HIV Surveillance Report, 2012

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, 2012* 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 2012 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 = 104).

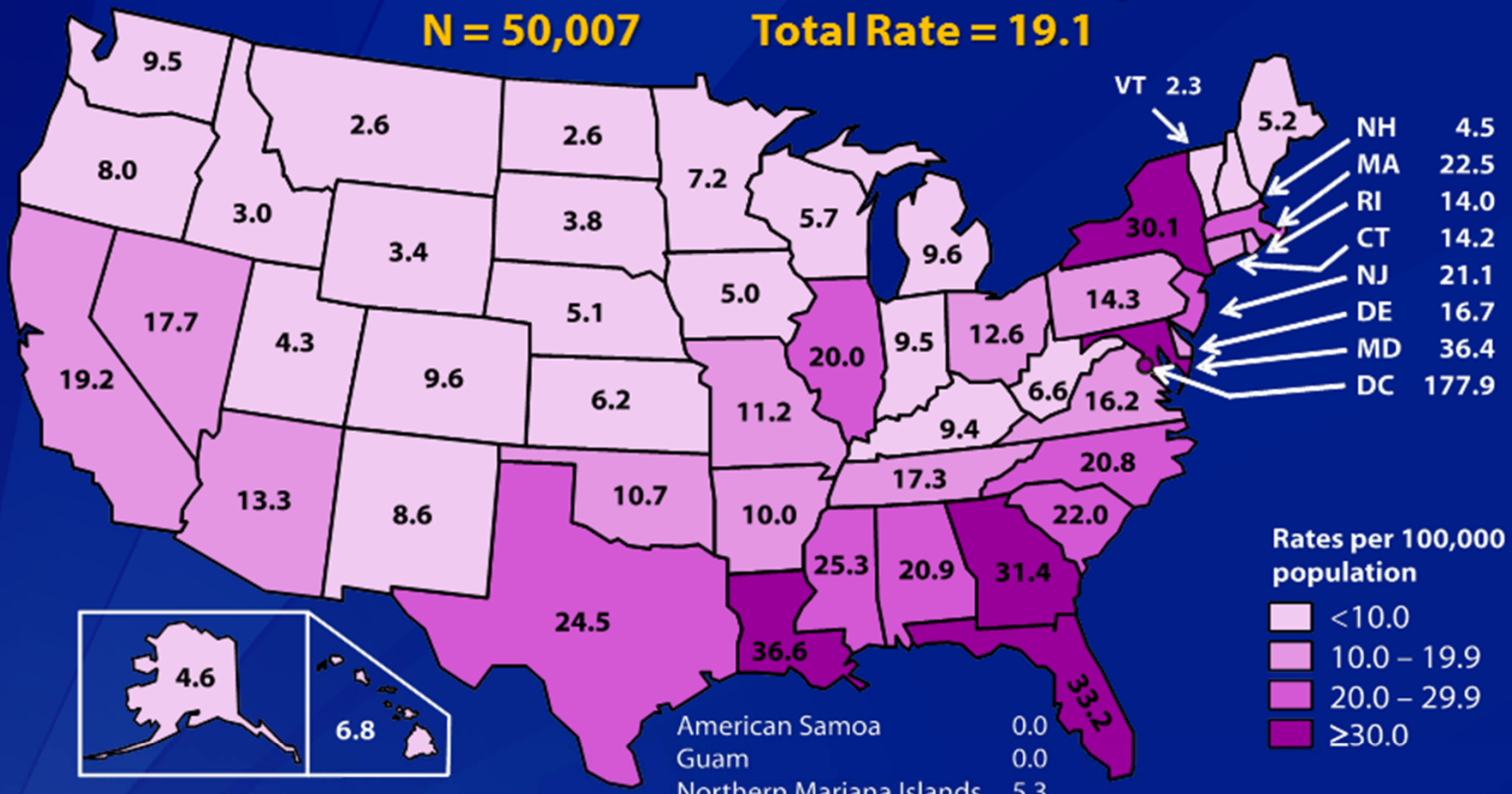
- Data analyses for new infections exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program (number of primary HIV+ refugees in this program living in MN as of December 31, 2012= 166), as well as, other refugees/immigrants reporting a positive test prior to their arrival in Minnesota (n=154).

- 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

Rates of Diagnoses of HIV Infection among Adults and Adolescents, 2011—United States and 6 Dependent Areas

N = 50,007 Total Rate = 19.1

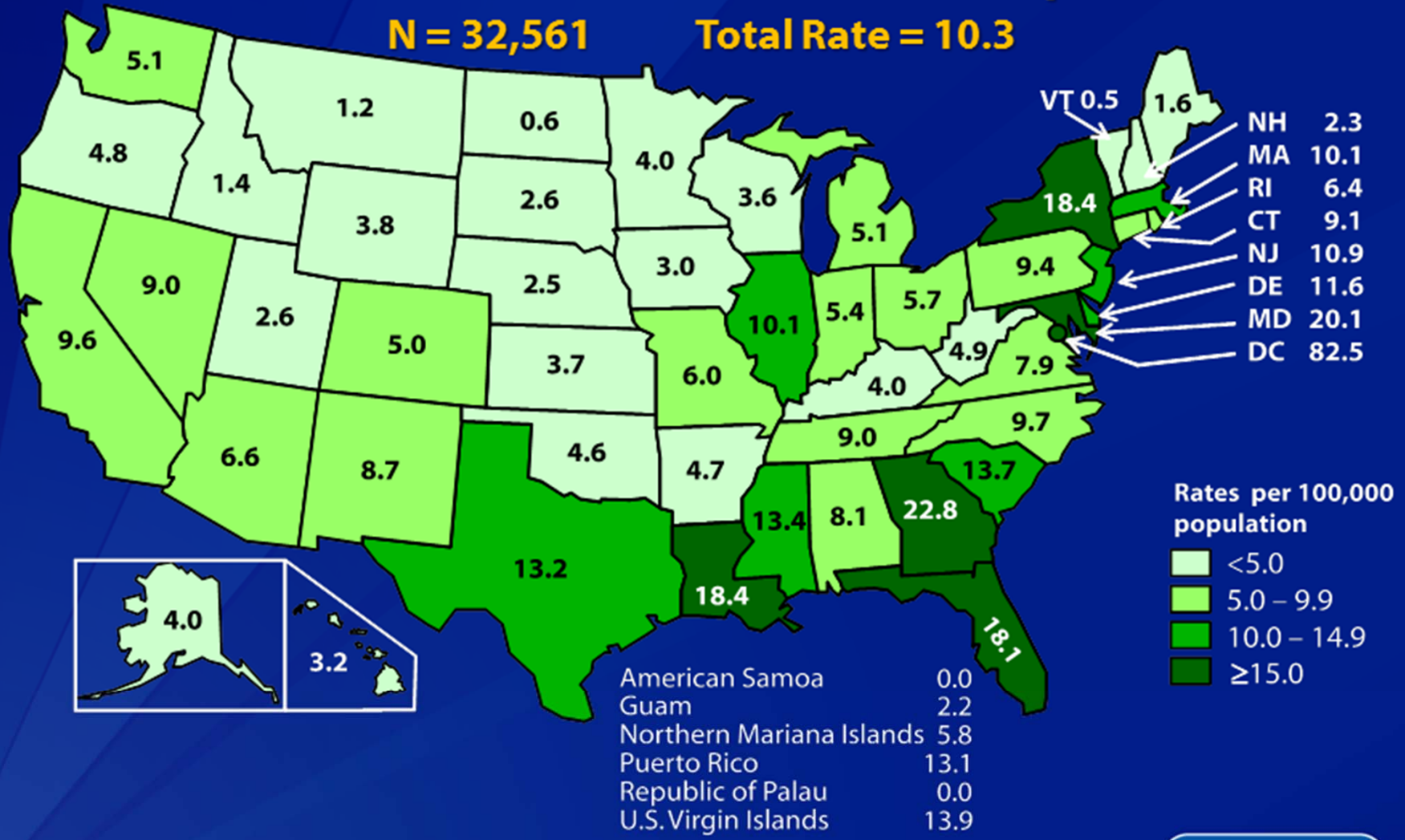


American Samoa	0.0
Guam	0.0
Northern Mariana Islands	5.3
Puerto Rico	28.6
Republic of Palau	0.0
U.S. Virgin Islands	39.5

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting.

CDC

Rates of Stage 3 (AIDS) Classifications among Persons with HIV Infection, 2011—United States and 6 Dependent Areas

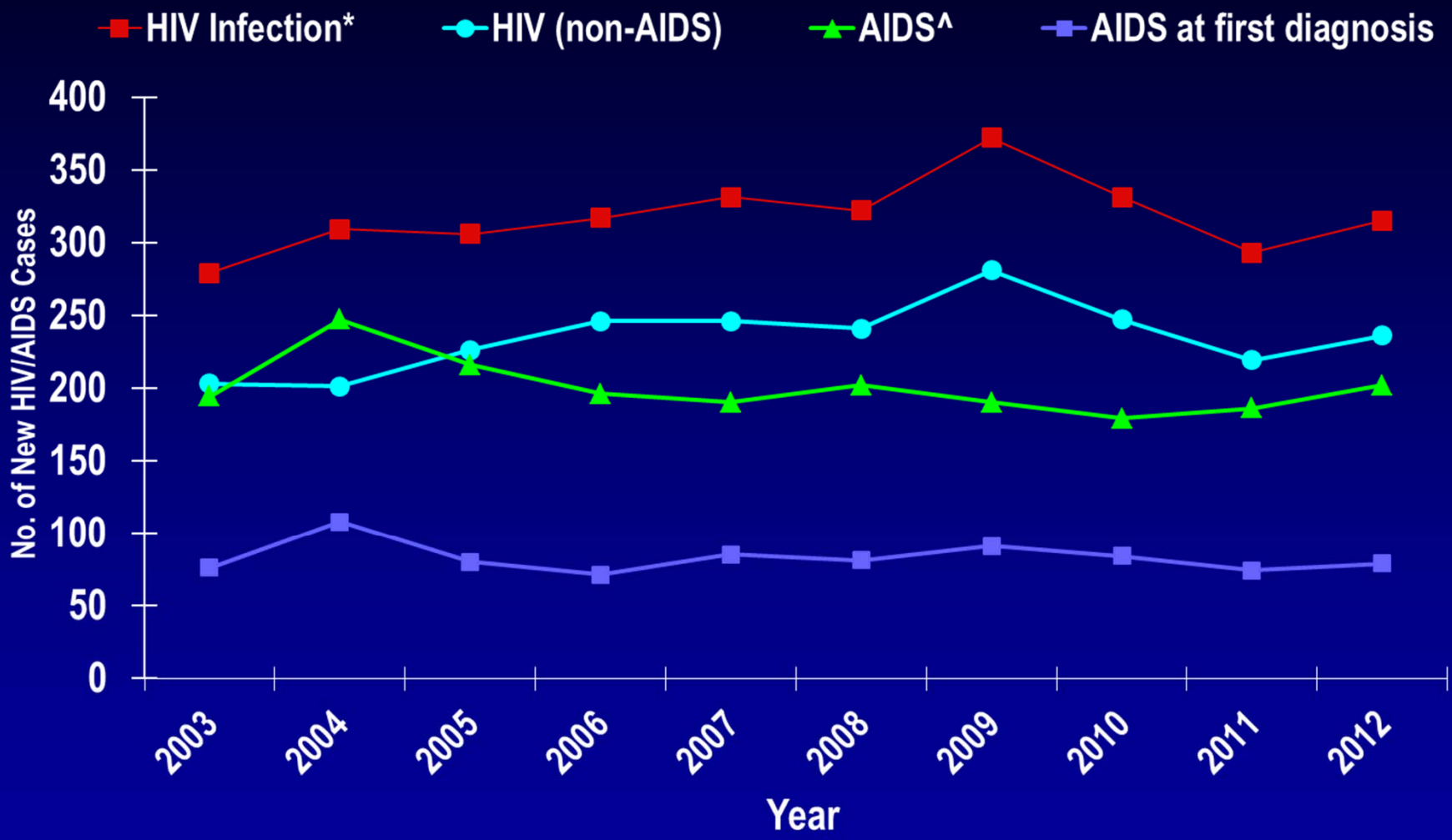


Note. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting. q

Overview of HIV/AIDS in Minnesota

HIV/AIDS in Minnesota:

New HIV Infection, HIV (non-AIDS) and AIDS Cases by Year, 2003-2012

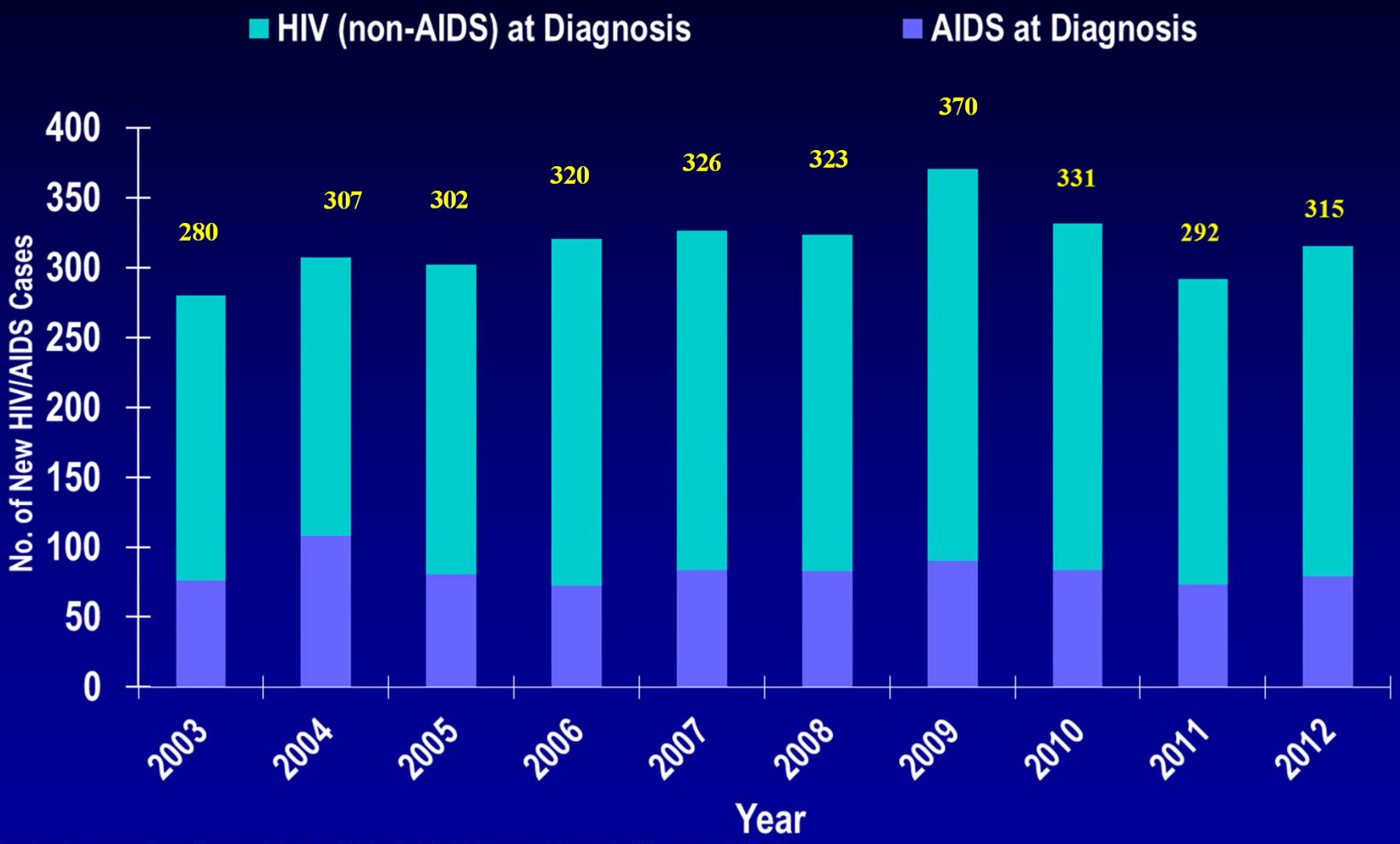


**Includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) diagnosed within a given calendar year.*

^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:
HIV (non-AIDS) and AIDS at Diagnosis by Year, 2003-2012



**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.

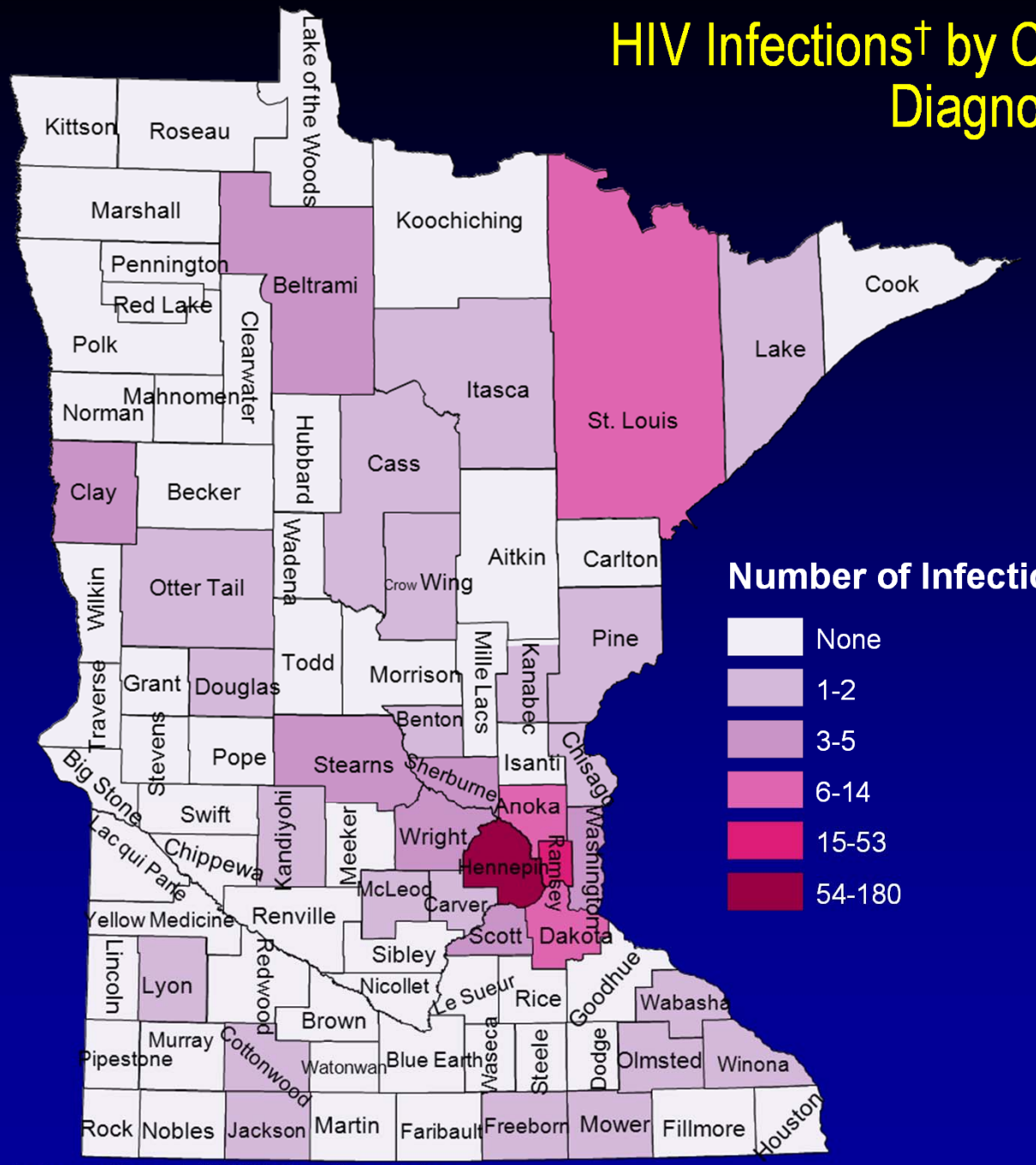
Data Source: *Minnesota HIV/AIDS Surveillance System*

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

** HIV or AIDS at first diagnosis*

Place

HIV Infections† by County of Residence at Diagnosis, 2012



Number of Infections

- None
- 1-2
- 3-5
- 6-14
- 15-53
- 54-180

City of Minneapolis – 123
City of St. Paul – 44
Suburban# – 94
Greater Minnesota - 54

Total number = 315

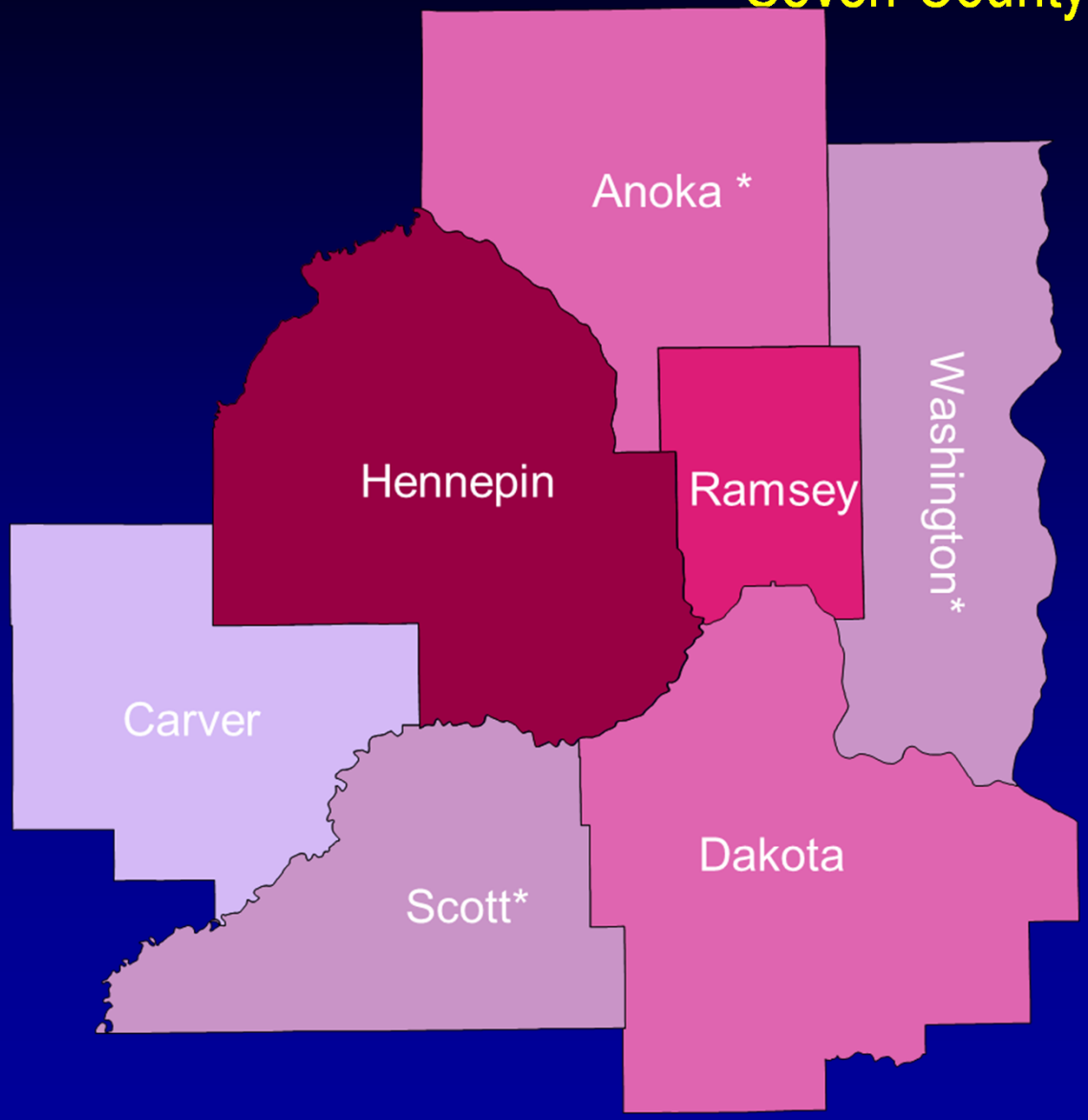
*Counties in which a state correctional facility is located

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† by County of Residence at Diagnosis, 2012
Seven-County Metro Area



Number of Infections

- None
- 1-2
- 3-5
- 6-14
- 15-53
- 54-180

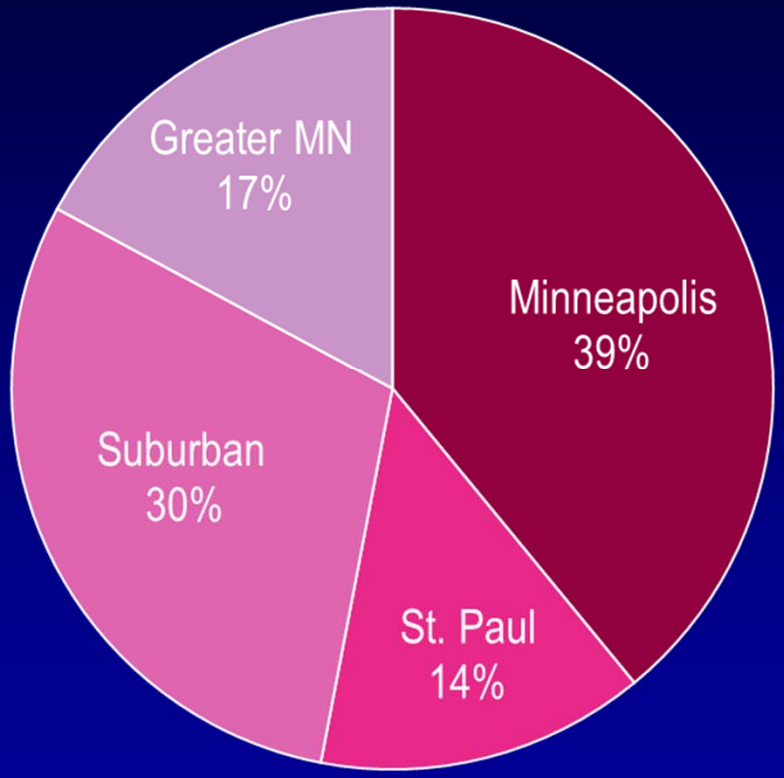
City of Minneapolis – 123
City of St. Paul – 44
Suburban# – 94

Total number (Metro only) = 261

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* in Minnesota by Residence at Diagnosis, 2012

Total Number = 315

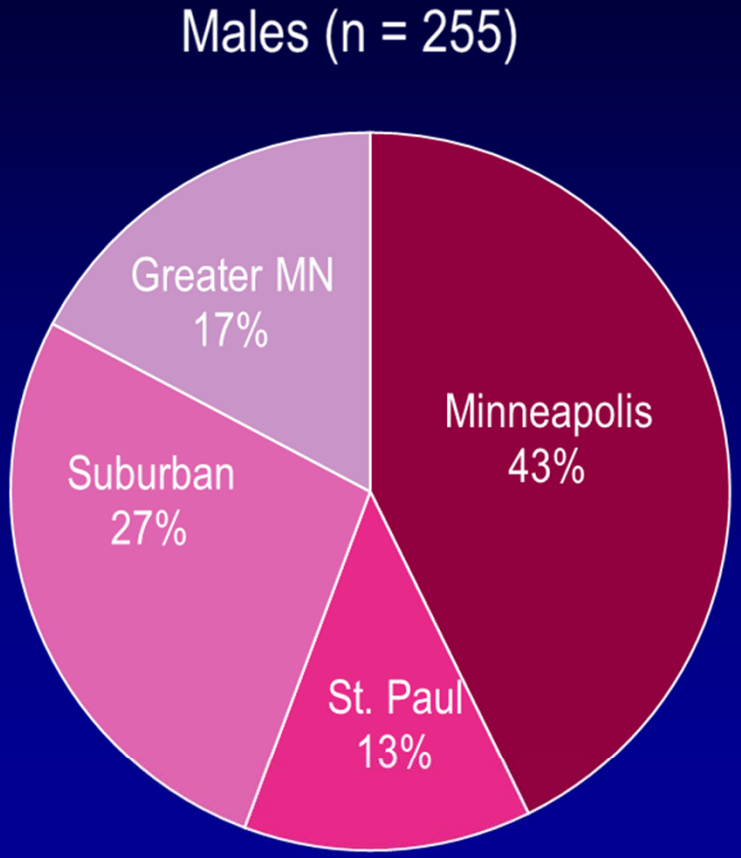


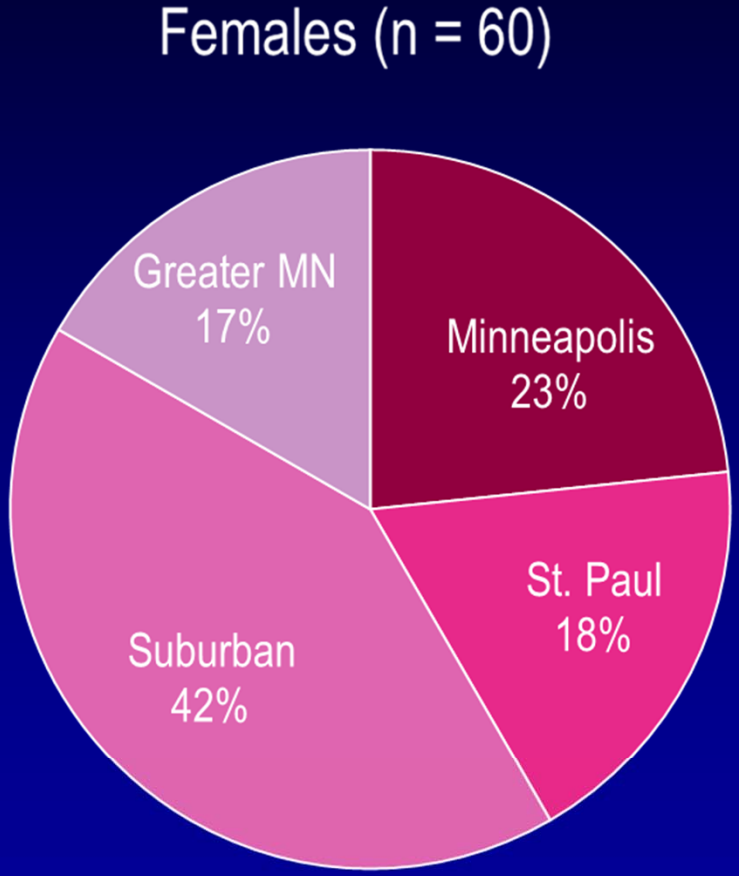
Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (except Minneapolis), Ramsey (except St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties, outside the seven-county metro area.

** HIV or AIDS at first diagnosis*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* in Minnesota by Gender and Residence at Diagnosis, 2012

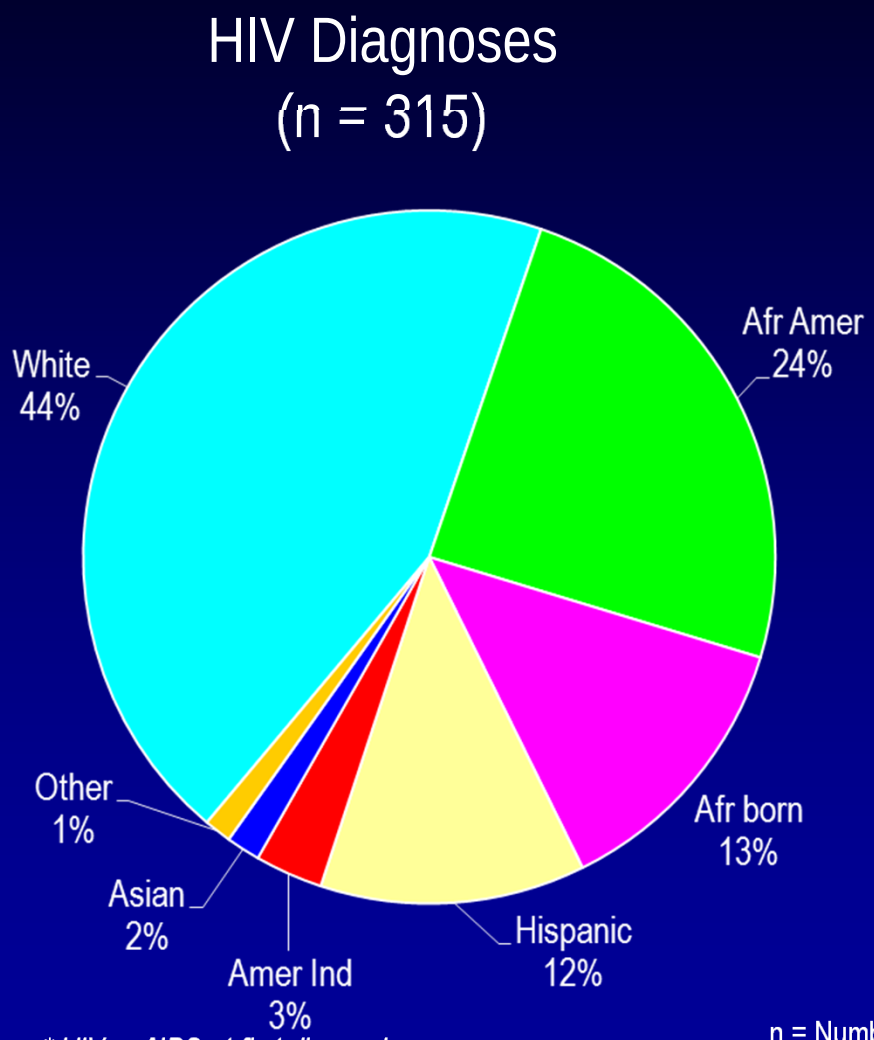


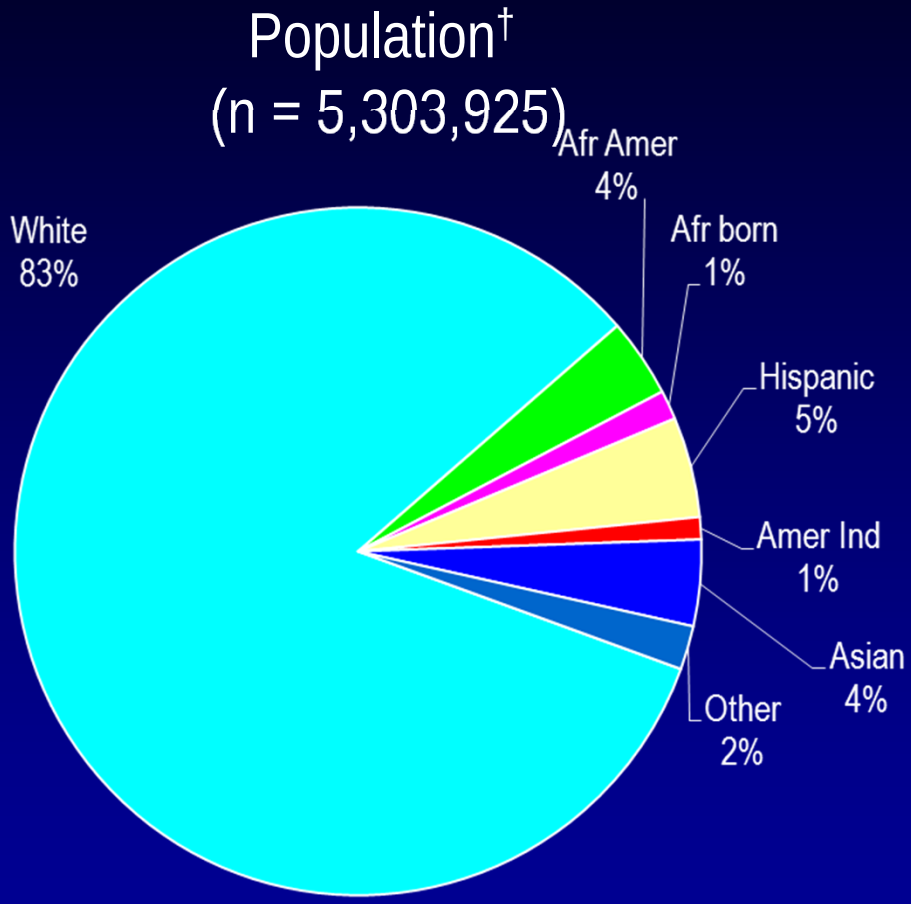


Data Source: *Minnesota HIV/AIDS Surveillance System*

Gender and Race/Ethnicity

HIV Infections* Diagnosed in Year 2012 and General Population in Minnesota by Race/Ethnicity





** HIV or AIDS at first diagnosis*

† Population estimates based on 2010 U.S. Census data.

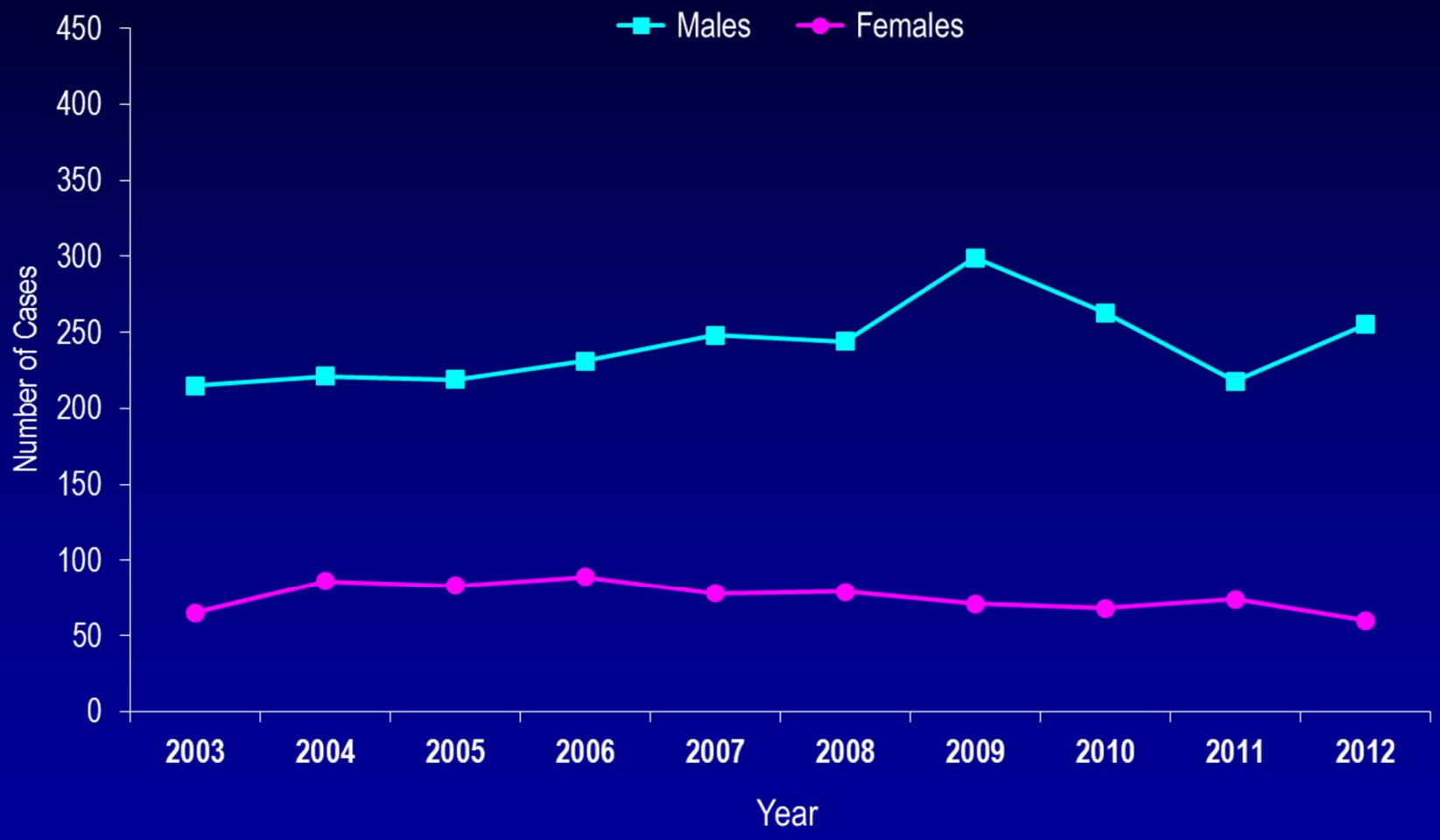
n = Number of persons Amer Ind = American Indian

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

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

Data Source: *Minnesota HIV/AIDS Surveillance System*

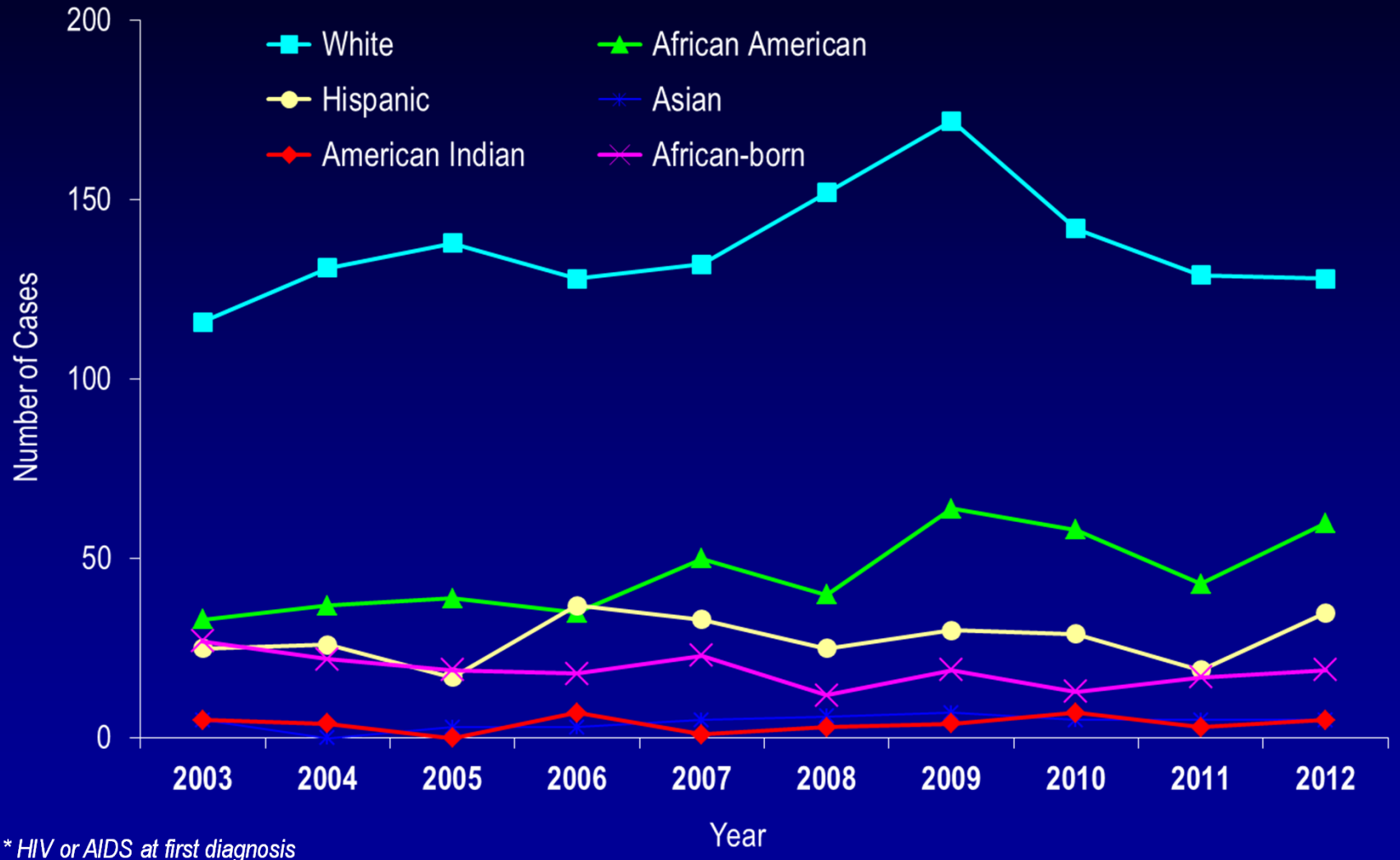
HIV Infections* by Gender and Year of Diagnosis, 2003 - 2012



** HIV or AIDS at first diagnosis*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Males by Race/Ethnicity† and Year of Diagnosis, 2003 - 2012

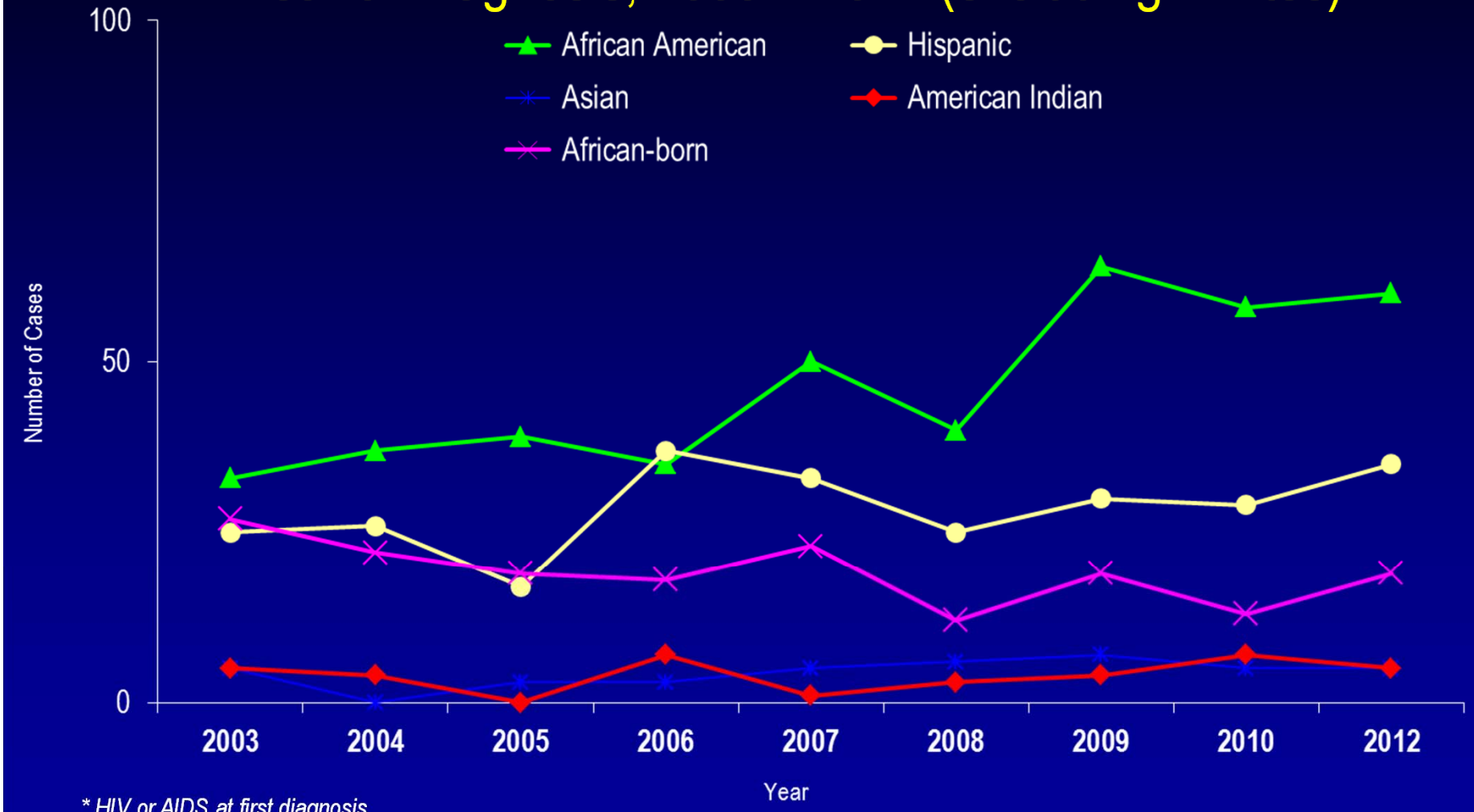


** HIV or AIDS at first diagnosis*

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

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Males by Race/Ethnicity† and Year of Diagnosis, 2003 – 2012 (excluding Whites)

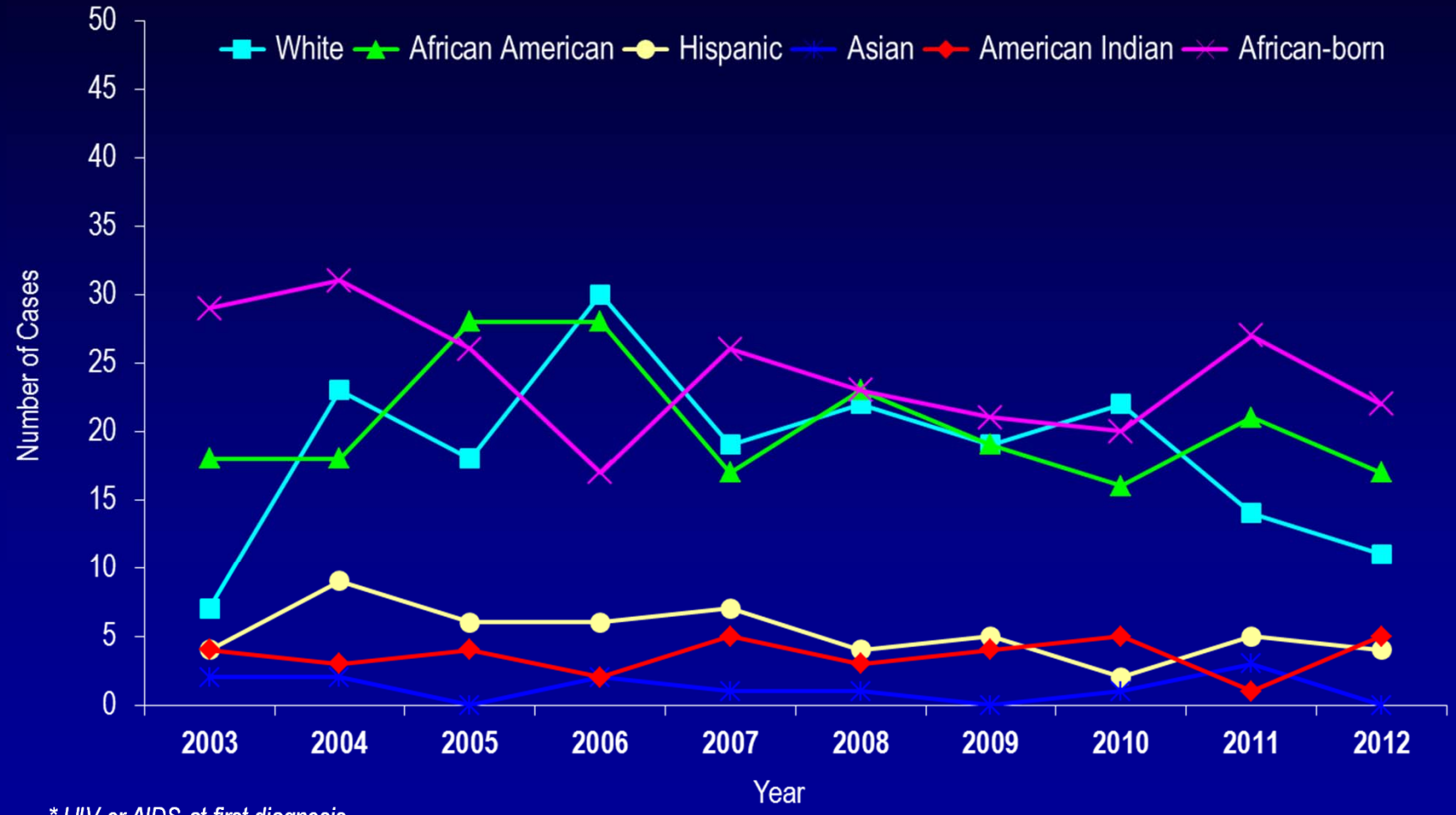


** HIV or AIDS at first diagnosis*

† "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, 2003 – 2012

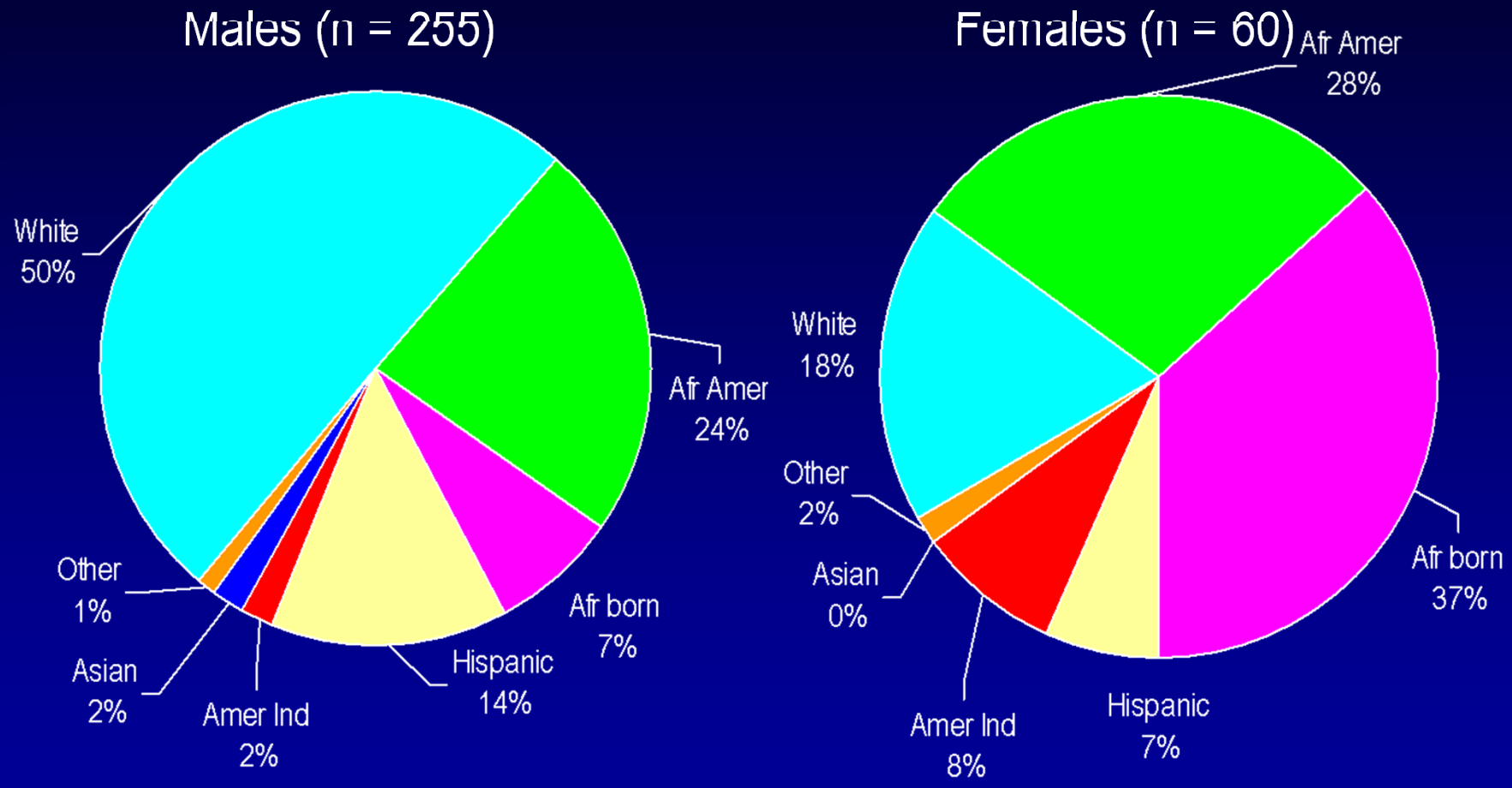


** HIV or AIDS at first diagnosis*

† "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 2012 by Gender and Race/Ethnicity



** HIV or AIDS at first diagnosis*

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*

HIV/AIDS in Minnesota: Annual Review

Number of Cases and Rates (per 100,000 persons) of HIV Infection* by Race/Ethnicity† – Minnesota, 2012

Race/Ethnicity	*Cases*	*%*	*Rate*
White, non-Hispanic	139	44%	3.2
Black, African-American	77	24%	39.2
Black, African-born	41	13%	56.2††
Hispanic	39	12%	15.6
American Indian	10	3%	18.0
Asian/Pacific Islander	5	2%	2.3
Other^	4	1%	x
Total	*315*	*100%*	*5.9*

** HIV or AIDS at first diagnosis; 2010 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.

†† Estimate of 72,930 Source: Retrieved from MNCompass.org on 3/22/12. Additional calculations by the State Demographic Center.

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

Number of Cases and Rates (per 100,000 persons) of Adult and Adolescent HIV Infection* by Gender/Risk†, Minnesota, 2012

Gender/Risk	Cases	%	Rate
Men (Total)	(254)	81%	11.8
MSM†	*178*	*70%*	191.8††
Non-MSM	*76*	*30%*	3.7
Women	59	19%	2.7
Total	*313*	*100%*	*7.1*

- *HIV or AIDS at first diagnosis over the age of 13;*
- *2010 U.S. Census Data for persons age 13 and over used for rate calculations.*

† *"MSM" refers to both MSM and MSM/IDU.*

†† *Estimate of 92,788*

Data Source: *Minnesota HIV/AIDS Surveillance System*

Age

Average Age at HIV Diagnosis by Race/Ethnicity† : 2010-2012

Race/Ethnicity	Average age in years (No. of cases)	
	Women	Men
White	38 (47)	37 (400)
Black		
African American	39 (54)	31 (162)
African-born	34 (69)	40 (50)
Hispanic	36 (11)	32 (82)
Asian	33 (14)	33 (14)
American Indian	36 (11)	30 (16)

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

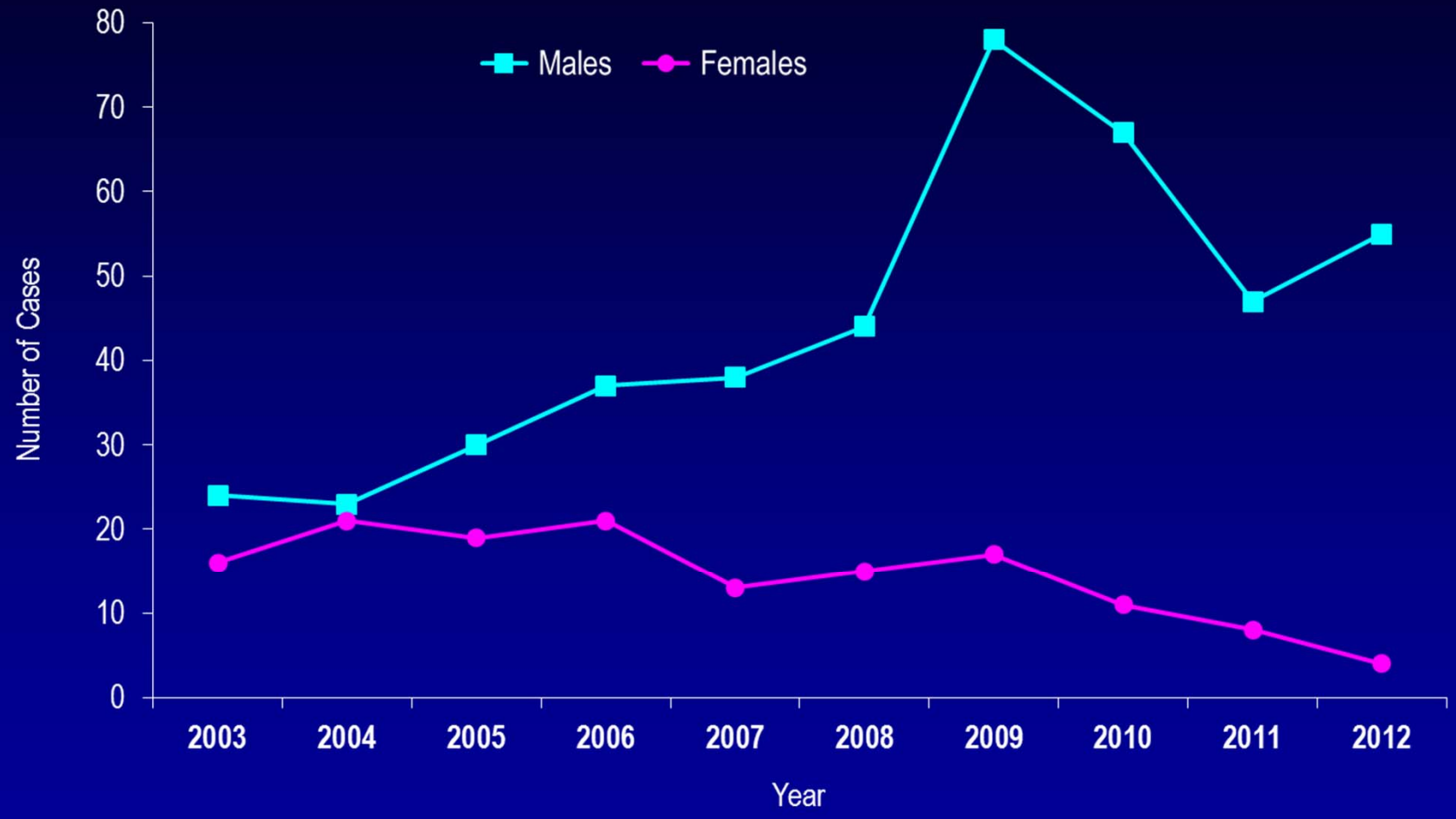
† *"African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks.*

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, 2003 - 2012

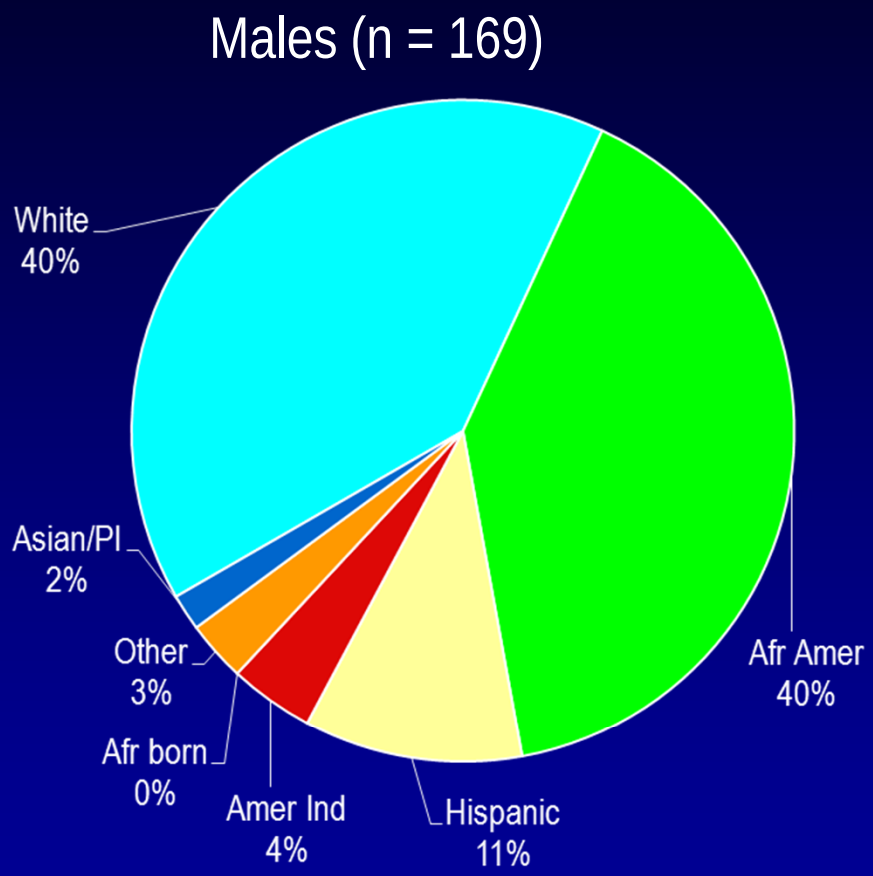


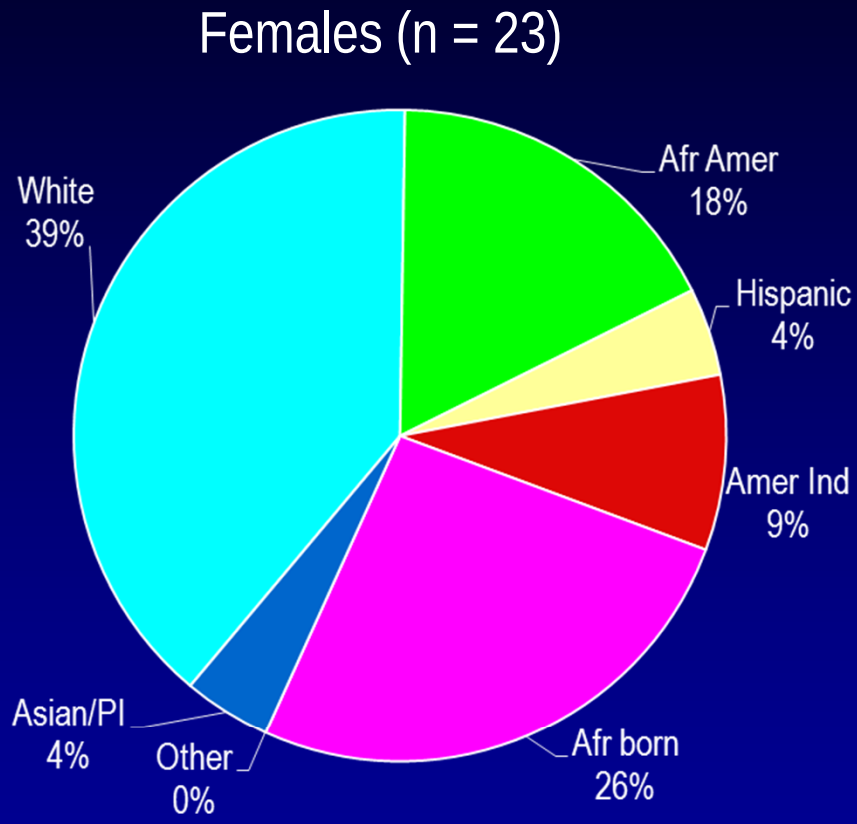
* *HIV or AIDS at first diagnosis*

† *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, 2010 - 2012 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)

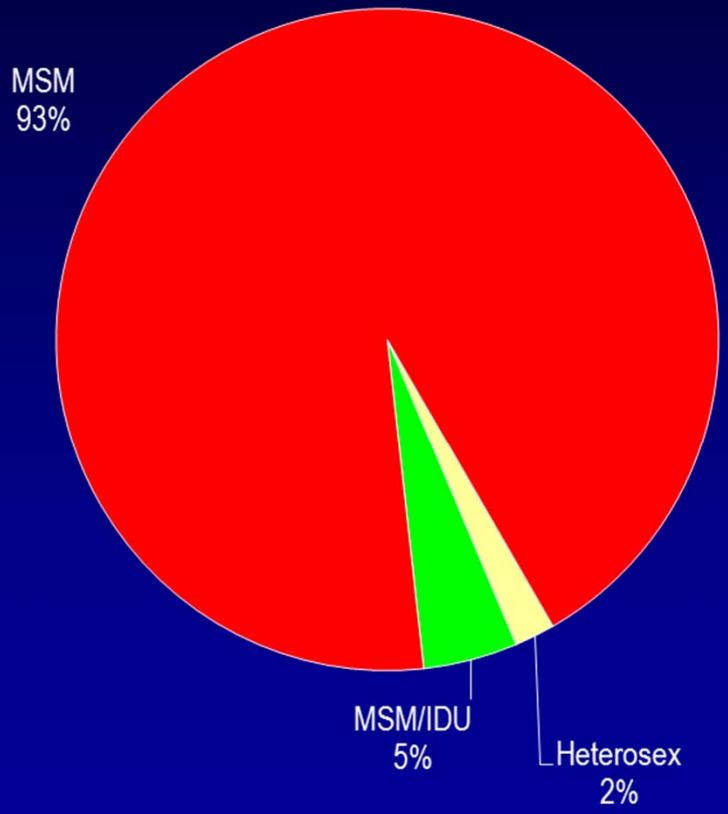
Afr born = African-born (Black, African-born persons)

Other = Multi-racial persons or persons with unknown race

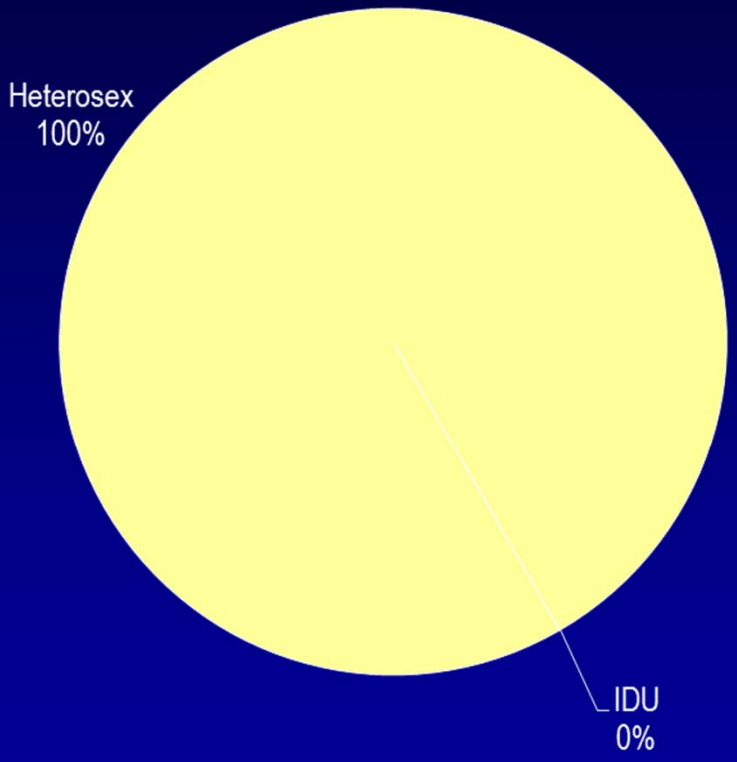
Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* Among Adolescents and Young Adults† by Gender and Estimated Exposure Group#, 2010- 2012 Combined

Males (n = 169)



Females (n = 23)



* *HIV or AIDS at first diagnosis*

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

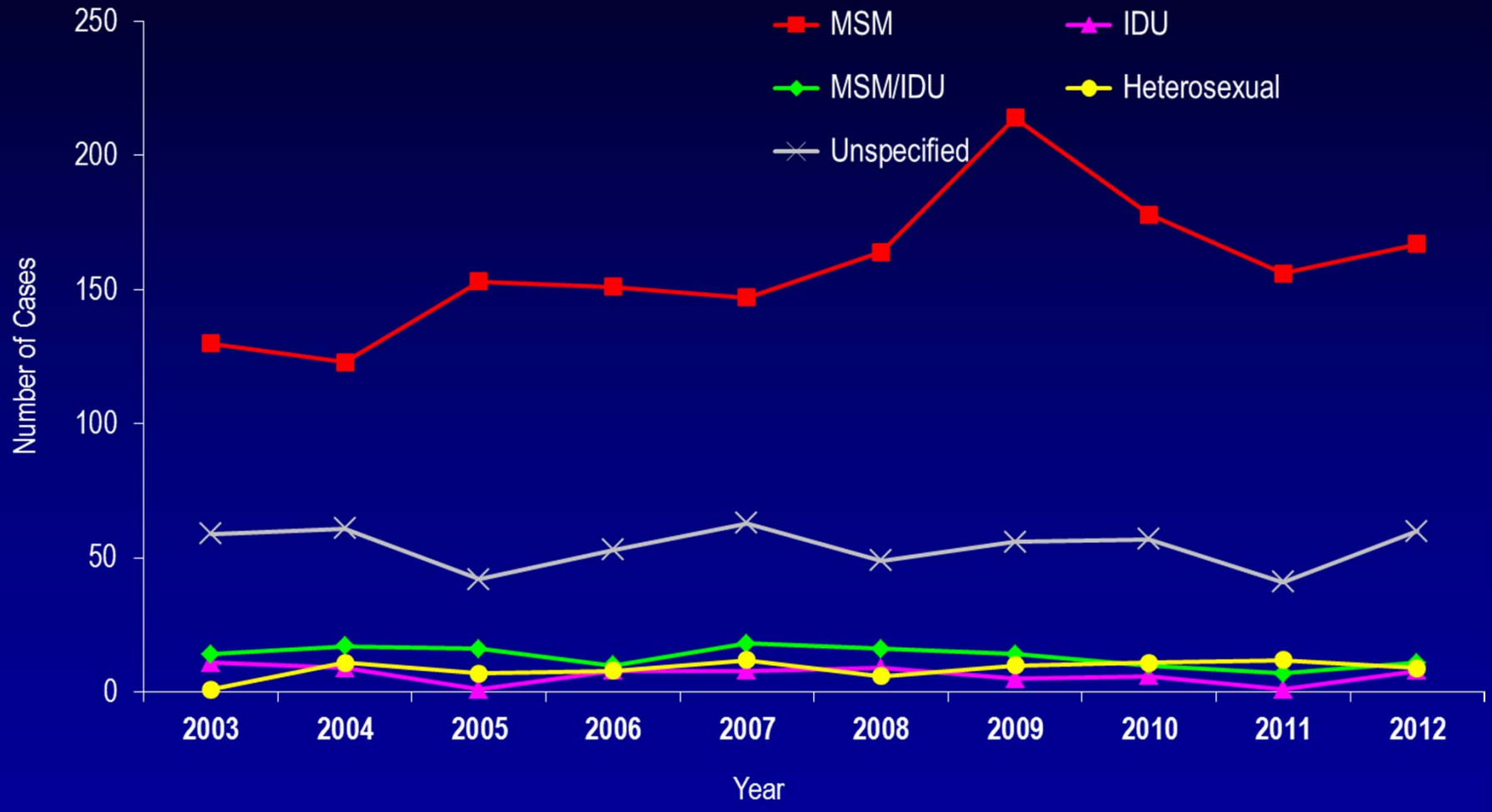
n = Number of persons
IDU = Injecting drug use
MSM = Men who have sex with men
Heterosex = Heterosexual contact

Mode of Exposure proportions have been estimated using cases for 2010-2012 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, 2003 - 2012

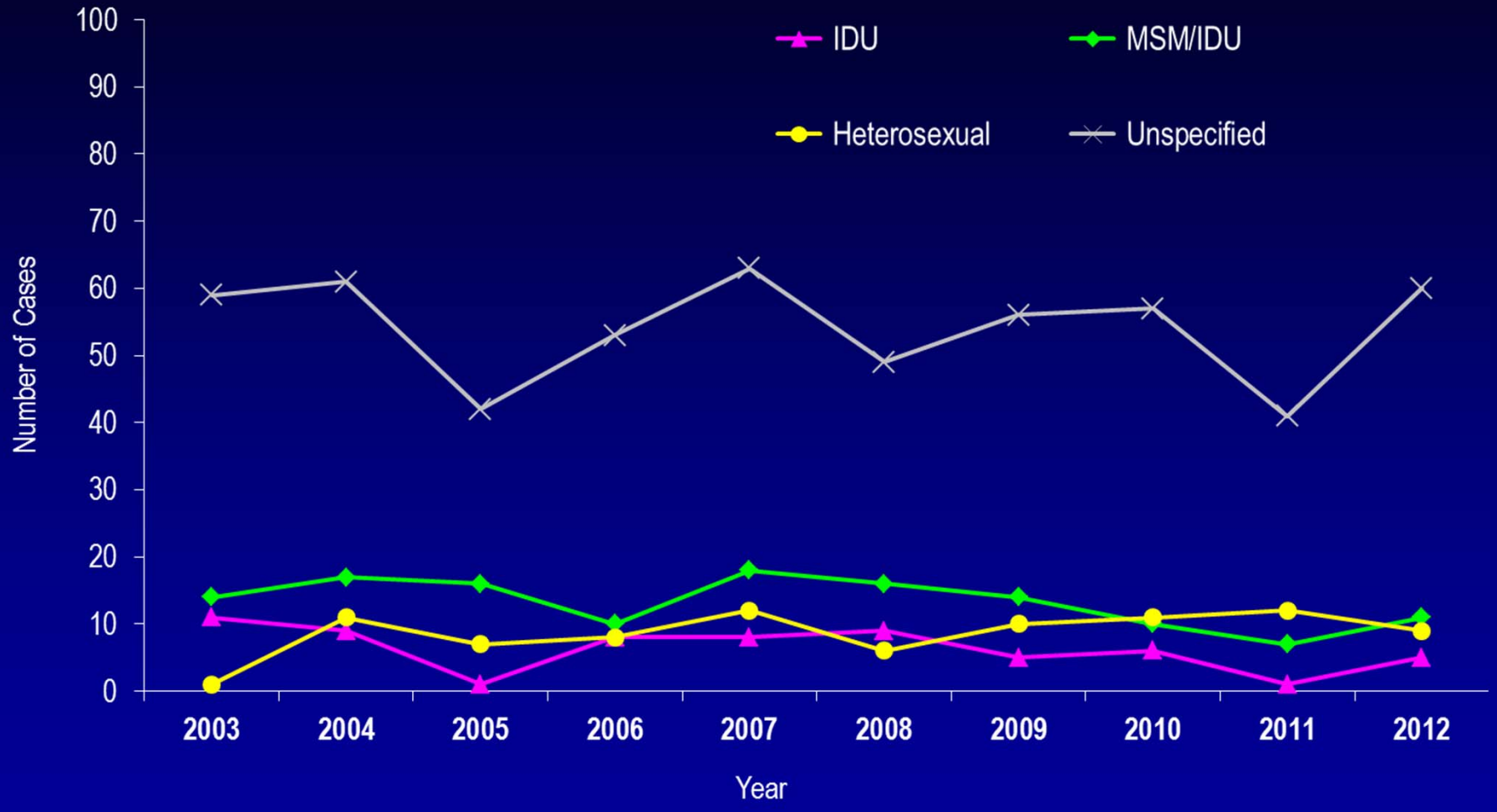


MSM = Men who have sex with men IDU = Injecting drug use Heterosexual = Heterosexual contact

* *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, 2003 - 2012 (excluding MSM)

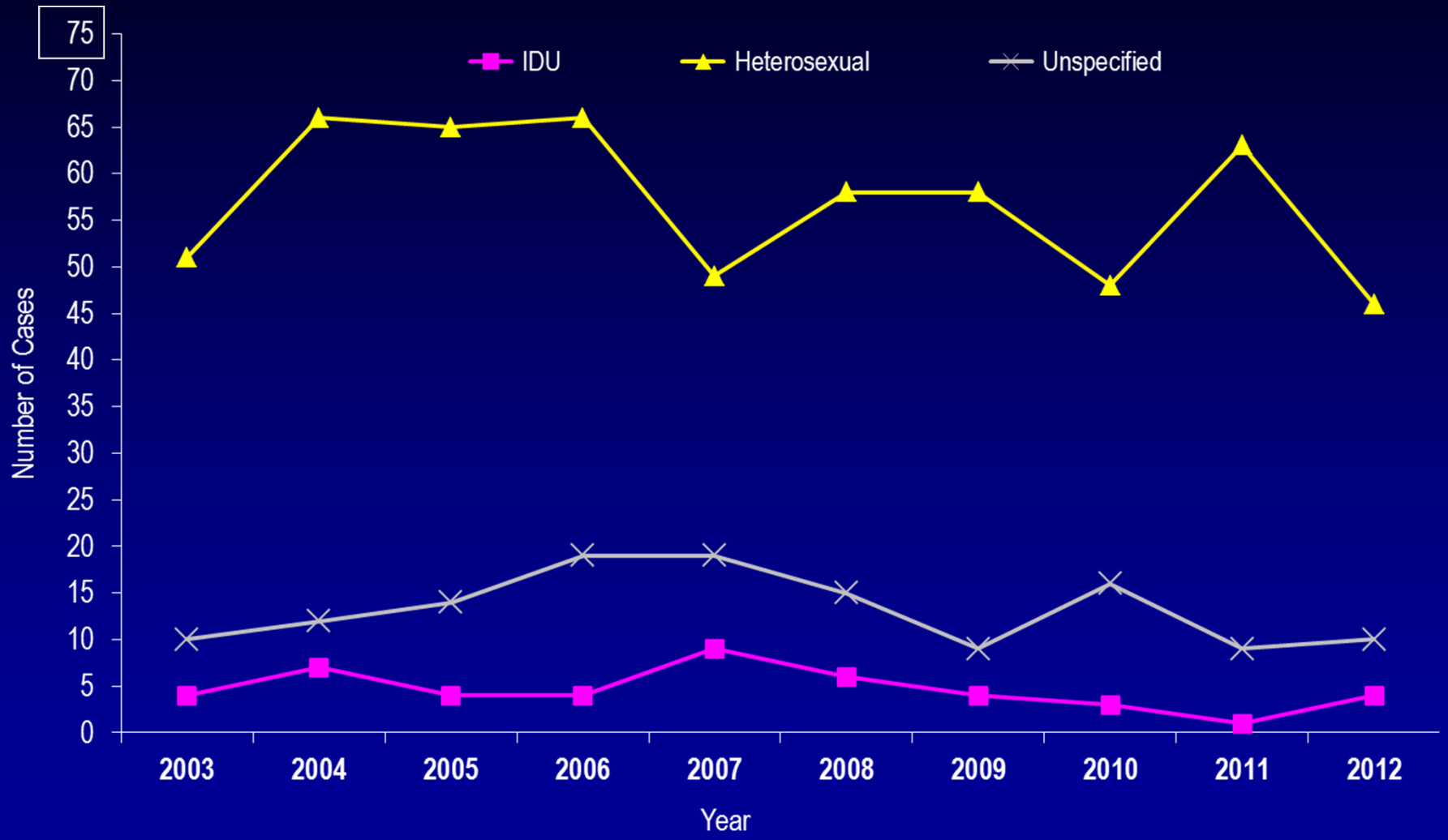


MSM = Men who have sex with men IDU = Injecting drug use Heterosexual = Heterosexual contact

* *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, 2003 - 2012

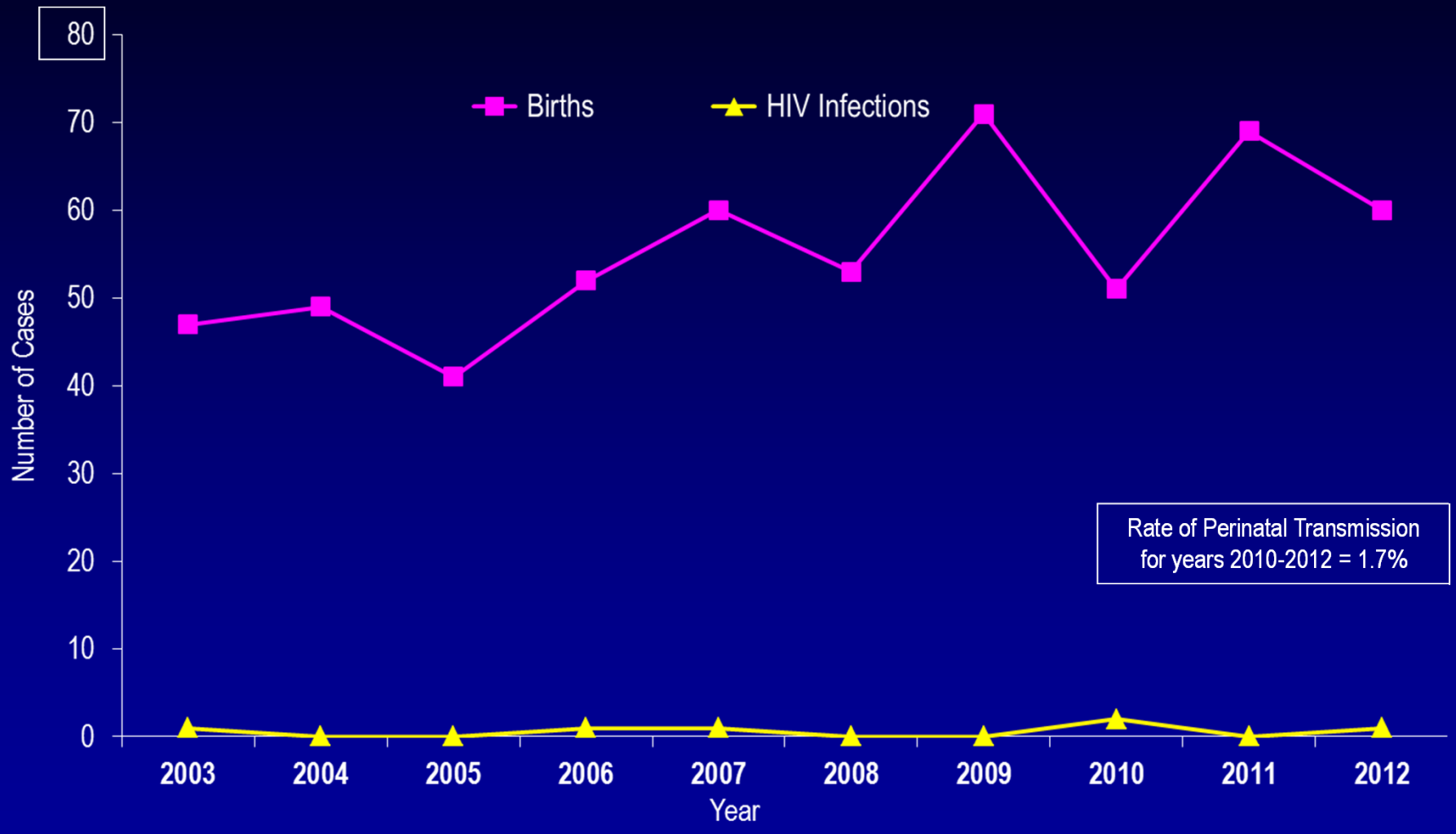


IDU = Injecting drug use Heterosexual = Heterosexual contact with HIV+ , with IDU, with partner with unknown risk
Unspecified = No mode of exposure ascertained

** 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, 2003 - 2012

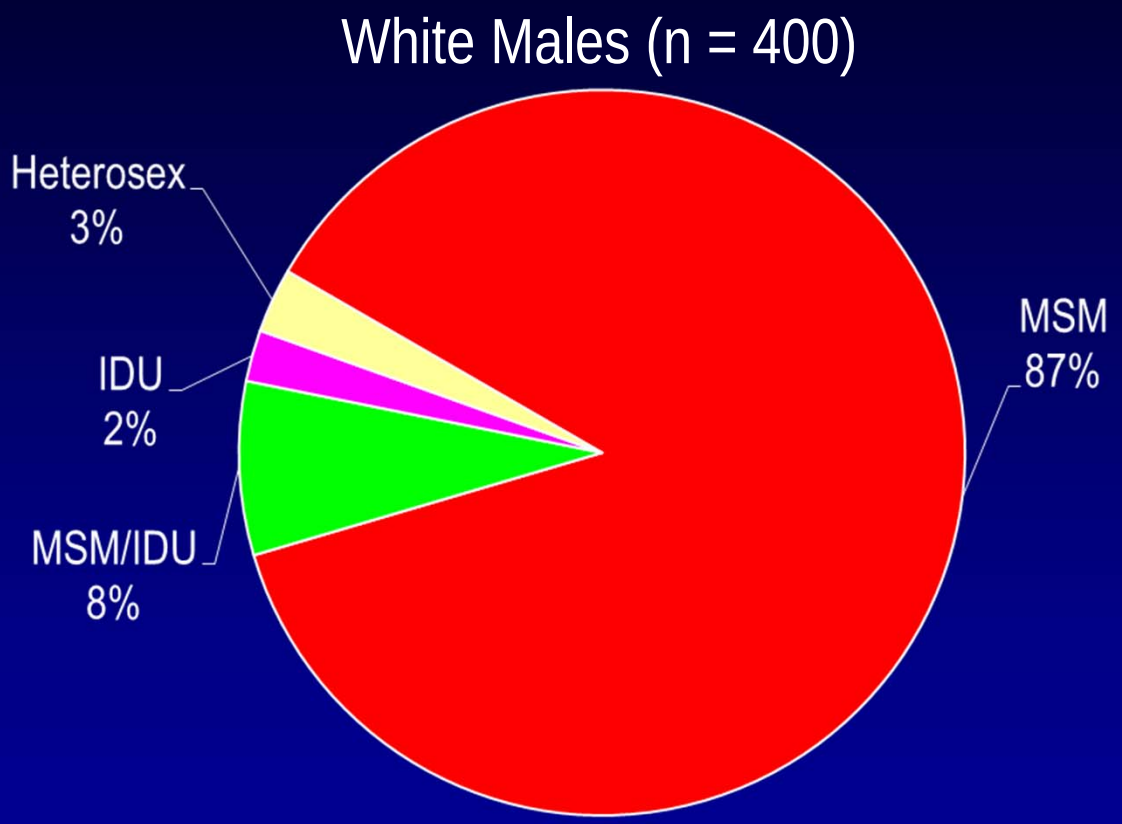


** HIV or AIDS at first diagnosis for a child exposed to HIV during mother's pregnancy, at birth, and/or during breastfeeding.*

Note: an additional 1child under the age of 13 years was diagnosed in Minnesota in 2012 but was not born in the United States.

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure†
Diagnosis Years 2010 – 2012 combined



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

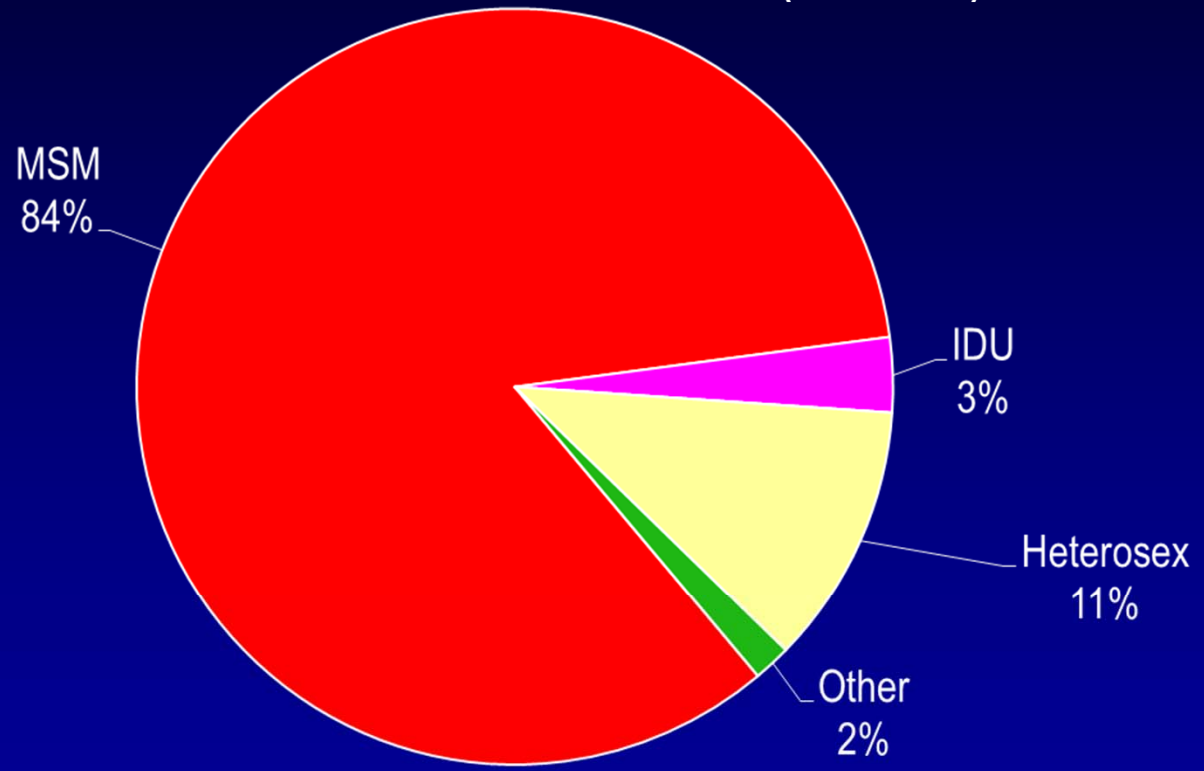
** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2010-2012 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 2010 - 2012 combined

African American Males†† (n = 162)



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*

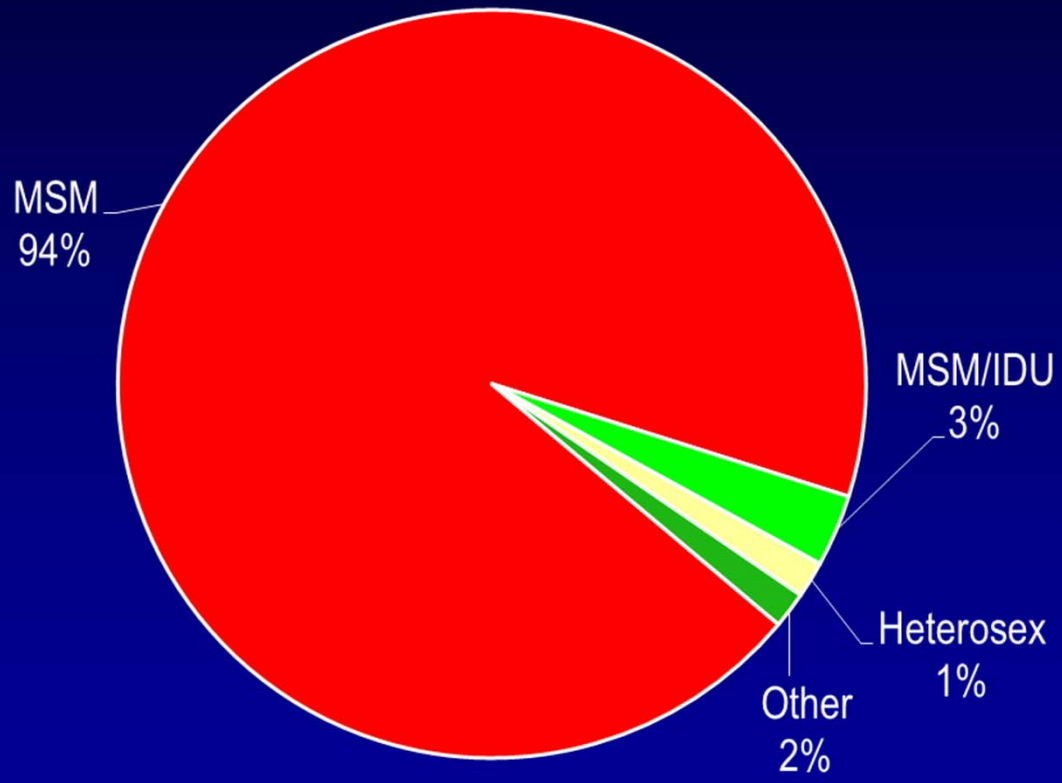
† Mode of Exposure proportions have been estimated using cases for 2010-2012 with known risk. For more detail see the HIV Surveillance Technical notes.

†† *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 2010 - 2012 combined

Hispanic Males (n =82)



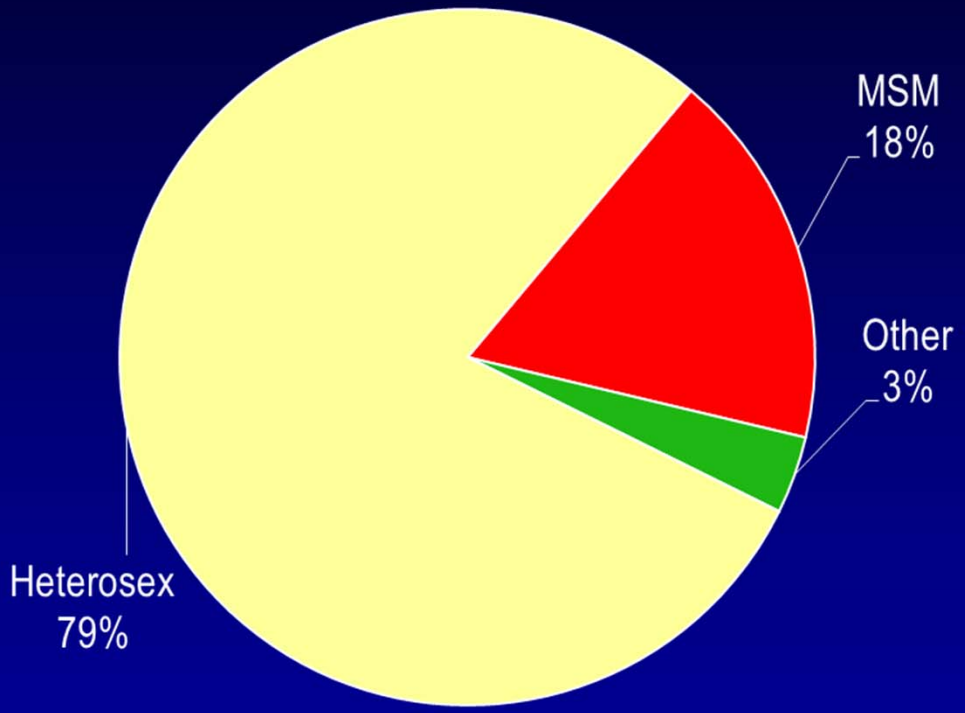
n = Number of persons MSM = Men who have sex with men IDU = Injecting drug use Heterosex = Heterosexual contact

** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2010-2012 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2010 - 2012 combined

African-born Males†† (n =50)



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*

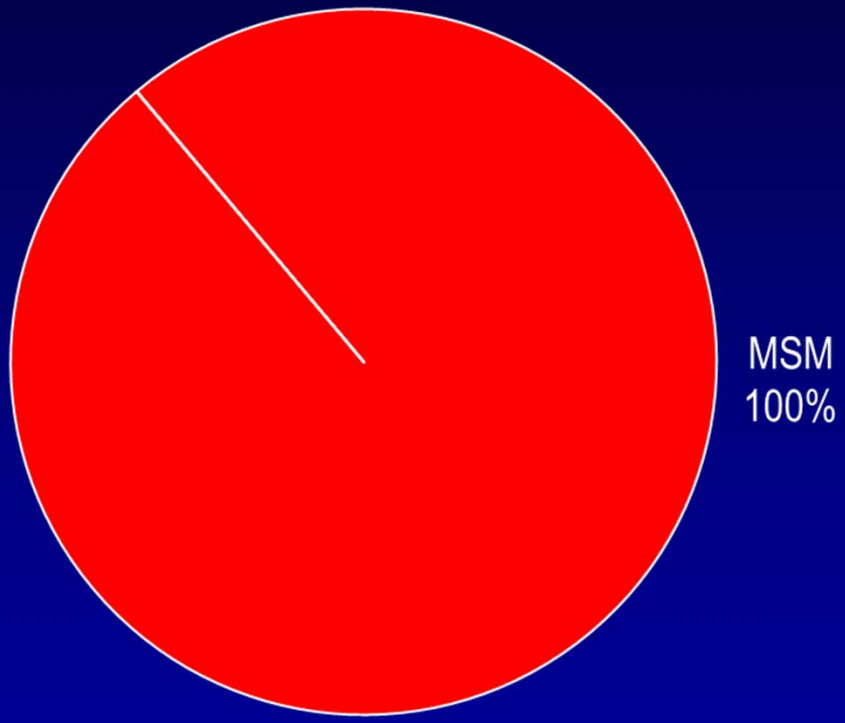
† Mode of Exposure has been estimated for cases with unknown risk using the following: 5% - MSM, 90% - Heterosexual, and 5%-Other. For more detail see the HIV Surveillance Technical notes.

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

HIV Infections* by Estimated Mode of Exposure†
Diagnosis Years 2010 - 2012 combined

Asian Males (n = 14)

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*

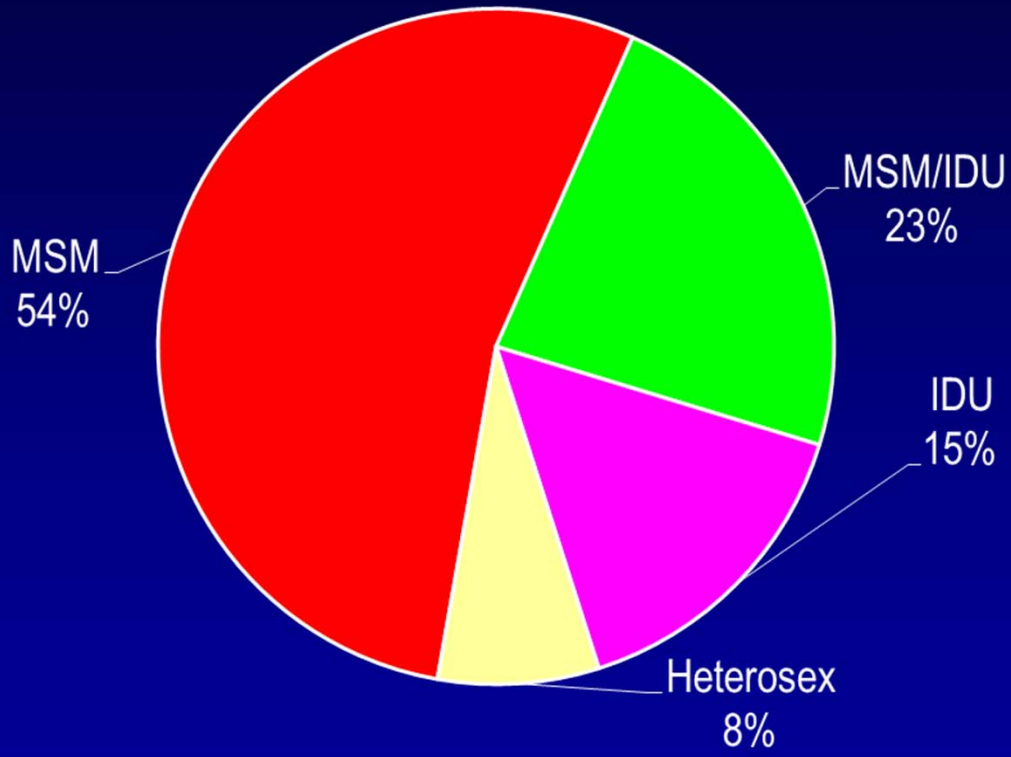
† Mode of Exposure proportions have been estimated using cases for 2010-2012 with known risk. For more detail see the HIV Surveillance Technical notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2010 - 2012 combined

American Indian Males (n = 16)

CAUTION: Small number of cases – interpret carefully.

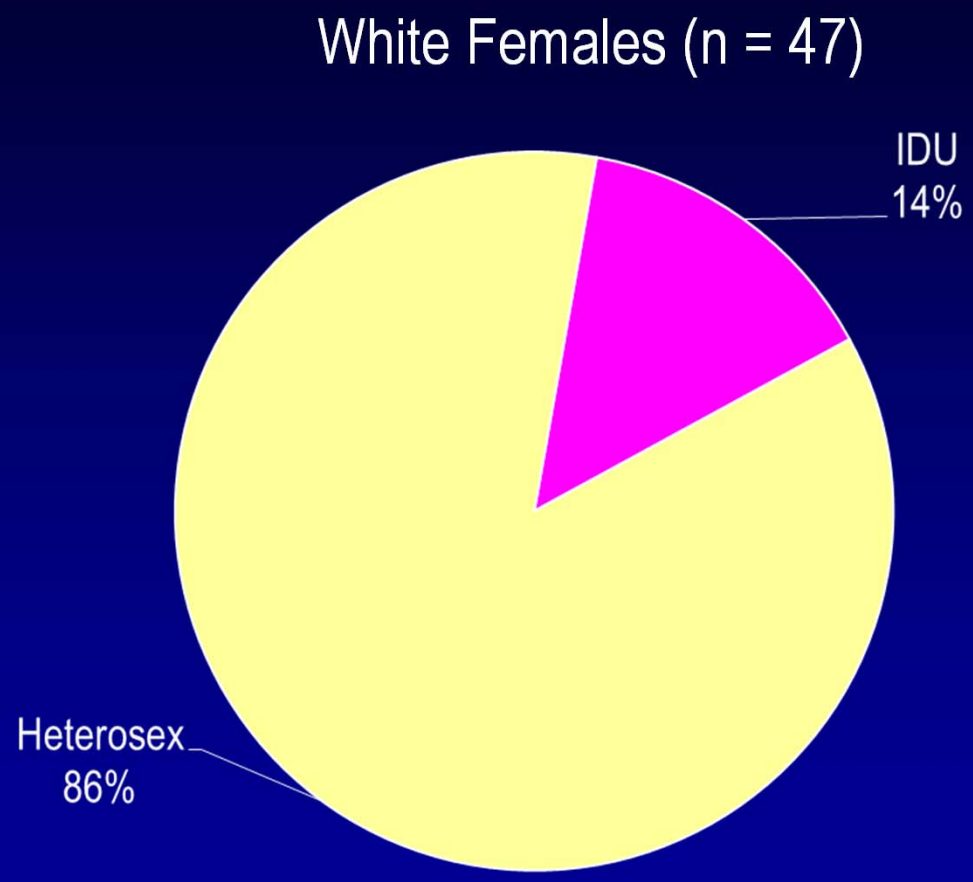


n = Number of persons MSM = Men who have sex with men IDU = Injecting drug use Heterosex = Heterosexual contact

** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2010-2012 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2010 - 2012 combined



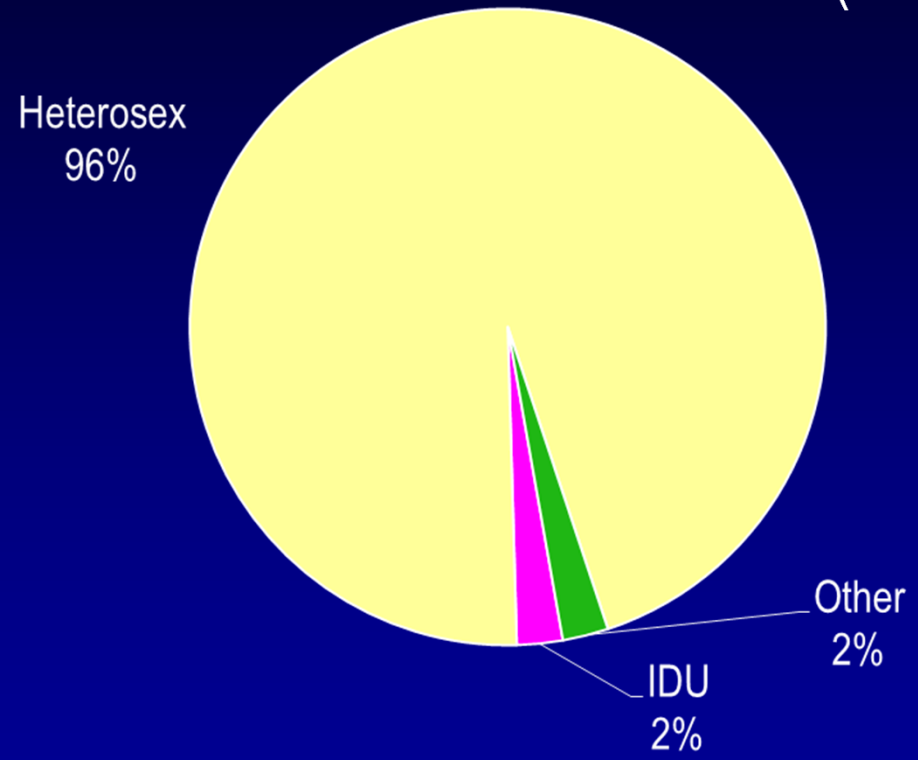
n = Number of persons IDU = Injecting drug use Heterosex = Heterosexual contact Other = Other risk, including perinatal

* *HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2010-2012 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure†
Diagnosis Years 2010 - 2012 combined

African American Females†† (n = 54)



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

n = Number of persons

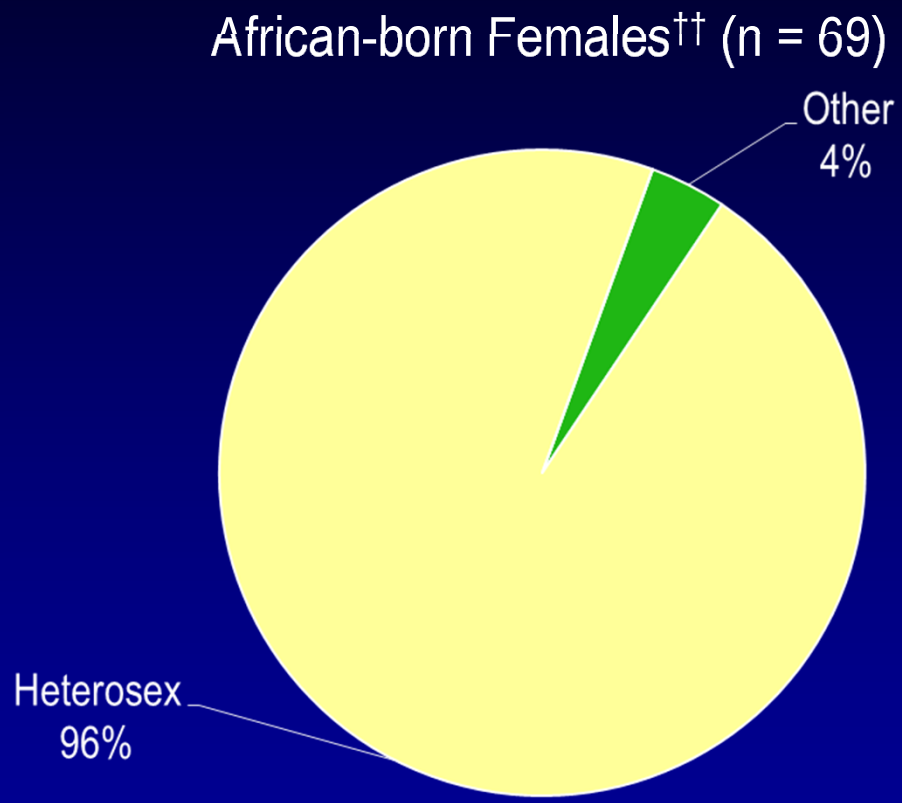
** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2010-2012 with known risk. For more detail see the HIV Surveillance Technical notes.

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

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2010 - 2012 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.

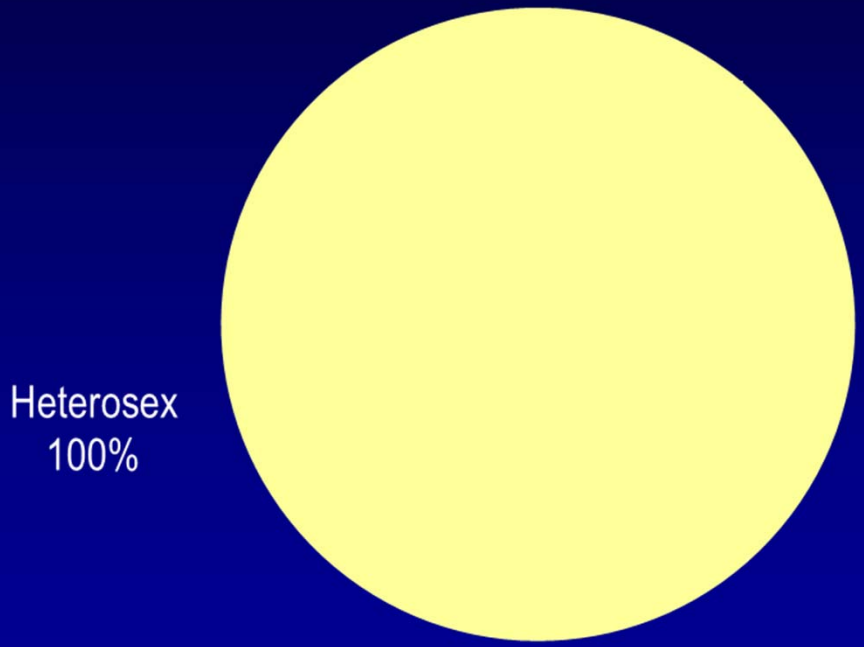
†† *Refers to Black, African-born females.*

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2010 - 2012 combined

Hispanic Females (n = 11)

CAUTION: Small number of cases – interpret carefully.



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

n = Number of persons

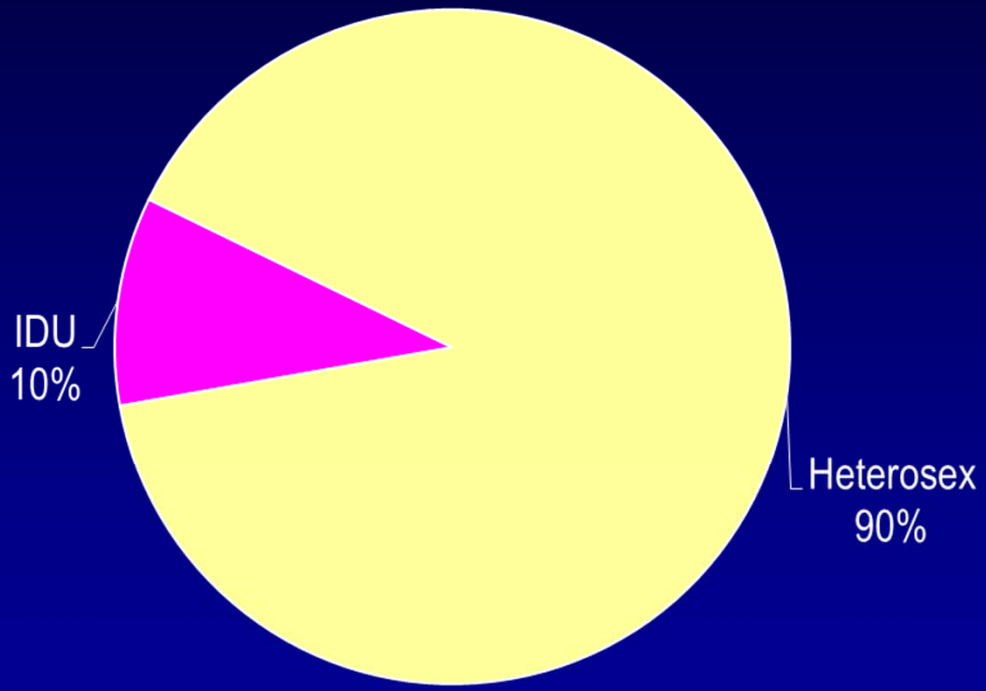
* *HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2010-2012 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2010 - 2012 combined

American Indian Females (n = 11)

CAUTION: Small number of cases – interpret carefully.



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

n = Number of persons

** HIV or AIDS at first diagnosis*

† Mode of Exposure proportions have been estimated using cases for 2010-2012 with known risk. For more detail see the HIV Surveillance Technical notes.

HIV Infections* by Estimated Mode of Exposure† Diagnosis Years 2010 - 2012 combined

Asian Females (n = 4)

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

HIV and Hepatitis B, C co-infection

HIV and Hepatitis B and C

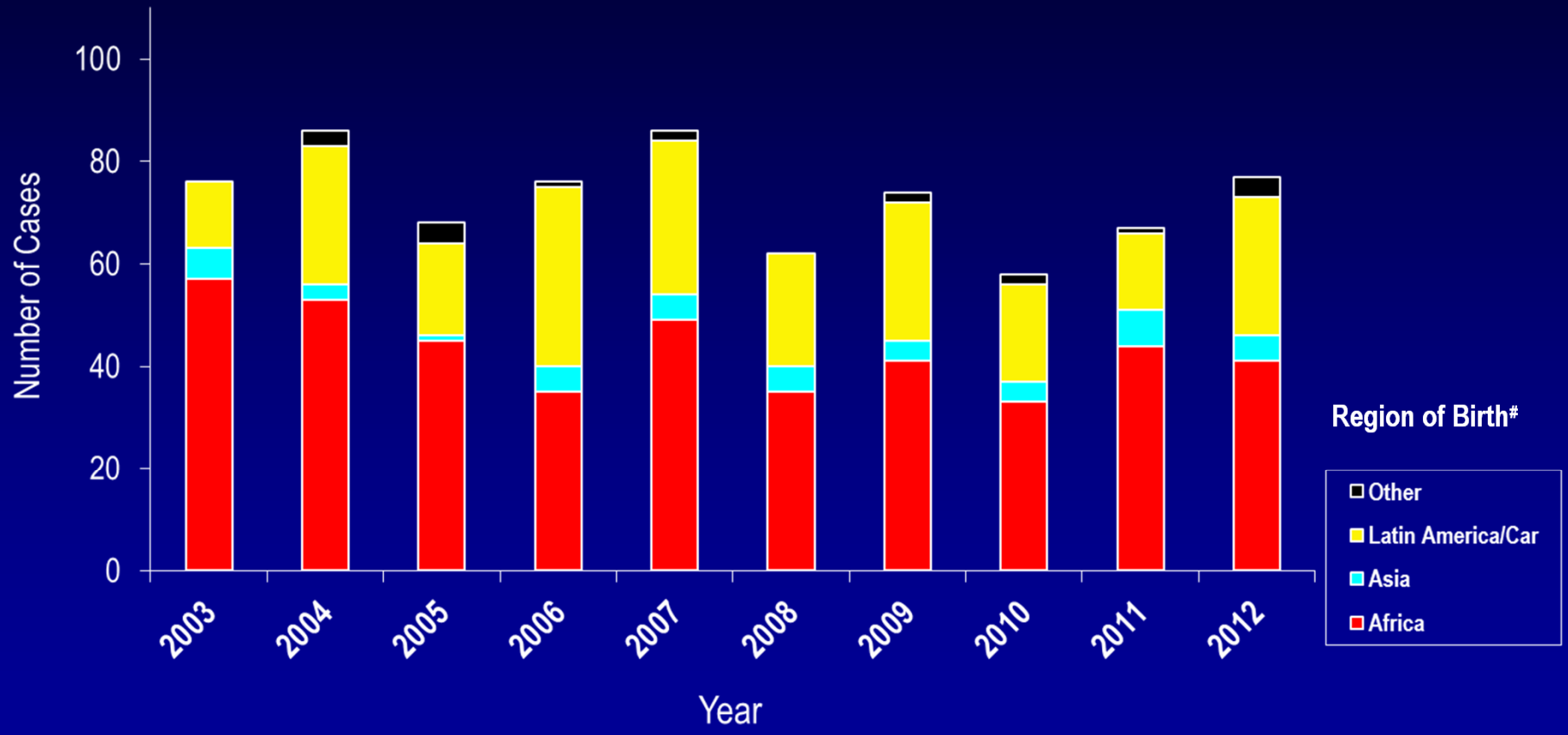
- As of December 31, 2012* , 7,516 persons are assumed alive and living in Minnesota with HIV/AIDS
  - Of these 7,516 persons, 880 (12%) are co-infected with either Hepatitis B or C
    - Of the 880, 305 (35%) are living with HIV and Hep B
    - Of the 880, 536 (61%) are living with HIV and Hep C
    - Of the 880, 39 (4%) are living with HIV, Hep B and Hep C

** 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 Sources: *Minnesota HIV/AIDS Surveillance System and Minnesota Hepatitis Surveillance System*

Foreign-born Cases

HIV Infections* among Foreign-Born Persons† in Minnesota by Year of Diagnosis and Region of Birth, 2003 - 2012



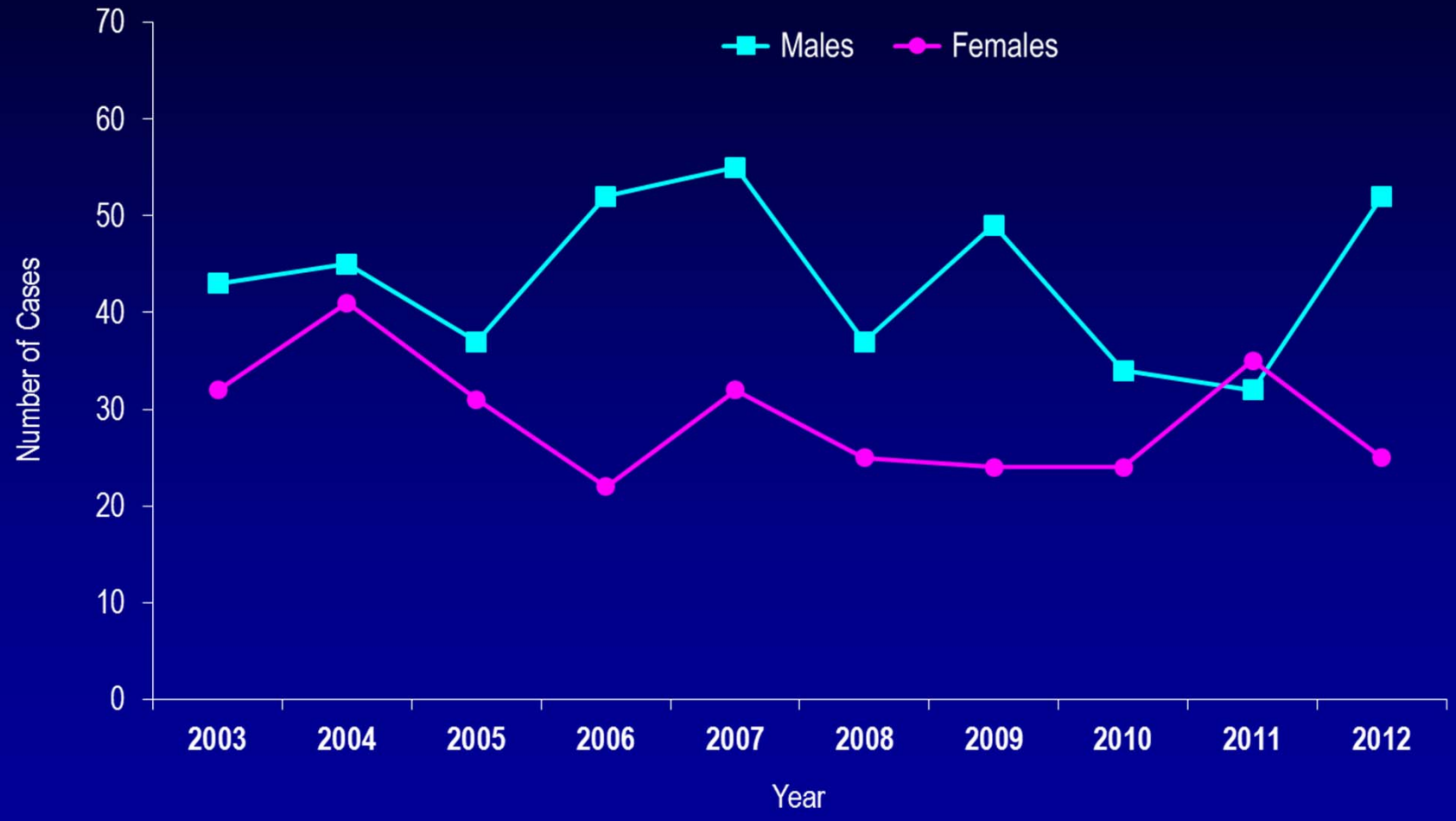
** HIV or AIDS at first diagnosis*

† 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, 2003 – 2012

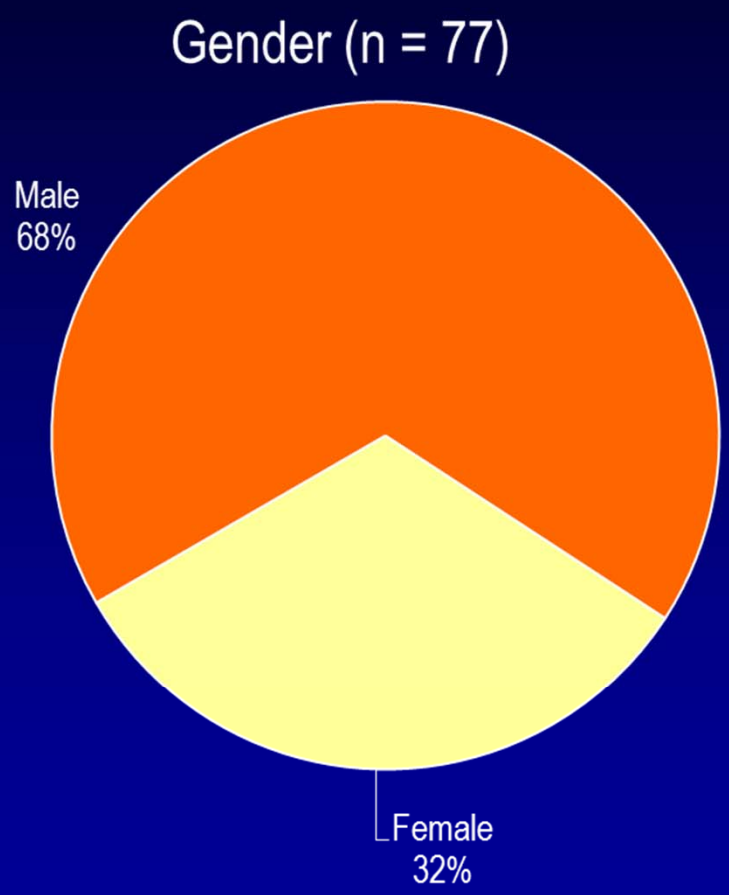


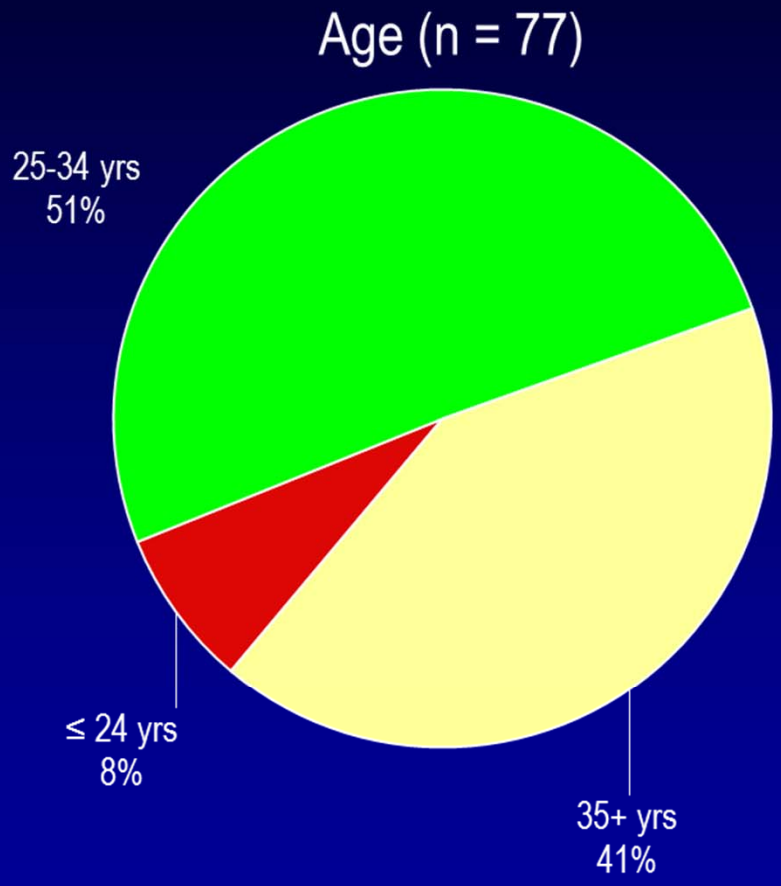
HIV or AIDS at first diagnosis

† *Excludes persons arriving in 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, 2012





** 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, 2012

- **Mexico** (n=19)
- **Liberia** (n=10)
- **Ethiopia** (n=8)
- **Kenya** (n=5)
- **Nigeria (n=5)**
- **Somalia (n=4)**
- **Cameroon (n=3)**
- **Guatemala (n=3)**
- **Philippines (n=2)**
- **Other^ (n=19)**

** 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.

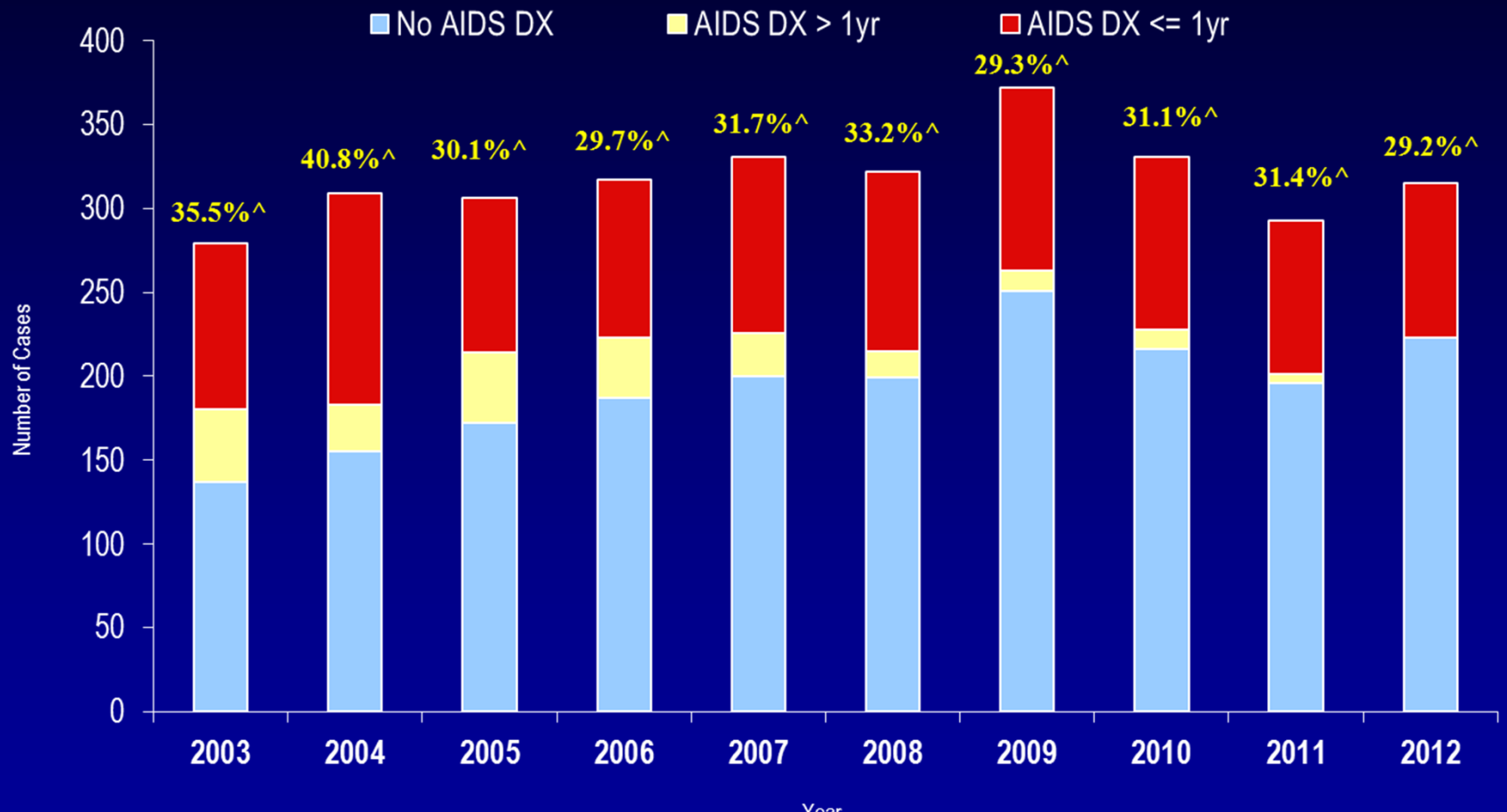
^ Includes 19 additional countries.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Late Testers

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

Time of Progression to AIDS for HIV Infections Diagnosed in Minnesota*, 2003 - 2012†



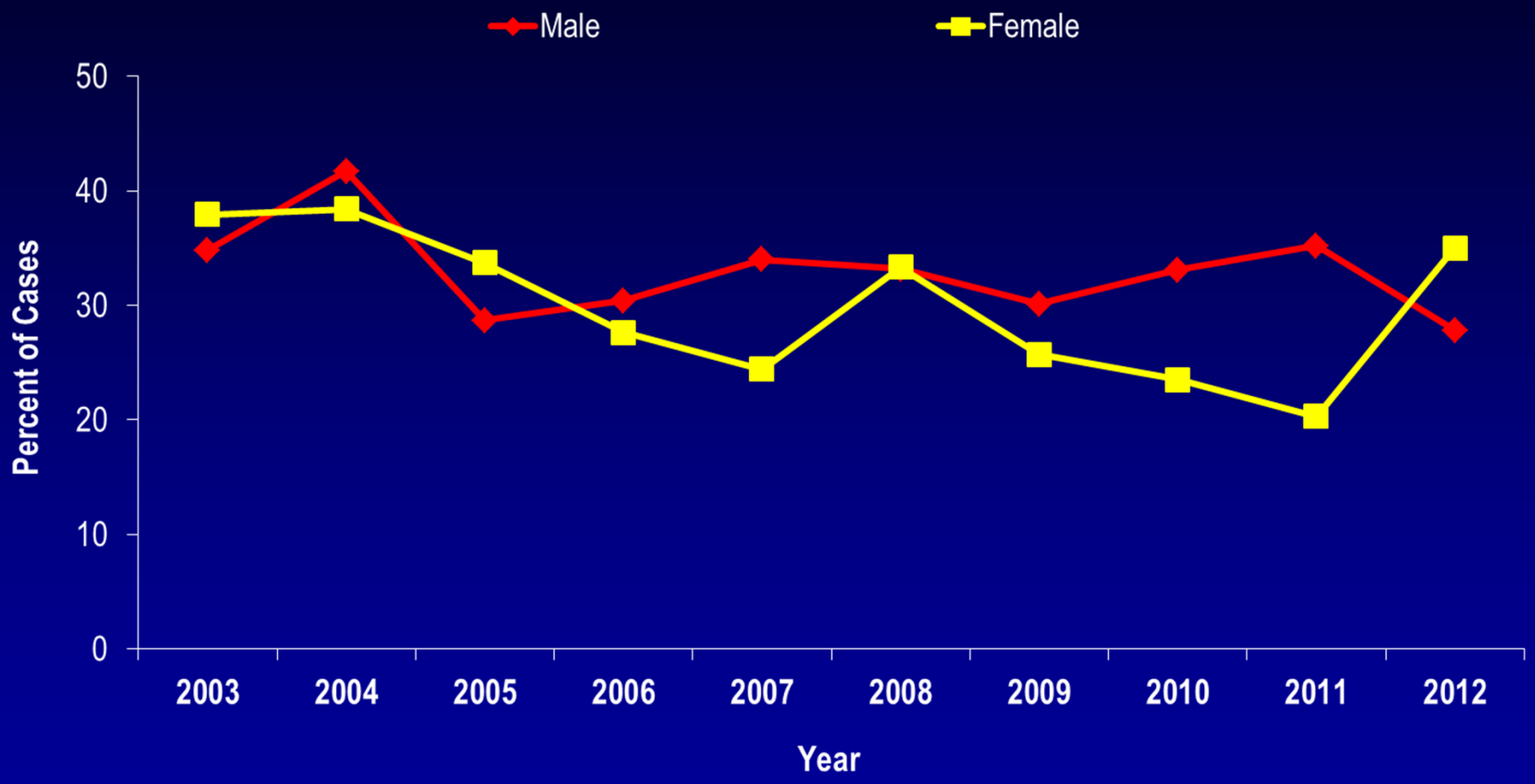
*Numbers include AIDS at 1st report but exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

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

† Numbers/Percent for cases diagnosed in 2012 only represents cases progressing to AIDS through April 1, 2013.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Progression to AIDS within 1 year of initial HIV Infection* Diagnosis by Gender, 2003 - 2012†

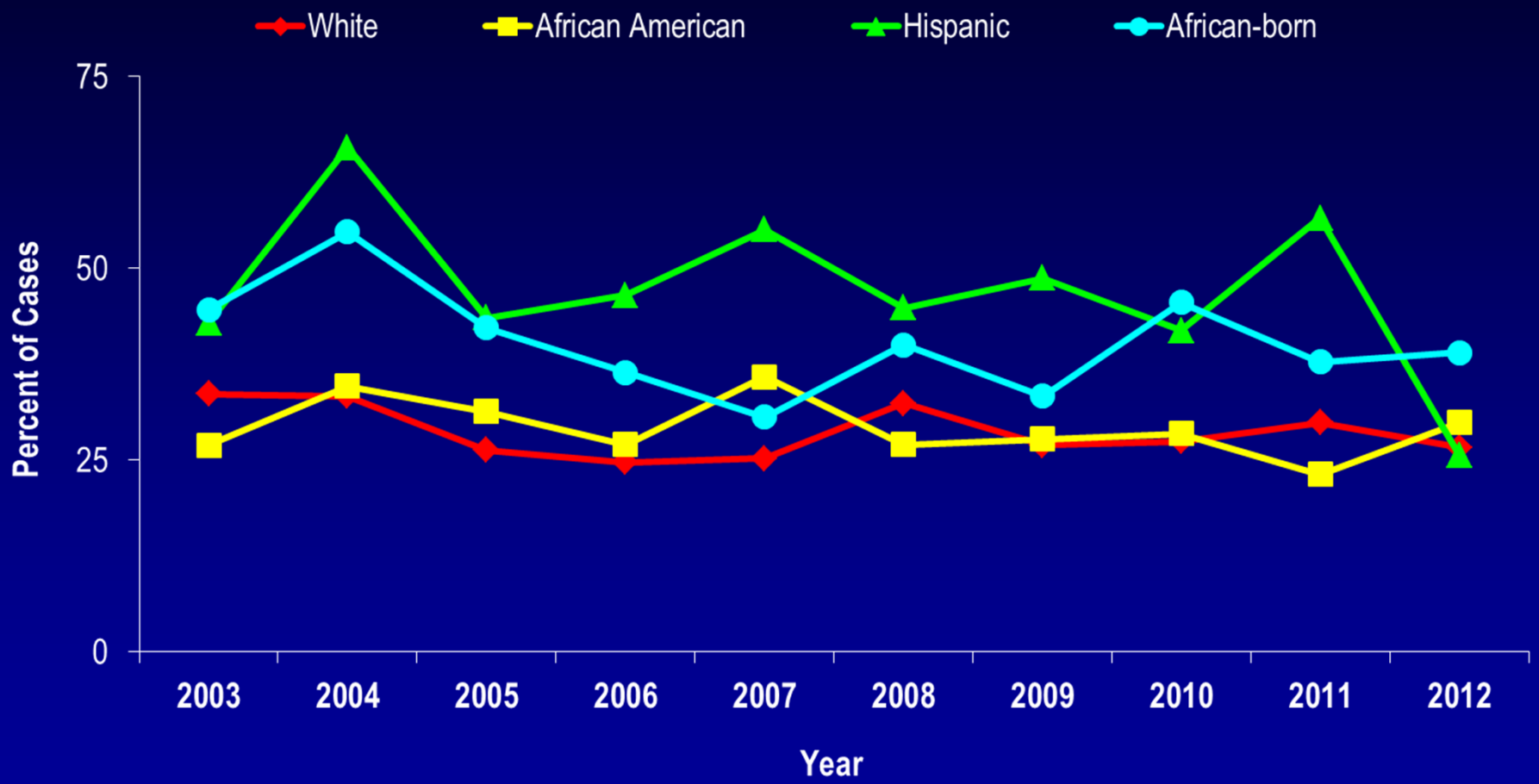


*Numbers include AIDS at 1st report but exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

† Numbers/Percent for cases diagnosed in 2012 only represents cases progressing to AIDS through April 2, 2013.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Progression to AIDS within 1 year of initial HIV Infection* Diagnosis by Race/Ethnicity^, 2003 - 2012†



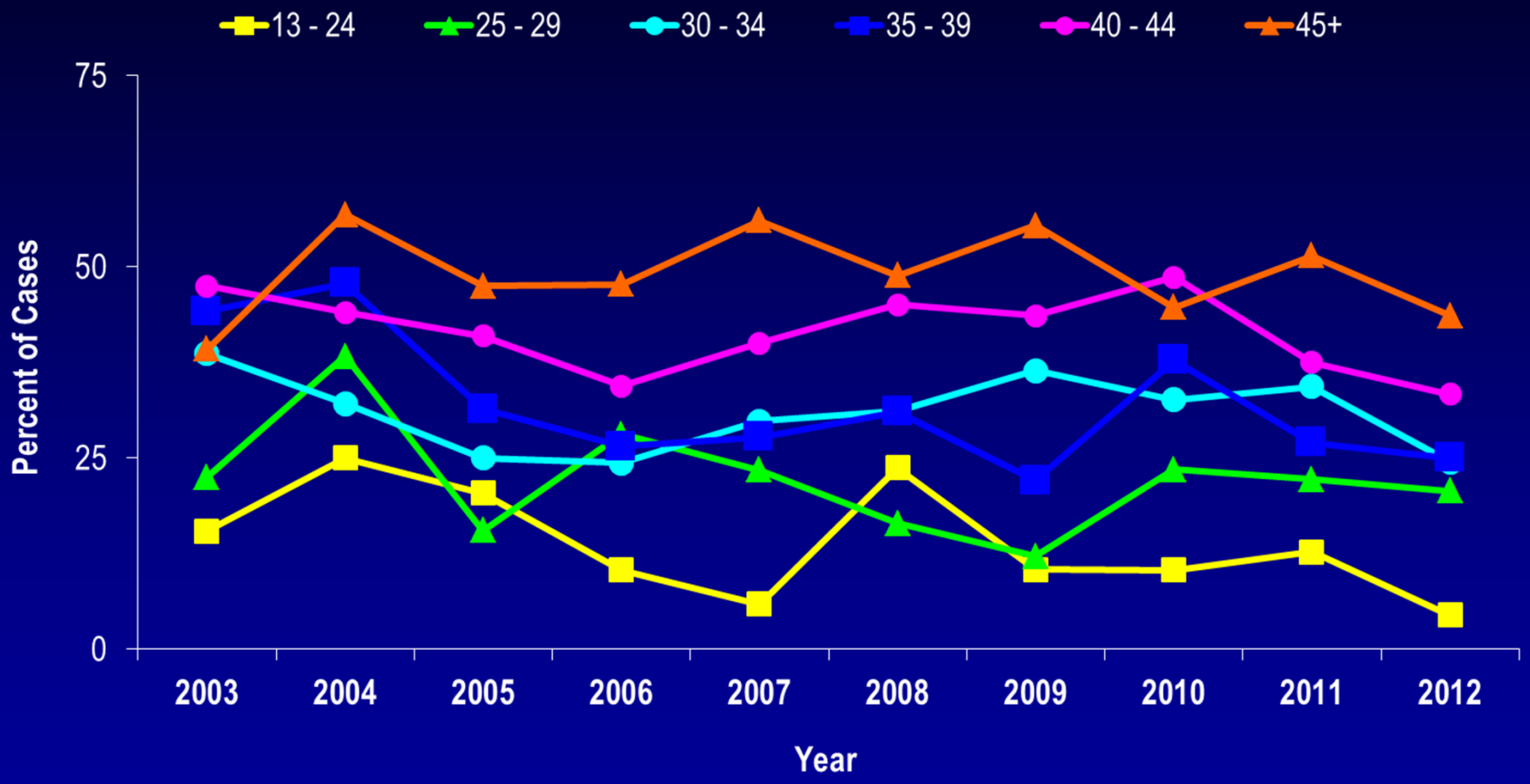
*Numbers include AIDS at 1st report but exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

† Numbers/Percent for cases diagnosed in 2012 only represents cases progressing to AIDS through April 2 2013.

^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, 2003 - 2012†

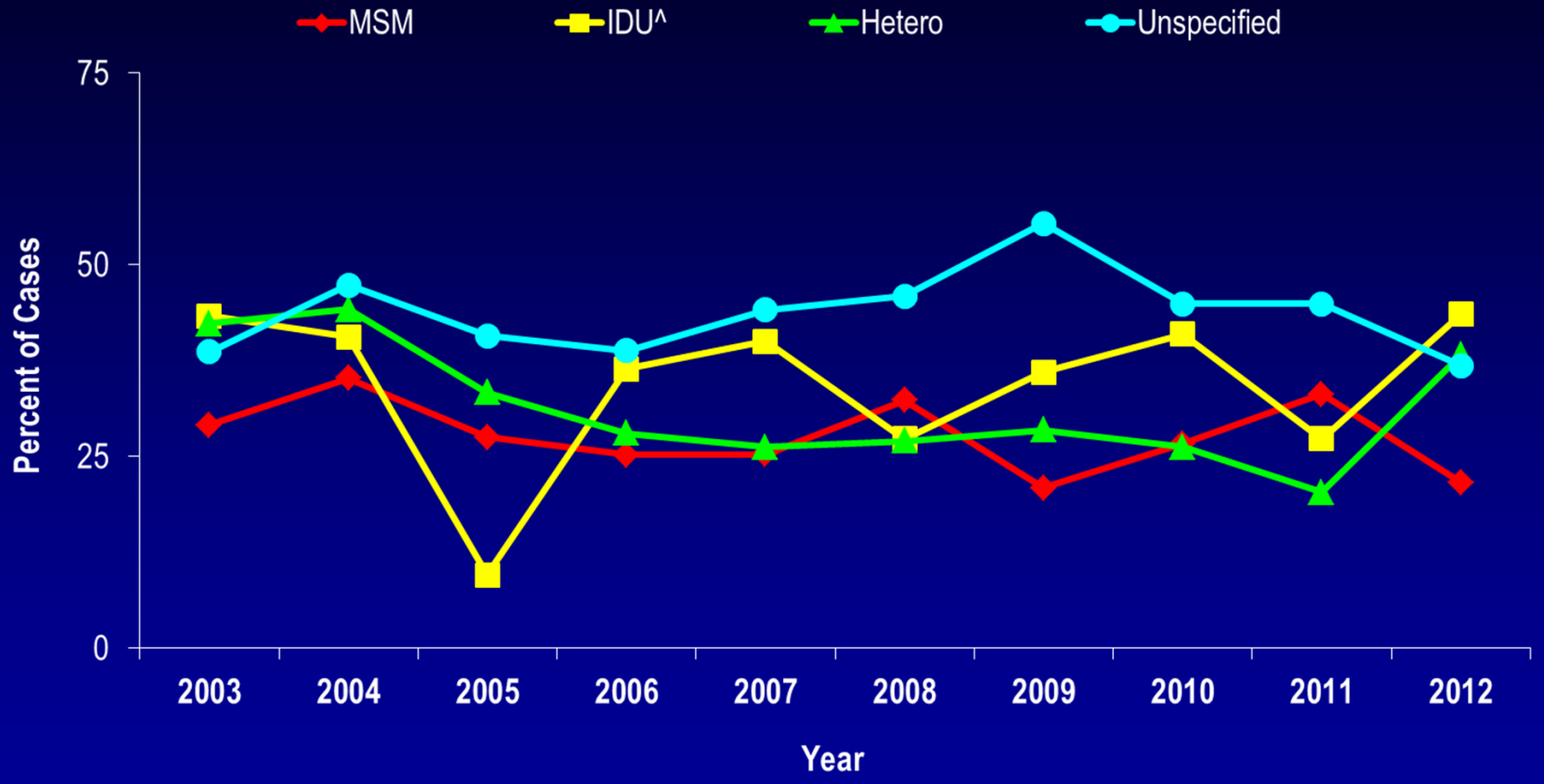


*Numbers include AIDS at 1st report but exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

† Numbers/Percent for cases diagnosed in 2012 only represents cases progressing to AIDS through April 2, 2013.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Progression to AIDS within 1 year of initial HIV Infection* Diagnosis by Mode of Transmission, 2003 - 2012†

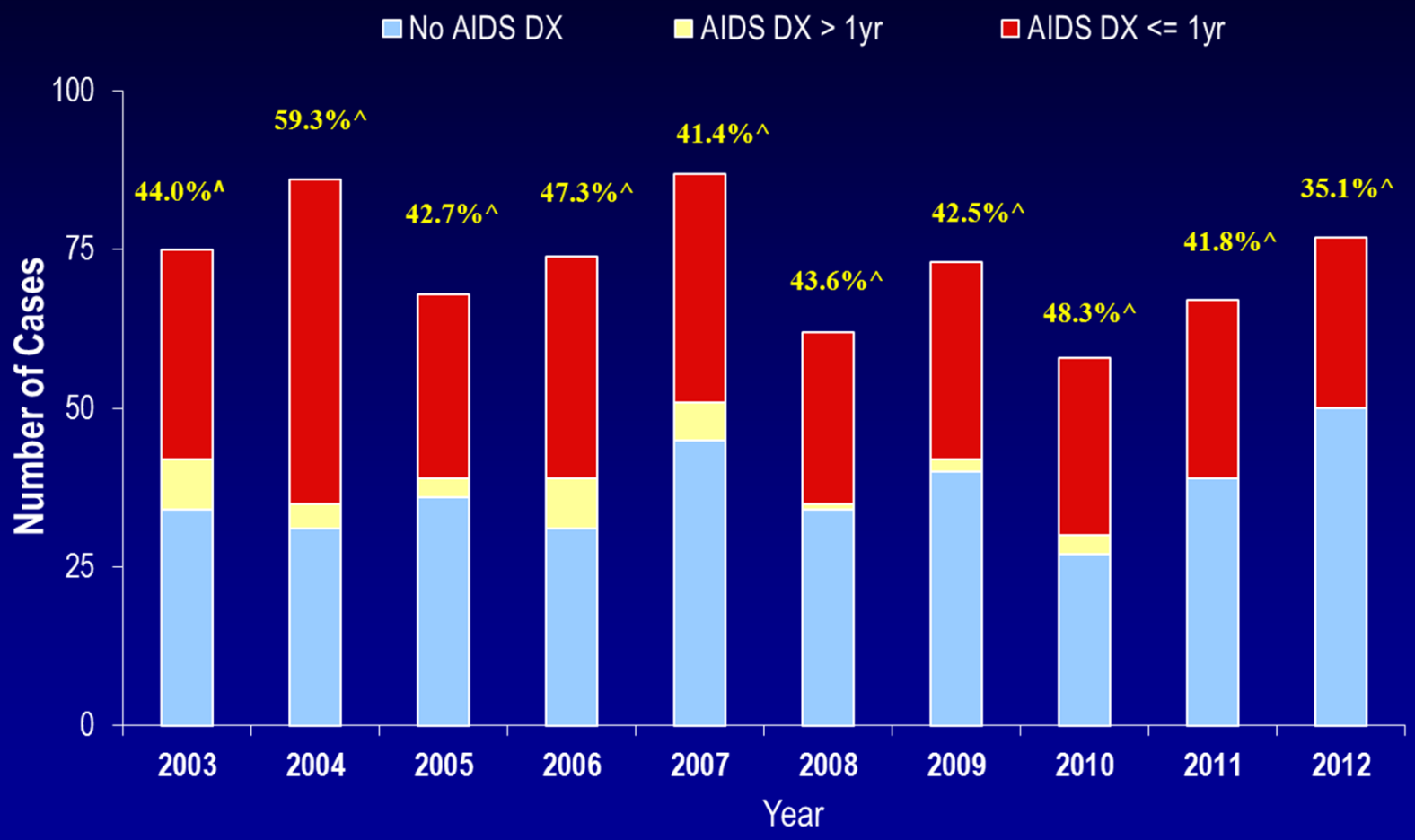


*Numbers include AIDS at 1st report but exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

† Numbers/Percent for cases diagnosed in 2012 only represents cases progressing to AIDS through April 2, 2013.
^Includes MSM/IDU

Data Source: *Minnesota HIV/AIDS Surveillance System*

Time of Progression to AIDS for HIV Infections* Diagnosed Among Foreign-Born Persons, Minnesota 2003 - 2012†



*Numbers include AIDS at 1st report but exclude 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.

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

† Numbers/Percent for cases diagnosed in 2012 only represents cases progressing to AIDS through April 2, 2013.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Companion Text for the Slide Set: *Minnesota HIV Surveillance Report, 2012*

INTRODUCTION

Overview

The *Minnesota HIV Surveillance Report, 2012* describes the occurrence of reported HIV infections in Minnesota by person, place, and time through December 31, 2012. 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). In June 2011, an amendment to the communicable disease reporting rule was passed, requiring the report of all CD4 and Viral Load test results.

Data in this report include cases diagnosed with HIV infection[1] as of December 31, 2012 and reported to the MDH as of April 1, 2013. All data are displayed by earliest date of HIV diagnosis. Refer to the *HIV Surveillance Technical Notes* for a more detailed description of data inclusion and exclusion criteria.

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.

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

Thus, any changes in numbers of infections may be due to one of these factors, or due to actual changes in HIV/AIDS occurrence.

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 2011, state-specific HIV infection diagnosis rates ranged from 2.3 per 100,000 persons in Vermont to 33.6 per 100,000 persons in Louisiana with an overall national rate of 19.1 per 100,000 persons. Minnesota had the 17th lowest HIV infection rate (7.2 HIV infections reported per 100,000 persons[2]). Compared with other states in the Midwest, Minnesota has a moderate rate of HIV diagnosis. At this time all states have confidential name-based HIV case reporting and 2011 is the first year of data from which a national comparison of HIV infection rates were calculated. In 2011, state-specific AIDS diagnosis rates ranged from 0.5 per 100,000 persons in Vermont to 22.8 per 100,000 persons in Georgia. Minnesota had the 15th lowest AIDS rate (4.0 AIDS cases reported per 100,000 persons[3]). Compared with states in the Midwest region, Minnesota had a moderate AIDS rate.

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,

[2] Centers for Disease Control and Prevention. HIV/AIDS Statistics and Surveillance Slide Sets http://www.cdc.gov/hiv/topics/surveillance/resources/slides/general/index.htm accessed April 15, 2013, Slide 13

[3] Centers for Disease Control and Prevention. HIV/AIDS Statistics and Surveillance Slide Sets http://www.cdc.gov/hiv/topics/surveillance/resources/slides/general/index.htm accessed April 05, 2013, Slide 29

Minnesota became the first state to make HIV infection a reportable condition. As of December 31, 2012, a cumulative total of 10,112 cases of HIV infection have been reported among Minnesota residents.[4] This includes 6,165 AIDS cases and 3,947 HIV, non-AIDS cases. Of these 10,112 HIV/AIDS cases, 3,459 are known to be deceased through correspondence with the reporting source, other health departments, review of death certificates, active surveillance, and matches with the National Death Index and Social Security Death Master File.

Overview of HIV/AIDS in Minnesota, 1990-2012

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 145 in 2001 to 247 in 2004, a 70 percent increase. Since 2004 the number of AIDS cases diagnosed has declined, with 202 AIDS cases diagnosed in 2012. The number of HIV (non-AIDS) diagnoses has remained fairly constant over the past decade from 2003 through 2012, at approximately 230 cases per year. With a peak of 280 newly diagnosed HIV (non-AIDS) cases in 2009, 236 new HIV (non-AIDS) cases were reported in 2012 (an increase of 8% from 219 in 2011). By the end of 2012, an estimated 7,516 persons with HIV/AIDS were assumed to be living in Minnesota.[5]

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.

[4] 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.

[5] 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.

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 83% of new infections 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 was diagnosed in 33 counties in Minnesota in 2012.

In 2012 there was an 8% increase statewide in the number of new HIV diagnoses compared to 2011. There were however differences seen in these increases from 2011 to 2012 by geography, with an increase of 22% in Minneapolis, an increase of 2% in St. Paul, an increase of 32% in Greater Minnesota, but a decrease of 12% in the suburbs. Analyses of the increase in greater Minnesota singled out St. Louis County as a contributor to the rise in cases. From 2011 to 2012 the number of cases in Greater Minnesota increased by 13 cases. During this same time period, St. Louis County saw an increase of 12 cases, from 2 cases in 2011 to 14 cases in 2012. Eleven of the 14 (79%) cases in St. Louis County in 2012 were men. Of those 11 men, 8 (73%) reported a history of MSM. The analyses did not show any trend by age at diagnosis.

New HIV Infections by Gender & Race/Ethnicity[6]

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 2012, 81% of new infections occurred among males and 19% among females.

Trends in the annual number of new HIV infections diagnosed among males differ by racial/ethnic group, and in 2012 numbers of new cases among males increased

[6] 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.

from 2011 by 17%. New cases among White males drove the epidemic in the 1980s and early 1990s, and today White males still account for the largest number of new infections, but the proportion of cases that White males account for is decreasing. In 2012, White males accounted for 50% of the new HIV infections, with 128 diagnoses, compared to 59% in 2011.

The annual number of cases for African American males peaked in 1992 at 78 and gradually decreased to 33 in 2003. During the past several years the number of cases in this group has trended upwards, with 60 new HIV diagnoses in 2012. This represents a 40% increase among African-American males from 2011 to 2012.

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 2012, an increase in Hispanic males was observed, from 19 cases in 2011 to 35 in 2012, representing an increase of 84%. Nineteen African-Born males were diagnosed in 2012; this is a slight increase from 2011 when 17 cases were diagnosed.

Similarly, trends in the annual number of HIV infections diagnosed among females differ by racial/ethnic group. However, unlike males, in 2012 the number of newly infected cases as compared to 2011 decreased by 19%. 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. In 2012 White women only made up 18% of the new infections in Minnesota, with 11 new cases.

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 2012 there were 17 cases diagnosed among African American women, compared to 21 in 2011. Between 1999 and 2002 the number of cases among African-born females increased significantly, from 13 to 39 cases. However, starting in 2003 the number decreased, and 17 new cases were diagnosed in 2006. In 2012 the number of new cases among African-born women was 22, making up 37% of all new diagnoses among women. 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 17% of the male population and 50% of the infections diagnosed among men in 2012. White, non-Hispanics make up approximately 83% of the male population in Minnesota and 50% of the new HIV infections diagnosed among men in 2012. Similarly for females, women of color make up approximately 13% of the female population and 82% of the new infections among women. White, non-Hispanics make up approximately 83% of the female population and 18% of new infections among women in 2012.[7]

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.

Beginning in 2012, MDH began estimating the number of MSM living in Minnesota. Men who have sex with Men have the highest rate of HIV infection than any other sub-category. In 2012, the estimated rate of HIV infection among MSM was 191.8 per 100,000 population. This is more than 50 times higher than the rate among non-MSM men (3.7 per 100,000 population). It's important to note that MSM contains cases from all racial/ethnic categories and therefore cannot be directly compared to the rates by race/ethnicity. For more information on how this was estimated, see the *HIV Surveillance Technical Notes.*

New HIV Infections among Adolescents and Young Adults[8], 1990-2012

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

[7] Population estimates based on U.S. Census 2010 data.
[8] 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.

infections occurring in the population more than the reported number of cases in older age groups does.

In 1990, 10% (45/436) of new HIV infections reported to the MDH were among youth. In 2012 this percentage was 19% (59/315). Just like overall trends, trends among youth differ by gender and race. Since 2001, 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 79 cases, the highest seen since 1986. In 2012, the number of cases increased from 47 in 2011 to 55. Of these 55 new cases among adolescent and young adult men, 31 (56%) were among MSM of color. Since 2003, the number of cases among young males has increased by about 130 percent.

Unlike young men, the annual number of new HIV infections diagnosed among young women has remained relatively consistent over time. However, since 2009, the number of new HIV infections diagnosed among young women has decreased consistently. In 2012 there were four cases diagnosed among young women. Females accounted for 7% (4/59) of new HIV infections diagnosed among adolescents and young adults in 2012.

Overall, young women accounted for 7% (4/60) of new infections among females and young males accounted for 22% (55/255) of new infections among males in 2012.

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 40% of new HIV infections diagnosed between 2010 and 2012, African Americans accounted for 40%, and Hispanics 11%. American Indians, Asians and other racial groups made up 4%, 2% and 3% of the remaining cases, respectively. Among young women, Whites accounted for 39%, African-born 26%, African Americans 18%, American Indians 9%, Hispanics 4%, and Asian/Pacific Islanders 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 93% of the new HIV infections diagnosed between 2010 and 2012, 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 sex accounted for an estimated 2% of cases. Heterosexual contact accounted for an estimated 100% of new HIV infections diagnosed among adolescent and young adult females between 2010 and 2012.

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 2012, MSM accounted for 53% of all new infections (65% among males) with 167 cases diagnosed. On a much smaller scale, the numbers of male cases attributed to IDU and MSM/IDU as well as heterosexual contact have remained somewhat stable over the past decade. The number of cases without a specified risk has increased overall for the past decade, accounting for 24% of male cases in 2012.

Throughout the epidemic, heterosexual contact has been the predominant mode of HIV exposure reported among females accounting for 77% of female cases in 2012. IDU is the second most common known mode of transmission, and accounted for 7% of cases among women in 2012. Unspecified risk has been designated for a growing percentage of cases for the past several years and represented 21% of female cases in 2012, an increase of 75% of the proportion of cases in 2011 when 12% of women diagnosed with HIV infection did not have a specified mode of transmission. Most of these cases would not agree to or could not be interviewed by a Disease Intervention Specialist[9] from 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

[9] 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.

the Centers for Disease Control and Prevention (CDC)[10], 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 2010 and 2012, MSM or MSM/IDU accounted for an estimated 95% of cases among White males, 96% of cases among Hispanic males, 81% of cases among African American males, and 18% of cases among African-born males. The latter three also had some of the highest proportions of cases with unspecified risk (22%, 23%, and 72%, 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. Therefore as defined in the *HIV Surveillance Technical Notes* previously referenced, the unspecified risk is attributed at a weight of 90% to Heterosexual contact. IDU was estimated as a risk in 3% of male African American cases, and 2% of male White cases diagnosed during 2010-2012. The number of cases among Asian and American Indian men during the years 2010-2012 was insufficient to make generalizations regarding risk (less than 20 cases in each group). There were no cases attributed to IDU alone among Hispanic males during this same time period.

Heterosexual contact with a partner who has or is at increased risk for HIV infection accounted for an estimated 96% of cases among African American and African-born females, and 86% of White females between 2010 and 2012. The percent of cases

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

with unspecified risk among African-born and African American females, 19% and 20% respectively, was higher than for White females (11%) (see *HIV Surveillance Technical Notes* for further information about re-distribution of mode of exposure categories). IDU was estimated as a risk for 14% of cases among White, and 2% among African American women. No cases were attributed to IDU among African-born females during this same time period. The small number of cases in 2010-2012 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.

For 15 years the number of births to HIV-infected women increased steadily from 14 in 1996 to 71 in 2009. In 2012, there were 60 births to HIV+ women. The rate of transmission has decreased from 15% between 1994 and 1996 to 1.7% in the past three years, with one HIV+ births to HIV+ mothers in Minnesota in 2012.

The rate of transmission in Minnesota between 1982 and 1994 (before widespread use of zidovudine[11] to prevent mother-to-child HIV transmission) was 25%. Proper prenatal care, including HIV screening for all pregnant women and appropriate medical intervention for those infected, is a vital element in preventing the spread of HIV.

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 20 cases in 1990 to 77 cases in 2012. This increase

[11] A common antiretroviral drug.

has been largely driven by the increase of cases among African-born persons from 8 cases in 1990 to 41 cases in 2012, as well as, persons from Mexico, Central and South America from 6 cases in 1990 to 27 cases in 2012. Among new HIV infections diagnosed in 2012, 24% were among foreign-born persons. Based on U.S. Census 2010 data, foreign-born persons make up 7% of the total Minnesota population and are, therefore, disproportionately affected by HIV[12]. Among African-born this disparity is even more evident, while African-born persons make up just over 1% of the Minnesota population they accounted for 13% of new HIV infections in 2012.

In 2012, the number of foreign-born males increased from 32 in 2011 to 52 (63% increase). This is the highest number of foreign-born cases newly diagnosed with HIV in Minnesota since 2007. Males made up 68% of all foreign-born cases newly diagnosed with HIV in Minnesota. Despite the increase in foreign-born males, foreign-born females accounted for a greater percentage of all females diagnosed cases (42%) than did foreign-born cases among males (20%).

Six countries (Mexico, Liberia, Ethiopia, Kenya, Nigeria, and Somalia) accounted for a majority (66%) of new infections among foreign-born persons, however there are over 28 countries represented among the 77 new infections in 2012.

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

Since 2000, approximately one third of all new HIV infection cases diagnosed in Minnesota have either been AIDS at first diagnosis, or have progressed to an AIDS diagnosis within one year of initial diagnosis with HIV (non-AIDS) infection. As with other characteristics of the HIV epidemic in Minnesota, the proportion of late testers varies by demographic characteristics. The most significant differences occur by race/ethnicity, with the proportion of late testers between 2003 and 2012 among African-born (39%) and African Americans (30%) being higher than that among Whites (27%) and Hispanics (26%). Similar data for American Indians and Asian/Pacific Islanders in a single year had fewer than 10 cases and are considered not stable. Differences by age are as expected with the percentage of late testers increasing with age at time of diagnosis. In

[12] Based on U.S. Census 2010 data, the Minnesota State Demographic Center estimates that there are 380,764 foreign-born persons, including 72,930 African-born persons are living in Minnesota out of a total population of 5,303,925. 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.

2012[13], 4% of those diagnosed between the ages of 13 and 24 were late testers compared to 44% of those 45 years and older. Finally, the percentage of late testers is also higher among foreign-born cases compared to other cases. In 2012, 35% of foreign-born cases were late testers compared to 27% of US-born cases.

[13] Percentage of late testers for 2012 includes only those progressing to AIDS through January 2013. 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. Additionally, on January 4, 2010 the U.S. travel ban on HIV+ visitors and immigrants was lifted. Persons now testing positive for the first time in Minnesota after arriving from their native country will no longer be assigned the status of 'immigrant', as compared to those who were diagnosed pre-2010 during obligatory immigrant physical examinations. Finally, an amendment to the communicable disease reporting rule was passed in June 2011, requiring the report of all CD4 and Viral Load test results.

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

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

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.

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 and Social Security Death Master File. "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

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

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 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 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 who 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 2012, we would use cases diagnosed between 2010 and 2012. 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

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

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:

Reported Female cases 2010 - 2012

Race/Risk	Heterosexual n (%†)	IDU n (%†)	Other[5] n (%†)	*Unspecified n*	Total N
White	36 (85)	6 (14)	0 (0)	*5*	47
African-American	41 (95)	1 (2)	1 (2)	*11*	54
African-born	54 (96)	0 (0)	2 (4)	*13*	69

† Percent of those with known risk.

Female Cases for 2010 - 2012 with Estimated risk:

Race/Risk	Heterosexual	IDU	Other	*Unspec.*	Total N
White	(.85*5) + 36 = **41**	(.14*5) + 5 = **6**	0	*0*	47
African-American	(.95*11) + 41 = **52**	(.02*5) + 1 = **1**	(.02*5) + 1 = **1**	*0*	54
African-born‡	(.95*13) + 54 = **66**	0	(.05*13) + 2 = **3**	*0*	69

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

MSM Estimate

In 2012 MDH began estimating the population of MSM in Minnesota. This estimate generates a denominator for the most commonly reported risk factor in

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

Minnesota and allows for the calculation of a rate of infection and rate of prevalence among those in the risk group. Estimation is done each year using the most recently available census data for men over the age of 13 and using the model by on Laumann et al[6] where 9% of the urban population, 4% of the suburban population and 1% of the rural population are estimated to be MSM.

$$MSM_{state\ i} = (rural\ pop_{state\ i} \times 0{:}01\%) + (suburban\ pop_{state\ i} \times 0{:}04\%) + (urban\ pop_{state\ i} \times 0{:}09\%)$$

After consulting with stakeholders, it was agreed that it was appropriate to assign urban/suburban/rural designation based on the unique geography of Minnesota. The counties of Hennepin and Ramsey are assigned as urban, the counties of Anoka, Carver, Dakota, Scott and Washington along with the cities of Rochester, St. Cloud and Duluth are assigned as suburban, and the remaining areas were are assigned as rural. In 2012, this method utilized 2010 census data and produced an estimate of the MSM population in Minnesota to be 92,788. Overall, this represents 4.3% of the adolescent and adult male population in Minnesota.

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

[6] Laumann EO, Gagnon JH, Michael RT, et al. The social organization of sexuality: sexual practices in the United States, chapter 8. Chicago: University of Chicago Press; 1994

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. Ongoing participation in this initiative will allow for proper attribution of incident and prevalent cases in Minnesota.

Table 1. Number of New Cases and Rates (per 100,000 persons) of HIV Infection, HIV (non-AIDS), & AIDS[I] Minnesota, 1982-2012

Year	HIV Infection[III]		HIV (non-AIDS)[III]		AIDS[IV]	
	Cases	Rate	Cases	Rate	Cases	Rate
1982-1999	*6,065*	--	*4,810*	--	*3,532*	--
2000	281	5.7	194	3.9	173	3.5
2001	283	5.7	208	4.2	145	2.9
2002	308	6.1	222	4.4	176	3.5
2003	279	5.5	203	4.0	194	3.8
2004	309	6.1	201	4.0	247	4.9
2005	306	6.0	226	4.4	216	4.2
2006	317	6.1	246	4.8	196	3.8
2007	331	6.4	246	4.7	190	3.6
2008	322	6.1	241	4.6	202	3.8
2009	372	7.0	281	5.3	190	3.6
2010	331	6.2	247	4.7	179	3.4
2011	293	5.5	219	4.1	186	3.5
2012	315	5.9	236	4.4	202	3.8
Cumulative Total[II]	*10,112*	*190.7*	*7,780*	*146.7*	*6,028*	*113.7*

[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

[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 2010 U.S. Census population data (2010-2011), 2000 U.S. Census population data for 2000, and U.S. Census intercensal population estimates released in September 2011 were used for years 2001-2009.

[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, 2012

Group	Males		Females		*Total*		*HIV*
	Cases	%	Cases	%	*Cases*	*%*	*Infection Rate*
Residence[II]							
Minneapolis	109	43%	14	23%	*123*	*39%*	*32.2*
St. Paul	33	13%	11	18%	*44*	*14%*	*15.4*
Suburban	69	27%	25	42%	*94*	*30%*	*4.3*
Greater Minnesota	44	17%	10	17%	*54*	*17%*	*2.2*
Total	*255*	*100%*	*60*	*100%*	*315*	*100%*	*5.9*
Age							
<13 yrs	1	0%	1	2%	*2*	*1%*	*0.2*
13-19 yrs	4	2%	3	5%	*7*	*2%*	*1.4*
20-24 yrs	51	20%	1	2%	*52*	*17%*	*14.6*
25-29 yrs	44	17%	14	23%	*58*	*18%*	*15.6*
30-34 yrs	34	13%	15	25%	*49*	*16%*	*14.3*
35-39 yrs	31	12%	5	8%	*36*	*11%*	*11.0*
40-44 yrs	26	10%	7	12%	*33*	*10%*	*9.4*
45-49 yrs	32	13%	6	10%	*38*	*12%*	*9.4*
50-54 yrs	14	5%	5	8%	*19*	*6%*	*4.7*
55-59 yrs	11	4%	1	2%	*12*	*4%*	*3.4*
60+ yrs	7	3%	2	3%	*9*	*3%*	*0.9*
Total	*255*	*100%*	*60*	*100%*	*315*	*100%*	*5.9*
StateTotals	*255*		*60*		*315*		*5.9*

[I] HIV Infection includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2011.

[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 (one diagnosis in 2011).

Rates calculated using U.S. Census 2010 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, 2012

	Males			Females			*Total*		
Group	**Cases**	**%**	***Rate*** [IV]	**Cases**	**%**	***Rate*** [IV]	***Cases***	***%***	***Rate*** [III]
Race/Ethnicity									
White, non-Hispanic	128	50%	*5.9*	11	18%	*0.5*	*139*	*44%*	*3.2*
Black[II], African-American	60	24%	X	17	28%	X	*77*	*24%*	*39.2*
Black[II], African-born	19	7%	X	*22*	37%	X	*41*	*13%*	*56.2*
Hispanic	35	14%	*26.5*	4	7%	*3.4*	*39*	*12%*	*15.6*
American Indian	5	2%	#	5	8%	#	*10*	*3%*	*18.0*
Asian/PI	5	2%	#	0	0%	#	*5*	*2%*	*2.3*
Other[II]	3	1%	X	1	2%	X	*4*	*1%*	*X*
Total	*255*	*100%*	*9.7*	*60*	*100%*	*2.2*	*315*	*100%*	*5.9*
Mode of Exposure									
MSM	167	65%	X	--	--	X	*167*	*53%*	X
IDU	8	3%	X	4	7%	X	*12*	*4%*	X
MSM/IDU	11	4%	X	--	--	X	*11*	*3%*	X
Heterosexual (Total)	(9)	4%	X	(46)	77%	X	*(55)*	*17%*	X
with IDU	*2*	--	X	*0*	--	X	*2*	--	X
with Bisexual Male	*0*	--	X	*3*	--	X	*3*	--	X
with Hemophiliac/other	*0*	--	X	*0*	--	X	*0*	--	X
with HIV+	*7*	--	X	*16*	--	X	*23*	--	X
Hetero, unknown risk[V]	*0*	--	X	*27*	--	X	*27*	--	X
Perinatal	1	0%	X	0	0%	X	*1*	0%	X
Other	0	0%	X	1	2%	X	*1*	0%	*X*
Unspecified	27	11%	X	5	8%	X	*32*	10%	*X*
No Interview, Unspecified	32	13%	X	4	7%	X	*36*	11%	*X*
Total	*255*	*100%*	*9.7*	*60*	*100%*	*2.2*	*315*	*100%*	*5.9*

[I] HIV infection includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2011.

[II] African-born Blacks are reported separately from other Blacks (born in the U.S. or elsewhere). The Black, African-American population is non-Hispanic. "Other" includes multi-racial persons and persons with unknown race.

[III] Rates calculated using U.S. Census 2010 data. The population estimate for African-born persons was calculated by the Minnesota State Demographic Center . The population estimate for Black, African-American persons (196,211) was calculated by subtracting the U.S. Census estimate for African-born persons (72,390) from the total Black population (269,414). Note that this assumes that all African-born persons are Black (as opposed to another race).

[IV] U.S. Census 2010 data necessary to calculate race-specific rates by gender are not available for all subpopulations, and/or numbers are too small to calculate reliable rates.

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, 2012		
County[II]	**HIV Infection Cases**	**HIV Infection Rate[III]**
Aitkin	0	-
Anoka	10	3.0
Becker	0	-
Beltrami	1	-
Benton	3	-
Big Stone	0	-
Blue Earth	0	-
Brown	0	-
Carlton	0	-
Carver	1	-
Cass	1	-
Chippewa	0	-
Chisago	1	-
Clay	4	-
Clearwater	0	-
Cook	0	-
Cottonwood	1	-
Crow Wing	1	-
Dakota	8	2.0
Dodge	0	-
Douglas	1	-
Faribault	0	-
Fillmore	0	-
Freeborn	2	-
Goodhue	0	-
Grant	0	-
Hennepin	180	15.6
Houston	0	-
Hubbard	0	-
Isanti	0	-
Itasca	1	-
Jackson	1	-
Kanabec	1	-
Kandiyohi	2	-
Kittson	0	-
Koochiching	0	-
Lac Qui Parle	0	-
Lake	1	-
Lake of the Woods	0	-
Le Sueur	0	-
Lincoln	0	-
Lyon	1	-
McLeod	1	-
Mahnomen	0	-
Marshall	0	-
Martin	0	-
Meeker	0	-
Mille Lacs	0	-
Morrison	0	-
Mower	1	-

Table 4. Number of Cases and Rates (per 100,000 persons) of HIV Infection by County of Residence[I] -- Minnesota, 2012		
County[II]	**HIV Infection Cases**	**HIV Infection Rate[III]**
Murray	0	-
Nicollet	0	-
Nobles	0	-
Norman	0	-
Olmsted	1	-
Otter Tail	1	-
Pennington	0	-
Pine	1	-
Pipestone	0	-
Polk	0	-
Pope	0	-
Ramsey	53	10.4
Red Lake	0	-
Redwood	0	-
Renville	0	-
Rice	0	-
Rock	0	-
Roseau	0	-
St. Louis	14	7.0
Scott	5	3.8
Sherburne	4	-
Sibley	0	-
Stearns	4	-
Steele	0	-
Stevens	0	-
Swift	0	-
Todd	0	-
Traverse	0	-
Wabasha	1	-
Wadena	0	-
Waseca	0	-
Washington	4	-
Watonwan	0	-
Wilkin	0	-
Winona	1	-
Wright	3	-
Yellow Medicine	0	-
State Total	*315*	*5.9*

[I] HIV infection includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2011.

[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 2010 data. Rates not calculated for counties with fewer than 5 cases.

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 one state prisoner during 2011 (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 1982-2012

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	84	68	10	9	14	4	2	*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	5	14	18	5	2	1	2	*47*	21	45%
2004	7	13	22	3	2	1	1	*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	12	24	2	2	1	2	*59*	29	49%
2008	3	11	27	6	0	3	3	*53*	34	64%
2009	16	13	34	4	1	2	1	*71*	39	55%
2010	7	14	22	2	2	1	3	*51*	20	39%
2011^	11	10	28	8	4	1	3	*69*	36	53%
2012^	14	13	25	3	2	0	0	*60*	32	54%
Cumulative Total	199	225	286	56	36	18	22	849	345	41%

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 (231), Asia/Pacific Islands (16), 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 1982-2012

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	-
2010	0	0	2	0	0	0	0	*2*	2	100%
2011	0	0	0	0	0	0	0	*0*	0	
2012	1	0	0	0	0	0	0	*1*	1	100%
Cumulative Total	19	6	8	4	2	2	0	*41*	13	32%
Rate of Transmission 2010 - 2012	3.1%	0.0%	2.7%	0.0%	0.0%	0.0%	0.0%	1.7%	3.4%	--
Cumulative Rate of Transmission[IV]	9.5%	2.7%	2.8%	7.1%	--	--	--	4.8%	3.8%	--

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 (8), 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, 2012

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, 2012 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 2012 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 (number of state prisoners believed to be living with HIV/AIDS = 104).

- Data analyses for new infections exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program (number of primary HIV+ refugees in this program living in MN as of Dec 31, 2012= 166), as well as, other refugees/immigrants reporting a positive test prior to their arrival in Minnesota (n=154).

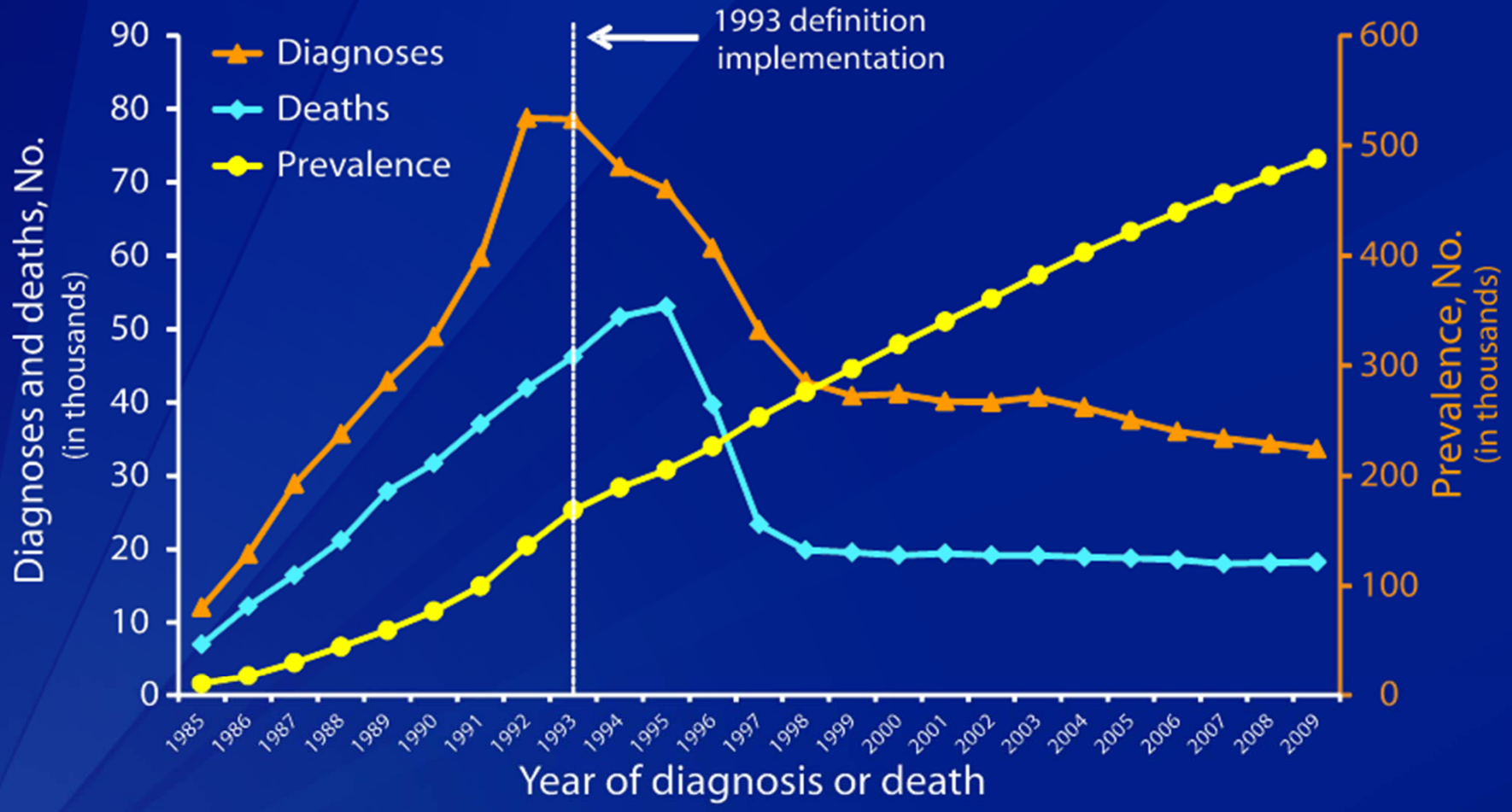
- Some limitations of surveillance data:
  - Data do not include HIV-infected persons who have not been tested for HIV
  - Data do not include persons whose positive test results have not been reported to the MDH
  - Data do not include HIV-infected persons who have only tested anonymously
  - Case numbers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

AIDS Diagnoses, Deaths, and Persons Living with AIDS, 1985–2009—United States and 6 U.S. Dependent Areas

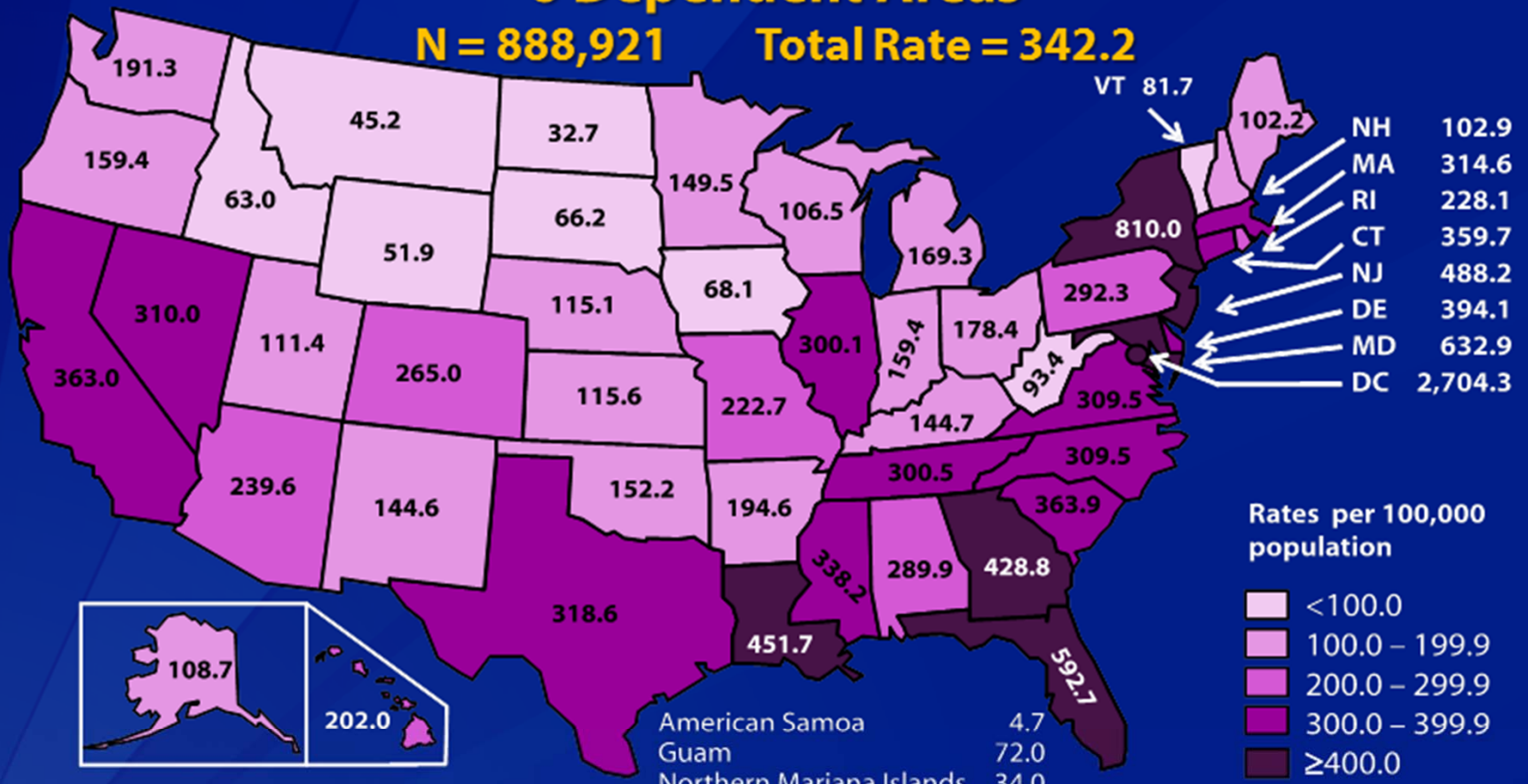


Note. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting. Death may be due to any cause.

CDC

Rates of Adults and Adolescents Living with Diagnosed HIV Infection, Year-end 2010—United States and 6 Dependent Areas

N = 888,921 Total Rate = 342.2

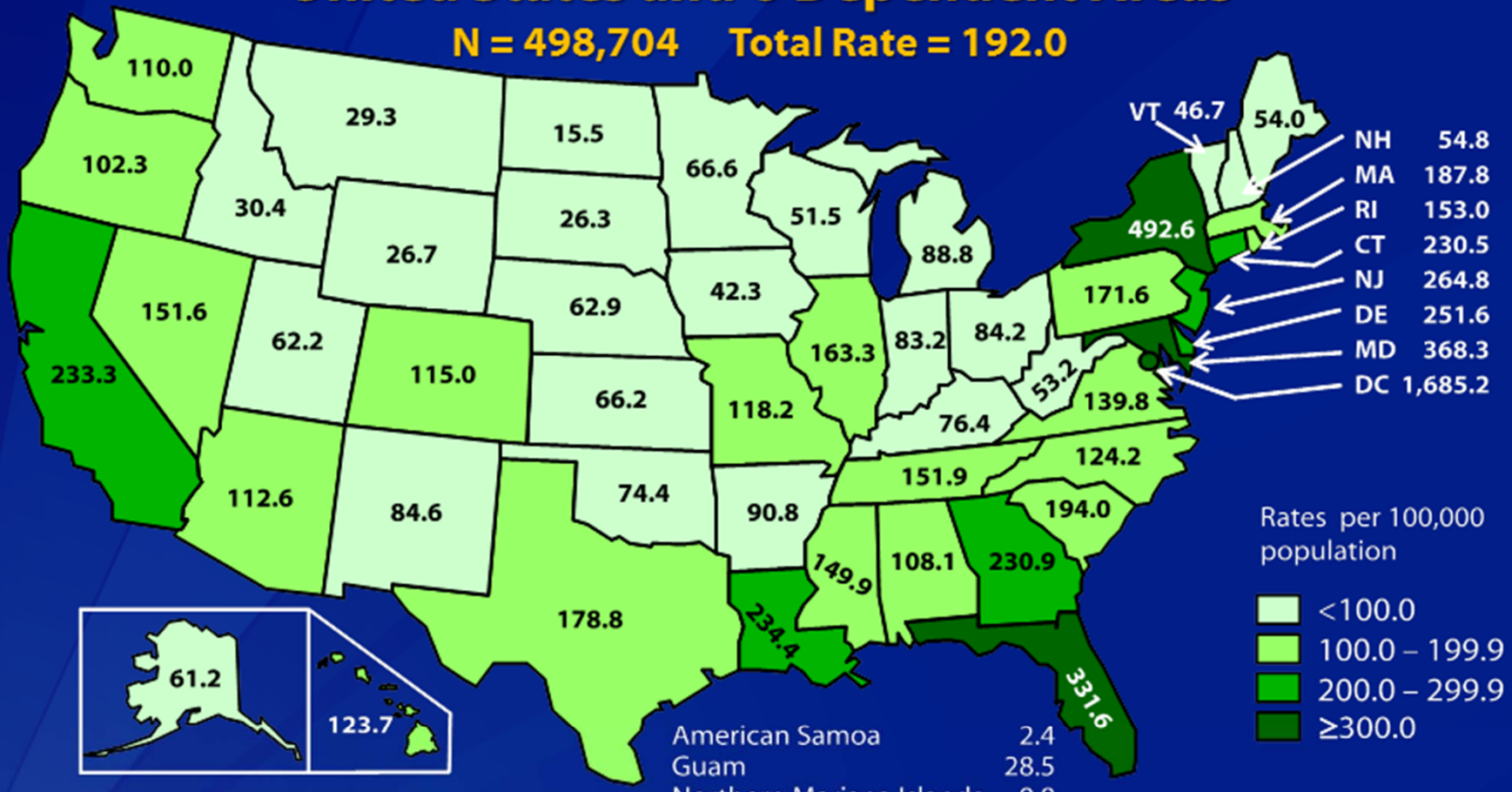


American Samoa	4.7
Guam	72.0
Northern Mariana Islands	34.0
Puerto Rico	584.3
Republic of Palau	24.7
U.S. Virgin Islands	667.1

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting.

Rates of Adults and Adolescents Living with Diagnosed HIV Infection Ever Classified as Stage 3 (AIDS), Year-end 2010— United States and 6 Dependent Areas

N = 498,704 Total Rate = 192.0



American Samoa	2.4
Guam	28.5
Northern Mariana Islands	9.8
Puerto Rico	357.2
Republic of Palau	5.3
U.S. Virgin Islands	383.4

Note. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting.

Overview of HIV/AIDS in Minnesota

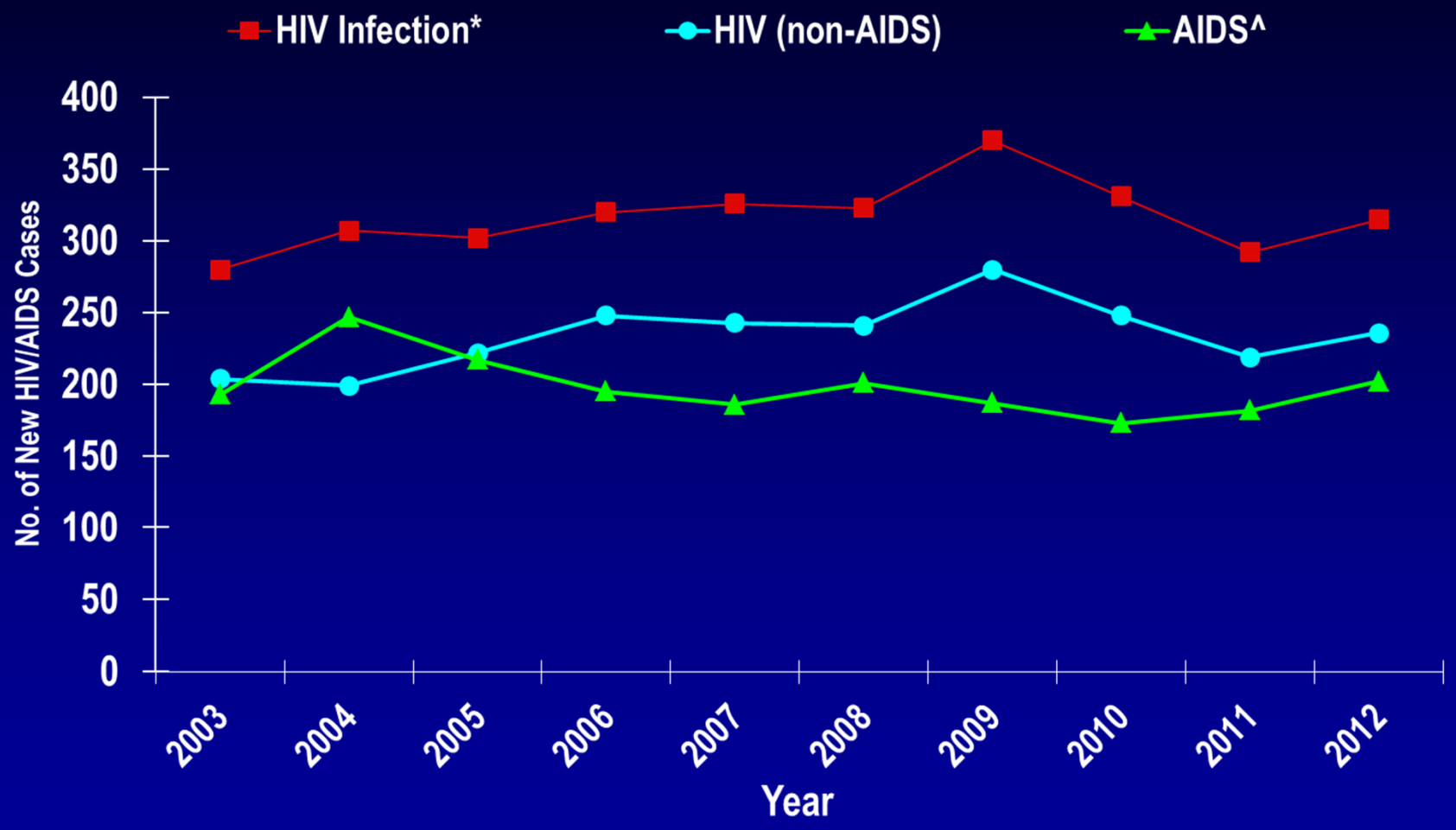
Minnesota HIV/AIDS Surveillance: *Cumulative Cases*

- As of December 31, 2012, a cumulative total of 10,112* persons have been diagnosed and reported with HIV infection in Minnesota. Of these:
  - 3,947 persons have been diagnosed with HIV infection (non-AIDS)
  - 6,165 have progressed to AIDS
- Of these 10,112 persons, 3,459 are known to be deceased

Data Source: *Minnesota HIV/AIDS Surveillance System*

HIV/AIDS in Minnesota:

New HIV Infection, HIV (non-AIDS) and AIDS Cases by Year, 2003-2012



**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*

Persons Living with HIV/AIDS in Minnesota

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

- As of December 31, 2012, 7,516* persons are assumed alive and living in Minnesota with HIV/AIDS
  - 3,974 living with HIV infection (non-AIDS)
  - 3,542 living with AIDS

- This number includes 1,654 persons who were first reported with HIV or AIDS elsewhere and subsequently moved to Minnesota

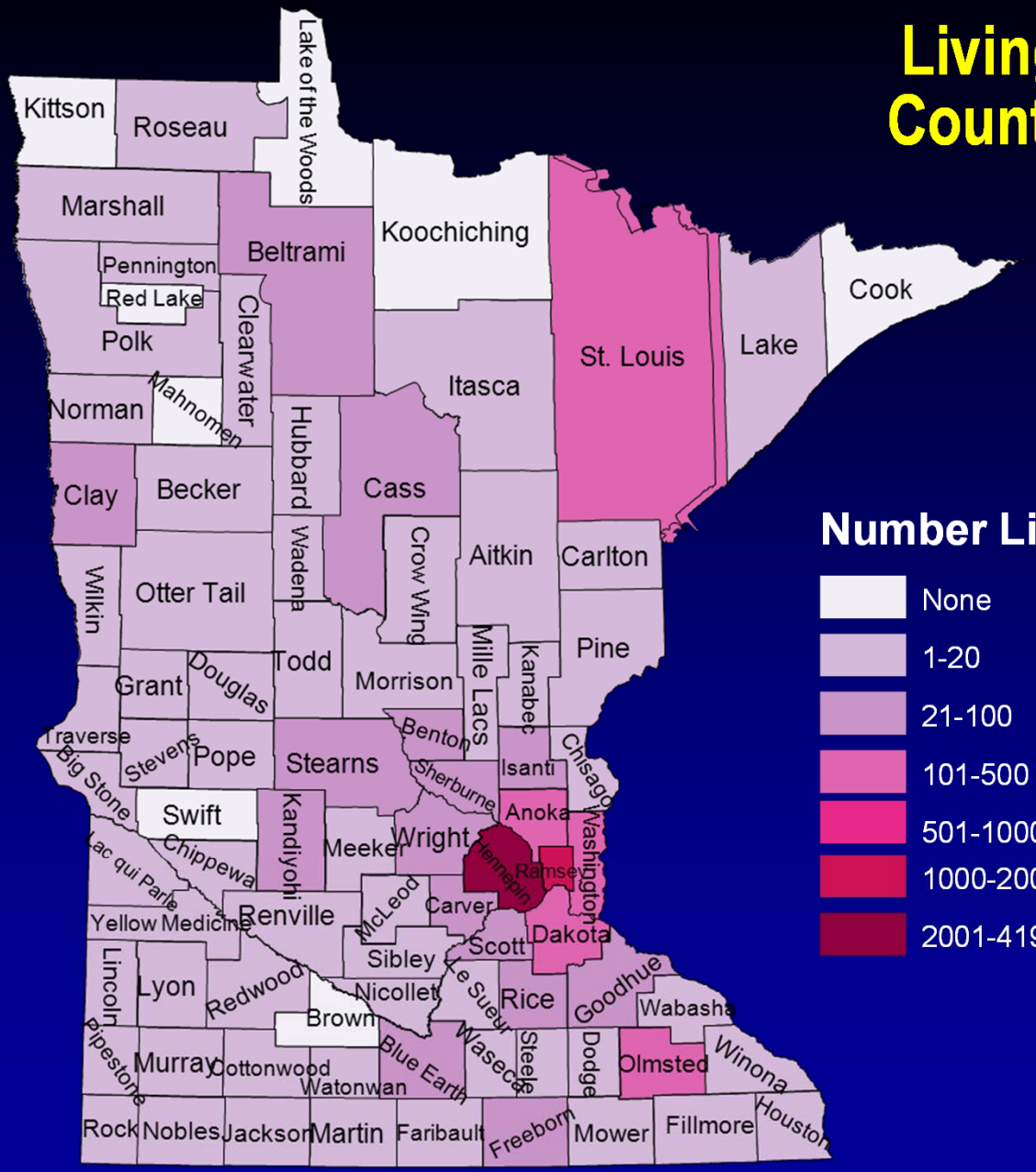
- This number excludes 1,112 persons who were first reported with HIV or AIDS in Minnesota and subsequently moved out of the state

** 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, 2012



Number Living with HIV/AIDS

- None
- 1-20
- 21-100
- 101-500
- 501-1000
- 1000-2000
- 2001-4190

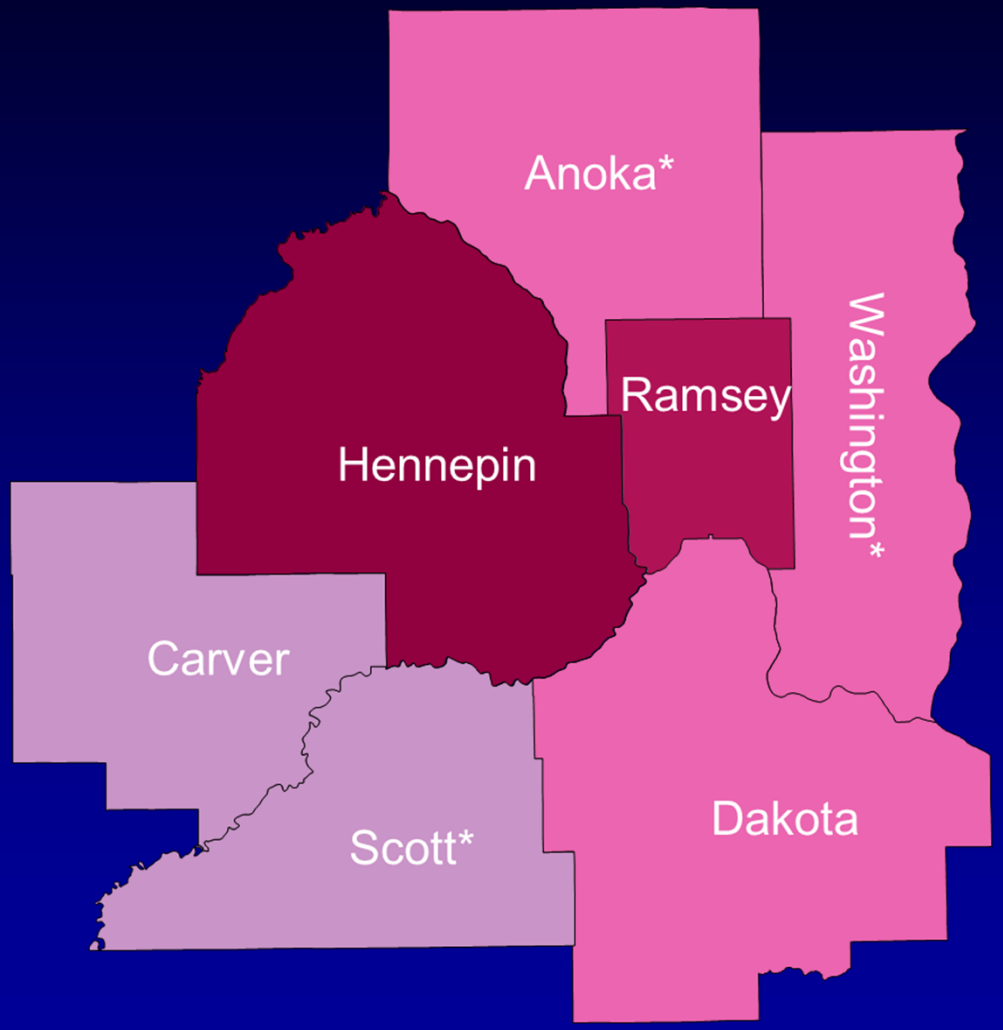
City of Minneapolis – 2,943
City of St. Paul – 1,025
Suburban[#] – 2,393
Greater Minnesota – 1,111

Total number = 7,472
(44 people missing residence information)

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

Data Source: *Minnesota HIV/AIDS Surveillance System*

Map of Metro Area:
Living HIV/AIDS Cases by County of Residence, 2012



Number Living with HIV/AIDS

- None
- 1-20
- 21-100
- 101-500
- 501-1000
- 1000-2000
- 2001-4190

City of Minneapolis – 2,943
City of St. Paul – 1,025
Suburban# – 2,393

Total number (Metro only) = 6,361

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

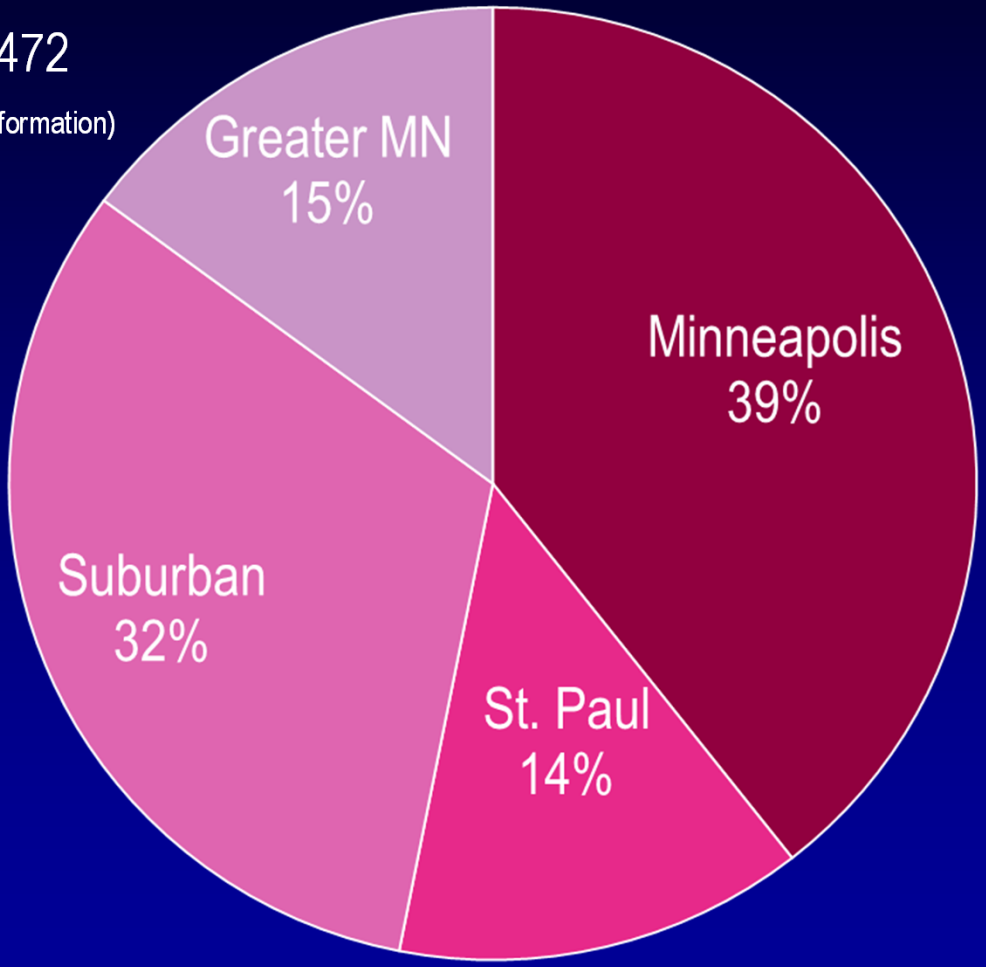
* Counties in which a state correctional facility is located.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota by Current Residence, 2012

Total Number =7,472

(44 persons missing residence information)

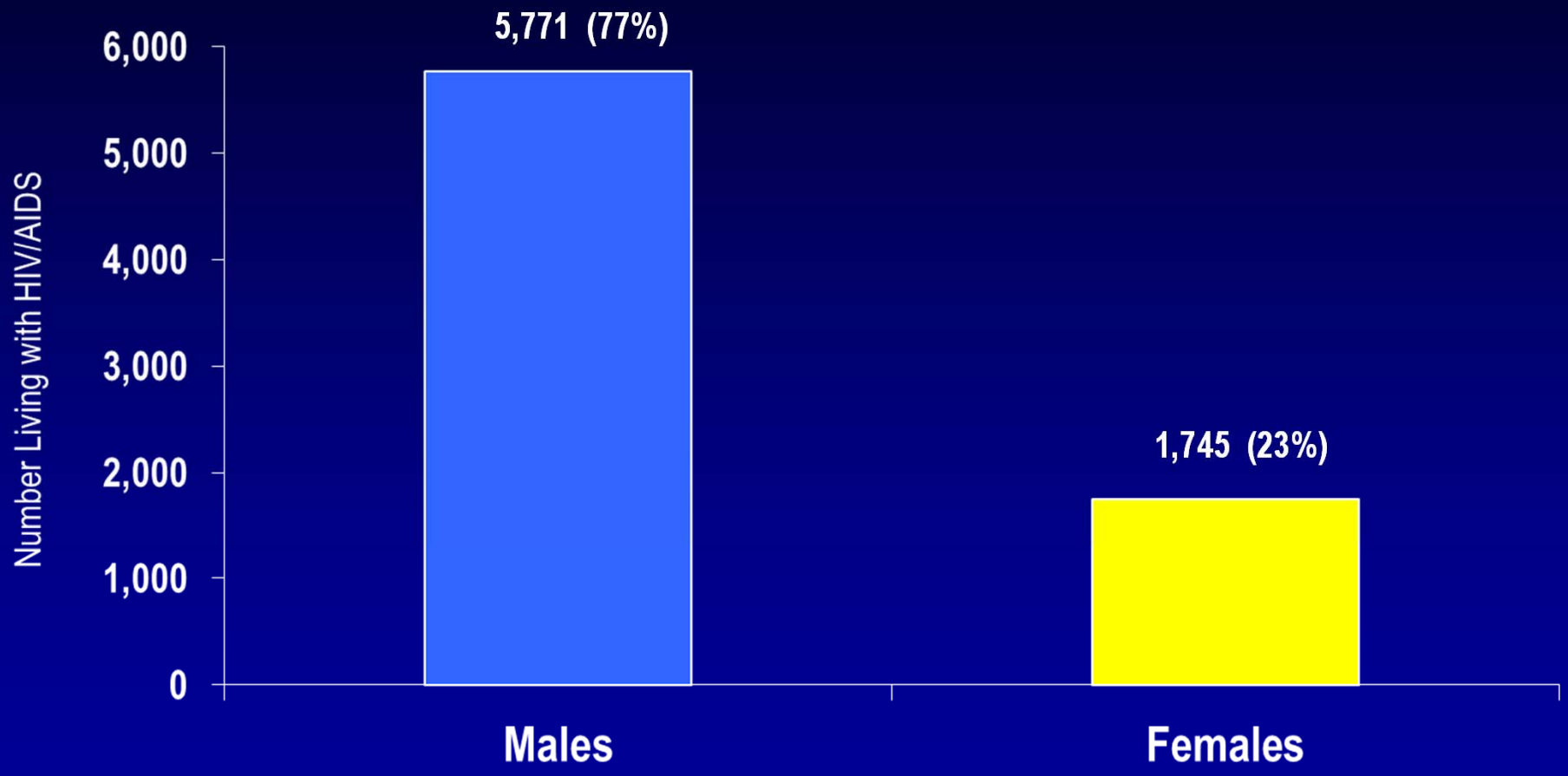


Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (except Minneapolis), Ramsey (except St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties, outside the seven-county metro area.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Gender and Race/Ethnicity

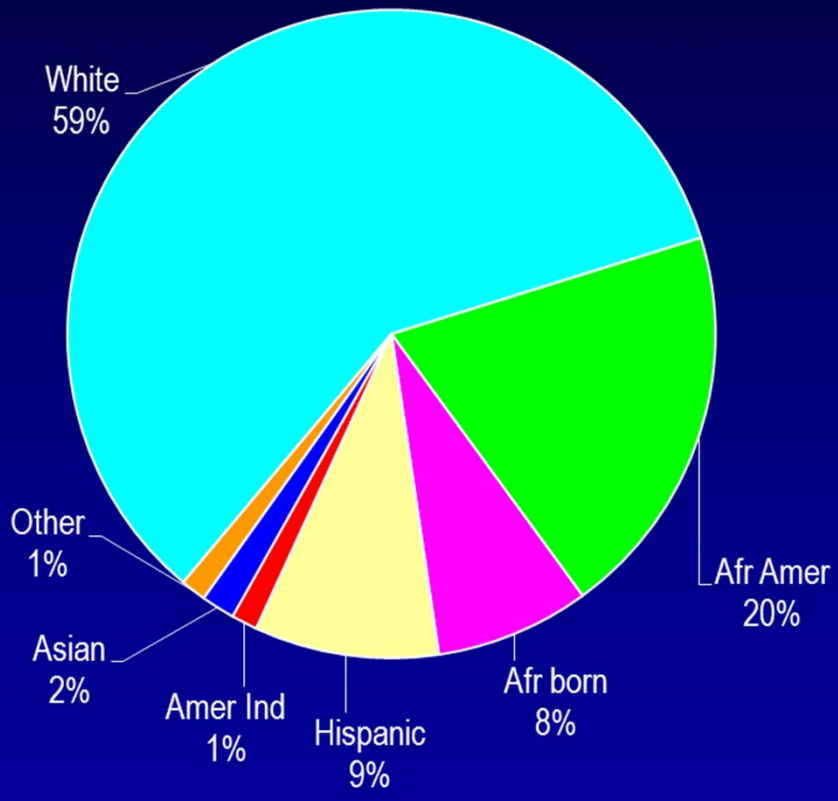
Persons Living with HIV/AIDS in Minnesota by Gender, 2012



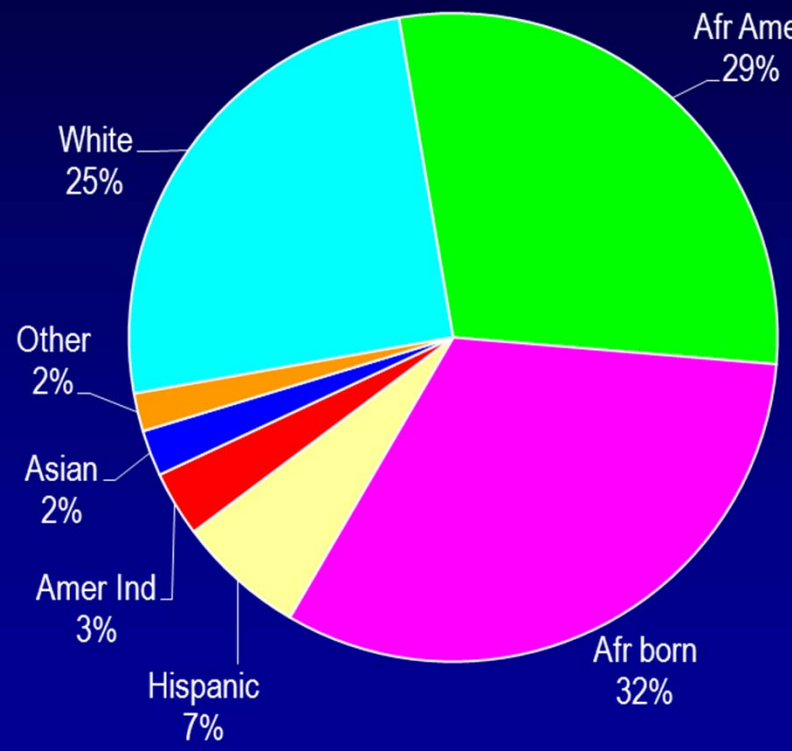
Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota by Gender and Race/Ethnicity, 2012

Males (n = 5,771)



Females (n = 1,745)



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, 2012

Race/Ethnicity	*Cases*	*%*	*Rate*
White, non-Hispanic	3,848	51%	87.4
Black, African-American	1,476	22%	838.9
Black, African-born	1,005	13%	1378.0††
Hispanic	642	9%	256.5
American Indian	132	2%	238.2
Asian/Pacific Islander	137	2%	63.8
Other^	106	1%	X
Total	*7,516*	*100%*	*141.7*

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..

†† Estimate of 72,930 Source: Retrieved from MNCompass.org on 3/22/12. Additional calculations by the State Demographic Center.

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

Number of Cases and Rates (per 100,000 persons) of Adults and Adolescents* Living with HIV/AIDS by Gender/Risk†, Minnesota, 2012

Gender/Risk	Cases	%	Rate
Men (Total)	(5,749)	81%	266
MSM†	*4,239*	*70%*	4,568.5††
Non-MSM	*1,510*	*30%*	73
Women	1,721	19%	77.5
Total	*7,470*	*100%*	*170.5*

**HIV or AIDS at first diagnosis over the age of 13;*

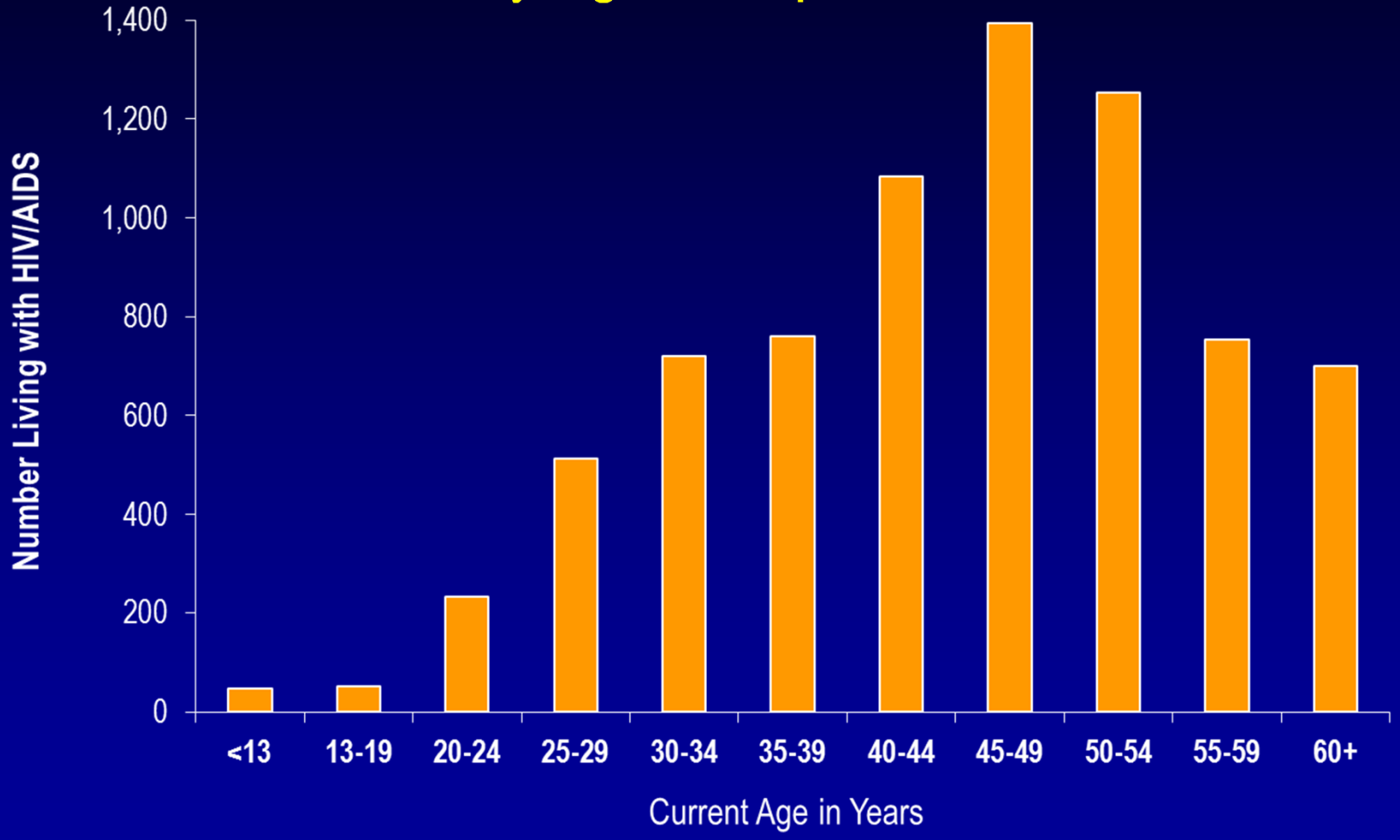
- *2010 U.S. Census Data for persons age 13 and over used for rate calculations.*

† "MSM" refers to both MSM and MSM/IDU.

†† Estimate of 92,788

Age

Persons Living with HIV/AIDS in Minnesota by Age Group†, 2012

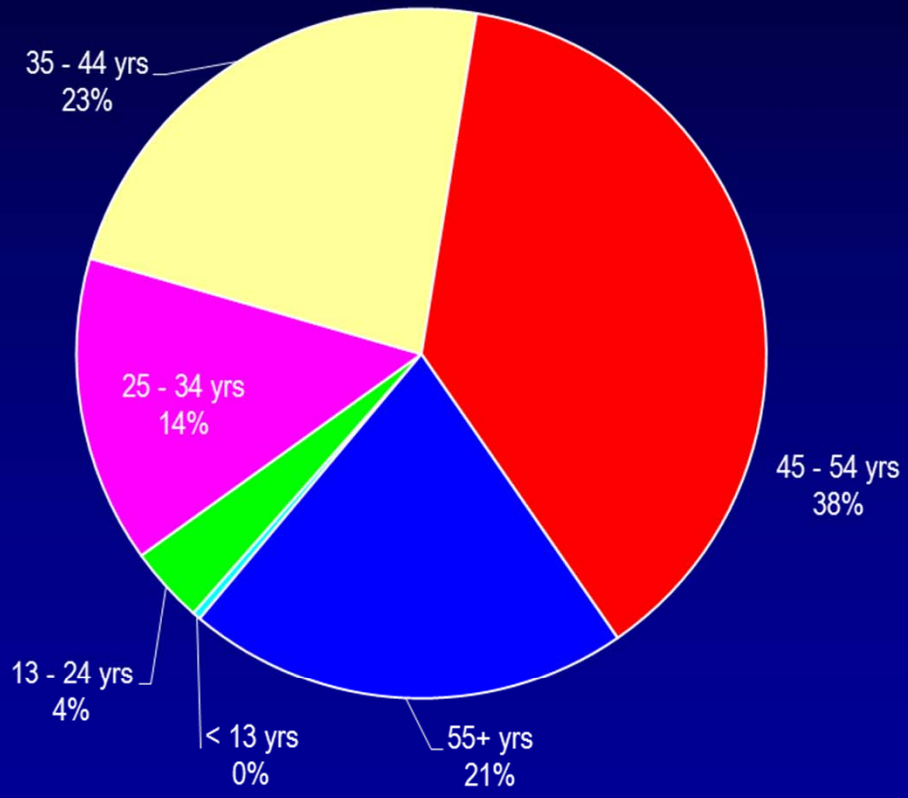


† *Age missing for 8 people .*

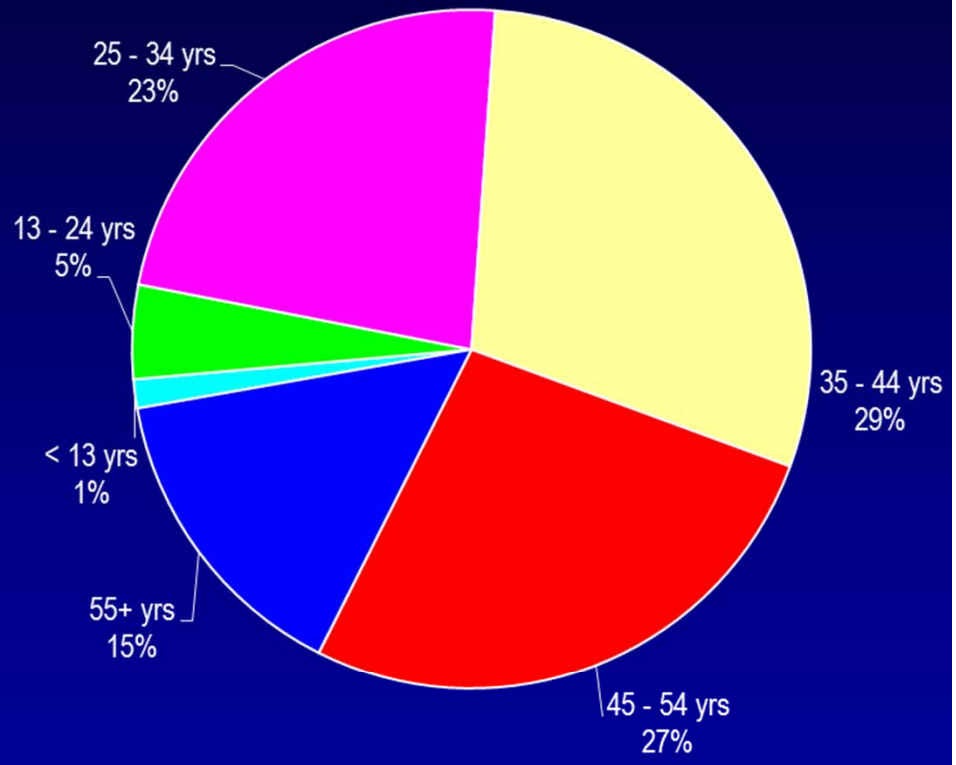
Data Source: *Minnesota HIV/AIDS Surveillance System*

Persons Living with HIV/AIDS in Minnesota by Age† and Gender, 2012

Males (n = 5,766)



Females (n = 1,744)



n = Number of persons

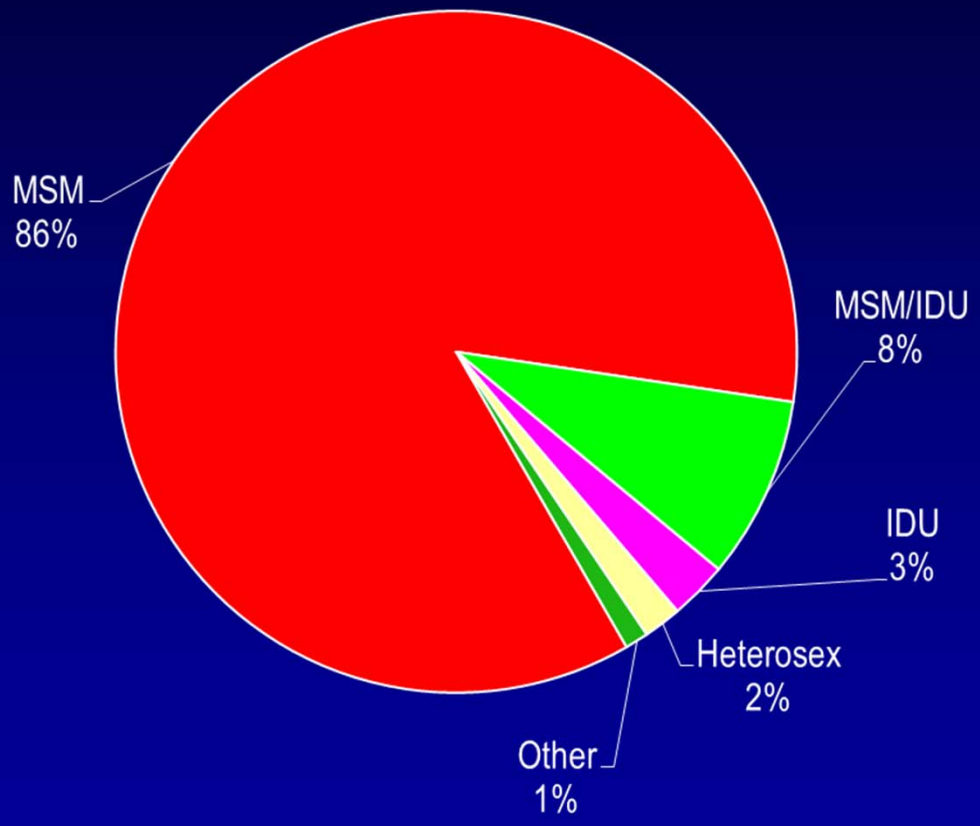
† Age missing for 6 people .

Data Source: *Minnesota HIV/AIDS Surveillance System*

Mode of Exposure

Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2012

White Males (n = 3,410)



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

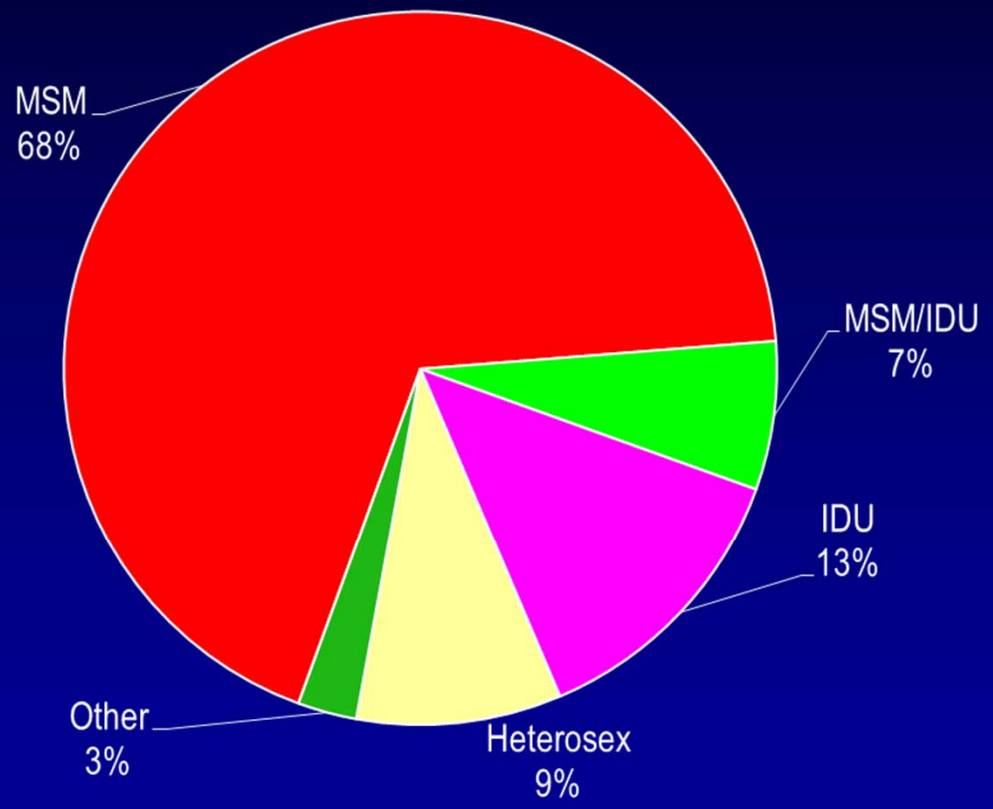
IDU = Injecting drug use Heterosex = Heterosexual contact

† 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†, 2012

African American Males†† (n = 1,140)



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

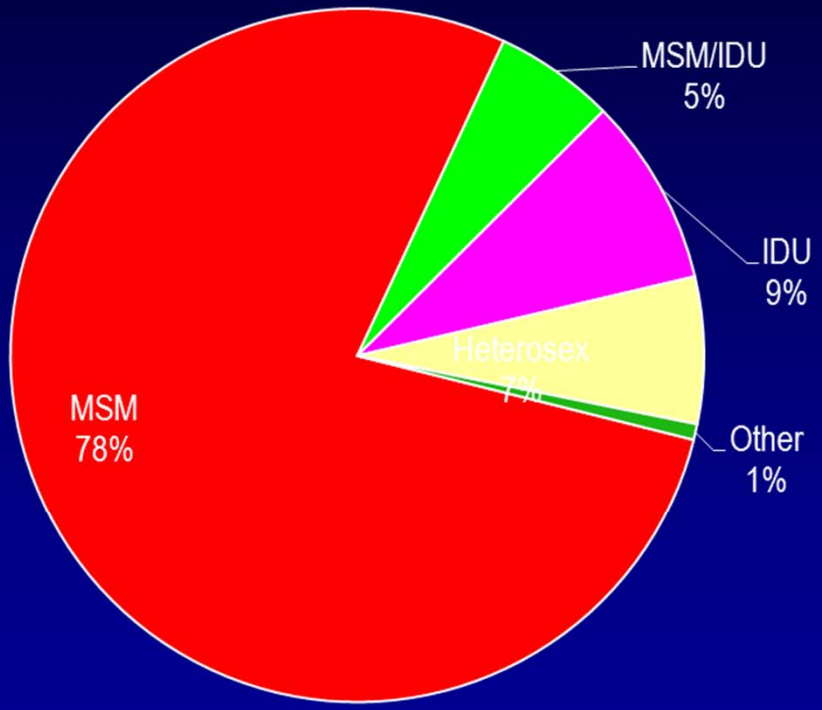
† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

†† *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†, 2012

Hispanic Males (n = 531)



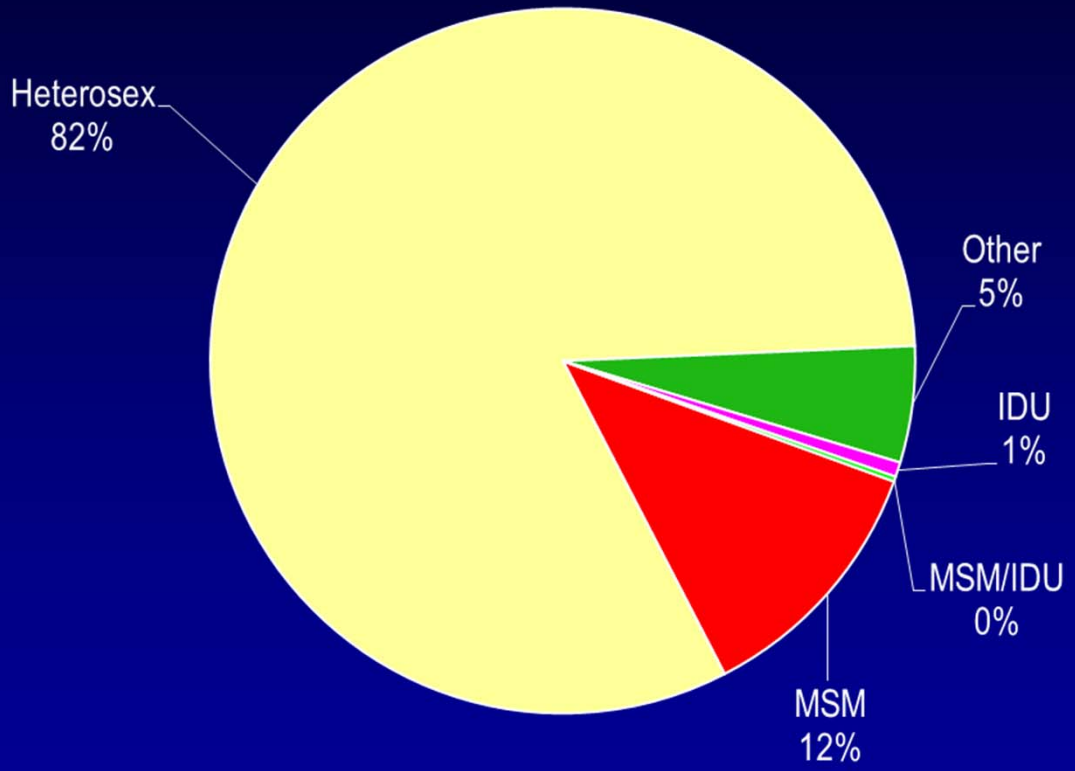
n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
IDU = Injecting drug use Heterosex = Heterosexual contact

† 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†, 2012

African-born Males†† (n = 445)



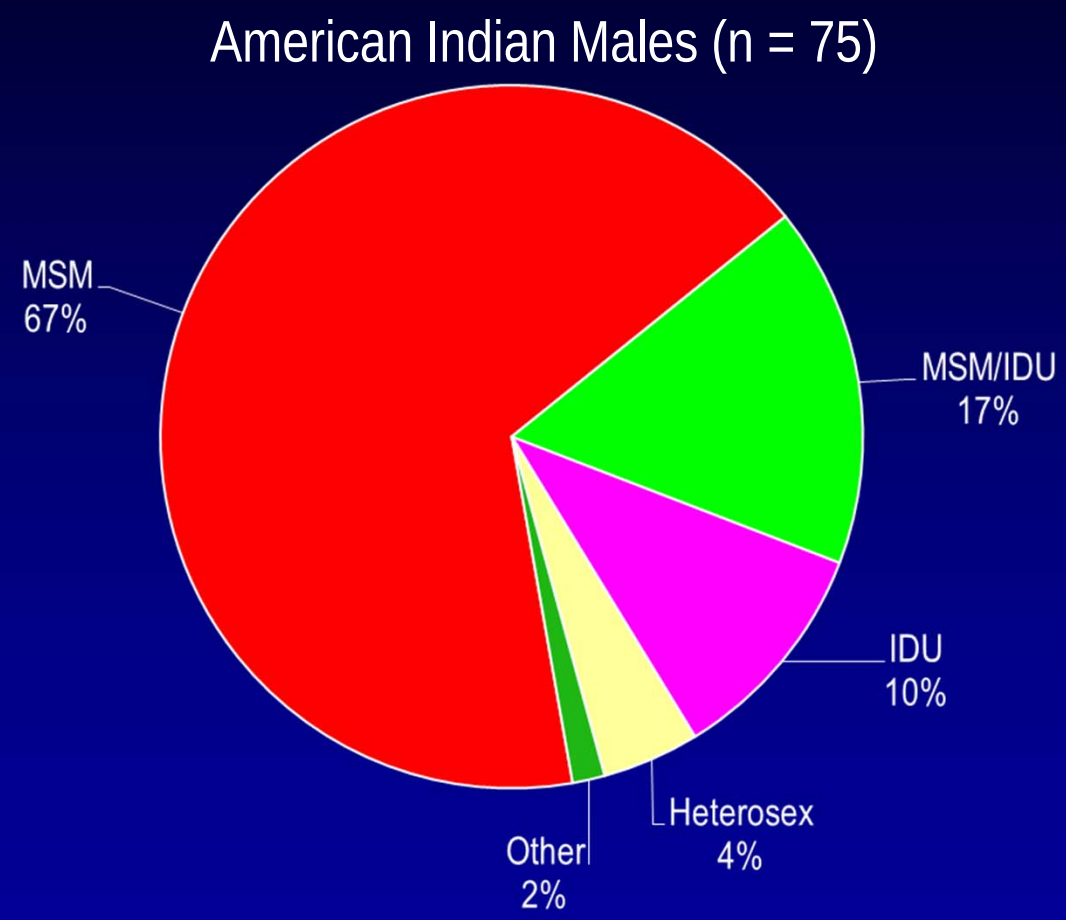
n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
Heterosex = Heterosexual contact

† 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†, 2012

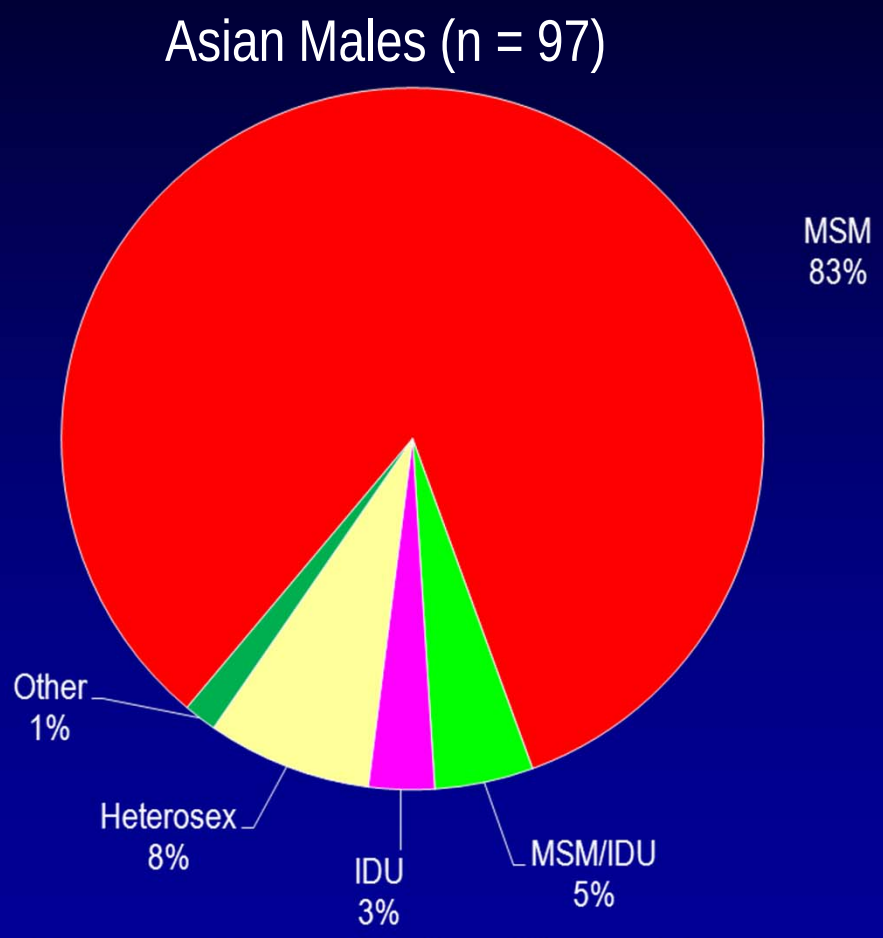


n = Number of persons MSM = Men who have sex with men Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk
IDU = Injecting drug use Heterosex = Heterosexual contact

† 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†, 2012



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

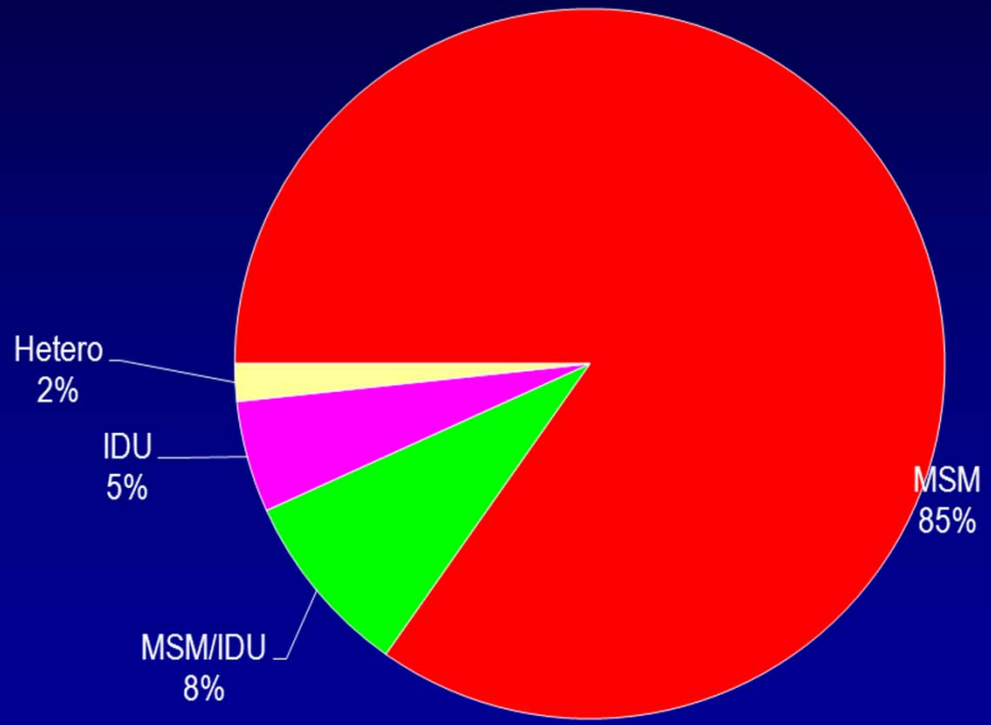
† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2012

Multi-racial Males (n = 65)

CAUTION: Small number of cases – interpret carefully.

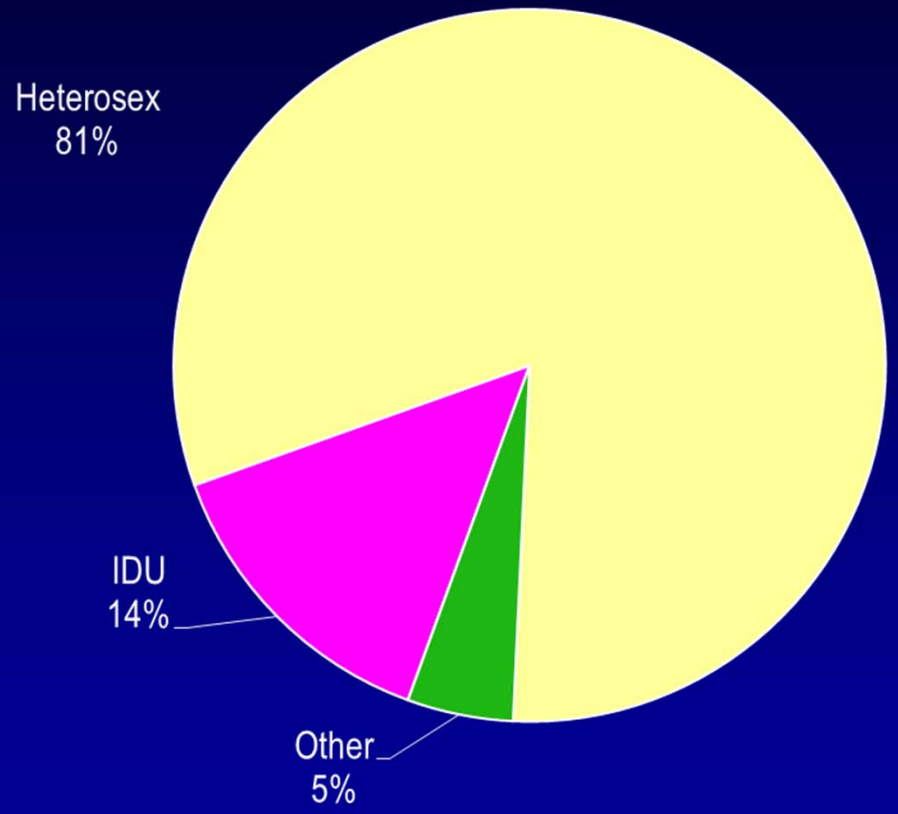


n = Number of persons
IDU = Injecting drug use
MSM = Men who have sex with men
Heterosex = Heterosexual contact
Other = Hemophilia, transplant, transfusion, mother w/ HIV or HIV risk

† 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†, 2012

African American Females†† (n = 506)



n = Number of persons

IDU = Injecting drug use

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

Heterosex = Heterosexual contact

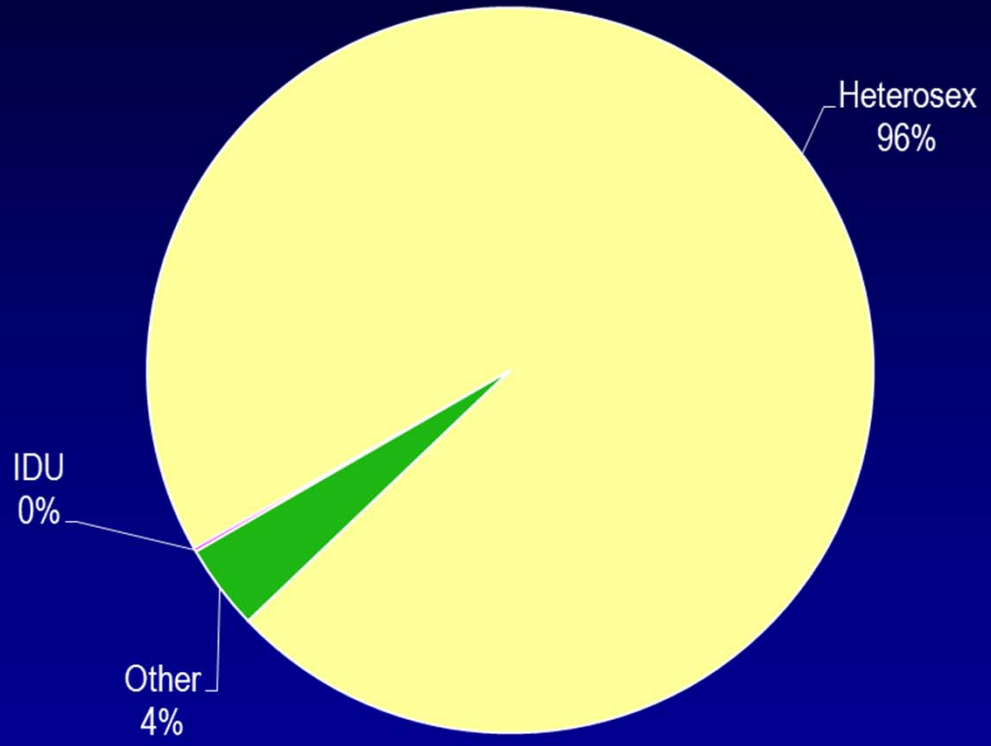
† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

†† *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†, 2012

African-born Females†† (n = 560)



n = Number of persons

IDU = Injecting drug use

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

Heterosex = Heterosexual contact

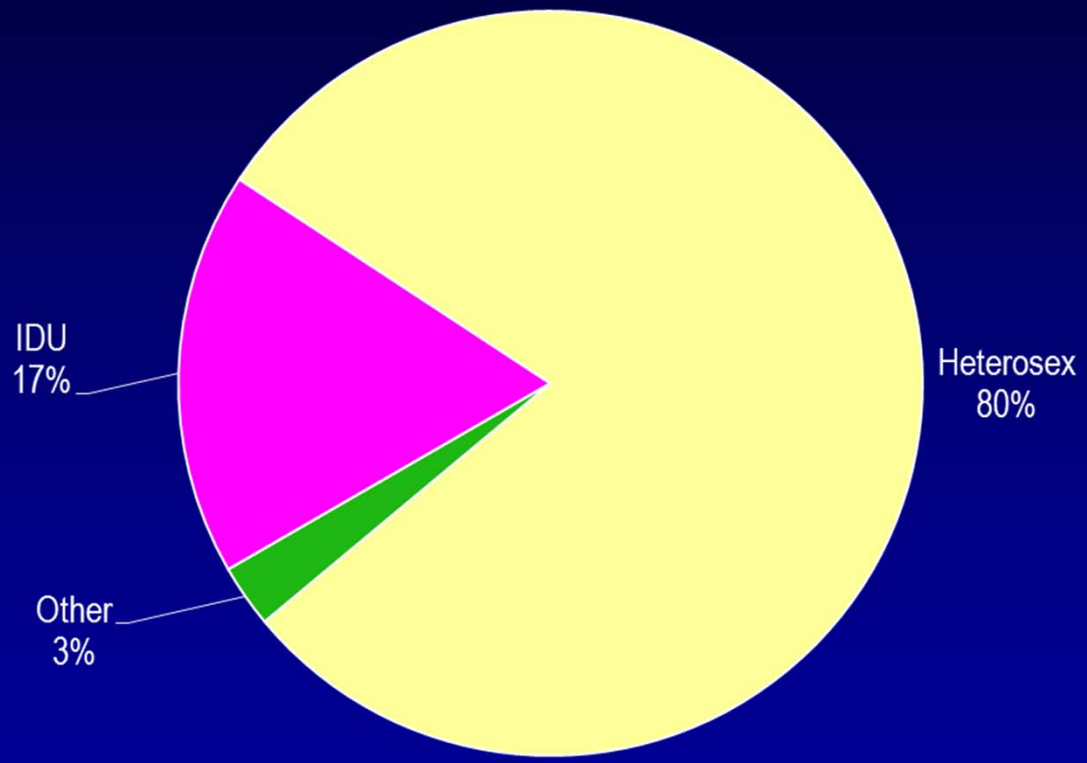
† Mode of Exposure has been estimated using the following proportions: 95% - Heterosexual, 5% - Other. For additional detail see the HIV Prevalence & Mortality Technical Notes.

†† *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†, 2012

White Females (n = 438)



n = Number of persons

IDU = Injecting drug use

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

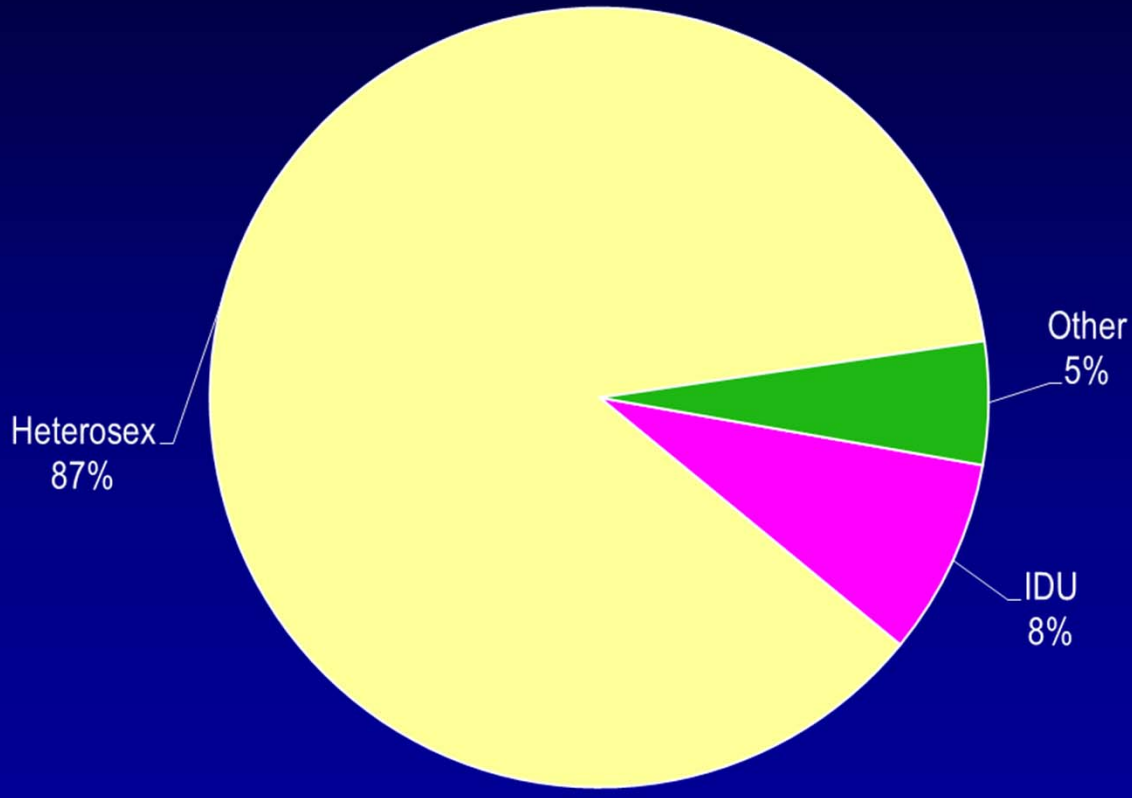
Heterosex = Heterosexual contact

† 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†, 2012

Hispanic Females (n = 111)



n = Number of persons

IDU = Injecting drug use

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

Heterosex = Heterosexual contact

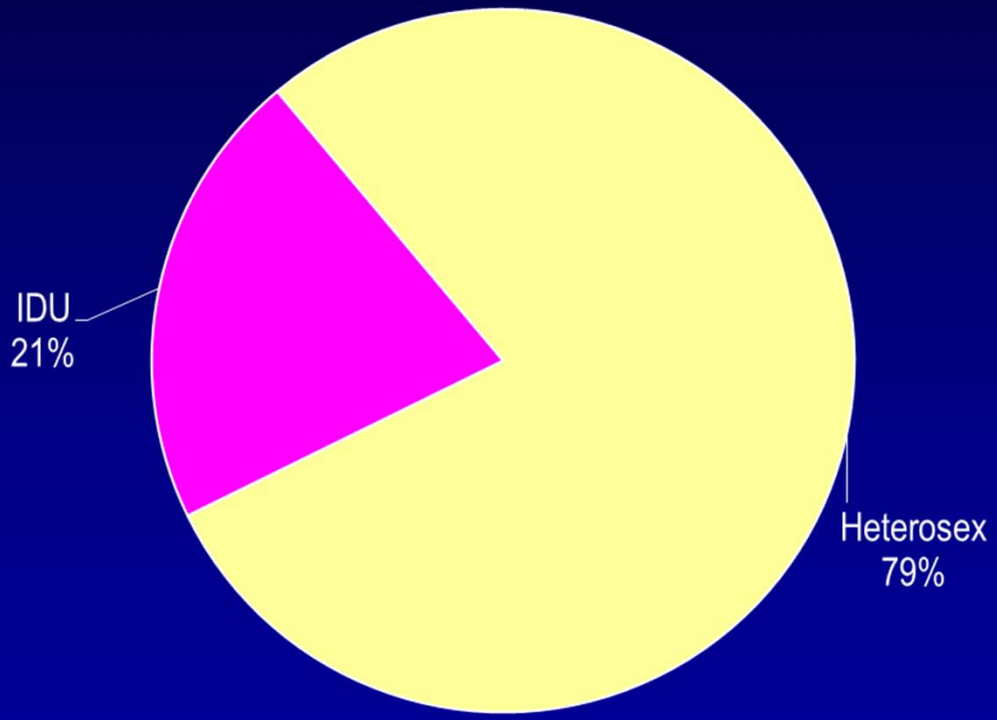
† Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2012

American Indian Females (n = 57)

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

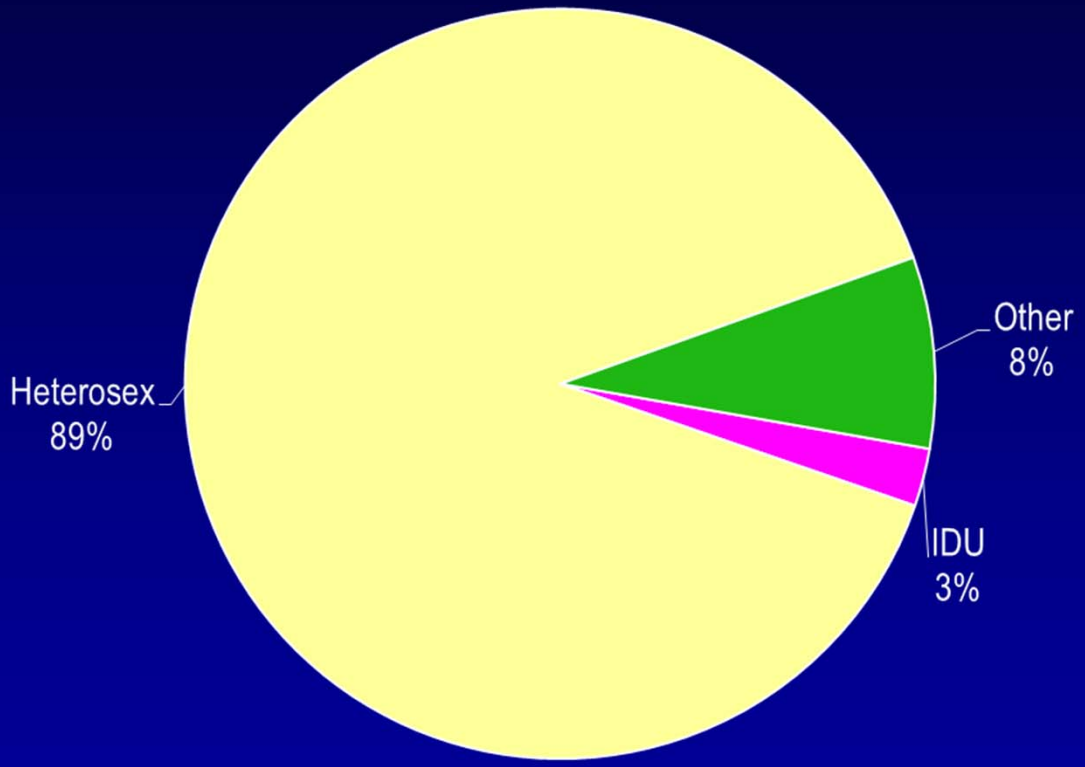
Heterosex = Heterosexual contact

† Mode of Exposure has been estimated using 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†, 2012

Asian Females (n = 40)

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.

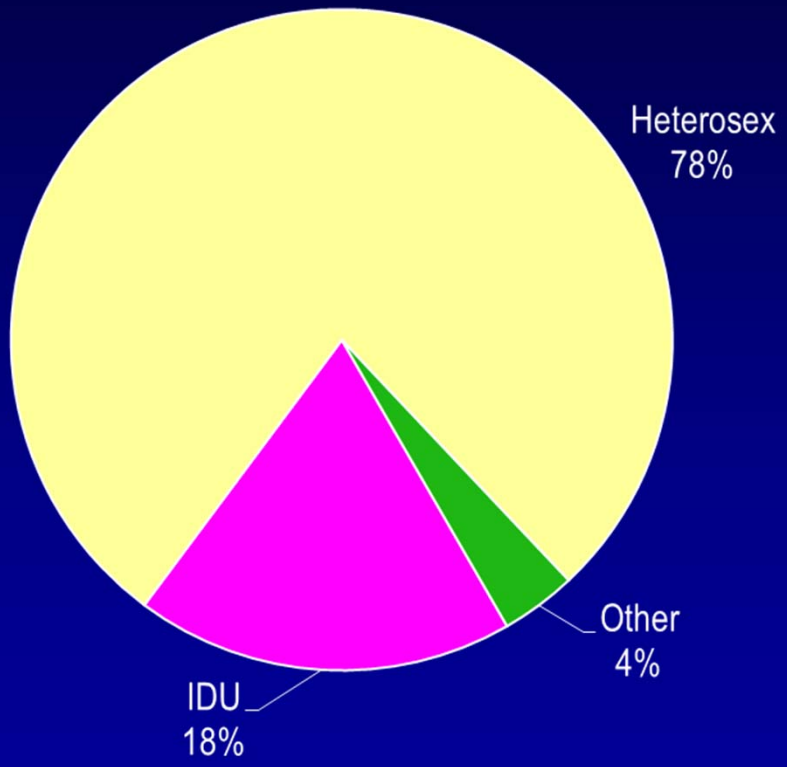
For additional detail see the HIV Prevalence & Mortality Technical Notes.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure†, 2012

Multi-racial Females (n = 31)

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

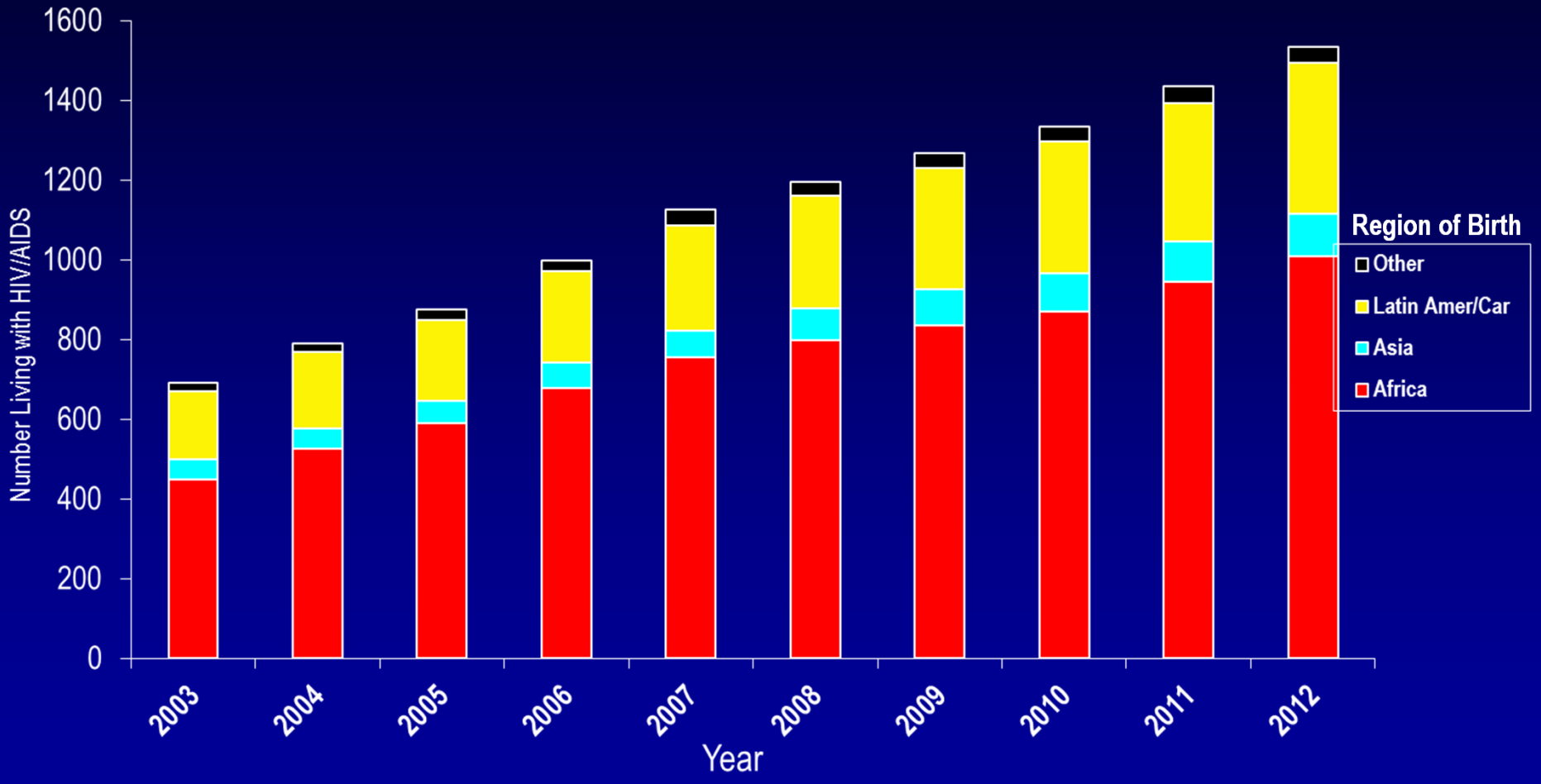
† Mode of Exposure has been estimated using the following proportions: 95% - Heterosexual, 5% - Other.

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, 2003-2012



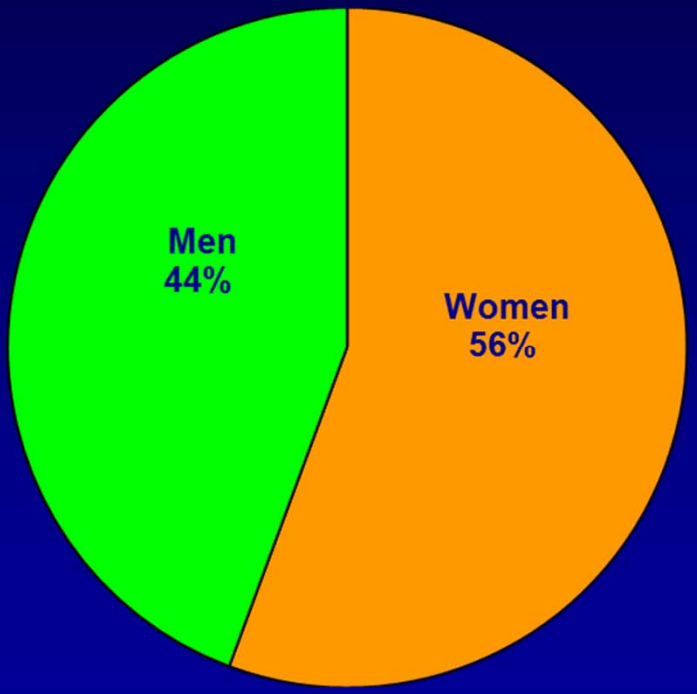
Latin Amer/Car – Includes Mexico, Caribbean, and Central/South American countries

Data Source: *Minnesota HIV/AIDS Surveillance System*

African-Born† Persons Living with HIV/AIDS Compared to Other Minnesota Cases by Gender, 2012

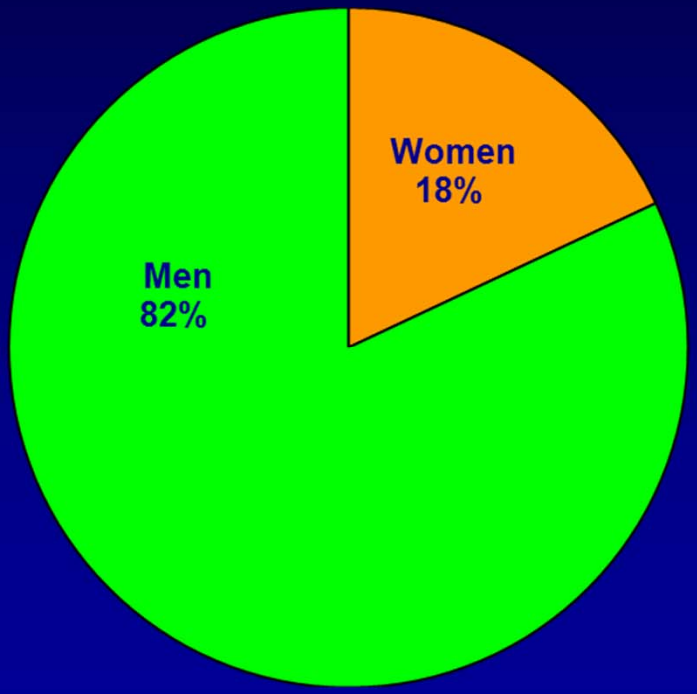
African-born Persons

Total Number = 1,008



U.S.-born Cases

Total Number = 5,982



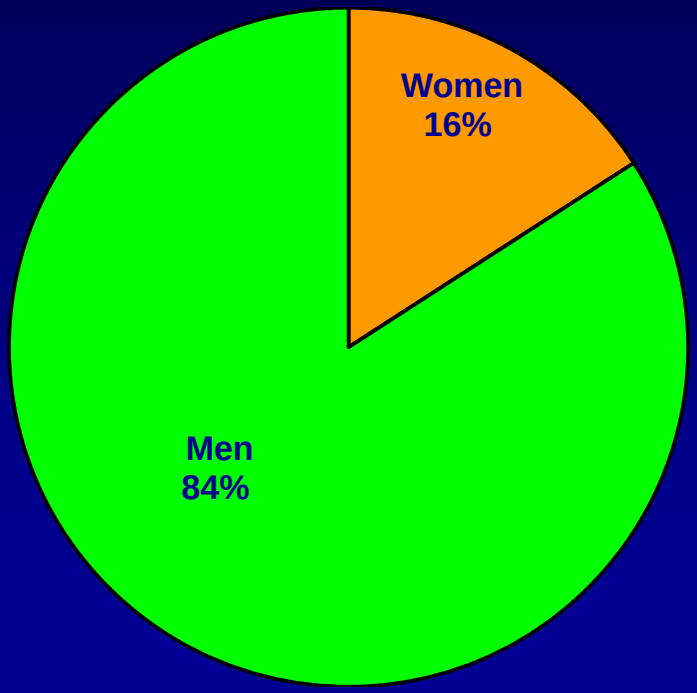
† *Includes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program and other refugee/immigrant programs. Also includes 1 White African-born persons and 2 multi-racial African-born person.*

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, 2012

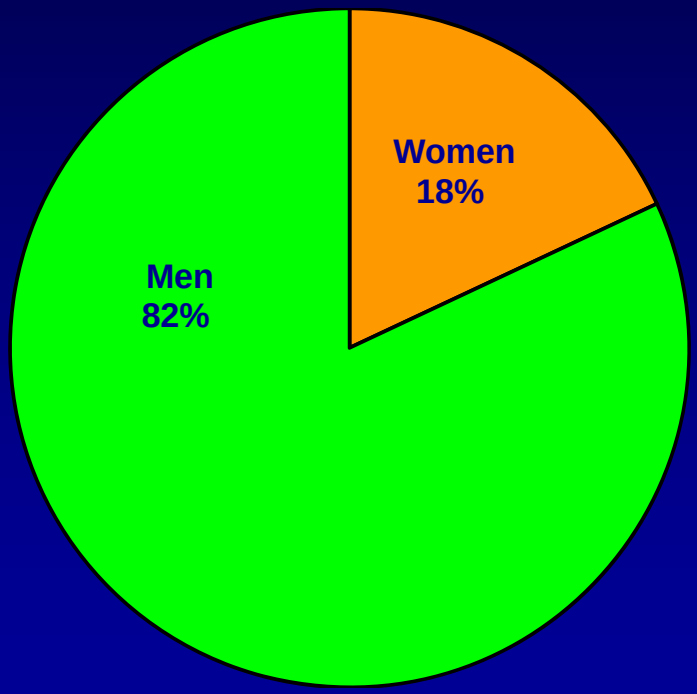
Latin/Caribbean Persons

Total Number = 378



U.S.-born Cases

Total Number = 5,982



† *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, 2012

- **Ethiopia/Oromia** (n=228)
- **Mexico** (n=225)
- **Kenya** (n=149)
- **Liberia** (n=137)
- **Somalia** (n=97)
- **Cameroon** (n=77)
- **Sudan** (n=63)
- **Other^** (n=545)

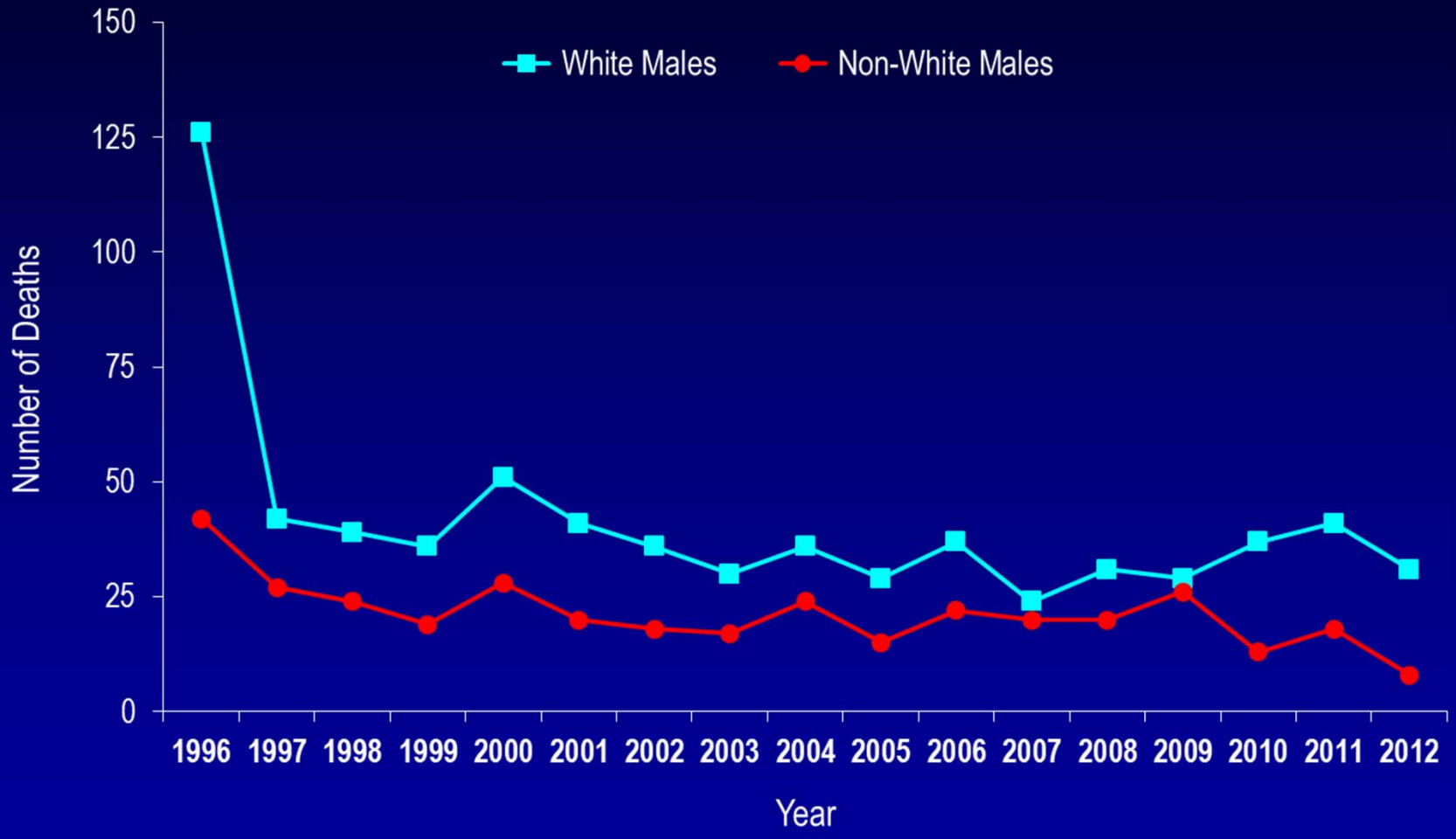
† Includes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

^ Includes 90 additional countries.

Data Source: *Minnesota HIV/AIDS Surveillance System*

Mortality

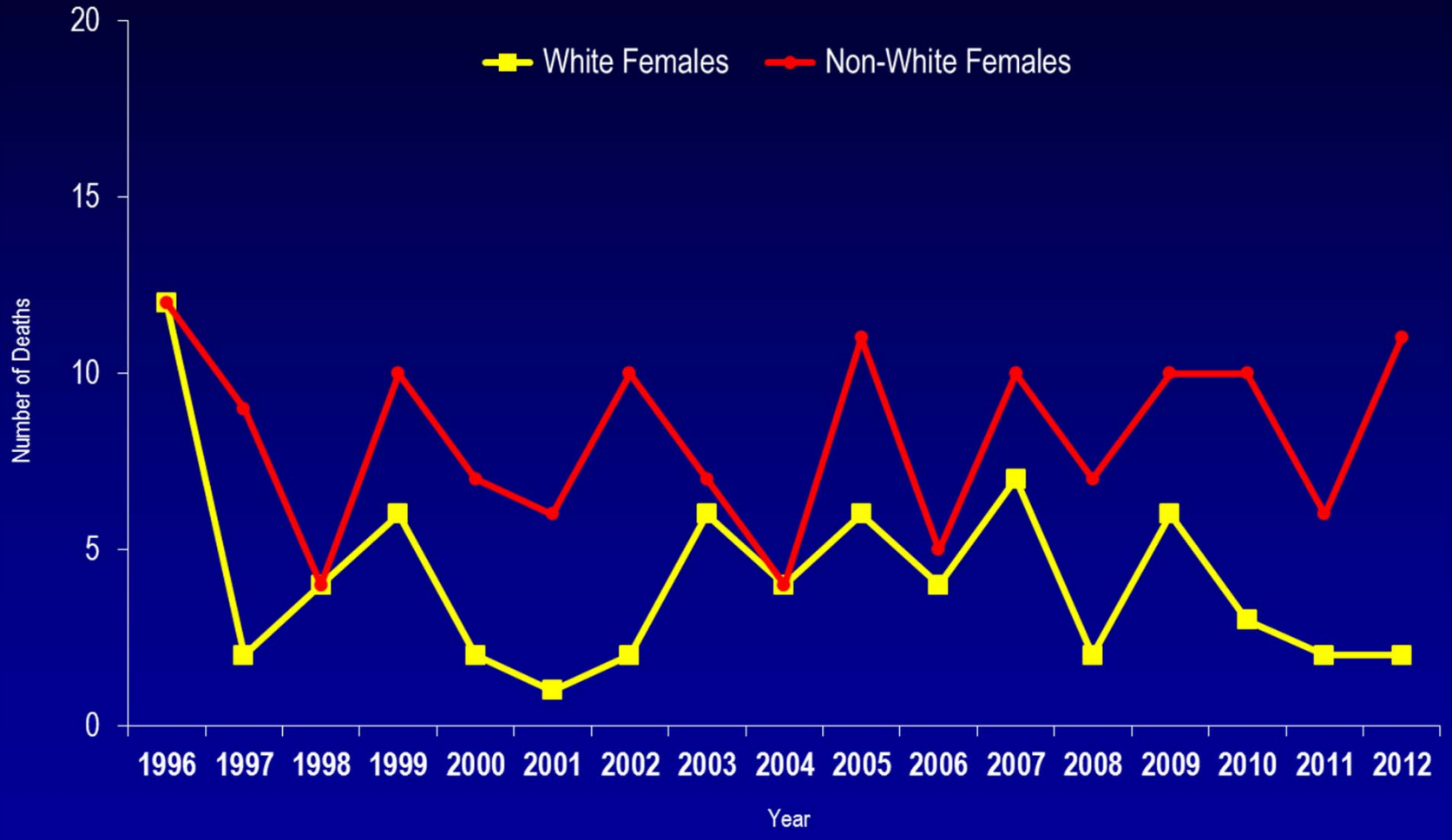
Reported Deaths* among Male MN AIDS Cases 1996-2012



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

Data Source: *Minnesota HIV/AIDS Surveillance System*

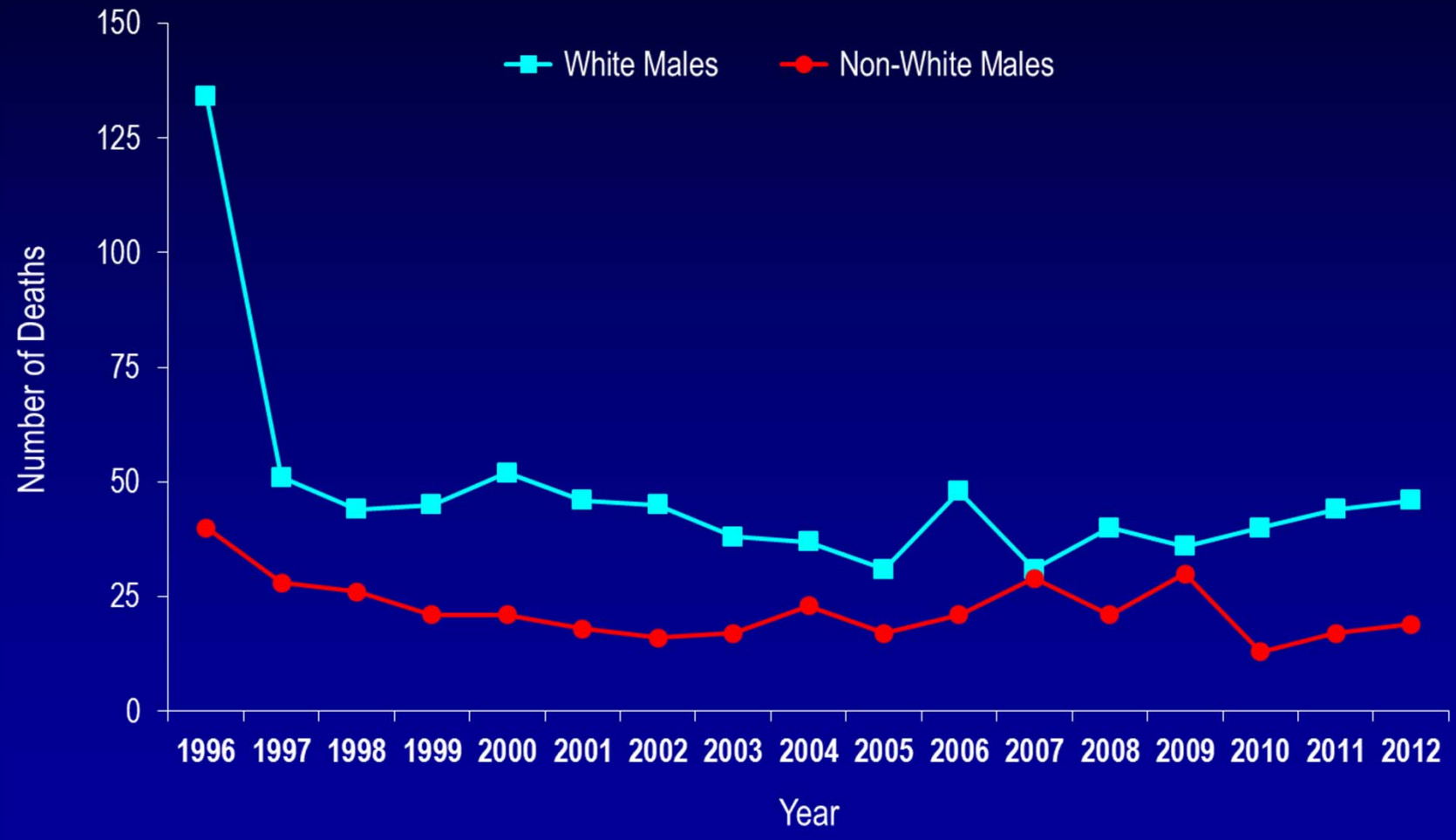
Reported Deaths* among Female MN AIDS Cases 1996-2012



** 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†, 1996-2012

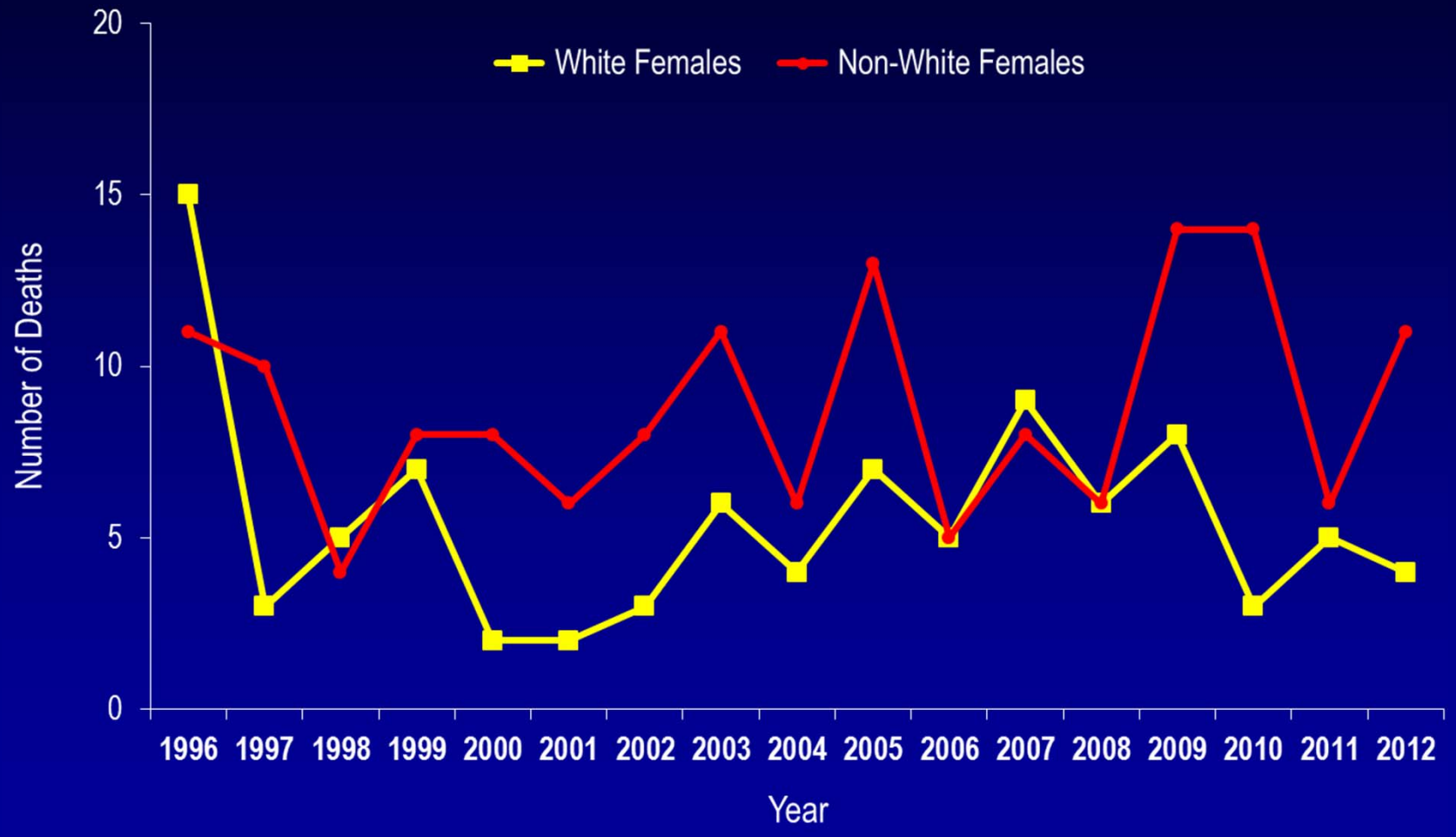


** Deaths in Minnesota among people with HIV infection regardless of location of diagnosis and cause of death.*

† HIV (non-AIDS) or AIDS

Data Source: *Minnesota HIV/AIDS Surveillance System*

Reported Deaths* in Minnesota among Females with HIV Infection†, 1996-2012



** 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, 2012

INTRODUCTION

The *Minnesota HIV/AIDS Prevalence & Mortality Report, 2012* 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). In June 2011, an amendment to the communicable disease reporting rule was passed, requiring the report of all CD4 and Viral Load test results, improving the completeness of passive reporting in Minnesota, and better allowing for the monitoring of disease progression. Additionally, regular contact is maintained with several clinical sites to ensure completeness of reporting (active surveillance). MDH staff also performs routine death matches with state and national data as to ensure correct vital status in the surveillance system. 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, 2012 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), as of February 2013 an estimated 1.15 million persons in the United States were living with HIV/AIDS, with 18.1% 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 498,704 at end of 2010.[2]

PERSONS LIVING WITH HIV/AIDS IN MINNESOTA

Overview of HIV/AIDS in Minnesota, 1990's-2012

Heavily attributed to the success of new treatments introduced in 1995 (protease inhibitors) and 1996 (highly active antiretroviral therapy or HAART), the number of persons assumed to be living with HIV/AIDS in Minnesota has been steadily increasing over time. While these treatments do not cure, they can delay progression to AIDS among persons with HIV (non-AIDS) infection and improve survival among those with AIDS. As of December 31, 2012, 7,516 persons known to be living with HIV/AIDS resided in Minnesota, a 5.4% increase from 2011. Following recent increases in the number of HIV (non-AIDS) diagnoses starting in the mid-2000's, reaching a peak of 281 new HIV (non-AIDS) cases in 2009; decreases have been observed since then, with 236 new HIV (non-AIDS) cases in 2012. In addition, the number of newly diagnosed AIDS cases has begun to decline after a recent high of 247 cases in 2004, with 202 new AIDS cases diagnosed in 2012.

[1] http://www.cdc.gov/hiv/resources/factsheets/PDF/stats_basics_factsheet.pdf , accessed April 15, 2013
[2] http://www.cdc.gov/hiv/topics/surveillance/resources/slides/general/index.htm , slide 30, 32 and 33 accessed April 15, 2013

Living HIV/AIDS Cases, 2012

Among the estimated 7,516 prevalent cases in Minnesota, 3,974 are diagnosed with HIV (non-AIDS) and 3,542 are diagnosed with AIDS. The majority (85%) of prevalent cases reside in the seven-county metropolitan area surrounding the Twin Cities of Minneapolis and St. Paul (Hennepin, Ramsey, Anoka, Carver, Dakota, Scott, and 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 93% of counties in Minnesota.

Gender & Race/Ethnicity

Seventy-seven percent (77%) of prevalent HIV/AIDS cases are males. Broken down by race/ethnicity, 59% of male cases are White, 20% African American, 9% Hispanic, 8% African-born, 1% American Indian, and 2% Asian/Pacific Islander. In total, 40% of males living with HIV/AIDS are non-White whereas only 17% of the general male population is Non-White. Among female cases, the distribution is even more skewed toward women of color: 25% White, 29% African American, 32% 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 17% 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.

Beginning in 2012, MDH began estimating the number of MSM living in Minnesota. Men who have sex with Men have the highest rate of persons living with HIV/AIDS than any other sub-group. In 2012, the estimated rate of people living with HIV/AIDS among MSM was 4,568.5 per 100,000 population. This is more than 60 times higher than the rate among non-MSM men (73 per 100,000 population). It's important to note that MSM contains cases from all racial/ethnic categories and therefore cannot be

directly compared to the rates by race/ethnicity. For more information on how this was estimated, see the *HIV/AIDS Prevalence & Mortality Technical Notes.*

Age

Seventy-nine percent (79%) of persons living with HIV/AIDS in 2012 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 twenty-five to thirty-four account for 14% of male living cases, females of the same age account for 23% 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 2012, persons 50 and older accounted for 36%, or more than one in three persons living with HIV in Minnesota, compared to 16 % in 2002. Within the next 5-years it is estimated that one in 2 Minnesotans living with HIV will be over the age of 50.

Mode of Exposure

In 2012, 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 68% of non-White male cases. The estimated percent of male cases that identified IDU as a risk factor was particularly high for African Americans (13%), American Indians (10%), and Hispanics (9%). and These percentages among Asian, White, and African-born males were estimated at 3%, 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 (21%), followed by Whites with 17%, African Americans with 14% and Hispanics with 8%. Among Asian females,

heterosexual contact accounted for an estimated 89% of cases, and IDU for an estimated 3%. However, the number of prevalent cases among Asian/Pacific Islander females is quite small (n=40), so the results need to be interpreted very carefully. Finally, while African-born women make up the largest proportion (32%) of females living with HIV in Minnesota, they account for less than one percent of the IDU cases among HIV+ women.

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, only 7% of White prevalent cases have unspecified risk, compared to 80% of African-born, 32% of Asian, and 23% and 18% for Hispanic and African American cases, respectively. Among women, the disparity between White females (8% unspecified) and women of color is not as striking, except for African-born (23% unspecified) females. See the *HIV/AIDS Prevalence & Mortality Technical Notes* for a detailed discussion of mode of exposure categories.

Special Populations

Between 1990 and 2012, 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 2012, the total number of foreign-born persons living with HIV/AIDS in Minnesota was 1,534, a 7% increase from 2011. 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 56% of those living with HIV/AIDS in Minnesota. Among Asian-born cases, women account for 31% of cases. The gender distribution among cases born in Latin America/the Caribbean is similar to that of U.S.-born cases, where 16% of prevalent cases are among women.

Seven countries (Ethiopia, Mexico, Kenya, Liberia, Somalia, Cameroon, and Sudan) account for a majority (64%) of living foreign-born cases, however there are 90 additional countries represented among the 1,534 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 over the past decade. The largest declines in mortality were observed among White males in the mid 1990s. In recent years, the number of deaths among Minnesota AIDS cases has been comparable between White and non-White males and between White and non-White females. In 2012, a total of 52 deaths were reported among AIDS cases diagnosed in Minnesota. The total number of deaths[4] reported in Minnesota for those living with HIV infection (HIV (non-AIDS) or AIDS) was 80 in 2012.

[3] Includes all deaths to cases diagnosed with AIDS in MN, regardless of location of death and cause of death.
[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]. In June 2011, an amendment to the communicable disease reporting rule was passed, requiring the report of all CD4 and Viral Load test results, improving the completeness of passive reporting in Minnesota, and better allowing for the monitoring of disease progression. 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, Social Security Master Death File, and Minnesota Vital Statistics Death Files. "AIDS deaths" refers to all deaths among AIDS

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

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 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 who 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

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

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 for White, African American and African-born females:

Living Cases among Females in 2012

Race/Risk	Heterosexual n (%†)	IDU n (%†)	Other n (%†)	Unspecified n	Total N
White	322 (80)	71(18)	11 (3)	34	438
African-American	354 (81)	61 (14)	21 (5)	70	506
African-born	417 (96)	1 (0)	15 (3)	127	560

† Percent of those with known risk.

Female Cases with Estimated risk:

Race/Risk	Heterosexual	IDU	Other	Total N
White	(.80*34) + 322= **349**	(.18*34) + 71= **77**	(.03*34) + 11= **12**	438
African-American	(.81*70) + 354= **411**	(.14*70) + 61= **71**	(.05*70) + 21 = **24**	506
African-born‡	(.95*127) +417= **538**	1	(.05*127) + 15= **22**	560

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

MSM Estimate

In 2012 MDH began estimating the population of MSM in Minnesota. This estimate generates a denominator for the most commonly reported risk factor in Minnesota and allows for the calculation of a rate of infection and rate of prevalence among those in the risk group. Estimation is done each year using the most recently available census data for men over the age of 13 and using the model by on Laumann et al[4] where 9% of the urban population, 4% of the suburban population and 1% of the rural population are estimated to be MSM.

$$MSM_{state\ i} = (rural\ pop_{state\ i} \times 0{:}01\%) + (suburban\ pop_{state\ i} \times 0{:}04\%) + (urban\ pop_{state\ i} \times 0{:}09\%)$$

After consulting with stakeholders, it was agreed that it was appropriate to assign urban/suburban/rural designation based on the unique geography of Minnesota. The counties of Hennepin and Ramsey are assigned as urban, the counties of Anoka, Carver, Dakota, Scott and Washington along with the cities of Rochester, St. Cloud and Duluth are assigned as suburban, and the remaining areas were are assigned as rural. In 2012, this method utilized 2010 census data and produced an estimate of the MSM population in Minnesota to be 92,788. Overall, this represents 4.3% of the adolescent and adult male population in Minnesota.

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

[4] Laumann EO, Gagnon JH, Michael RT, et al. The social organization of sexuality: sexual practices in the United States, chapter 8. Chicago: University of Chicago Press; 1994

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. Ongoing participation in this initiative will allow for proper attribution of incident and prevalent cases in Minnesota.

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, 2012							
Group	**HIV (non-AIDS)**		**AIDS**		***Total***		***HIV/AIDS***
	Cases	**%**	**Cases**	**%**	***Cases***	***%***	***Prevalence Rate***
Residence[III]							
Minneapolis	1,590	40%	1,353	38%	*2,943*	*39%*	*769.3*
St. Paul	517	13%	508	14%	*1,025*	*14%*	*359.6*
Suburban	1,273	32%	1,120	32%	*2,393*	*32%*	*109.7*
Greater Minnesota	569	14%	542	15%	*1,111*	*15%*	*45.3*
Total	*3,949*	*100%*	*3,523*	*100%*	*7,472*	*100%*	*140.9*
Age[IV]							
<13 yrs	41	1%	5	<1%	*46*	*1%*	*5.0*
13-19 yrs	40	1%	12	<1%	*52*	*1%*	*10.2*
20-24 yrs	178	4%	55	2%	*233*	*3%*	*65.5*
25-29 yrs	381	10%	131	4%	*512*	*7%*	*137.4*
30-34 yrs	467	12%	253	7%	*720*	*10%*	*210.0*
35-39 yrs	426	11%	335	9%	*761*	*10%*	*231.9*
40-44 yrs	590	15%	494	14%	*1,084*	*14%*	*307.2*
45-49 yrs	661	17%	734	21%	*1,395*	*19%*	*343.4*
50-54 yrs	539	14%	714	20%	*1,253*	*17%*	*311.9*
55-59 yrs	354	9%	399	11%	*753*	*10%*	*215.4*
60+ yrs	292	7%	409	12%	*701*	*9%*	*72.8*
Total	*3,969*	*100%*	*3,541*	*100%*	*7,510*	*100%*	*141.6*
Gender							
Male	2,990	75%	2,781	79%	*5,771*	*77%*	*219.3*
Female	984	25%	761	21%	*1,745*	*23%*	*65.3*
Total	*3,974*	*100%*	*3,542*	*100%*	*7,516*	*100%*	*141.7*
StateTotals	*3,974*		*3,542*		*7,516*		*141.7*

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

[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 2010 U.S. Census data.

[III] Residence information missing for 25 persons living with HIV and 19 persons living with AIDS.

[IV] Age missing for 5 persons living with HIV and 1 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 104 state prisoners, 166 refugees in the HIV-Positive Refugee Resettlement Program, and 154 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, 2012

Group	Males				Females				*Total*				
	HIV (non-AIDS)	AIDS	*Total*		HIV (non-AIDS)	AIDS	*Total*		*HIV (non-AIDS)*	*AIDS*	*Grand Total*		
			Cases	*%*			*Cases*	*%*			*Cases*	*%*	*Rate[III]*
Race/Ethnicity													
White, non-Hispanic	1,871	1,539	*3,410*	*59%*	259	179	*438*	*25%*	*2,130*	*1,718*	*3,848*	*51%*	*87.4*
Black[II], African-American	558	582	*1,140*	*20%*	273	233	*506*	*29%*	*831*	*815*	*1,646*	*22%*	*838.9*
Black[II], African-born	208	237	*445*	*8%*	316	244	*560*	*32%*	*524*	*481*	*1,005*	*13%*	*1378.0*
Hispanic	226	305	*531*	*9%*	65	46	*111*	*6%*	*291*	*351*	*642*	*9%*	*256.5*
American Indian	34	41	*75*	*1%*	26	31	*57*	*3%*	*60*	*72*	*132*	*2%*	*238.2*
Asian/PI	47	50	*97*	*2%*	23	17	*40*	*2%*	*70*	*67*	*137*	*2%*	*63.8*
Other[II]	46	27	*73*	*1%*	22	11	*33*	*2%*	*68*	*38*	*106*	*1%*	*x*
Total	*2,990*	*2,781*	*5,771*	*100%*	*984*	*761*	*1,745*	*100%*	*3,974*	*3,542*	*7,516*	*100%*	*141.7*
Mode of Exposure													
MSM	2,112	1,745	*3,857*	*67%*	--	--	--	--	*2,112*	*1,745*	*3,857*	*51%*	*x*
IDU	105	156	*261*	*5%*	69	89	*158*	*9%*	*174*	*245*	*419*	*6%*	*x*
MSM/IDU	176	206	*382*	*7%*	--	--	--	--	*176*	*206*	*382*	*5%*	*x*
Heterosexual (Total)	(91)	(135)	(226)	*4%*	(711)	(559)	(1270)	*73%*	*(802)*	*(694)*	*(1496)*	*20%*	*x*
with IDU	23	47	70	--	71	85	156	--	94	132	226	--	*x*
with Bisexual Male	-	-	-	--	50	43	93	--	50	43	93	--	*x*
with Hemophiliac/other	2	2	4	--	7	1	8	--	9	3	12	--	*x*
with HIV+	66	86	152	--	262	165	427	--	328	251	579	--	*x*
Hetero, unknown risk[IV]	0	0	0	--	321	265	586		321	265	586		
Perinatal	25	17	*42*	*1%*	41	10	51	*3%*	66	27	93	*1%*	*x*
Other	9	20	*29*	*1%*	3	2	*5*	*0%*	*12*	*22*	*34*	*0%*	*x*
Unspecified	292	329	*621*	*11%*	81	55	*136*	*8%*	*373*	*384*	*757*	*10%*	*x*
No Interview, Unspecified	180	173	*353*	*6%*	79	46	*125*	*7%*	*259*	*219*	*478*	*6%*	*x*
Total	*2,990*	*2,781*	*5,771*	*100%*	*984*	*761*	*1,745*	*100%*	*3,974*	*3,542*	*7,516*	*100%*	*141.7*

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

[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 2010 data. The population estimate for African-born persons was calculated by the Minnesota State Demographic Center . The population estimate for Black, African-American persons (196,211) was calculated by subtracting the U.S. Census estimate for African-born persons (72,390) from the total Black population (269,414). 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 104 state prisoners, 166 refugees in the HIV-Positive Refugee Resettlement Program, and 154 additional 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, 2012

County[II]	HIV (non-AIDS)	AIDS	*Total*	*Rate[III]*
Aitkin	8	3	*11*	*67.9*
Anoka	165	165	*330*	*99.7*
Becker	6	7	*13*	*40.0*
Beltrami	9	12	*21*	*47.3*
Benton	11	10	*21*	*54.6*
Big Stone	0	1	*1*	-
Blue Earth	18	17	*35*	*54.7*
Brown	7	8	*15*	*57.9*
Carlton	5	6	*11*	*31.1*
Carver	25	29	*54*	*59.3*
Cass	13	13	*26*	*91.0*
Chippewa	3	3	*6*	*48.2*
Chisago	12	7	*19*	*35.3*
Clay	20	8	*28*	*47.5*
Clearwater	1	2	*3*	-
Cook	0	2	*2*	-
Cottonwood	2	5	*7*	*59.9*
Crow Wing	4	12	*16*	*25.6*
Dakota	179	160	*339*	*85.1*
Dodge	3	3	*6*	*29.9*
Douglas	7	8	*15*	*41.7*
Faribault	1	5	*6*	*41.2*
Fillmore	5	5	*10*	*47.9*
Freeborn	11	19	*30*	*96.0*
Goodhue	10	15	*25*	*54.1*
Grant	1	2	*3*	-
Hennepin	2,270	1,920	*4,190*	*363.6*
Houston	3	1	*4*	-
Hubbard	3	1	*4*	-
Isanti	11	11	*22*	*58.2*
Itasca	4	8	*12*	*26.6*
Jackson	8	10	*18*	*175.3*
Kanabec	2	3	*5*	*30.8*
Kandiyohi	13	12	*25*	*59.2*
Kittson	0	0	*0*	-
Koochiching	0	0	*0*	-
Lac Qui Parle	1	1	*2*	-
Lake	2	2	*4*	-
Lake of the Woods	0	0	*0*	-
Le Sueur	5	8	*13*	*46.9*
Lincoln	3	0	*3*	-
Lyon	9	2	*11*	*42.5*
McLeod	6	7	*13*	*35.5*
Mahnomen	0	0	*0*	-
Marshall	1	1	*2*	-
Martin	7	3	*10*	*48.0*
Meeker	5	4	*9*	*38.6*
Mille Lacs	1	8	*9*	*34.5*
Morrison	3	8	*11*	*33.1*
Mower	9	8	*17*	*43.4*
Murray	1	1	*2*	-
Nicollet	3	8	*11*	*33.6*
Nobles	9	6	*15*	*70.2*
Norman	2	0	*2*	-
Olmsted	63	53	*116*	*80.4*
Otter Tail	7	7	*14*	*24.4*
Pennington	1	1	*2*	-
Pine	4	3	*7*	*23.5*
Pipestone	1	0	*1*	-
Polk	4	6	*10*	*31.6*
Pope	1	1	*2*	-
Ramsey	610	592	*1,202*	*236.3*
Red Lake	0	0	*0*	-
Redwood	1	1	*2*	-
Renville	1	1	*2*	-
Rice	38	23	*61*	*95.1*
Rock	1	3	*4*	-
Roseau	1	0	*1*	-
St. Louis	73	61	*134*	*66.9*

Table 3. Number and Rate (per 100,000) of Persons Living with HIV (non-AIDS) and AIDS by County of Residence[I] -- Minnesota, 2012

County[II]	HIV (non-AIDS)	AIDS	*Total*	*Rate[III]*
Scott	39	44	*83*	*63.9*
Sherburne	20	25	*45*	*50.8*
Sibley	1	1	*2*	-
Stearns	39	33	*72*	*47.8*
Steele	5	4	*9*	*24.6*
Stevens	0	2	*2*	-
Swift	0	0	*0*	-
Todd	1	1	*2*	-
Traverse	1	0	*1*	-
Wabasha	1	2	*3*	-
Wadena	1	1	*2*	-
Waseca	2	5	*7*	*36.6*
Washington	92	71	*163*	*68.4*
Watonwan	0	1	*1*	-
Wilkin	0	1	*1*	-
Winona	12	2	*14*	*27.2*
Wright	22	17	*39*	*31.3*
Yellow Medicine	0	1	*1*	-
State Total[II]	*3,974*	*3,542*	*7,516*	*152.8*

[I] Cases reported to the MDH, assumed to be alive and currently residing in a Minnesota county as of 12/31/11.

[II] Residence information missing for 25 persons living with HIV and 19 persons living with AIDS. Total rate is based on all cases in the state (n=7,516)

Numbers by county exclude federal, and private prisoners, but include 164 refugees in the HIV-Positive Refugee Resettlement Program and 143 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 103. 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 2010 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, 2003-2012

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
HIV (non-AIDS)	202	198	221	247	243	241	281	249	219	236
AIDS[II]	194	247	217	195	188	201	190	175	182	202
AIDS deaths	60	68	61	68	61	60	71	63	67	52
PLWHA	4,895	5,002	5,233	5,566	5,950	6,221	6,552	6814	7,136	7,516
All deaths	72	70	68	79	77	73	88	70	61	80

[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 2003 and then diagnosed as an AIDS case in 2008 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 Case numbers exclude federal and private prisoners.

Table 5. Known Mortality among Minnesota AIDS Cases by Year of Diagnosis -- Minnesota, through 2012[I]				
Year	**Cases Diagnosed**	**Cases Known to be Dead[II]**	**Case-Fatality Rate[III]**	**Deaths Occurring in this Interval**
1982-1999	3,532	2,553	72%	2,069
2000	172	43	25%	88
2001	145	30	21%	68
2002	176	37	21%	66
2003	194	41	21%	60
2004	247	49	20%	68
2005	217	37	17%	61
2006	195	23	12%	68
2007	188	31	16%	61
2008	201	26	13%	60
2009	190	17	9%	71
2010	175	13	7%	63
2011	182	14	8%	67
2012	202	9	4%	52
Cumulative Total	6,016	2,923	49%	2,922

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

[II] Cases known to be dead (by any cause) as of 12/31/2012. 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.