HIV Surveillance Report, 2009

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, 2009* 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 2009 and reported to the Minnesota Department of Health (MDH) HIV/AIDS Surveillance System.

- The data are displayed by year of HIV diagnosis.

Introduction (II)

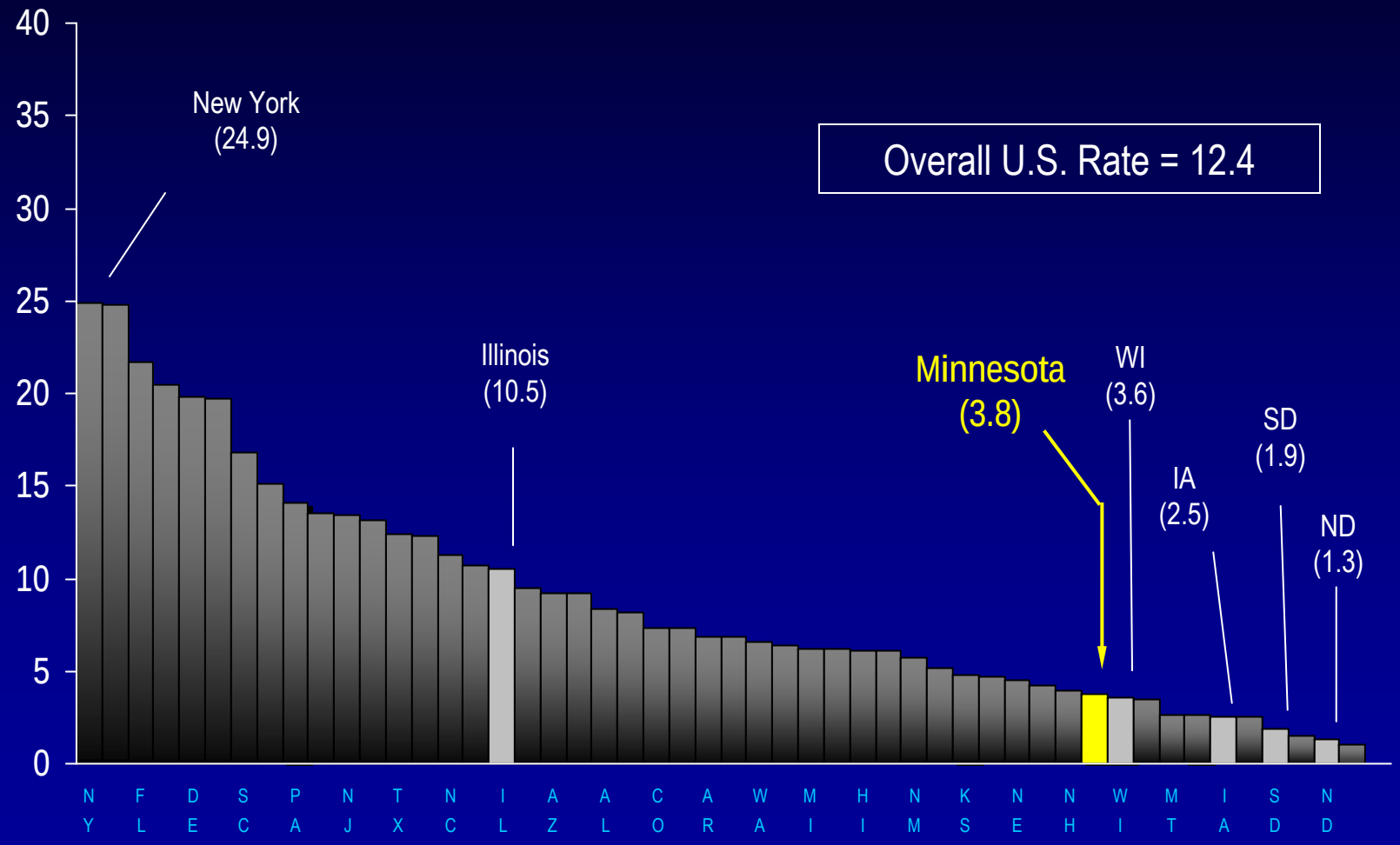
- Data analyses exclude persons diagnosed in federal or private correctional facilities, but include state prisoners (number of state prisoners believed to be living with HIV/AIDS = 133).

- 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 = 191), as well as, other refugees/immigrants reporting a positive test prior to their arrival in Minnesota (n=104).

- 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 2007



SOURCE:
U.S. HIV/AIDS Surveillance Report, Year-end 2007
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, 2009, a cumulative total of 9,163* persons have been diagnosed and reported with HIV infection in Minnesota. Of these:
  - 3,508 persons have been diagnosed with HIV infection (non-AIDS)
  - 5,655 have progressed to AIDS
- Of these 9,163 persons, 3,056 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.*

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

- As of December 31, 2009, 6,552* persons are assumed alive and living in Minnesota with HIV/AIDS
  - 3,469 living with HIV infection (non-AIDS)
  - 3,083 living with AIDS

- This number includes 1,274 persons who were first reported with HIV or AIDS elsewhere and subsequently moved to Minnesota

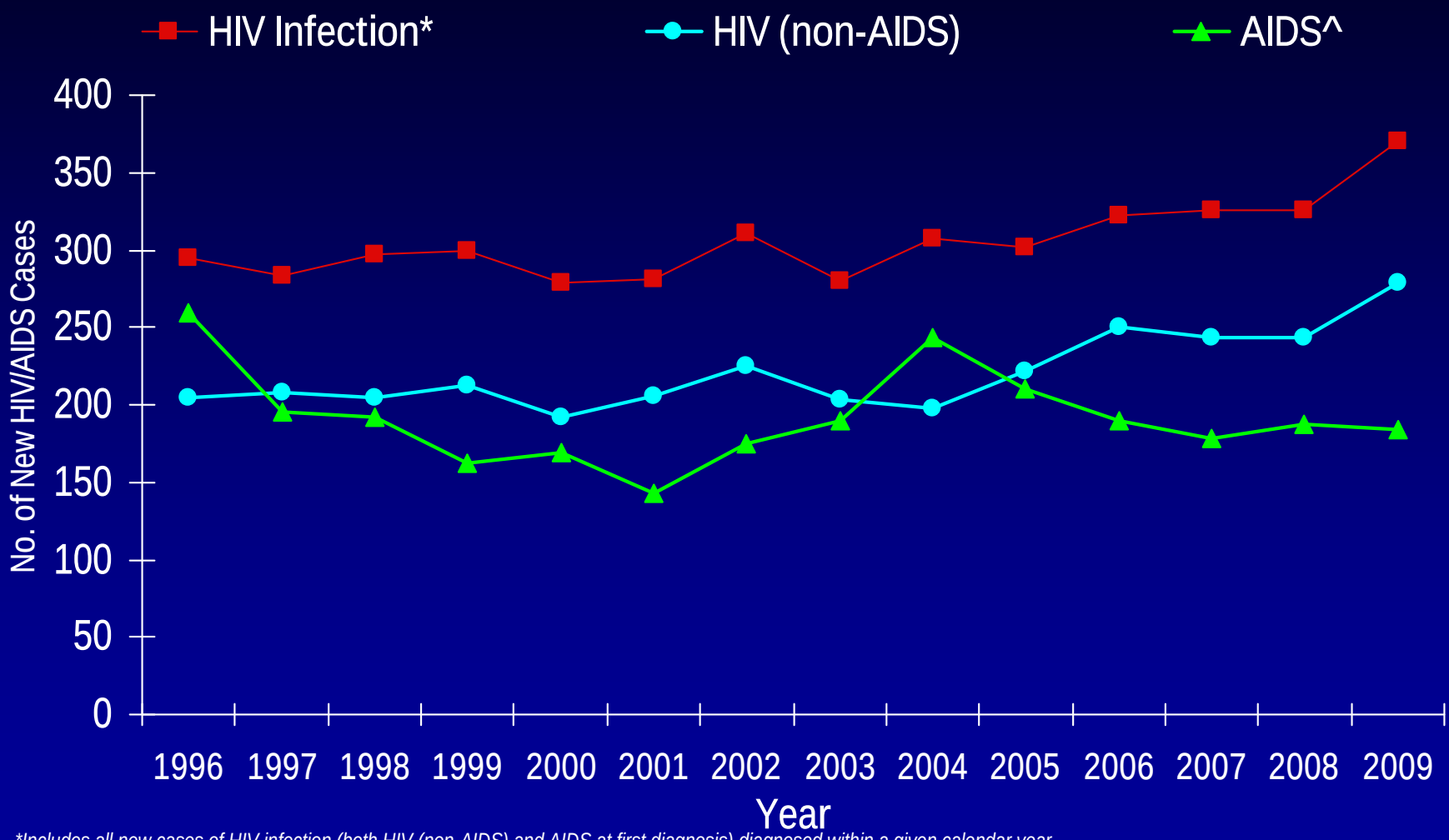
- This number excludes 1,084 persons who were first reported with HIV or AIDS in Minnesota and subsequently moved out of the state

** 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, 1996 - 2009



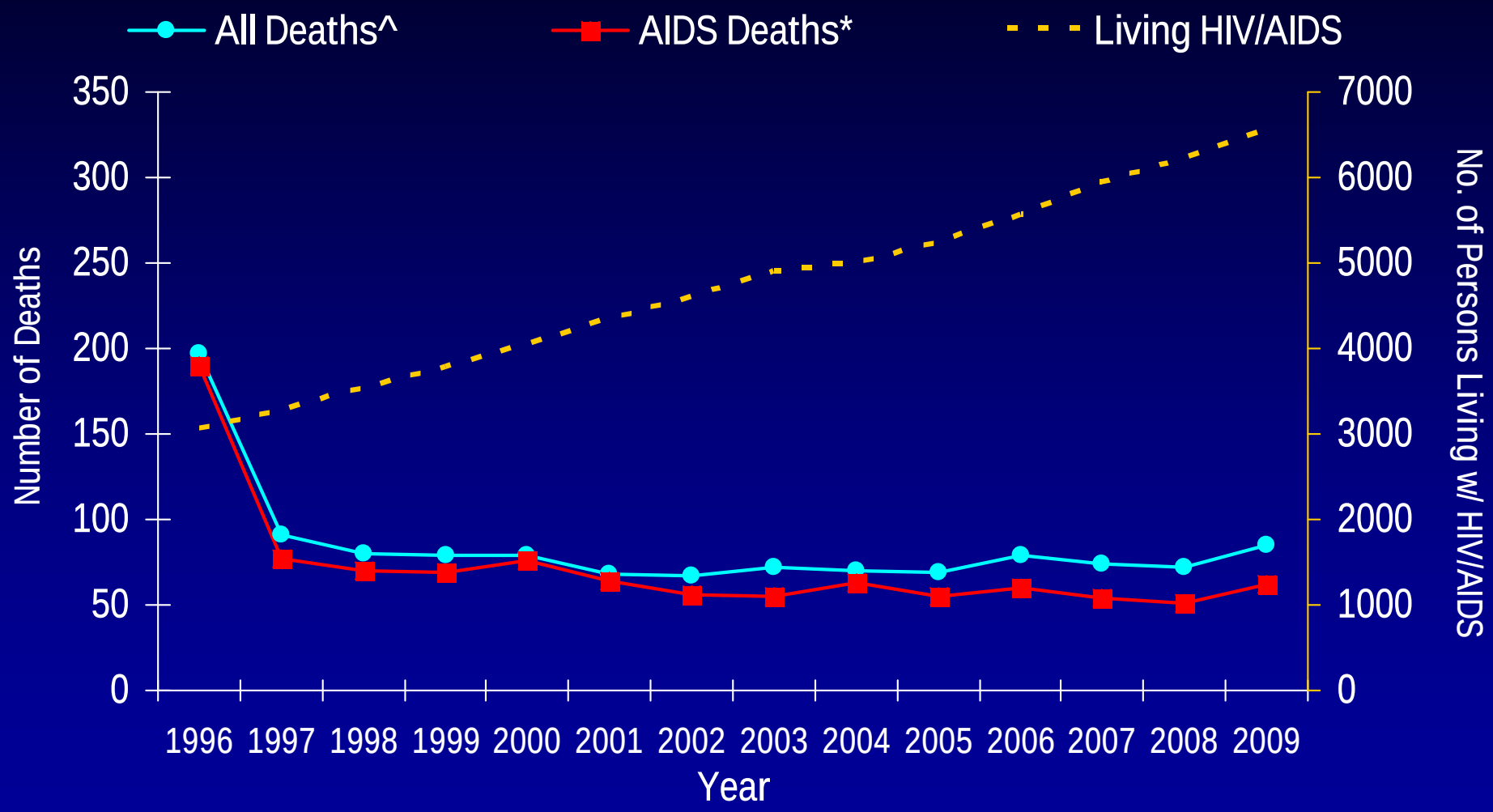
**Includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) diagnosed within a given calendar year.*

^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, 1996 - 2009



**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.

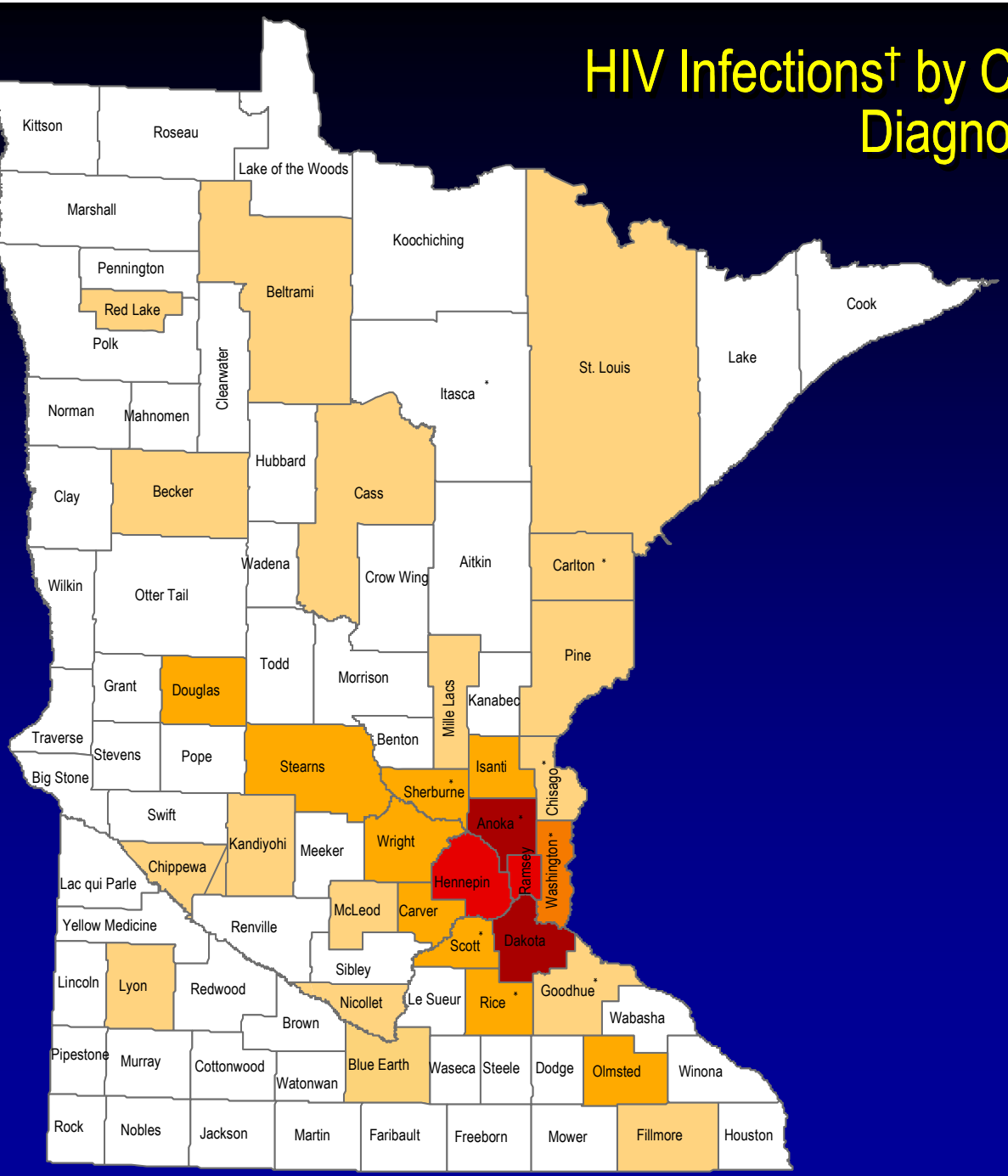
Data Source: *Minnesota HIV/AIDS Surveillance System*

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

* *HIV or AIDS at first diagnosis*

Place

HIV Infections† by County of Residence at Diagnosis, 2009



Number of Infections

- None
- 1 - 2
- 3 - 6
- 7 - 15
- 16 - 54
- 55 - 191

City of Minneapolis – 119
City of St. Paul – 52
Suburban# – 148
Greater Minnesota - 51

Total number = 370

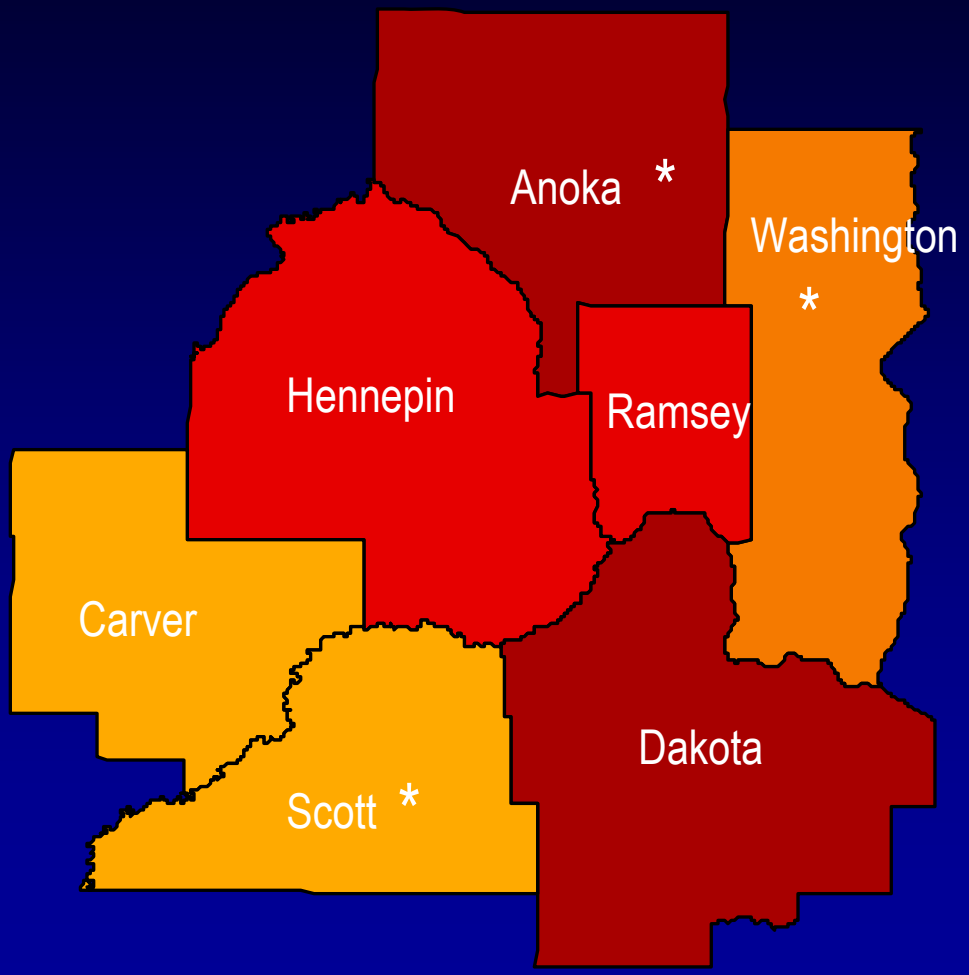
* Counties in which a state correctional facility is located

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, 2009



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- None
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City of Minneapolis – 119
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Suburban# – 148

* Counties in which a state correctional facility is located

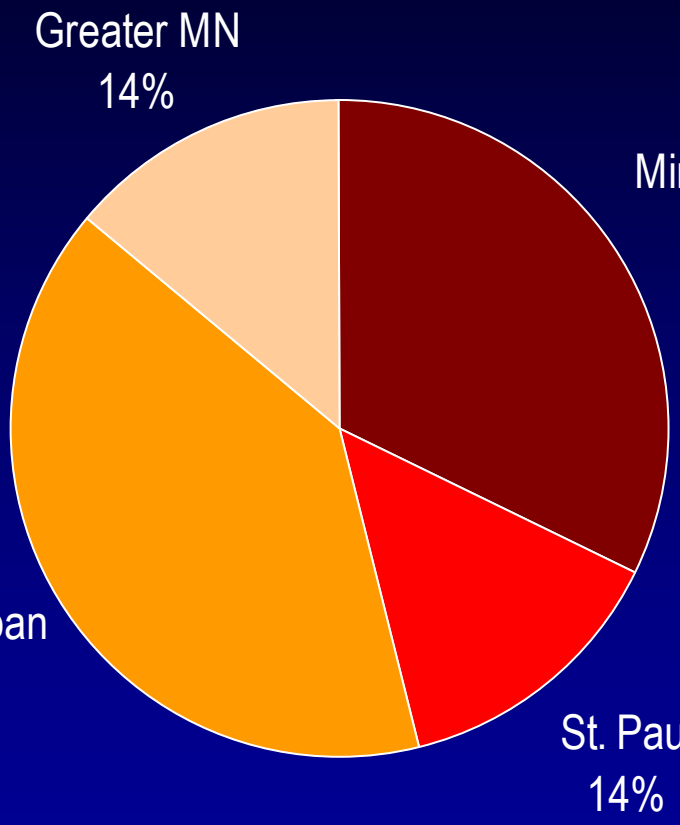
7-county metro area, excluding the cities of Minneapolis and St. Paul

† *HIV or AIDS at first diagnosis*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* in Minnesota by Residence at Diagnosis, 2009

Total Number = 370



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.

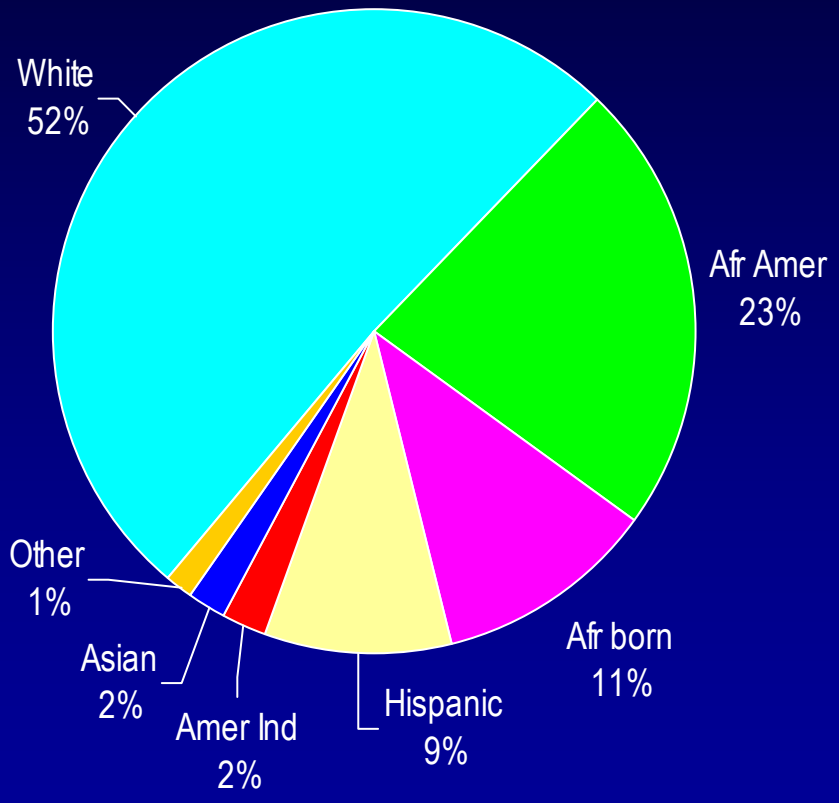
* *HIV or AIDS at first diagnosis*

Data Source: *Minnesota HIV/AIDS Surveillance System*

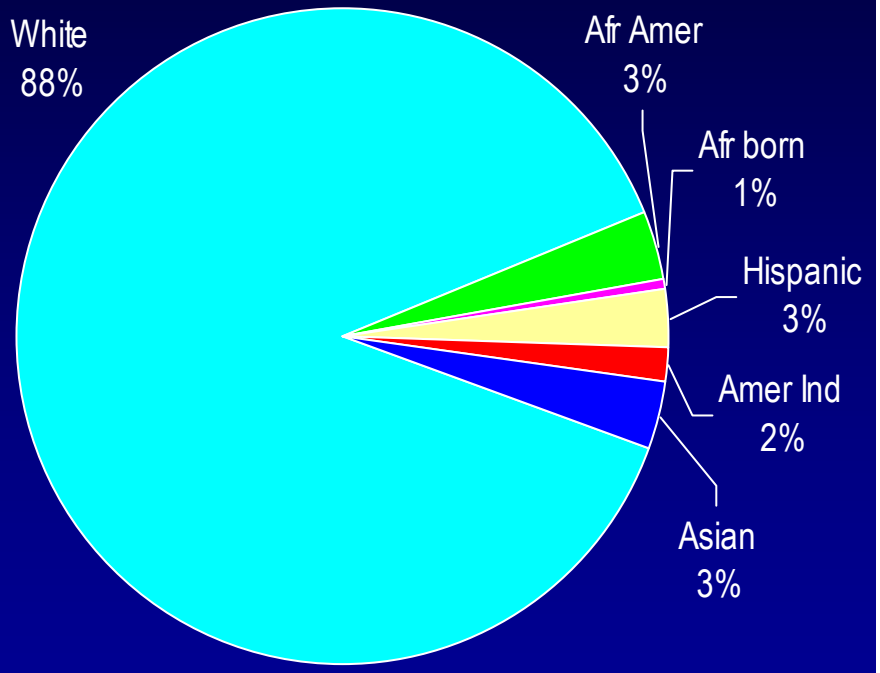
Gender and Race/Ethnicity

HIV Infections* Diagnosed in Year 2009 and General Population in Minnesota by Race/Ethnicity

HIV Diagnoses (n = 370)



Population† (n = 4,919,479)



** HIV or AIDS at first diagnosis*

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

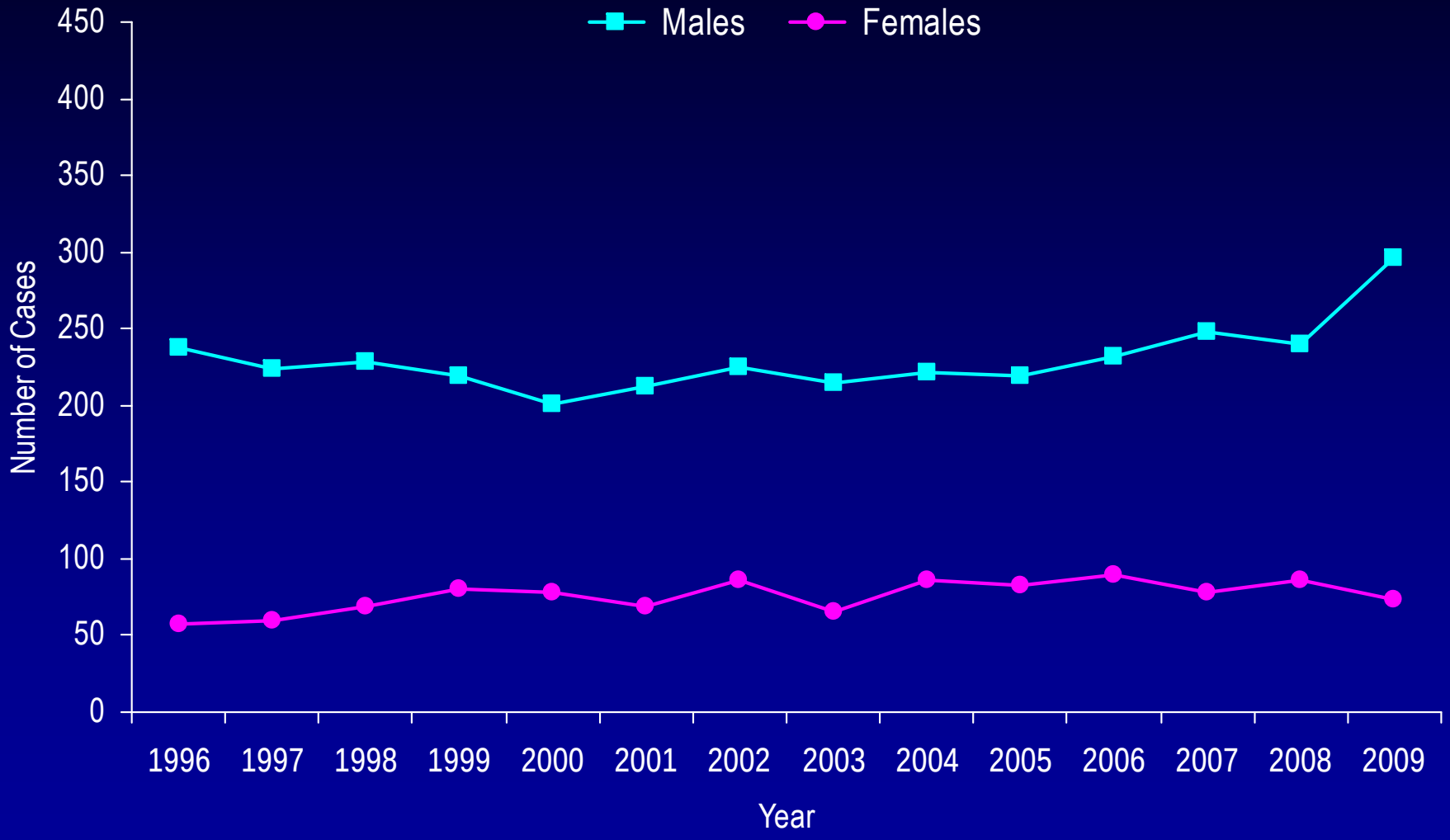
n = Number of persons Amer Ind = American Indian

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

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

Data Source: *Minnesota HIV/AIDS Surveillance System*

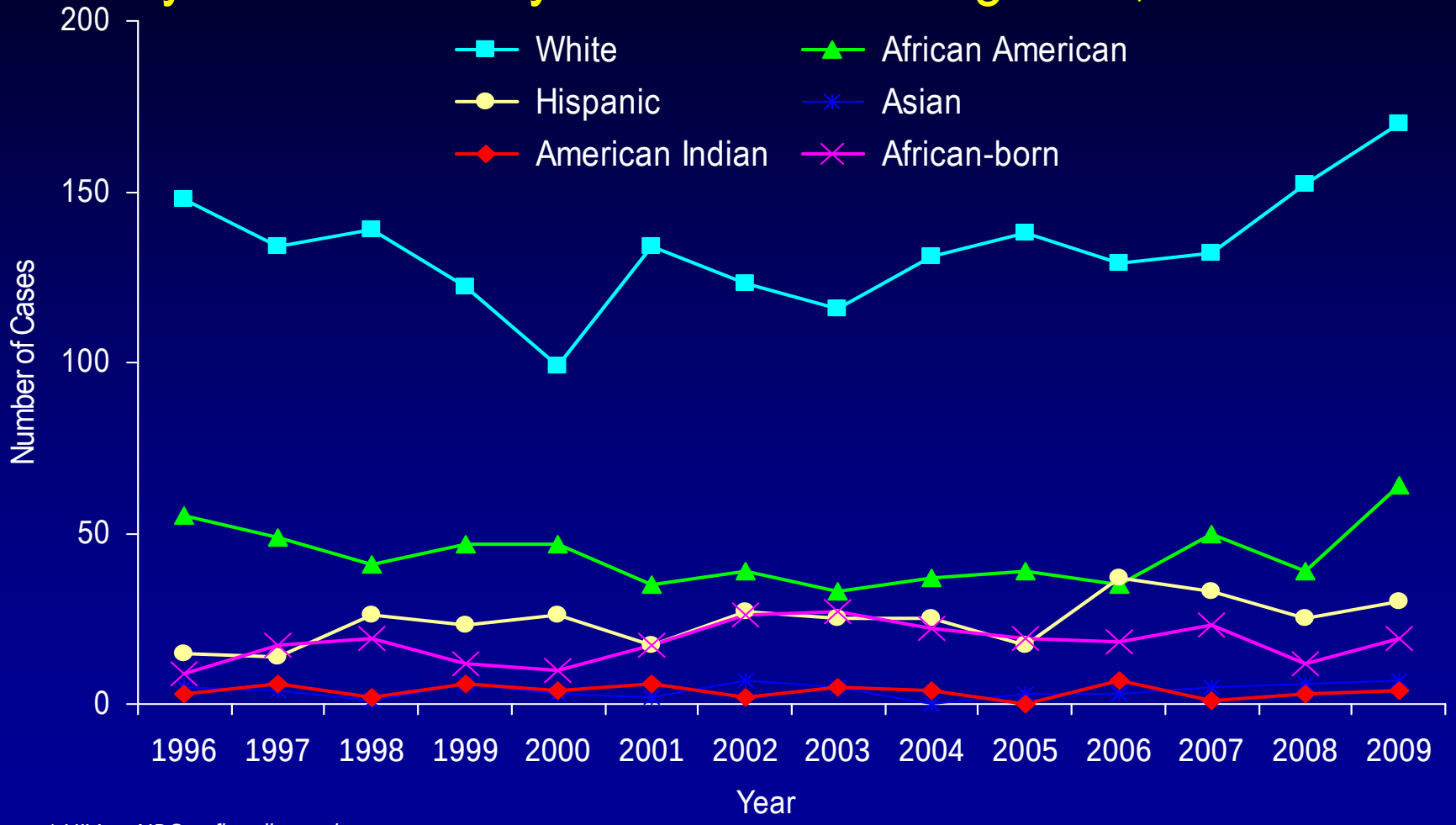
HIV Infections* by Gender and Year of Diagnosis, 1996 - 2009



** HIV or AIDS at first diagnosis*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Males by Race/Ethnicity† and Year of Diagnosis, 1996 - 2009

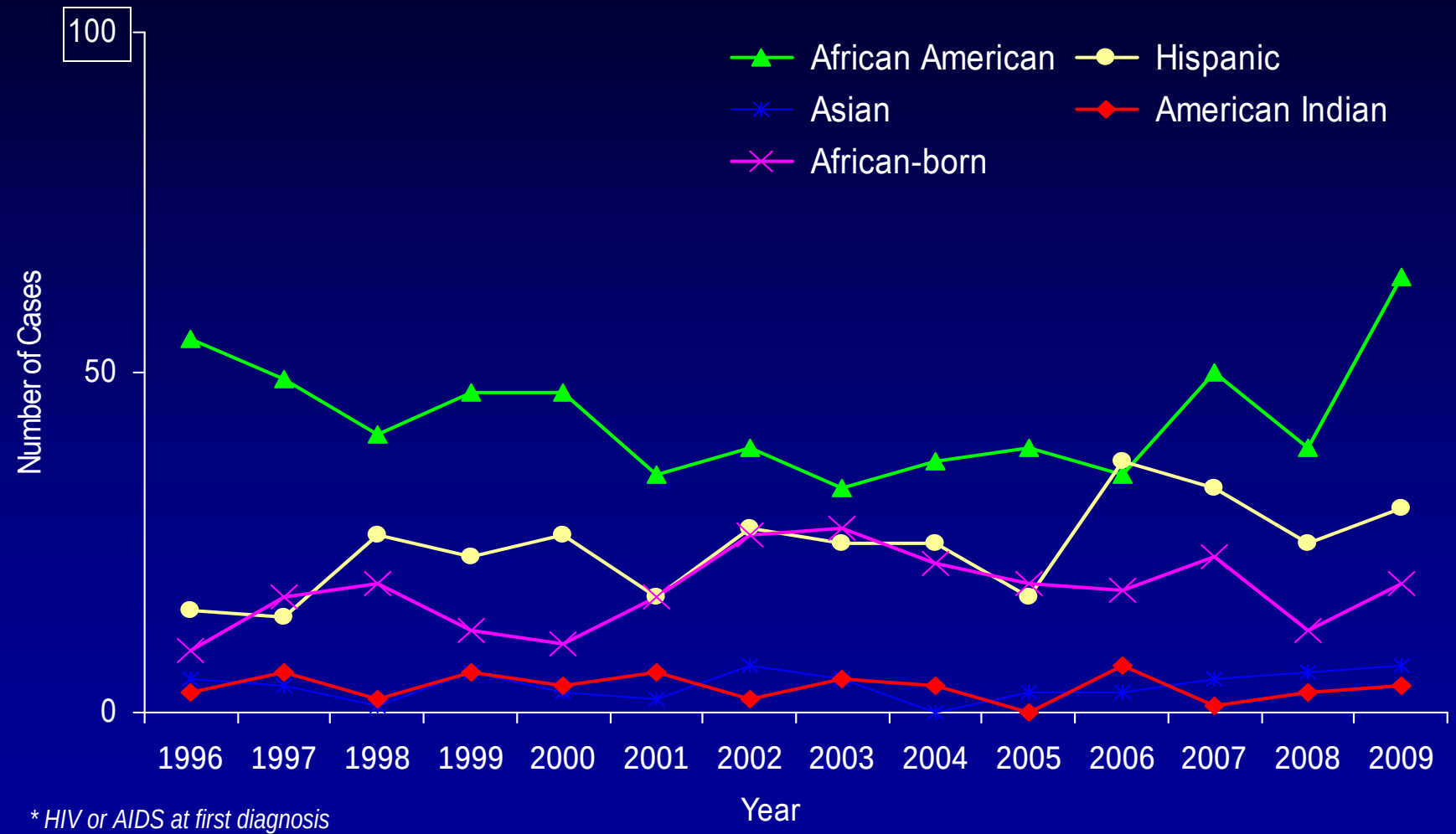


** HIV or AIDS at first diagnosis*

† "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, 1996 - 2009 (excluding Whites)

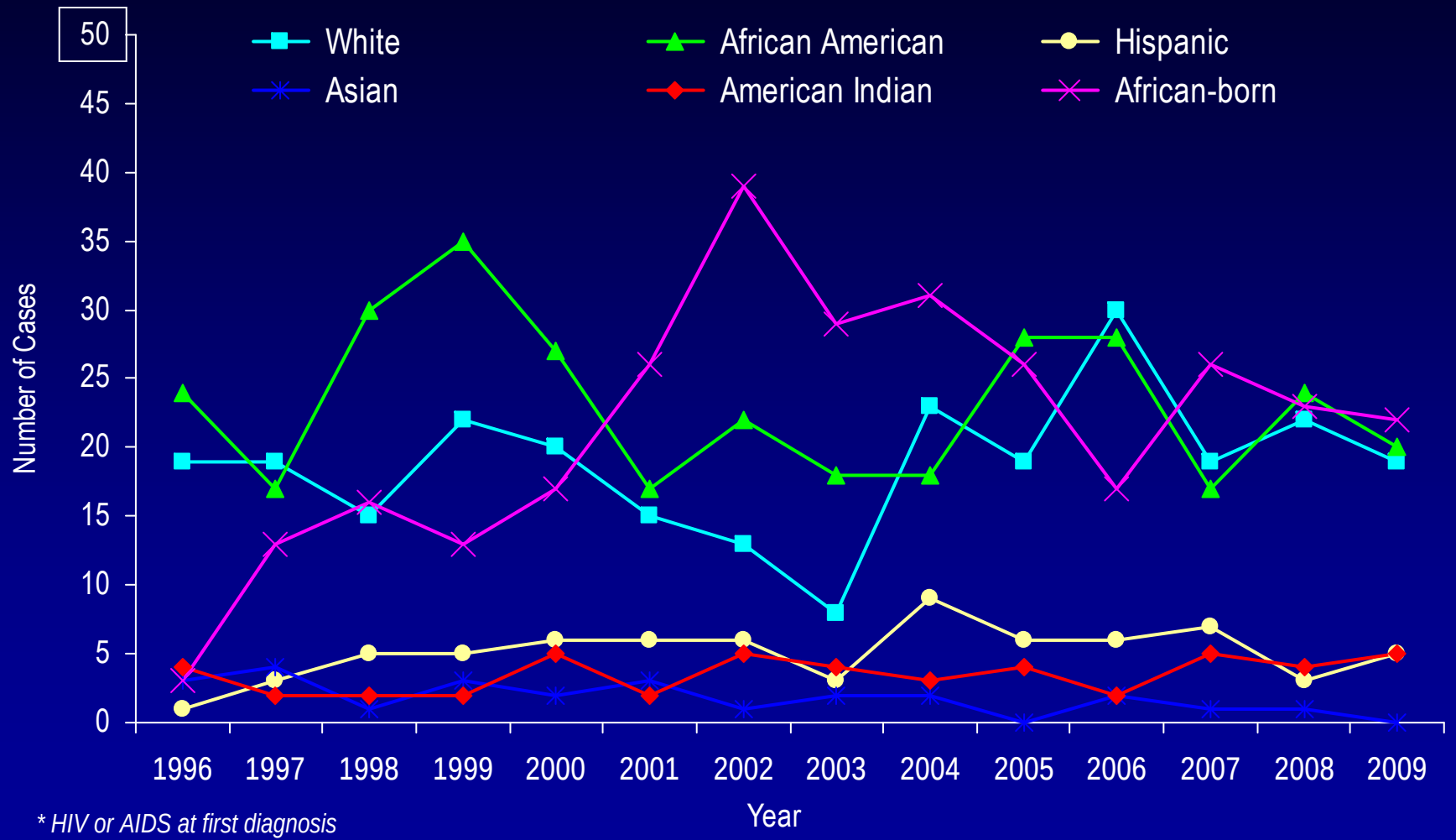


** HIV or AIDS at first diagnosis*

† "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, 1996 - 2009



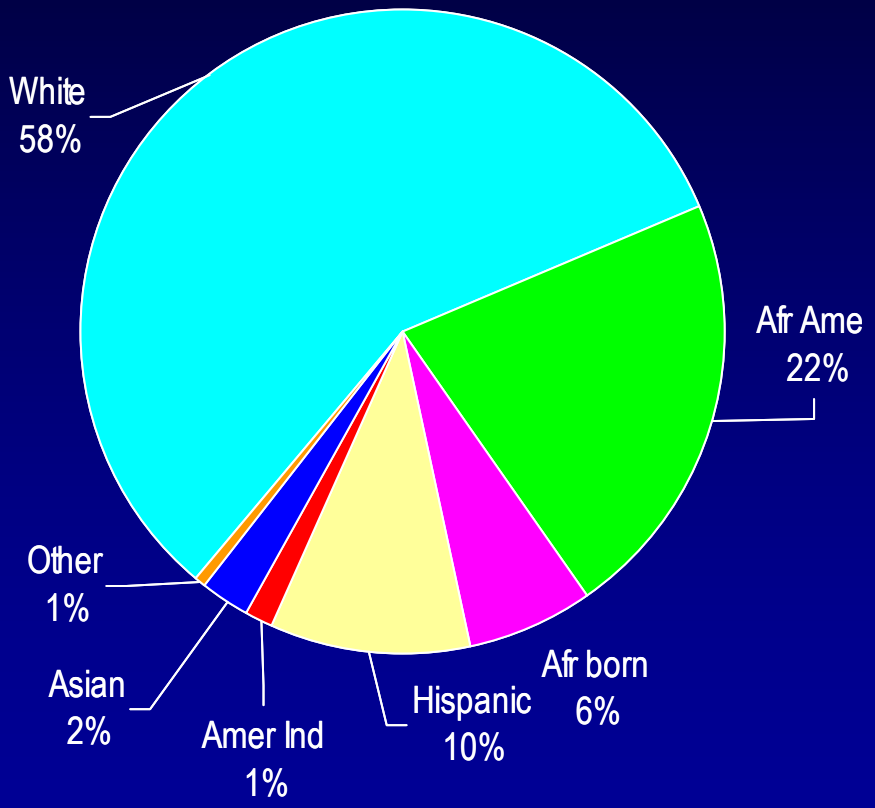
** HIV or AIDS at first diagnosis*

† "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.

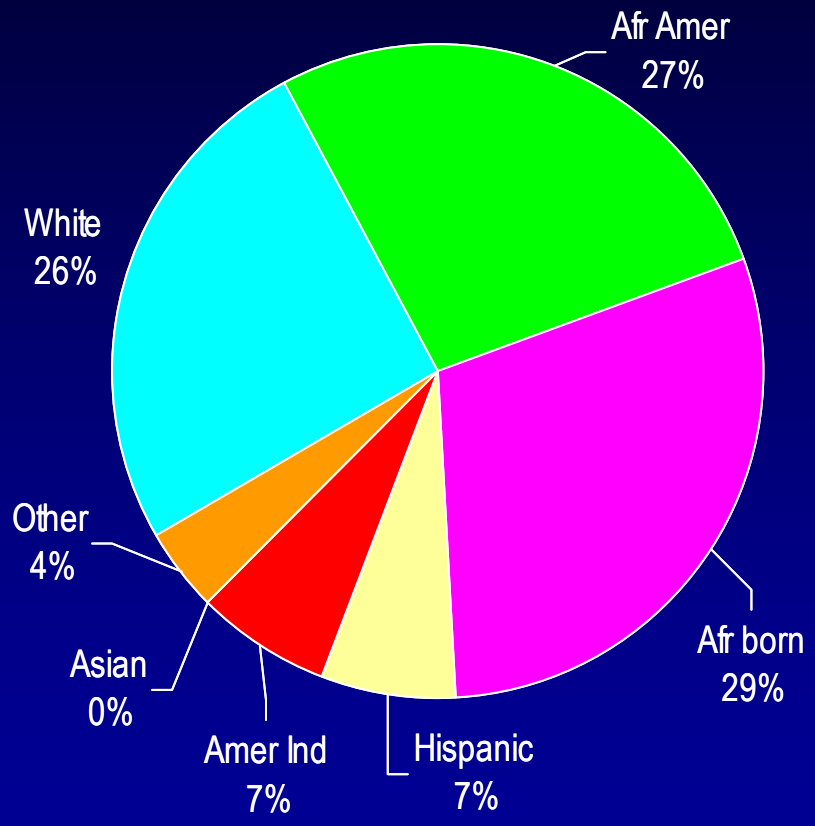
Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Diagnosed in Year 2009 by Gender and Race/Ethnicity

Males (n = 296)



Females (n = 74)



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, 2009

Race/Ethnicity	*Cases*	*%*	*Rate*
White, non-Hispanic	**189**	**51%**	**4.4**
Black, African-American	**84**	**23%**	**50.1**
Black, African-born	**41**	**11%**	**82-116.5††**
Hispanic	**35**	**9%**	**24.4**
American Indian	**9**	**2%**	**11.1**
Asian/Pacific Islander	**7**	**2%**	**4.2**
Other^	**5**	**1%**	X
Total	***370***	***100%***	***7.5***

** 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

Data Source: *Minnesota HIV/AIDS Surveillance System*

Age

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

Race/Ethnicity	Average age in years (No. of cases)		
	1996-1998	2001-2003	2007-2009
White	36 (421)	38 (373)	37 (454)
Black			
African American	34 (145)	37 (107)	32 (153)
African-born	35 (45)	36 (70)	38 (54)
Hispanic	33 (55)	33 (69)	33 (88)
Asian	33 (10)	39 (14)	32 (18)
American Indian	35 (11)	37 (13)	34 (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)		
	1996-1998	2001-2003	2007-2009
White	32 (53)	32 (36)	36 (60)
Black			
African American	32 (71)	32 (57)	34 (61)
African-born	33 (32)	33 (94)	34 (71)
Hispanic	29 (9)	29 (15)	38 (15)
Asian	23 (8)	40 (6)	----
American Indian	31 (8)	36 (11)	29 (14)

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

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

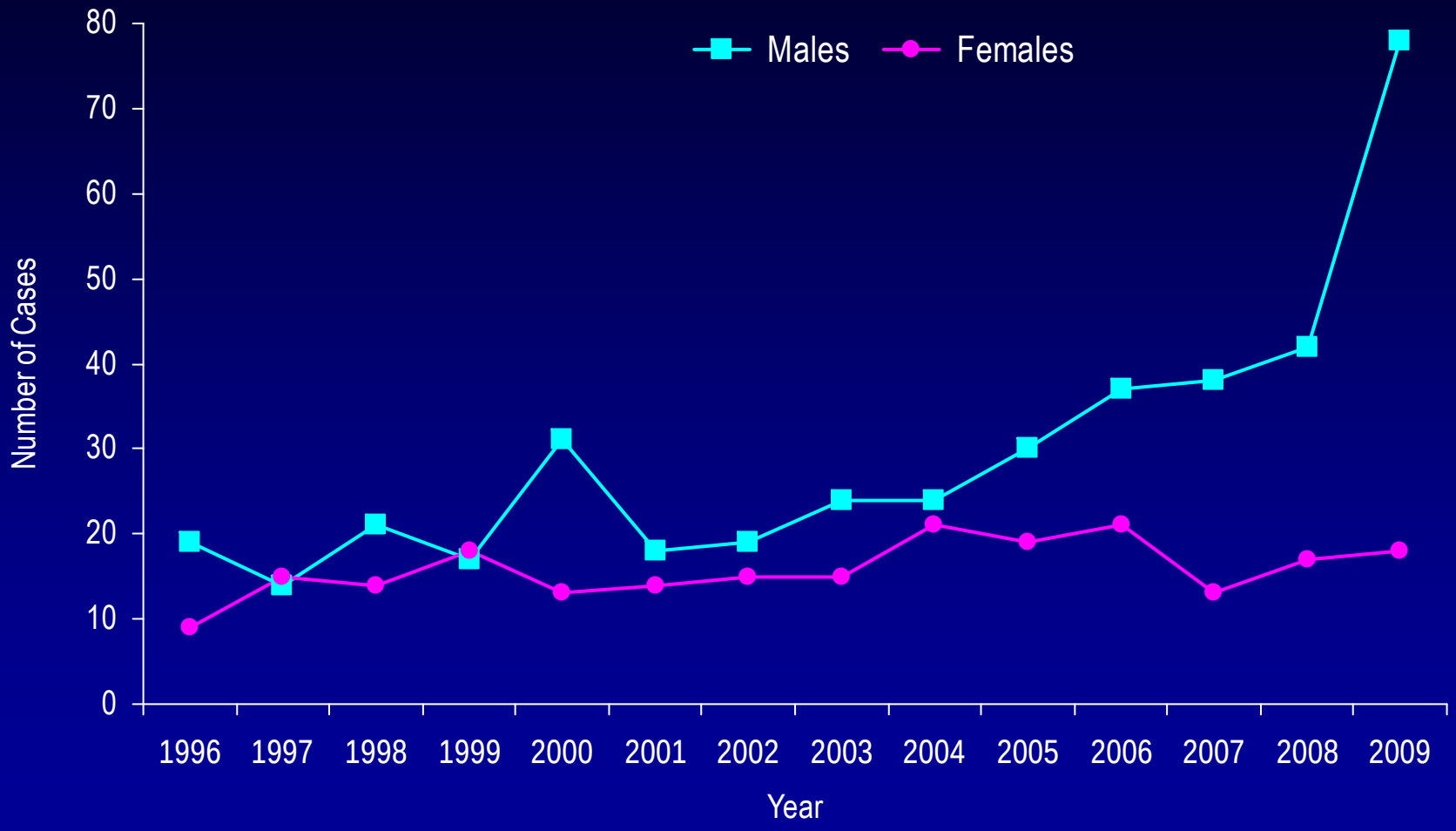
† *"African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks.*

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, 1996 - 2009

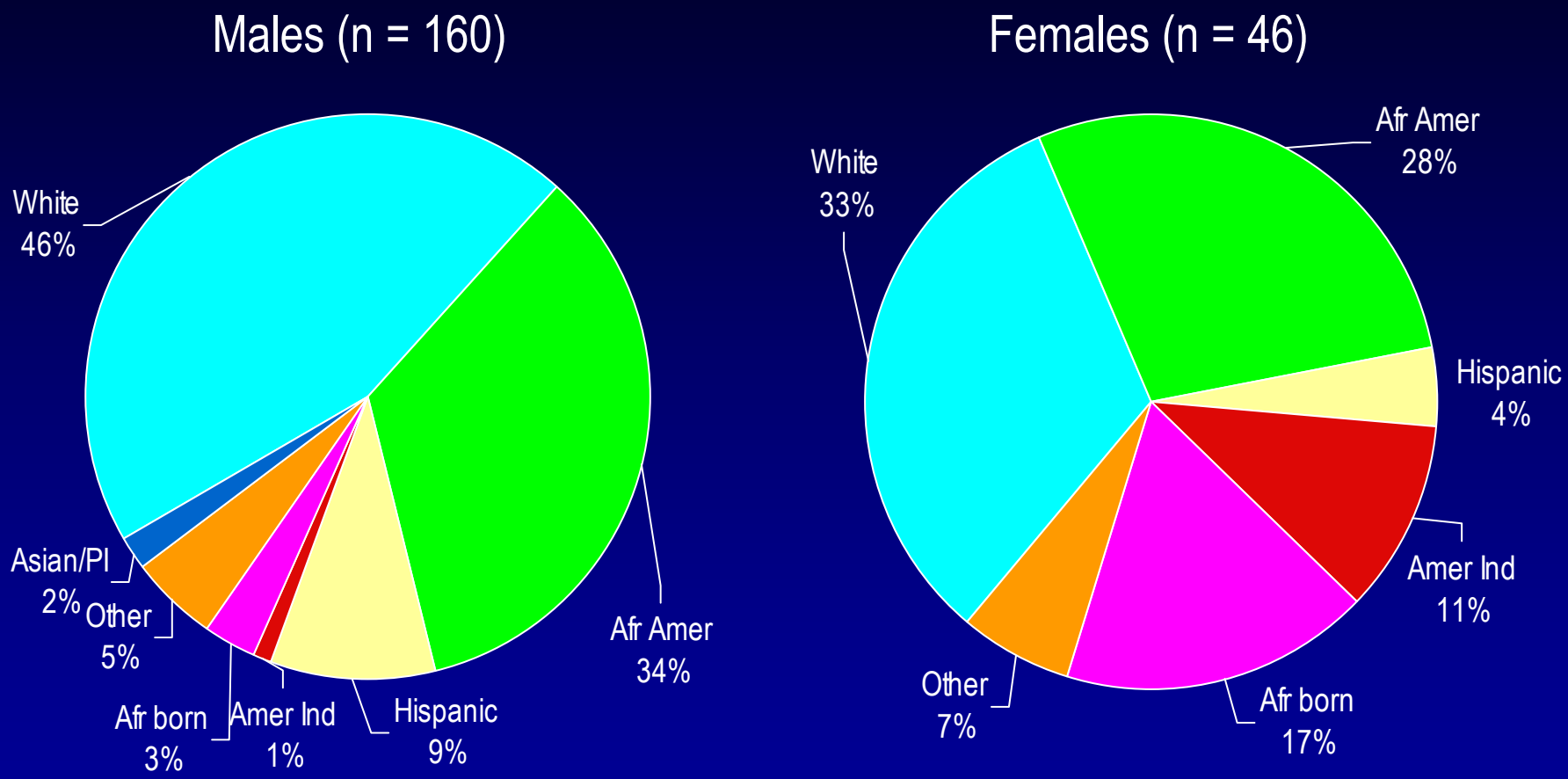


* *HIV or AIDS at first diagnosis*

† *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, 2007 - 2009 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 Amer Ind = American Indian

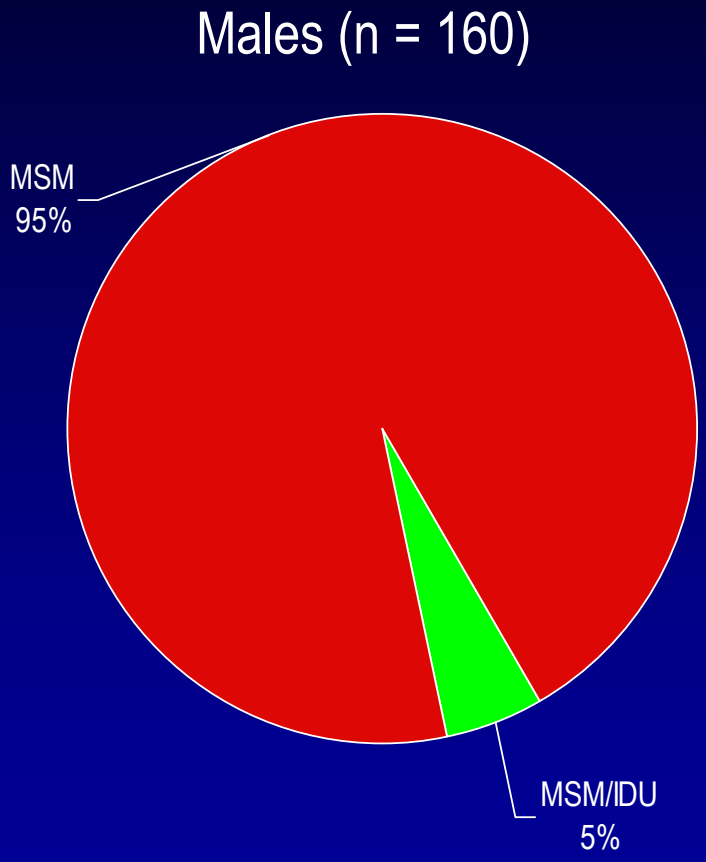
Afr Amer = African American (Black, not African-born persons)

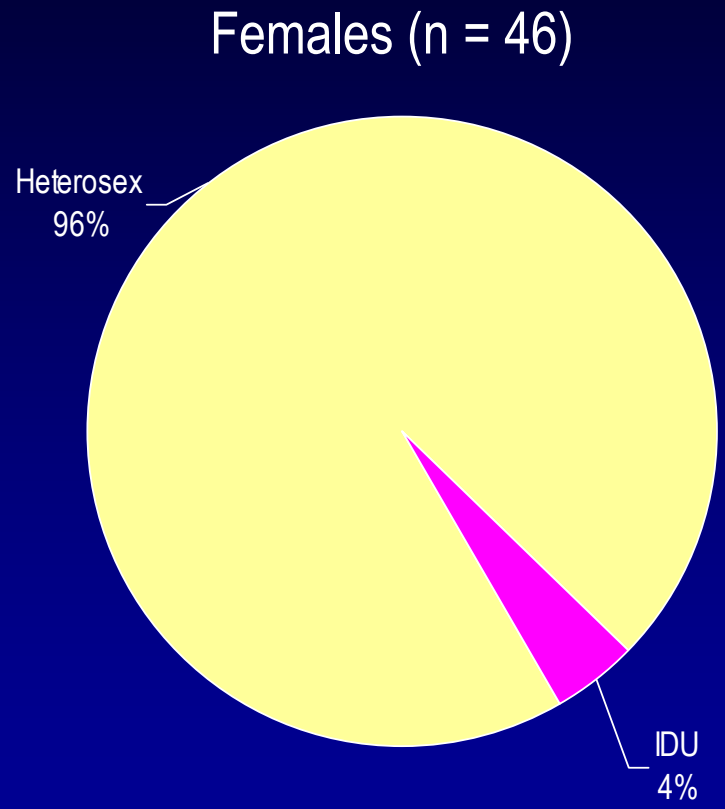
Afr born = African-born (Black, African-born persons)

Other = Multi-racial persons or persons with unknown race

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Adolescents and Young Adults† by Gender and Estimated Exposure Group#, 2007 - 2009 Combined





* *HIV or AIDS at first diagnosis*

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

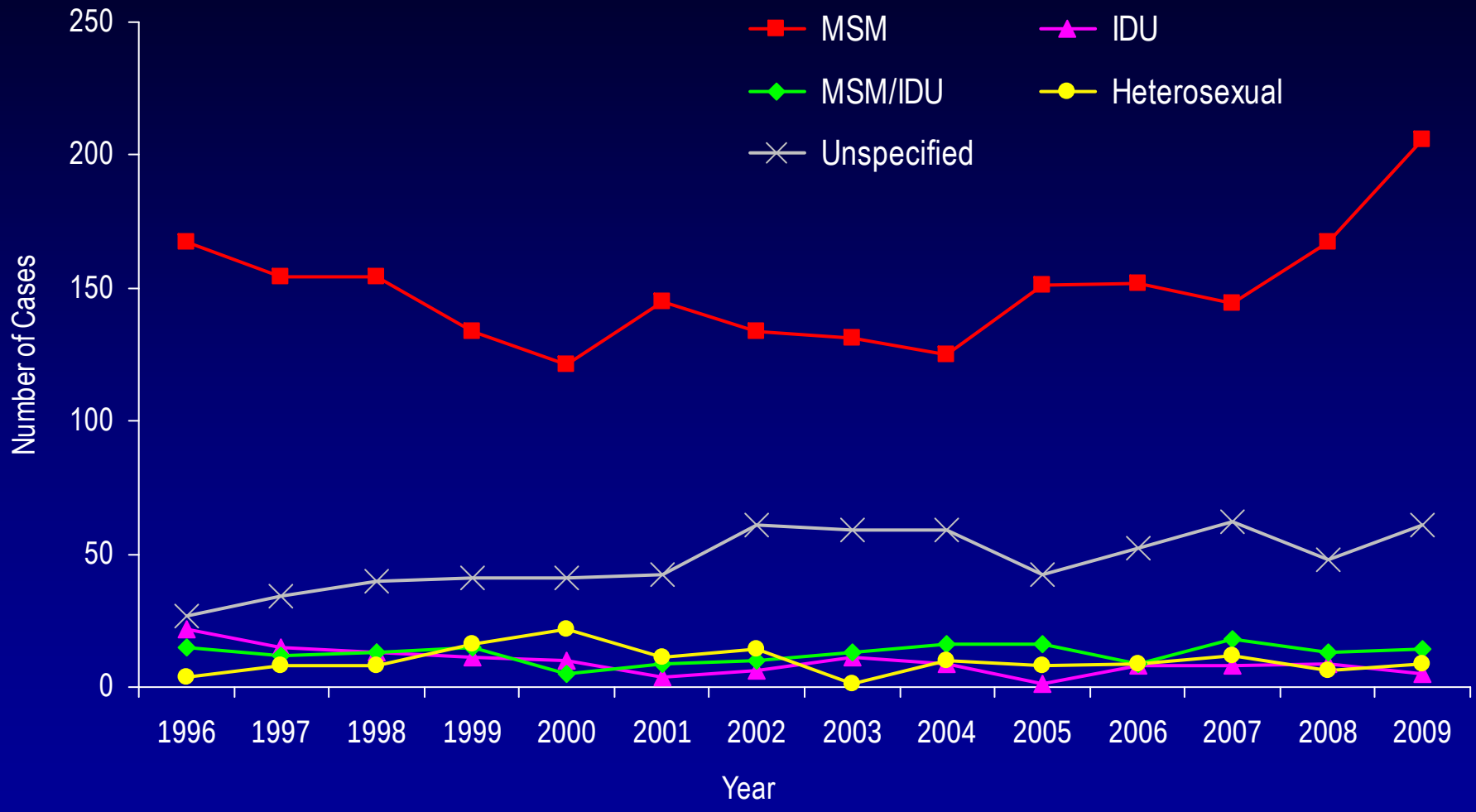
n = Number of persons
IDU = Injecting drug use
MSM = Men who have sex with men
Heterosex = Heterosexual contact

Mode of Exposure proportions have been estimated using cases for 2007-2009 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, 1996 - 2009

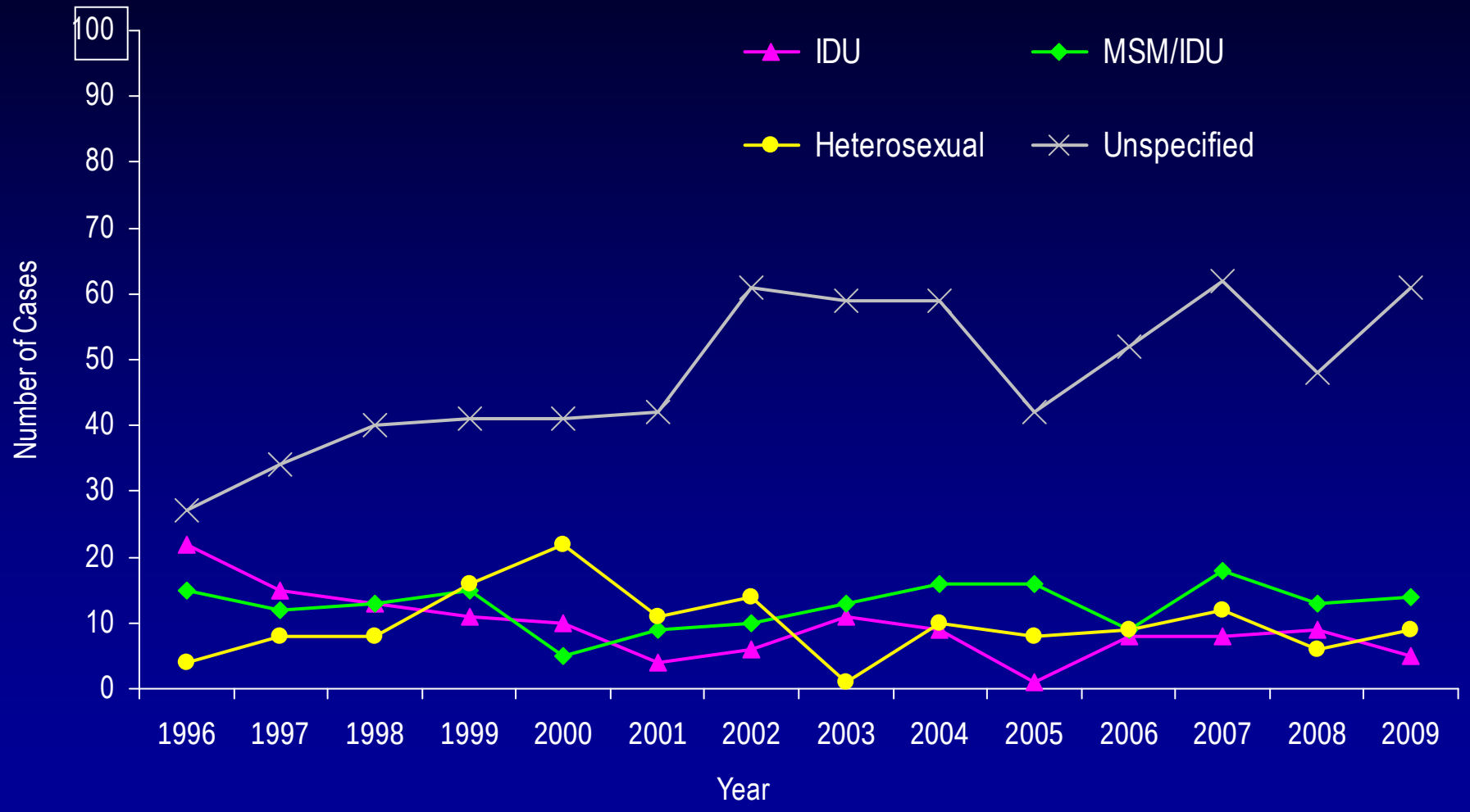


MSM = Men who have sex with men IDU = Injecting drug use Heterosexual = Heterosexual contact

* *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, 1996 - 2009 (excluding MSM)

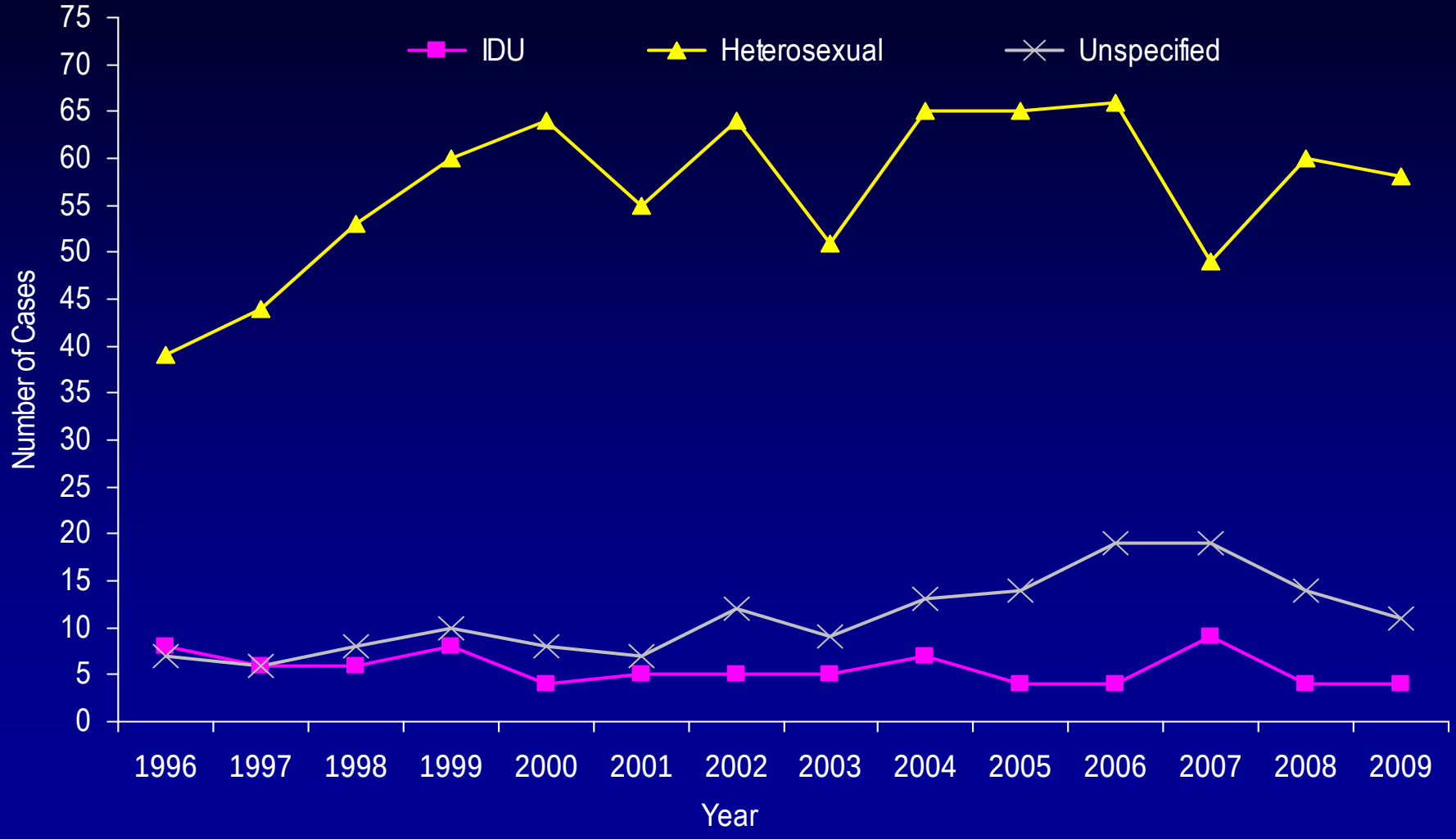


MSM = Men who have sex with men IDU = Injecting drug use Heterosexual = Heterosexual contact

* *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, 1996 - 2009

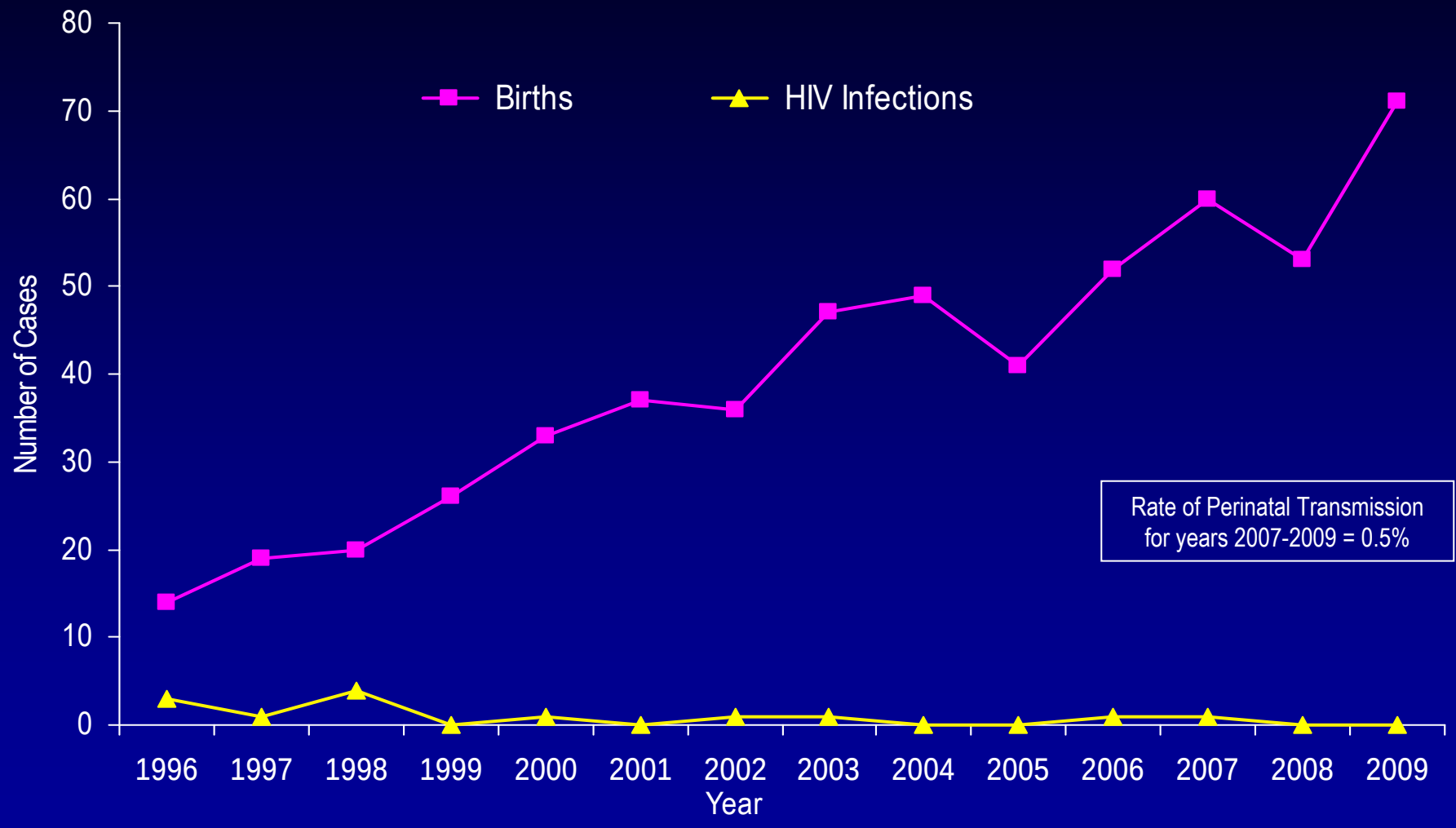


IDU = Injecting drug use Heterosexual = Heterosexual contact with HIV+ , with IDU, with partner with unknown risk
Unspecified = No mode of exposure ascertained

** 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, 1996 - 2009

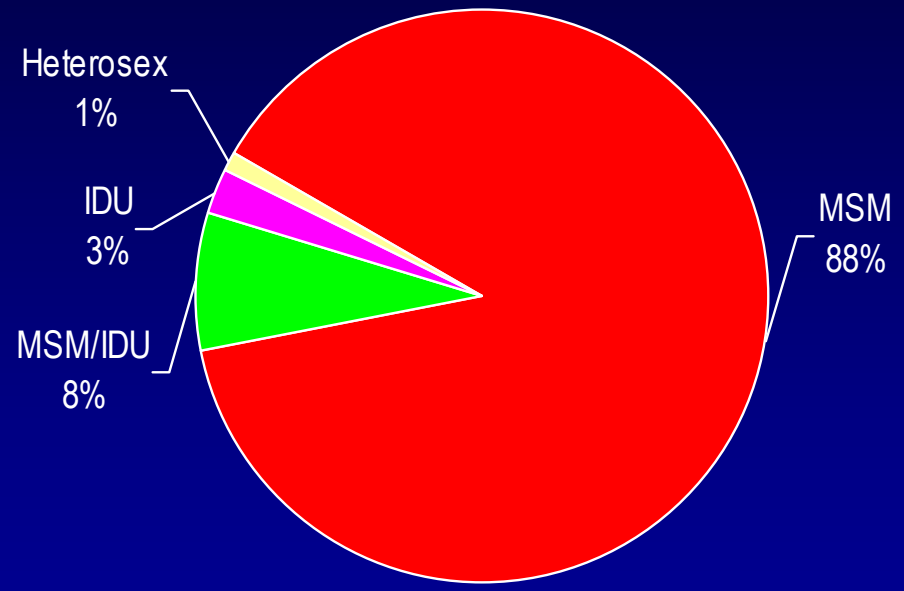


** HIV or AIDS at first diagnosis for a child exposed to HIV during mother's pregnancy, at birth, and/or during breastfeeding.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure†
Diagnosis Years 2007 - 2009 combined

White Males (n = 454)



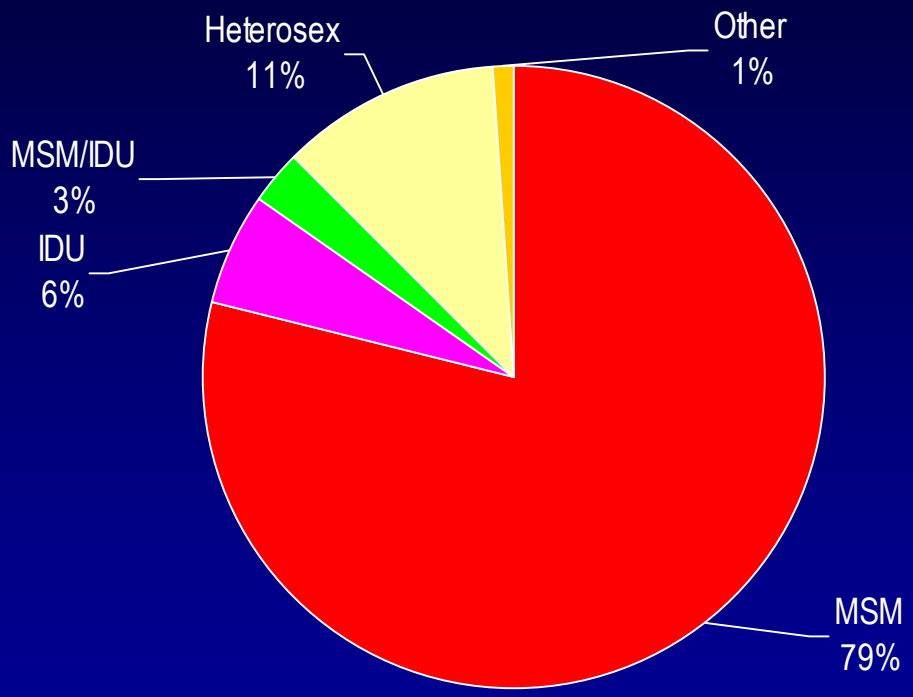
n = Number of persons MSM = Men who have sex with men IDU = Injecting drug use Heterosex = Heterosexual contact
Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2007-2009 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2007 - 2009 combined

African American Males†† (n = 153)



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*

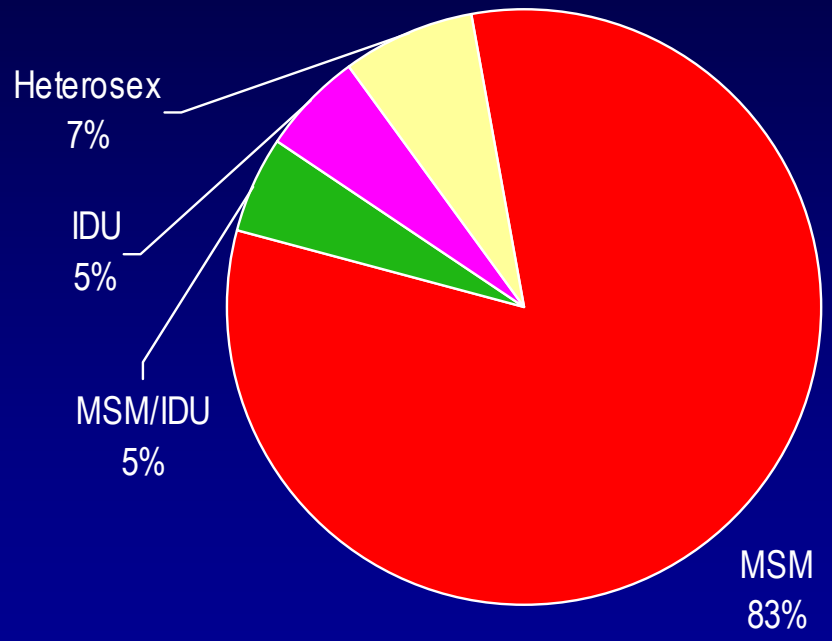
† Mode of Exposure proportions have been estimated using cases for 2007-2009 with known risk. For more detail see the HIV Surveillance Technical notes.

†† *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 2007 - 2009 combined

Hispanic Males (n = 88)



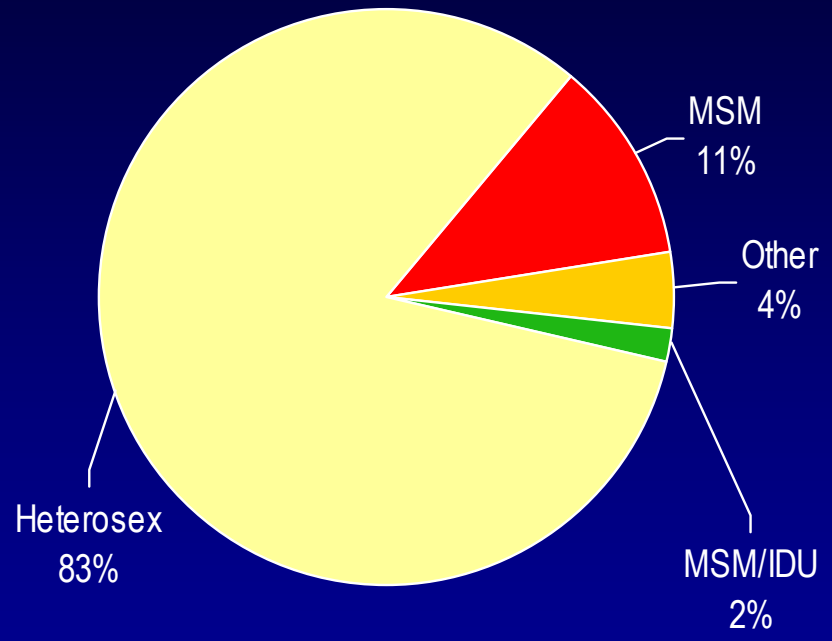
n = Number of persons MSM = Men who have sex with men IDU = Injecting drug use Heterosex = Heterosexual contact

** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2007-2009 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2007 - 2009 combined

African-born Males†† (n = 54)



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*

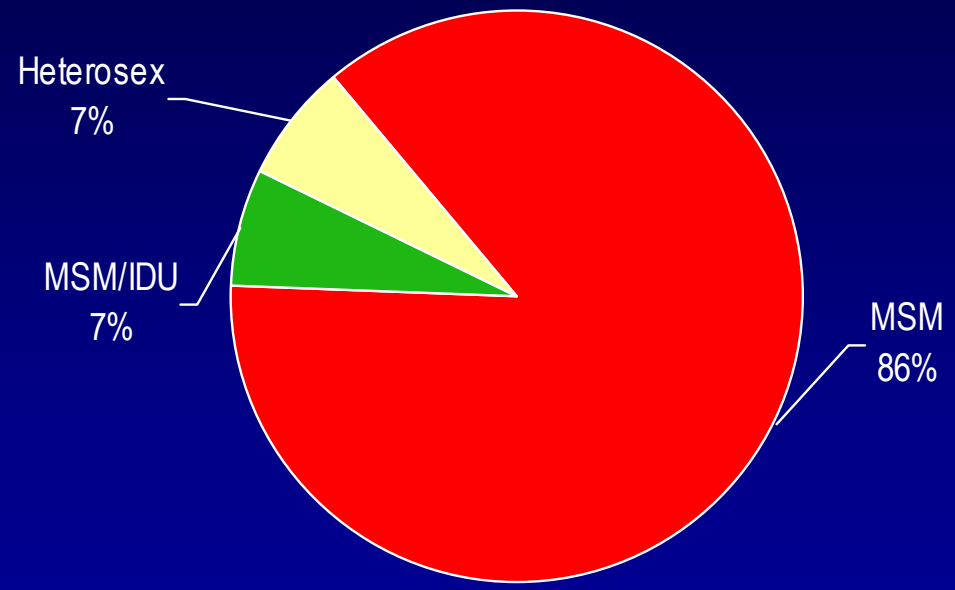
† Mode of Exposure has been estimated for cases with unknown risk using the following: 5% - MSM, 90% - Heterosexual, and 5%-Other. For more detail see the HIV Surveillance Technical notes.

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

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2007 - 2009 combined

Asian Males (n = 18)

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

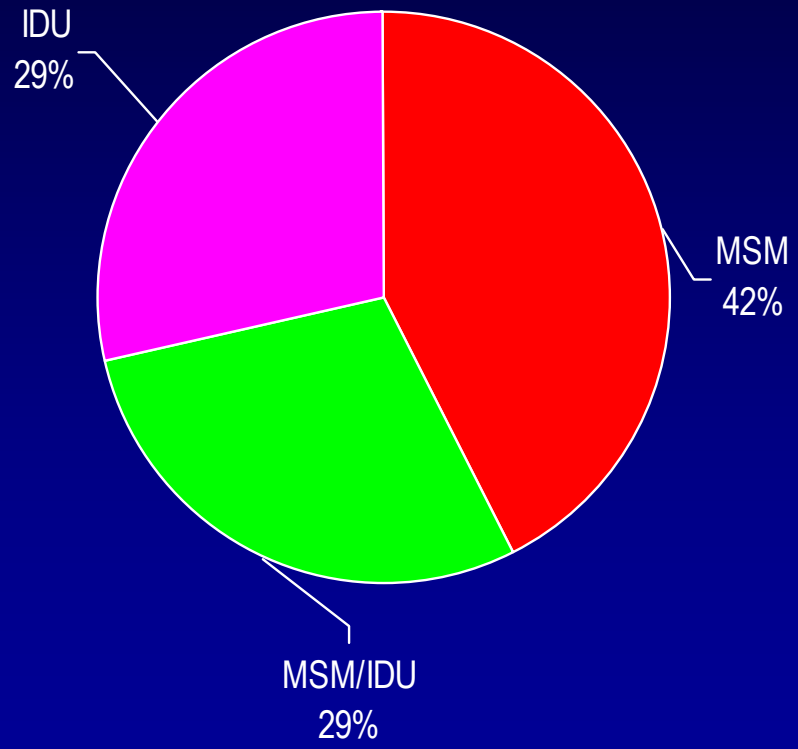
** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2007-2009 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2007 - 2009 combined

American Indian Males (n = 8)

CAUTION: Small number of cases – interpret carefully.



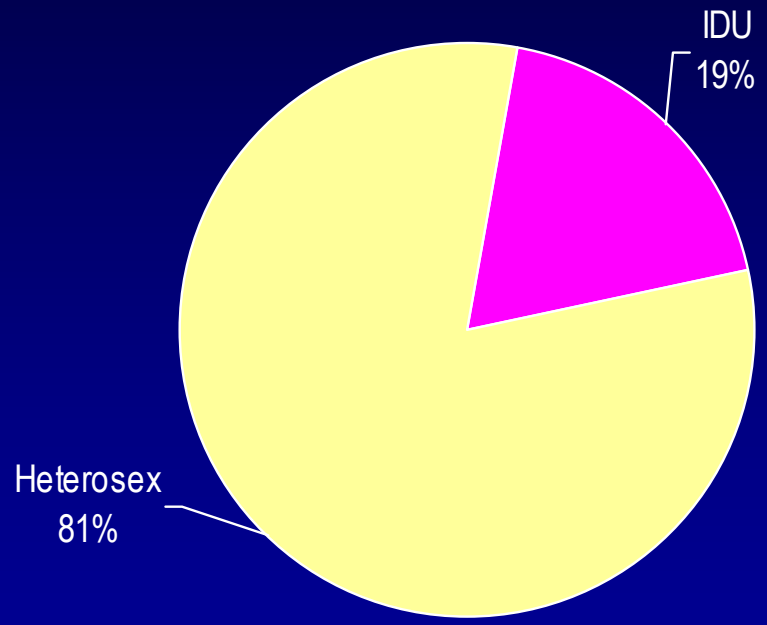
n = Number of persons MSM = Men who have sex with men IDU = Injecting drug use Heterosex = Heterosexual contact

** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2007-2009 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2007 - 2009 combined

White Females (n = 60)



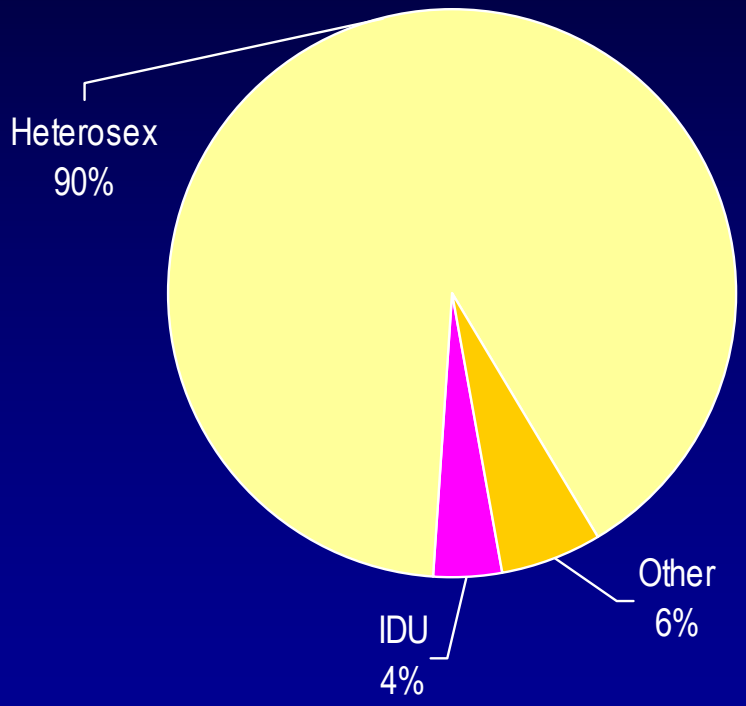
n = Number of persons IDU = Injecting drug use Heterosex = Heterosexual contact Other = Other risk, including perinatal

** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2007-2009 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure†
Diagnosis Years 2007 - 2009 combined

African American Females†† (n = 61)



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

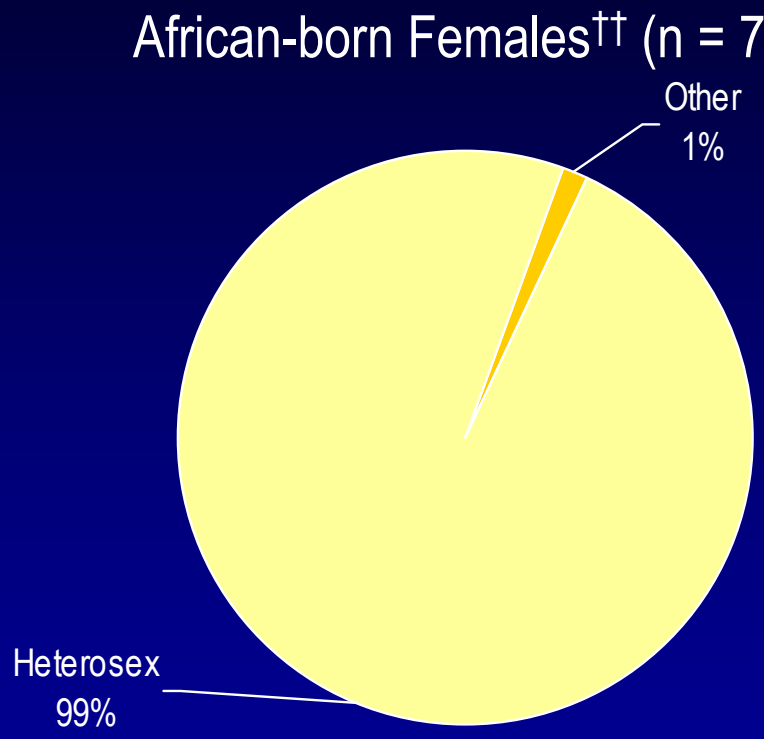
n = Number of persons

** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2007-2009 with known risk. For more detail see the HIV Surveillance Technical notes.

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

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2007 - 2009 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.

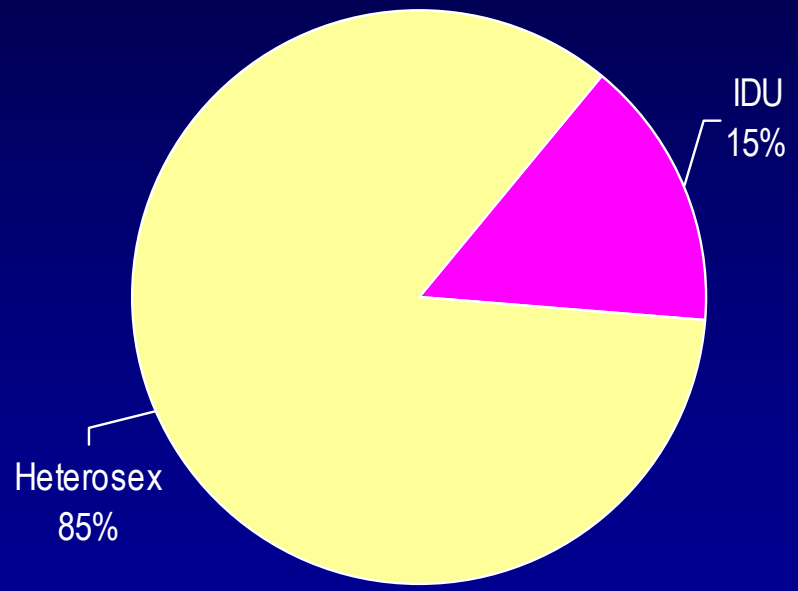
†† *Refers to Black, African-born females.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2007 - 2009 combined

Hispanic Females (n = 15)

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*

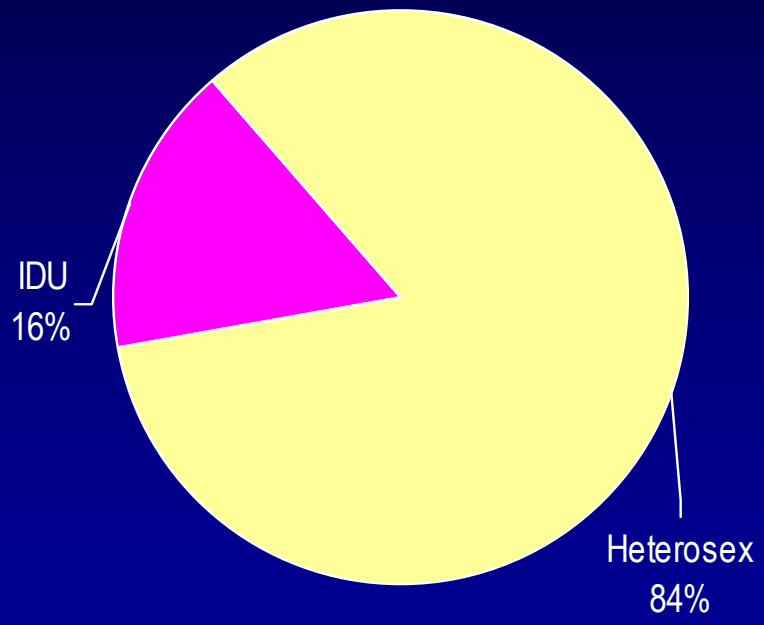
† Mode of Exposure proportions have been estimated using cases for 2007-2009 with known risk. For more detail see the HIV Surveillance Technical notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2007 - 2009 combined

American Indian Females (n = 14)

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

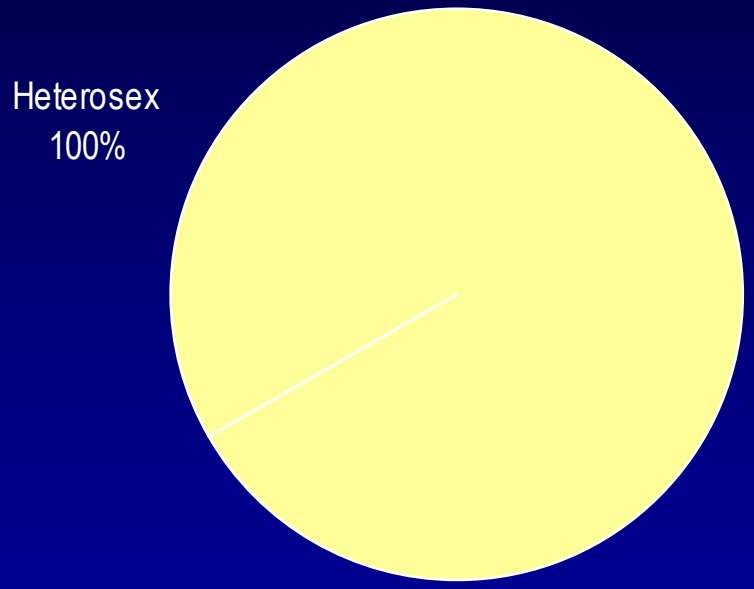
** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2007-2009 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2007 - 2009 combined

Asian Females (n = 2)

CAUTION: Small number of cases – interpret carefully.



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

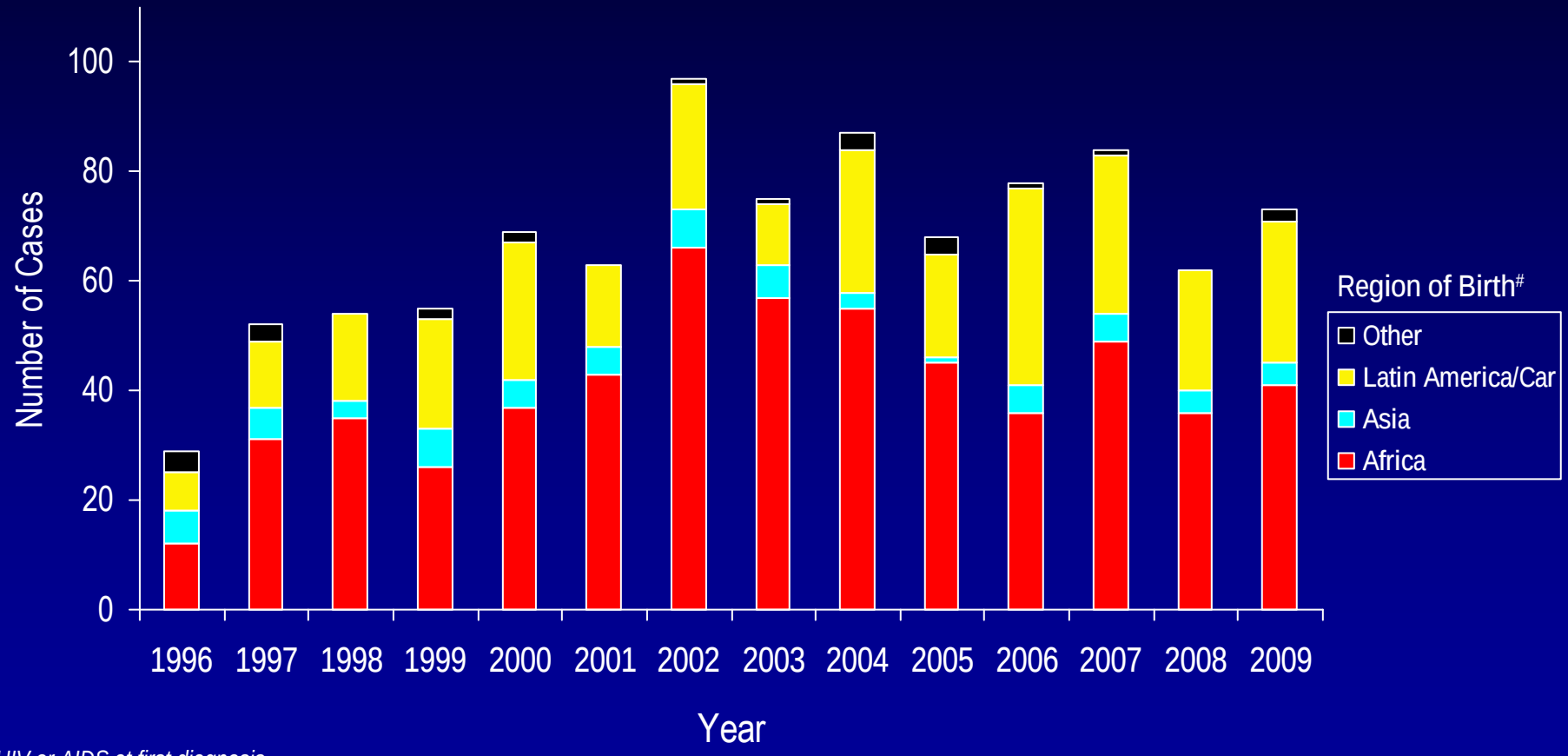
* *HIV or AIDS at first diagnosis*

† 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, 1996 - 2009



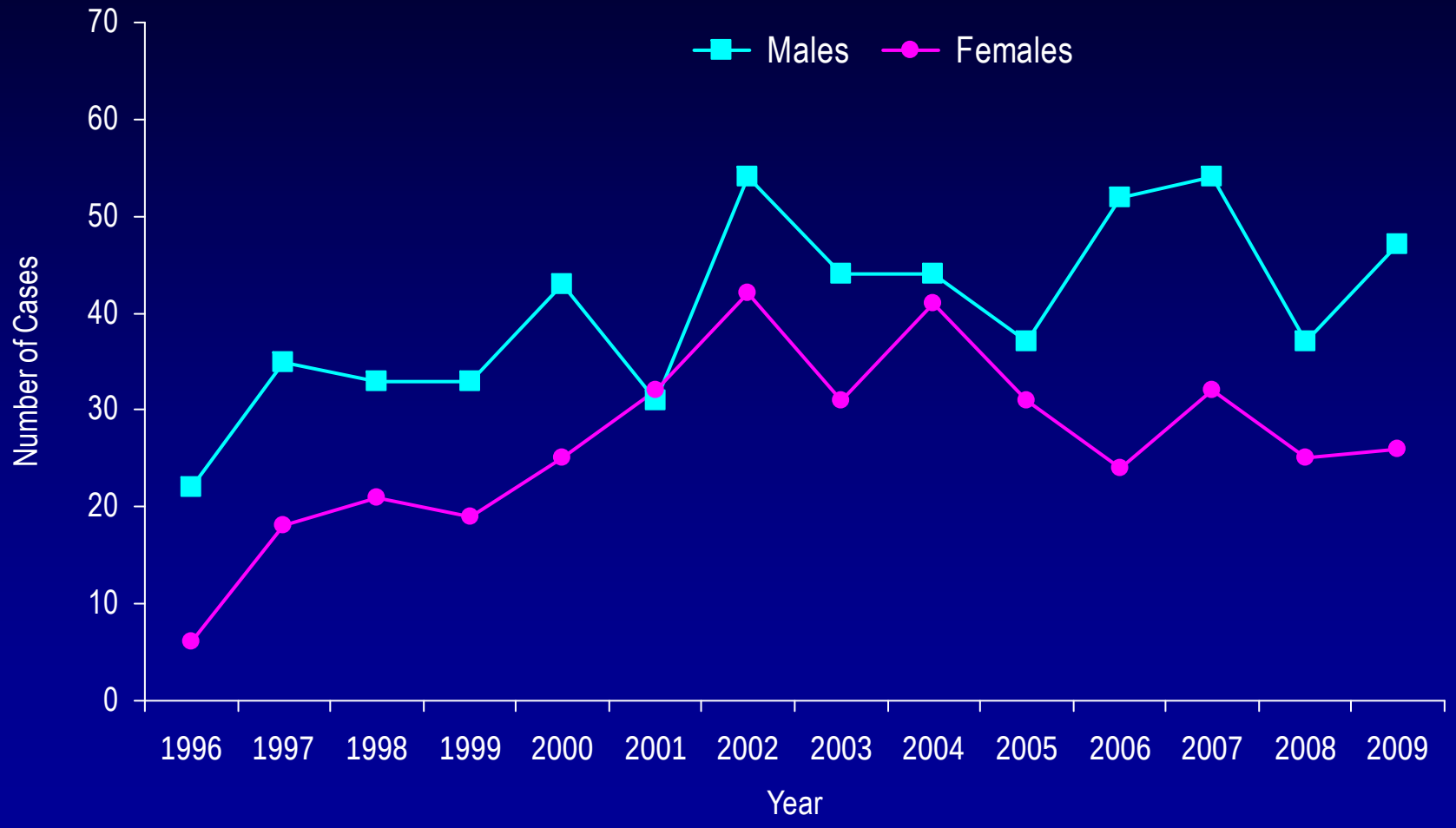
** HIV or AIDS at first diagnosis*

† 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, 1996 - 2009

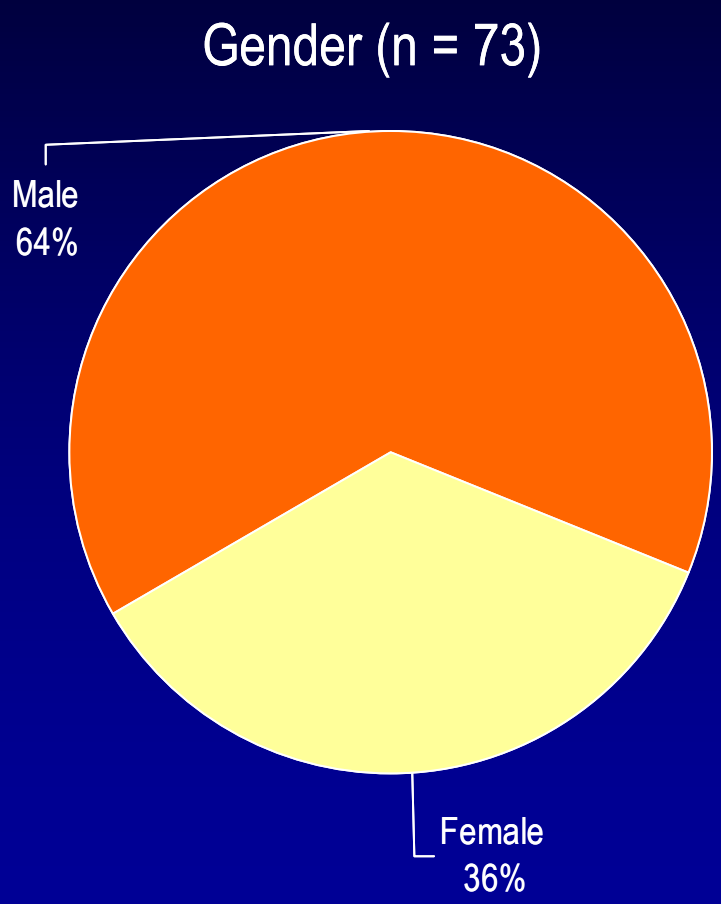


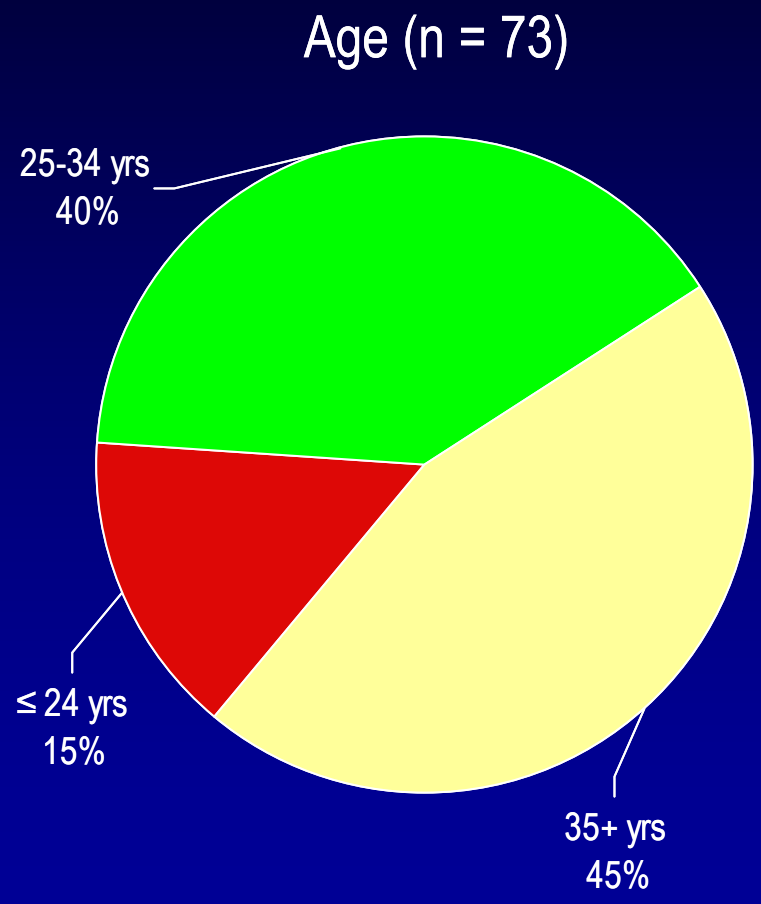
•HIV or AIDS at first diagnosis

†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, 2009





* *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, 2009

- **Mexico** (n=15)
- **Cameroon** (n=6)
- **Ethiopia** (n=6)
- **Liberia** (n=6)
- **Kenya** (n=5)
- **Guatemala** (n=3)
- **Other^** (n=32)

** HIV or AIDS at first diagnosis*

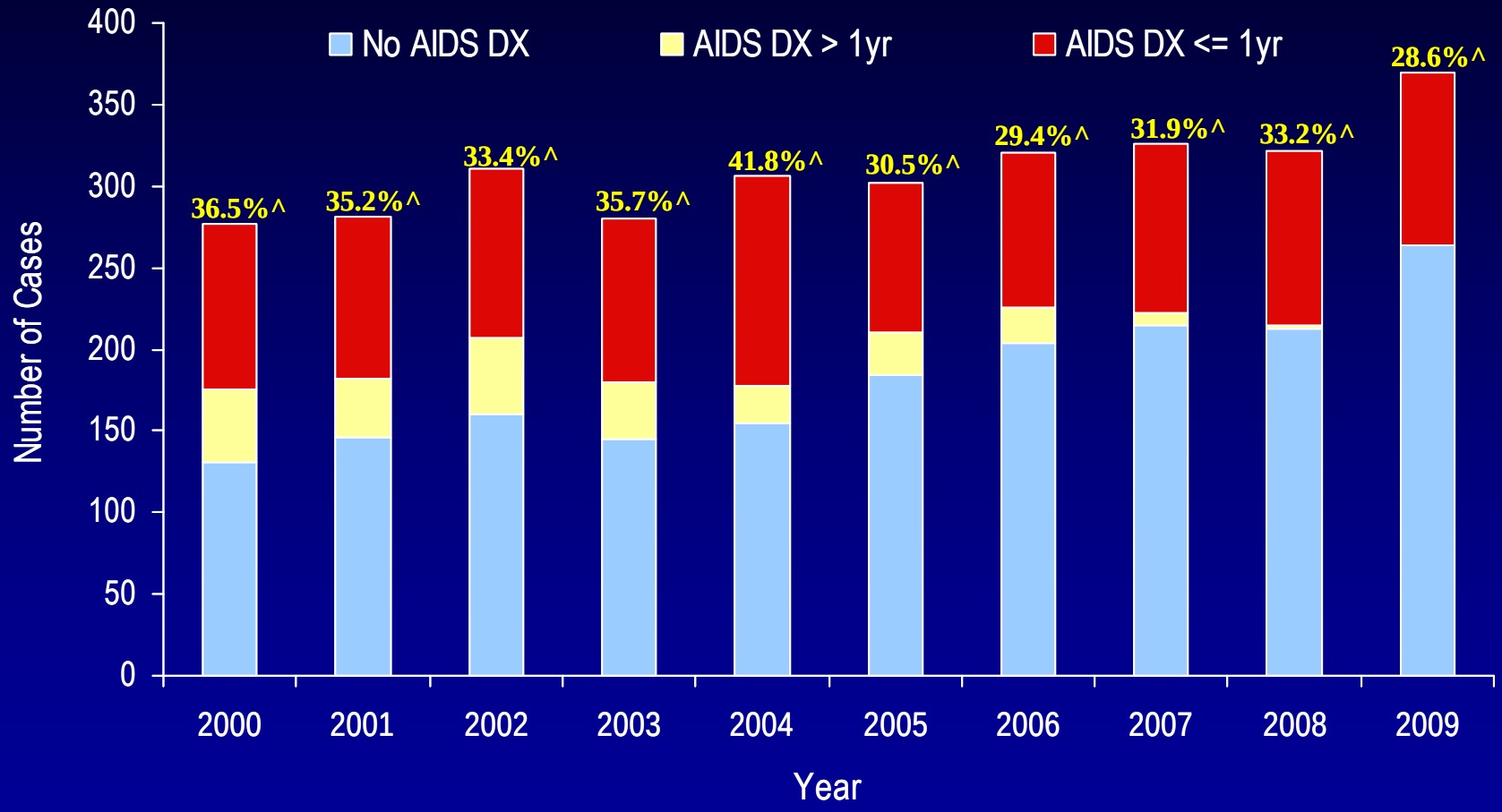
† Excludes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota..

^ Includes 22 additional countries.

Late Testers

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

Time of Progression to AIDS for HIV Infections Diagnosed in Minnesota*, 2000 - 2009†



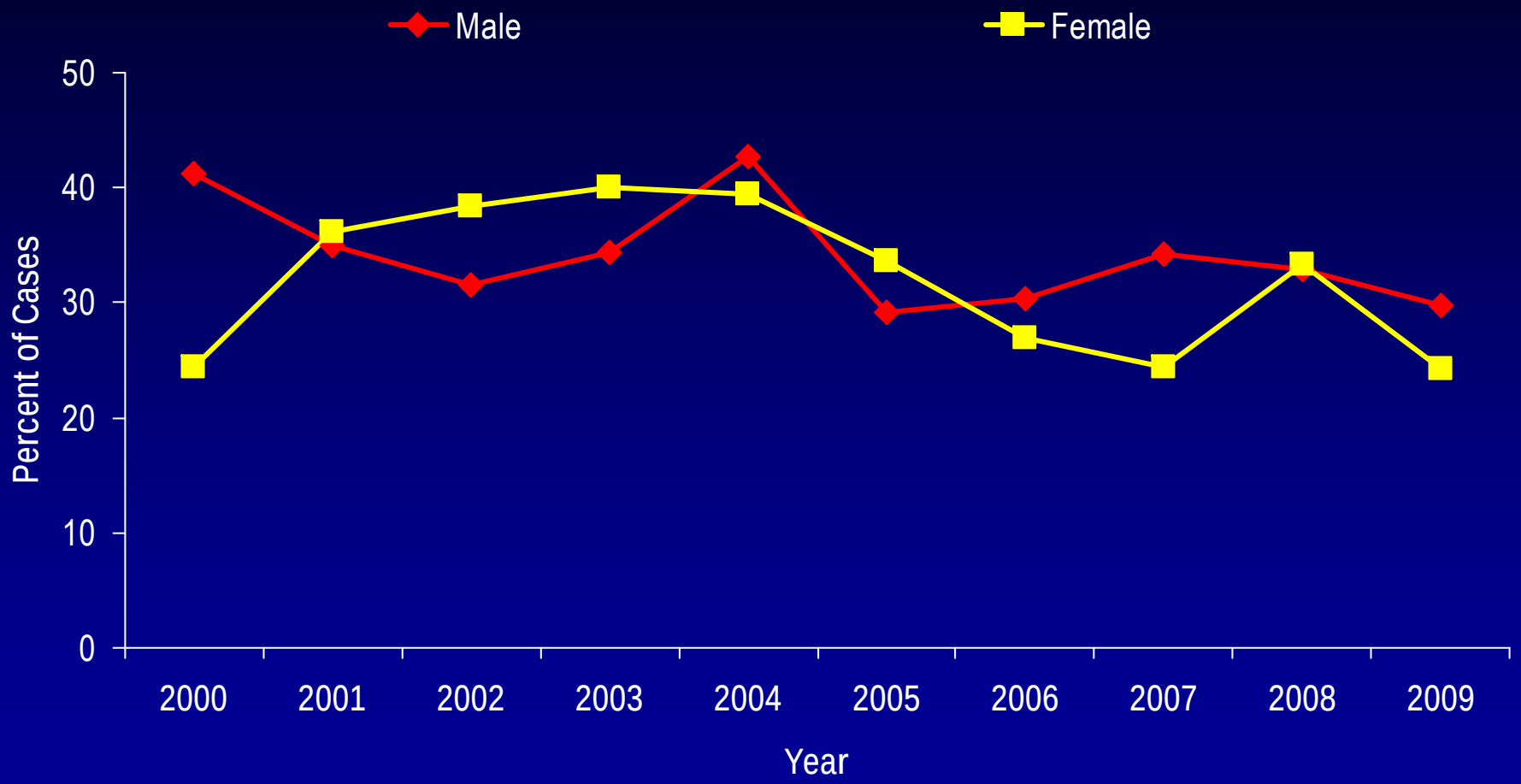
**Numbers include AIDS at 1st report and refugees in the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.*

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

† Numbers/Percent for cases diagnosed in 2009 only represents cases progressing to AIDS through January 2010.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Progression to AIDS within 1 year of initial HIV Infection* Diagnosis by Gender, 2000 - 2009†

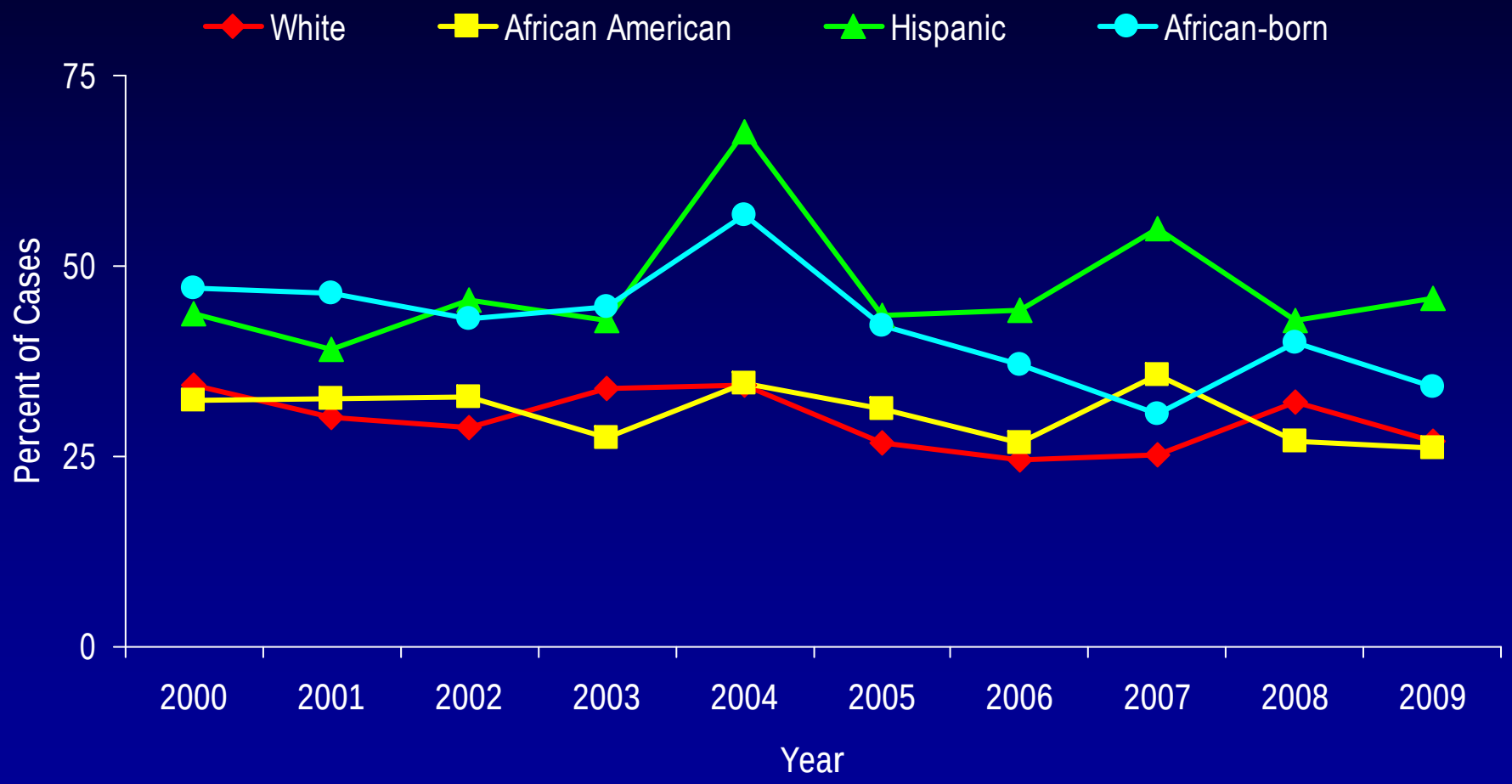


**Numbers include AIDS at 1st report and refugees in the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.*

† Numbers/Percent for cases diagnosed in 2009 only represents cases progressing to AIDS through January 2010.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Progression to AIDS within 1 year of initial HIV Infection* Diagnosis by Race/Ethnicity^, 2000 - 2009†



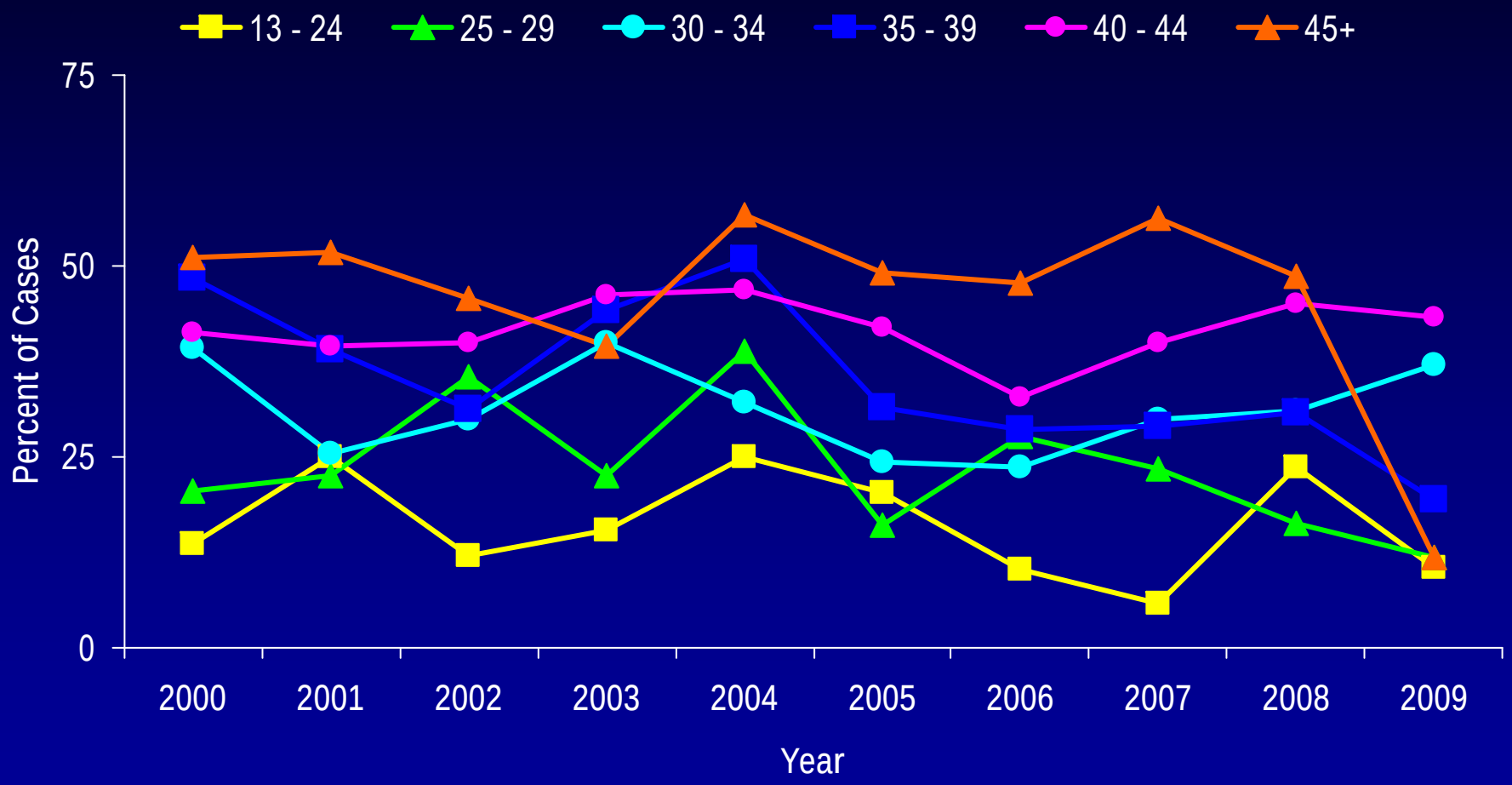
**Numbers include AIDS at 1st report and refugees in the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.*

† Numbers/Percent for cases diagnosed in 2009 only represents cases progressing to AIDS through January 2010.

^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 - 2009†



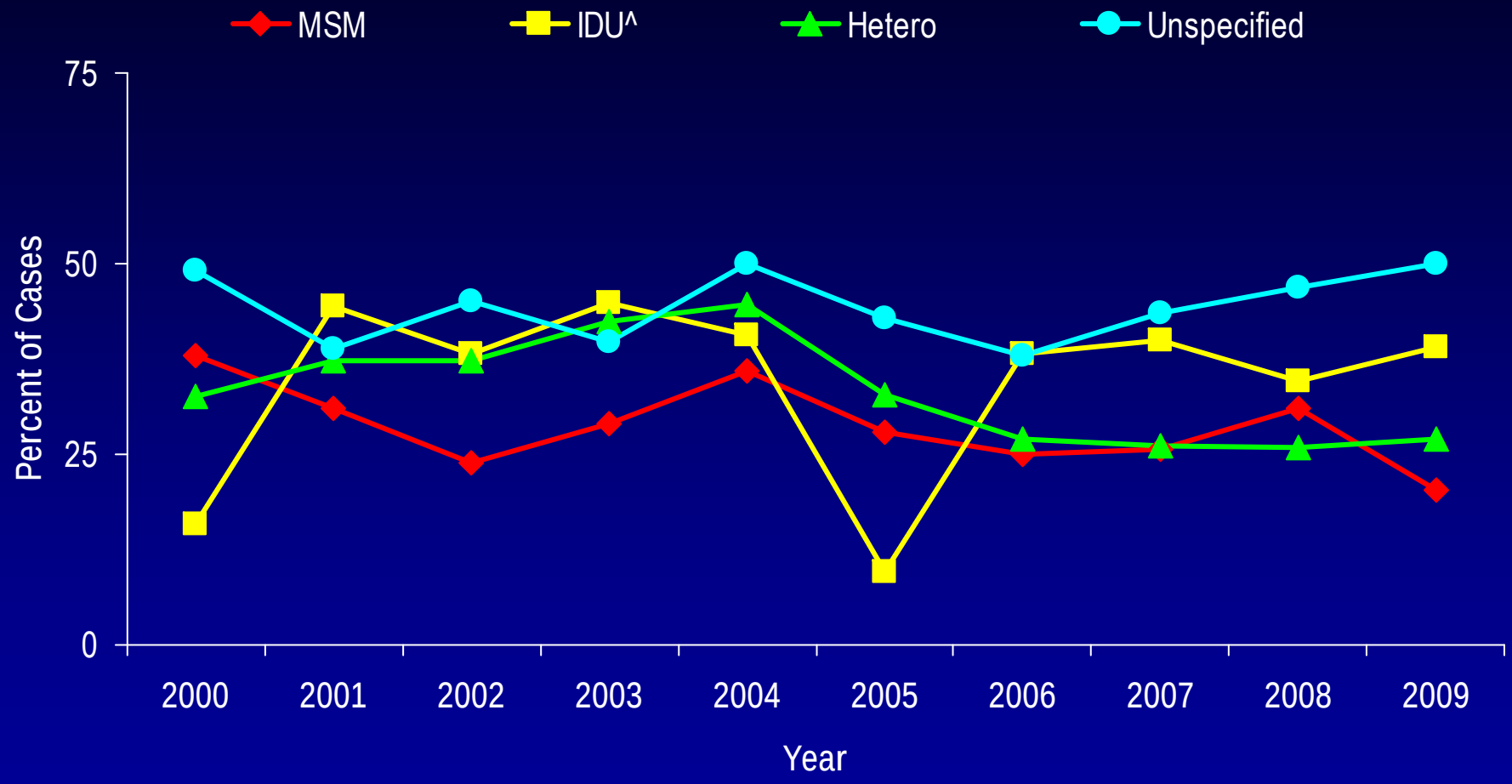
**Numbers include AIDS at 1st report and refugees in the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.*

† Numbers/Percent for cases diagnosed in 2009 only represents cases progressing to AIDS through January 2010.

^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 - 2009†



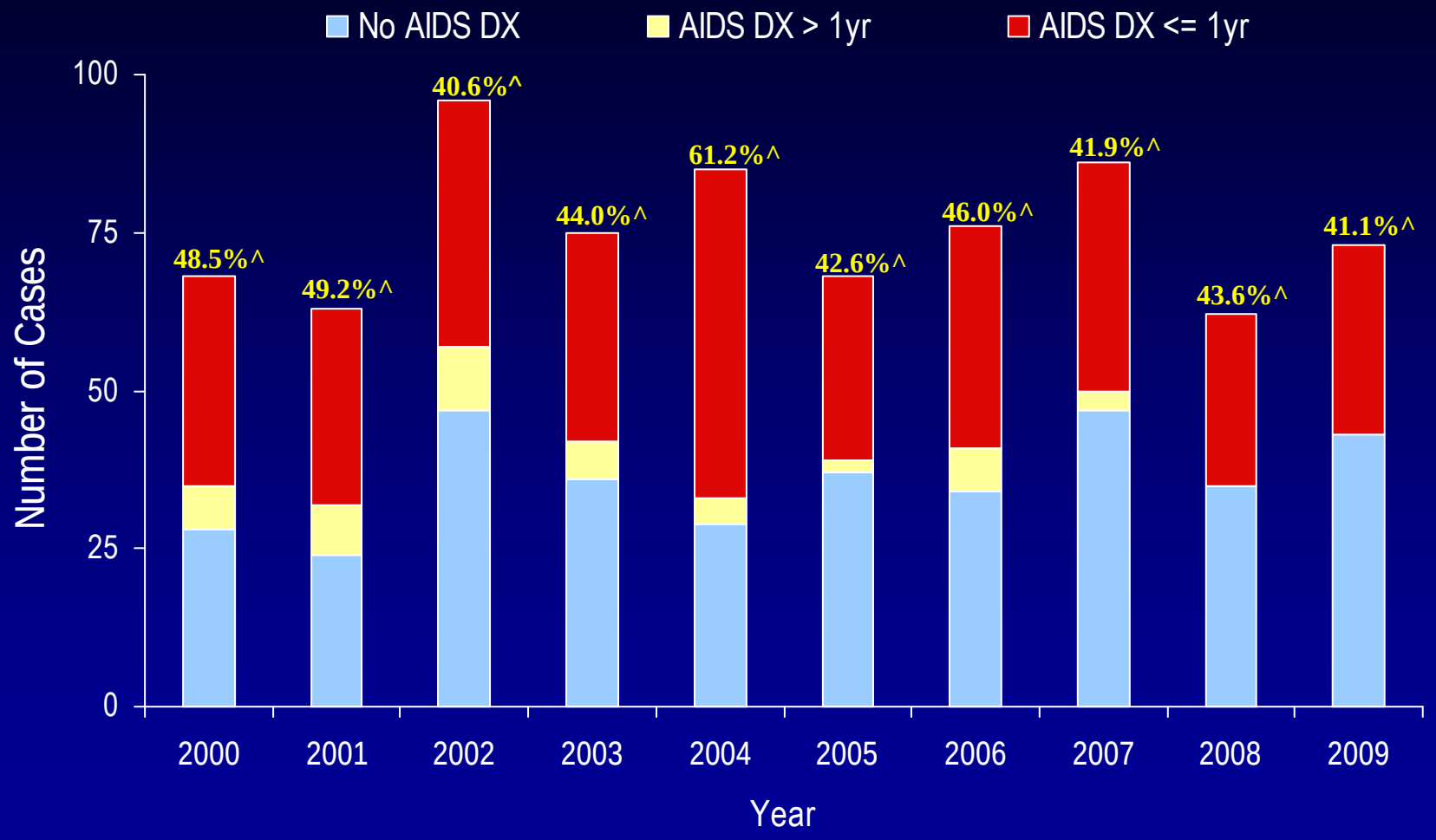
**Numbers include AIDS at 1st report and refugees in the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the U.S.*

† Numbers/Percent for cases diagnosed in 2009 only represents cases progressing to AIDS through January 2010.

^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 - 2009†



**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 2009 only represents cases progressing to AIDS through January 2010.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Companion Text for the Slide Set: *Minnesota HIV Surveillance Report, 2009*

INTRODUCTION

Overview

The *Minnesota HIV Surveillance Report, 2009* describes the occurrence of reported HIV infections in Minnesota by person, place, and time through December 31, 2009. 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, 2009 and reported to the MDH as of April 2, 2010. 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 2007, state-specific AIDS rates ranged from 1.0 per 100,000 persons in Vermont to 24.9 per 100,000 persons in New York. Minnesota had the 11th lowest AIDS rate (3.8 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. A national comparison of HIV infection rates will be possible in 2013, when all states will have mature HIV reporting systems.

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, 2009, a cumulative total of 9,163 cases of HIV infection have been reported among Minnesota residents.[3] This includes 5,655 AIDS cases and 3,508 HIV, non-AIDS cases. Of these 9,163 HIV/AIDS cases, 3,056 are known to be deceased

[2] Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report* 2007:19

[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, 1990-2009

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. Since 2004 the number of AIDS cases diagnosed has once again steadily declined, with 184 AIDS cases diagnosed in 2009. 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 an ongoing increase from 198 cases in 2004 to 279 cases in 2009, a 41 percent increase. By the end of 2009, an estimated 6,552 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 changed slightly over time, and currently about 86 percent of new infections

[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.

occur in the metropolitan area surrounding Minneapolis/St. Paul. Additionally, although HIV infection is more common in 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 2009, 80% of new infections occurred among males and 20% 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 99. Since 2000, numbers among White males have increased steadily, from 99 to 170 in 2009, a 71 percent increase.

The annual number of cases for African American males peaked in 1992 at 79 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. However, over the past three years the number of cases in this group has trended upwards, with 64 cases diagnosed in 2009. This is the largest number seen since 1994.

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 has remained at that new high since, with 30 cases diagnosed in 2009.

[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.

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 2001, the annual number of new infections diagnosed among African American females has increased slightly overall, although without a clear pattern from year to year. In 2009 there were 20 cases diagnosed among African American women, compared to 26 in 2008 and 17 in 2007. 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. Since 2007, the number of cases among African-born women has remained fairly stable around 24 cases per year. 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 43% of the infections diagnosed among men in 2009. Whites make up approximately 88% of the male population in Minnesota and 57% of the new HIV infections diagnosed among men in 2009. 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 2009.[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], 1990-2009

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% (45/437) of new HIV infections reported to the MDH were among youth. In 2009 this percentage was 26% (96/370), the highest percentage ever and the highest number of cases among youth since 1986. Just like overall trends, trends among youth differ by gender and race. 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. Since then the number of new cases among young males has been increasing steadily, a few cases per year. However, in 2009 the number of cases increased dramatically by 83 percent compared to 2008, to 78 cases, the highest seen since 1986. Since 2001, the number of cases among young males has increased by over 300 percent.

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 18 cases in 2009. Females accounted for 19% (18/96) of new HIV infections diagnosed among adolescents and young adults in 2009. Overall, young women accounted for 25% (18/74) of new infections among females and young males accounted for 27% (78/296) 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 46% of new HIV infections diagnosed between

[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.

2007 and 2009, African Americans accounted for 34%, Hispanics 9%, and African-born 3% of the cases. Among young women, Whites accounted for 33%, African Americans 28%, African-born 17%, and Hispanics 4% of the new infections diagnosed during the same time period.

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 95% of the new HIV infections diagnosed between 2007 and 2009, while the joint risk of MSM and injecting drug use (IDU) accounted for an estimated 5% 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 2007 and 2009, 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. Since 2000, the number of new cases diagnosed among MSM has increased steadily and in 2009, MSM accounted for 56% of all new infections (70% among males) in 2009, with 206 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 5% of cases among women in 2009. 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 50% in 2009. 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 2007 and 2009, MSM or MSM/IDU accounted for an estimated 96% of cases among White males, 88% of cases among Hispanic males, 82% of cases among African American males, and 13% of cases among African-born males. The latter three also had the highest proportions of cases with unspecified risk (38%, 31%, and 80%, 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 6% of male African American cases, 5% of Hispanic cases and 3% of male White cases diagnosed during 2007-2009. The number of cases among Asian and American Indian men during the years 2007-2009 was

[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.

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 Asian males, while IDU related transmission appears to be more prominent among American Indian males.

Heterosexual contact with a partner who has or is at increased risk for HIV infection accounted for an estimated 90% of cases among African American females, 81% of White females, and 99% of cases among African-born females between 2007 and 2009. The percent of cases with unspecified risk among African-born and African American females, 28% and 16% respectively, was higher than for White females (12%) (see *HIV Surveillance Technical Notes* for further information about re-distribution of mode of exposure categories). IDU was estimated as a risk for 19% of cases among Whites, and 4% among African Americans. The small number of cases in 2007-2009 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 71 in 2009. During the same time period the rate of transmission has decreased from 15% between 1994 and 1996 to 0.5% in the past three years.

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

[10] A common antiretroviral drug.

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.

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 73 cases in 2009. This increase has been largely driven by the increase of cases among African-born persons from 7 cases in 1990 to 41 cases in 2009, as well as, persons from Mexico, Central and South America from 6 cases in 1990 to 26 cases in 2009. Among new HIV infections diagnosed in 2009, 19% 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 11% of new HIV infections in 2009.

Females account for a greater percentage of foreign-born cases (36%) than of overall cases (20%), and on average foreign-born cases are slightly older (median age at diagnosis: 33) than US-born cases (median age at diagnosis: 32).

Six countries (Cameroon, Ethiopia, Guatemala, Kenya, Liberia, and Mexico) accounted for a majority (56%) of new infections among foreign-born persons, however there are over twenty-five countries represented among the 73 new infections in 2009.

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

[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.

race/ethnicity, with the proportion of late testers between 2000 and 2009 among Hispanics (48%) and African-born (43%) being higher than that among American Indians (32%), Asian/Pacific-Islanders (31%), Whites (29%) and African Americans (31%). Differences by age are as expected with the percentage of late testers increasing with age at time of diagnosis. In 2009[12], 10% of those diagnosed between the ages of 13 and 24 were late testers compared to 51% of those 40 years and older. Finally, the percentage of late testers is also significantly higher among foreign-born cases compared to other cases. In 2009, 41% of foreign-born cases were late testers compared to 24% of US-born cases.

[12] Percentage of late testers for 2009 includes only those progressing to AIDS through January 2010. As such, this percentage is likely to 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. Each year, estimation is done by using the risk distribution for cases diagnosed in the most recent three-year period with known risk by race and gender and applying it to those with unspecified risk of the same race and gender, for example to estimate risk in 2007, we would use cases diagnosed between 2005 and 2007. 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

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

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. CDC will release a RIDR report every 6 months which will affect the ownership of Minnesota cases. While the Surveillance staff will always inquire about previous diagnosis and will check with CDC to determine if the case has been previously reported, it is possible that cases we believe to have been initially diagnosed in Minnesota were in fact diagnosed in another state Below is an example of the changes from a RIDR report from the report issued for cases newly reported from July 1, 2006 through June 30, 2007 compared to cases reported since the inception of AIDS surveillance through June 30, 2007. Through this project, MDH identified 16 cases of HIV infection (including AIDS at first report) and 7 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 78 cases that no longer live in Minnesota and added one AIDS diagnosis.

Table 1. Number of New Cases and Rates (per 100,000 persons) of HIV Infection, HIV (non-AIDS), and AIDS[I] Minnesota, 1982-2009

Year	HIV Infection[III]		HIV (non-AIDS)[III]		AIDS[IV]	
	Cases	Rate	Cases	Rate	Cases	Rate
1982-1999	*6,068*	--	*4,813*	--	*3,532*	--
2000	277	5.9	190	4.0	171	3.6
2001	281	5.9	206	4.3	145	3.0
2002	311	6.5	224	4.7	176	3.7
2003	280	5.8	203	4.2	192	3.9
2004	306	6.2	196	4.0	248	5.0
2005	302	6.1	222	4.5	214	4.4
2006	320	6.5	248	5.0	193	3.9
2007	326	6.6	243	4.9	182	3.7
2008	322	6.5	240	4.9	192	3.9
2009	370	7.5	279	5.7	184	3.7
Cumulative Total[II]	*9,163*	*186.3*	*7,064*	*143.6*	*5,429*	*110.4*

[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 (2000-2008) 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, 2009

Group	Males		Females		*Total*		*HIV*
	Cases	%	Cases	%	*Cases*	*%*	*Infection Rate*
Residence[II]							
Minneapolis	107	36%	12	16%	*119*	*32%*	*31.1*
St. Paul	33	11%	19	26%	*52*	*14%*	*18.1*
Suburban	119	40%	29	39%	*148*	*40%*	*7.5*
Greater Minnesota	37	13%	14	19%	*51*	*14%*	*2.2*
Total	*296*	*100%*	*74*	*100%*	*370*	*100%*	*7.5*
Age							
<13 yrs	1	0%	1	1%	*2*	*1%*	*0.2*
13-19 yrs	20	7%	5	7%	*25*	*7%*	*4.8*
20-24 yrs	58	20%	13	18%	*71*	*19%*	*22.0*
25-29 yrs	46	16%	13	18%	*59*	*16%*	*18.4*
30-34 yrs	40	14%	14	19%	*54*	*15%*	*15.3*
35-39 yrs	31	10%	10	14%	*41*	*11%*	*9.9*
40-44 yrs	32	11%	5	7%	*37*	*10%*	*9.0*
45-49 yrs	32	11%	6	8%	*38*	*10%*	*10.4*
50-54 yrs	20	7%	4	5%	*24*	*6%*	*8.0*
55-59 yrs	8	3%	3	4%	*11*	*3%*	*4.8*
60+ yrs	8	3%	0	0%	*8*	*2%*	*1.0*
Total	*296*	*100%*	*74*	*100%*	*370*	*100%*	*7.5*
StateTotals	*296*		*74*		*370*		*7.5*

[I] HIV Infection includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2009.

[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 (five diagnoses in 2009).

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, 2009									
	Males			**Females**			***Total***		
Group	**Cases**	**%**	***Rate*** [IV]	**Cases**	**%**	***Rate*** [IV]	***Cases***	***%***	***Rate*** [III]
Race/Ethnicity									
White, non-Hispanic	170	57%	#	19	26%	#	*189*	*51%*	*4.4*
Black[II], African-American	64	22%	#	20	27%	#	*84*	*23%*	*50.1*
Black[II], African-born	19	6%	#	22	30%	#	*41*	*11%*	*82-116.5*
Hispanic	30	10%	#	5	7%	#	*35*	*9%*	*24.4*
American Indian	4	1%	#	5	7%	#	*9*	*2%*	*11.1*
Asian/PI	7	2%	#	0	0%	#	*7*	*2%*	*4.2*
Other[II]	2	1%	#	3	4%	#	*5*	*1%*	*X*
Total	*296*	*100%*	*12.2*	*74*	*100%*	*3.0*	*370*	*100%*	*7.5*
Mode of Exposure									
MSM	206	70%	X	--	--	X	*206*	*56%*	X
IDU	5	2%	X	4	5%	X	*9*	*2%*	X
MSM/IDU	14	5%	X	--	--	X	*14*	*4%*	X
Heterosexual (Total)	(9)	3%	X	(58)	78%	X	*(67)*	*18%*	X
with IDU	*2*	--	X	*6*	--	X	*8*	--	X
with Bisexual Male	--	--	X	*4*	--	X	*4*	--	X
with Hemophiliac/other	*0*	--	X	*0*	--	X	*0*	--	X
with HIV+	*7*	--	X	*22*	--	X	*29*	--	X
Hetero, unknown risk[V]	--	--	X	*26*	--	X	*26*	--	X
Perinatal	1	0%	X	1	1%	X	*2*	*1%*	X
Other	0	0%	X	0	0%	X	*0*	*0%*	*X*
Unspecified	30	10%	X	4	5%	X	*34*	*9%*	*X*
No Interview, Unspecified	31	10%	X	7	9%	X	*38*	10%	*X*
Total	*296*	*100%*	*12.2*	*74*	*100%*	*3.0*	*370*	*100%*	*7.5*

[I] HIV infection includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2009.

[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, 2009		
County[II]	HIV Infection Cases	HIV Infection Rate[III]
Aitkin	0	-
Anoka	20	6.7
Becker	1	-
Beltrami	2	-
Benton	0	-
Big Stone	0	-
Blue Earth	1	-
Brown	0	-
Carlton	2	-
Carver	4	-
Cass	2	-
Chippewa	1	-
Chisago	2	-
Clay	0	-
Clearwater	0	-
Cook	0	-
Cottonwood	0	-
Crow Wing	0	-
Dakota	30	8.4
Dodge	0	-
Douglas	4	-
Faribault	0	-
Fillmore	1	-
Freeborn	0	-
Goodhue	2	-
Grant	0	-
Hennepin	191	17.1
Houston	0	-
Hubbard	0	-
Isanti	3	-
Itasca	0	-
Jackson	0	-
Kanabec	0	-
Kandiyohi	2	-
Kittson	0	-
Koochiching	0	-
Lac Qui Parle	0	-
Lake	0	-
Lake of the Woods	0	-
Le Sueur	0	-
Lincoln	0	-
Lyon	1	-
McLeod	1	-
Mahnomen	0	-
Marshall	0	-
Martin	0	-
Meeker	0	-
Mille Lacs	1	-
Morrison	0	-
Mower	0	-

Table 4. Number of Cases and Rates (per 100,000 persons) of HIV Infection by County of Residence[I] -- Minnesota, 2009		
County[II]	**HIV Infection Cases**	**HIV Infection Rate[III]**
Murray	0	-
Nicollet	2	-
Nobles	0	-
Norman	0	-
Olmsted	5	4.0
Otter Tail	0	-
Pennington	0	-
Pine	1	-
Pipestone	0	-
Polk	0	-
Pope	0	-
Ramsey	64	12.5
Red Lake	1	-
Redwood	0	-
Renville	0	-
Rice	5	8.8
Rock	0	-
Roseau	0	-
St. Louis	1	-
Scott	3	-
Sherburne	4	-
Sibley	0	-
Stearns	3	-
Steele	0	-
Stevens	0	-
Swift	0	-
Todd	0	-
Traverse	0	-
Wabasha	0	-
Wadena	0	-
Waseca	0	-
Washington	7	3.5
Watonwan	0	-
Wilkin	0	-
Winona	0	-
Wright	3	-
Yellow Medicine	0	-
State Total	*370*	*7.5*

[I] HIV infection includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2009.

[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 five state prisoners during 2009 (State correctional facilities are located in the following counties: Anoka, Carlton, Chisago, Goodhue, Itasca, Rice, Scott, Sherburne, 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 1982-2009

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)
1982-1999	85	68	10	9	14	4	1	*191*	20	10%
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*	27	52%
2007	16	13	24	2	2	1	2	*60*	29	48%
2008	3	13	27	5	1	3	1	*53*	34	64%
2009	17	13	34	4	1	2	0	*71*	39	55%
Cumulative Total	171	191	211	42	29	16	10	670	257	38%

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 (212), Asia/Pacific Islands (15), Latin America/Caribbean (28), and Europe (2).

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 1982-2009

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)
1982-1999	18	5	3	3	2	2	0	*33*	6	18%
2000	0	1	0	0	0	0	0	*1*	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	100%
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%
2008	0	0	0	0	0	0	0	*0*	0	-
2009	0	0	0	0	0	0	0	*0*	0	-
Cumulative Total	18	6	6	4	2	2	0	*38*	10	26%
Rate of Transmission 2007 - 2009	0%	0%	1%	0%	0%	0%	0%	1%	1%	--
Cumulative Rate of Transmission[IV]	11%	3%	3%	10%	--	--	--	6%	4%	--

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, 2009

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, 2009 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 2009 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=118) and persons arriving to Minnesota through the HIV+ Refugee Resettlement Program (n=160 prevalent cases) and other immigrants reporting a positive test prior to their arrival in Minnesota (n=98 prevalent cases).

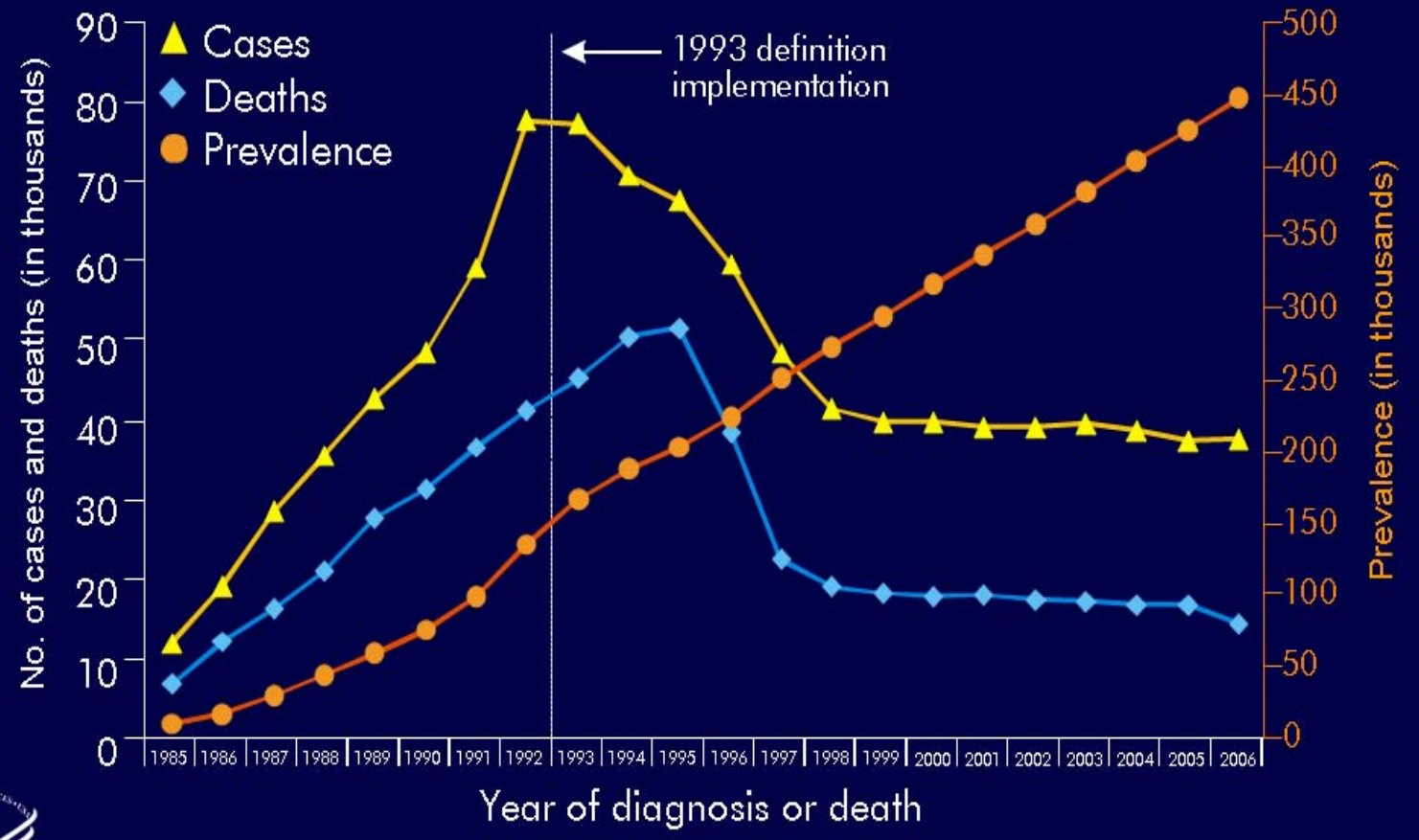
- Some limitations of surveillance data:
  - Data do not include HIV-infected persons who have not been tested for HIV
  - Data do not include persons whose positive test results have not been reported to the MDH
  - Data do not include HIV-infected persons who have only tested anonymously
  - Case numbers 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)

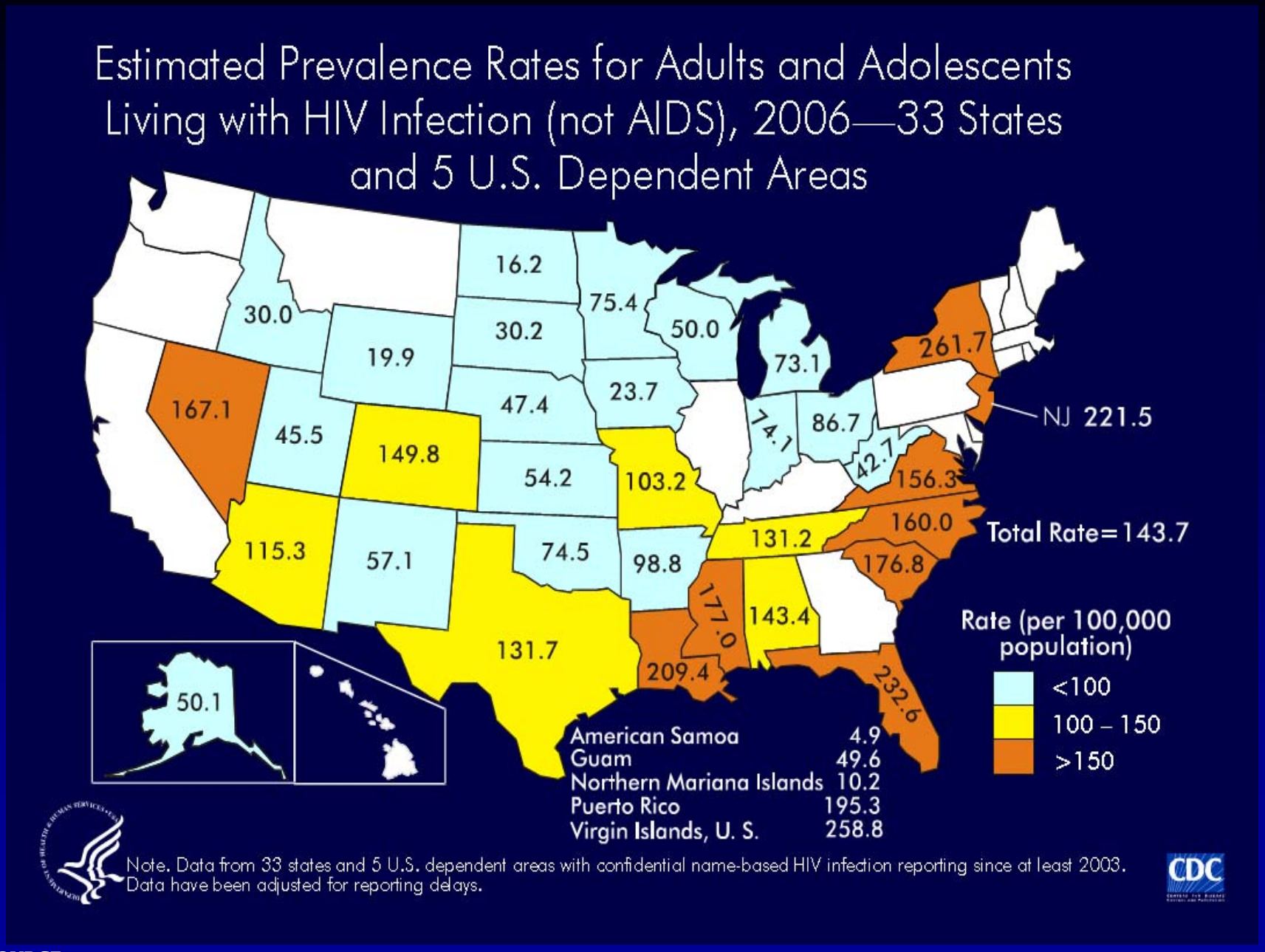
National Context

Estimated Number of AIDS Cases, Deaths, and Persons Living with AIDS, 1985–2006—United States and Dependent Areas

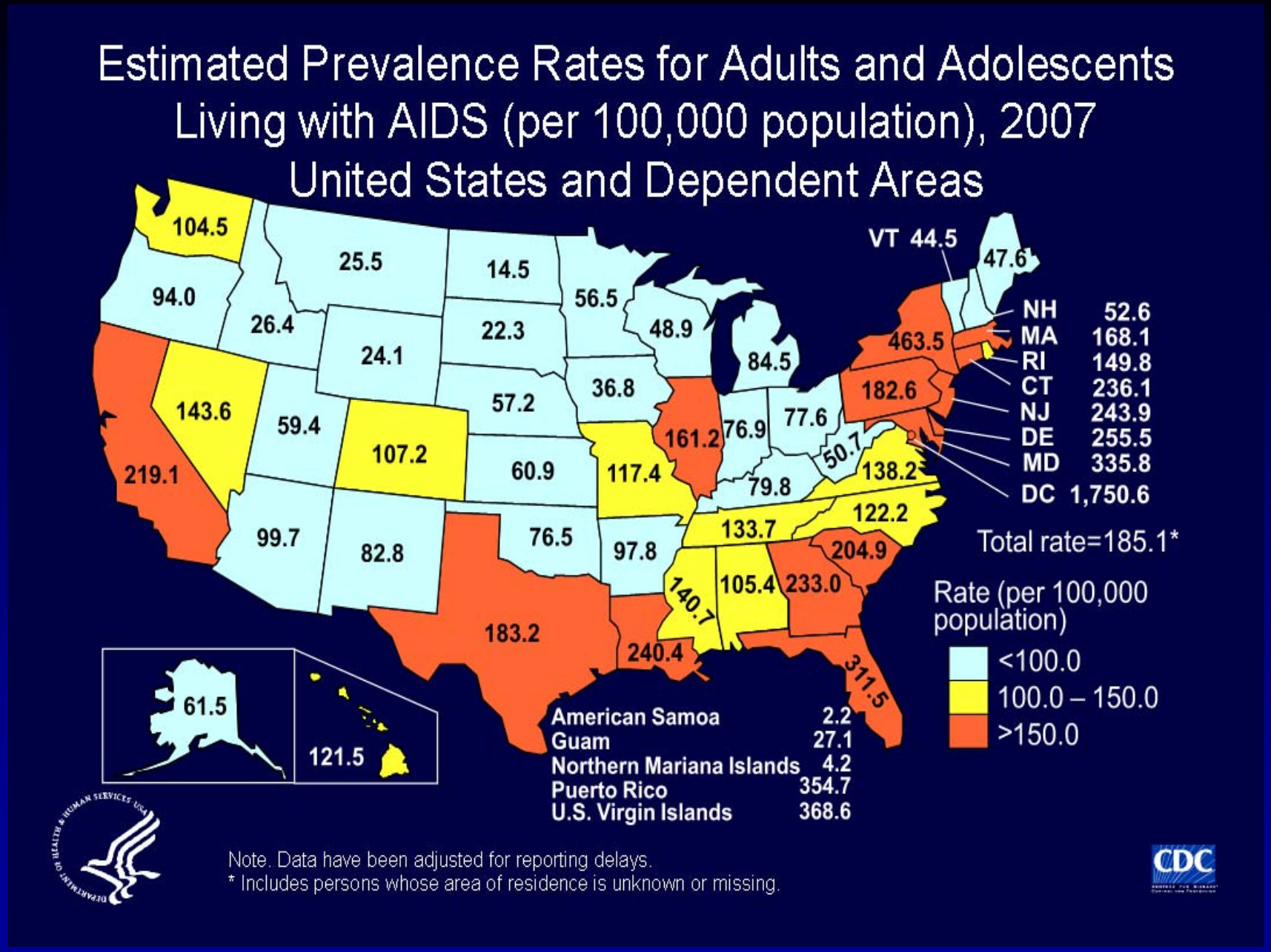


Note. Data have been adjusted for reporting delays.

SOURCE:
U.S. HIV/AIDS Surveillance Report, Year-end 2007
National Center for HIV, STD, and TB Prevention, CDC



SOURCE:
U.S. HIV/AIDS Surveillance Report, Year-end 2007
National Center for HIV, STD, and TB Prevention, CDC



SOURCE:
U.S. HIV/AIDS Surveillance Report, Year-end 2007
National Center for HIV, STD, and TB Prevention, CDC

Overview of HIV/AIDS in Minnesota

Minnesota HIV/AIDS Surveillance: *Cumulative Cases*

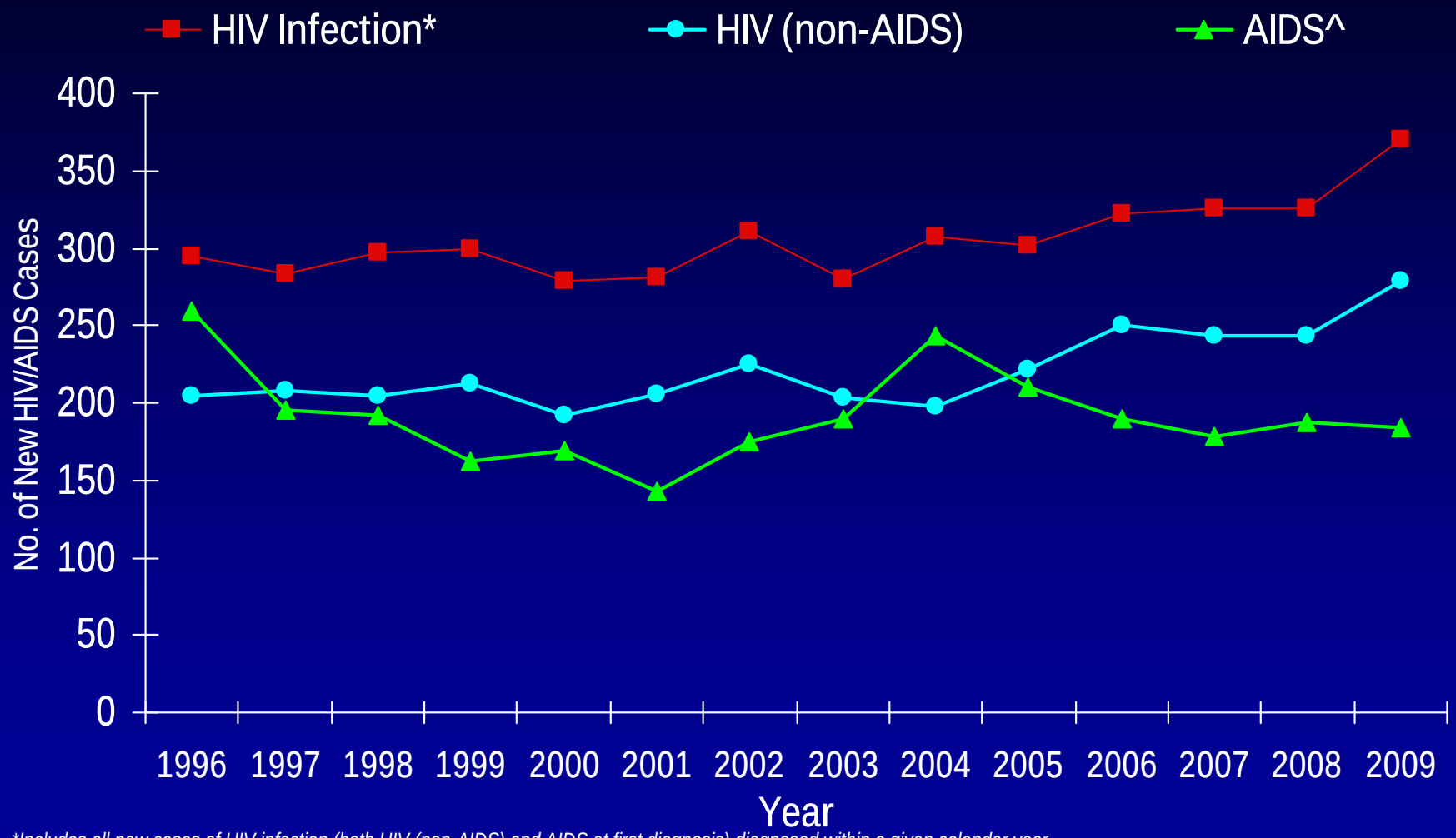
- As of December 31, 2009, a cumulative total of 9,163* persons have been diagnosed and reported with HIV infection in Minnesota. Of these:
  - 3,508 persons have been diagnosed with HIV infection (non-AIDS)
  - 5,655 have progressed to AIDS

- Of these 9,163 persons, 3,056 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.*

HIV/AIDS in Minnesota:

New HIV Infection, HIV (non-AIDS) and AIDS Cases by Year, 1996-2009



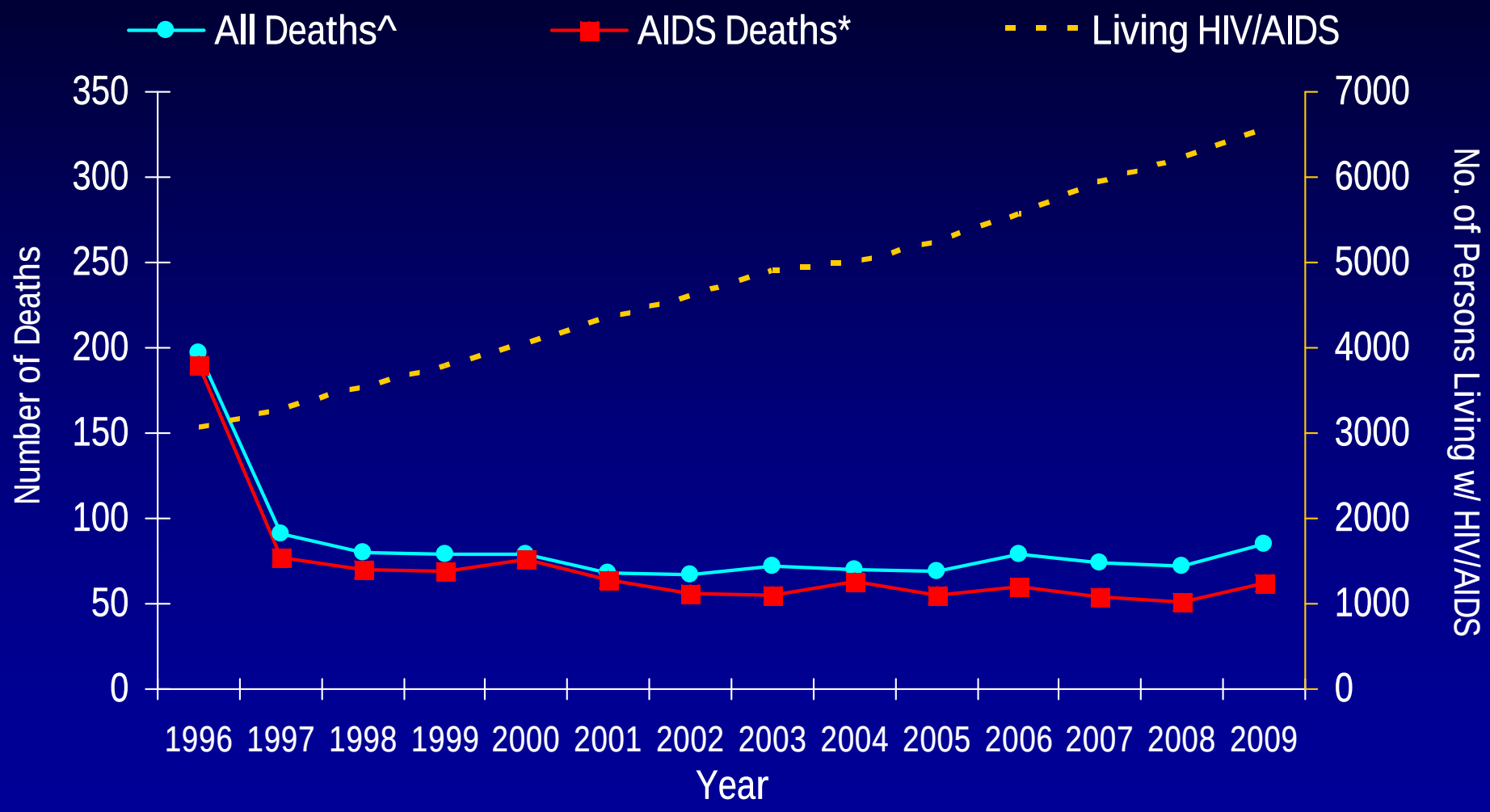
**Includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) diagnosed within a given calendar year.*

^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, 1996-2009



**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, 2009, 6,552* persons are assumed alive and living in Minnesota with HIV/AIDS
  - 3,469 living with HIV infection (non-AIDS)
  - 3,083 living with AIDS

- This number includes 1,274 persons who were first reported with HIV or AIDS elsewhere and subsequently moved to Minnesota

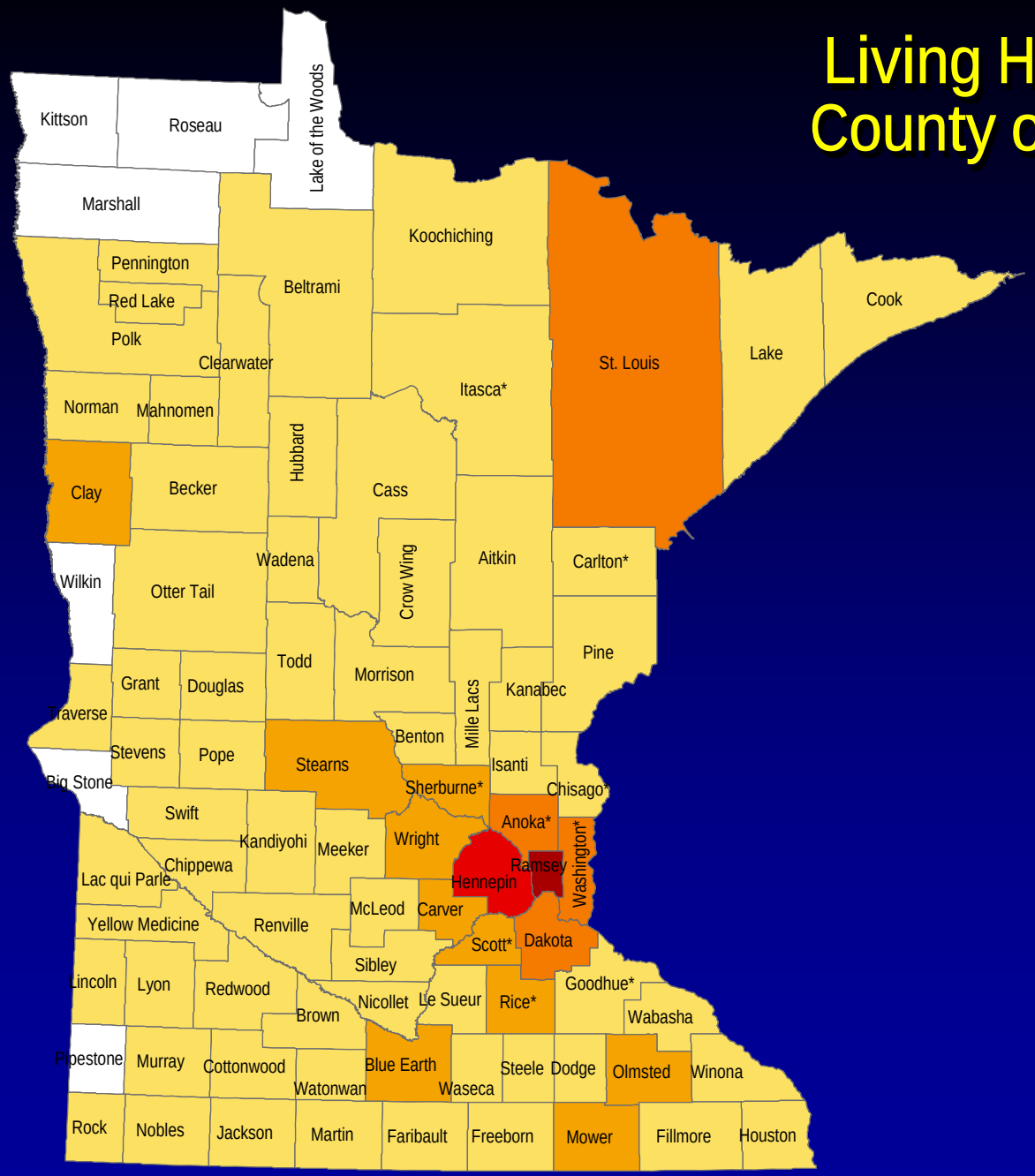
- This number excludes 1,084 persons who were first reported with HIV or AIDS in Minnesota and subsequently moved out of the state

** 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, 2009



Number Living with HIV/AIDS

- None
- 1 - 20
- 21 - 100
- 101 - 500
- 501 – 1,000
- 1,001 – 2,000
- 2,001 – 3,635

City of Minneapolis – 2,576
City of St. Paul – 946
Suburban# – 2,066
Greater Minnesota - 940

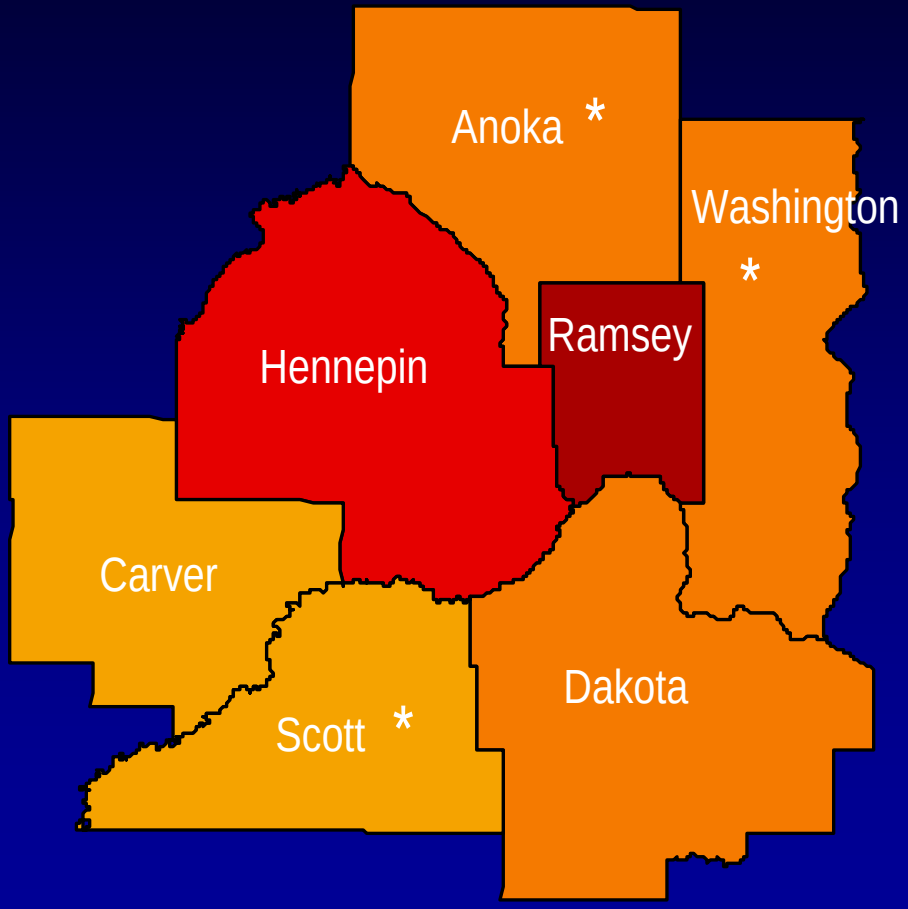
Total number = 6,552
(24 people missing residence information)

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, 2009



Number Living with HIV/AIDS

- None
- 1 - 20
- 21 - 100
- 101 - 500
- 501 – 1,000
- 1,001 – 2,000
- 2,001 – 3,526

City of Minneapolis – 2,576
City of St. Paul – 946
Suburban# – 2,066

Total number (Metro only) = 5,588

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

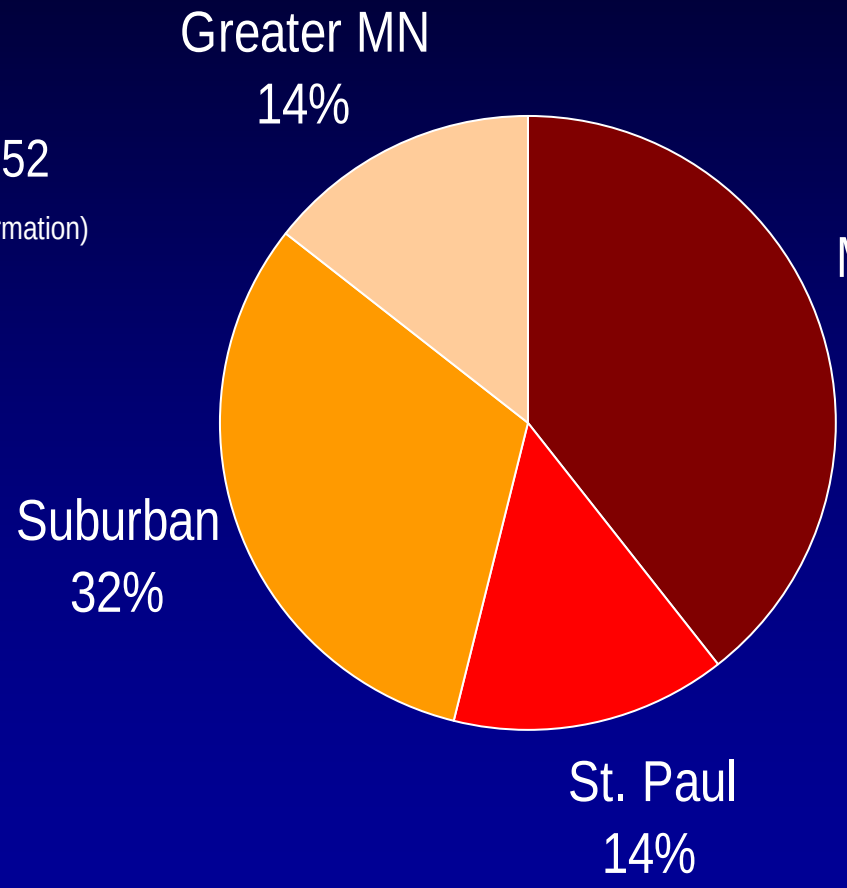
* Counties in which a state correctional facility is located.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota by Current Residence, 2009

Total Number = 6,552

(24 persons missing residence information)

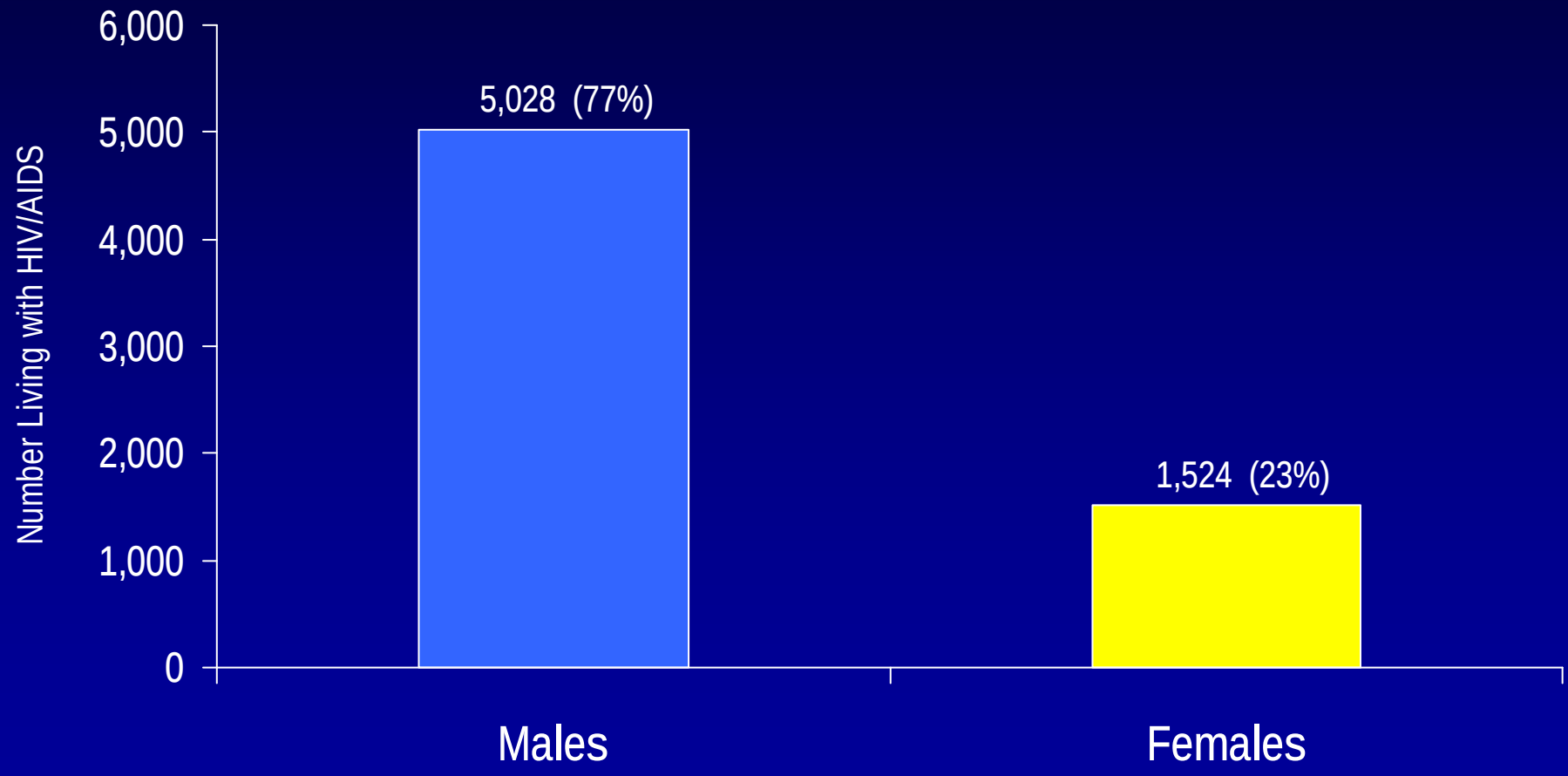


Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (except Minneapolis), Ramsey (except St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties, outside the seven-county metro area.

Data Source: *Minnesota HIV/AIDS Surveillance System*

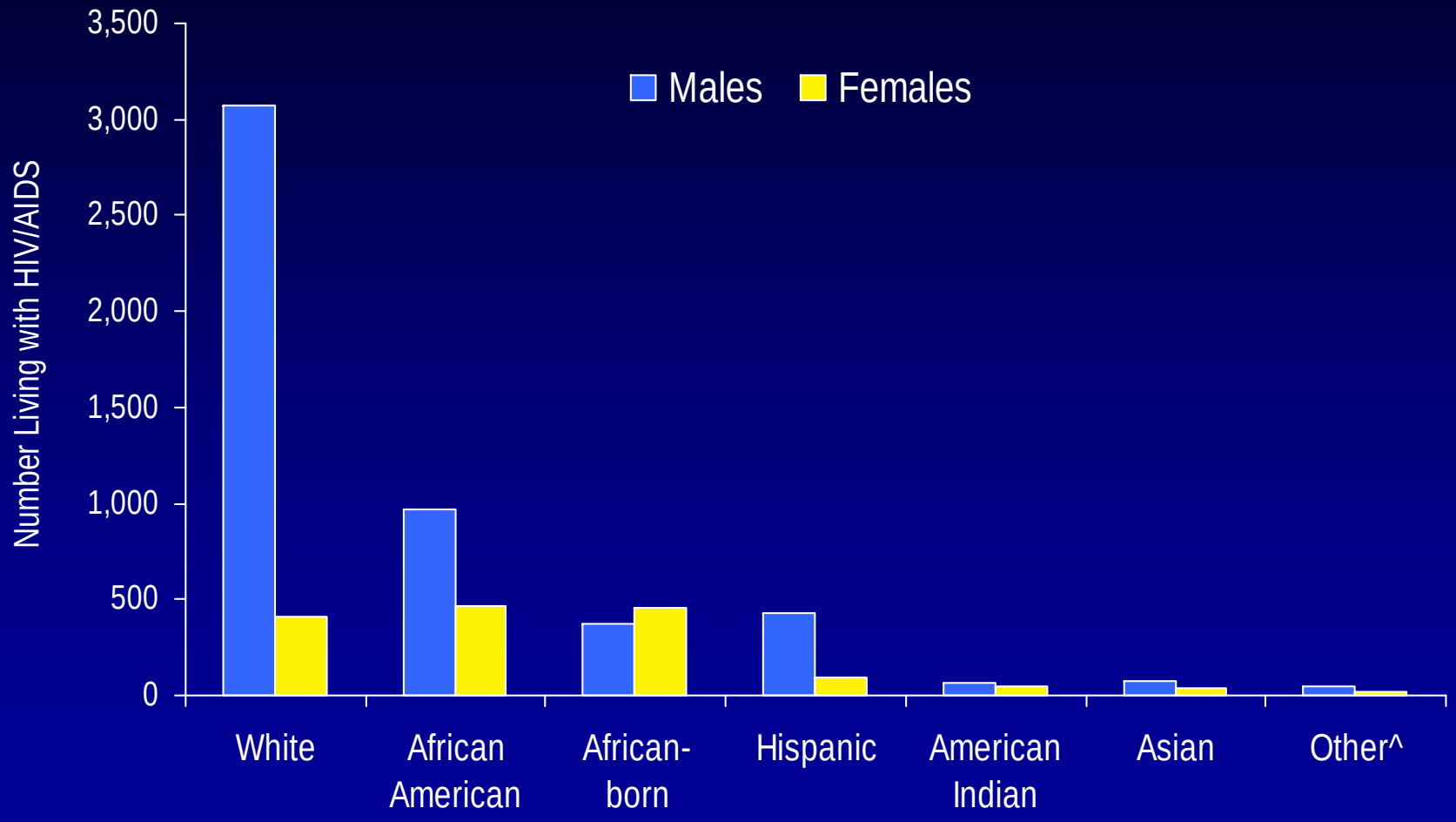
Gender and Race/Ethnicity

Persons Living with HIV/AIDS in Minnesota by Gender, 2009



Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota by Gender and Race/Ethnicity*, 2009

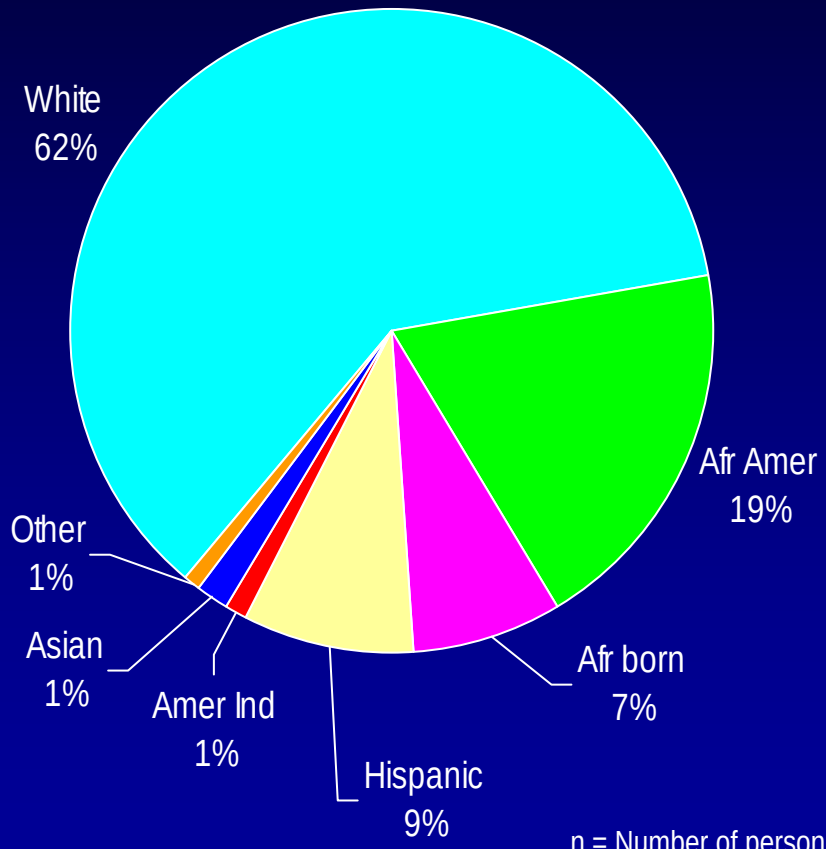


* "African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks.
^ Other includes persons with unknown or multiple races (n=58).

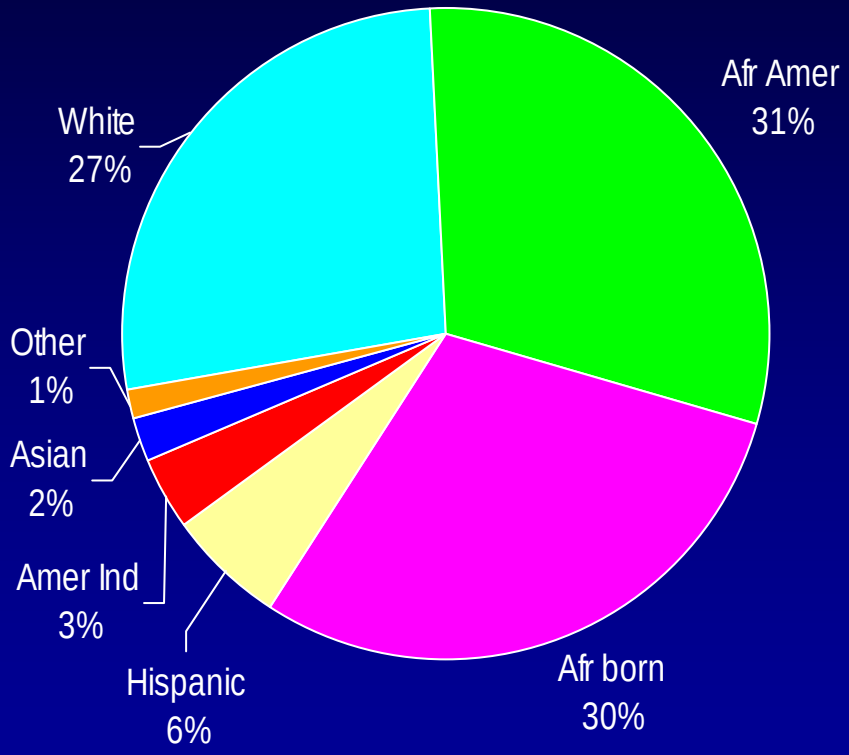
Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota by Gender and Race/Ethnicity, 2009

Males (n = 5,028)



Females (n = 1,524)



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, 2009

Race/Ethnicity	*Cases*	*%*	*Rate*
White, non-Hispanic	**3,477**	**53%**	**80.4**
Black, African-American	**1,430**	**22%**	**852.3**
Black, African-born	**831**	**13%**	**1,662-2,362††**
Hispanic	**521**	**8%**	**363.4**
American Indian	**114**	**2%**	**140.6**
Asian/Pacific Islander	**111**	**2%**	**66.0**
Other^	**68**	**1%**	**X**
Total	***6,552***	***100%***	***133.2***

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.

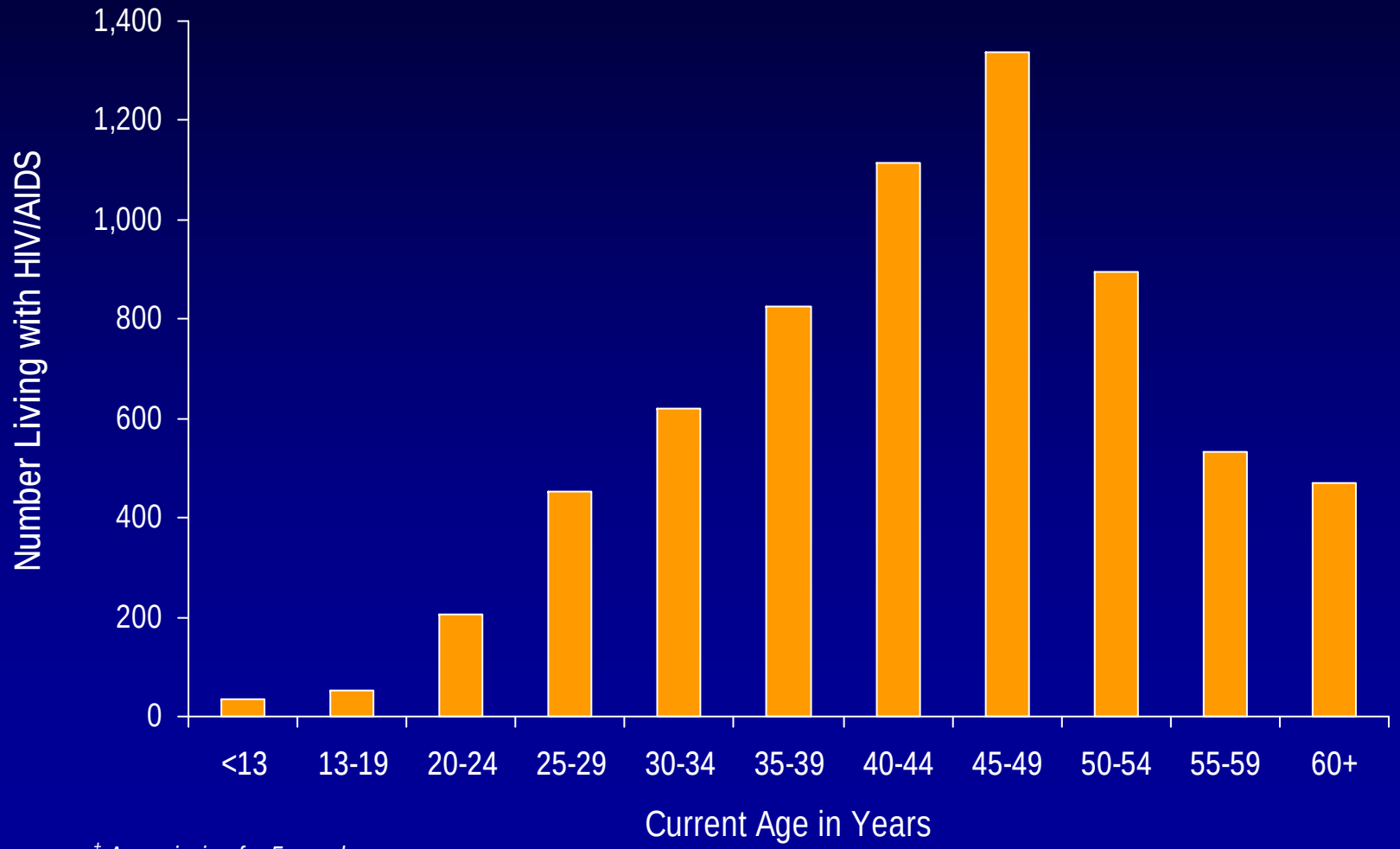
†† Accurate population estimates for African-born persons and MSM (any race) living in Minnesota are unavailable – anecdotal (50,000) and 2000 US Census data (35,188)) were used to create the range of rates reported for African-born.

^ 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†, 2009

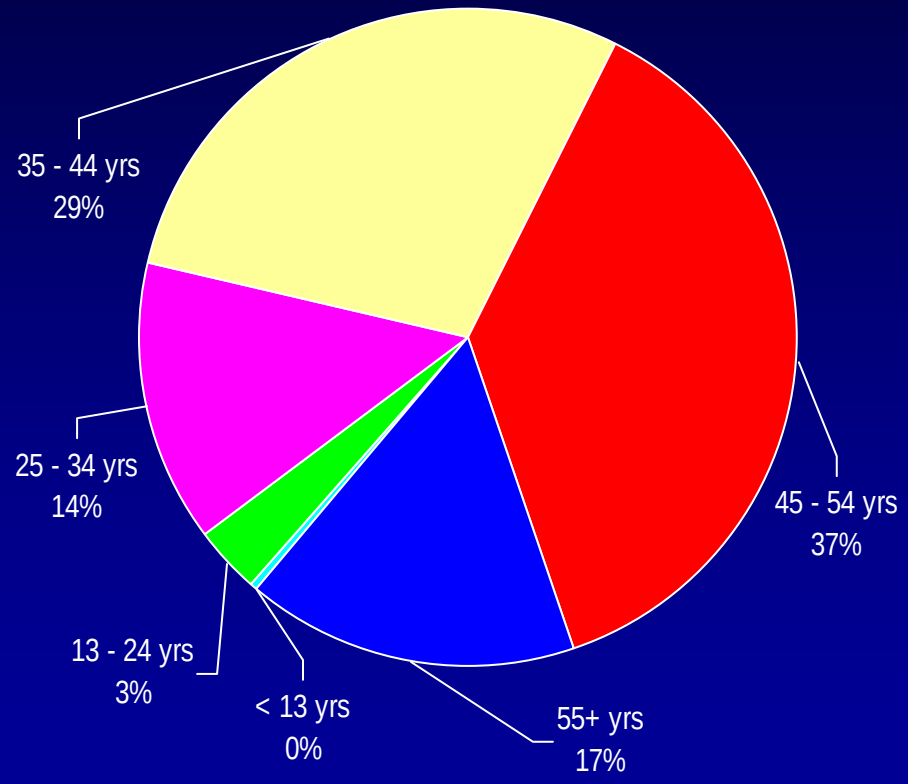


† *Age missing for 5 people .*

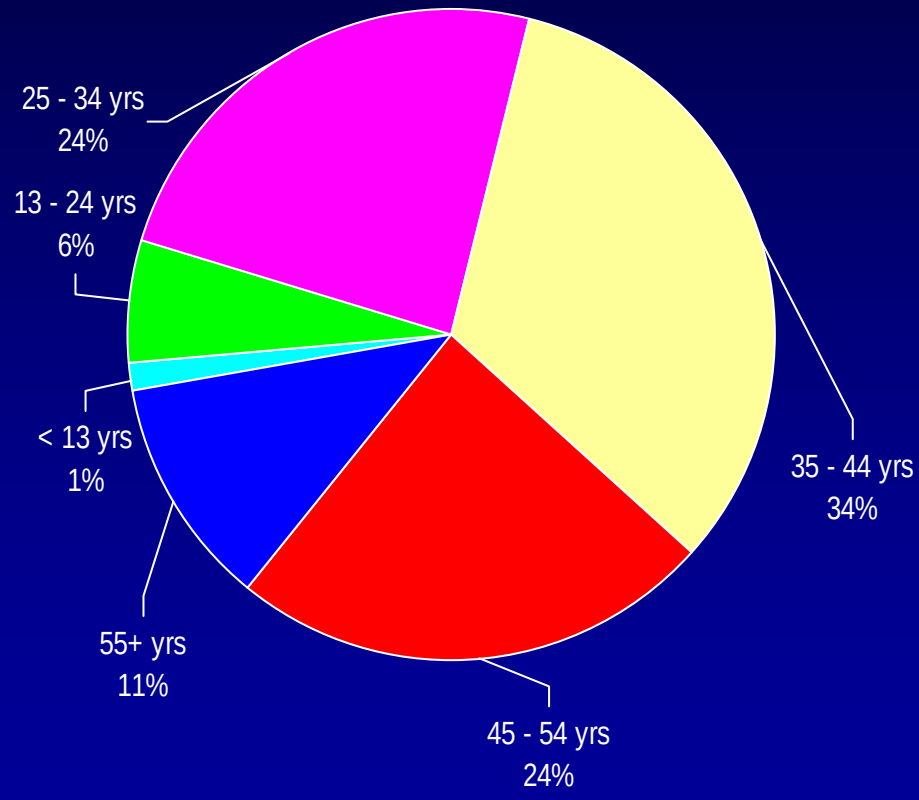
Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota by Age† and Gender, 2009

Males (n = 5,028)



Females (n = 1,524)



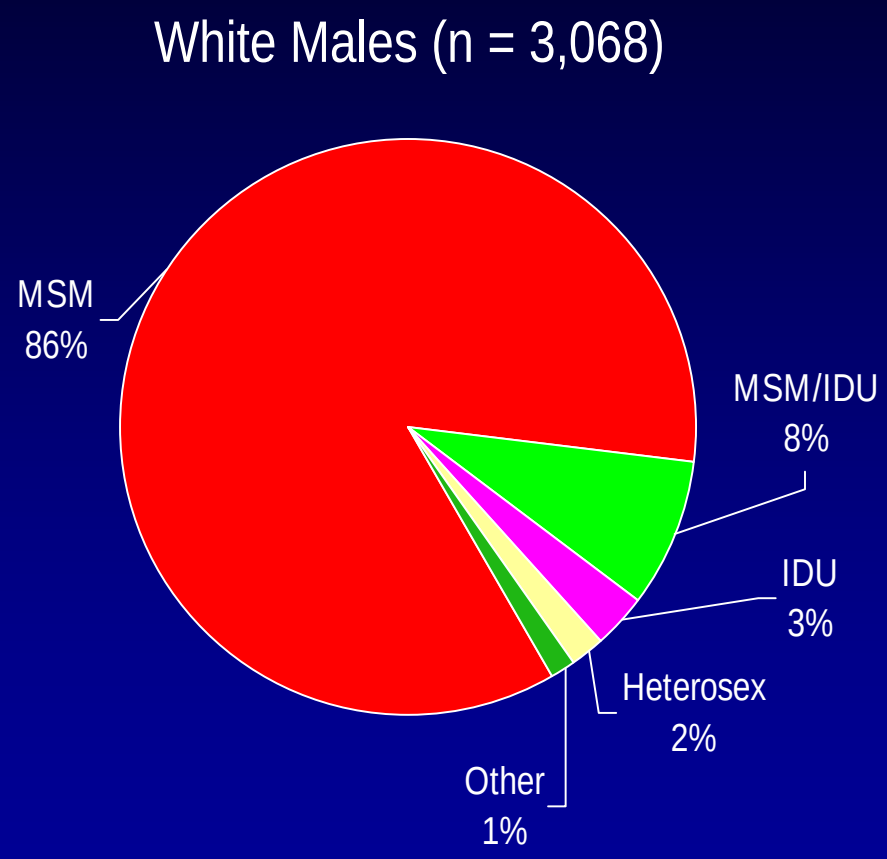
n = Number of persons

† Age missing for 5 people .

Data Source: *Minnesota HIV/AIDS Surveillance System*

Mode of Exposure

Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2009



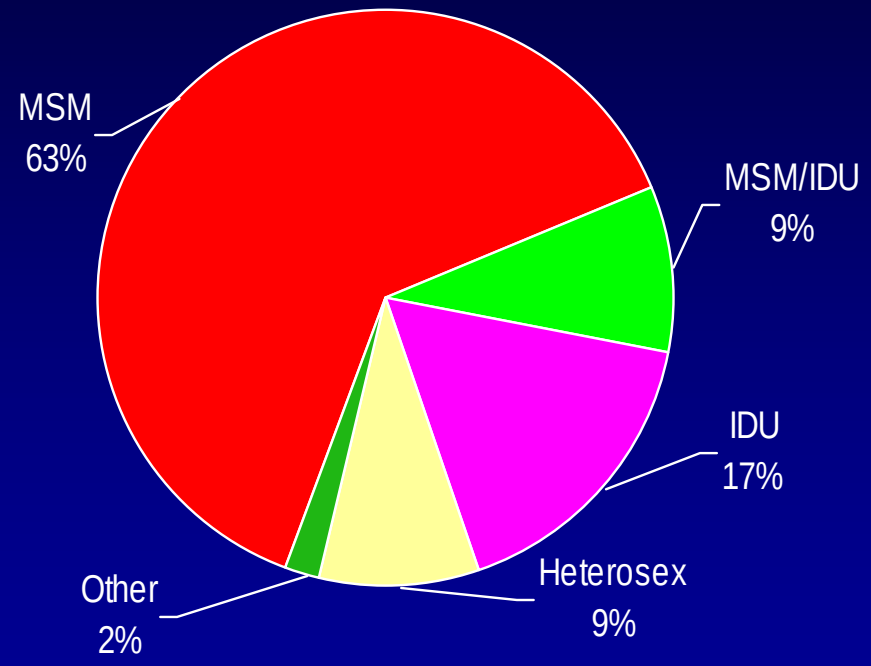
n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
IDU = Injecting drug use Heterosex = Heterosexual contact

† 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†, 2009

African American Males†† (n = 969)



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

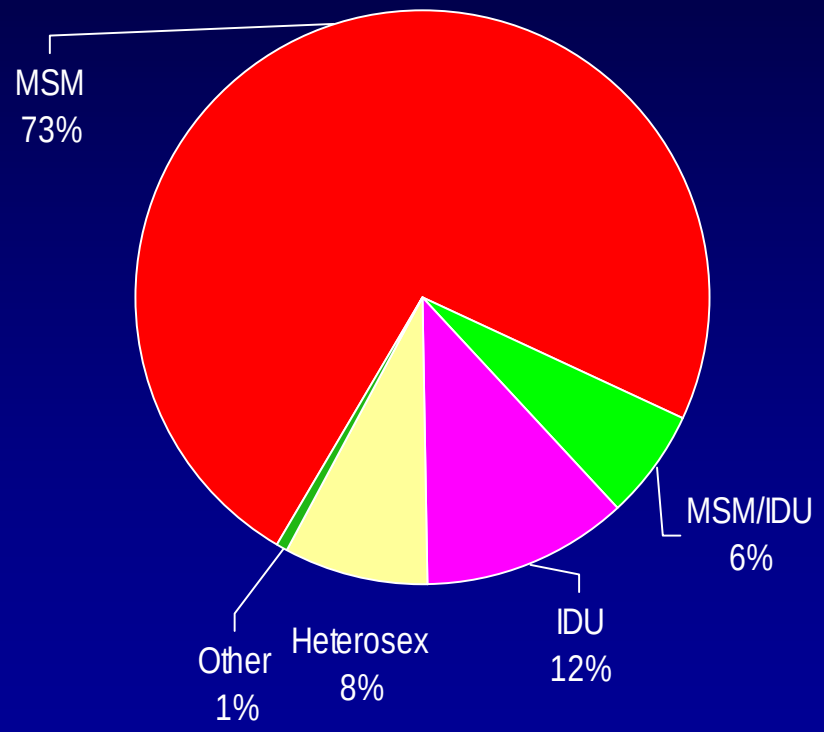
† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

†† *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†, 2009

Hispanic Males (n = 432)



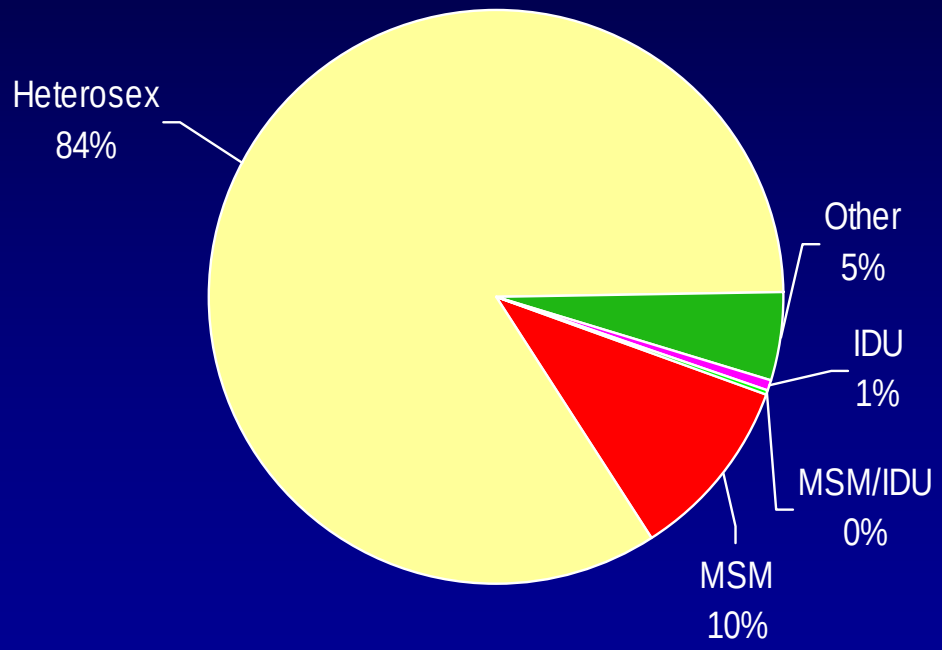
n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
IDU = Injecting drug use Heterosex = Heterosexual contact

† 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†, 2009

African-born Males†† (n = 374)



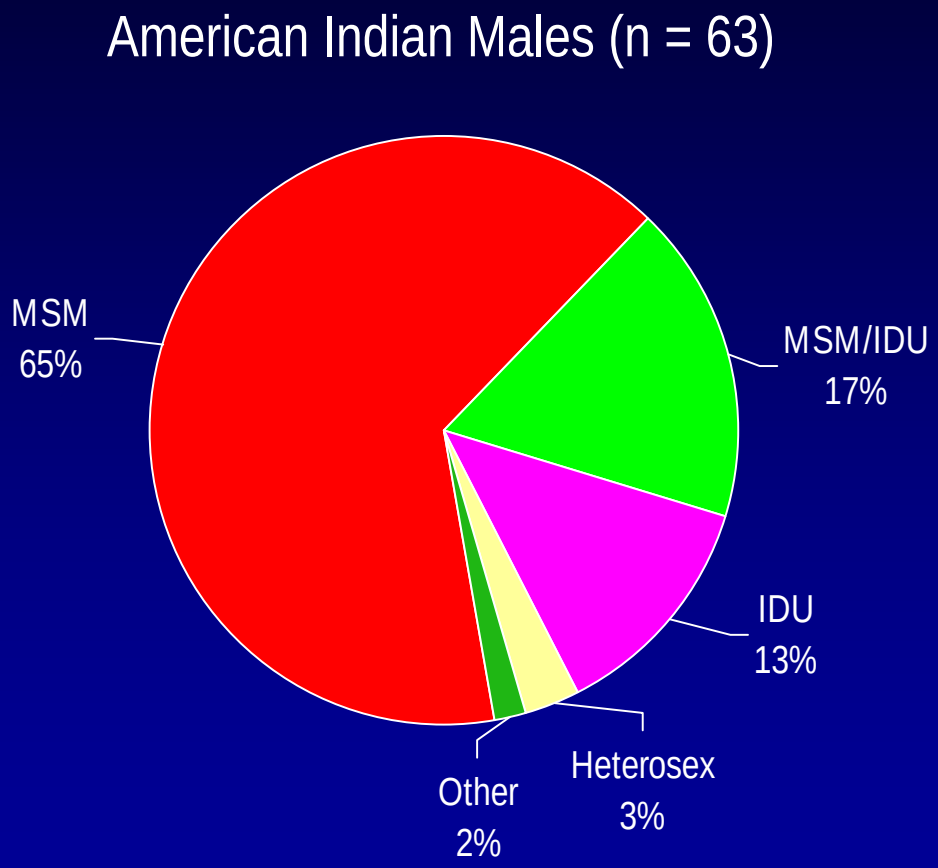
n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
Heterosex = Heterosexual contact

† 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†, 2009

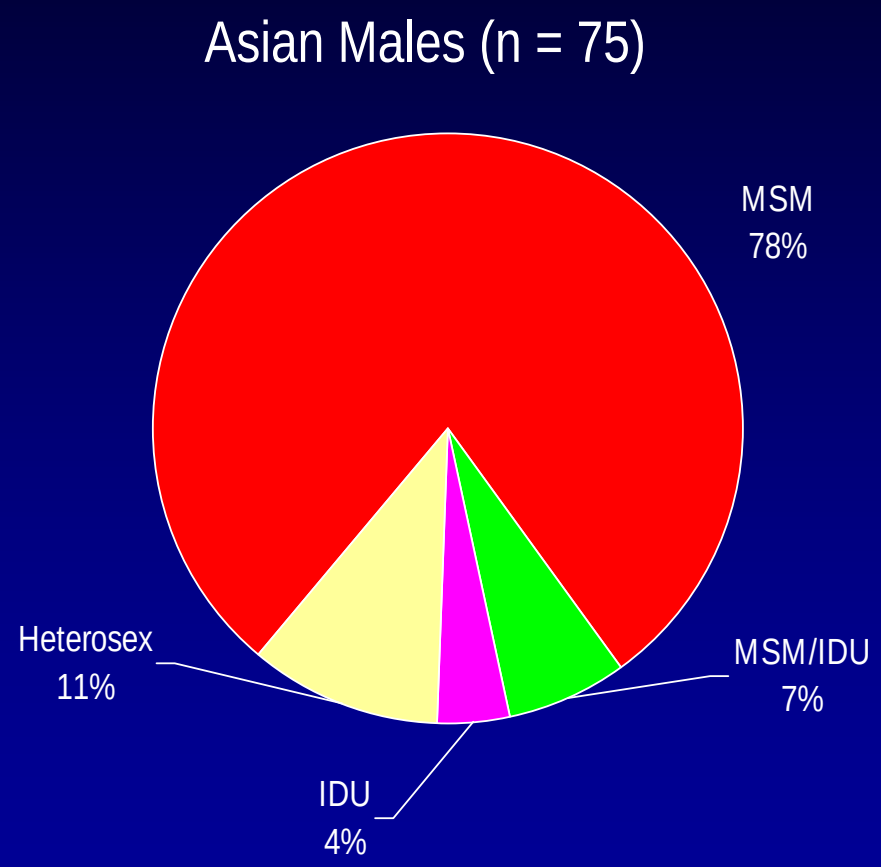


n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
IDU = Injecting drug use Heterosex = Heterosexual contact

† 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†, 2009



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

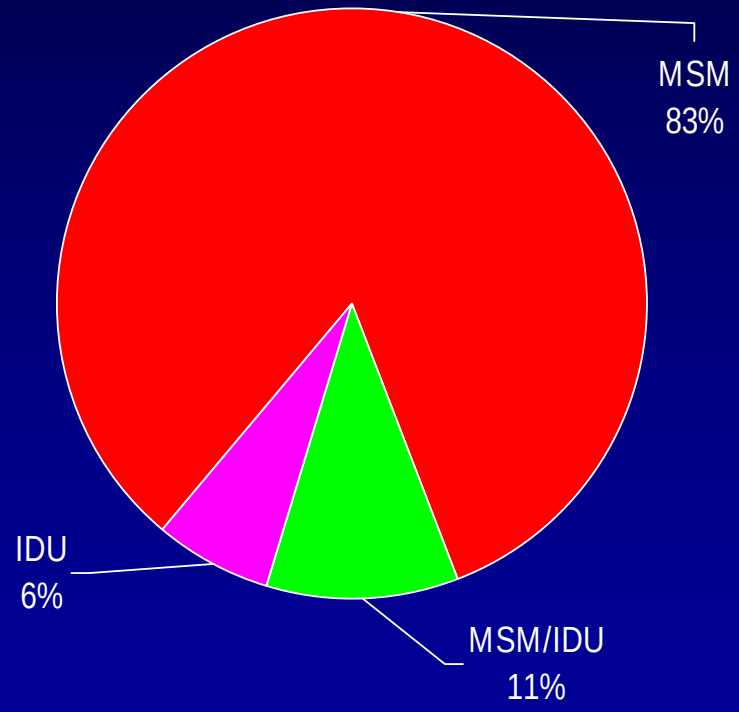
† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2009

Multi-racial Males (n = 47)

CAUTION: Small number of cases – interpret carefully.



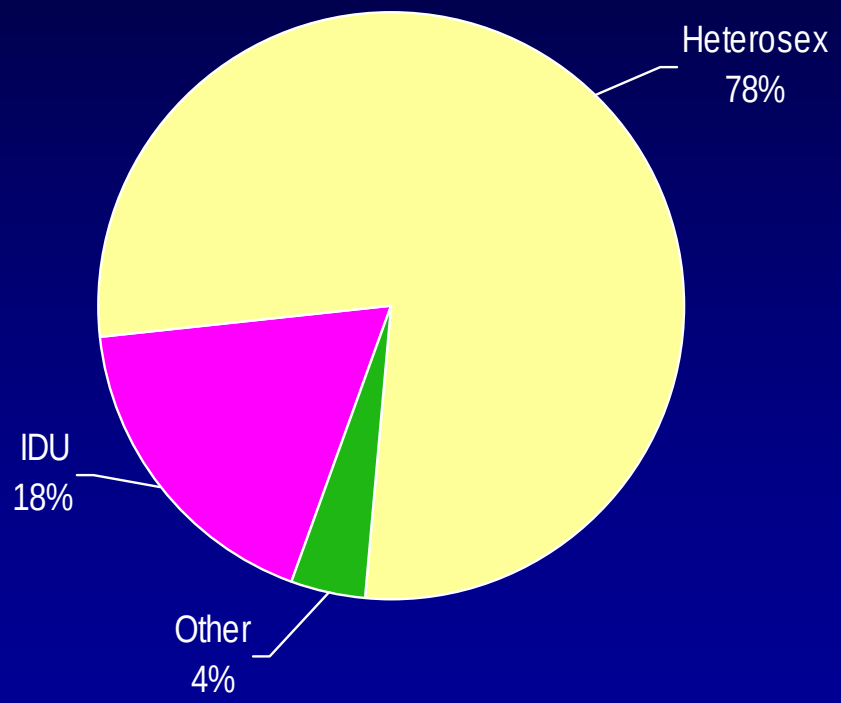
n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

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.

Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2009

African American Females†† (n = 461)



n = Number of persons

IDU = Injecting drug use

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

Heterosex = Heterosexual contact

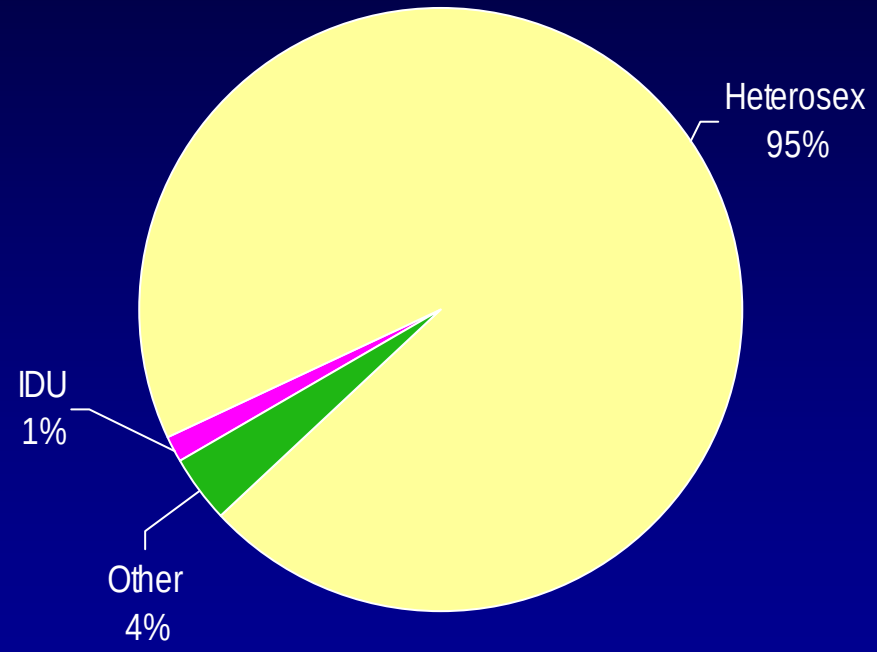
† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

†† *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†, 2009

African-born Females†† (n = 457)



n = Number of persons

IDU = Injecting drug use

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

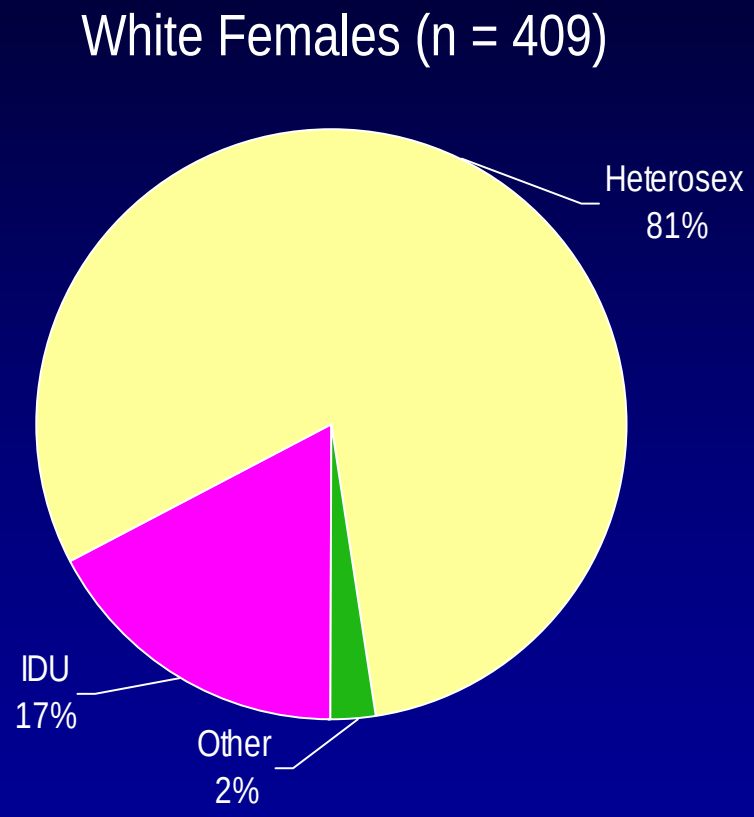
Heterosex = Heterosexual contact

† 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†, 2009



n = Number of persons

IDU = Injecting drug use

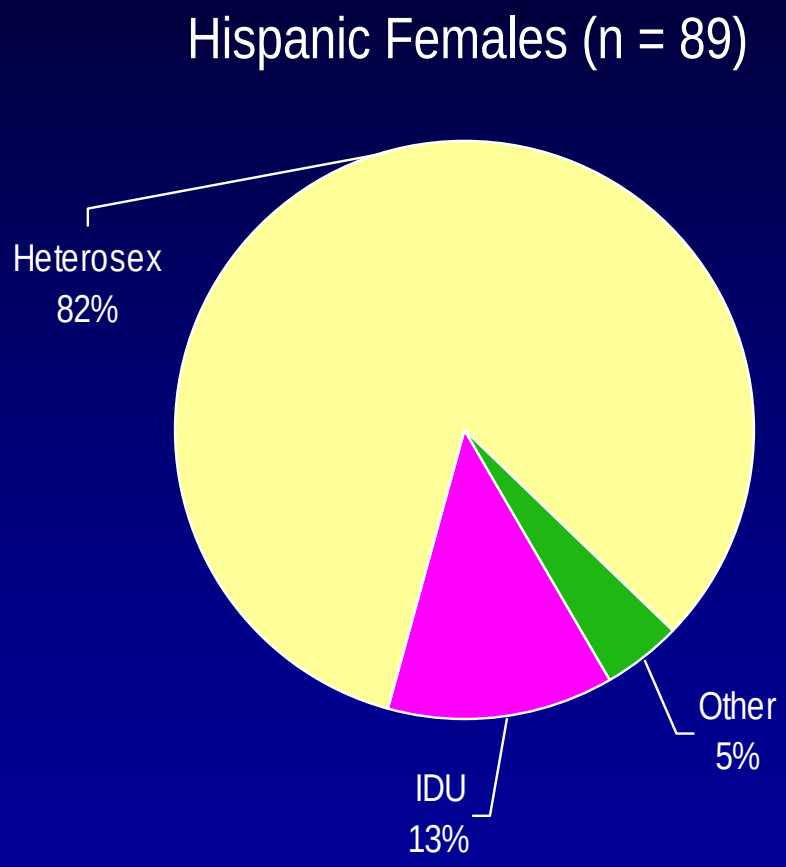
Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

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†, 2009

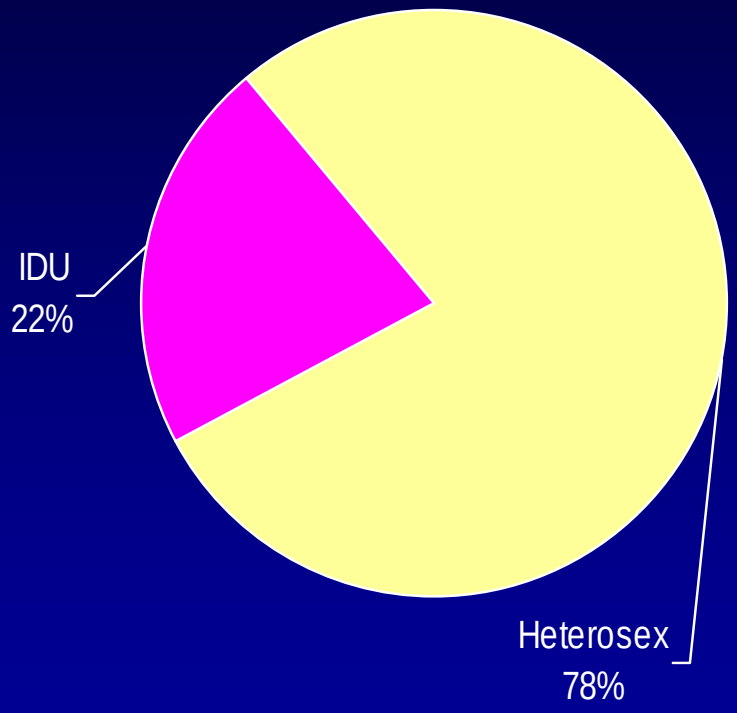


n = Number of persons
IDU = Injecting drug use
Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
Heterosex = Heterosexual contact

† 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†, 2009

American Indian Females (n = 51)



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

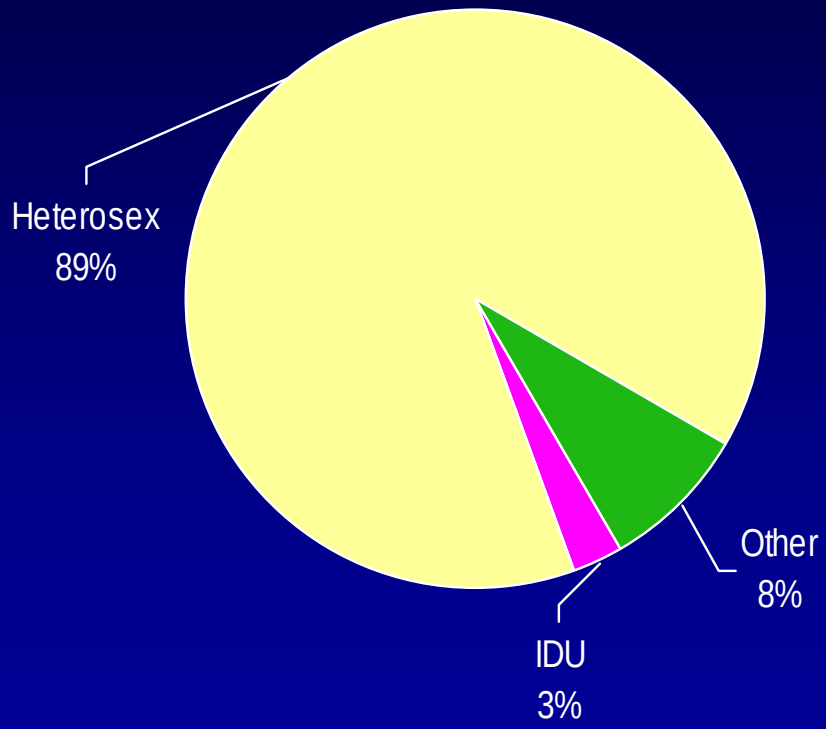
† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2009

Asian Females (n = 36)

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

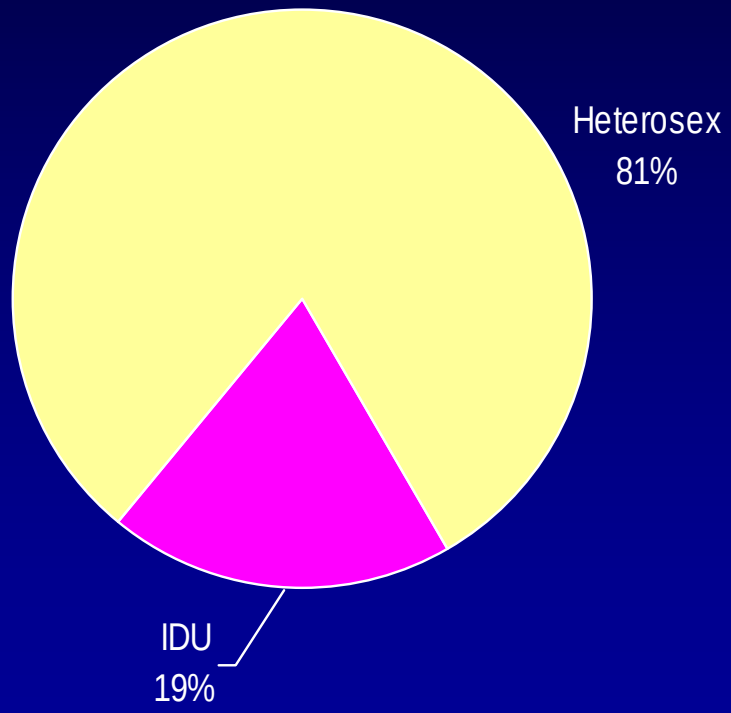
† Mode of Exposure has been estimated using the following proportions: 95% - Heterosexual, 5% - Other.
For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2009

Multi-racial Females (n = 21)

CAUTION: Small number of cases – interpret carefully.



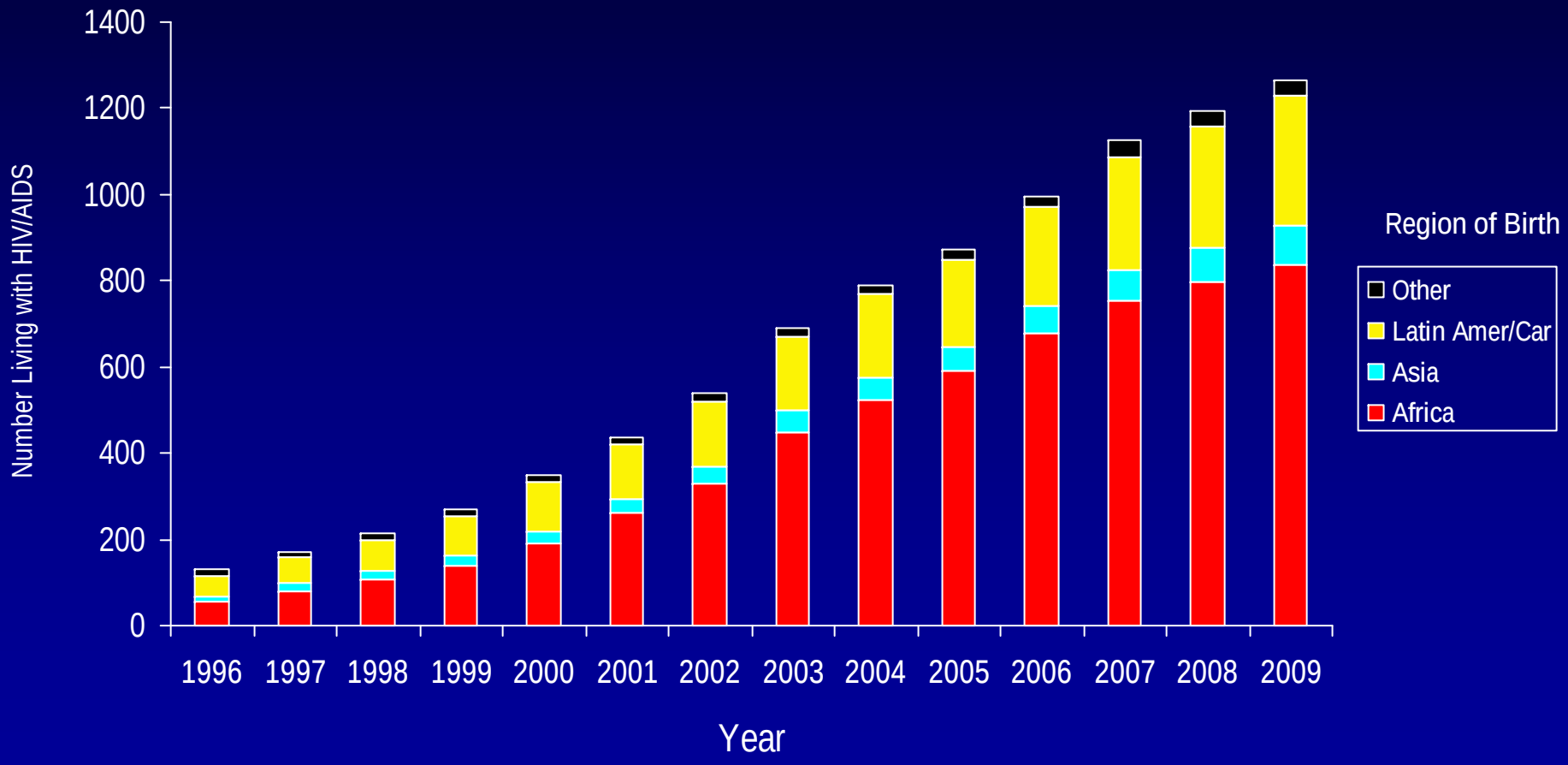
n = Number of persons
IDU = Injecting drug use
Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
Heterosex = Heterosexual contact

† 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, 1996-2009



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

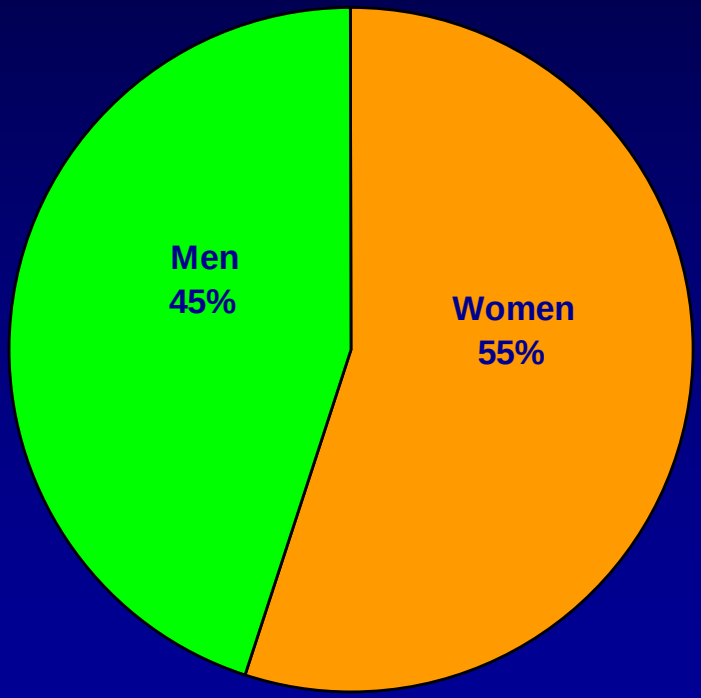
Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV/AIDS in Minnesota: Annual Review

African-Born† Persons Living with HIV/AIDS Compared to Other Minnesota Cases by Gender, 2009

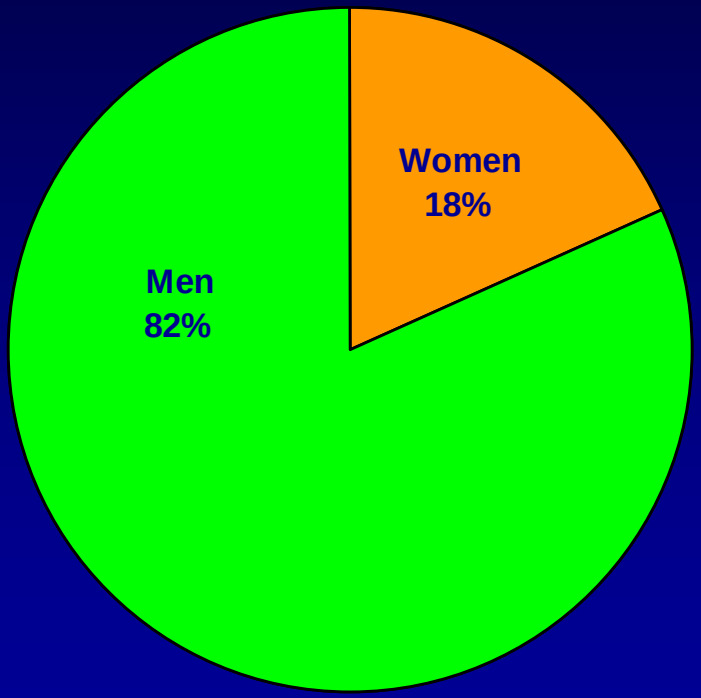
African-born Persons

Total Number = 836



U.S.-born Cases

Total Number = 5,286



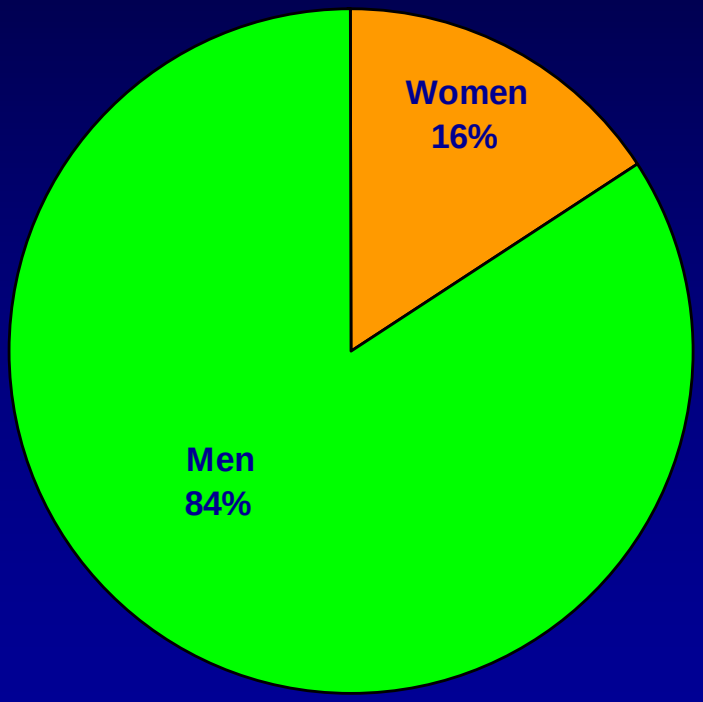
† *Includes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program and other refugee/immigrant programs and 4 White African-born persons*

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, 2009

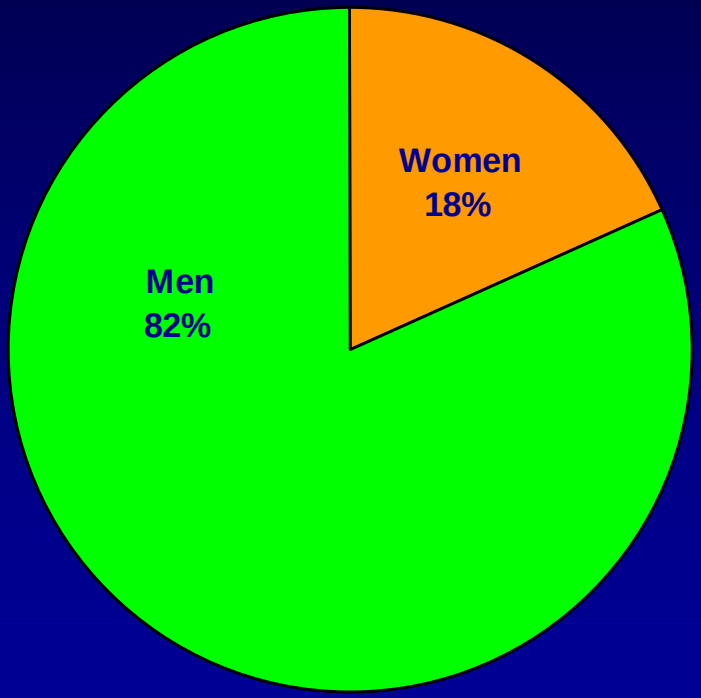
Latin/Caribbean Persons

Total Number = 303



U.S.-born Cases

Total Number = 5,286



† *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, 2009

- **Ethiopia/Oromia** (n=199)
- **Mexico** (n=174)
- **Kenya** (n=114)
- **Liberia** (n=113)
- **Cameroon** (n=72)
- **Somalia** (n=69)
- **Other^** (n=536)

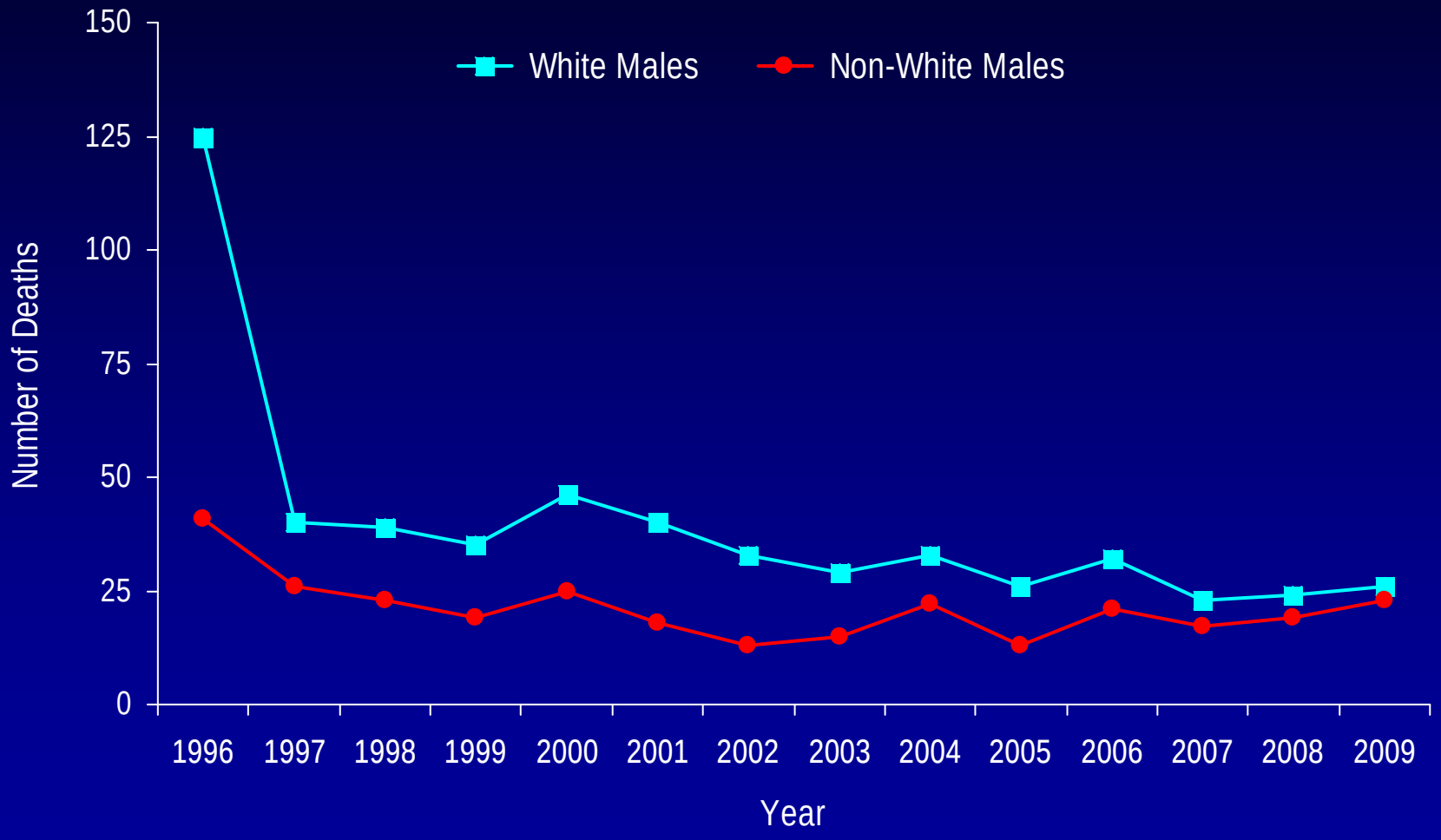
† Includes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

^ Includes 86 additional countries.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Mortality

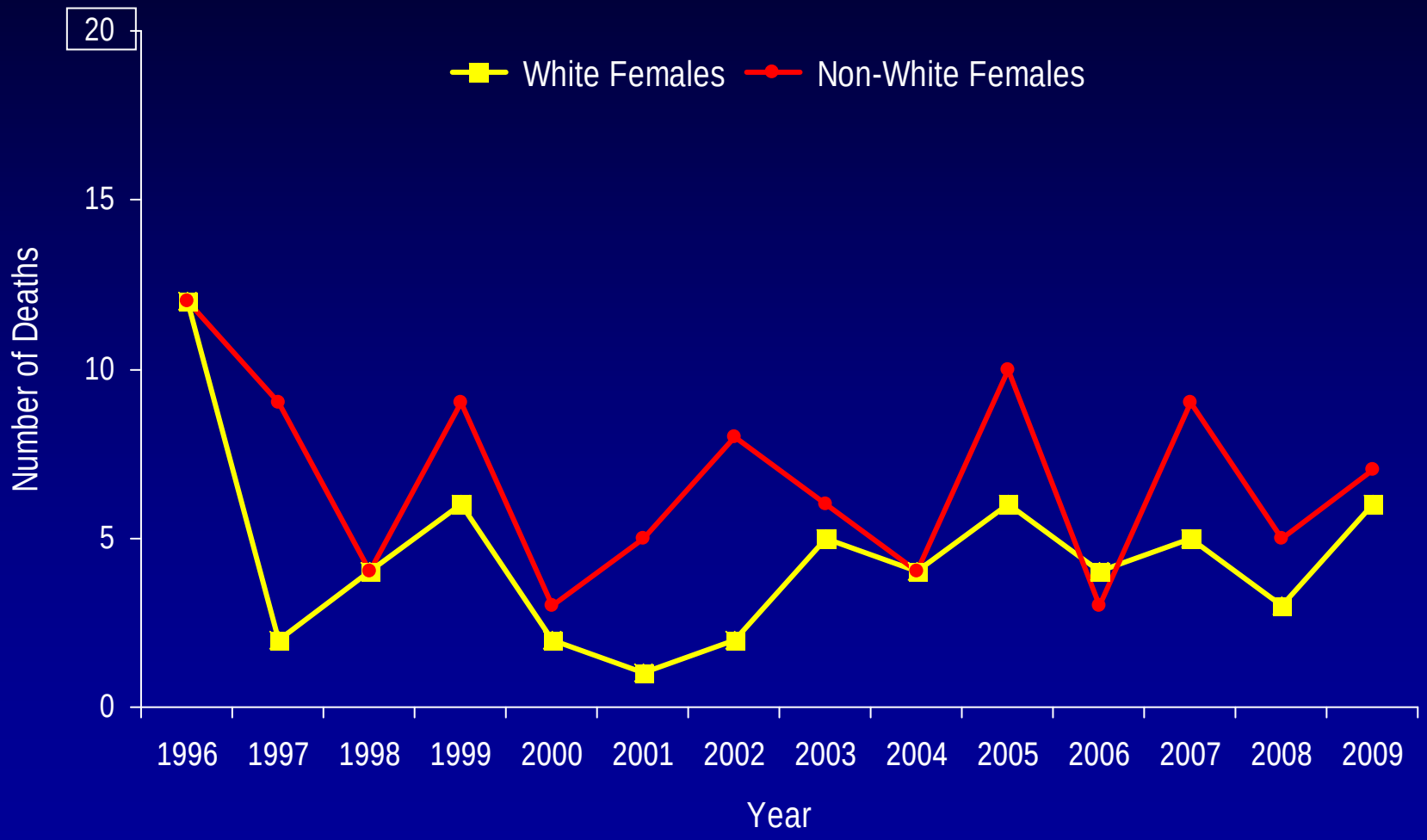
Reported Deaths* among Male MN AIDS Cases 1996-2009



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

Data Source: *Minnesota HIV/AIDS Surveillance System*

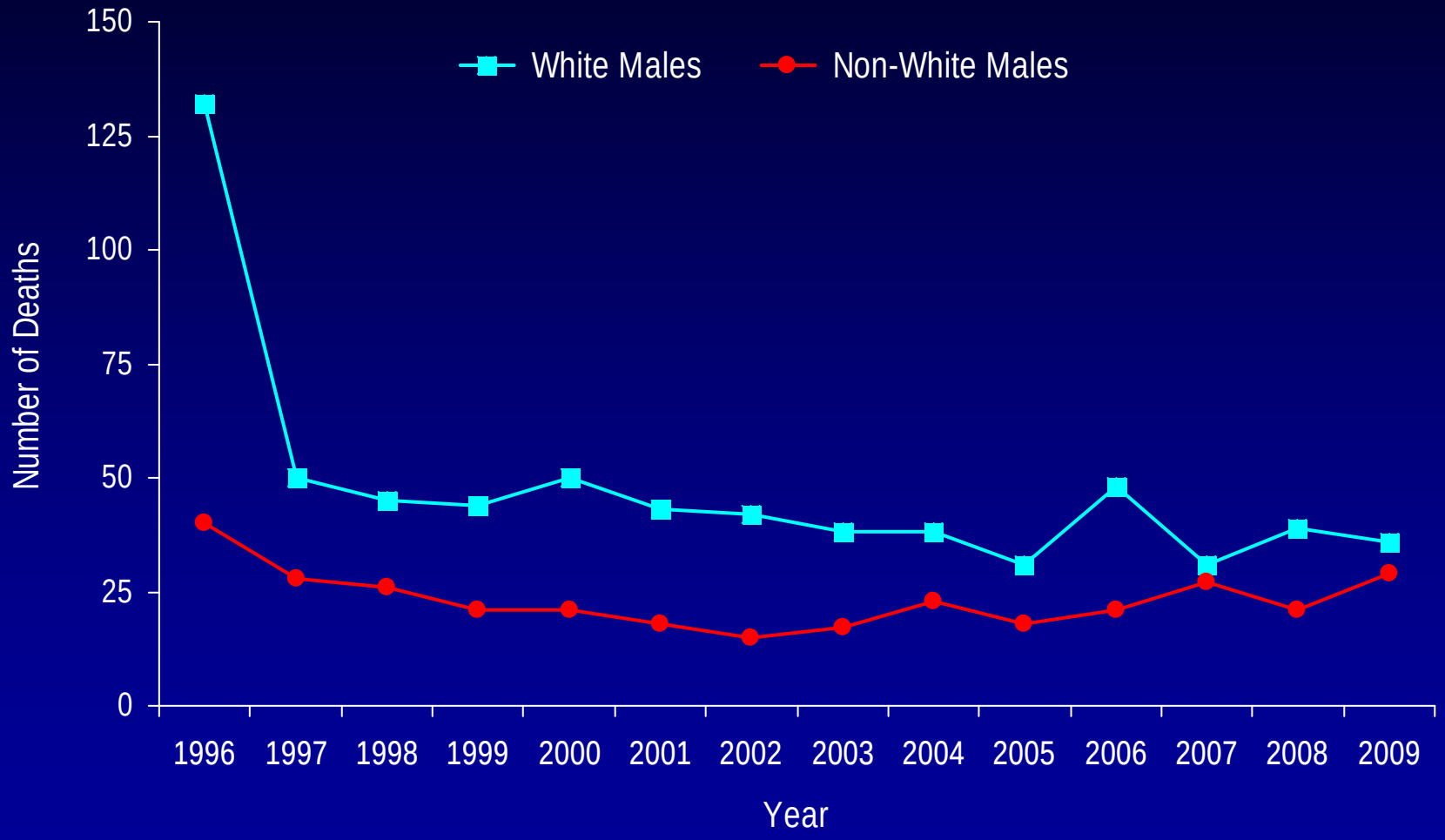
Reported Deaths* among Female MN AIDS Cases 1996-2009



** 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†, 1996-2009

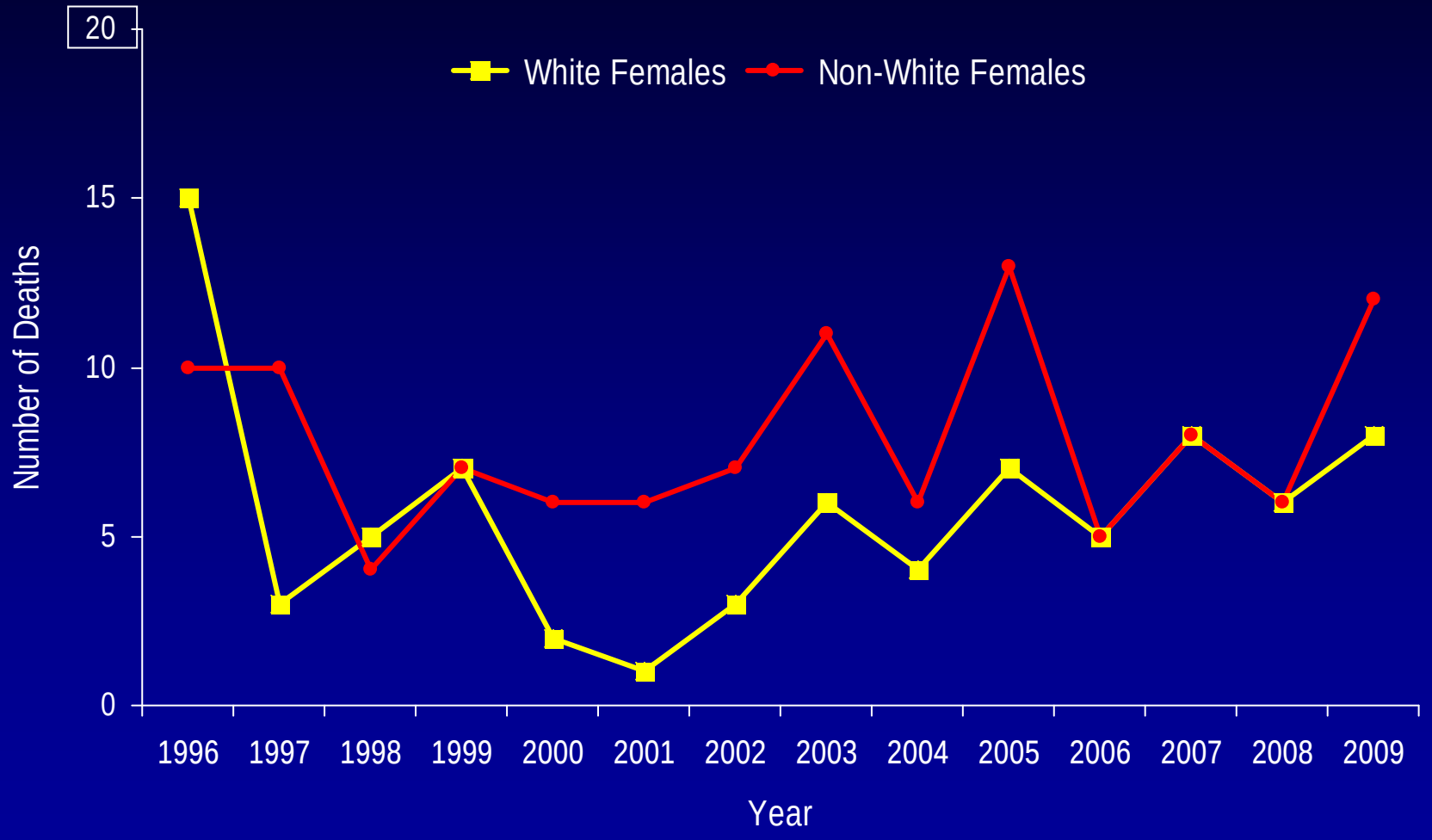


** Deaths in Minnesota among people with HIV infection regardless of location of diagnosis and cause of death.*

† *HIV (non-AIDS) or AIDS*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Reported Deaths* in Minnesota among Females with HIV Infection†, 1996-2009



** 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, 2009

INTRODUCTION

The *Minnesota HIV/AIDS Prevalence & Mortality Report, 2009* 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, 2009 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 2006, between 1,056,400 and 1,156,400 persons in the United States were living with HIV/AIDS, with 21% 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 455,636 in 2006.[2]

PERSONS LIVING WITH HIV/AIDS IN MINNESOTA

Overview of HIV/AIDS in Minnesota, 1990-2009

The number of persons assumed to be living with HIV/AIDS in Minnesota has been steadily increasing over time. As of December 31, 2009, 6,552 persons known to be living with HIV/AIDS resided in Minnesota, a 5.3% increase from 2008. 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, followed by a slight decrease between 2005 and 2007. The number of AIDS cases increased again slightly in 2008, however in 2009 the number decreased again to that seen in 2007..

Living HIV/AIDS Cases, 2009

Among the estimated 6,552 prevalent cases in Minnesota, 3,469 are diagnosed with HIV (non-AIDS) and 3,083 are diagnosed with AIDS. The majority (86%) of prevalent cases reside in the seven-county metropolitan area surrounding the Twin Cities

[1] Centers for Disease Control and Prevention. *HIV Prevalence Estimates – US 2006*, MMWR 2009; 57(39):1073-76
[2] Centers for Disease Control and Prevention. *HIV/AIDS Surveillance Report, 2007*. Vol 19.

of Minneapolis and St. Paul (Hennepin, Ramsey, Anoka, Carver, Dakota, Scott, and 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, 61% of male cases are White, 19% African American, 9% Hispanic, 7% African-born, 1% American Indian, and 1% Asian/Pacific Islander. In total, 39% of males living with HIV/AIDS are non-White whereas only 11% of the general male population is Non-White. Among female cases, the distribution is even more skewed toward women of color: 27% White, 30% African American, 30% African-born, 6% Hispanic, 3% American Indian, and 2% Asian/Pacific Islander. Thus, 73% 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

Seventy-nine percent (79%) of persons living with HIV/AIDS in 2009 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 six (6) 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 2009, persons 50 and older accounted for 29 percent of living cases compared to 16 percent in 2002.

Mode of Exposure

In 2009, 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 94% of White male cases, it accounts for an estimated 64% of non-White male cases. The estimated percent of male cases that identified IDU as a risk factor was particularly high for African Americans (17%), Hispanics (12%), and American Indians (13%). These percentages among Asian, White, and African-born males were estimated at 4%, 3%, and 1%, 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 (22%) followed by African Americans, Whites, and Hispanics with 18%, 17%, and 13%, respectively. Among Asian females, heterosexual contact accounted for an estimated 86% of cases, and IDU for an estimated 3%. However, the number of prevalent cases among Asian/Pacific Islander females is quite small (n=36), so the results need to be interpreted very carefully.

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 46% of females. Additionally, among males only 6% of White prevalent cases have unspecified risk, compared to 84% of African-born, 33% of Asian, and 23% 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 (29% unspecified) and women of color is not as striking, except for African-born (77% unspecified) and Asian (61%) females. See

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

Special Populations

Between 1990 and 2009, 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 2009, the total number of foreign-born persons living with HIV/AIDS in Minnesota was 1,277, a 7% increase from 2008. 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 55% of those living with HIV/AIDS in Minnesota. Among Asian-born cases, women account for 35% of cases. The gender distribution among cases born in Latin America, the Caribbean and Other countries is similar to that of U.S.-born cases, where 18% and 25% of prevalent cases are among women, respectively.

Six countries (Cameroon, Ethiopia, Kenya, Liberia, Mexico, and Somalia) account for a majority (58%) of living foreign-born cases, however there are over 90 countries represented among the 1,277 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 has remained relatively constant between 1997 and 2009. The largest declines in mortality were observed among White males in the mid 1990s. In recent

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

years, the number of deaths among Minnesota AIDS cases has been comparable between White and non-White males and between White and non-White females. In 2009, a total of 62 deaths were reported among AIDS cases diagnosed in Minnesota. Of these deaths, thirteen (13) were among women and 49 among men. The number of deaths[4] reported in Minnesota for those living with HIV infection (HIV (non-AIDS) or AIDS) was slightly higher (85 deaths) than the number of deaths among MN AIDS cases.

[4] Includes all deaths to people living with HIV infection in Minnesota, 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. CDC will release a RIDR report every 6 months which will affect the ownership of Minnesota cases. While the Surveillance staff will always inquire about previous diagnosis and will check with CDC to determine if the case has been previously reported, it is possible that cases we believe to have been initially diagnosed in Minnesota were in fact diagnosed in another state Below is an example of the changes from a RIDR report from the report issued for cases newly reported from July 1, 2006 through June 30, 2007 compared to cases reported since the inception of AIDS surveillance through June 30, 2007. Through this project, MDH identified 16 cases of HIV infection (including AIDS at first report) and 7 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 78 cases that no longer live in Minnesota and added one AIDS diagnosis.

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, 2009							
Group	**HIV (non-AIDS)**		**AIDS**		***Total***		***HIV/AIDS***
	Cases	**%**	**Cases**	**%**	***Cases***	***%***	***Prevalence Rate***
Residence[III]							
Minneapolis	1,386	40%	1,190	39%	*2,576*	*39%*	*673.3*
St. Paul	478	14%	468	15%	*946*	*14%*	*329.4*
Suburban	1,102	32%	964	31%	*2,066*	*32%*	*104.8*
Greater Minnesota	488	14%	452	15%	*940*	*14%*	*41.3*
Total	*3,454*	*100%*	*3,074*	*100%*	*6,528*	*100%*	*133.2*
Age[IV]							
<13 yrs	29	1%	6	<1%	*35*	*1%*	*3.8*
13-19 yrs	41	1%	12	<1%	*53*	*1%*	*10.1*
20-24 yrs	168	5%	38	1%	*206*	*3%*	*63.9*
25-29 yrs	323	9%	129	4%	*452*	*7%*	*141.3*
30-34 yrs	390	11%	230	7%	*620*	*9%*	*175.5*
35-39 yrs	477	14%	349	11%	*826*	*13%*	*200.2*
40-44 yrs	581	17%	535	17%	*1,116*	*17%*	*271.1*
45-49 yrs	614	18%	725	24%	*1,339*	*20%*	*367.6*
50-54 yrs	429	12%	467	15%	*896*	*14%*	*297.2*
55-59 yrs	233	7%	301	10%	*534*	*8%*	*235.4*
60+ yrs	179	5%	291	9%	*470*	*7%*	*60.9*
Total	*3,464*	*100%*	*3,083*	*99%*	*6,552*	*100%*	*126.5*
Gender							
Male	2,605	75%	2,423	79%	*5,028*	*77%*	*206.4*
Female	864	25%	660	21%	*1,524*	*23%*	*61.4*
Total	*3,469*	*100%*	*3,083*	*100%*	*6,552*	*100%*	*133.2*
StateTotals	*3,469*		*3,083*		*6,552*		*133.2*

[I] Cases reported to the MDH, assumed to be alive, and currently residing in Minnesota as of 12/31/09.

[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 15 persons living with HIV and 9 persons living with AIDS.

[IV] Age missing for 5 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 118 state prisoners and 160 refugees in the HIV-Positive Refugee Resettlement Program and 98 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, 2009

	Males				Females				*Total*				
Group	**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	1,675	1,393	*3,068*	*61%*	235	174	*409*	*27%*	*1,910*	*1,567*	*3,477*	*53%*	*80.4*
Black[II], African-American	475	494	*969*	*19%*	256	205	*461*	*30%*	*731*	*699*	*1,430*	*22%*	*852.3*
Black[II], African-born	181	193	*374*	*7%*	262	195	*457*	*30%*	*443*	*388*	*831*	*13%*	*1,662 - 2,362*
Hispanic	177	255	*432*	*9%*	50	39	*89*	*6%*	*227*	*294*	*521*	*8%*	*363.4*
American Indian	27	36	*63*	*1%*	25	26	*51*	*3%*	*52*	*62*	*114*	*2%*	*140.6*
Asian/PI	43	32	*75*	*1%*	21	15	*36*	*2%*	*64*	*47*	*111*	*2%*	*66.0*
Other[II]	27	20	*47*	*1%*	15	6	*21*	*1%*	*42*	*26*	*68*	*1%*	*x*
Total	*2,605*	*2,423*	*5,028*	*100%*	*864*	*660*	*1,524*	*100%*	*3,469*	*3,083*	*6,552*	*100%*	*133.2*
Mode of Exposure													
MSM	1,795	1,523	*3,318*	*66%*	--	--	--	--	*1,795*	*1,523*	*3,318*	*51%*	*x*
IDU	118	153	*271*	*5%*	66	96	*162*	*11%*	*184*	*249*	*433*	*7%*	*x*
MSM/IDU	170	179	*349*	*7%*	--	--	--	--	*170*	*179*	*349*	*5%*	*x*
Heterosexual (Total)	(81)	(104)	(185)	*4%*	(614)	(467)	(1081)	*71%*	*(695)*	*(571)*	*(1266)*	*19%*	*x*
with IDU	26	43	69	--	73	85	158	--	99	128	227	--	*x*
with Bisexual Male	-	-	-	--	46	39	85	--	46	39	85	--	*x*
with Hemophiliac/other	2	2	4	--	3	1	4	--	5	3	8	--	*x*
with HIV+	53	59	112	--	225	132	357	--	278	191	469	--	*x*
Hetero, unknown risk[IV]	0	0	0	--	267	210	477		267	210	477		
Perinatal	14	13	*27*	*1%*	32	7	39	*3%*	46	20	66	*1%*	*x*
Other	11	24	*35*	*1%*	3	2	*5*	*0%*	*14*	*26*	*40*	*1%*	*x*
Unspecified	250	278	*528*	*11%*	63	48	*111*	*7%*	*313*	*326*	*639*	*10%*	*x*
No Interview, Unspecified	166	149	*315*	*6%*	86	40	*126*	*8%*	*252*	*189*	*441*	*7%*	*x*
Total	*2,605*	*2,423*	*5,028*	*100%*	*864*	*660*	*1,524*	*100%*	*3,469*	*3,083*	*6,552*	*100%*	*133.2*

[I] Cases reported to the MDH, assumed to be alive and currently residing in Minnesota as of 12/31/09.

[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 118 state prisoners and 160 refugees in the HIV-Positive Refugee Resettlement Program and an additional 98 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, 2009

County[II]	HIV (non-AIDS)	AIDS	*Total*	*Rate[III]*
Aitkin	3	2	*5*	*32.7*
Anoka	134	131	*265*	*88.9*
Becker	3	7	*10*	*33.3*
Beltrami	9	9	*18*	*45.4*
Benton	5	10	*15*	*43.8*
Big Stone	0	0	*0*	-
Blue Earth	22	12	*34*	*60.8*
Brown	4	4	*8*	*29.7*
Carlton	5	6	*11*	*34.7*
Carver	16	22	*38*	*54.1*
Cass	5	9	*14*	*51.6*
Chippewa	2	2	*4*	-
Chisago	7	5	*12*	*29.2*
Clay	17	12	*29*	*56.6*
Clearwater	2	1	*3*	-
Cook	0	2	*2*	-
Cottonwood	1	2	*3*	-
Crow Wing	3	10	*13*	*23.6*
Dakota	177	127	*304*	*85.4*
Dodge	1	4	*5*	*28.2*
Douglas	4	8	*12*	*36.6*
Faribault	2	7	*9*	*55.6*
Fillmore	4	4	*8*	*37.9*
Freeborn	9	9	*18*	*55.2*
Goodhue	8	9	*17*	*38.5*
Grant	3	3	*6*	*95.4*
Hennepin	1,970	1,685	*3,655*	*327.5*
Houston	1	1	*2*	-
Hubbard	2	2	*4*	-
Isanti	13	11	*24*	*76.7*
Itasca	3	9	*12*	*27.3*
Jackson	6	2	*8*	*71.0*
Kanabec	3	1	*4*	-
Kandiyohi	6	9	*15*	*36.4*
Kittson	0	0	*0*	-
Koochiching	1	0	*1*	-
Lac Qui Parle	1	0	*1*	-
Lake	1	1	*2*	-
Lake of the Woods	0	0	*0*	-
Le Sueur	3	5	*8*	*31.5*
Lincoln	3	0	*3*	-
Lyon	6	3	*9*	*35.4*
McLeod	4	6	*10*	*28.7*
Mahnomen	1	0	*1*	-
Marshall	0	0	*0*	-
Martin	7	2	*9*	*41.3*
Meeker	3	5	*8*	*35.3*
Mille Lacs	1	3	*4*	-
Morrison	2	6	*8*	*25.2*
Mower	11	11	*22*	*57.0*
Murray	3	1	*4*	-
Nicollet	2	3	*5*	*16.8*
Nobles	10	6	*16*	*76.8*
Norman	0	1	*1*	-
Olmsted	63	36	*99*	*79.7*
Otter Tail	2	4	*6*	*10.5*
Pennington	1	1	*2*	-
Pine	3	2	*5*	*18.8*
Pipestone	0	0	*0*	-
Polk	5	6	*11*	*35.1*
Pope	3	1	*4*	-
Ramsey	556	542	*1,098*	*214.9*
Red Lake	1	0	*1*	-
Redwood	1	1	*2*	-
Renville	1	1	*2*	-
Rice	22	11	*33*	*58.2*
Rock	1	2	*3*	-
Roseau	0	0	*0*	-
St. Louis	57	60	*117*	*58.3*

Table 3. Number and Rate (per 100,000) of Persons Living with HIV (non-AIDS) and AIDS by County of Residence[I] -- Minnesota, 2009

County[II]	HIV (non-AIDS)	AIDS	*Total*	*Rate[III]*
Scott	26	34	*60*	*67.0*
Sherburne	13	17	*30*	*46.6*
Sibley	1	1	*2*	-
Stearns	26	29	*55*	*41.3*
Steele	3	2	*5*	*14.8*
Stevens	0	2	*2*	-
Swift	0	2	*2*	-
Todd	3	1	*4*	-
Traverse	1	0	*1*	-
Wabasha	3	1	*4*	-
Wadena	1	4	*5*	*36.5*
Waseca	5	2	*7*	*35.8*
Washington	49	52	*101*	*50.2*
Watonwan	2	2	*4*	-
Wilkin	0	0	*0*	-
Winona	10	4	*14*	*28.0*
Wright	15	16	*31*	*34.4*
Yellow Medicine	1	0	*1*	-
State Total[II]	*3,469*	*3,083*	*6,552*	*133.2*

[I] Cases reported to the MDH, assumed to be alive and currently residing in a Minnesota county as of 12/31/09.

[II] Residence information missing for 15 persons living with HIV and 9 persons living with AIDS. Total rate is based on all cases in the state (n=6,552)

Numbers by county exclude federal, and private prisoners, but include 160 refugees in the HIV-Positive Refugee Resettlement Program and 98 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 118. State correctional facilities are located in the following counties: Anoka, Carlton, Chisago, Goodhue, Itasca, Rice, Scott, Sherburne, 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, 1999-2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
HIV (non-AIDS)	212	190	206	224	203	196	222	248	243	240	279
AIDS[II]	161	171	145	176	192	248	214	193	182	192	184
AIDS deaths	69	76	64	56	55	63	55	60	54	51	62
PLWHA	3,790	4,046	4,331	4,598	4,895	5,002	5,233	5,566	5,950	6,221	6,552
All deaths	79	79	68	67	72	70	69	79	74	72	85

[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, 2008 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 2009[I]				
Year	**Cases Diagnosed**	**Cases Known to be Dead[II]**	**Case-Fatality Rate[III]**	**Deaths Occurring in this Interval**
1982-1999	3,532	2,417	68%	2,055
2000	171	30	18%	76
2001	145	20	14%	64
2002	176	30	17%	56
2003	192	32	17%	55
2004	248	37	15%	63
2005	214	29	14%	55
2006	193	13	7%	60
2007	182	21	12%	54
2008	192	18	9%	51
2009	184	5	3%	62
Cumulative Total	5,429	2,652	49%	2,651

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

[II] Cases known to be dead (by any cause) as of 12/31/2009. 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.