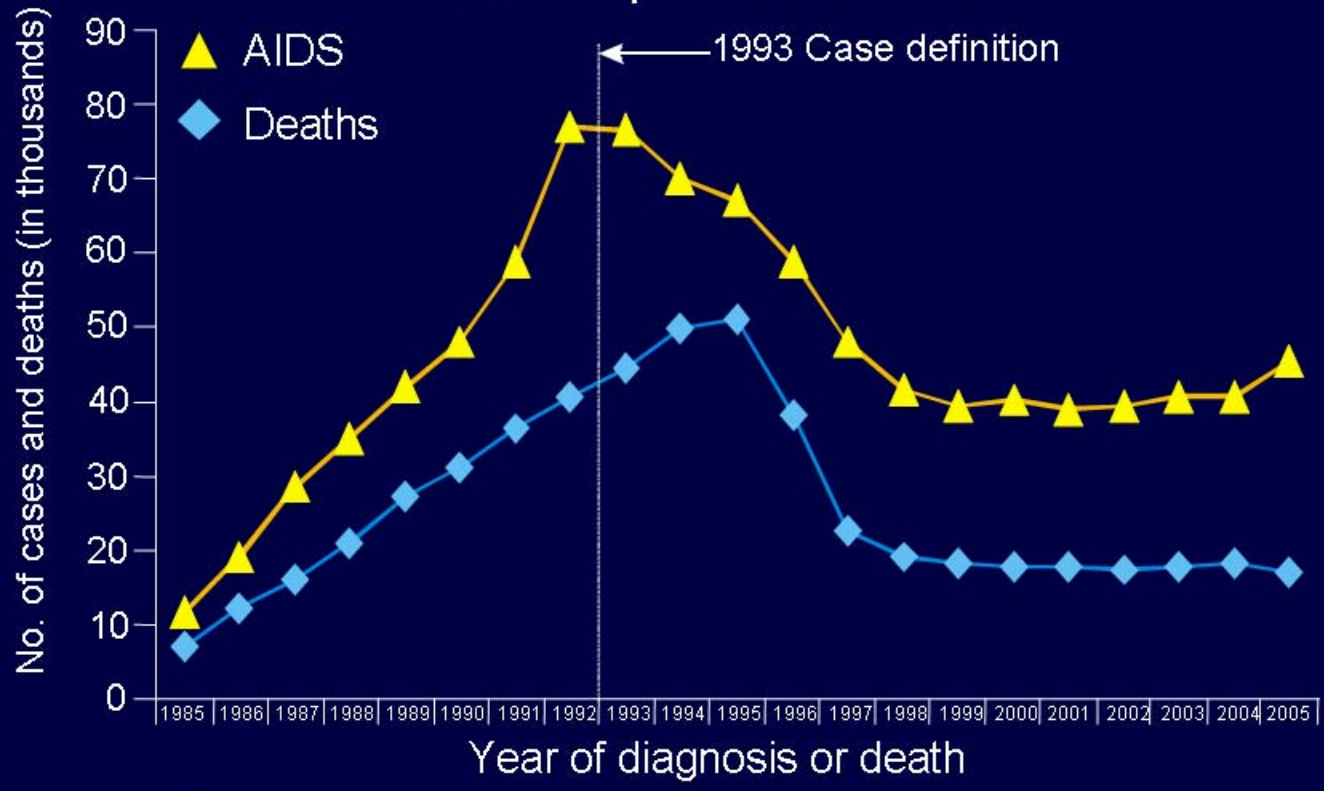
- Some limitations of surveillance data:
  - Data do not include HIV-infected persons who have not been tested for HIV
  - Data do not include persons whose positive test results have not been reported to the MDH
  - Data do not include HIV-infected persons who have only tested anonymously
  - Case numbers for the most recent years may be undercounted due to delays in reporting
  - Reporting of living cases that were not initially diagnosed in Minnesota is known to be incomplete

Introduction (III)

- Persons are assumed to be alive unless the MDH has knowledge of their death.
- Persons whose most recently reported state of residence was Minnesota are assumed to be currently residing in Minnesota unless the MDH has knowledge of their relocation. Our ability to track changes of residence, including within the state, is limited.
- Vital status and current residence are updated through one or more of the following methods:
  - Standard case reporting
  - Correspondence with other health departments
  - Active surveillance (monthly)
  - Death certificate reviews (annually)
  - Birth certificate reviews (annually, women only)

National Context

Estimated Number of AIDS Cases and Deaths among Adults and Adolescents with AIDS, 1985–2005—United States and Dependent Areas



Note. Data have been adjusted for reporting delays.

SOURCE:
U.S. HIV/AIDS Surveillance Report, Year-end 2005
National Center for HIV, STD, and TB Prevention, CDC

Overview of HIV/AIDS in Minnesota

Minnesota HIV/AIDS Surveillance: *Cumulative Cases*

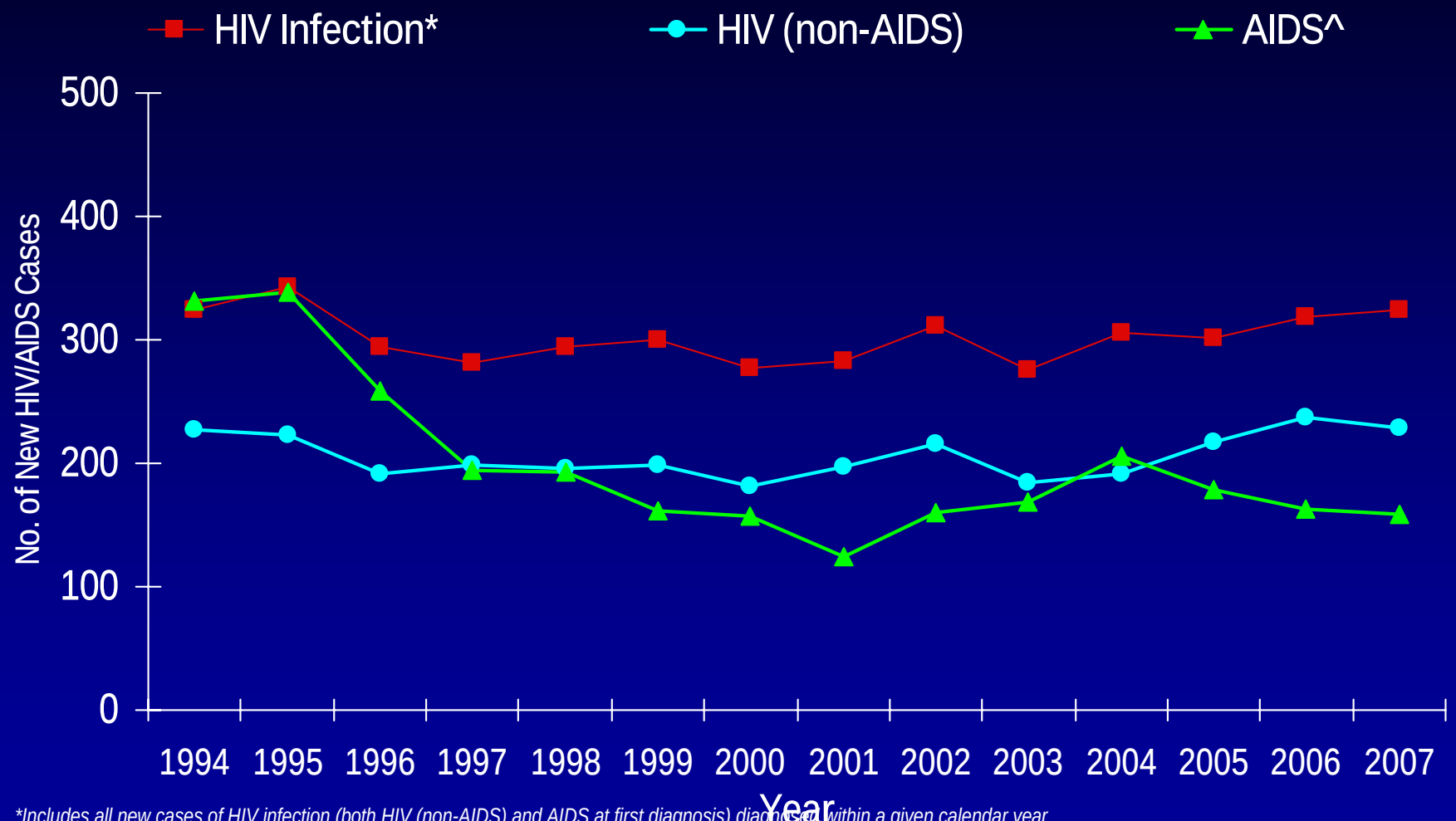
- As of December 31, 2007, a cumulative total of 8,504* persons have been diagnosed and reported with HIV infection in Minnesota. Of these:
  - 3,353 persons have been diagnosed with HIV infection (non-AIDS)
  - 5,151 have progressed to AIDS
- Of these 8,504 persons, 2,912 are known to be deceased

** This number includes only persons who reported Minnesota as their state of residence at the time of their HIV and/or AIDS diagnosis.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV/AIDS in Minnesota:

New HIV Infection, HIV (non-AIDS) and AIDS Cases by Year, 1994-2007



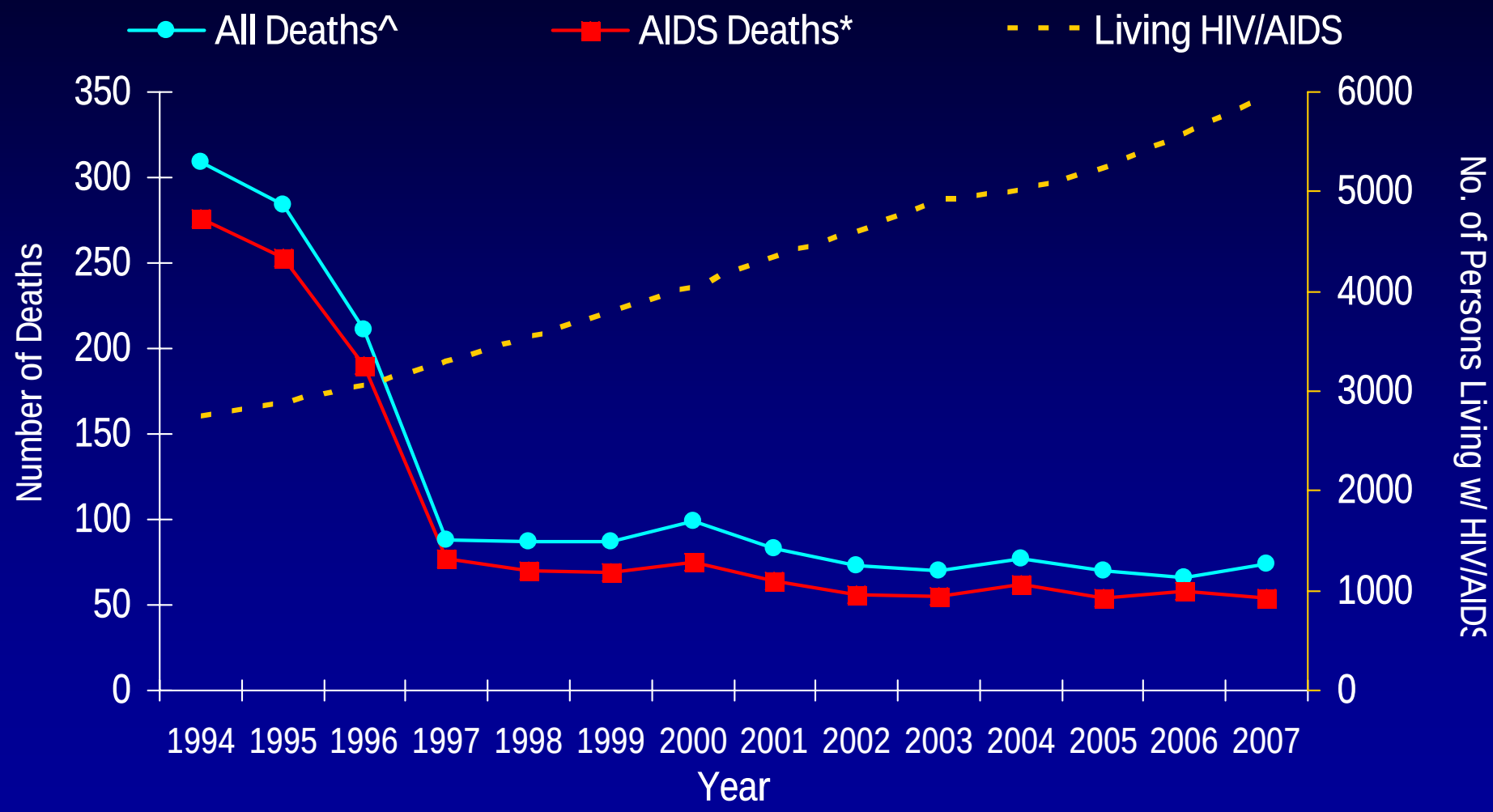
**Includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) diagnosed within a given calendar year.*

^Includes all new cases of AIDS diagnosed within a given calendar year, including AIDS at first diagnosis. This includes refugees in the HIV+ Resettlement Program, as well as, other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the United States.

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV/AIDS in Minnesota:

Number of Prevalent Cases, and Deaths by Year, 1994-2007



**Deaths among MN AIDS cases, regardless of location of death and cause.*

^Deaths in Minnesota among people with HIV/AIDS, regardless of location of diagnosis and cause.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota

Estimated Number of Persons *Living with HIV/AIDS in Minnesota*

- As of December 31, 2007, 5,950* persons are assumed alive and living in Minnesota with HIV/AIDS
  - 3,312 living with HIV infection (non-AIDS)
  - 2,638 living with AIDS

- This number includes 1,036 persons who were first reported with HIV or AIDS elsewhere and subsequently moved to Minnesota

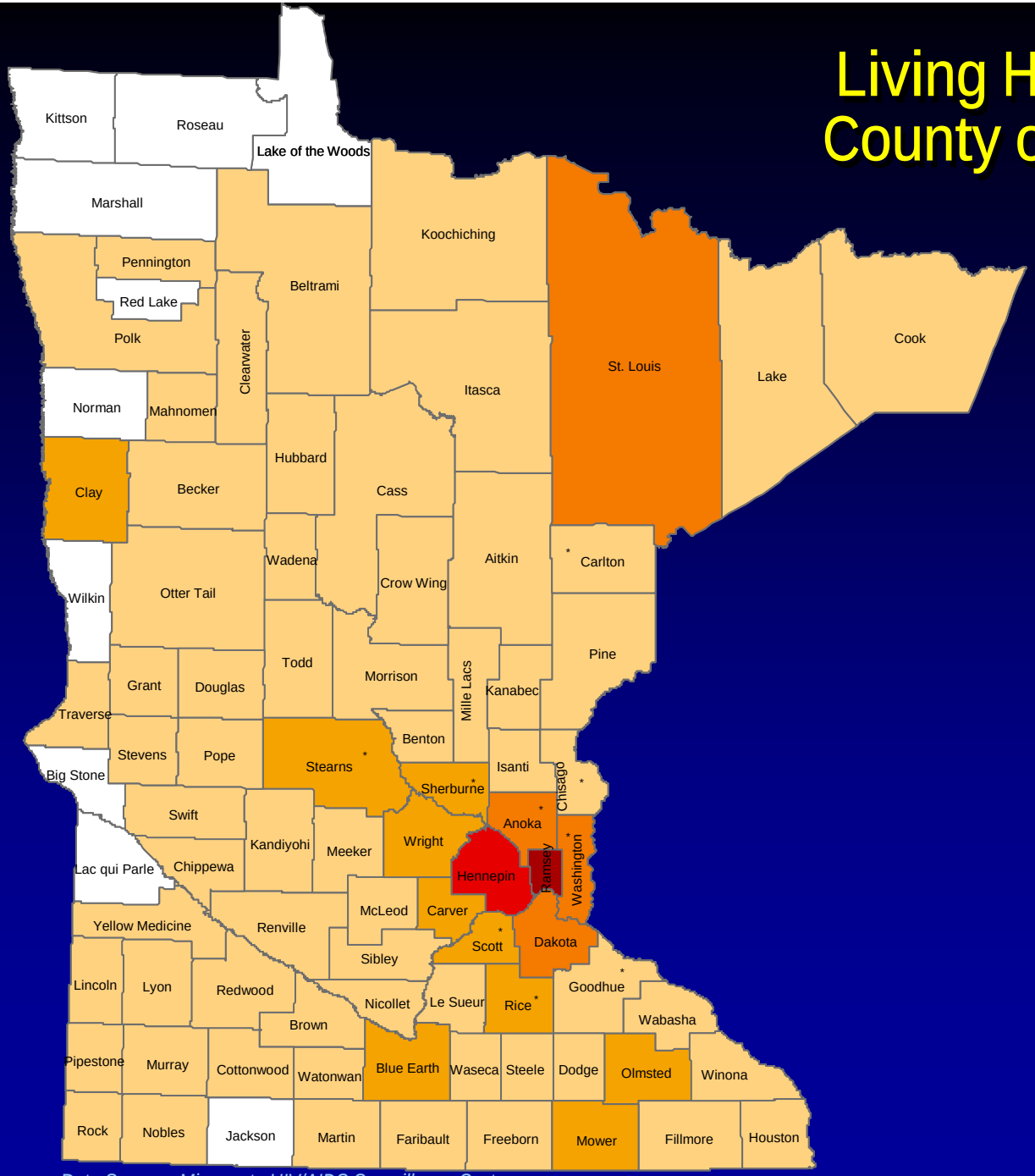
- This number excludes 894 persons who were first reported with HIV or AIDS in Minnesota and subsequently moved out of the state

** This number includes persons who reported Minnesota as their current state of residence, regardless of residence at time of diagnosis. Includes state prisoners and refugees arriving through the HIV+ Refugee Resettlement Program, as well as, HIV+ refugee/immigrants arriving through other programs.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Place

Living HIV/AIDS Cases by County of Residence, 2007



Number Living with HIV/AIDS

- None
- 1 - 20
- 21 - 100
- 101 - 500
- 501 – 1,000
- 1,001 – 2,000
- 2,001 – 3,366

City of Minneapolis – 2,448
City of St. Paul – 847
Suburban[#] – 1,808
Greater Minnesota - 824

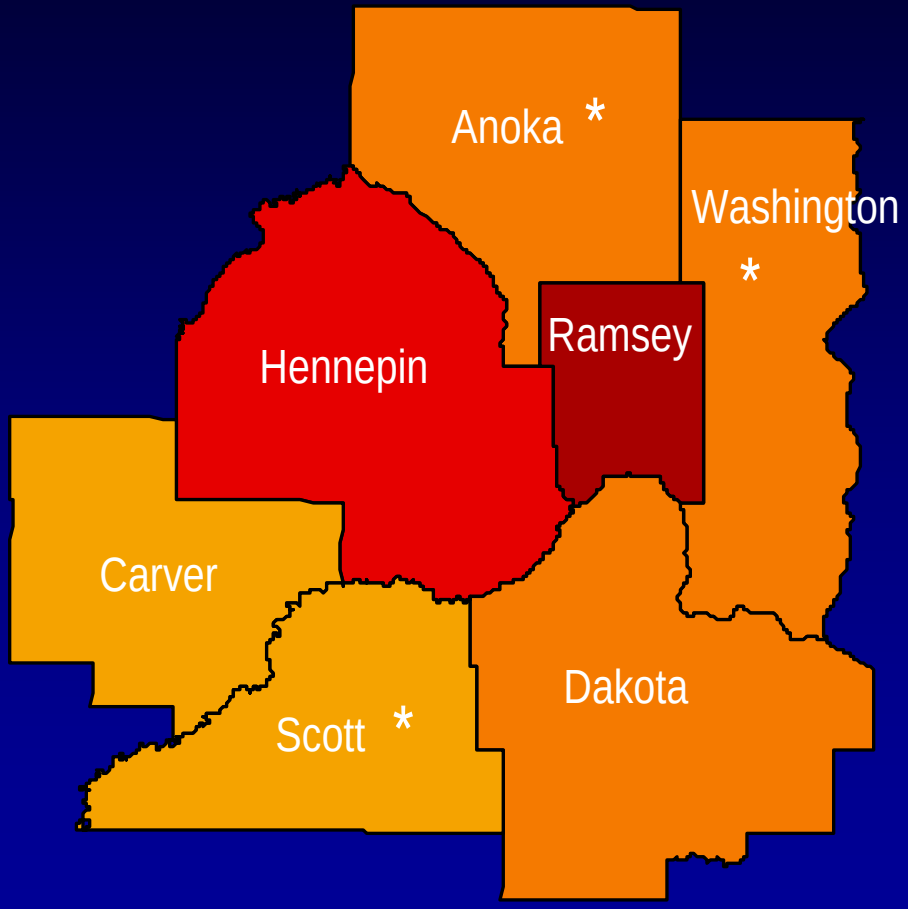
Total number = 5,950
(23 people missing residence information)

[#] 7-county metro area, excluding the cities of Minneapolis and St. Paul

* Counties in which a state correctional facility is located.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Map of Metro Area:
Living HIV/AIDS Cases by County of Residence, 2007



Number Living with HIV/AIDS

- None
- 1 - 20
- 21 - 100
- 101 - 500
- 501 – 1,000
- 1,001 – 2,000
- 2,001 – 3,366

City of Minneapolis – 2,448
City of St. Paul – 847
Suburban# – 1,808

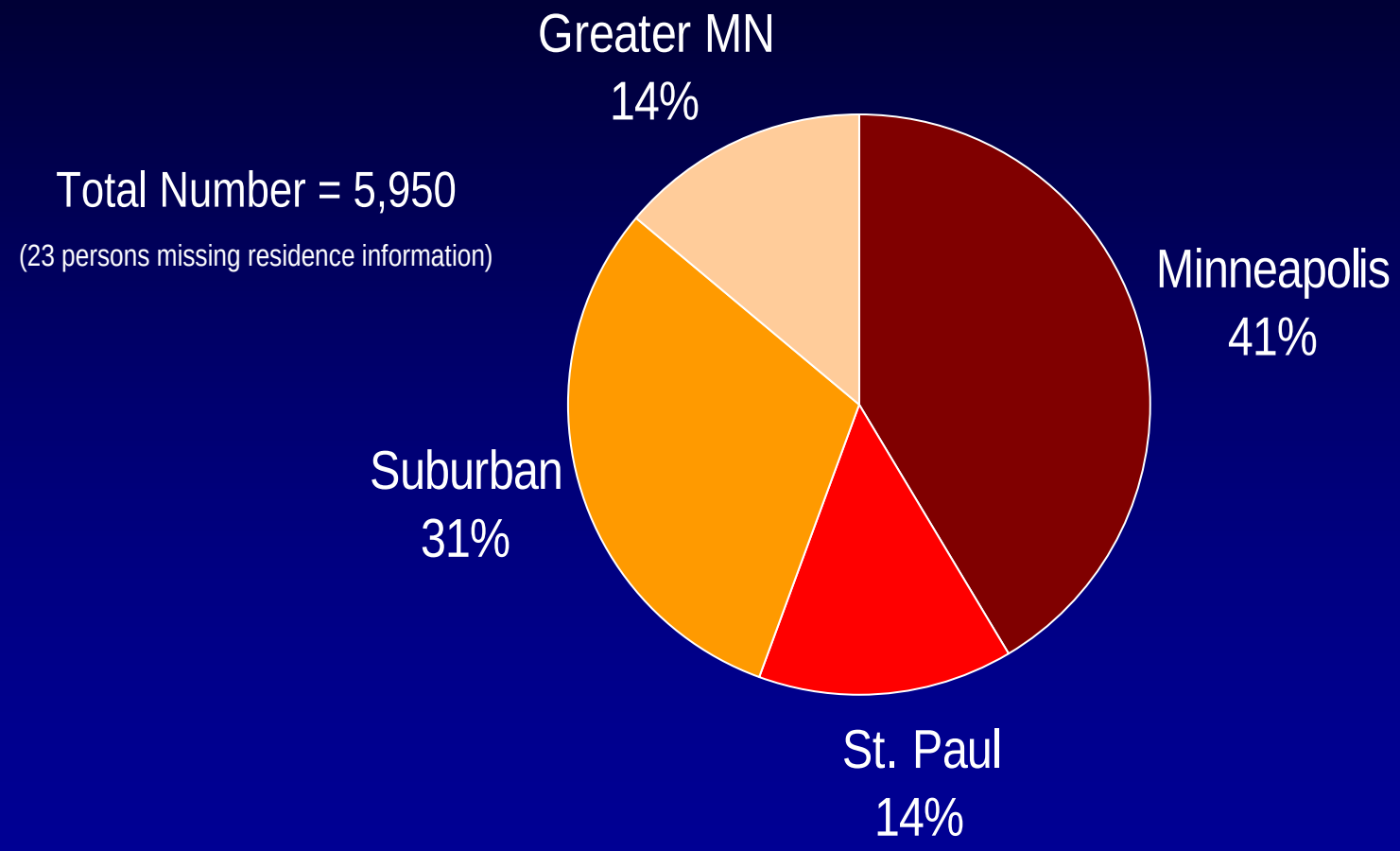
Total number (Metro only) = 5,103

* Counties in which a state correctional facility is located

7-county metro area, excluding the cities of Minneapolis and St. Paul

Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota by Current Residence, 2007

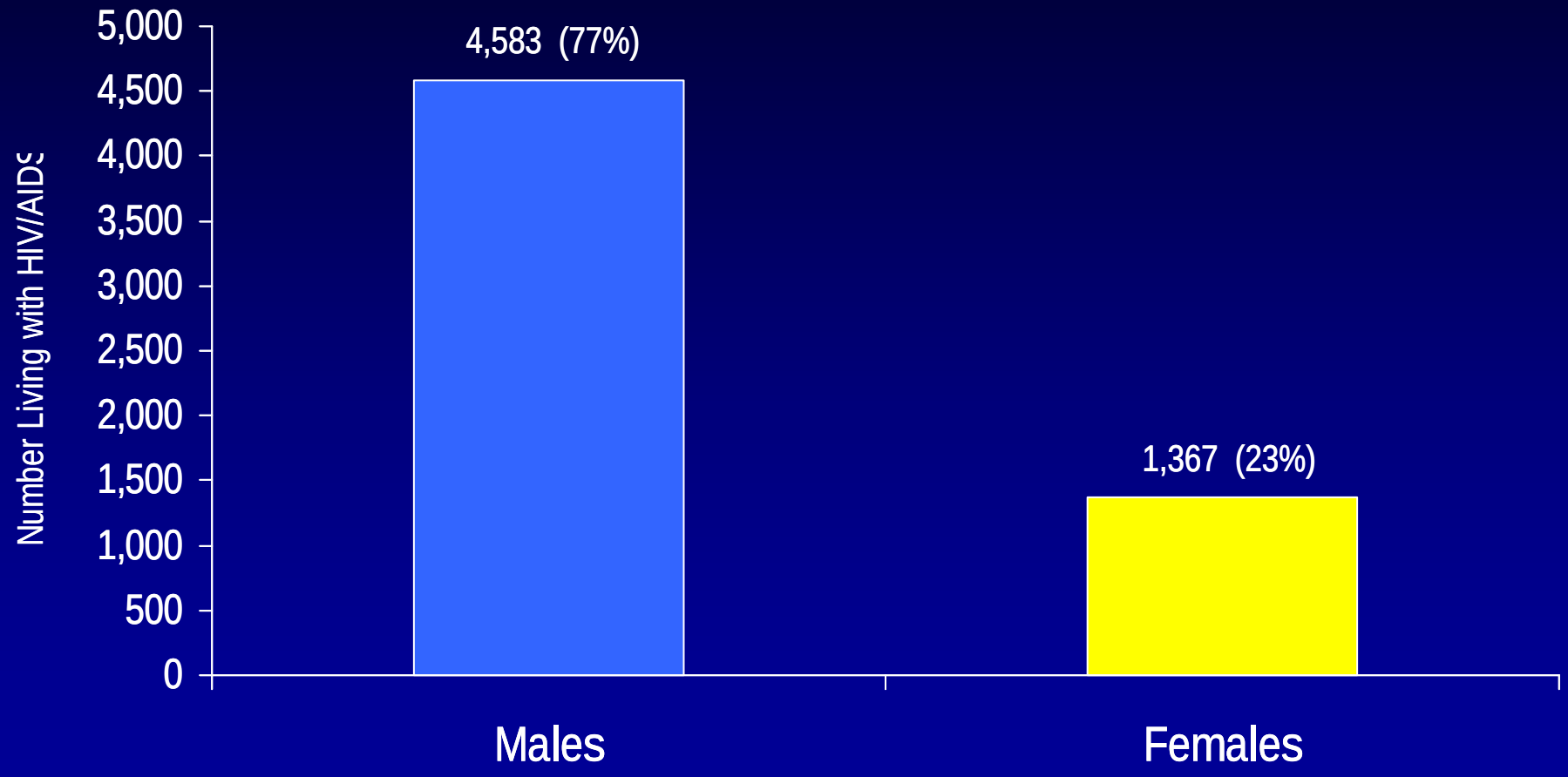


Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (except Minneapolis), Ramsey (except St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties, outside the seven-county metro area.

Data Source: *Minnesota HIV/AIDS Surveillance System*

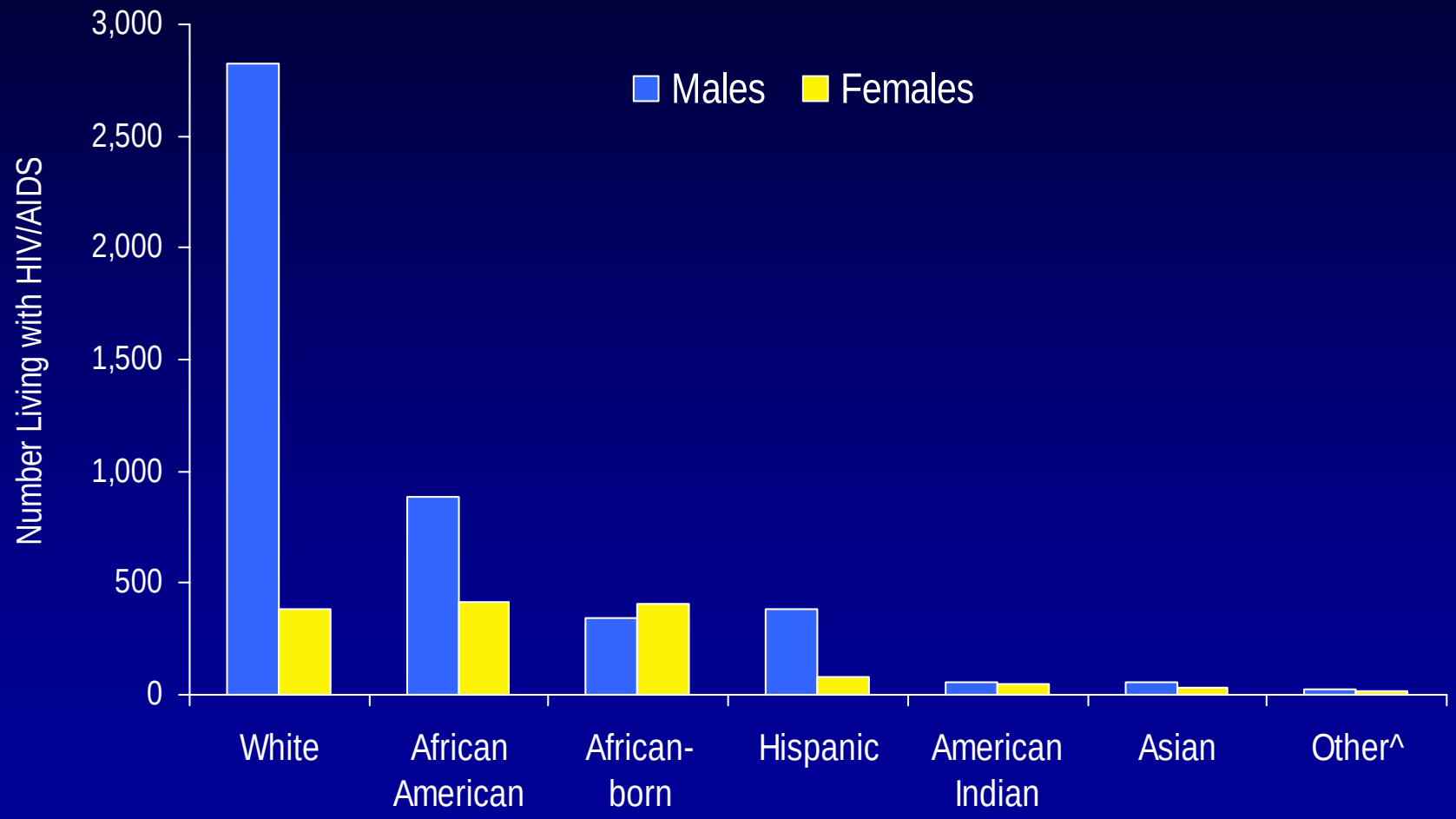
Gender and Race/Ethnicity

Persons Living with HIV/AIDS in Minnesota by Gender, 2007



Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota by Gender and Race/Ethnicity*, 2007



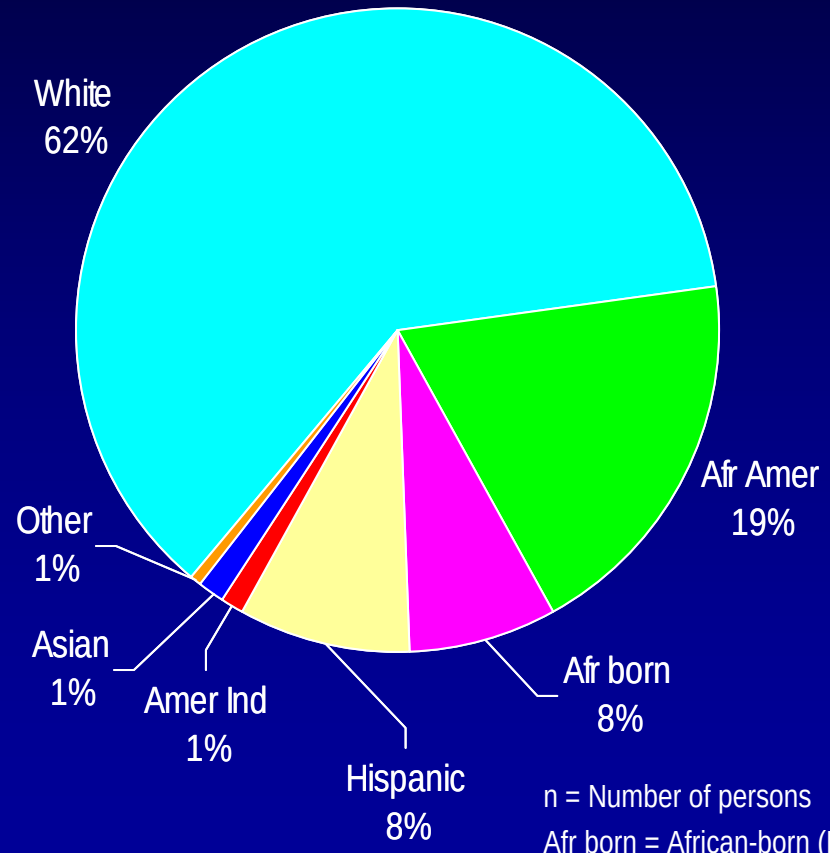
* *"African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks.*

^ Other includes persons with unknown or multiple races (n=39).

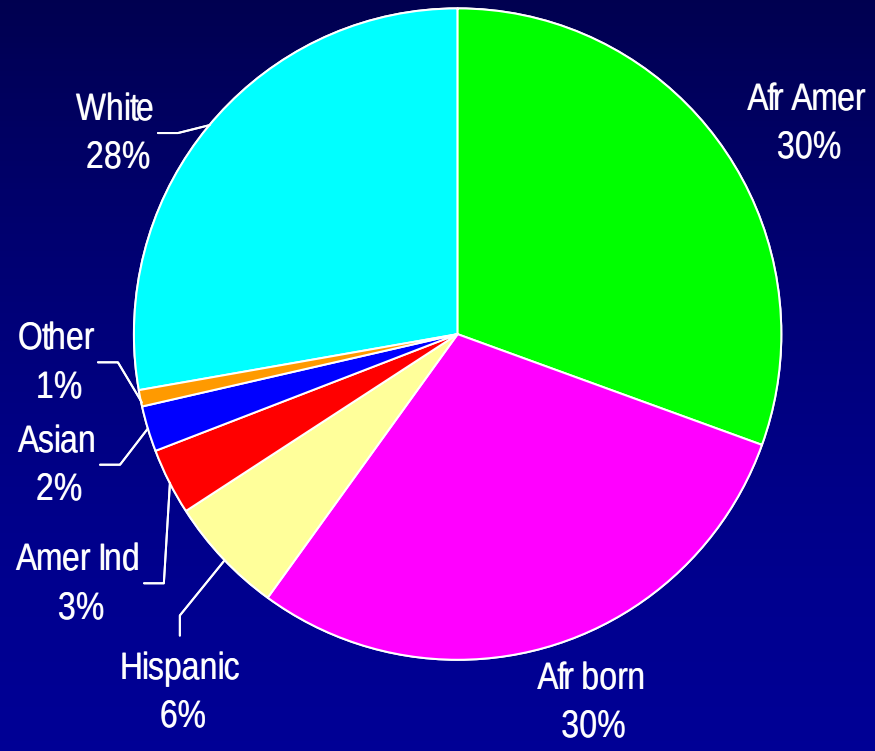
Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota by Gender and Race/Ethnicity, 2007

Males (n = 4,583)



Females (n = 1,367)



n = Number of persons Afr Amer = African American (Black, not African-born persons)
Afr born = African-born (Black, African-born persons) Amer Ind = American Indian
Other = Multi-racial persons or persons with unknown race

Data Source: *Minnesota HIV/AIDS Surveillance System*

Number of Cases and Rates (per 100,000 persons) of Persons Living with HIV/AIDS by Race/Ethnicity† – Minnesota, 2007

Race/Ethnicity	*Cases*	*%*	*Rate*
White, non-Hispanic	**3,205**	**54%**	**74.1**
Black, African-American	**1,299**	**22%**	**774.2**
Black, African-born	**751**	**13%**	**1502-2134††**
Hispanic	**464**	**8%**	**323.6**
American Indian	**103**	**2%**	**127**
Asian/Pacific Islander	**89**	**1%**	**52.9**
Other^	**39**	**1%**	**X**
Total	***5,950***	***100%***	***120.9***

Census Data used for rate calculations.

† "African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks. Cases with unknown race are excluded.

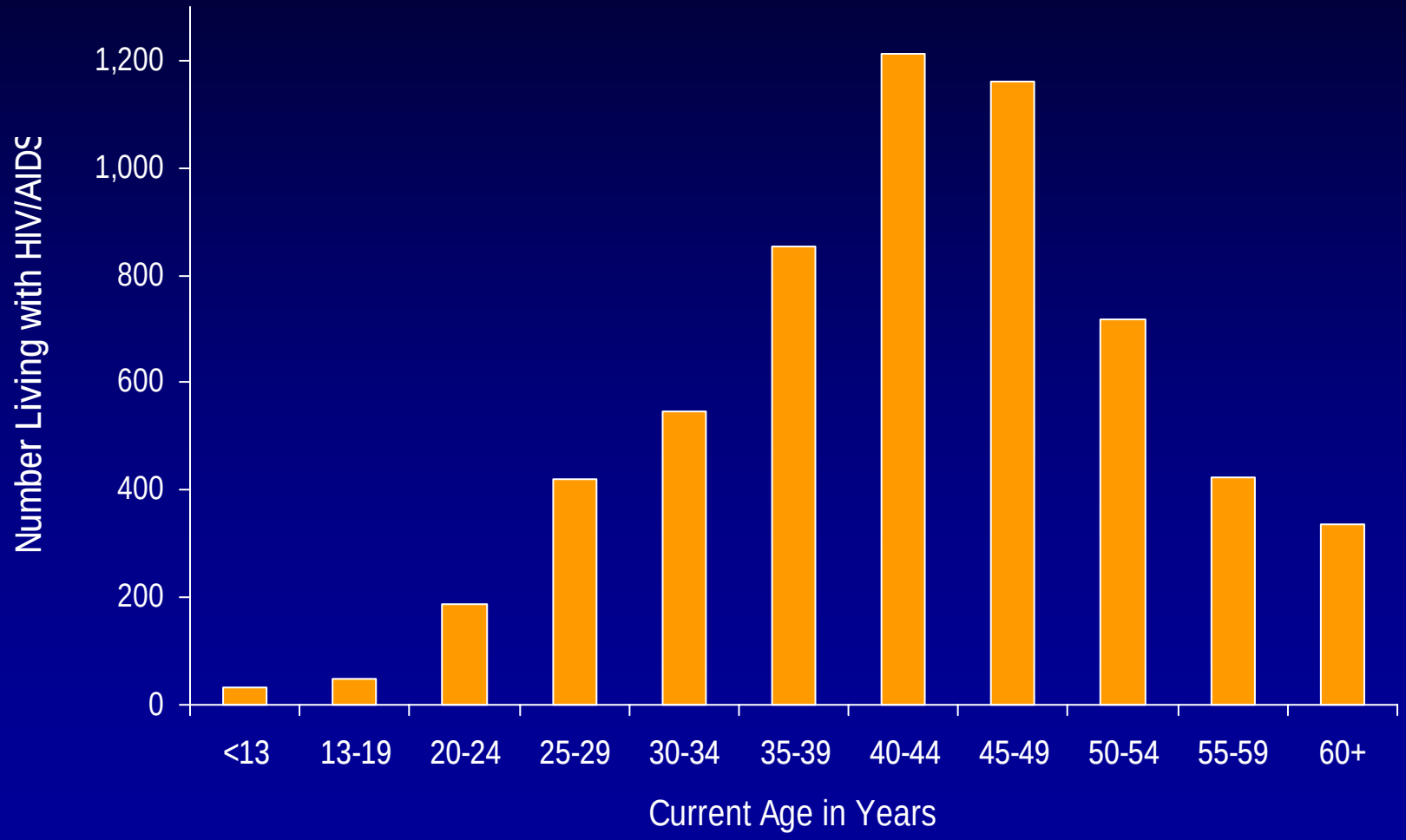
†† Accurate population estimates for African-born persons and MSM (any race) living in Minnesota are unavailable – anecdotal (50,000) and 2000 US Census data (35,188)) were used to create the range of rates reported for African-born.

^ Other = Multi-racial persons or persons with unknown race

Data Source: *Minnesota HIV/AIDS Surveillance System*

Age

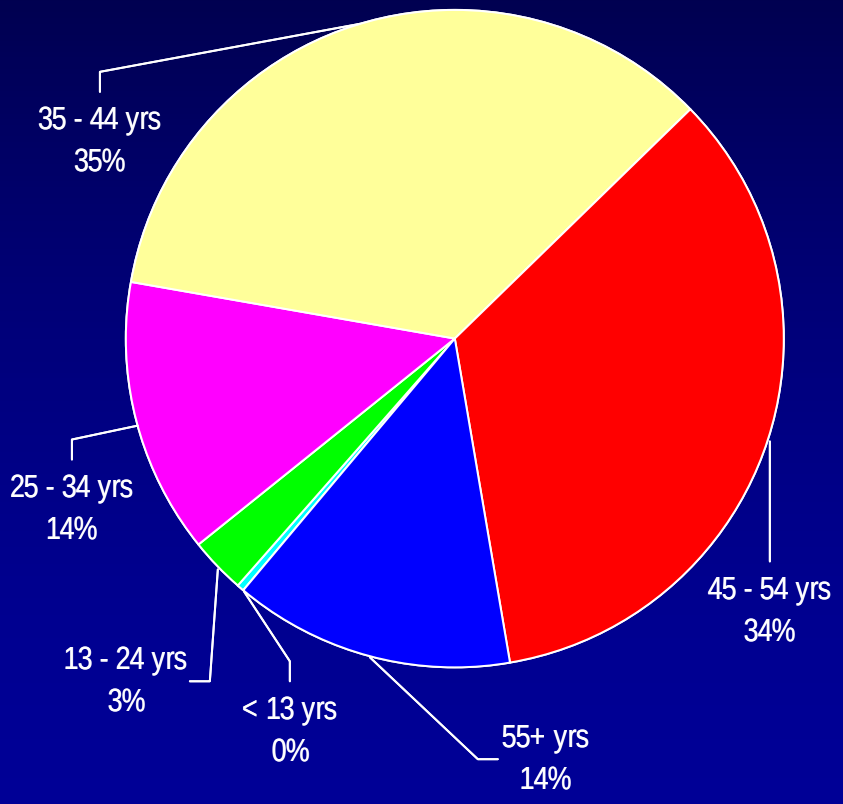
Persons Living with HIV/AIDS in Minnesota by Age Group, 2007



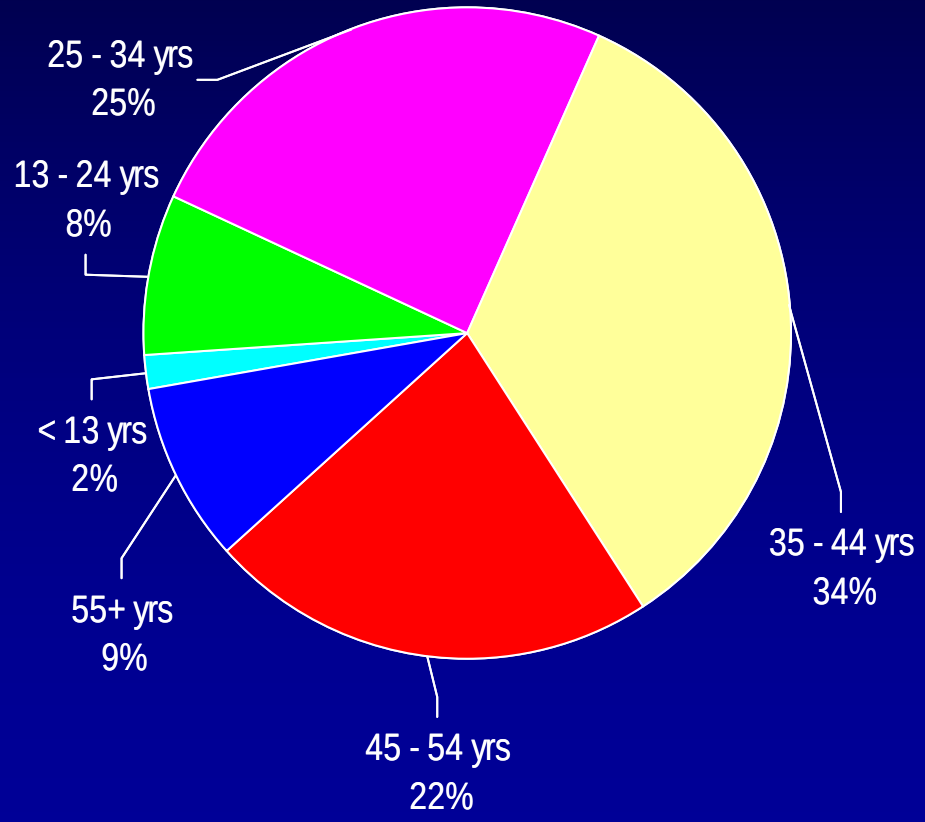
Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota by Age and Gender, 2007

Males (n = 4,583)



Females (n = 1,367)

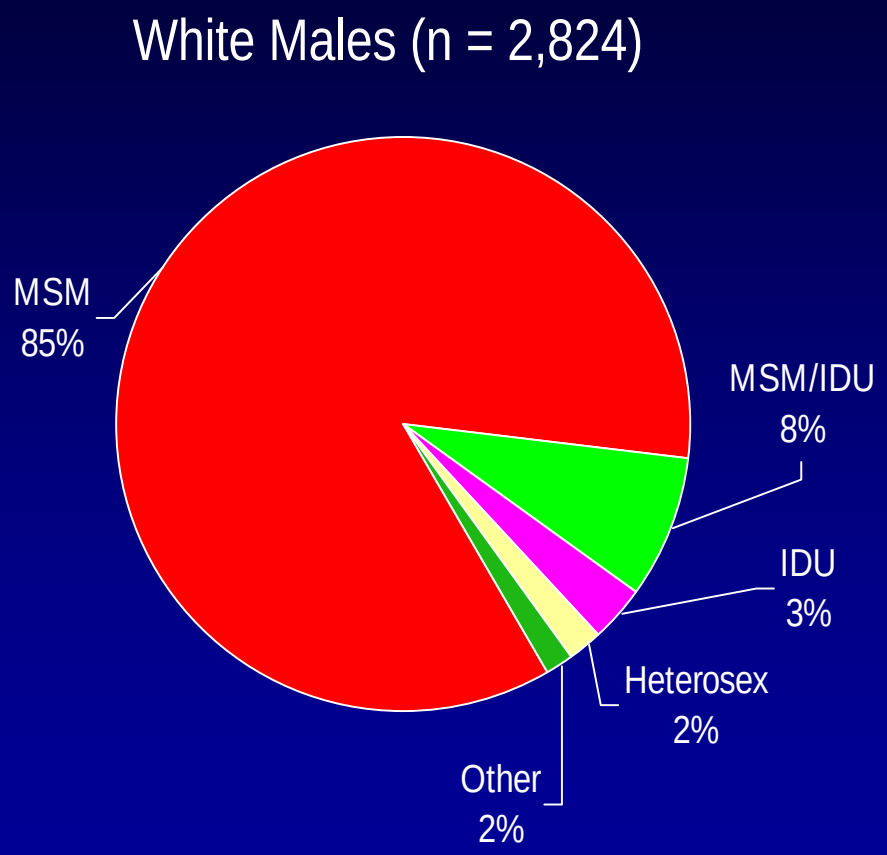


n = Number of persons

Data Source: *Minnesota HIV/AIDS Surveillance System*

Mode of Exposure

Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007



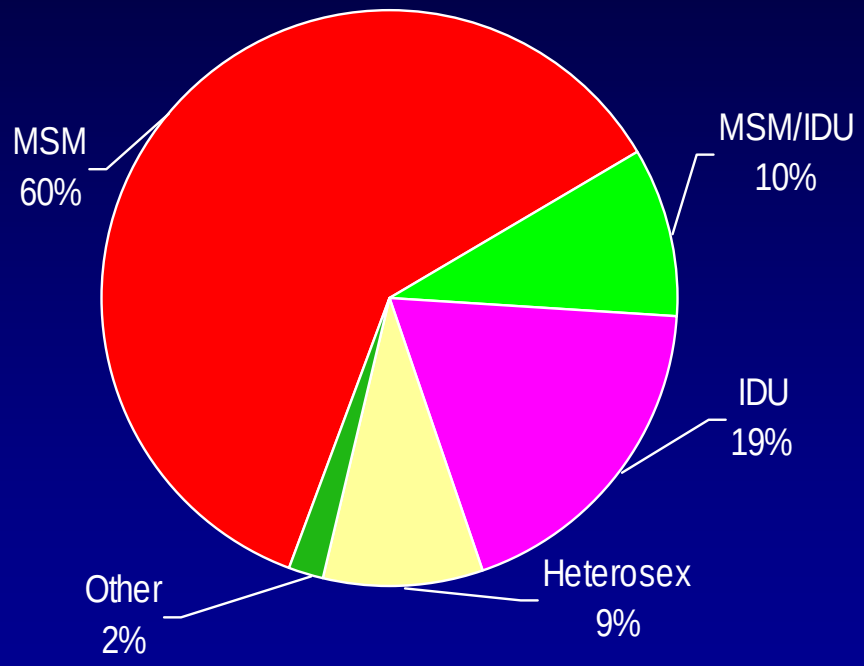
n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
IDU = Injecting drug use Heterosex = Heterosexual contact

† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007

African American Males†† (n = 883)



n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
IDU = Injecting drug use Heterosex = Heterosexual contact

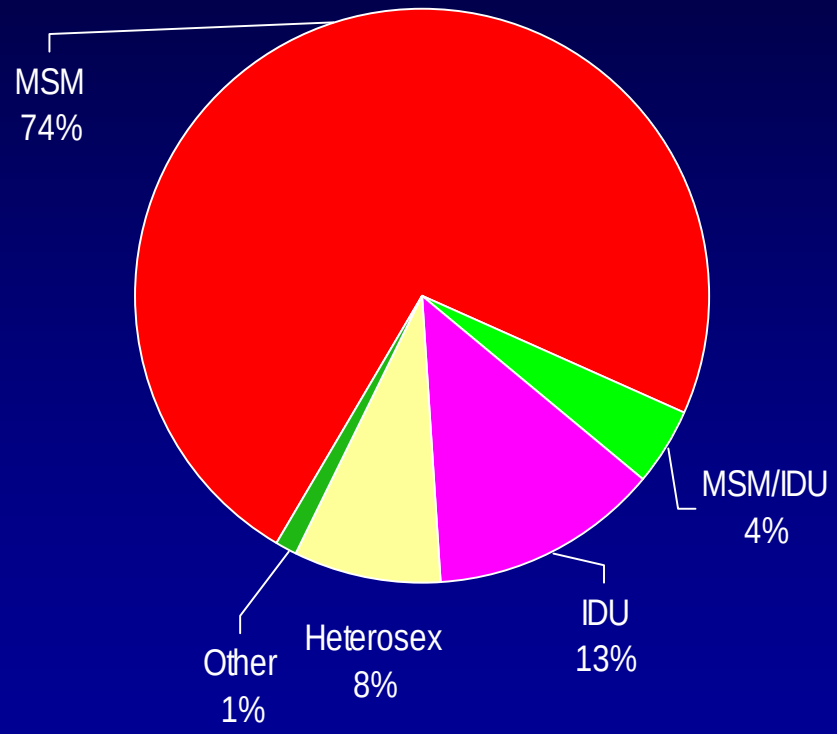
† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

†† *Refers to Black, African American (not African-born) males.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007

Hispanic Males (n = 384)



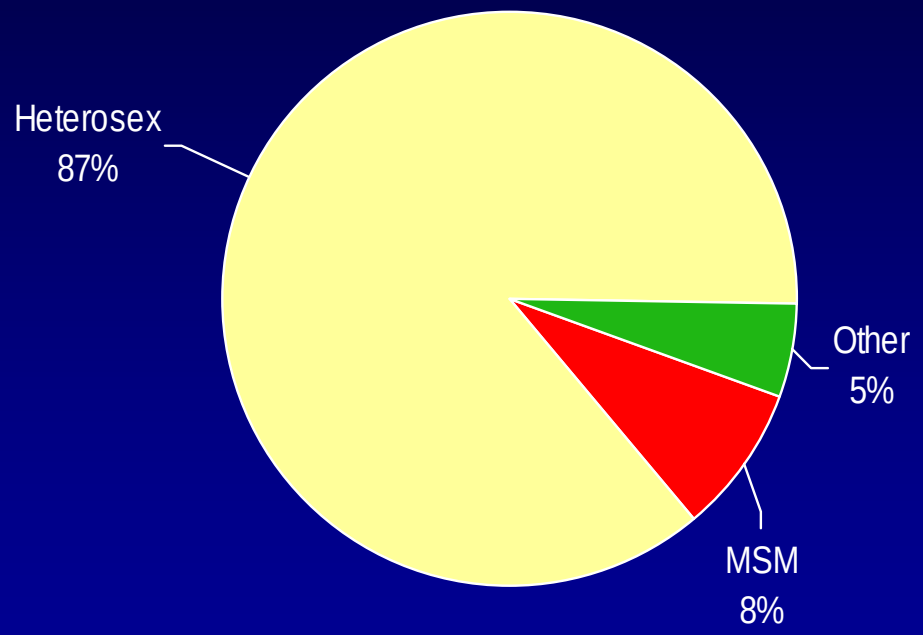
n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
IDU = Injecting drug use Heterosex = Heterosexual contact

† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007

African-born Males†† (n = 347)



n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
Heterosex = Heterosexual contact

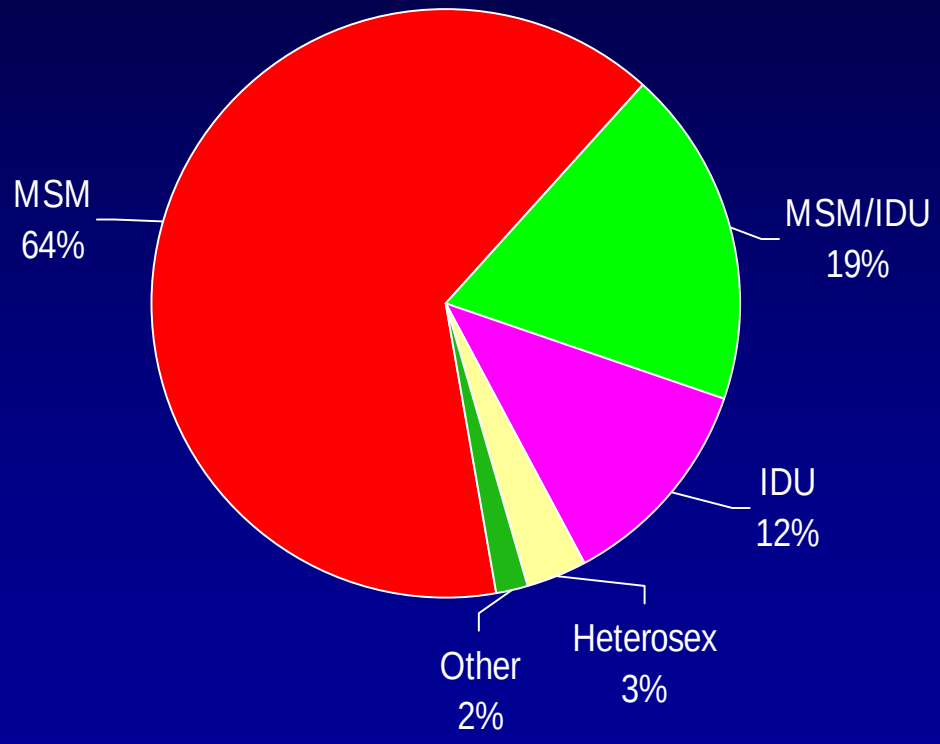
† Mode of Exposure has been estimated using the following breakdown: 5% - MSM, 90% - Heterosex, and 5% - Other.
For additional detail see the HIV Prevalence & Mortality Technical Notes.

†† *Refers to Black, African-born males.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007

American Indian Males (n = 59)

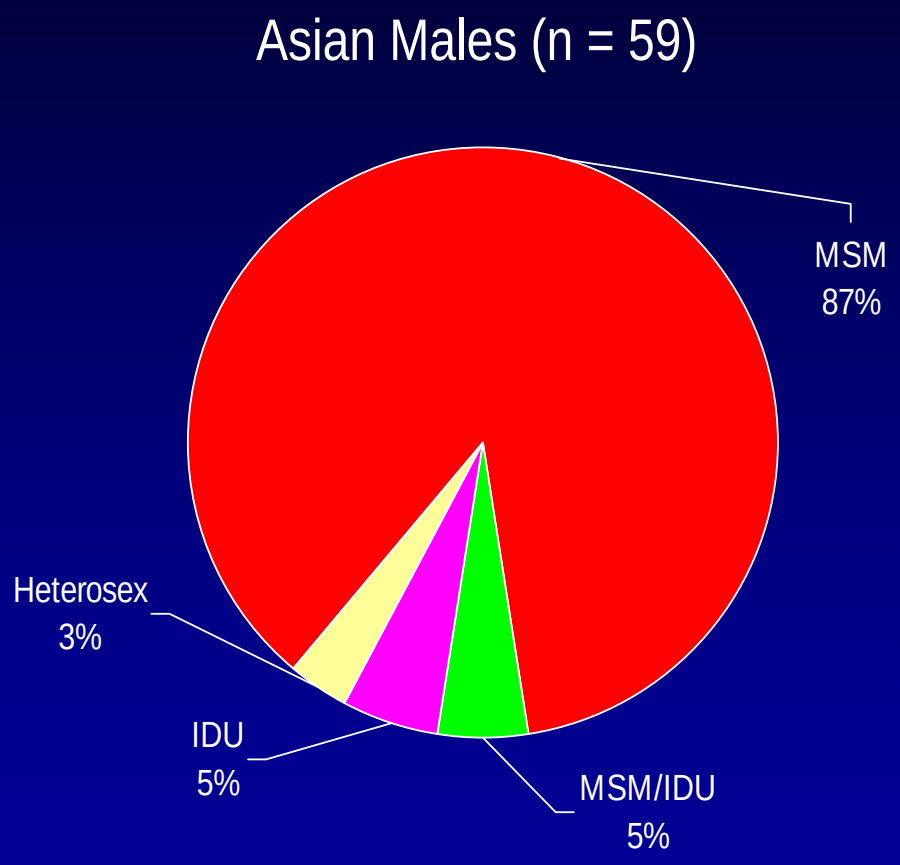


n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
IDU = Injecting drug use Heterosex = Heterosexual contact

† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007



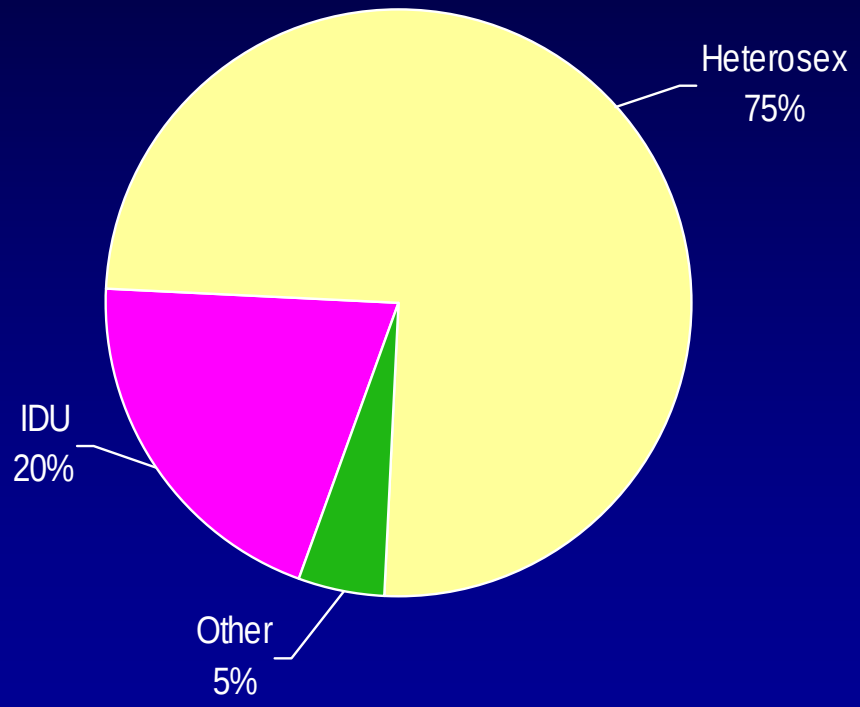
n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
IDU = Injecting drug use Heterosex = Heterosexual contact

† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007

African American Females†† (n = 416)



n = Number of persons

IDU = Injecting drug use

Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

Heterosex = Heterosexual contact

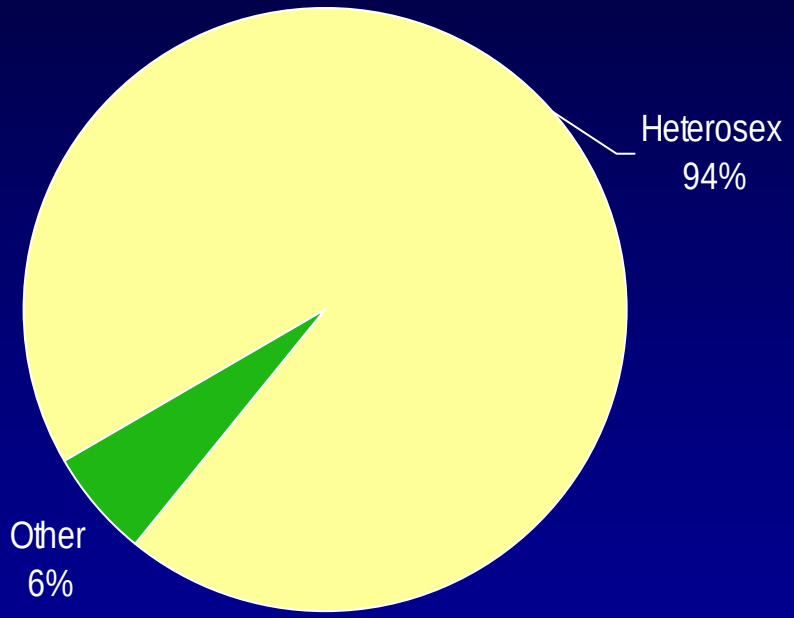
† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

†† *Refers to Black, African American (not African-born) females.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007

African-born Females†† (n = 404)



n = Number of persons

IDU = Injecting drug use

Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

Heterosex = Heterosexual contact

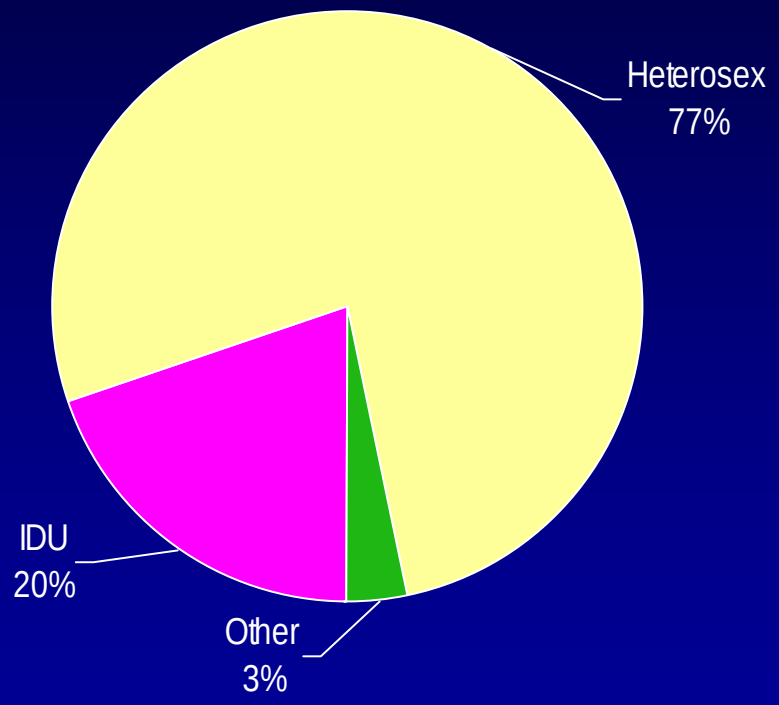
† Mode of Exposure has been estimated using the following proportions: 95% - Heterosexual, 5% - Other. For additional detail see the HIV Prevalence & Mortality Technical Notes.

†† *Refers to Black, African-born females.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007

White Females (n = 381)



n = Number of persons

IDU = Injecting drug use

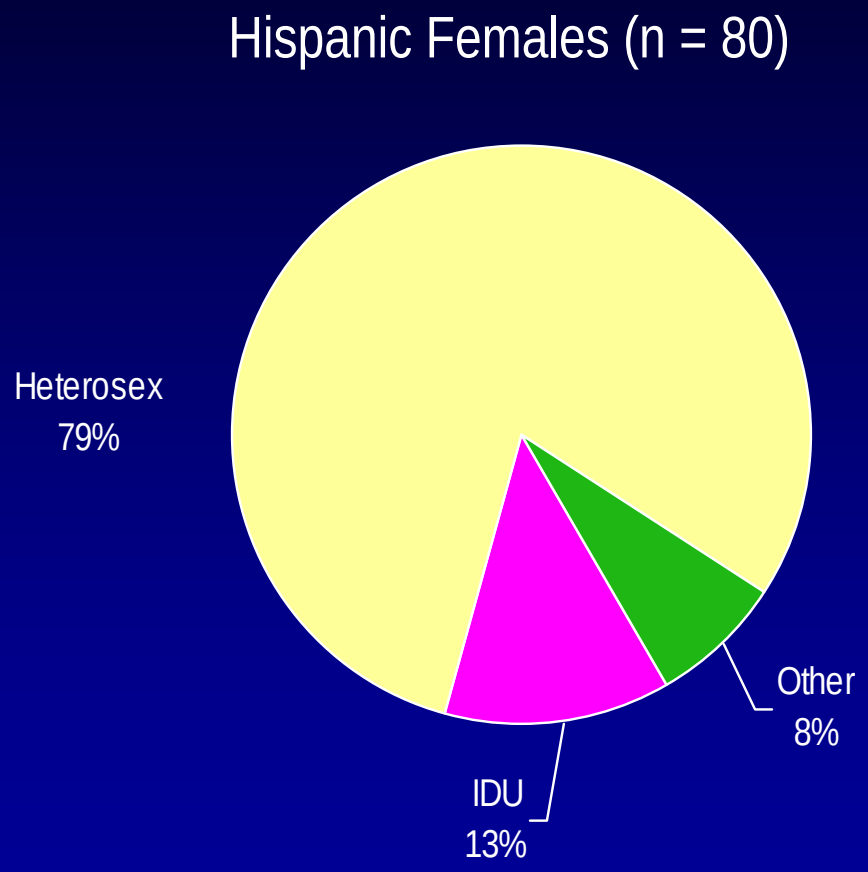
Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

Heterosex = Heterosexual contact

† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007



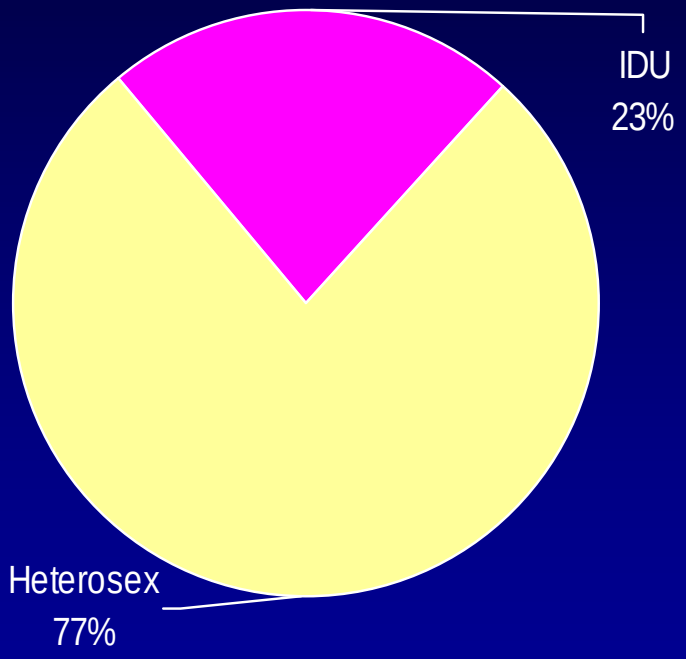
n = Number of persons
IDU = Injecting drug use
Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
Heterosex = Heterosexual contact

† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007

American Indian Females (n = 44)



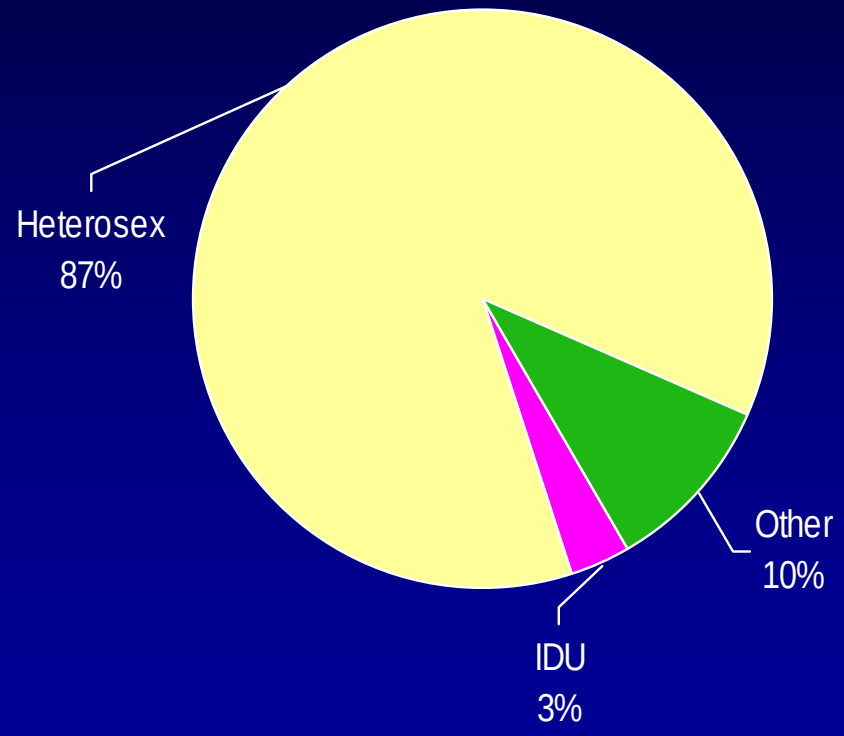
n = Number of persons
IDU = Injecting drug use
Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
Heterosex = Heterosexual contact

† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2007

Asian Females (n = 30)

CAUTION: Small number of cases – interpret carefully.



n = Number of persons

IDU = Injecting drug use

Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

Heterosex = Heterosexual contact

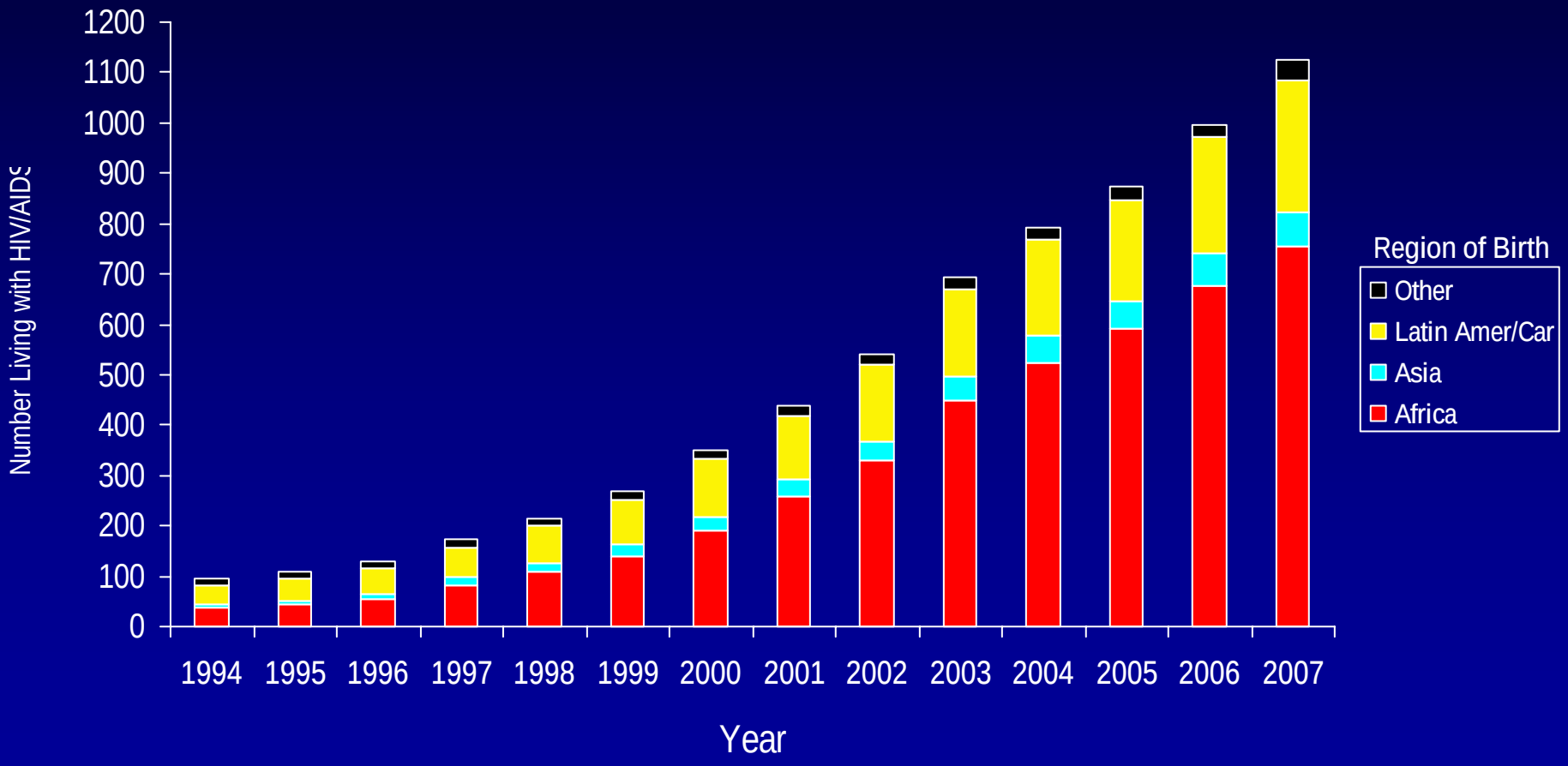
† Mode of Exposure has been estimated using the following proportions: 95% - Heterosexual, 5% - Other.

For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Special Populations

Foreign-Born Persons Living with HIV/AIDS in Minnesota by Region of Birth, 1994-2007



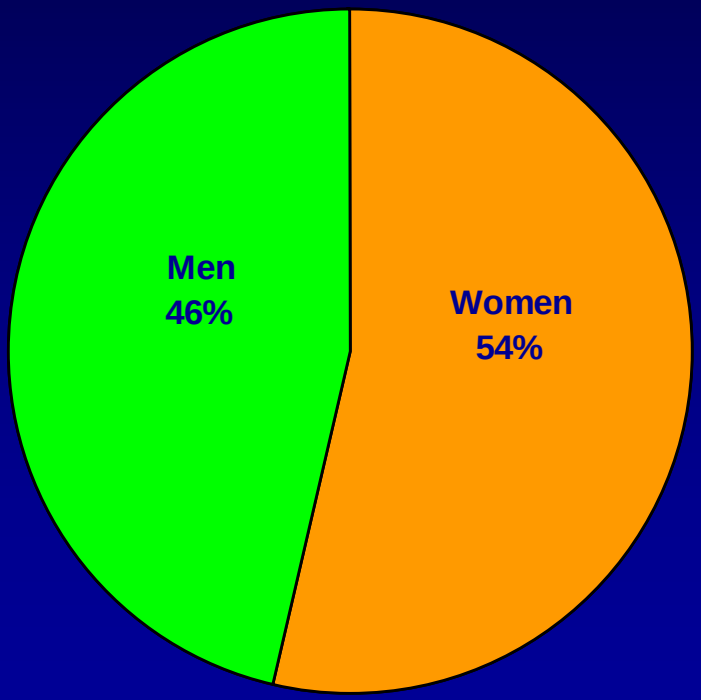
Latin Amer/Car – Includes Mexico, Caribbean, and Central/South American countries

Data Source: *Minnesota HIV/AIDS Surveillance System*

African-Born† Persons Living with HIV/AIDS Compared to Other Minnesota Cases by Gender, 2007

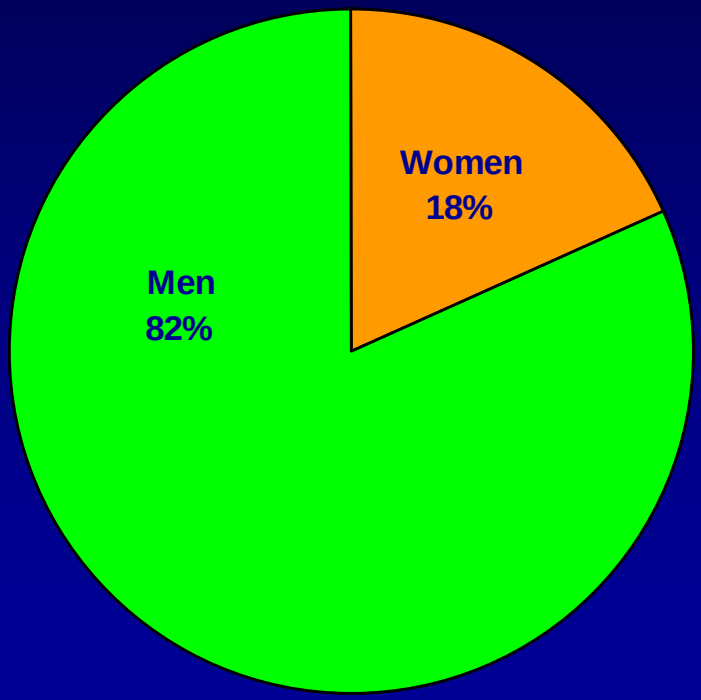
African-born Persons

Total Number = 754



U.S.-born Cases

Total Number = 4,824



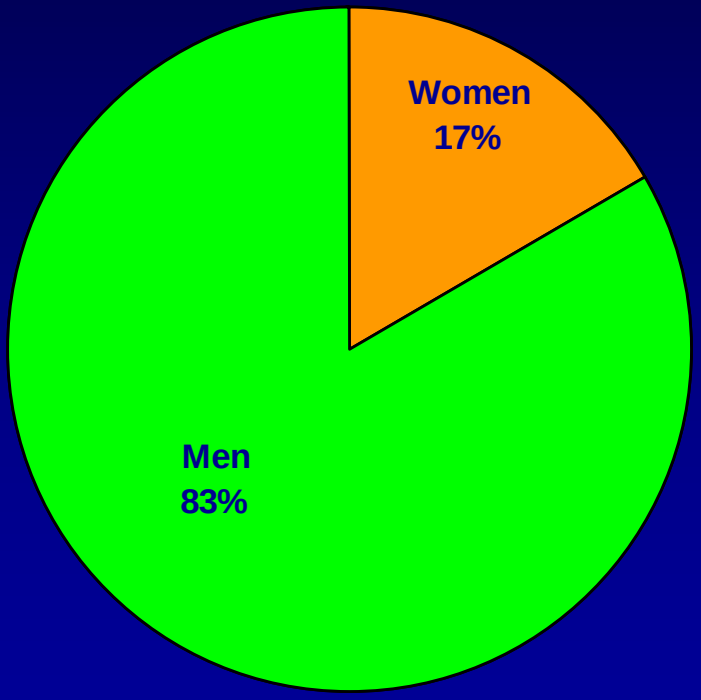
† *Includes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program and other refugee/immigrant programs and 3 White African-born persons*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS born in Latin America/Caribbean† Countries Compared to Other Minnesota Cases by Gender, 2007

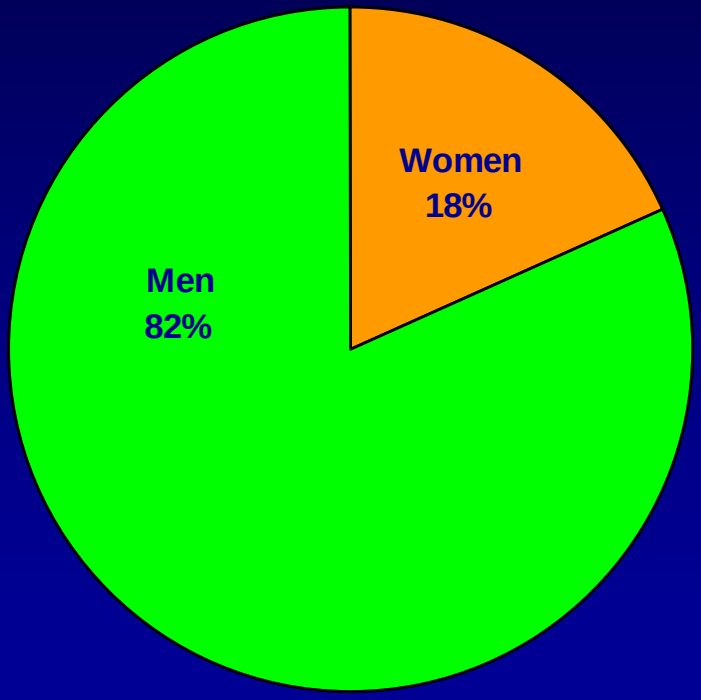
Latin/Caribbean Persons

Total Number = 263



U.S.-born Cases

Total Number = 4,824



† *Includes Mexico and all Central/South American and Caribbean countries.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Countries of Birth Among Foreign-Born Persons† Living with HIV/AIDS, Minnesota, 2007

- **Ethiopia/Oromia** (n=189)
- **Mexico** (n=147)
- **Liberia** (n=105)
- **Kenya** (n=97)
- **Somalia** (n=65)
- **Cameroon** (n=61)
- **Other^** (n=462)

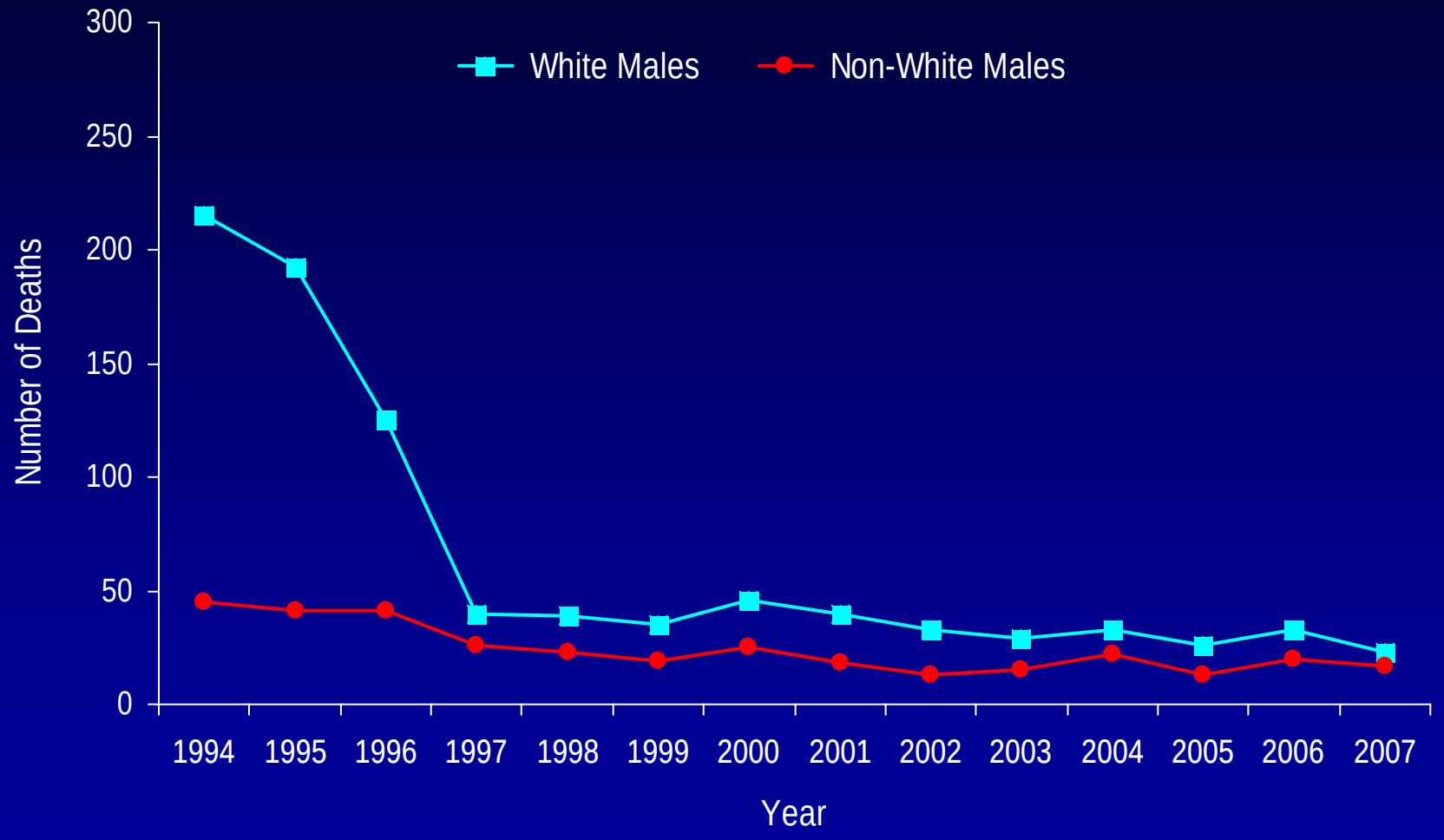
† Includes *persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as, other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota..*

^ *Includes 76 additional countries.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Mortality

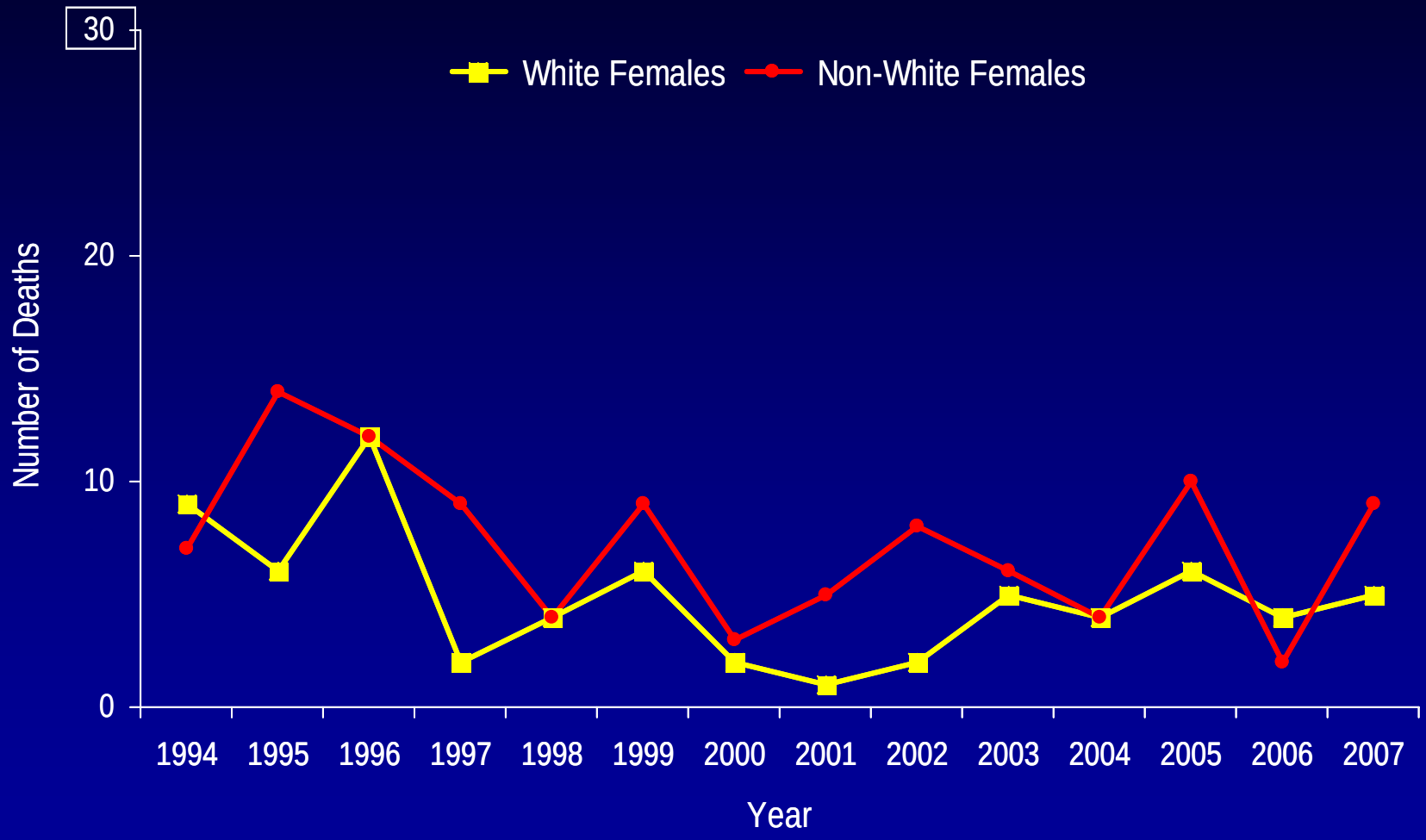
Reported Deaths* among Male MN AIDS Cases 1994-2007



** Deaths among MN AIDS cases, regardless of location and cause.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

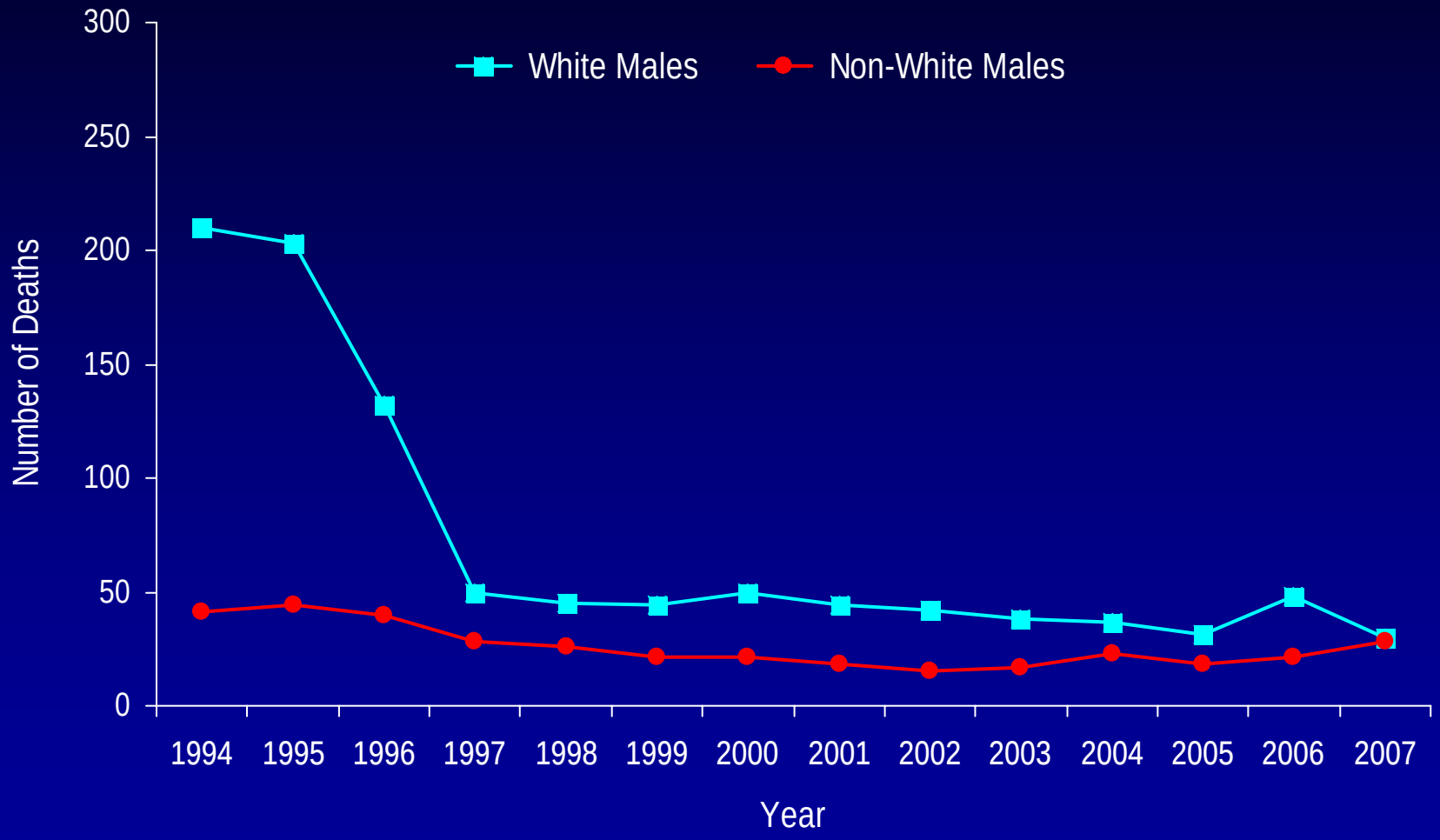
Reported Deaths* among Female MN AIDS Cases 1994-2007



** Deaths among MN AIDS cases, regardless of location and cause.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Reported Deaths* in Minnesota among Males with HIV Infection†, 1994-2007

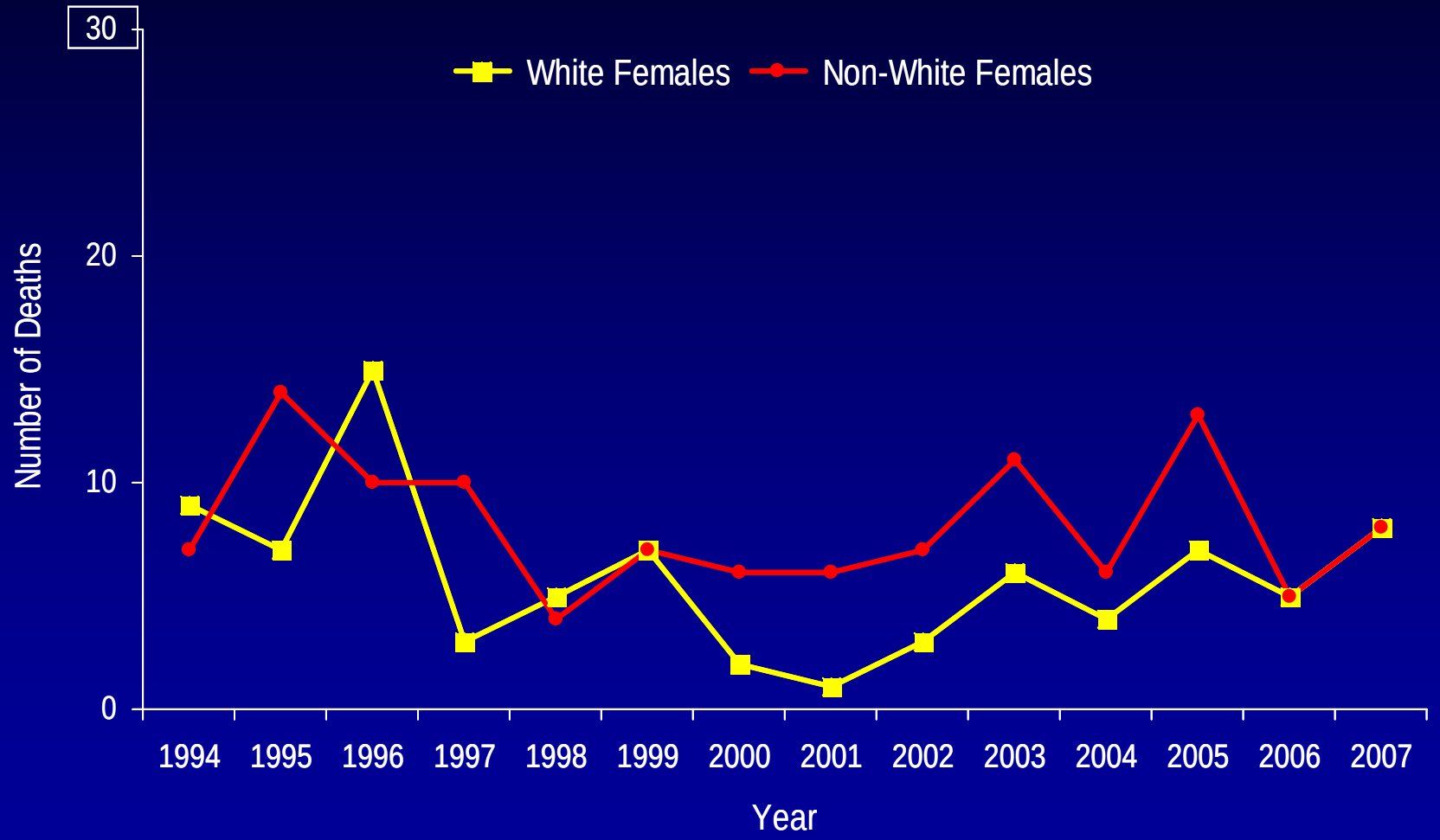


** Deaths in Minnesota among people with HIV infection regardless of location of diagnosis and cause of death.*

† *HIV (non-AIDS) or AIDS*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Reported Deaths* in Minnesota among Females with HIV Infection†, 1994-2007



** Deaths in Minnesota among people with HIV infection regardless of location of diagnosis and cause of death.*

† HIV (non-AIDS) or AIDS

Data Source: *Minnesota HIV/AIDS Surveillance System*

Companion Text for the Slide Set:
Minnesota HIV/AIDS Prevalence & Mortality Report, 2007

INTRODUCTION

The *Minnesota HIV/AIDS Prevalence & Mortality Report, 2007* contains estimates of HIV/AIDS prevalence (the number of persons living with HIV or AIDS) and mortality in Minnesota. These estimates can be used to help educate, plan for HIV/AIDS services and develop policy.

Data Source

In Minnesota, laboratory-confirmed infections of human immunodeficiency virus (HIV) are monitored by the Minnesota Department of Health (MDH) through an active and passive surveillance system. State rules (Minnesota Rule 4605.7040) require both physicians and laboratories to report all cases of HIV infection (HIV or AIDS) directly to the MDH (passive surveillance). Additionally, regular contact is maintained with several clinical sites to ensure completeness of reporting (active surveillance). All of the data presented in this report come from MDH HIV/AIDS Surveillance System.

Data Limitations

The prevalence estimate is calculated by totaling the number of HIV and AIDS cases diagnosed through December 31, 2007 who are not known to be deceased and whose most recently reported state of residence was Minnesota. It bears noting that persons who are HIV-infected but not yet tested are not included in this prevalence estimate. Migration (known HIV-infected persons moving in or out of the state) also affects the estimate. Refer to the *HIV/AIDS Prevalence & Mortality Technical Notes* for a more detailed description of data inclusions and exclusions.

Factors that impact the completeness and accuracy of the available surveillance data on HIV/AIDS include the level of screening and compliance with case reporting. Thus, any changes in numbers of infections may be due to one of these factors, or due to actual changes in HIV/AIDS occurrence.

PERSONS LIVING WITH HIV/AIDS IN THE UNITED STATES

According to the Centers for Disease Control & Prevention (CDC), at the end of 2003, 1,039,000 to 1,185,000 persons in the United States were living with HIV/AIDS, with 24-27% undiagnosed and unaware of their HIV infection[1]. The number of people specifically living with AIDS in the United States has been increasing in recent years: from approximately 290,400 in 1998 to approximately 436,693 in 2006.[2]

PERSONS LIVING WITH HIV/AIDS IN MINNESOTA

Overview of HIV/AIDS in Minnesota, 1990-2007

The number of persons assumed to be living with HIV/AIDS in Minnesota has been steadily increasing over time. As of December 31, 2007, 5,950 persons known to be living with HIV/AIDS resided in Minnesota, a 6.9% increase from 2006. The number of HIV (non-AIDS) diagnoses had remained steady since the mid-1990s at just under 200 cases per year, however since 2003 that number has been increasing steadily. In contrast, both the number of newly diagnosed AIDS cases and the number of deaths among AIDS cases declined between 1996 and 2000. These decreases were primarily due to the success of new treatments introduced in 1995 (protease inhibitors) and 1996 (highly active antiretroviral therapy or HAART). These treatments do not cure, but can delay progression to AIDS among persons with HIV (non-AIDS) infection and improve survival among those with AIDS. Thus, the declines slowed during the late 1990s and between 2001 and 2004 the numbers of AIDS cases increased slowly. In 2006 and 2007, the numbers of AIDS cases decreased once more.

Living HIV/AIDS Cases, 2007

Among the estimated 5,950 prevalent cases in Minnesota, 3,312 are diagnosed with HIV (non-AIDS) and 2,638 are diagnosed with AIDS. The majority (86%) of prevalent cases reside in the seven-county metropolitan area surrounding the Twin Cities of Minneapolis and St. Paul (Hennepin, Ramsey, Anoka, Carver, Dakota, Scott, and

[1] Glynn M, Rhodes P. Estimated HIV prevalence in the United States at the end of 2003. National HIV Prevention Conference; June 2006; Atlanta. Abstract 595.
[2] Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report* 2006:18.

Washington counties). Although HIV infection is more common in communities with higher population densities and greater poverty, there are people living with HIV or AIDS in over 88% of counties in Minnesota.

Gender & Race/Ethnicity

Seventy-seven percent (77%) of prevalent HIV/AIDS cases are males. Broken down by race/ethnicity, 62% of male cases are White, 19% African American, 8% Hispanic, 8% African-born, 1% American Indian, and 1% Asian/Pacific Islander. In total, 38% of males living with HIV/AIDS are non-White whereas only 12% of the general male population is Non-White. Among female cases, the distribution is even more skewed toward women of color: 28% White, 30% African American, 30% African-born, 6% Hispanic, 3% American Indian, and 2% Asian/Pacific Islander. Thus, 72% of prevalent female HIV/AIDS cases are non-White whereas only 11% of the general female population in Minnesota is non-White.

Please note that race is not considered a biological reason for disparities related to HIV/AIDS experienced by persons of color. Race, however, can be considered a marker for other personal and social characteristics that put a person at greater risk for HIV exposure. These characteristics may include, but are not limited to, lower socioeconomic status, less education, and less access to health care.

Age

Eighty percent (80%) of persons living with HIV/AIDS in 2007 are currently 35 years of age or older. As with new cases, there are differences by gender in the age of living cases. While males 24 and younger account for just three (3) percent of male living cases, young females account for ten (10) percent of female living cases.

With the advent of therapies that delay progression to AIDS and death for those living with HIV infection the population of living cases has aged over time. In 2007, persons 50 and older accounted for 25 percent of living cases compared to 16 percent in 2002.

Mode of Exposure

In 2007, MDH used a risk re-distribution method to estimate the mode of exposure among cases with unknown risk. For additional details on how this was done please read the *HIV Prevalence and Mortality Technical Notes*. All mode of exposure numbers referred to in the text are based on the risk re-distribution.

The proportions of living cases attributable to particular modes of exposure differ among gender and race groups. While male-to-male sex (MSM or MSM/IDU) accounts for an estimated 93% of White male cases, it accounts for an estimated 61% of non-White male cases. The estimated percent of male cases that identified IDU as a risk factor was particularly high for African Americans (19%), Hispanics (13%), and American Indians (12%). These percentages among Asian, White, and African-born males were estimated at 5%, 3%, and 0%, respectively. Similar to the MSM category, IDU may be underreported due to social stigma.

Across all race/ethnicity groups, females most frequently report heterosexual contact as their mode of HIV exposure. However, IDU also accounts for a large percentage of female cases among most race/ethnicity groups. The largest estimated percentage of IDU cases are among American Indians (23%) followed by African Americans, Whites, and Hispanics with 20%, 20%, and 13%, respectively. There were no IDU cases either among African-born females or among Asian females. The number of prevalent HIV/AIDS cases among Asian females was too small (n = 30) to make generalizations about risk.

While risk re-distribution was used to make better sense of mode of exposure information there are differences by race and gender on how many cases have unspecified risk. Among males 16% of prevalent cases have no risk information, compared to 26% of females. Additionally, among males only 6% of White prevalent cases have unspecified risk, compared to 88% of African-born, 39% of Asian, and 22% and 20% for Hispanic and African American cases, respectively. The percent of African American males with unspecified risk has increased over the past three years. Among women, the disparity between White females (13% unspecified) and women of color is not as striking, except for African-born (51% unspecified) and Asian (30%) females. See

the *HIV/AIDS Prevalence & Mortality Technical Notes* for a detailed discussion of mode of exposure categories.

Special Populations

Between 1990 and 2007, the number of foreign-born persons living with HIV/AIDS in Minnesota increased substantially, especially among the African-born population. In 1990, 50 foreign-born persons were reported to be living with HIV/AIDS in Minnesota, and by 2003 this number had increased twelve-fold to 692 persons. In 2007, the total number of foreign-born persons living with HIV/AIDS in Minnesota was 1,126, a 12% increase from 2006. This trend illustrates the growing diversity of the infected population in Minnesota and the need for culturally appropriate HIV care services and prevention efforts.

The characteristics of foreign-born persons living with HIV/AIDS in Minnesota differ from U.S.-born, especially in gender. While females account for 18% of cases among U.S.-born persons, they account for 43% of foreign-born cases. This is especially noticeable among African-born cases, where women account for 54% of those living with HIV/AIDS in Minnesota. Among Asian-born cases, women account for 36% of cases. The gender distribution among cases born in Latin America, the Caribbean and Europe is similar to that of U.S.-born cases, where slightly under 20% of prevalent cases are among women.

Six countries (Cameroon, Ethiopia, Kenya, Liberia, Mexico, and Somalia) account for a majority (59%) of living foreign-born cases, however there are over 80 countries represented among the 1,126 foreign-born persons living with HIV infection in Minnesota.

HIV/AIDS MORTALITY IN MINNESOTA

The number of deaths[3] among Minnesota AIDS cases decreased between 1995 and 1997 and remained relatively constant between 1997 and 2007. The largest declines in mortality were observed among White males in the mid 1990s. In recent years, the number of deaths among Minnesota AIDS cases has been comparable between White and

[3] Includes all deaths to MN AIDS cases, regardless of location of death and cause of death.

non-White males and between White and non-White females. In 2007, a total of 54 deaths were reported among AIDS cases diagnosed in Minnesota. Of these deaths, fourteen (14) were among women and 40 among men. The number of deaths[4] reported in Minnesota for those living with HIV infection (HIV (non-AIDS) or AIDS) was slightly higher (74 deaths) than the number of deaths among MN AIDS cases.

[4] Includes all deaths in Minnesota to persons with HIV infection, regardless of location of diagnosis and cause of death.

HIV/AIDS PREVALENCE & MORTALITY
TECHNICAL NOTES

Surveillance of HIV/AIDS

The Minnesota Department of Health (MDH) collects case reports of HIV infection and AIDS diagnoses through a passive and active HIV/AIDS surveillance system. Passive surveillance relies on physicians and laboratories to report new cases of HIV infection or AIDS directly to the MDH in compliance with state rules[1]. Active surveillance conducted by MDH staff involves routine visits and correspondence with select HIV clinical facilities to ensure completeness of reporting and accuracy of the data.

Factors that impact the completeness and accuracy of HIV/AIDS surveillance data include: availability and targeting of HIV testing services, test-seeking behaviors of HIV-infected individuals, compliance with case reporting, and timeliness of case reporting. Certain events have also impacted trends in HIV/AIDS surveillance data. For example changes over time in the surveillance case definition (most notably the 1993 expansion of the case definition for adults and adolescents[2]) have resulted in artificial jumps in AIDS case counts at the time the new definition went into effect or in the preceding year because changes in case definition allowed for retrospective diagnoses.

Vital Status of HIV/AIDS Cases

Persons are assumed alive unless the MDH has knowledge of their death. Vital status information is updated by monthly visits to select reporting facilities, correspondence with other health departments, annual death certificate reviews, and periodic matches with the National Death Index. "AIDS deaths" refers to all deaths among AIDS cases regardless of the cause of death. "All deaths" refers to all death among HIV/AIDS cases regardless of the cause of death.

Place of Residence for HIV/AIDS Cases

Persons are assumed to be residing in Minnesota if their most recently reported state of residence was Minnesota and the MDH has not received notice of relocation

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[1] Minnesota Rule 4605.7040
[2] MMWR 1992;41[no.RR-17]:1-19

outside of the state. Likewise, a person's county or city of residence is assumed to be the most recently reported value unless the MDH is otherwise notified. Residence information is updated through standard case reporting, monthly visits to select reporting facilities and/or correspondence with other state health departments. Persons diagnosed with HIV infection while imprisoned in a state correctional facility are included in the data presented unless otherwise noted (federal and private prisoners are excluded). Residential relocation, including release from state prison, is difficult to track and therefore data presented by *current* residence must be interpreted in this light. Data on residence *at time of diagnosis* are considered more accurate, limited only by the accuracy of self-reported residence location.

Data Tabulation and Presentation

Unless otherwise noted, data analyses exclude persons diagnosed in federal or private correctional facilities (inmates generally are not Minnesota residents before incarceration and do not stay in Minnesota upon their release), infants with unknown or negative HIV status who were born to HIV positive mothers. Data include HIV-infected refugees who resettled in Minnesota as part of the HIV-Positive Refugee Resettlement Program, as well as, other refugees/immigrants that resettled to Minnesota but had an HIV diagnosis prior to arrival.

The HIV/AIDS surveillance system is a live database that is continuously updated to reflect the most current information available. Variables such as current state of residence are over-written when updates are made. Annual archive files were initiated in 2001. Thus, the numbers of HIV/AIDS cases residing in Minnesota in 2000 and 2001 were estimated using the current state of residence variable while the number in previous years (1990-1999) was estimated using state of residence at time of diagnosis, vital status, and date of death variables. The number of HIV/AIDS cases alive in a certain year was calculated by summing cases with an HIV/AIDS diagnosis in that year or prior whose vital status in 2001 was "alive" or whose date of death was either after the calendar year of interest or missing.

Mode of Exposure Hierarchy

All state and city HIV/AIDS surveillance systems funded by the Centers for Disease Control and Prevention use a standardized hierarchy of mode of exposure categories. HIV and AIDS cases with more than one reported mode of exposure to HIV are classified in the exposure category listed first in the hierarchy. In this way, each case is counted as having only one mode of exposure. The only exception to this rule is the joint risk of male-to-male sex (MSM) and intravenous drug use (IDU), which makes up a separate exposure category in the hierarchy. The following is a list of the hierarchy for adolescent/adult HIV/AIDS cases:

(1) MSM
(2) IDU
(3) MSM/IDU
(4) Hemophilia patient
(5) Heterosexual contact
(6) Receipt of blood transfusion or tissue/organ transplant
(7) Other (e.g. needle stick in a health care setting)
(8) Risk not specified.

The following is the list of the hierarchy for pediatric HIV/AIDS cases:

(1) Hemophilia patient
(2) Mother with HIV or HIV risk
(3) Receipt of blood transfusion or tissue/organ transplant
(4) Other
(5) Risk not specified.

Heterosexual contact is only designated if a male or female can report specific heterosexual contact with a partner who has, or is at increased risk for, HIV infection (e.g. an intravenous drug user). For females this includes heterosexual contact with a bisexual male (mainly due to the elevated prevalence of HIV infection among men who have sex with men).

"Risk not specified" refers to cases with no reported history of exposure to HIV through any of the routes listed in the hierarchy of exposure categories. These cases include persons who have not yet been interviewed by MDH staff; persons whose

exposure history is incomplete because they died, declined to be interviewed, or were lost to follow-up; and persons who were interviewed or for whom follow-up information was available but no exposure was identified/acknowledged.

The growing number of cases with unspecified risk in recent years is, in part, artificial and due to interviews that have not yet been completed. In time, a number of these will be assigned a mode of exposure category. However, part of the observed increase is real. As stated above, a person must have intimate knowledge about his/her partner to meet the criteria for heterosexual mode of exposure. Often cases will not be certain about their partners' HIV status or risk. Additionally, the perception of social stigma presumably decreases the likelihood that a person will acknowledge certain risk behaviors, particularly male-to-male sex or injecting drug use. Thus, if the *true* numbers of cases due to heterosexual contact, MSM, and/or IDU increase, a larger number of cases without a specified risk would be expected.

A recent study by the Centers for Disease Control and Prevention used statistical methods to redistribute risk among female HIV/AIDS cases with unspecified risk[3]. The results are helpful but are based on national data that are not necessarily applicable to the state or local level. Speculation regarding the distribution of risk behaviors among those with unspecified risk is difficult, especially in men, for whom even a national study is not available.

Re-distribution of Mode of Exposure

In 2004 the Minnesota Department of Health began estimating mode of exposure for cases with unspecified risk in its annual summary slides. Estimation was done by using the risk distribution for living cases with known risk by race and gender and applying it to those with unspecified risk of the same race and gender. For females an additional step was added to the process. If females were interviewed by a Disease Intervention Specialist and injecting drug use and receipt of blood products were eliminated as possible causes of transmission and the female reported sex with males, then she was placed in a new category named "Heterosexual – with unknown risk". The

[3] MMWR 2001; 50(RR-6):31-40.

same was not done for males given the high level of stigma associated with male-to-male sex in certain communities.

When applying the proportions from those with known risk to those with unspecified risk there were two exceptions to the method, African-born cases and Asian/Pacific Islander women. For both African-born and Asian/Pacific Islander women a breakdown of 95% heterosexual risk and 5% other risk was used. For African-born males a breakdown of 5% male-to-male sex, 90% heterosexual risk, and 5% other risk was used. These percentages are based on epidemiological literature and/or community experience.

Below is an example of how the process worked for white, African American and African-born females:

Living Cases among Females in 2007

Race/Risk	Heterosexual n (%[†])	IDU n (%[†])	Other n (%[†])	Unspecified n	Total N
White	256 (77)	65 (20)	11 (3)	49	381
African-American	262 (75)	71 (20)	17 (5)	66	416
African-born	185 (93)	0 (0)	14 (7)	205	404

[†] Percent of those with known risk.

Female Cases with Estimated risk:

Race/Risk	Heterosexual	IDU	Other	Total N
White	(.77*49) + 256 = **294**	(.20*49) + 65 = **75**	(.03*49) + 11 = **13**	381
African-American	(.75*66) + 262 = **312**	(.20*66) + 71 = **84**	(.05*66) + 17 = **20**	416
African-born[‡]	(.95*205) + 185 = **380**	0	(.05*205) + 14 = **24**	404

[‡] Used a distribution of 95% heterosexual and 5% other.

Definitions Related to Race/Ethnicity

When data are stratified by race, Black race is broken down into African-born and African American (not African-born) based on reported country of birth.
The terms “persons of color” and “non-Whites” refer to all race/ethnicity categories other than White (Black, Hispanic, American Indian, and Asian/Pacific Islander).

Routine Interstate Duplicate Review (RIDR)

The Minnesota Department of Health (MDH) continues to participate in RIDR. RIDR is a CDC project aimed at eliminating duplicate reports of HIV and AIDS cases among states. Each case of HIV and AIDS is assigned to the state (or states when the diagnosis of HIV and AIDS occurs in two different states) where a person was first diagnosed. RIDR was the second such de-duplication initiative by CDC. The first initiative, IDEP, looked at cases reported through December 31, 2001. RIDR is now an ongoing activity that all states are expected to undertake. The latest de-duplication effort included cases from July 1, 2005 through June 30, 2006. Through this project, MDH identified 18 cases of HIV infection (including AIDS at first report) and no AIDS cases whose first diagnosis was not in Minnesota. These cases were previously considered as diagnosed in Minnesota and were counted in the cumulative number of cases diagnosed in Minnesota. As such, the change of “ownership” (where the case was diagnosed) has reduced both cumulative and yearly totals for Minnesota. Additionally, MDH also identified 47 cases that no longer live in Minnesota. CDC has just released the next RIDR report which covers cases from July 1, 2006 through June 30, 2007.

Table 1. Number[I] and Rate[II] (per 100,000) of Persons Living with HIV (non-AIDS) and AIDS by Residence, Age, and Gender -- Minnesota, 2007							
Group	**HIV (non-AIDS)**		**AIDS**		***Total***		***HIV/AIDS***
	Cases	**%**	**Cases**	**%**	***Cases***	***%***	***Prevalence Rate***
Residence[III]							
Minneapolis	1,403	43%	1,045	40%	*2,448*	*41%*	*639.8*
St. Paul	456	14%	391	15%	*847*	*14%*	*295.0*
Suburban	1,013	31%	795	30%	*1,808*	*30%*	*91.7*
Greater Minnesota	422	13%	402	15%	*824*	*14%*	*36.2*
Total	*3,294*	*100%*	*2,633*	*100%*	*5,950*	*100%*	*113.1*
Age[IV]							
<13 yrs	27	1%	6	0%	*33*	*1%*	*3.6*
13-19 yrs	38	1%	12	<1%	*50*	*1%*	*9.5*
20-24 yrs	152	5%	34	1%	*186*	*3%*	*57.7*
25-29 yrs	306	9%	116	4%	*422*	*7%*	*131.9*
30-34 yrs	352	11%	195	7%	*547*	*9%*	*154.8*
35-39 yrs	504	15%	349	13%	*853*	*14%*	*206.8*
40-44 yrs	651	20%	561	21%	*1,212*	*20%*	*294.4*
45-49 yrs	587	18%	575	22%	*1,162*	*20%*	*319.0*
50-54 yrs	346	10%	371	14%	*717*	*12%*	*237.9*
55-59 yrs	192	6%	232	9%	*424*	*7%*	*186.9*
60+ yrs	149	5%	187	7%	*336*	*6%*	*43.5*
Total	*3,304*	*100%*	*2,638*	*100%*	*5,950*	*100%*	*106.4*
Gender							
Male	2,479	75%	2,104	80%	*4,583*	*77%*	*188.2*
Female	833	25%	534	20%	*1,367*	*23%*	*55.0*
Total	*3,312*	*100%*	*2,638*	*100%*	*5,950*	*100%*	*120.9*
StateTotals	*3,312*		*2,638*		*5,950*		*120.9*

[I] Cases reported to the MDH, assumed to be alive, and currently residing in Minnesota as of 12/31/07.

[II] HIV/AIDS prevalence rate calculated by dividing the total number of prevalent cases in a stratum (e.g persons aged 20-24 years) by the estimated population for that stratum and multiplying by 100,000. Population estimates are based on 2000 U.S. Census data.

[III] Residence information missing for 18 persons living with HIV and 5 persons living with AIDS.

[IV] Age missing for 8 persons living with HIV and 0 persons living with AIDS.

Suburban = Seven-county metropolitan area except Minneapolis & St. Paul (Anoka, Carver, Dakota, Hennepin (except Minneapolis), Ramsey (except St. Paul), Scott, and Washington counties). Greater Minnesota = Remaining 80 counties outside of the seven-county metropolitan area.

Numbers exclude federal and private prisoners, but include 115 state prisoners and 165 refugees in the HIV-Positive Refugee Resettlement Program and 54 additional refugees/immigrants with HIV infection prior to resettling in Minnesota.

Percentages may not add to 100 due to rounding.

Table 2. Number of Males & Females and Rates (per 100,000) Living with HIV (non-AIDS) and AIDS by Race/Ethnicity and Mode of Exposure[I] - Minnesota, 2007

Group	Males				Females				*Total*				
	HIV (non-AIDS)	AIDS	*Total*		HIV (non-AIDS)	AIDS	*Total*		*HIV (non-AIDS)*	*AIDS*	*Grand Total*		
			Cases	*%*			*Cases*	*%*			*Cases*	*%*	*Rate[III]*
Race/Ethnicity													
White, non-Hispanic	1,582	1,242	*2,824*	*62%*	232	149	*381*	*28%*	*1,814*	*1,391*	*3,205*	*54%*	*74.1*
Black[II], African-American	473	410	*883*	*19%*	254	162	*416*	*30%*	*727*	*572*	*1,299*	*22%*	*774.2*
Black[II], African-born	180	167	*347*	*8%*	246	158	*404*	*30%*	*426*	*325*	*751*	*13%*	*1502 - 2134*
Hispanic	166	218	*384*	*8%*	50	30	*80*	*6%*	*216*	*248*	*464*	*8%*	*323.6*
American Indian	26	33	*59*	*1%*	24	20	*44*	*3%*	*50*	*53*	*103*	*2%*	*127.0*
Asian/PI	33	26	*59*	*1%*	18	12	*30*	*2%*	*51*	*38*	*89*	*1%*	*52.9*
Other[II]	19	8	*27*	*1%*	9	3	*12*	*1%*	*28*	*11*	*39*	*1%*	*x*
Total	*2,479*	*2,104*	*4,583*	*100%*	*833*	*534*	*1,367*	*100%*	*3,312*	*2,638*	*5,950*	*100%*	*120.9*
Mode of Exposure													
MSM	1,670	1,339	*3,009*	*66%*	--	--	--	--	*1,670*	*1,339*	*3,009*	*51%*	*x*
IDU	128	133	*261*	*6%*	69	87	*156*	*11%*	*197*	*220*	*417*	*7%*	*x*
MSM/IDU	161	150	*311*	*7%*	--	--	--	--	*161*	*150*	*311*	*5%*	*x*
Heterosexual (Total)	(83)	(82)	(165)	*4%*	(495)	(313)	(808)	*59%*	*(578)*	*(395)*	*(973)*	*16%*	*x*
with IDU	29	37	66	--	77	72	149	--	106	109	215	--	*x*
with Bisexual Male	-	-	-	--	56	34	90	--	56	34	90	--	*x*
with Hemophiliac/other	1	3	4	--	3	0	3	--	4	3	7	--	*x*
with HIV+	53	42	95	--	195	103	298	--	248	145	393	--	*x*
Hetero, unknown risk[IV]	0	0	0	--	164	104	268		164	104	268		
Perinatal	11	12	*23*	*1%*	28	8	36	*3%*	39	20	59	*1%*	*x*
Other	14	26	*40*	*1%*	10	4	*14*	*1%*	*24*	*30*	*54*	*1%*	*x*
Unspecified	150	147	*297*	*6%*	5	3	*8*	*1%*	*155*	*150*	*305*	*5%*	*x*
No Interview, Unspecified	262	215	*477*	*10%*	226	119	*345*	*25%*	*488*	*334*	*822*	*14%*	*x*
Total	*2,479*	*2,104*	*4,583*	*100%*	*833*	*534*	*1,367*	*100%*	*3,312*	*2,638*	*5,950*	*100%*	*120.9*

[I] Cases reported to the MDH, assumed to be alive and currently residing in Minnesota as of 12/31/07.

[II] African-born Blacks are reported separately from other Blacks (born in the U.S. or elsewhere). "Other" includes multi-racial persons and persons with unknown race.

[III] HIV/AIDS prevalence rate calculated by dividing the total number of prevalent cases in a stratum (e.g White, non-Hispanic) by the estimated population for that stratum and multiplying by 100,000. Population estimates are based on 2000 U.S. Census data. Accurate population estimates for Black, African-born persons living in Minnesota are unavailable – anecdotal (50,000) and 2000 U.S. Census data (35,188)) were used to create the range of rates reported for African-born persons. The population estimate for Black, African-American persons (167,784) was calculated by subtracting the U.S. Census estimate for African-born persons (35,188) from the total Black population (202,972). Note that this assumes that all African-born persons are Black (as opposed to another race).

[IV] Hetero, unknown risk - Females who were interviewed and whose only risk is heterosexual contact but who were not able to provide information on the sexual partner's risk.

MSM = Men who have sex with men. IDU = Injecting drug use. Heterosexual = For males: heterosexual contact with a female known to be HIV+, an injecting drug user, or a hemophiliac/blood product or organ transplant recipient. For females: heterosexual contact with a male known to be HIV+, bisexual, an injecting drug user, or a hemophiliac/blood product or organ transplant recipient. Perinatal = Mother to child HIV transmission. Other = Hemophilia patient/blood product or organ transplant recipient. Unspecified = Cases who did not acknowledge any of the risks listed above. No Interview, Unspecified = Cases who refused to be, could not be or have not yet been interviewed.

Numbers exclude federal and private prisoners, but include 115 state prisoners and 165 refugees in the HIV-Positive Refugee Resettlement Program and an additional 54 refugees/immigrants with HIV infection prior to resettling in Minnesota.

Percentages may not add to 100 due to rounding.

Table 3. Number and Rate (per 100,000) of Persons Living with HIV (non-AIDS) and AIDS by County of Residence[I] -- Minnesota, 2007

County[II]	HIV (non-AIDS)	AIDS	*Total*	*Rate[III]*
Aitkin	3	1	*4*	-
Anoka	116	95	*211*	*70.8*
Becker	0	5	*5*	*16.7*
Beltrami	9	9	*18*	*45.4*
Benton	4	5	*9*	*26.3*
Big Stone	0	0	*0*	-
Blue Earth	15	13	*28*	*50.1*
Brown	4	4	*8*	*29.7*
Carlton	5	7	*12*	*37.9*
Carver	13	15	*28*	*39.9*
Cass	1	6	*7*	*25.8*
Chippewa	0	2	*2*	-
Chisago	3	5	*8*	*19.5*
Clay	16	12	*28*	*54.7*
Clearwater	2	0	*2*	-
Cook	0	2	*2*	-
Cottonwood	1	2	*3*	-
Crow Wing	5	12	*17*	*30.9*
Dakota	149	101	*250*	*70.2*
Dodge	1	2	*3*	-
Douglas	1	6	*7*	*21.3*
Faribault	3	6	*9*	*55.6*
Fillmore	4	4	*8*	*37.9*
Freeborn	2	3	*5*	*15.3*
Goodhue	7	2	*9*	*20.4*
Grant	1	1	*2*	-
Hennepin	1,926	1,440	*3,366*	*301.6*
Houston	1	1	*2*	-
Hubbard	3	3	*6*	*32.7*
Isanti	5	4	*9*	*28.8*
Itasca	2	6	*8*	*18.2*
Jackson	0	0	*0*	-
Kanabec	2	0	*2*	-
Kandiyohi	5	9	*14*	*34.0*
Kittson	0	0	*0*	-
Koochiching	1	0	*1*	-
Lac Qui Parle	0	0	*0*	-
Lake	1	1	*2*	-
Lake of the Woods	0	0	*0*	-
Le Sueur	4	4	*8*	*31.5*
Lincoln	2	0	*2*	-
Lyon	6	2	*8*	*31.5*
McLeod	3	1	*4*	-
Mahnomen	1	0	*1*	-
Marshall	0	0	*0*	-
Martin	4	2	*6*	*27.5*
Meeker	3	4	*7*	*30.9*
Mille Lacs	2	5	*7*	*31.3*
Morrison	3	6	*9*	*28.4*
Mower	12	12	*24*	*62.2*
Murray	2	1	*3*	-
Nicollet	1	6	*7*	*23.5*
Nobles	12	7	*19*	*91.2*
Norman	0	0	*0*	-
Olmsted	52	38	*90*	*72.4*
Otter Tail	2	4	*6*	*10.5*
Pennington	1	1	*2*	-
Pine	4	1	*5*	*18.8*
Pipestone	1	0	*1*	-
Polk	8	5	*13*	*41.4*
Pope	2	2	*4*	-
Ramsey	568	475	*1,043*	*204.1*
Red Lake	0	0	*0*	-
Redwood	0	1	*1*	-
Renville	1	1	*2*	-
Rice	16	8	*24*	*42.4*
Rock	1	2	*3*	-
Roseau	0	0	*0*	-
St. Louis	58	53	*111*	*55.4*
Scott	21	30	*51*	*57.0*

Table 3. Number and Rate (per 100,000) of Persons Living with HIV (non-AIDS) and AIDS by County of Residence[I] -- Minnesota, 2007

County[II]	HIV (non-AIDS)	AIDS	*Total*	*Rate[III]*
Sherburne	13	16	*29*	*45.0*
Sibley	1	1	*2*	-
Stearns	29	25	*54*	*40.6*
Steele	4	2	*6*	*17.8*
Stevens	1	2	*3*	-
Swift	0	2	*2*	-
Todd	3	1	*4*	-
Traverse	1	1	*2*	-
Wabasha	4	1	*5*	*23.1*
Wadena	3	7	*10*	*72.9*
Waseca	7	2	*9*	*46.1*
Washington	40	48	*88*	*43.8*
Watonwan	3	2	*5*	*42.1*
Wilkin	0	0	*0*	-
Winona	8	4	*12*	*24.0*
Wright	12	13	*25*	*27.8*
Yellow Medicine	1	0	*1*	-
State Total[II]	*3,312*	*2,638*	*5,950*	*120.9*

[I] Cases reported to the MDH, assumed to be alive and currently residing in a Minnesota county as of 12/31/07.

[II] Residence information missing for 18 persons living with HIV and 5 persons living with AIDS. Total rate is based on all cases in the state (n=5,950)

Numbers by county exclude federal, and private prisoners, but include 165 refugees in the HIV-Positive Refugee Resettlement Program and 54 additional refugees/immigrants with HIV infection prior to resettling in Minnesota. Numbers for counties in which a state correctional facility is located, exclude those inmates. The total number of state prisioners is 115. State correctional facilities are located in the following counties: Anoka, Carlton, Chisago, Goodhue, Pine, Rice, Scott, St. Louis, Stearns, and Washington.

[III] HIV/AIDS prevalence rate calculated by dividing the total number of prevalent cases in a stratum (e.g persons living in Hennepin county) by the estimated population for that stratum and multiplying by 100,000. Population estimates are based on 2000 U.S. Census data. Rates not calculated for counties with fewer than 5 cases.

Table 4. Number of HIV (non-AIDS) Cases, AIDS Cases, AIDS Deaths, People Living with HIV/AIDS (PLWHA) and All Deaths[I]
Minnesota, 1994-2007

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
HIV (non-AIDS)	229	224	192	201	198	198	185	197	218	188	194	218	240	229
AIDS[II]	332	339	258	194	193	161	157	124	161	171	210	182	170	159
AIDS deaths	276	253	190	77	70	69	76	64	56	55	63	55	59	54
PLWHA	2,738	2,875	3,051	3,287	3,539	3,790	4,046	4,331	4,598	4,895	5,002	5,233	5,566	5,950
All deaths	267	268	197	91	80	79	79	69	67	72	70	69	79	74

[I] **HIV (non-AIDS)** = New cases of HIV infection (excluding AIDS at first diagnosis) diagnosed within a given calendar year. **AIDS** = All new cases of AIDS diagnosed within a given calendar year, including AIDS at first diagnosis. **AIDS deaths** = Number of deaths known to have occurred among MN AIDS cases in a given calendar year, regardless of location of death and cause. **All deaths**= Number of deaths known to have occurred in MN among people with HIV infection, regardless of location of diagnosis and cause of death.

[II]Numbers include refugees in the HIV-Positive Refugee Resettlement Program and other refugees/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.

Please Note: These numbers refer to events, not individuals. For example, a person diagnosed as an HIV (non-AIDS) case in 1996 and then diagnosed as an AIDS case in 2000 will be counted twice in Table 4, once for each event. Thus, the numbers of HIV (non-AIDS) and AIDS cases cannot be summed over years to obtain cumulative totals. Please refer to the Minnesota HIV Surveillance Report, 2007 New HIV Infections, Table 1 for cumulative totals.
Case numbers exclude federal and private prisoners.

Table 5. Known Mortality among Minnesota AIDS Cases by Year of Diagnosis -- Minnesota, through 2007[I]				
Year	**Cases Diagnosed**	**Cases Known to be Dead[II]**	**Case-Fatality Rate[III]**	**Deaths Occurring in this Interval**
1982-1994	2,386	2,011	84%	1,396
1995	339	131	39%	253
1996	258	91	35%	190
1997	194	57	29%	77
1998	193	44	23%	70
1999	161	33	20%	69
2000	157	28	18%	76
2001	124	17	14%	64
2002	161	27	17%	56
2003	171	23	13%	55
2004	210	30	14%	63
2005	182	24	13%	55
2006	170	9	5%	59
2007	159	12	8%	54
Cumulative Total	4,865	2,537	52%	2,537

[I] CDC 1993 AIDS definition used for all cases.

[II] Cases known to be dead (by any cause) as of 12/31/2007. Reporting of deaths is incomplete.

[III] Case-fatality rate is calculated by dividing the number of cases known to be dead by those diagnosed in a given interval and multiplying by 100.

Numbers exclude federal and private prisoners, but include state prisoners, refugees in the HIV-Positive Refugee Resettlement Program and other refugees/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.