

# HIV Surveillance Report, 2016

## **HIV/AIDS Surveillance System**



Minnesota  
Department *of* Health

Sexually Transmitted Diseases, HIV and Tuberculosis Section, Epidemiology and Surveillance Unit

# 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, 2016* or *HIV Surveillance Technical Notes*.
- This slide set describes new HIV diagnoses (including AIDS at first diagnosis) in Minnesota by person, place, and time.
- The slides rely on data from HIV/AIDS cases diagnosed through 2016 and reported to the Minnesota Department of Health (MDH) HIV/AIDS Surveillance System.
- The data are displayed by year of HIV diagnosis.

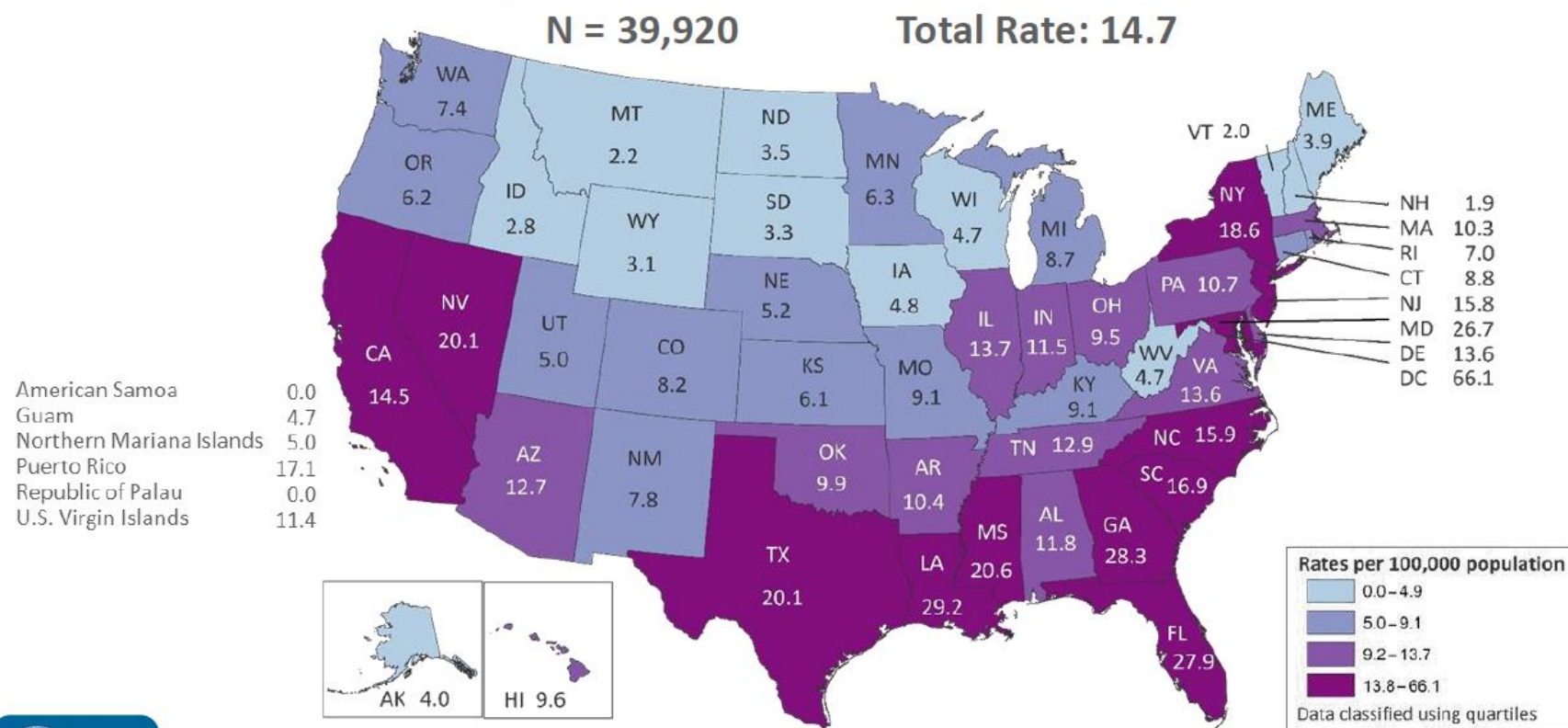
# Introduction (II)

- 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 = 102).
- Data analyses for new HIV diagnoses 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, 2016= 168), as well as, other refugees/immigrants reporting a positive test prior to their arrival in Minnesota (n=171).
- 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 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

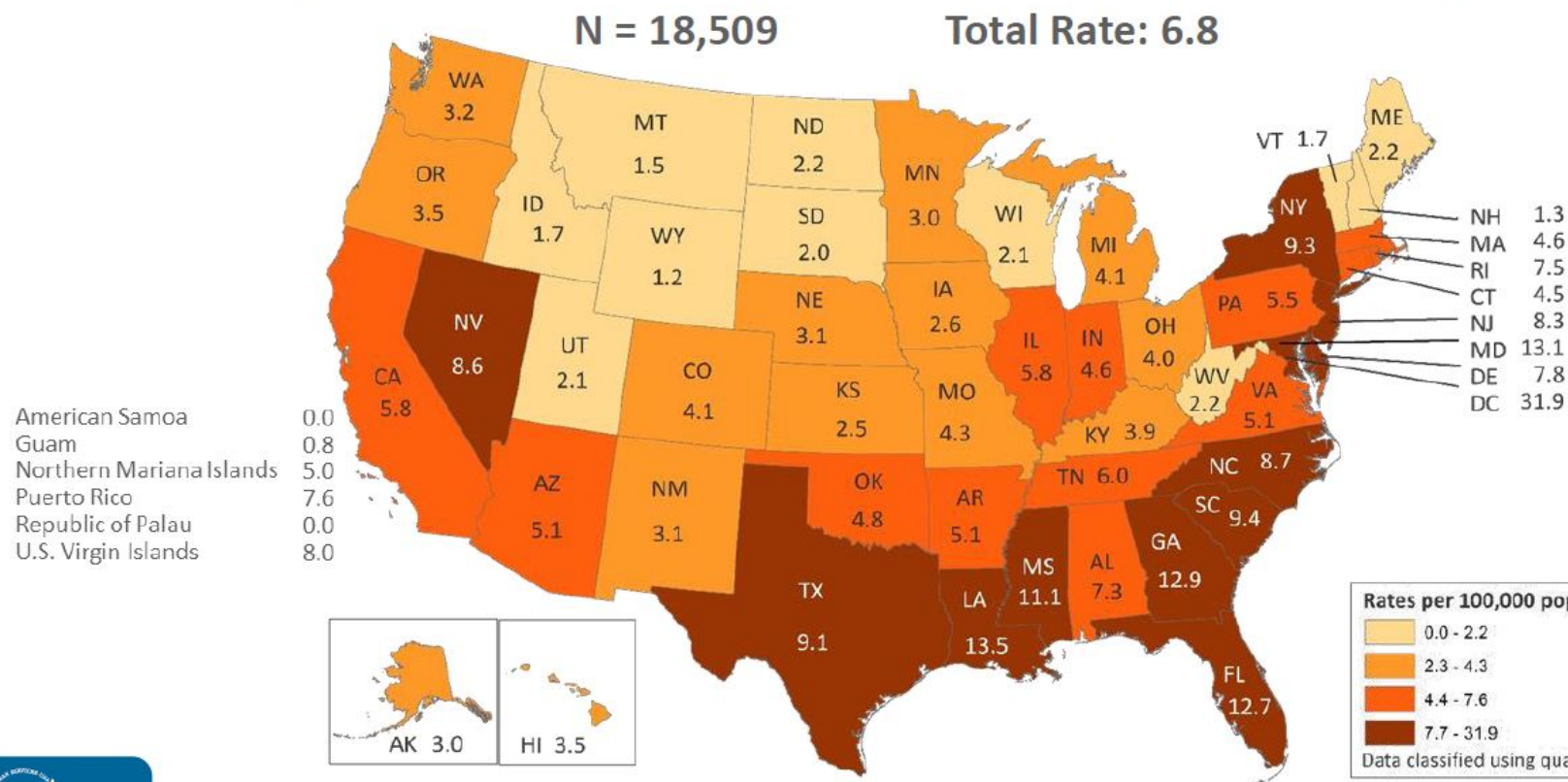


## Rates of Diagnoses of HIV Infection among Adults and Adolescents, by Area of Residence, 2015 — United States and 6 Dependent Areas



Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Data for the year 2015 are preliminary and based on 6 months reporting delay.

# Rates of Diagnosed HIV Infection Classified as Stage 3 (AIDS) among Adults and Adolescents, by Area of Residence, 2015 — United States and 6 Dependent Areas

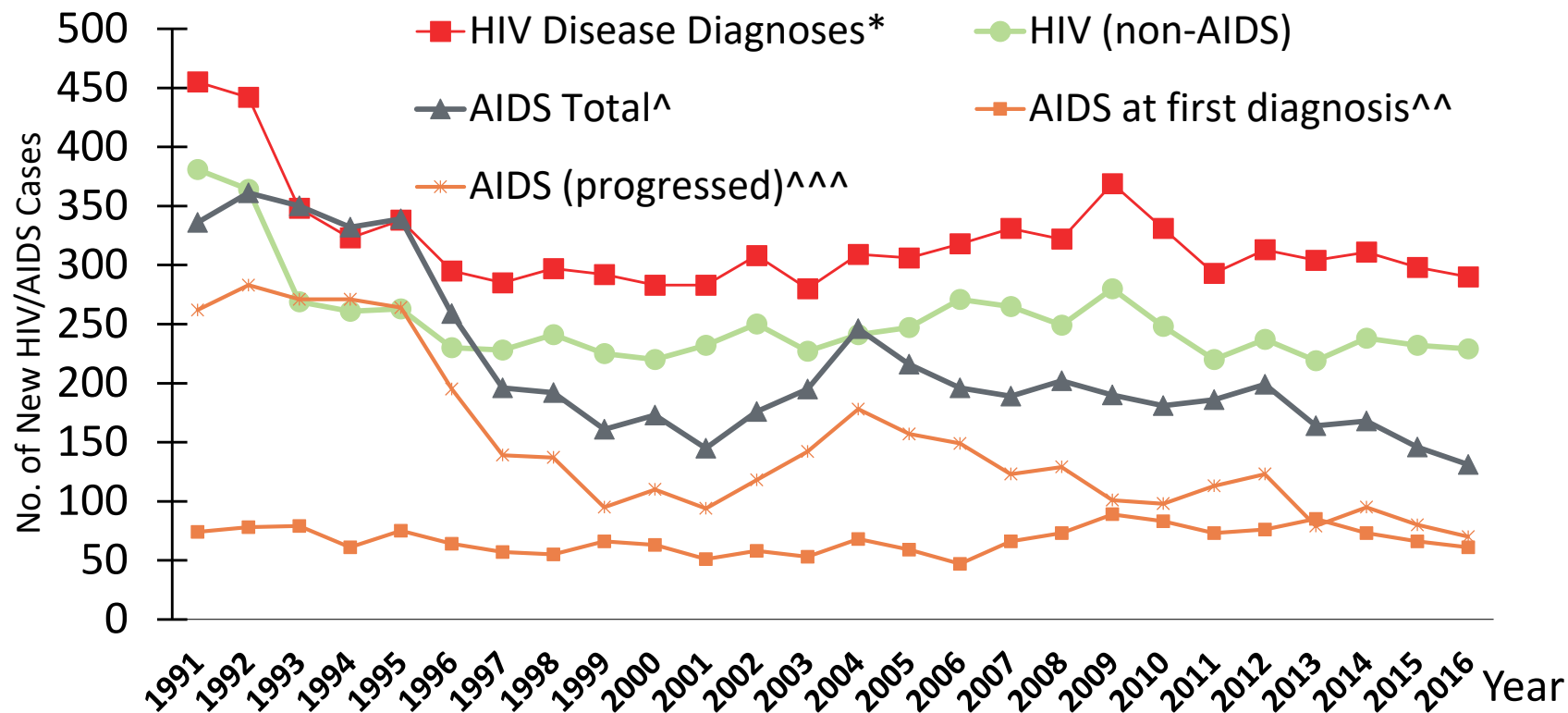


Note. Data for the year 2015 are preliminary and based on 6 months reporting delay.

# Overview of HIV/AIDS in Minnesota



# New HIV Disease Diagnoses, HIV (non-AIDS) and AIDS Cases by Year, 1990-2016



\*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^^ and AIDS ((progressed)^^^ previous diagnosis of HIV).

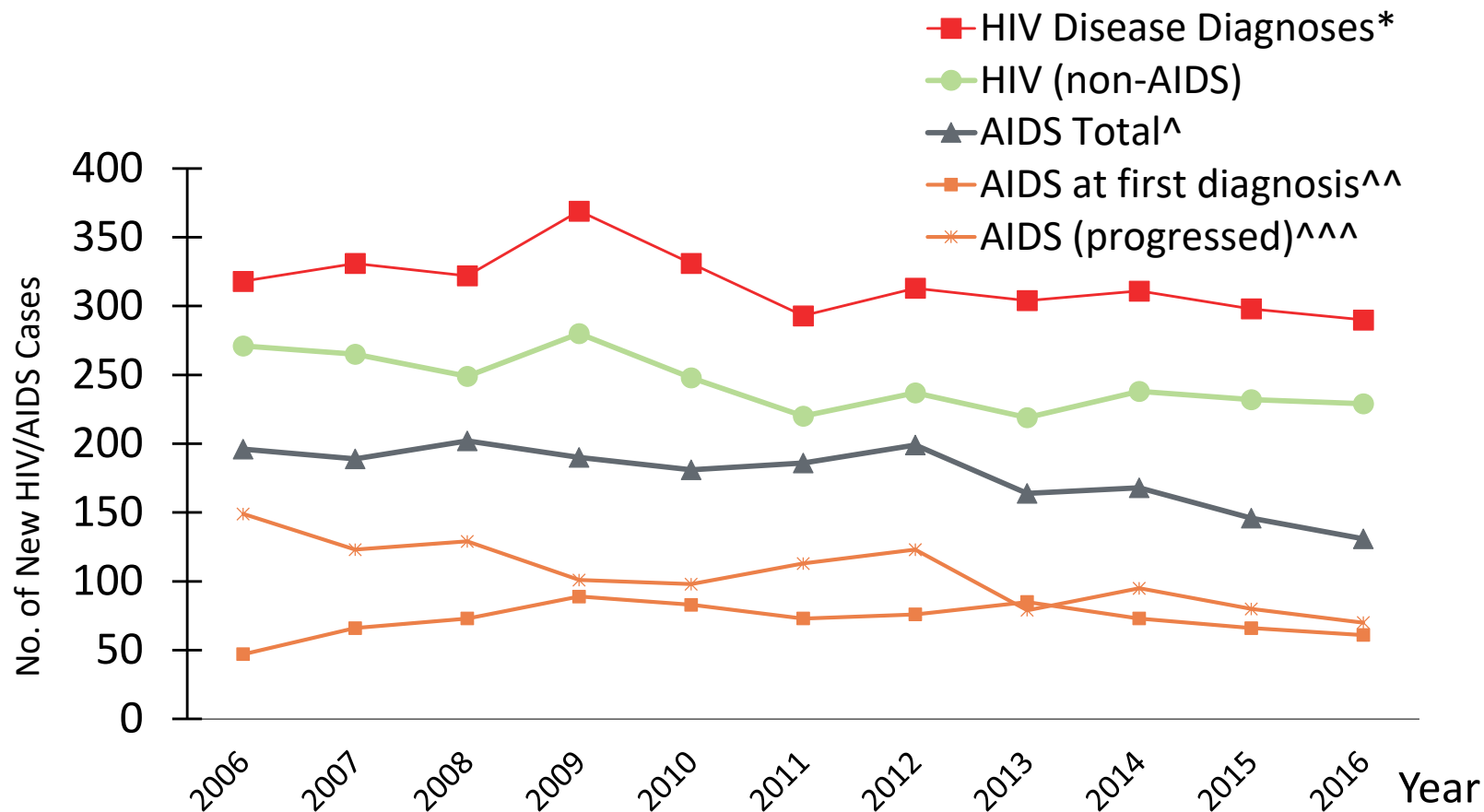
This includes refugees in the HIV+ Resettlement Program, as well as, other refugee/immigrants diagnosed with AIDS subsequent to their arrival in the United States.

HIV/AIDS in Minnesota: Annual Review





# New HIV Disease Diagnoses, HIV (non-AIDS) and AIDS Cases by Year, 2006-2016



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

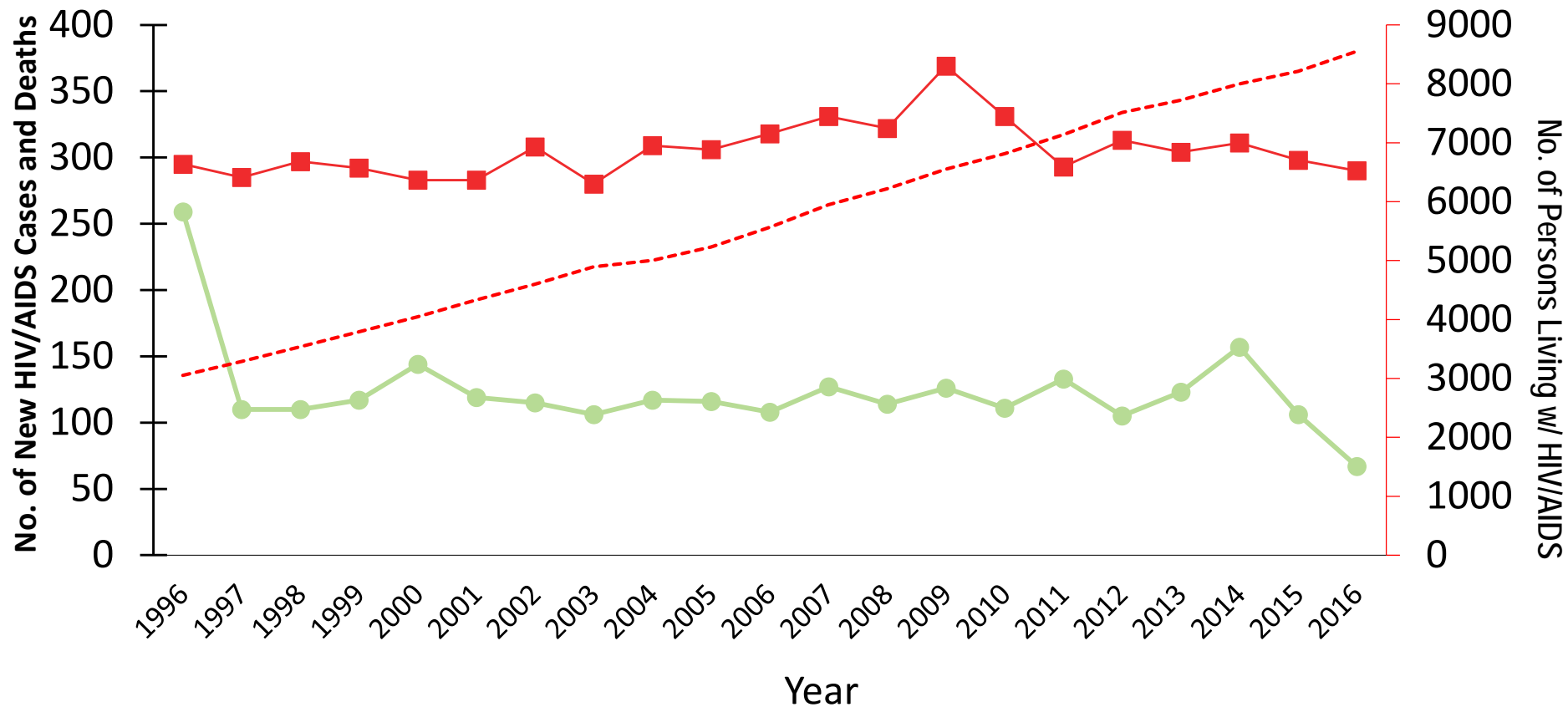
^Includes all new cases of AIDS diagnosed within a given calendar year, including AIDS at first diagnosis^^ and AIDS ((progressed)^^^ previous diagnosis of HIV).

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.



# New HIV Disease Diagnoses, Deaths and Prevalent Cases by Year, 1996-2016

■ HIV Disease Diagnoses\*      ● All Deaths^      - - - Living with HIV/AIDS

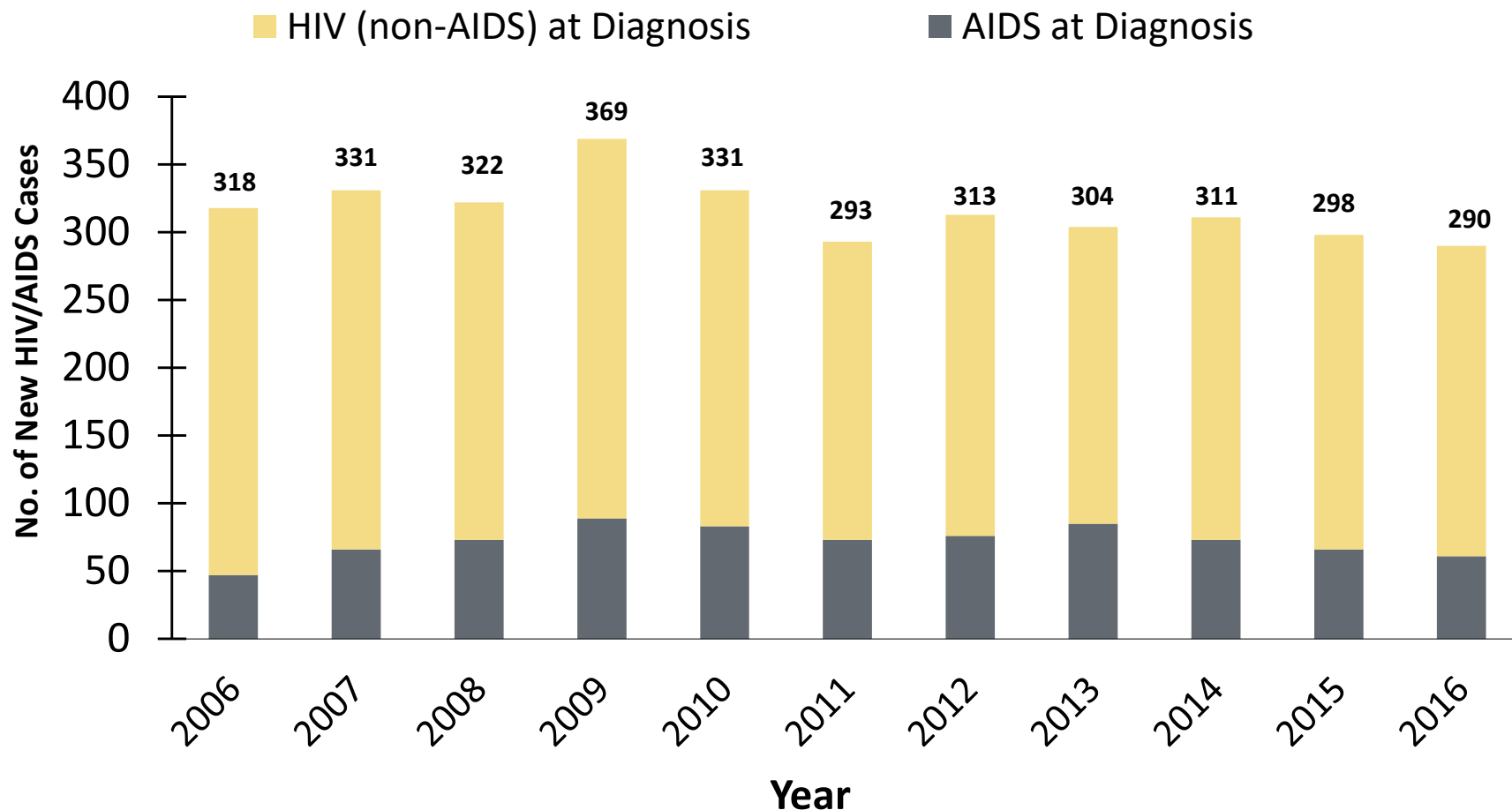


\*Includes all new cases of HIV infection (both HIV (non-AIDS) and AIDS at first diagnosis) diagnosed within a given calendar year.

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



# HIV (non-AIDS) and AIDS at Diagnosis by Year, 2006-2016



\*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.

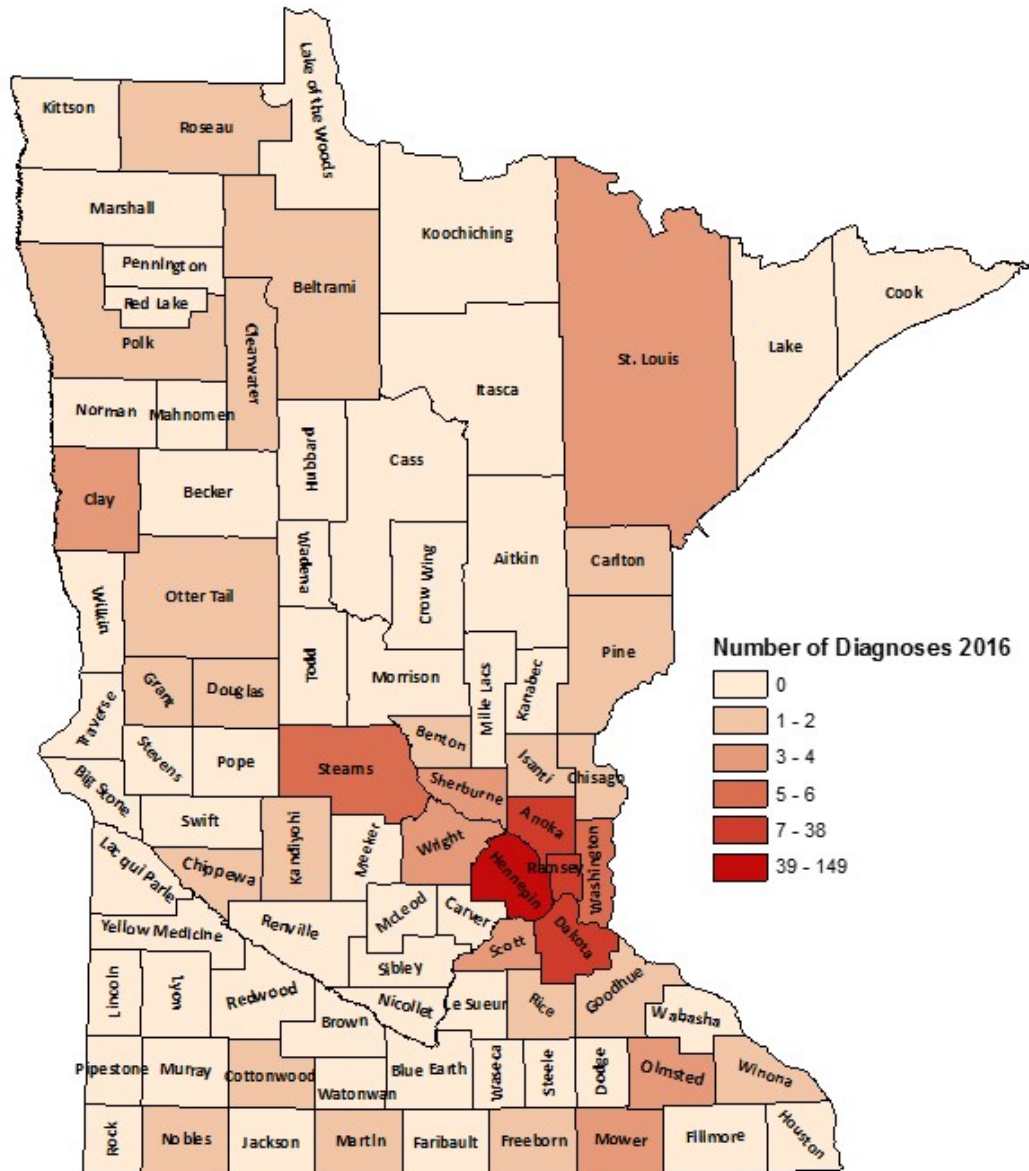
# HIV Diagnoses\* in Minnesota by Person, Place, and Time

\* HIV or AIDS at first diagnosis

Place



# HIV Diagnoses\* by County of Residence at Diagnosis, 2016



City of Minneapolis – 92  
City of St. Paul – 28  
Suburban<sup>#</sup> – 118  
Greater Minnesota – 52  
Total number = 290

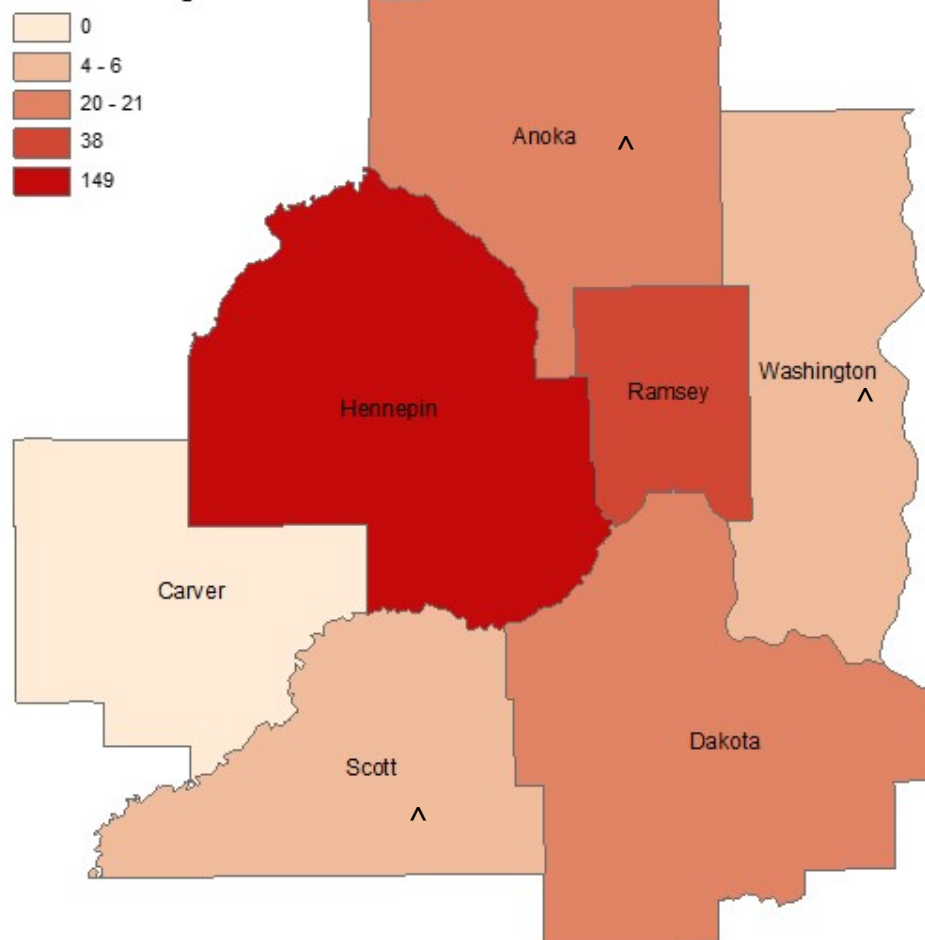
\*HIV or AIDS at first diagnosis

<sup>#</sup> 7-county metro area, excluding the cities of Minneapolis and St. Paul



# HIV Diagnoses\* by County of Residence at Diagnosis, 2016: Seven-County Metro Area

Twin Cities Seven County Metro Region:  
Number of Diagnoses 2016



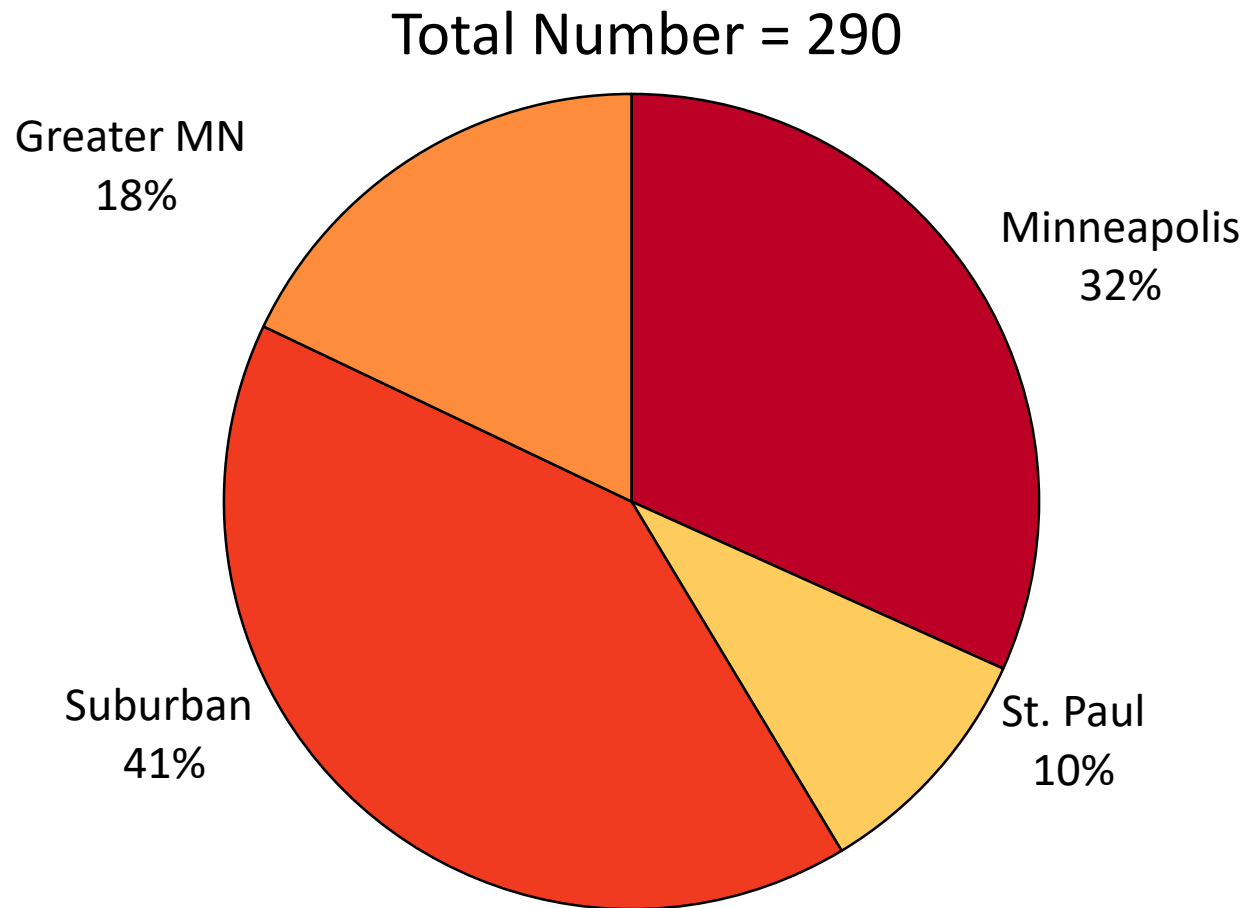
City of Minneapolis – 92  
City of St. Paul – 28  
Suburban<sup>#</sup> – 118  
Total number (Metro only) = 238  
<sup>#</sup> 7-county metro area, excluding  
the cities of Minneapolis and St. Paul

^Counties in which a state correctional facility is located.

\* HIV or AIDS at first diagnosis



## HIV Diagnoses\* in Minnesota by Residence at Diagnosis, 2016



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.

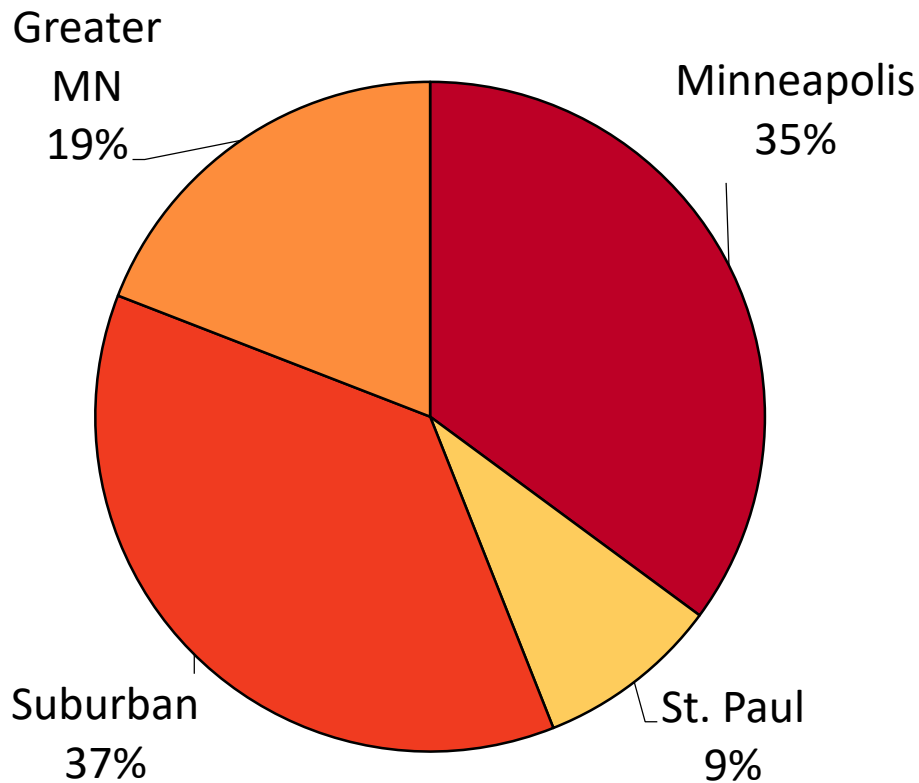
\* HIV or AIDS at first diagnosis



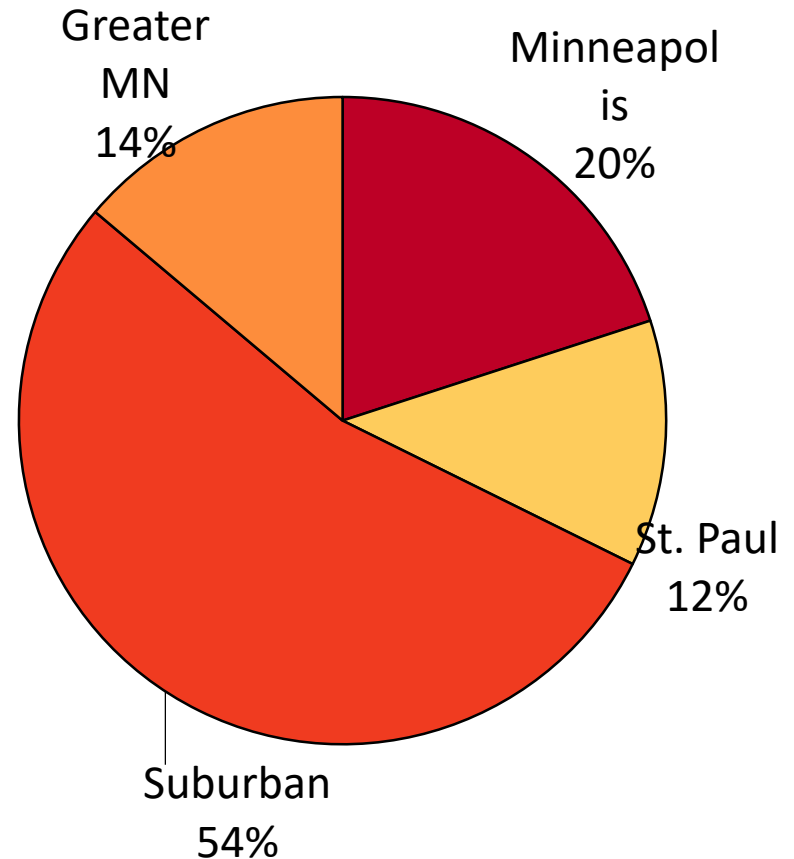


## HIV Diagnoses\* in Minnesota by Gender and Residence at Diagnosis, 2016

Males n = 225



Females n = 65



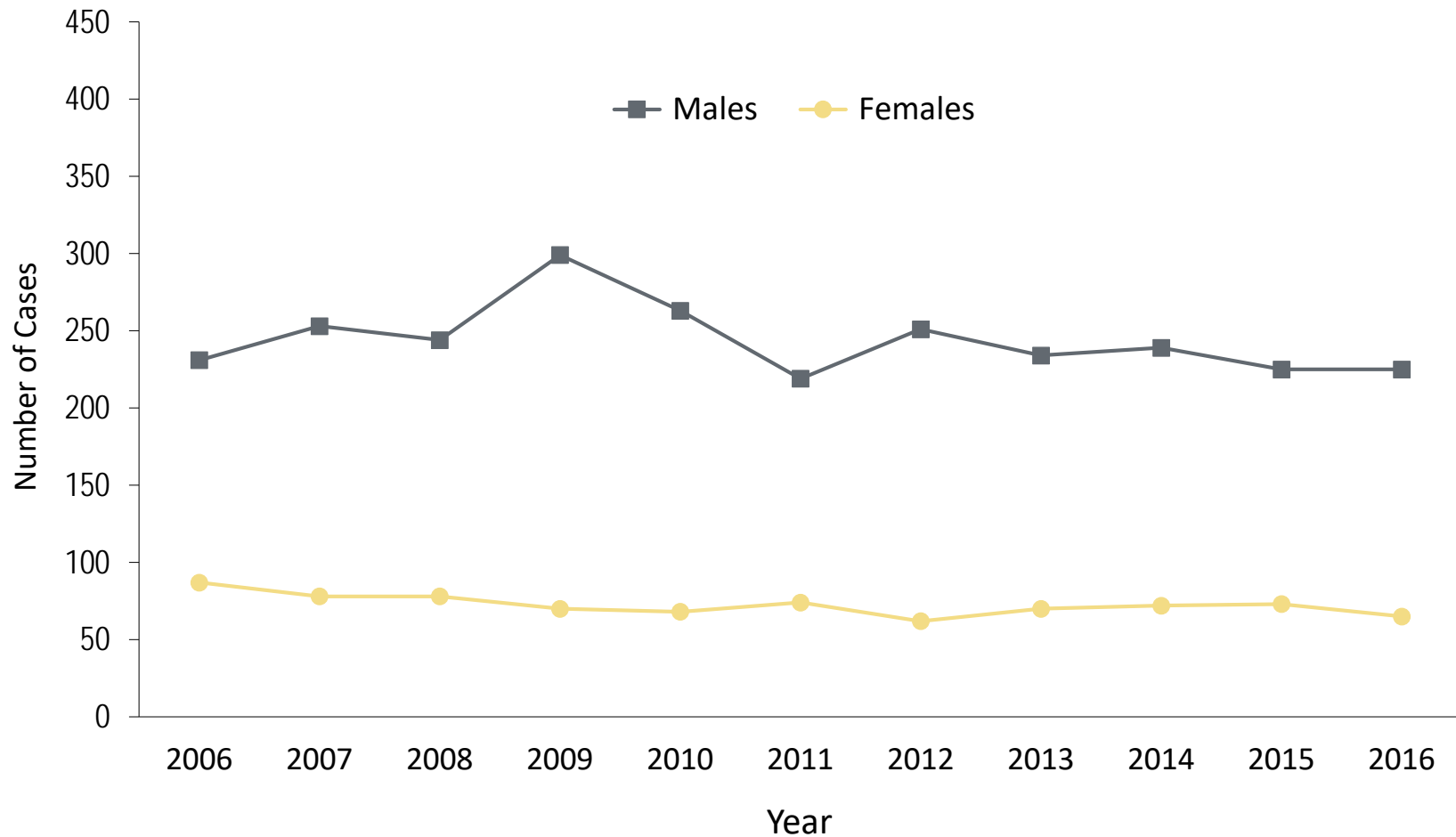
Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (except Minneapolis), Ramsey (except St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties, outside the seven-county metro area.

\* HIV or AIDS at first diagnosis

# Gender and Race/Ethnicity



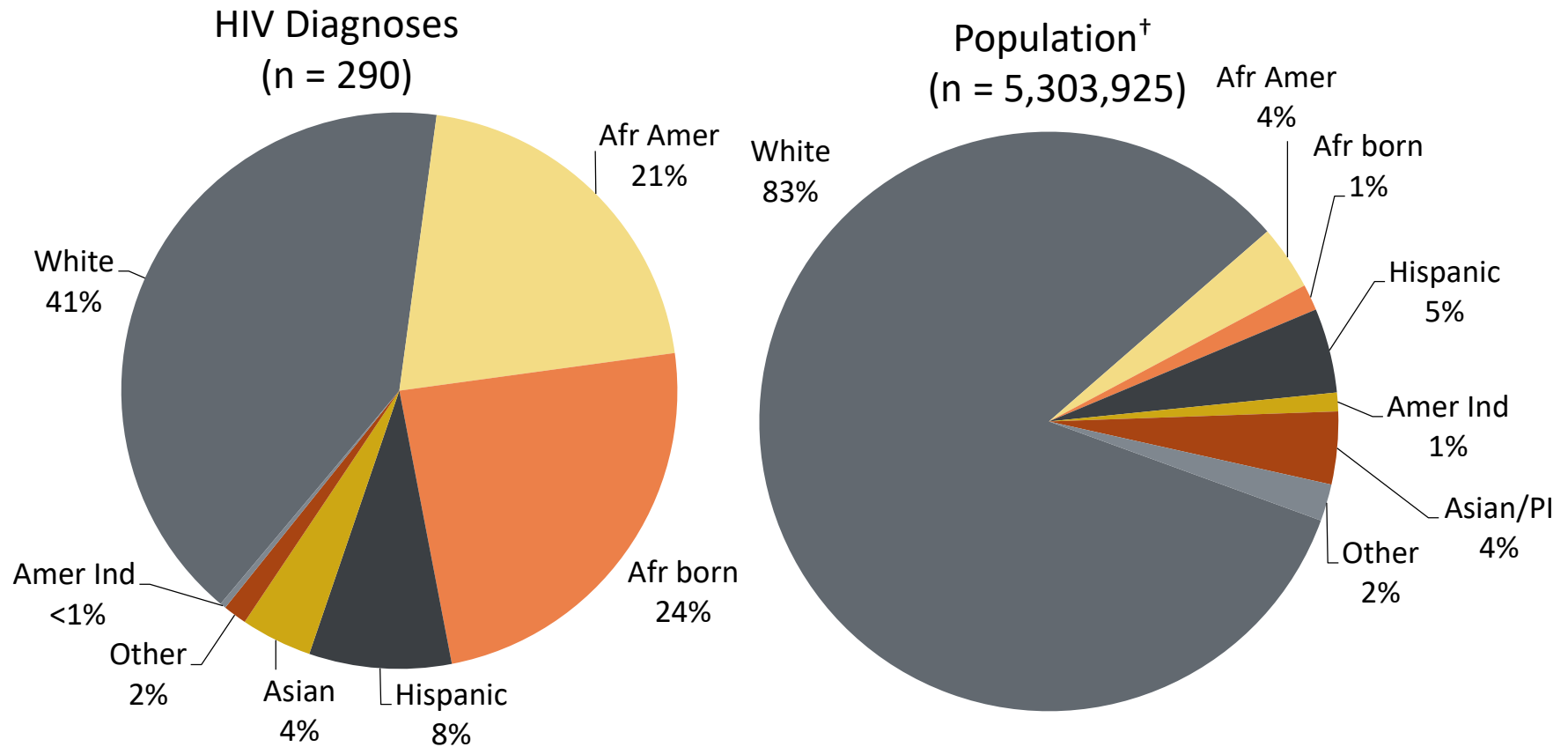
## HIV Diagnoses\* by Gender and Year of Diagnosis, 2006 - 2016



\* HIV or AIDS at first diagnosis



# HIV Diagnoses\* in Year 2016 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

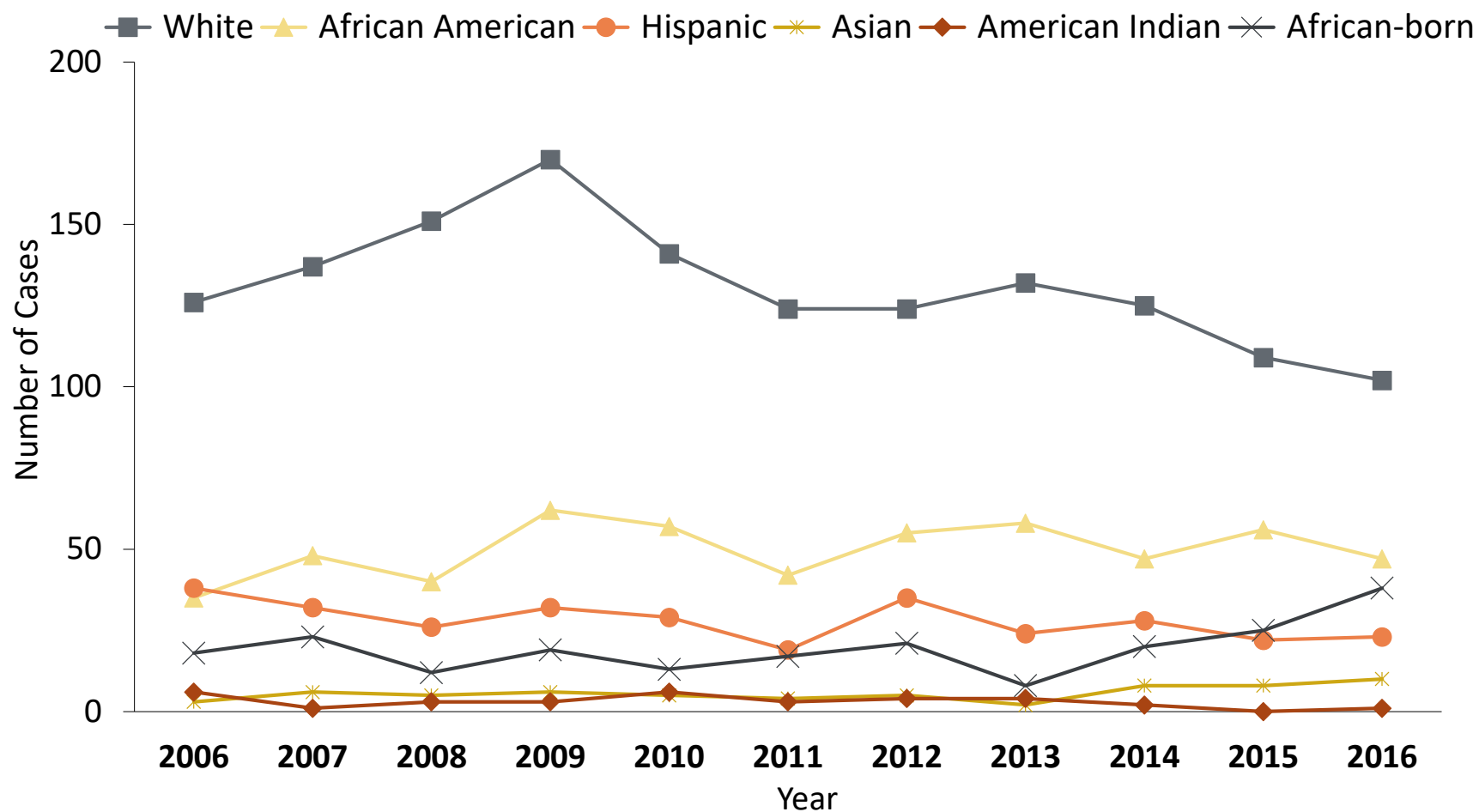
Amer Ind = American Indian

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

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



# HIV Diagnoses\* Among Males by Race/Ethnicity† and Year of Diagnosis, 2006 - 2016



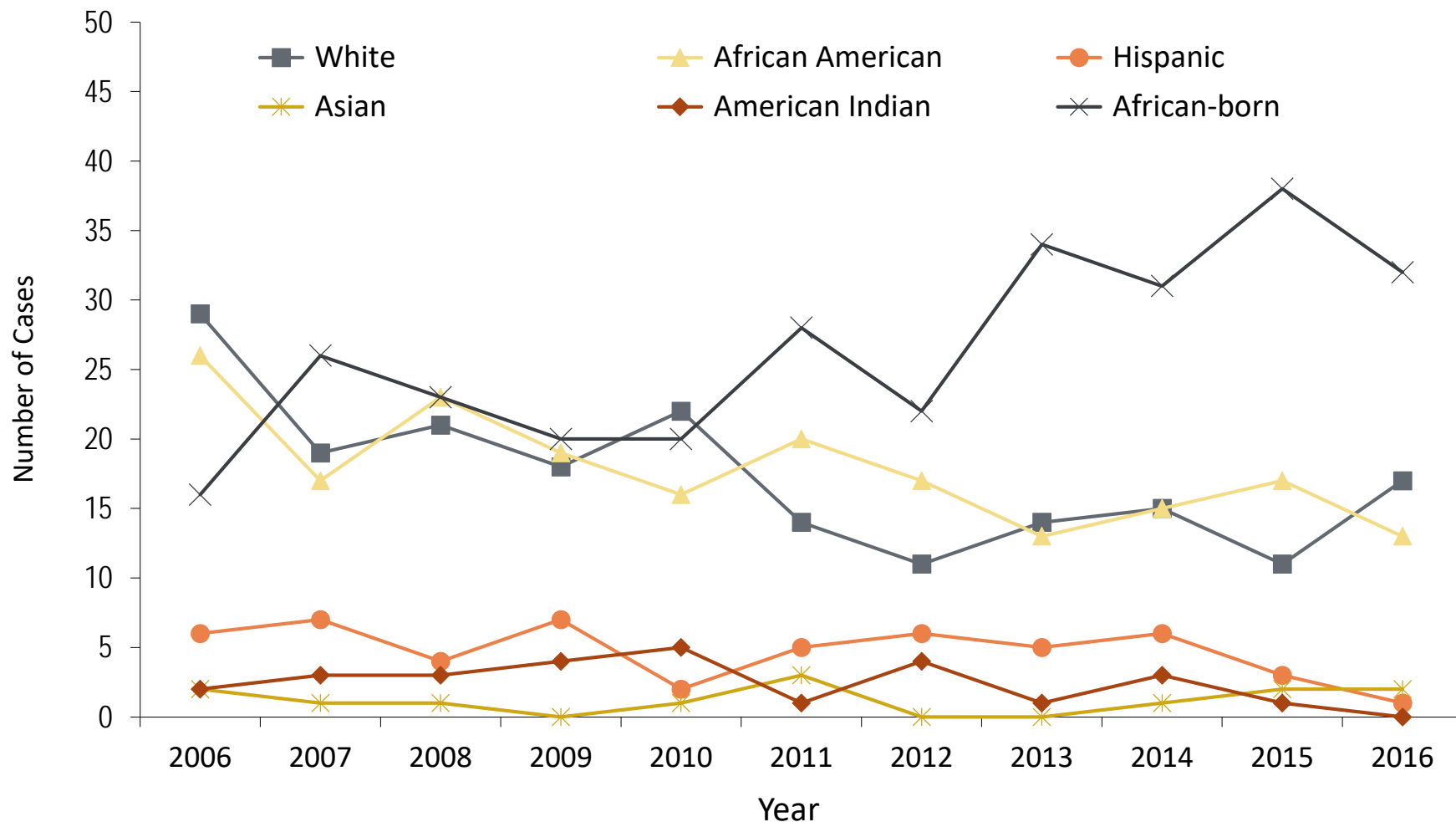
\* HIV or AIDS at first diagnosis

† "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.

*HIV/AIDS in Minnesota: Annual Review*



## HIV Diagnoses\* Among Females by Race/Ethnicity<sup>†</sup> and Year of Diagnosis, 2006 – 2016



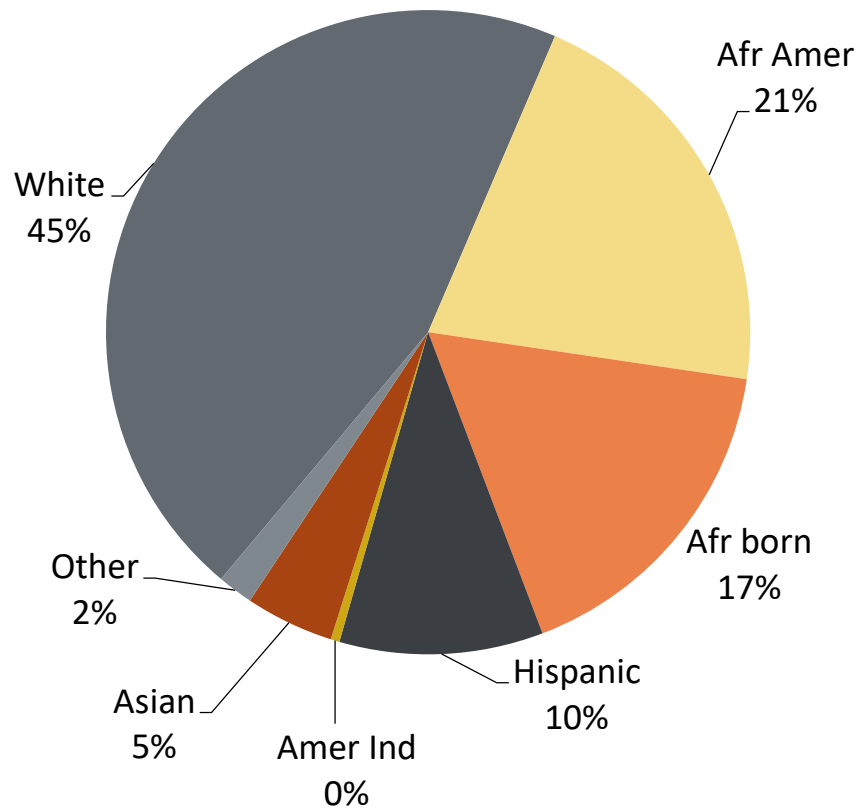
\* HIV or AIDS at first diagnosis

<sup>†</sup> "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.

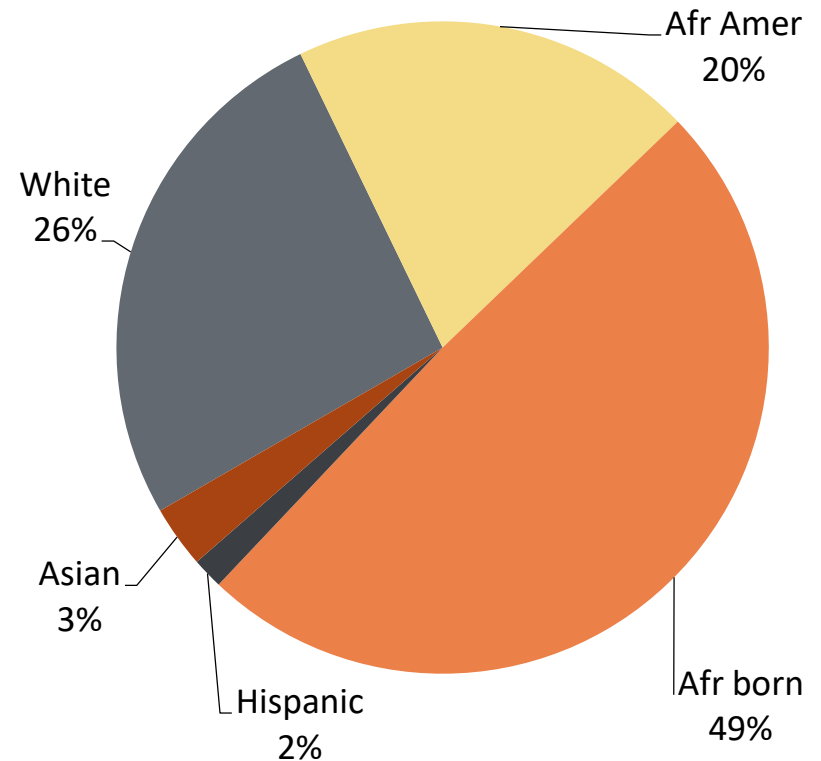


## HIV Diagnoses\* Diagnosed in Year 2016 by Gender and Race/Ethnicity

Males (n = 225)



Females (n = 65)



\* 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



## Number of Cases and Rates (per 100,000 persons) of HIV Diagnoses\* by Race/Ethnicity<sup>†</sup>– Minnesota, 2016

<b>Race/Ethnicity</b>	<b>Cases</b>	<b>%</b>	<b>Rate</b>
<b>White, non-Hispanic</b>	119	41%	2.7
<b>Black, African-American</b>	60	21%	31.3
<b>Black, African-born</b>	70	24%	90.3 <sup>††</sup>
<b>Hispanic</b>	24	8%	9.6
<b>American Indian</b>	1	0.3%	#
<b>Asian/Pacific Islander</b>	12	4%	5.6
<b>Other<sup>^</sup></b>	4	1%	#
<b>Total</b>	<b>290</b>	<b>100%</b>	<b>5.5</b>

\* HIV or AIDS at first diagnosis; 2010 U.S. Census Data used for rate calculations.

<sup>†</sup> “African-born” refers to Blacks who reported an African country of birth; “African American” refers to all other Blacks.

<sup>††</sup> Estimate of 77,557 Source: 2010-2012 American Community Survey. Additional calculations by the State Demographic Center.

<sup>^</sup> Other = Multi-racial persons or persons with unknown or missing race

# Number of cases too small to calculate reliable rate





# Number of Cases of Adult and Adolescent HIV Diagnoses\*\* by Gender Identity and Risk†, Minnesota, 2016

<b>Gender/Risk</b>	<b>Cases</b>	<b>%</b>	<b>Rate</b>
<b>Men (Total)</b>	(222)	77%	10.3
<b>MSM†</b>	139	62%	149.8
<b>Non-MSM</b>	83	38%	4.1
<b>Women</b>	61	22%	2.8
<b>Transgender ^ (Total)</b>	4	1%	x
<b>Male to Female</b>	2	50%	x
<b>Female to Male</b>	2	50%	x
<b>Total</b>	<b>287</b>	<b>100%</b>	<b>6.6</b>

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

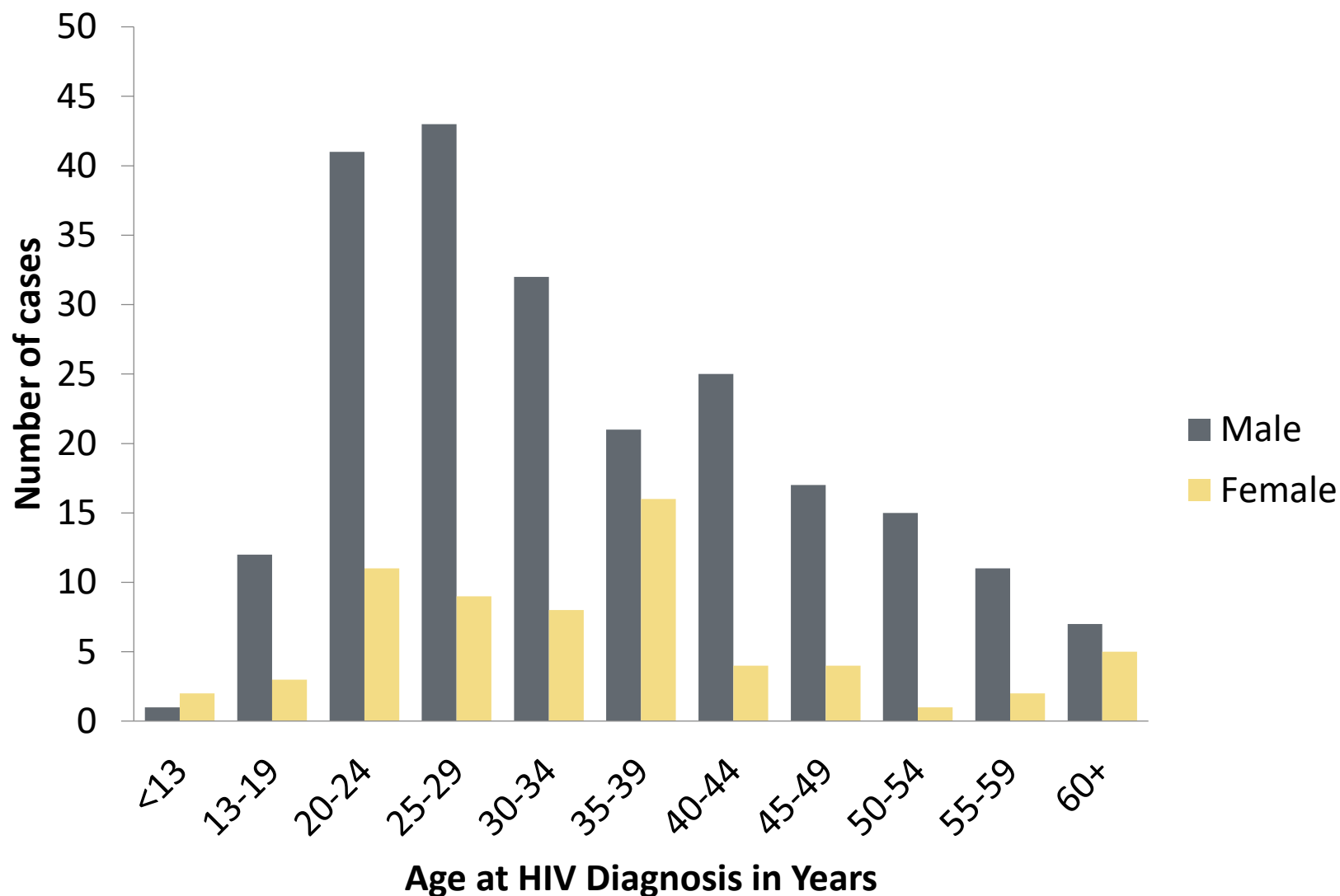
† “MSM” refers to both MSM and MSM/IDU. Estimate of 92,788

^ No current transgender estimate available

Age



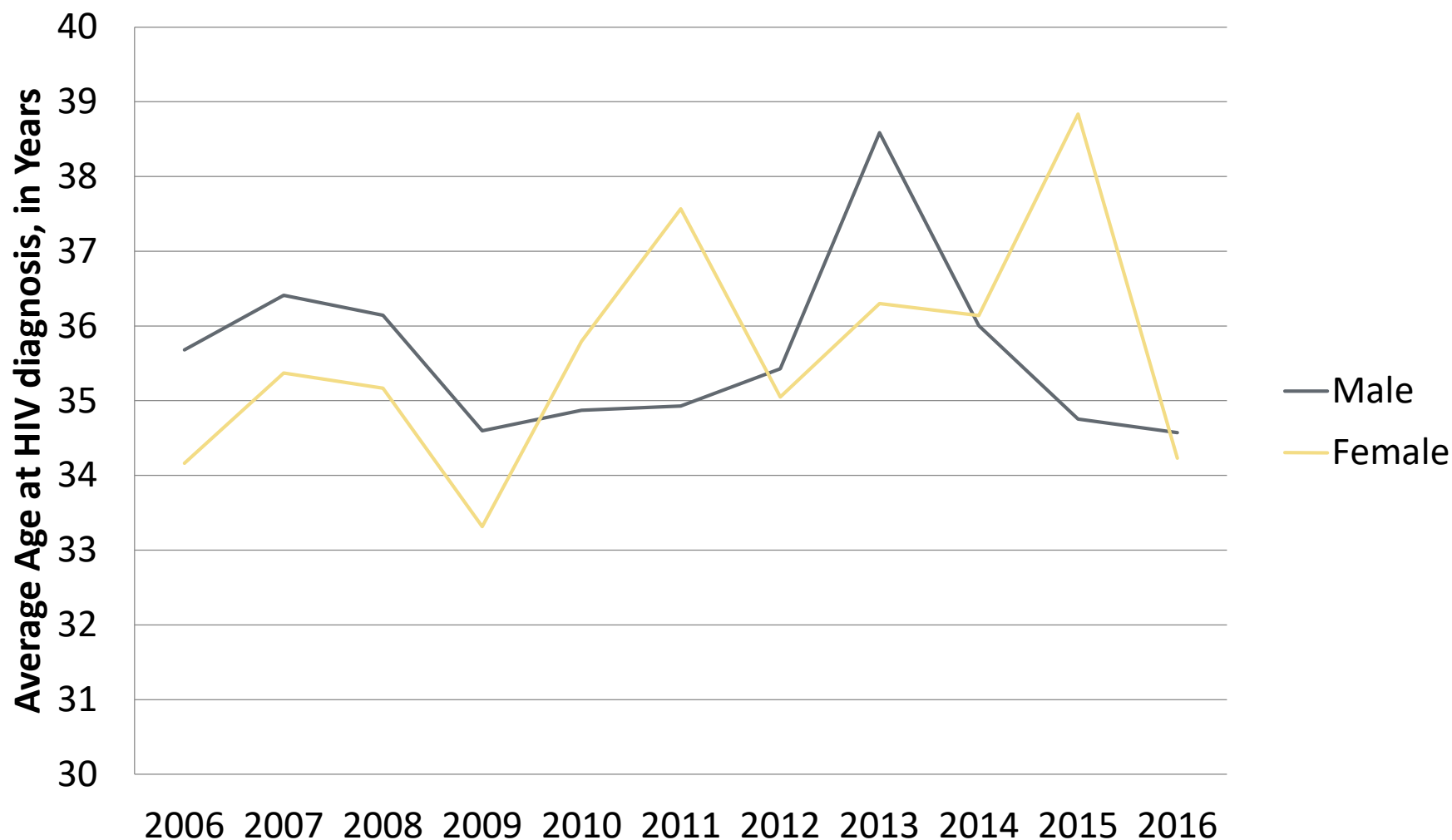
## Age at HIV Diagnosis\* by Sex at Birth, Minnesota, 2016



\* HIV or AIDS at first diagnosis



## Average Age at HIV Diagnosis\* by Sex at Birth, 2006-2016



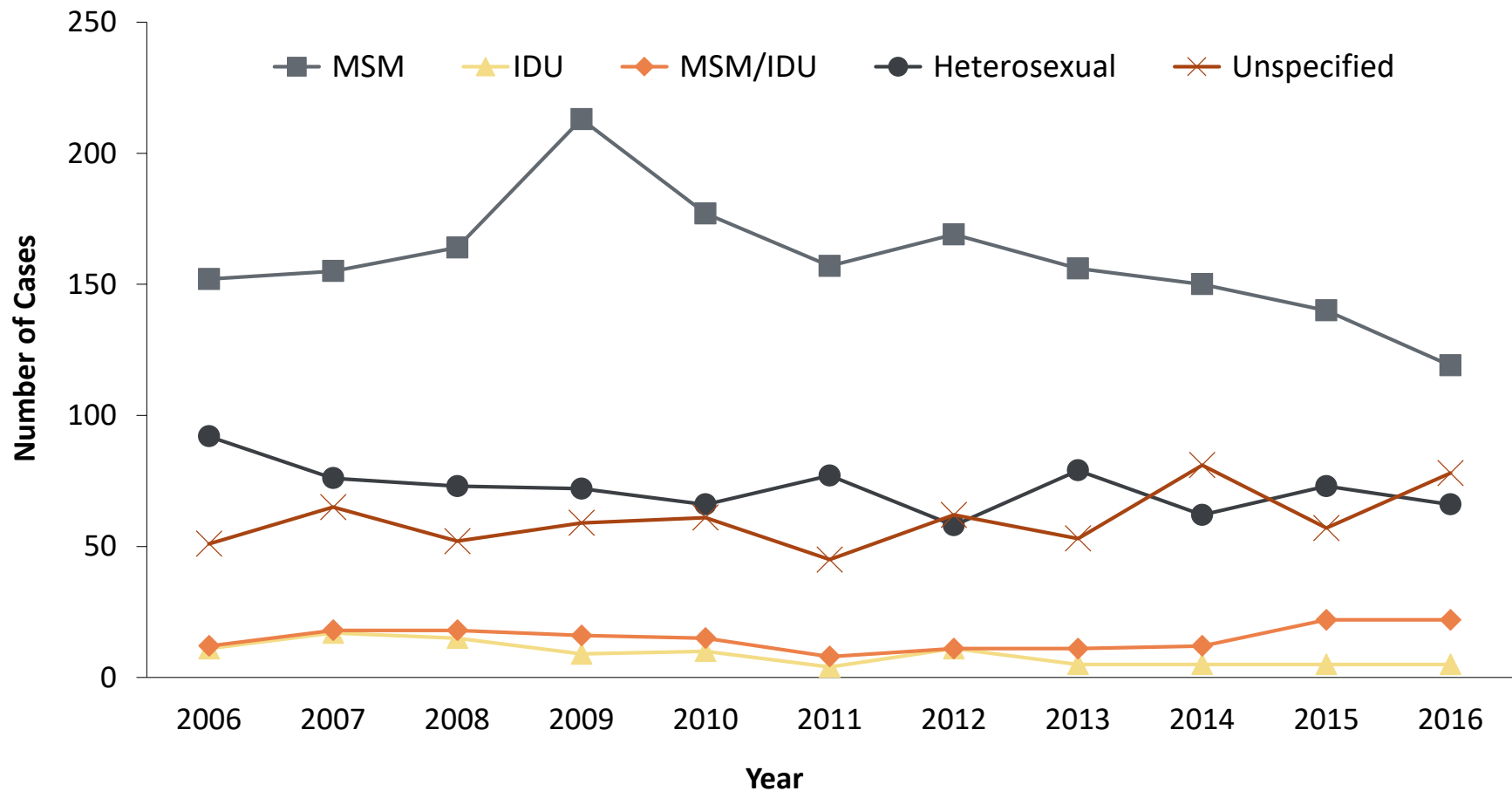
\* HIV or AIDS at first diagnosis



# Mode of Exposure



## HIV Diagnoses\* by Mode of Exposure and Year, 2005 - 2016

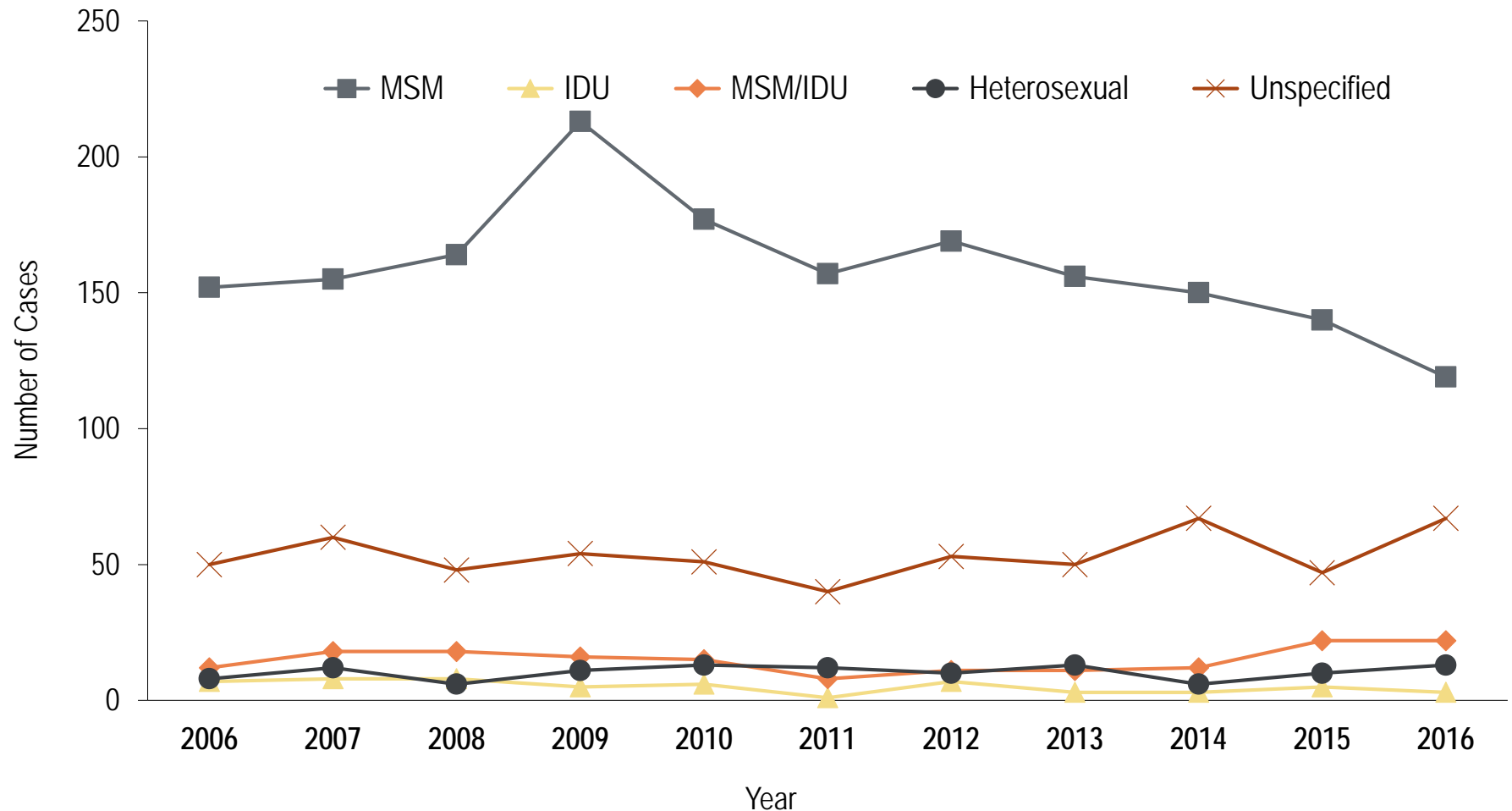


\*HIV or AIDS at first diagnosis

Unspecified = No mode of exposure ascertained



# HIV Diagnoses\* Among Males by Mode of Exposure and Year, 2006 - 2016



MSM = Men who have sex with men

IDU = Injecting drug use

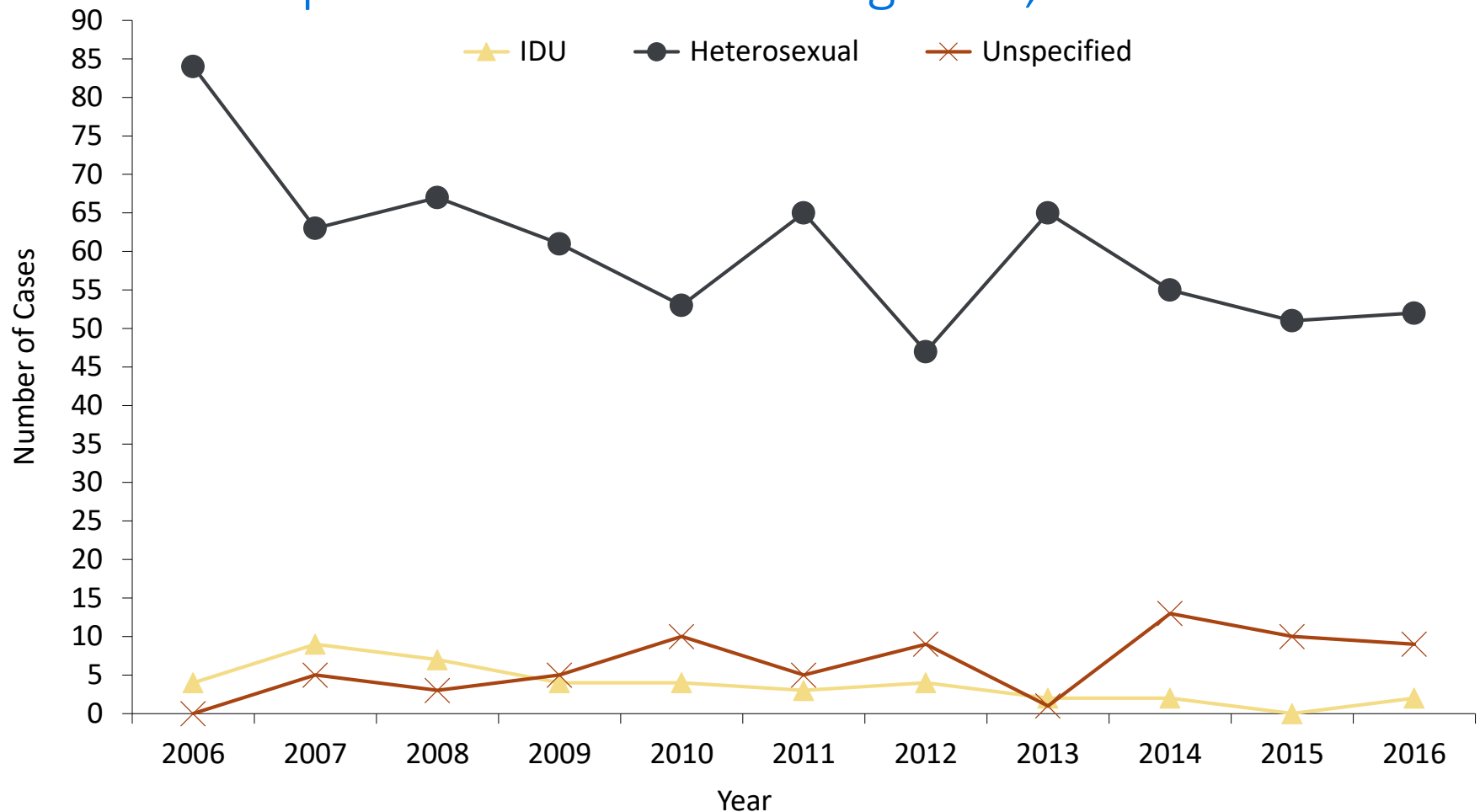
Heterosexual = Heterosexual contact

\* HIV or AIDS at first diagnosis

Unspecified = No mode of exposure ascertained



# HIV Diagnoses\* Among Females by Mode of Exposure and Year of Diagnosis, 2006 - 2016



IDU = Injecting drug use

Heterosexual = Heterosexual contact with HIV+ , bisexual, IDU, hemophiliac/blood project or organ transplant recipient, or with partner with unknown risk

Unspecified = No mode of exposure ascertained

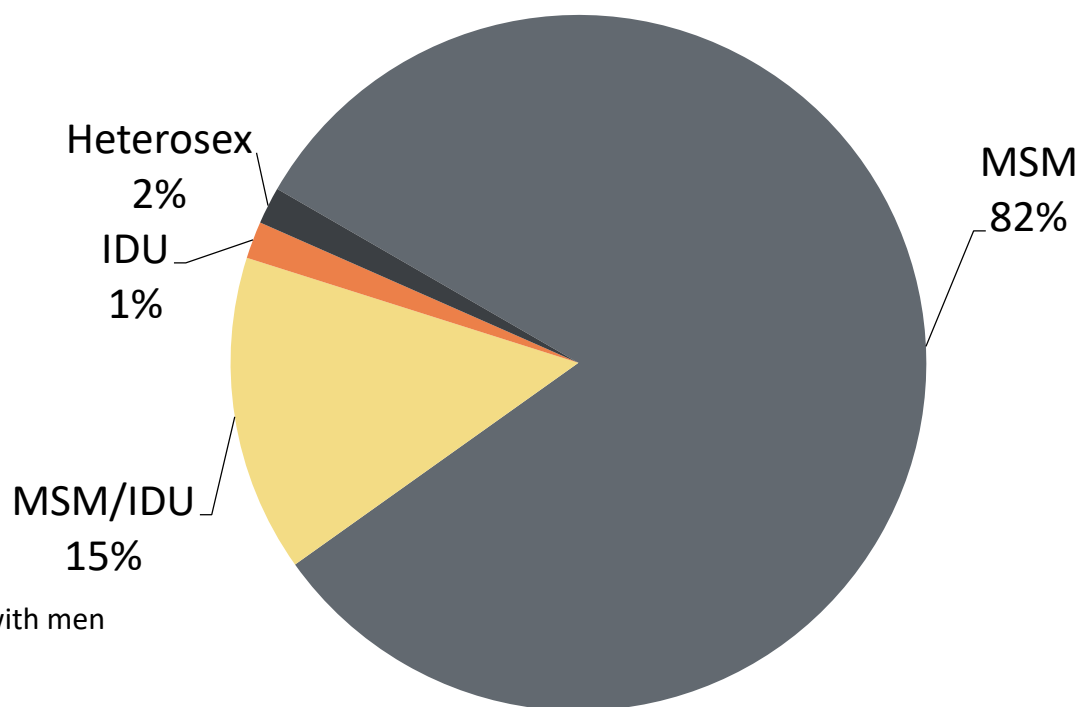
\* HIV or AIDS at first diagnosis





# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014–2016 combined

White Males (n = 336)



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

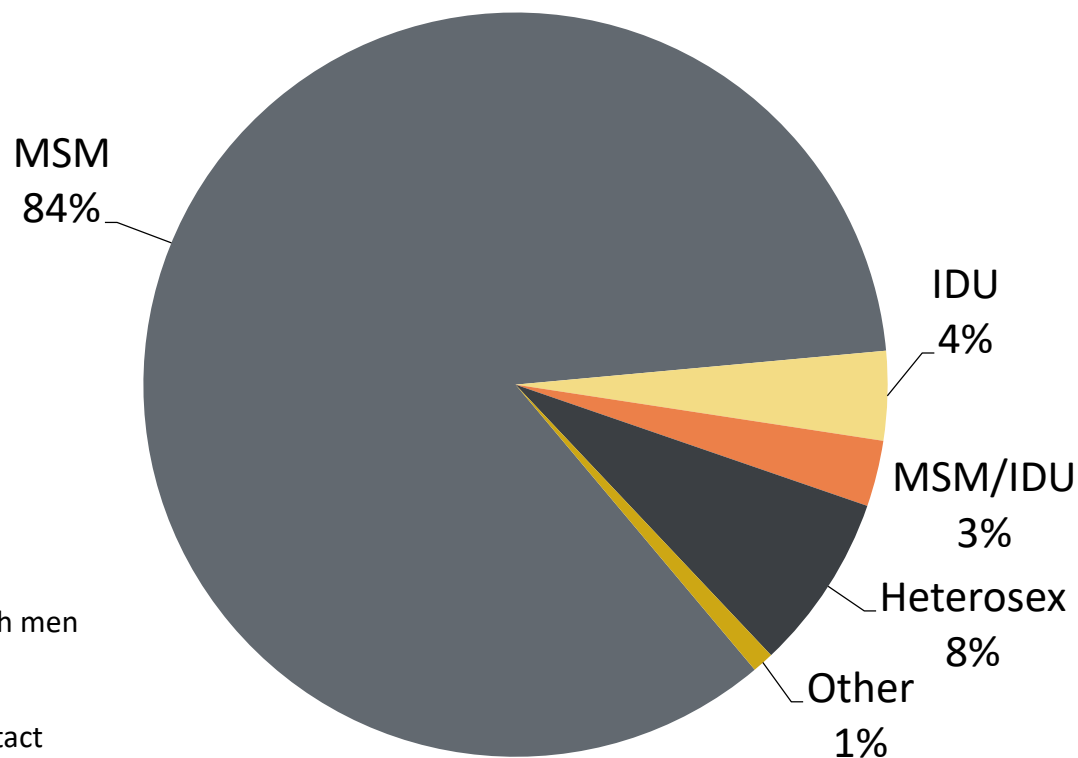
\* HIV or AIDS at first diagnosis

<sup>†</sup> Mode of Exposure proportions have been estimated using cases for 2014-2016 with known risk. For more detail see the HIV Surveillance Technical notes.



# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014 - 2016 combined

African American Males<sup>††</sup> (n = 150)



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

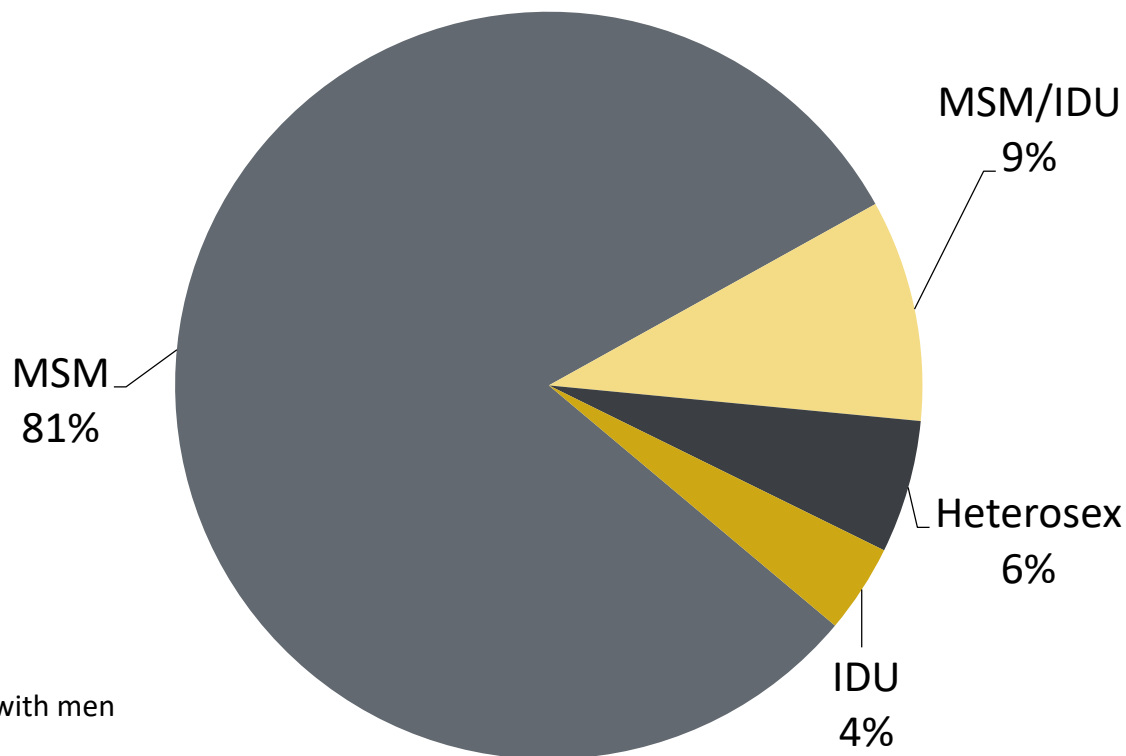
<sup>†</sup> Mode of Exposure proportions have been estimated using cases for 2014-2016 with known risk. For more detail see the HIV Surveillance Technical notes.

<sup>††</sup> Refers to Black, African American (not African-born) males.



# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014 - 2016 combined

Hispanic Males (n =73)



n = Number of persons

MSM = Men who have sex with men

IDU = Injecting drug use

Heterosex = Heterosexual contact

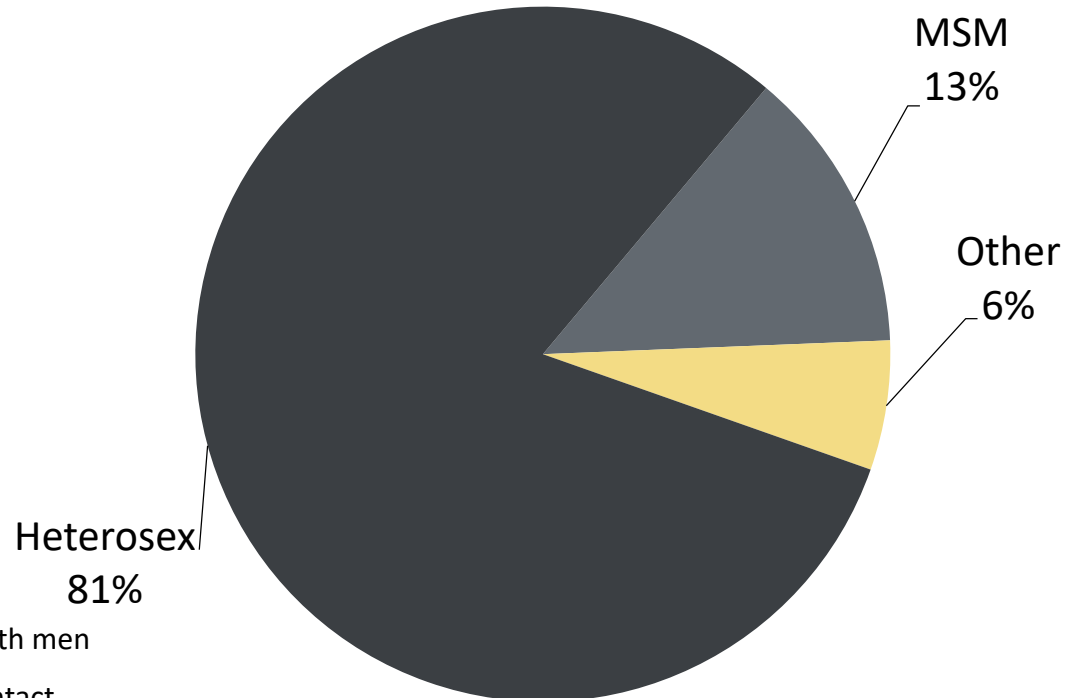
\* HIV or AIDS at first diagnosis

<sup>†</sup> Mode of Exposure proportions have been estimated using cases for 2014-2016 with known risk. For more detail see the HIV Surveillance Technical notes.



# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014 - 2016 combined

African-born Males<sup>††</sup> (n =83)



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

<sup>†</sup> 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.

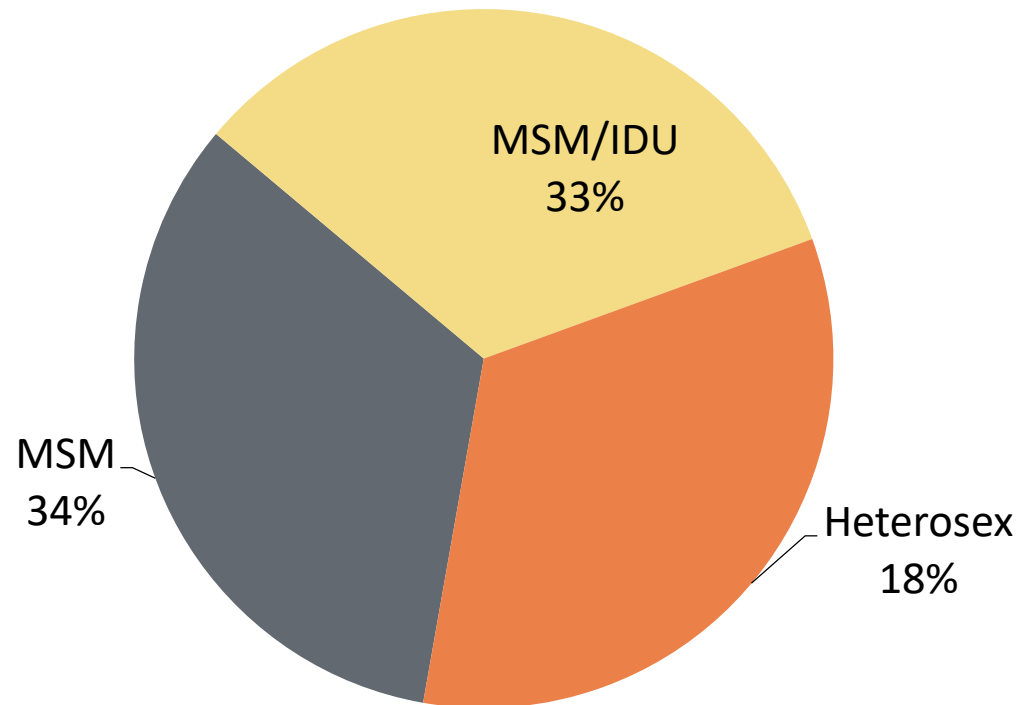
<sup>††</sup> Refers to Black, African-born males.



# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014 - 2016 combined

American Indian Males (n = 3)

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

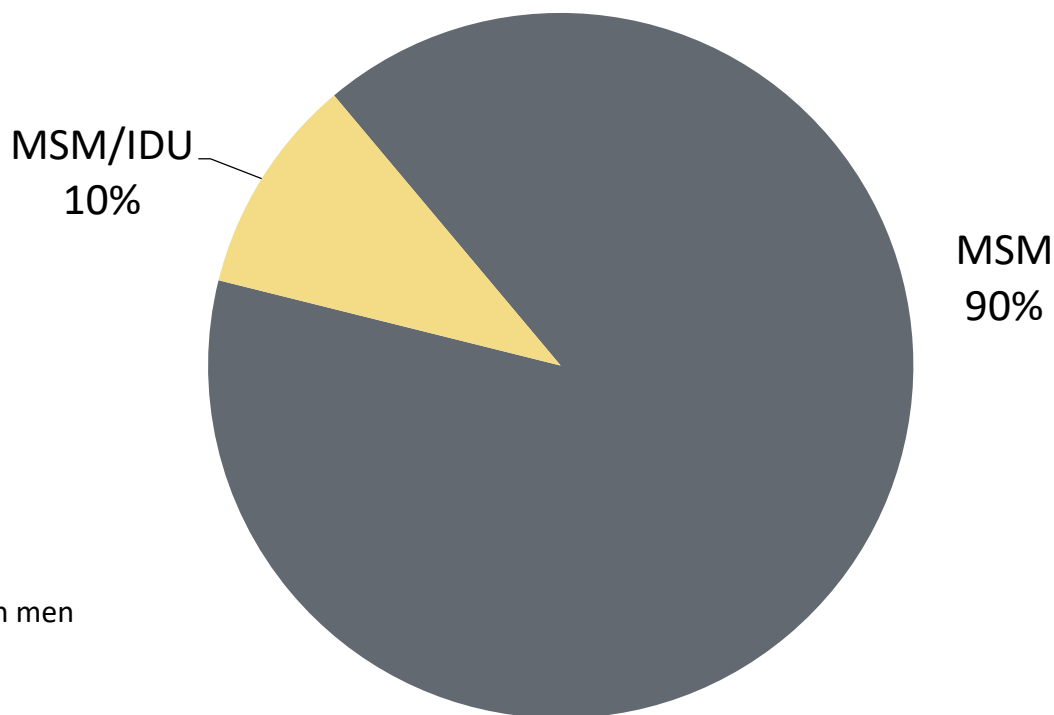
<sup>†</sup> Mode of Exposure proportions have been estimated using cases for 2014-2016 with known risk. For more detail see the HIV Surveillance Technical notes.



# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014 - 2016 combined

Asian Males (n = 26)

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

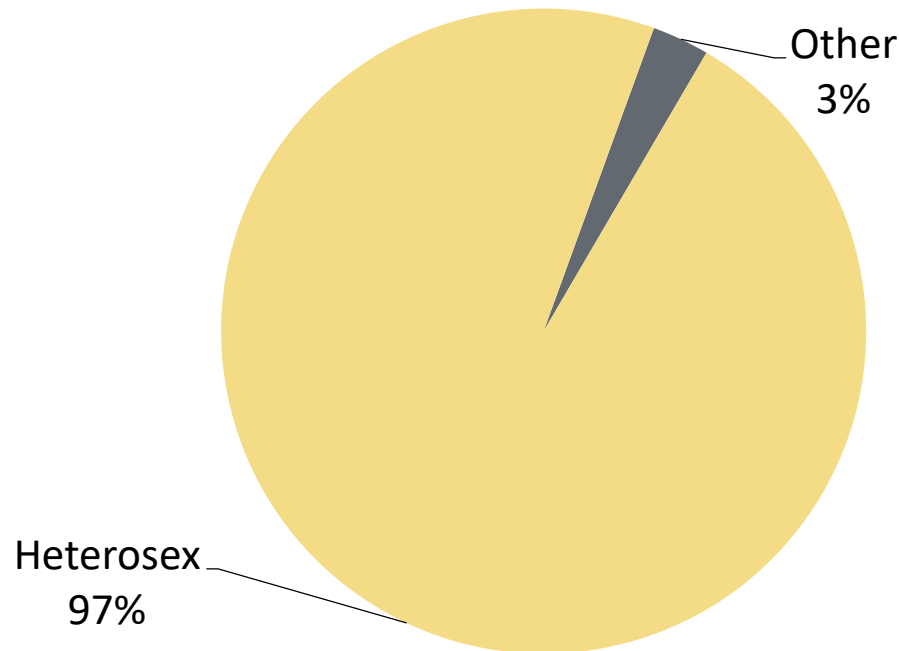
\* HIV or AIDS at first diagnosis

<sup>†</sup> Mode of Exposure proportions have been estimated using cases for 2014-2016 with known risk. For more detail see the HIV Surveillance Technical notes.



# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014 - 2016 combined

African-born Females<sup>††</sup> (n = 101)



n = Number of persons

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

Heterosex = Heterosexual contact

\* HIV or AIDS at first diagnosis

<sup>†</sup> Mode of Exposure has been estimated for cases with unknown risk using the following: 95% - Heterosexual and 5%-Other.

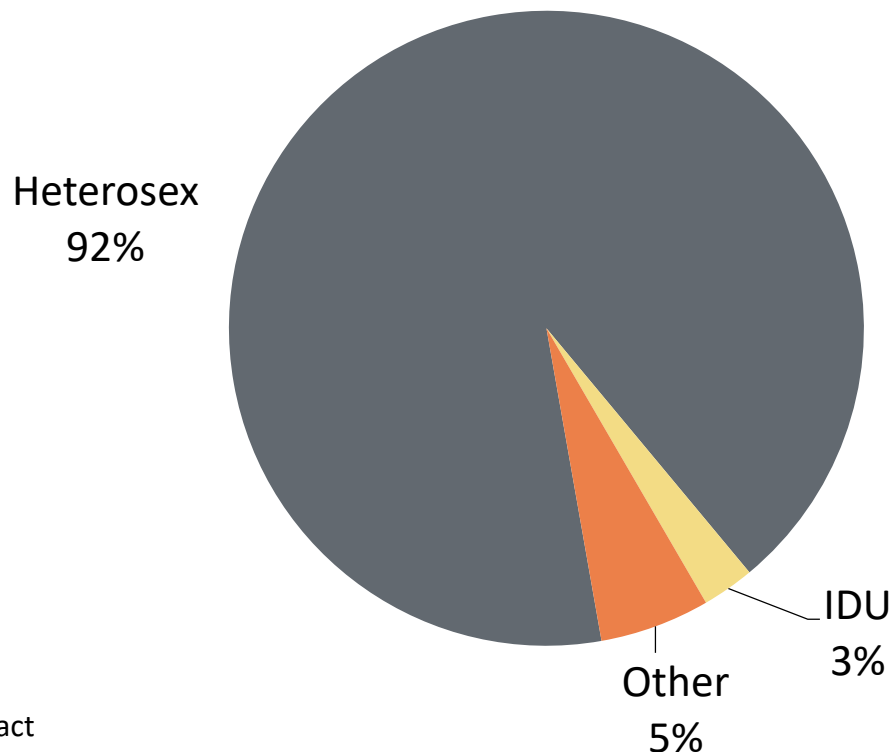
For more detail see the HIV Surveillance Technical notes.

<sup>††</sup> Refers to Black, African-born females.



# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014 - 2016 combined

African American Females<sup>††</sup> (n = 45)



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

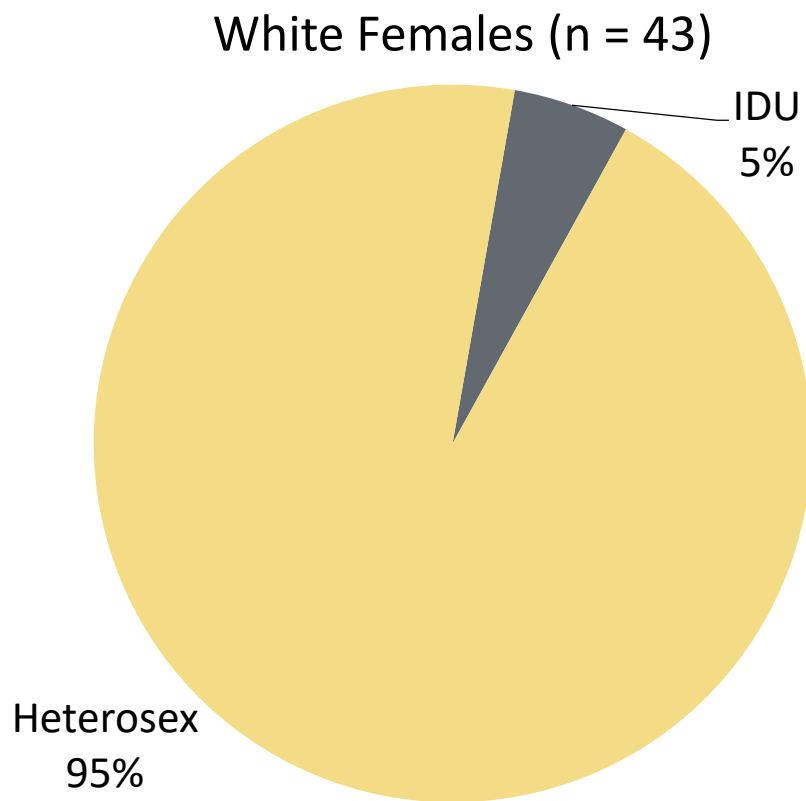
<sup>†</sup> Mode of Exposure proportions have been estimated using cases for 2014-2016 with known risk. For more detail see the HIV Surveillance Technical notes.

<sup>††</sup> Refers to Black, African American (not African-born) females.





# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014 - 2016 combined



n = Number of persons

IDU = Injecting drug use

Heterosex = Heterosexual contact

Other = Other risk, including perinatal

\* HIV or AIDS at first diagnosis

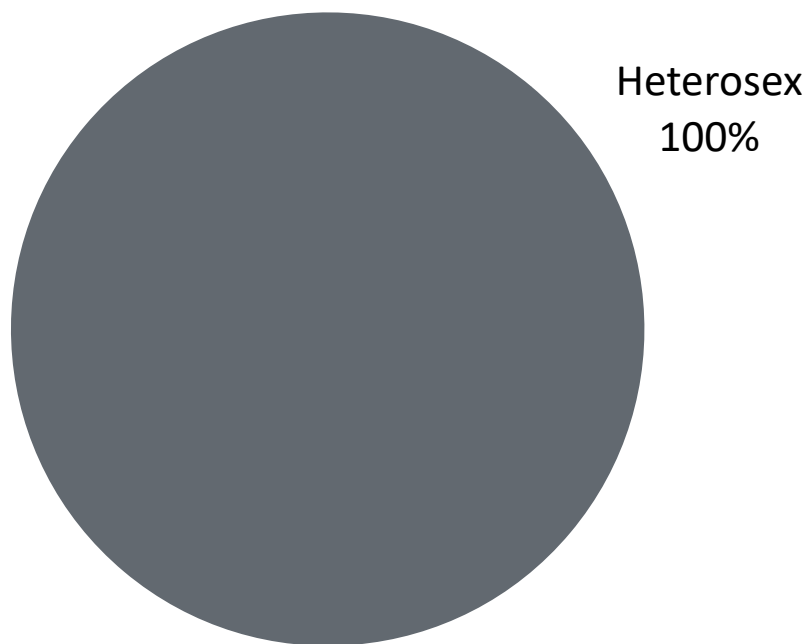
<sup>†</sup> Mode of Exposure proportions have been estimated using cases for 2014-2016 with known risk. For more detail see the HIV Surveillance Technical notes.



# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014 - 2016 combined

Hispanic Females (n = 10)

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

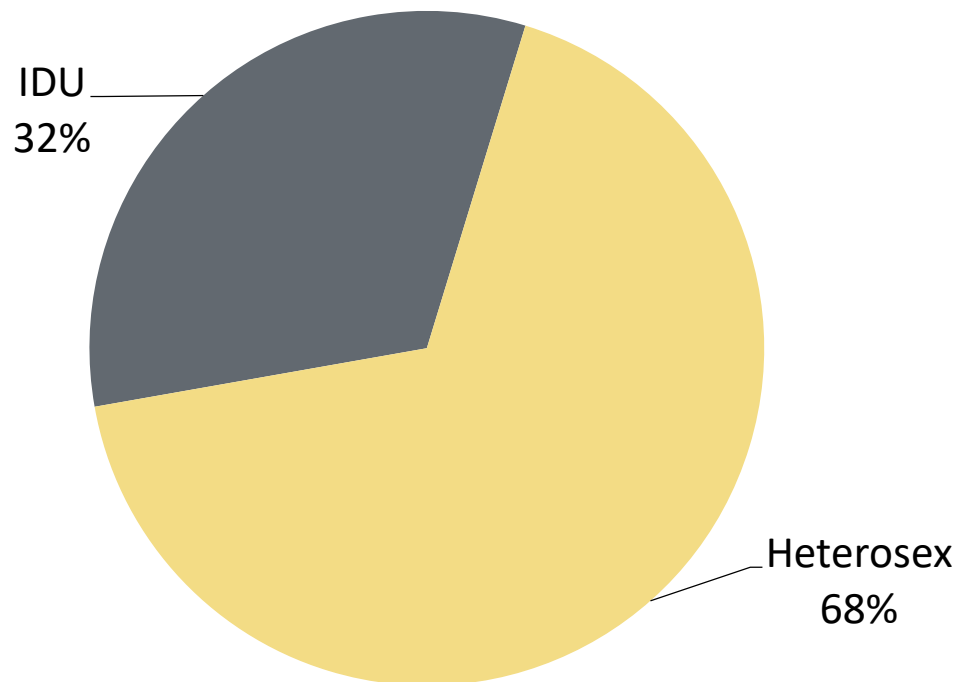
<sup>†</sup> Mode of Exposure proportions have been estimated using cases for 2014-2016 with known risk. For more detail see the HIV Surveillance Technical notes.



# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014 - 2016 combined

American Indian Females (n = 4)

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

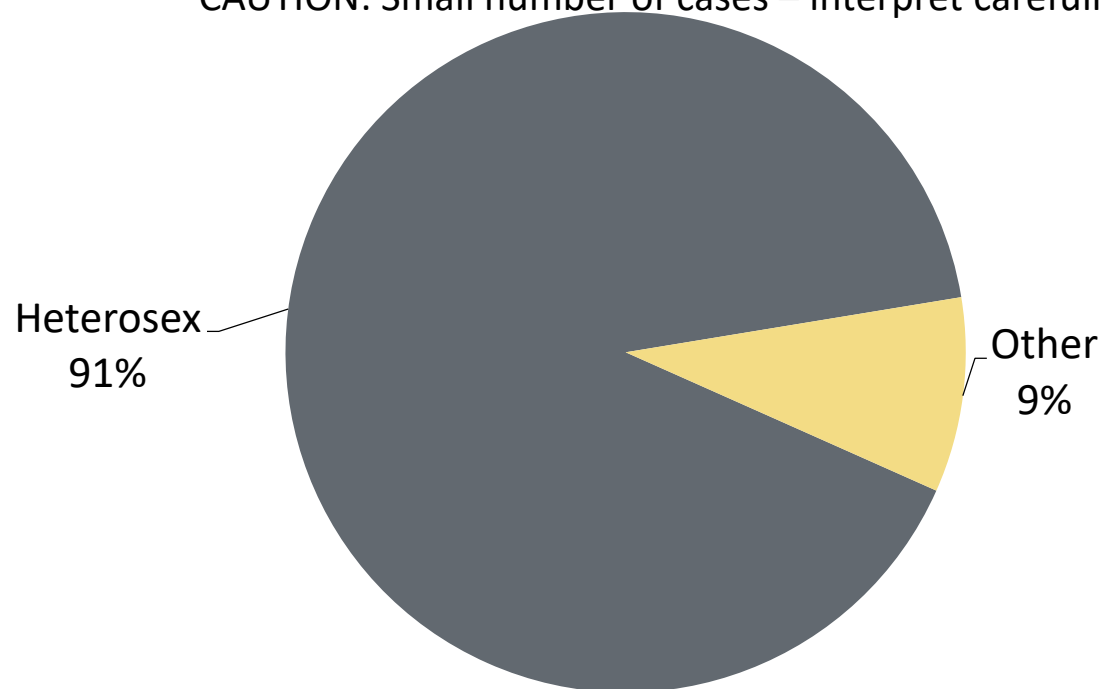
<sup>†</sup> Mode of Exposure proportions have been estimated using cases for 2014-2016 with known risk. For more detail see the HIV Surveillance Technical notes.



# HIV Diagnoses\* by Estimated Mode of Exposure<sup>†</sup> 2014 - 2016 combined

Asian Females (n = 5)

CAUTION: Small number of cases – interpret carefully.



n = Number of persons

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

Heterosex = Heterosexual contact

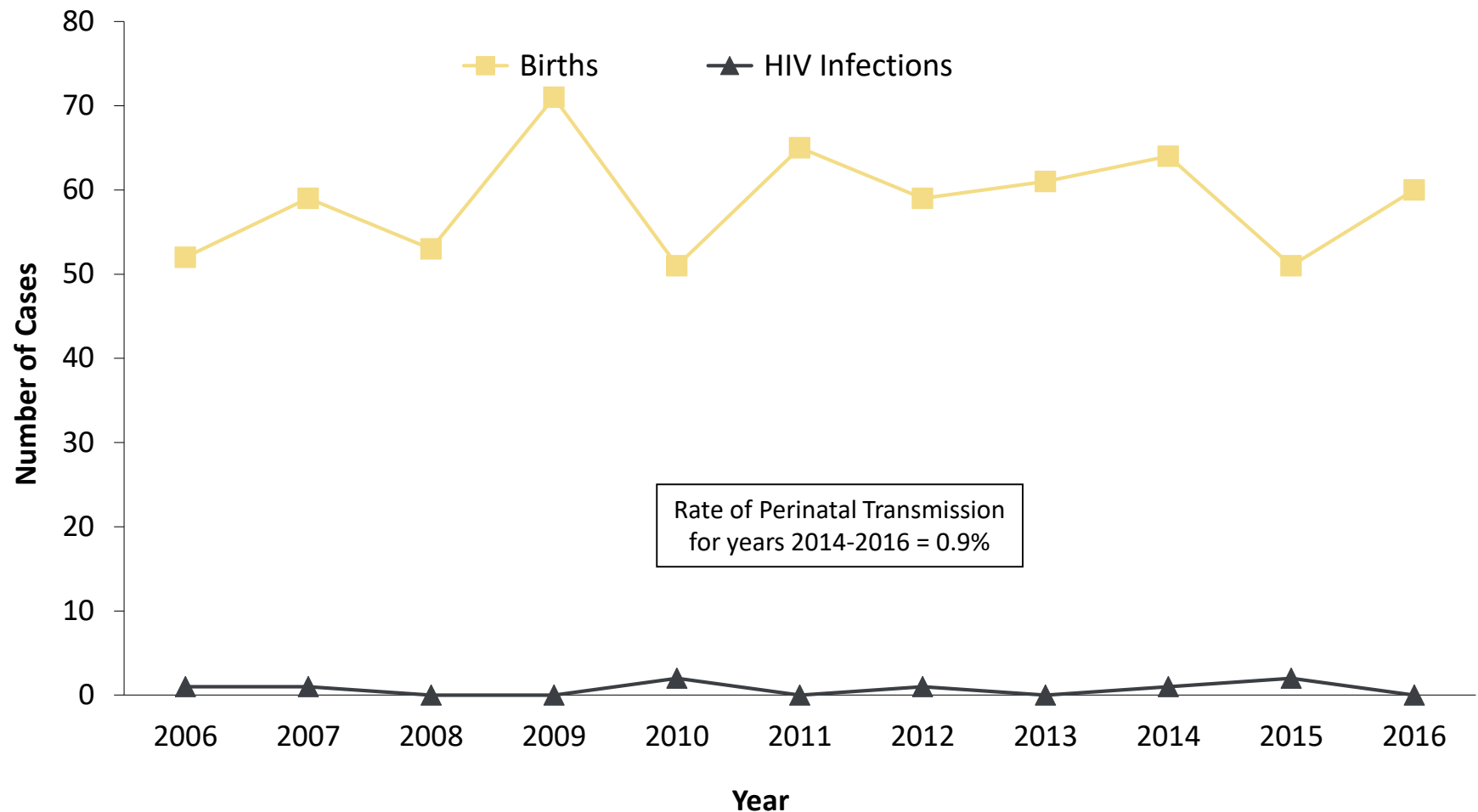
\* HIV or AIDS at first diagnosis

<sup>†</sup> 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.



# Births to HIV-Infected Women and Number of Perinatally Acquired HIV Infections\* by Year of Birth, 2006 - 2016



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

# Adolescents & Young Adults (Ages 13-24)\*



## HIV Diagnoses\* Among Adolescents and Young Adults† by Gender and Year, 2006 - 2016

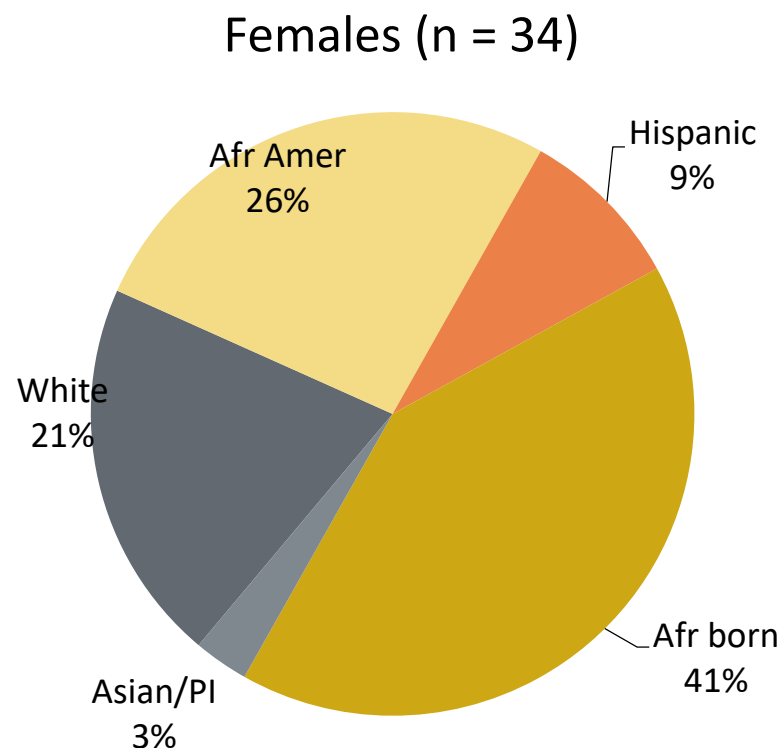
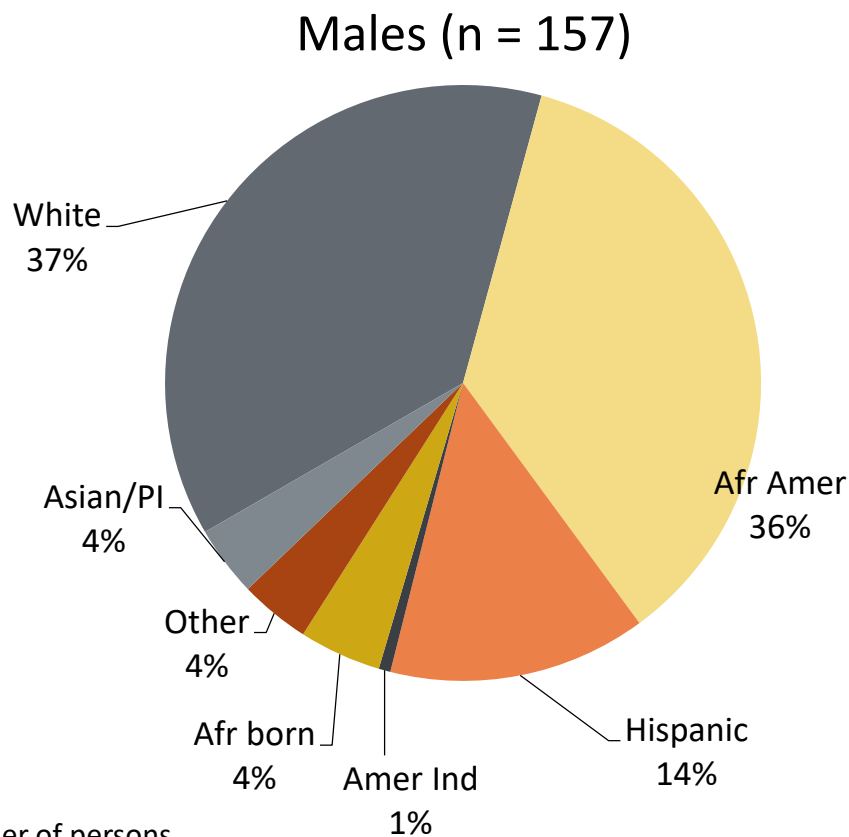


\* HIV or AIDS at first diagnosis

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



# HIV Diagnoses\* Among Adolescents and Young Adults<sup>†</sup> by Gender and Race/Ethnicity, 2014 - 2016 Combined



n = Number of persons

\* HIV or AIDS at first diagnosis

<sup>†</sup> Adolescents defined as 13-19 year-olds; Young Adults defined as 20-24 year-olds.

Amer Ind = American Indian

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

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

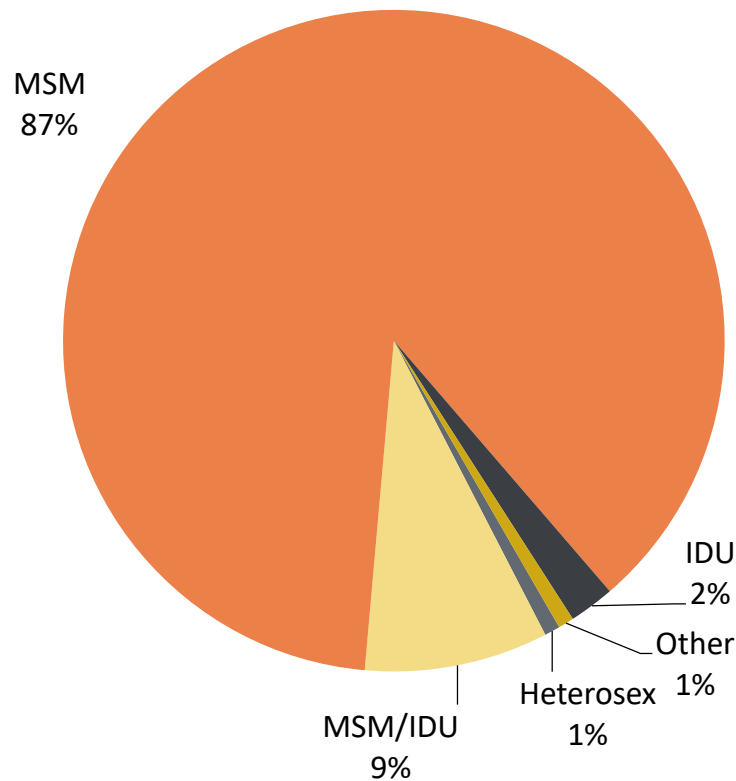
Other = Multi-racial persons or persons with unknown race



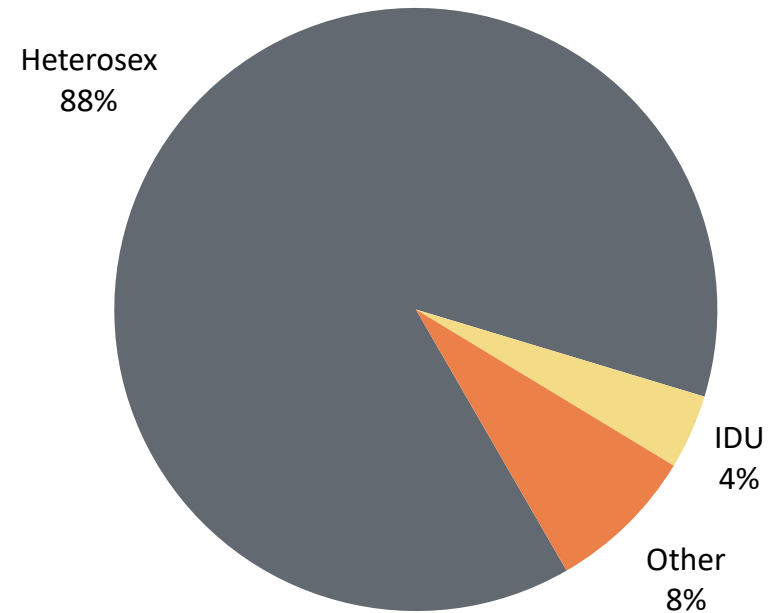


# HIV Diagnoses\* Among Adolescents and Young Adults<sup>†</sup> by Gender and Estimated Exposure Group<sup>#</sup>, 2014 - 2016 Combined

Males (n = 157)



Females (n = 34)



\* HIV or AIDS at first diagnosis

<sup>†</sup> Adolescents defined as 13-19 year-olds; Young Adults defined as 20-24 year-olds.

<sup>#</sup> Mode of Exposure proportions have been estimated using cases for 2014-2016 with known risk. For more detail see the HIV Surveillance Technical notes.

n = Number of persons

MSM = Men who have sex with men

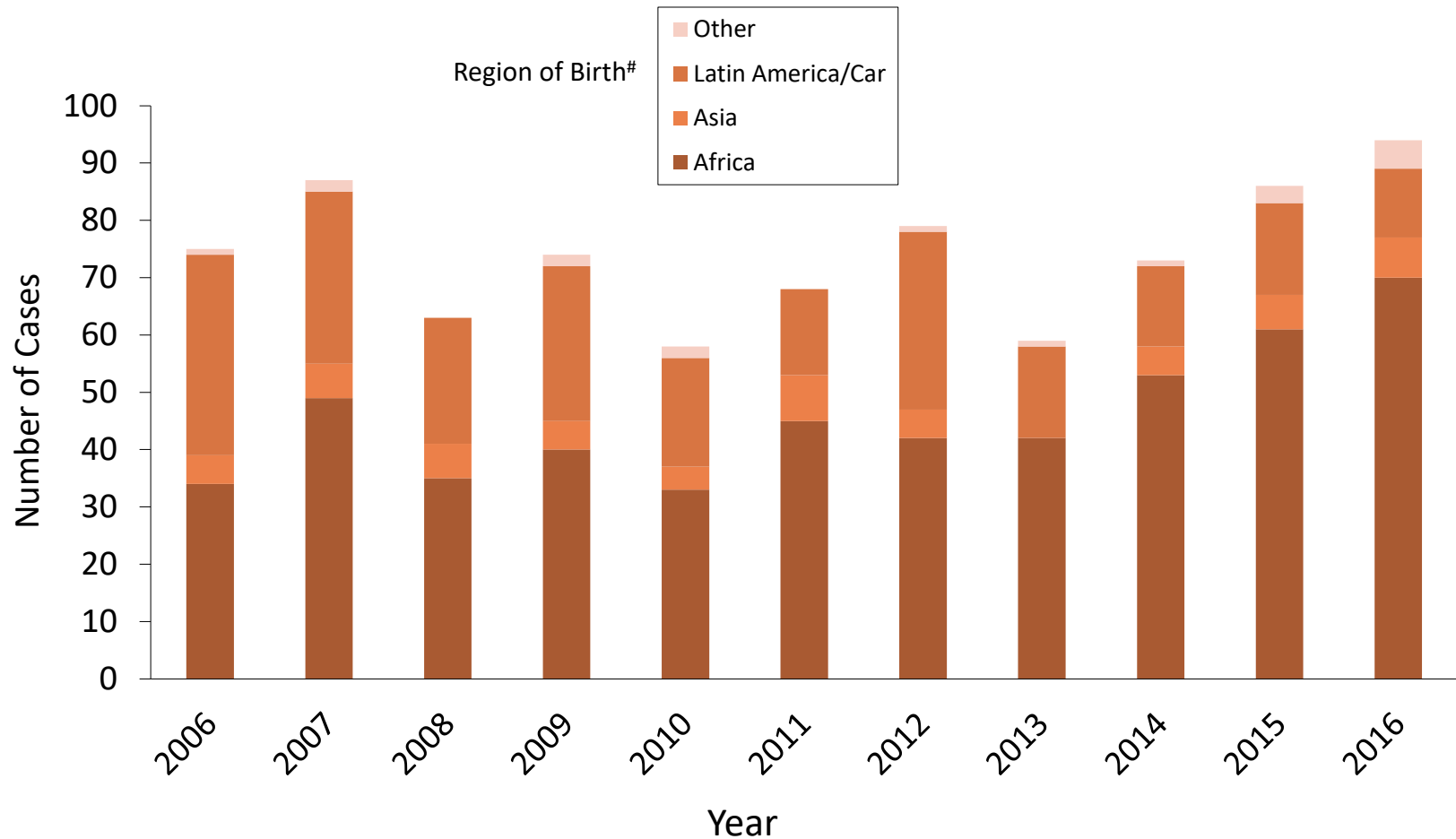
IDU = Injecting drug use

Heterosex = Heterosexual contact

# Foreign-born Cases



# HIV Diagnoses\* among Foreign-Born Persons<sup>†</sup> in Minnesota by Year and Region of Birth, 2006 - 2016



\* HIV or AIDS at first diagnosis

<sup>†</sup> 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.

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



## HIV Diagnoses\* Among Foreign-Born Persons<sup>†</sup> by Gender and Year, 2006 – 2016



\*HIV or AIDS at first diagnosis

<sup>†</sup> 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.



# Countries of Birth Among Foreign-Born Persons<sup>†</sup> Diagnosed with HIV\*, Minnesota, 2016

- Liberia (n=24)
- Ethiopia (n=11)
- Somalia (n=9)
- Mexico (n=8)
- Kenya (n=7)
- Nigeria (n=5)
- Cameroon (n=4)
- Viet Nam (n=3)
- Togo (n=2)
- Tanzania (n=2)
- Other<sup>^</sup> (n=19)

\* HIV or AIDS at first diagnosis

<sup>†</sup> 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.

<sup>^</sup> Includes 17 additional countries and 2 not specified.

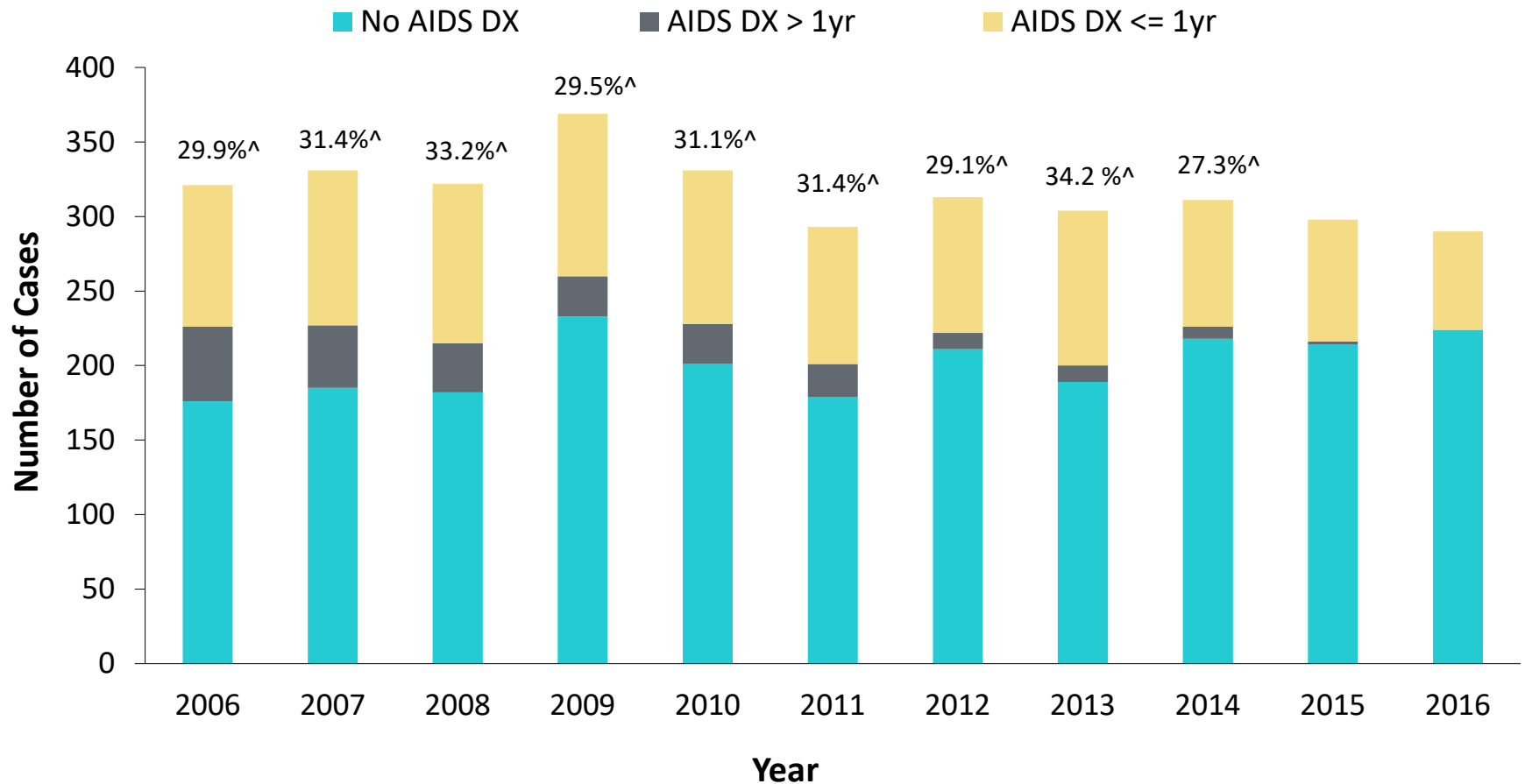


# Late Testers

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



# Time of Progression to AIDS for HIV Diagnoses in Minnesota\*, 2006 - 2016<sup>†</sup>



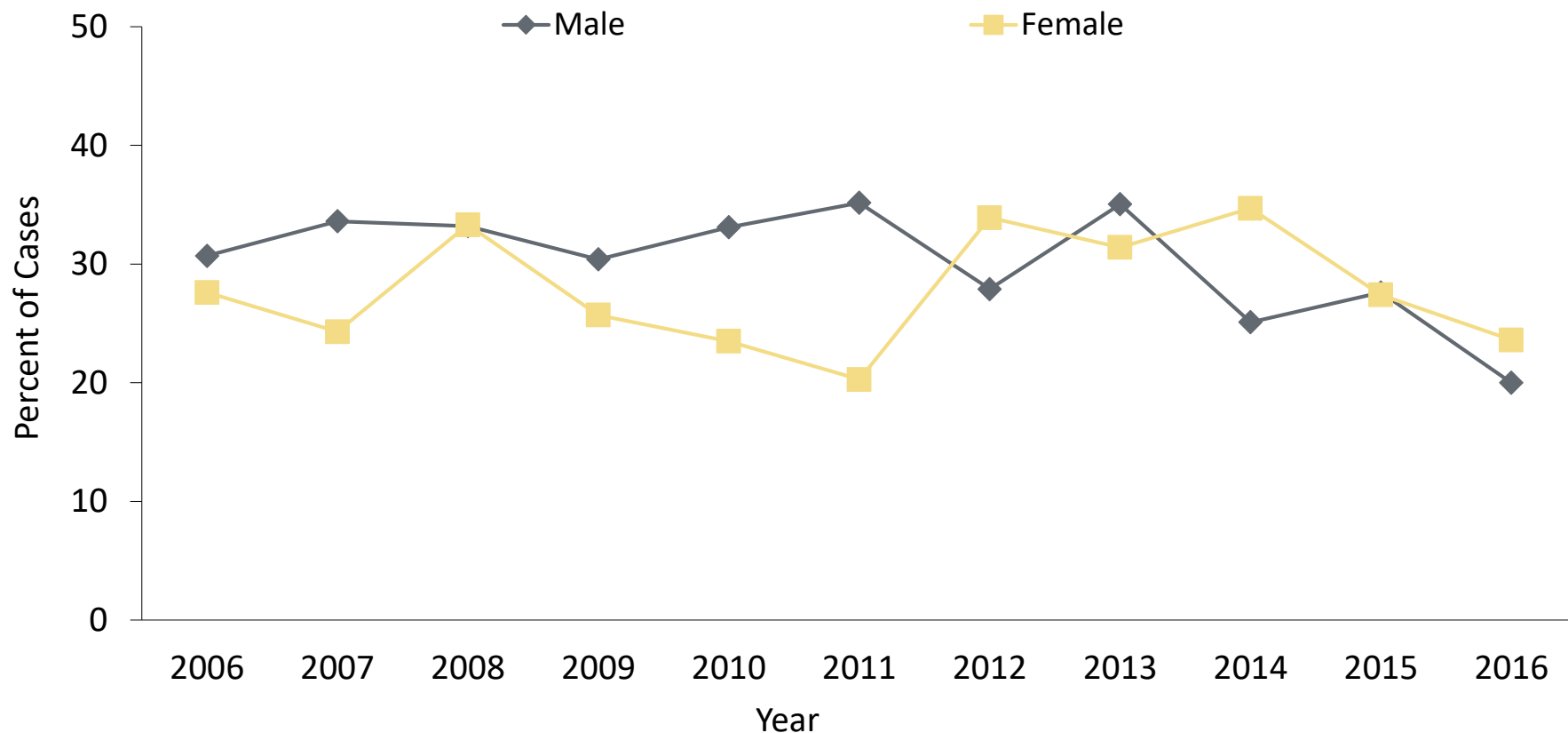
\*Numbers include AIDS at 1<sup>st</sup> report but exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

<sup>^</sup> Percent of cases progressing to AIDS within one year of initial diagnosis with HIV

<sup>†</sup> Numbers/Percent for cases diagnosed in 2016 only represents cases progressing to AIDS through March 20, 2017.



# Progression to AIDS within 1 year of initial HIV Diagnosis\* by Sex at Birth, 2006 - 2016<sup>†</sup>



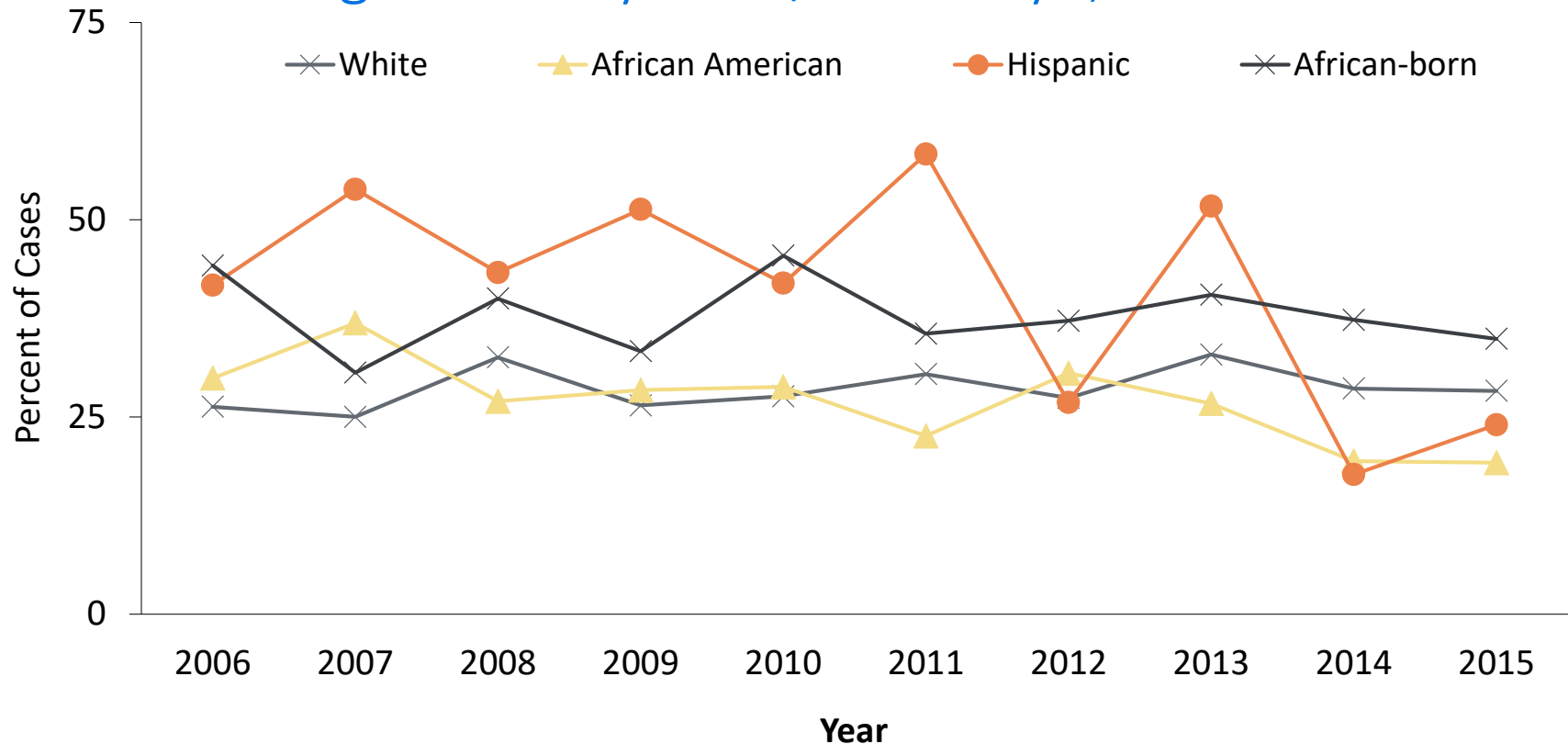
\*Numbers include AIDS at 1<sup>st</sup> report but exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

<sup>†</sup> Numbers/Percent for cases diagnosed in 2016 only represents cases progressing to AIDS through March 20, 2017.





## Progression to AIDS within 1 year of initial HIV Diagnoses\* by Race/Ethnicity<sup>^</sup>, 2006 - 2016<sup>†</sup>



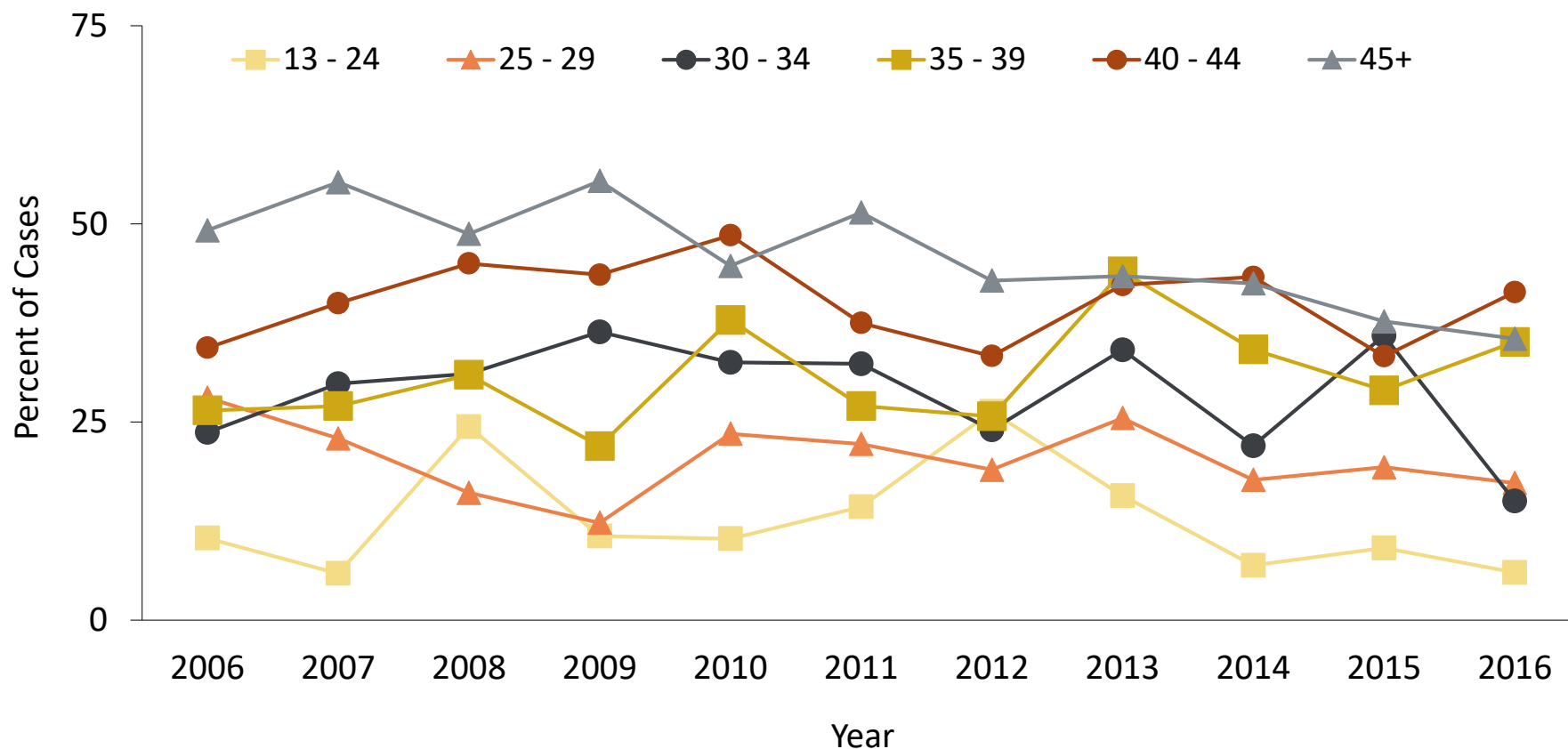
\*Numbers include AIDS at 1<sup>st</sup> report but exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

<sup>†</sup> Numbers/Percent for cases diagnosed in 2015 only represents cases progressing to AIDS through March 20, 2017.

<sup>^</sup>Percentage not calculated if less than 10 cases diagnosed per year



# Progression to AIDS within 1 year of initial HIV Diagnosis\* by Age, 2006 - 2016<sup>†</sup>

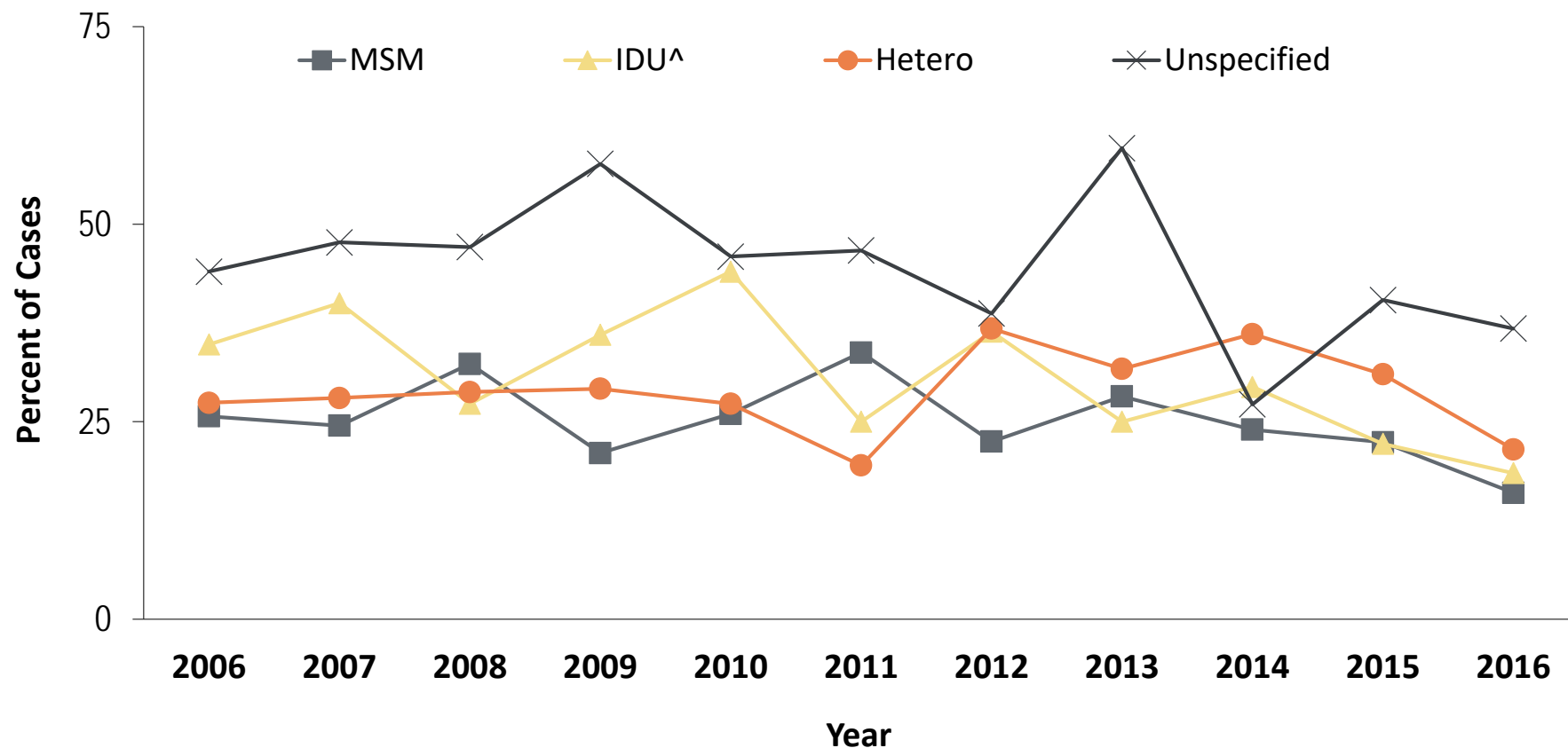


\*Numbers include AIDS at 1<sup>st</sup> report but exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

<sup>†</sup> Numbers/Percent for cases diagnosed in 2015 only represents cases progressing to AIDS through April 6, 2016.



## Progression to AIDS within 1 year of initial HIV Diagnosis\* by Mode of Transmission, 2005 - 2015<sup>†</sup>



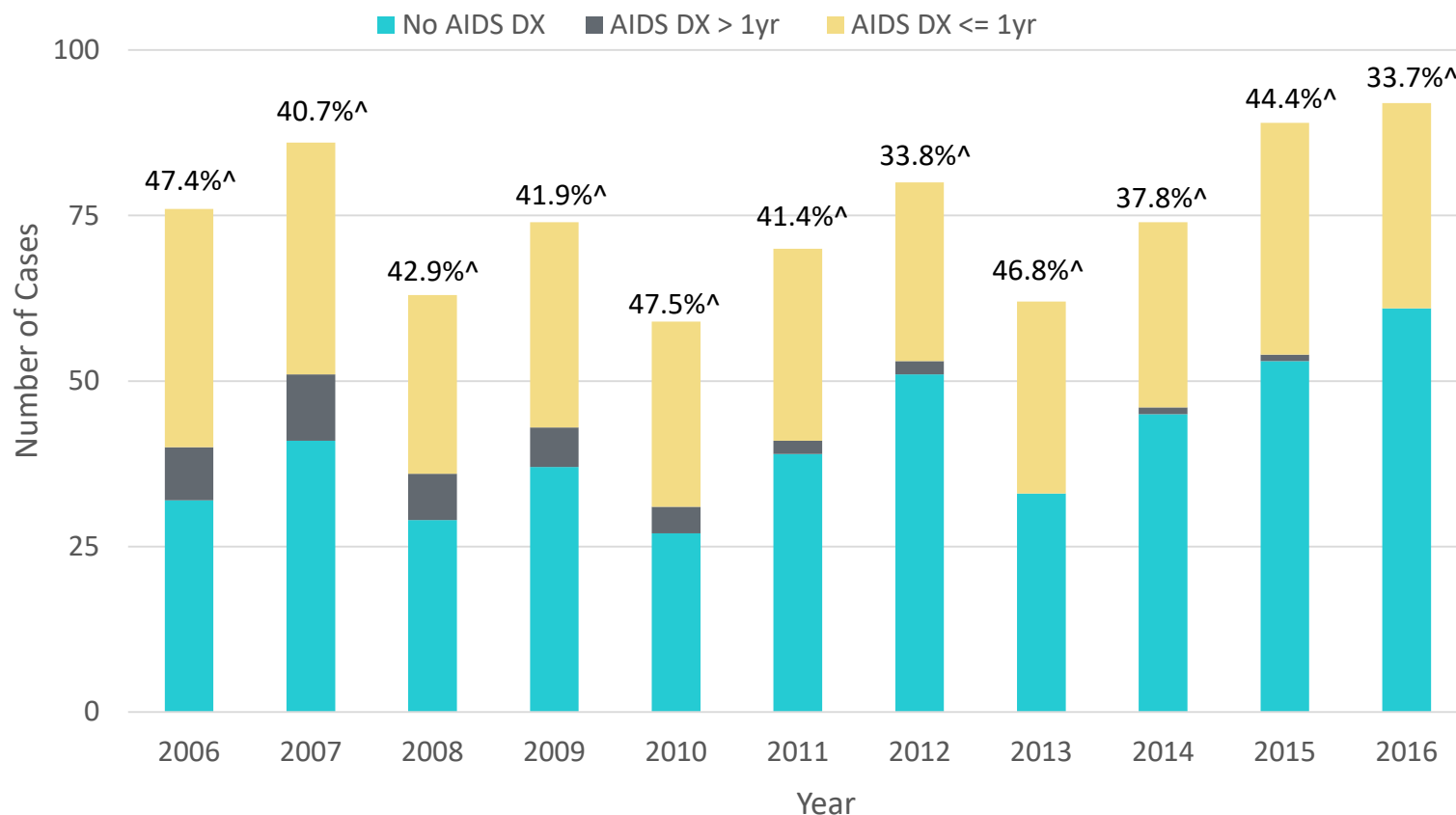
\*Numbers include AIDS at 1<sup>st</sup> report but exclude persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

<sup>†</sup> Numbers/Percent for cases diagnosed in 2016 only represents cases progressing to AIDS through March 20, 2017.

<sup>^</sup>Includes MSM/IDU



# Time of Progression to AIDS for HIV Diagnoses\* Among Foreign-Born Persons, Minnesota 2006 - 2016<sup>†</sup>



\*Numbers include AIDS at 1<sup>st</sup> 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

<sup>†</sup> Numbers/Percent for cases diagnosed in 2015 only represents cases progressing to AIDS through April 6, 2016.

# HIV/AIDS Prevalence and Mortality Report, 2016

## **HIV/AIDS Surveillance System**



Minnesota  
Department *of* Health

Sexually Transmitted Diseases, HIV and Tuberculosis Section, Epidemiology and Surveillance Unit

# 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, 2016 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 2016 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 = 102).
- 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, 2016=168 ), as well as, other refugees/immigrants reporting a positive test prior to their arrival in Minnesota (n=171).
- 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)

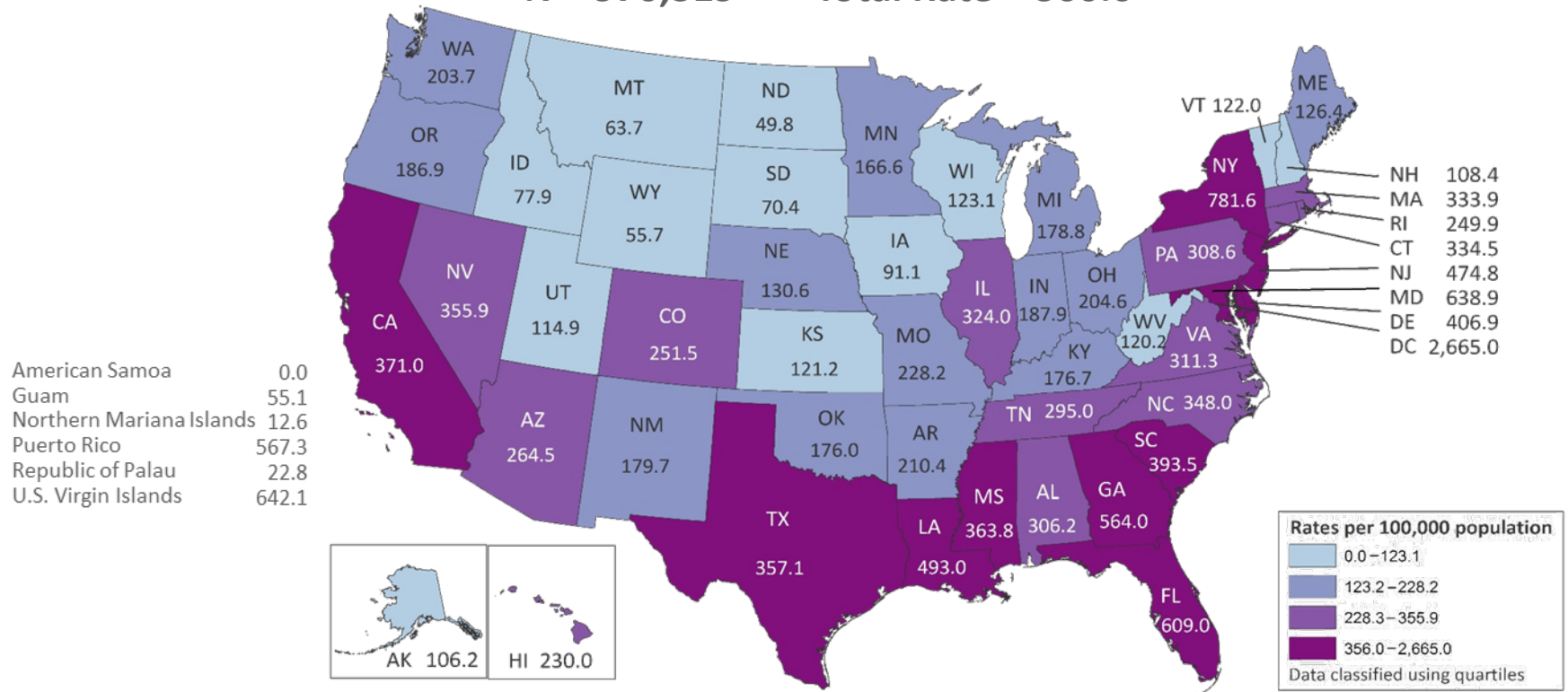


# National Context



# Rates of Adults and Adolescents Living with Diagnosed HIV Infection Year-end 2014—United States and 6 Dependent Areas

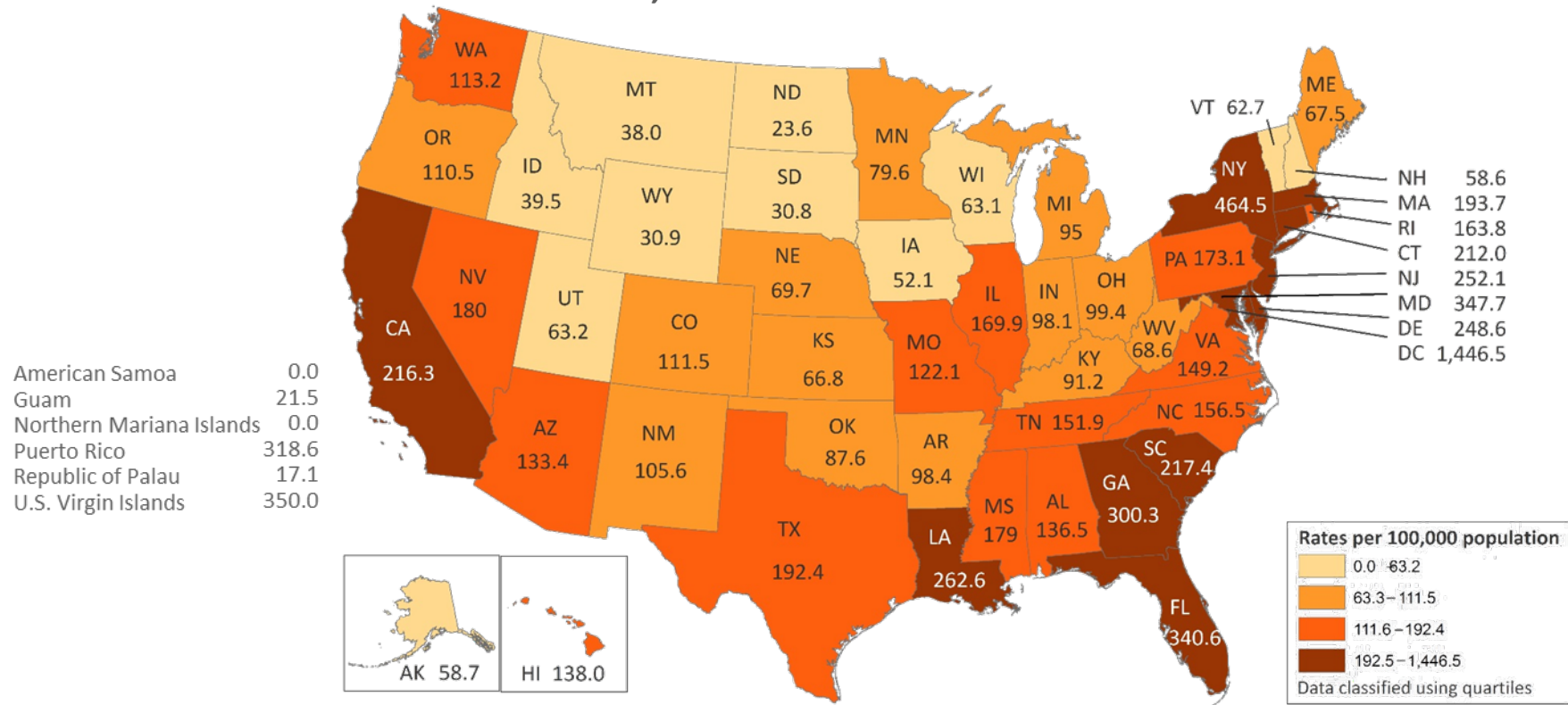
N = 970,319      Total Rate = 360.0



Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. Data are based on address of residence as of December 31, 2014 (i.e., most recent known address).

# Rates of Adults and Adolescents Living with Diagnosed HIV Infection Ever Classified as Stage 3 (AIDS), Year-end 2014—United States and 6 Dependent Areas

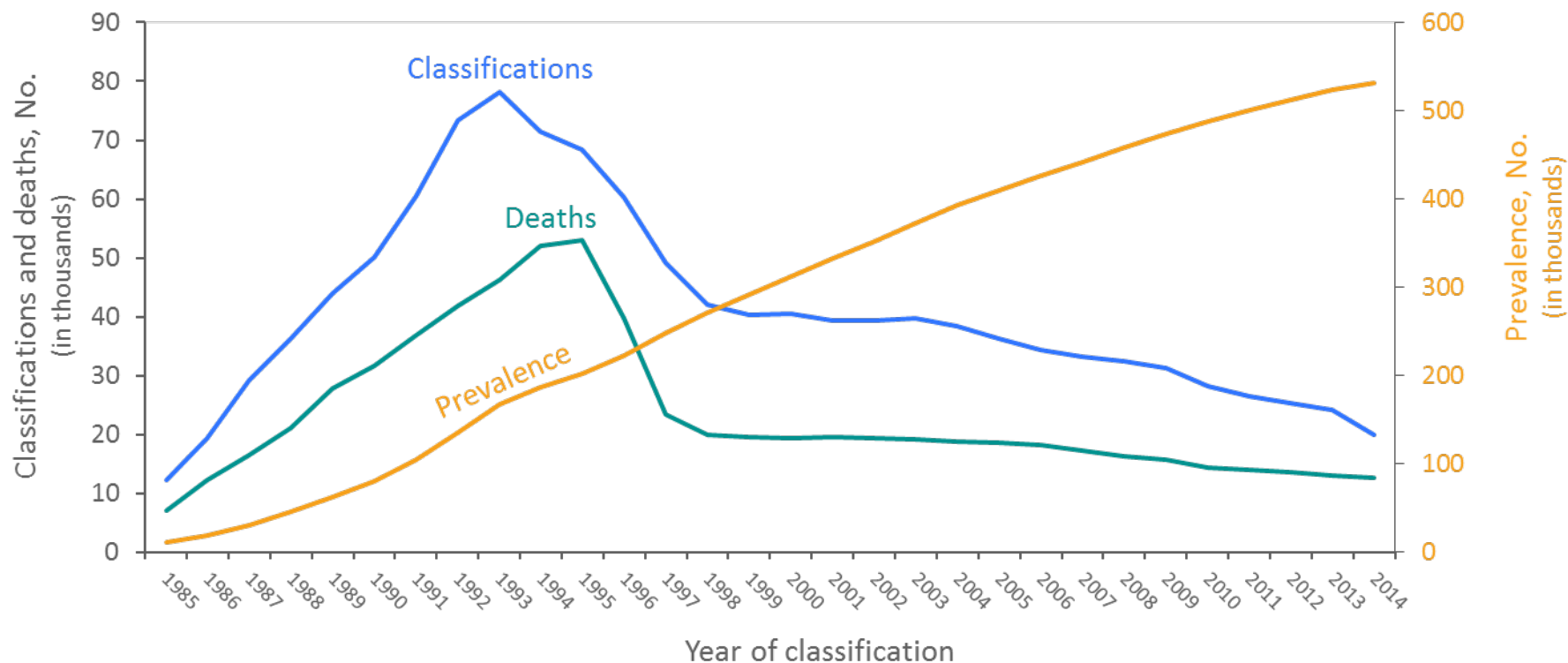
N = 530,620      Total Rate = 196.9



Note. Data are based on address of residence as of December 31, 2014 (i.e., most recent known address).



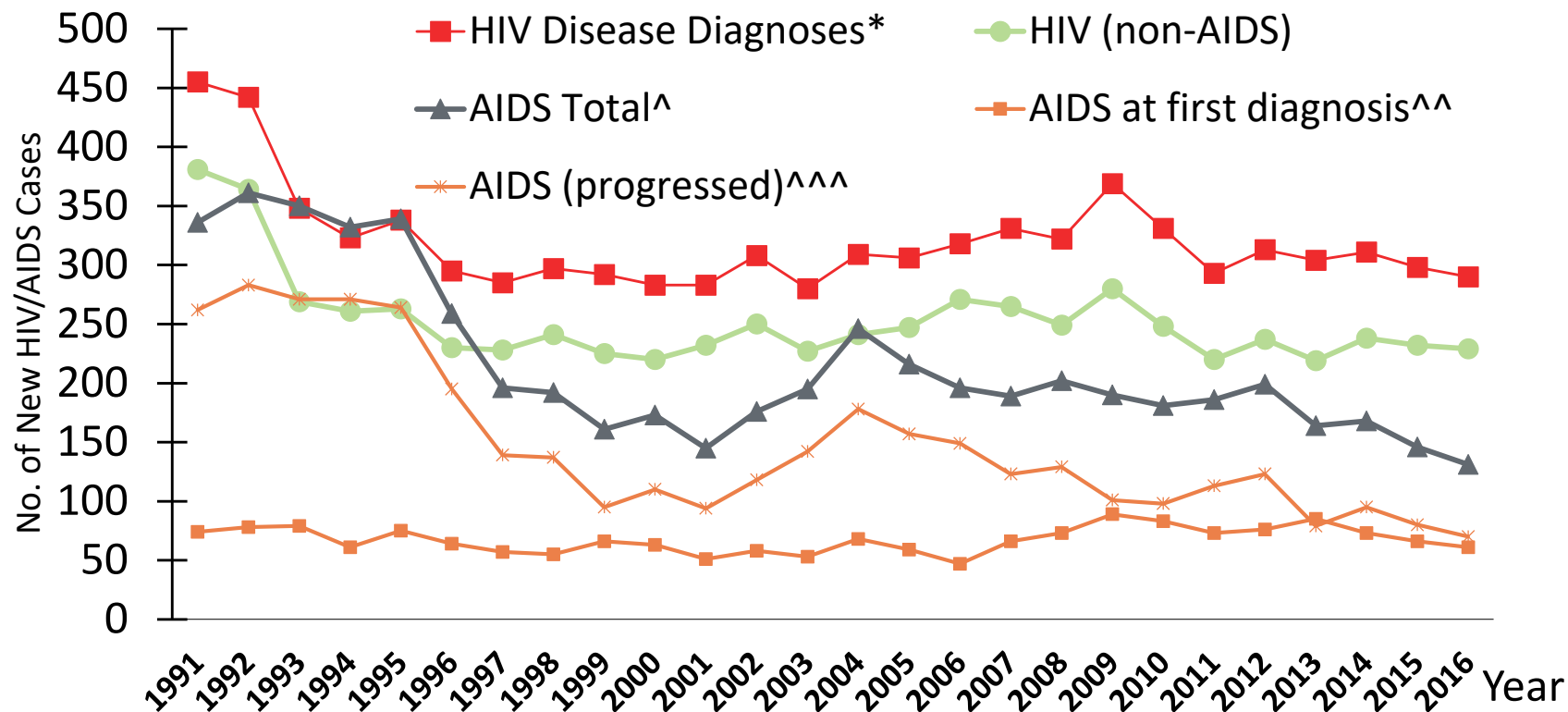
# Stage 3 (AIDS) Classifications, Deaths, and Persons Living with Diagnosed HIV Infection Ever Classified as Stage 3 (AIDS) 1985–2014--United States and 6 Dependent Areas



Note. Deaths of persons with HIV infection, stage 3 (AIDS) may be due to any cause.



# New HIV Disease Diagnoses, HIV (non-AIDS) and AIDS Cases by Year, 1990-2016



\*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^^ and AIDS ((progressed)^^^ previous diagnosis of HIV).

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.

HIV/AIDS in Minnesota: Annual Review

# Persons Living with HIV/AIDS in Minnesota

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

- As of December 31, 2016, **8,554\*** persons are assumed alive and living in Minnesota with HIV/AIDS
  - 4,575 living with HIV infection (non-AIDS)
  - 3,979 living with AIDS
- This number includes 2,064 persons who were first reported with HIV or AIDS elsewhere and subsequently moved to Minnesota
- This number excludes 1,332 persons who were first reported with HIV or AIDS in Minnesota and subsequently moved out of the state

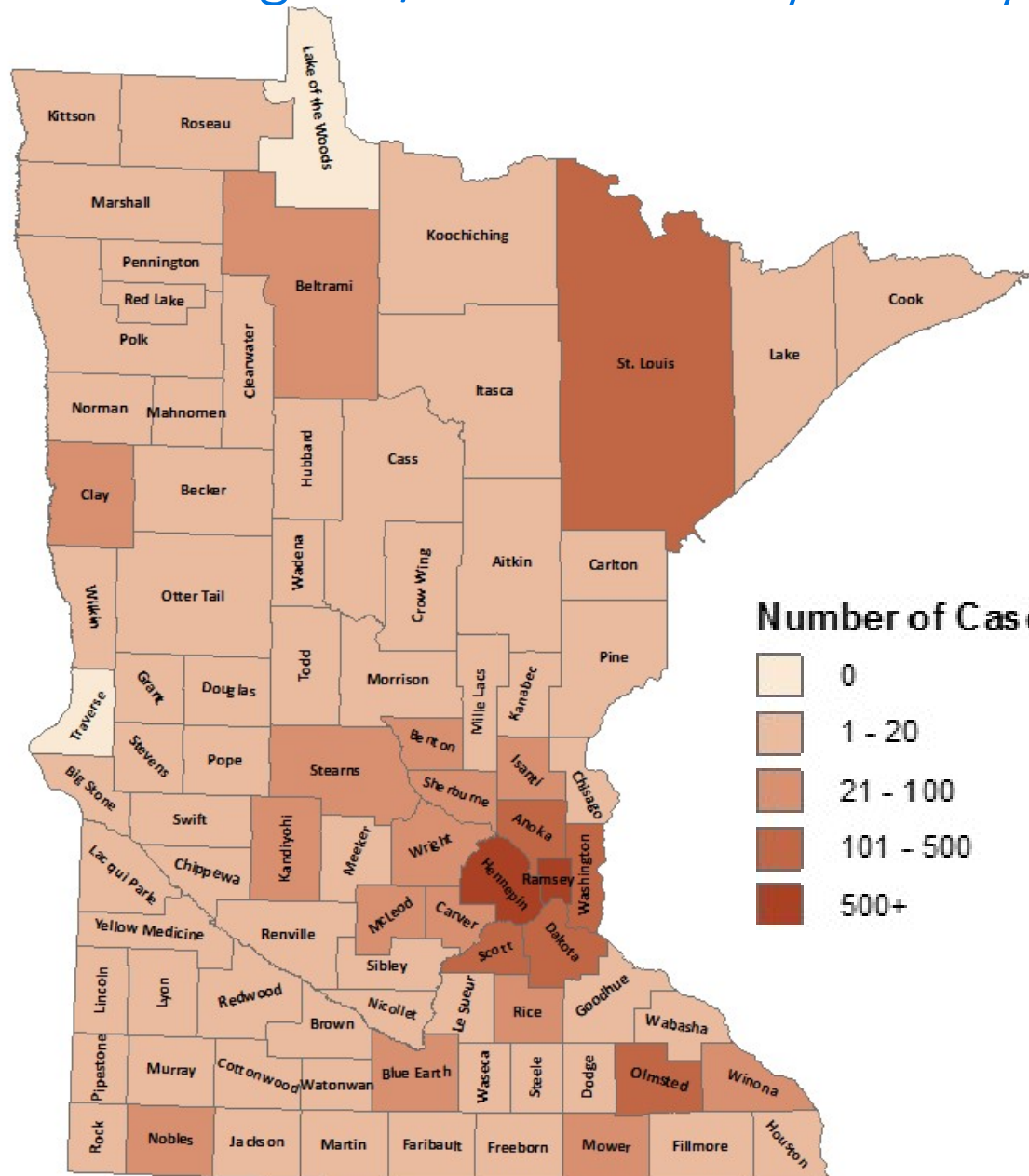
\* This number includes persons who reported Minnesota as their current state of residence, regardless of residence at time of diagnosis. Includes state prisoners and refugees arriving through the HIV+ Refugee Resettlement Program, as well as HIV+ refugee/immigrants arriving through other programs.

Place





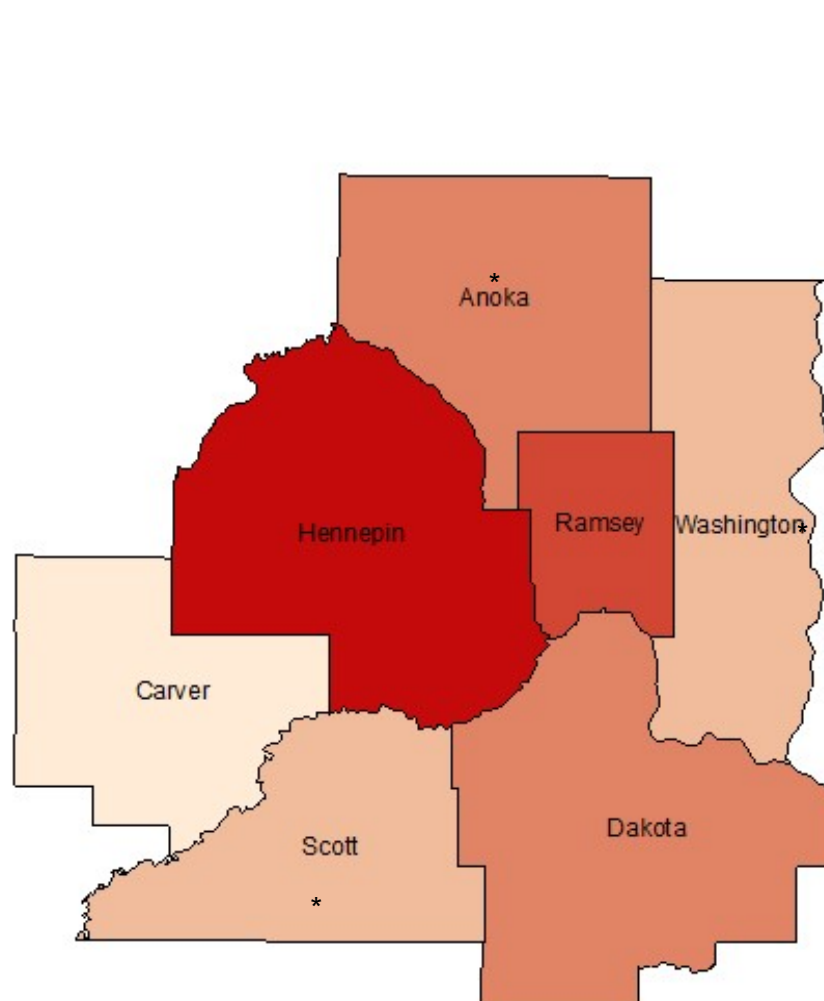
# Living HIV/AIDS Cases by County of Residence, 2016



City of Minneapolis – 3,134  
City of St. Paul – 1,108  
Suburban<sup>#</sup> – 2,699  
Greater Minnesota – 1,598  
Total number = 8,554  
(15 people missing residence information)  
<sup>#</sup> 7-county metro area, excluding the cities of Minneapolis and St. Paul



# Map of Metro Area: Living HIV/AIDS Cases by County of Residence, 2016



City of Minneapolis – 3,134

City of St. Paul – 1,108

Suburban# – 2,699

Total number (Metro only) = 6,941

# 7-county metro area,

excluding the cities of Minneapolis and St. Paul

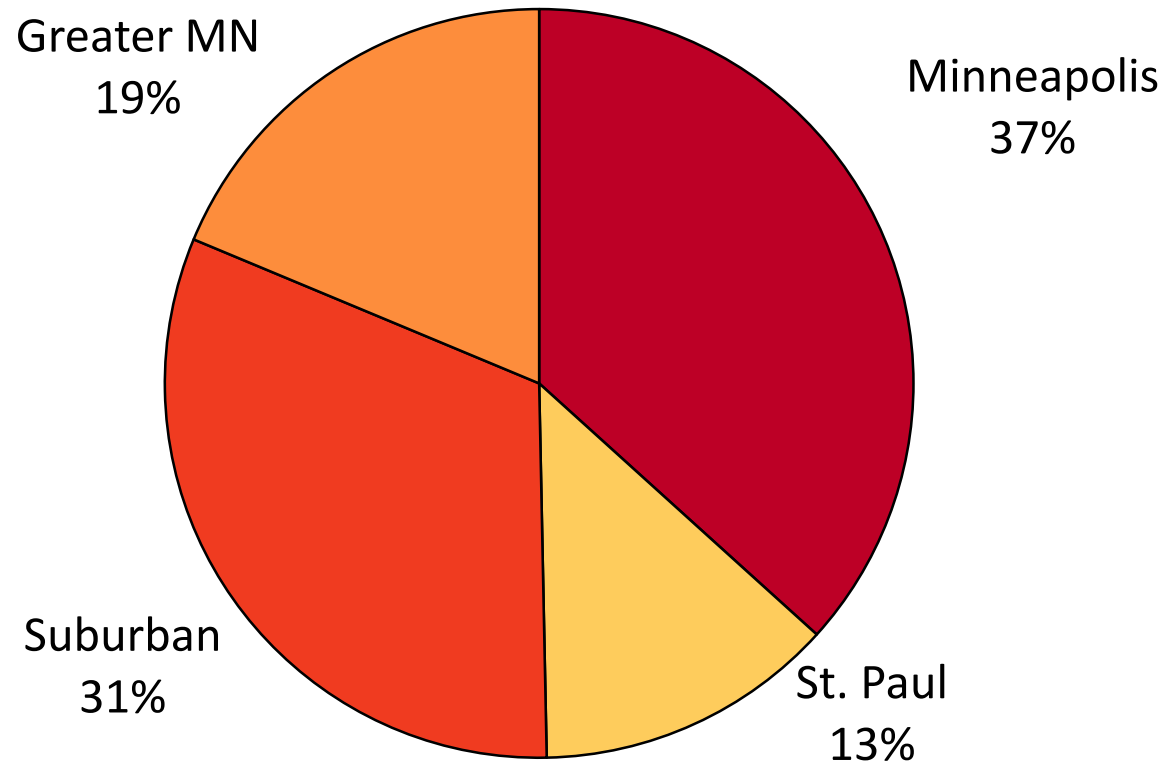
\* Counties in which a state correctional facility is located.



# Persons Living with HIV/AIDS in Minnesota by Current Residence, 2016

Total Number = 8,554

(61 persons missing residence information)

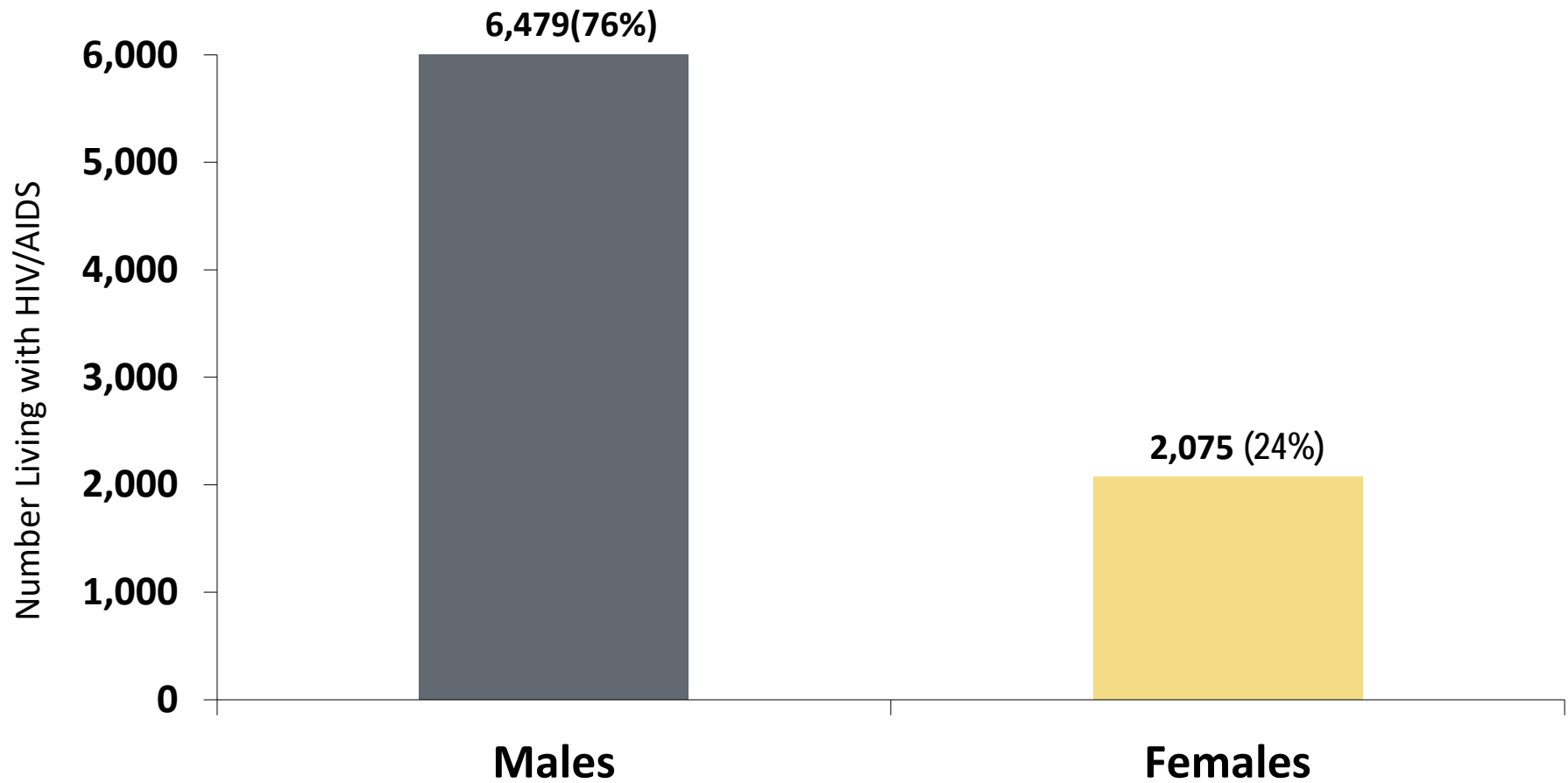


Suburban = Seven-county metro area including Anoka, Carver, Dakota, Hennepin (except Minneapolis), Ramsey (except St. Paul), Scott, and Washington counties. Greater MN = All other Minnesota counties, outside the seven-county metro area.

# Gender and Race/Ethnicity



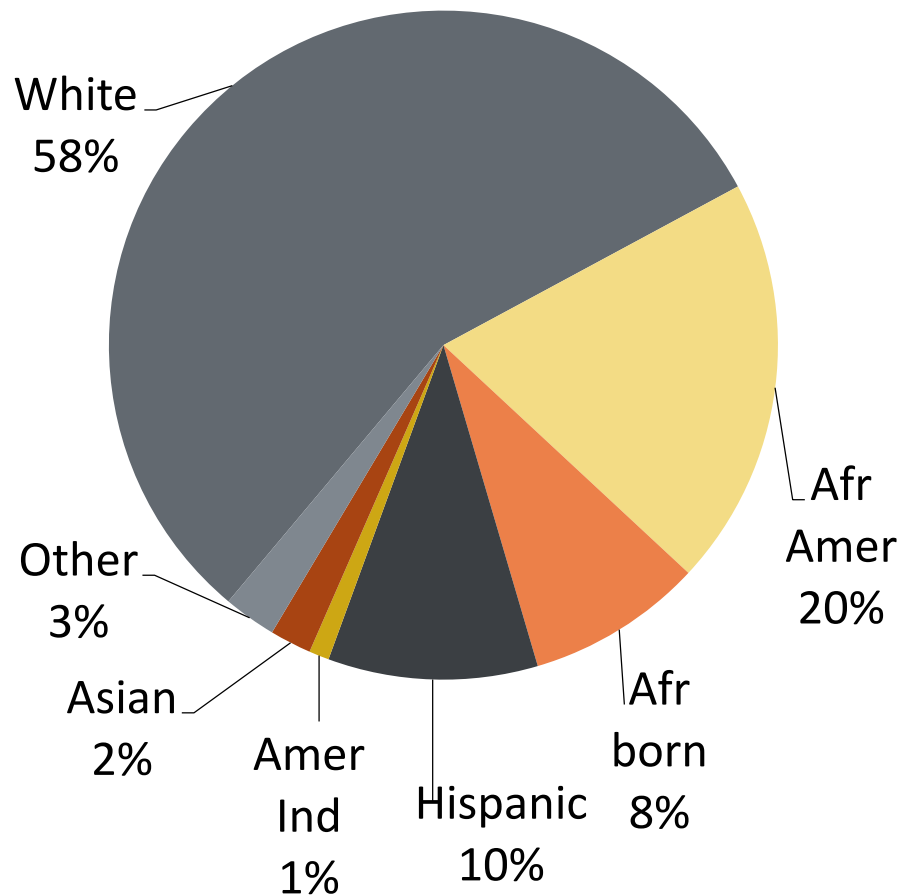
## Persons Living with HIV/AIDS in Minnesota by Gender, 2016



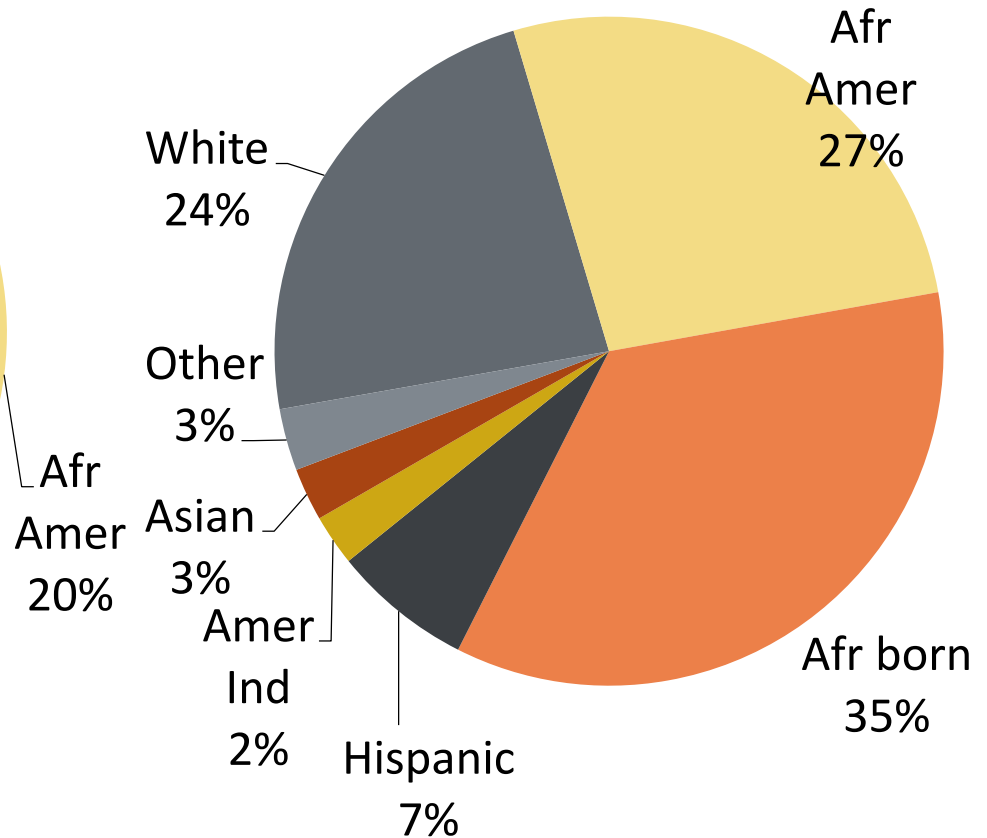


# Persons Living with HIV/AIDS in Minnesota by Gender and Race/Ethnicity, 2016

Males (n = 6,474)



Females (n = 2,072)



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



## Number of Cases and Rates (per 100,000 persons) of Persons Living with HIV/AIDS by Race/Ethnicity<sup>†</sup> – Minnesota, 2016

Race/Ethnicity	Cases	%	Rate
White, non-Hispanic	4,107	48%	93.2
Black, African-American	1,836	21%	958.3
Black, African-born	1,283	15%	1654.3 <sup>††</sup>
Hispanic	796	9%	318.1
American Indian	114	1%	205.7
Asian/Pacific Islander	183	2%	85.2
Other <sup>^</sup>	227	3%	X
Total	8,546	100%	161.1

<sup>††</sup> Estimate of 77,557 Source: 2010-2012 American Community Survey. Additional calculations by the State Demographic Center.

<sup>^</sup> Other = Multi-racial persons or persons with unknown race

Census Data used for rate calculations.

<sup>†</sup> "African-born" refers to Blacks who reported an African country of birth; "African American" refers to all other Blacks..



# Number of Cases and Rates (per 100,000 persons) of Adults and Adolescents\* Living with HIV/AIDS by Gender/Risk<sup>†</sup>, Minnesota, 2016

Gender/Risk	Cases	%	Rate
<b>Men (Total)</b>	(6,408)	76%	246.2
<b>MSM<sup>†</sup></b>	4,687	73%	5,051.3 <sup>††</sup>
<b>Non-MSM</b>	1,721	27%	83.2
<b>Women</b>	1,995	24%	89.8
<b>Total</b>	<b>8,403</b>	<b>100%</b>	<b>191.7</b>

\*HIV or AIDS at first diagnosis age 13 and older;

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

<sup>†</sup> “MSM” refers to both MSM and MSM/IDU.

<sup>††</sup> Estimate of 92,788





## Number of Cases of Adults and Adolescents\* Living with HIV/AIDS by Gender Identity and Risk†, Minnesota, 2016

Gender/Risk	Cases	%
<b>Men (Total)</b>	(6,354)	76%
<b>MSM†</b>	4,637	73%
<b>Non-MSM</b>	1,717	27%
<b>Women</b>	1,980	24%
<b>Transgender (Total)</b>	69	0.8%
<b>Male to Female</b>	54	78%
<b>Female to Male</b>	15	22%
<b>Total</b>	<b>8,403</b>	<b>100%</b>

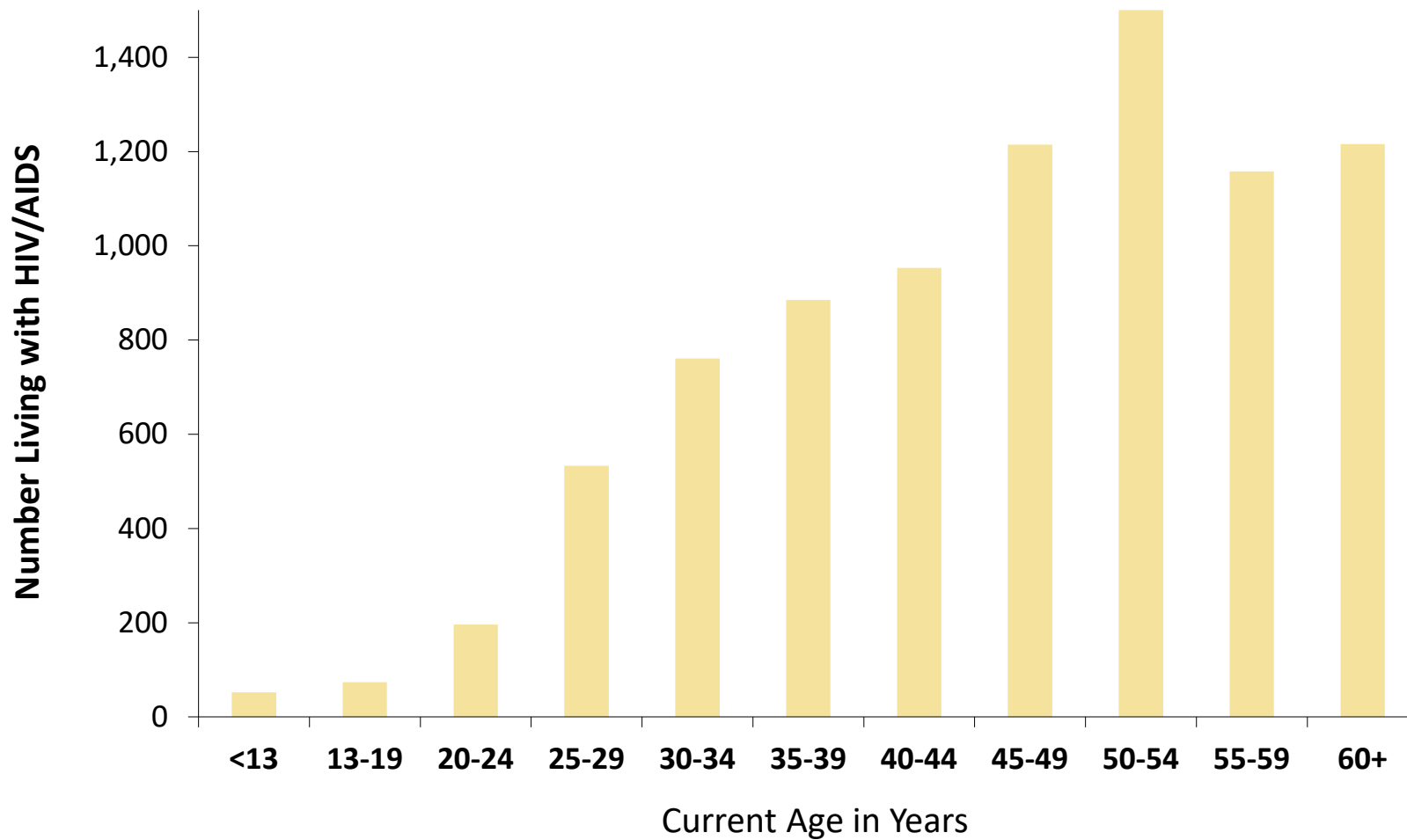
\*HIV or AIDS at first diagnosis age 13 and older;

† “MSM” refers to both MSM and MSM/IDU.

Age



## Persons Living with HIV/AIDS in Minnesota by Age Group<sup>†</sup>, 2016

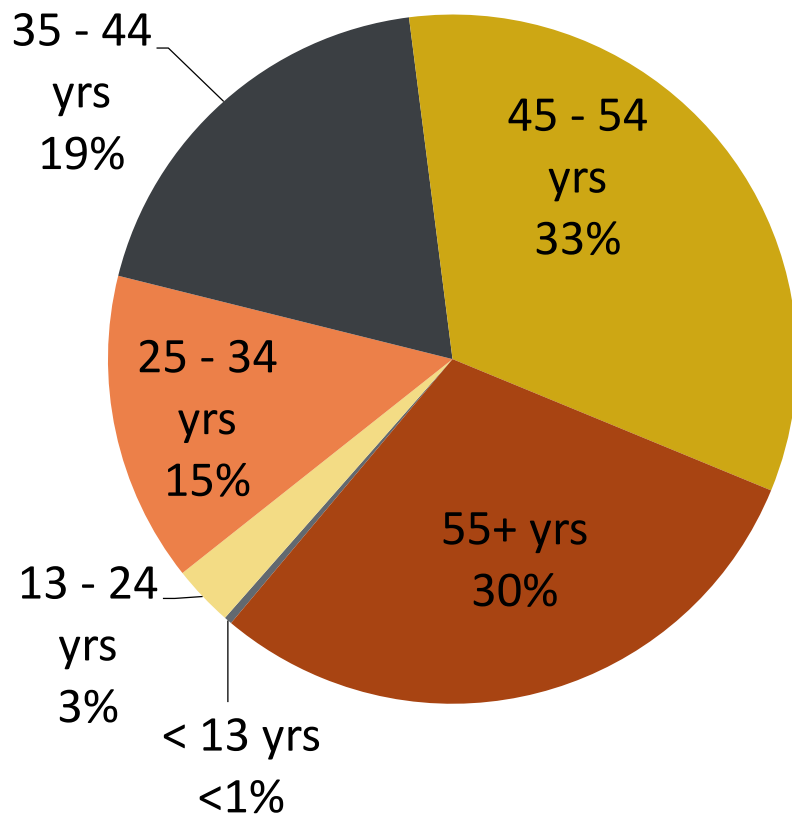


<sup>†</sup>Age missing for 5 persons living with HIV/AIDS

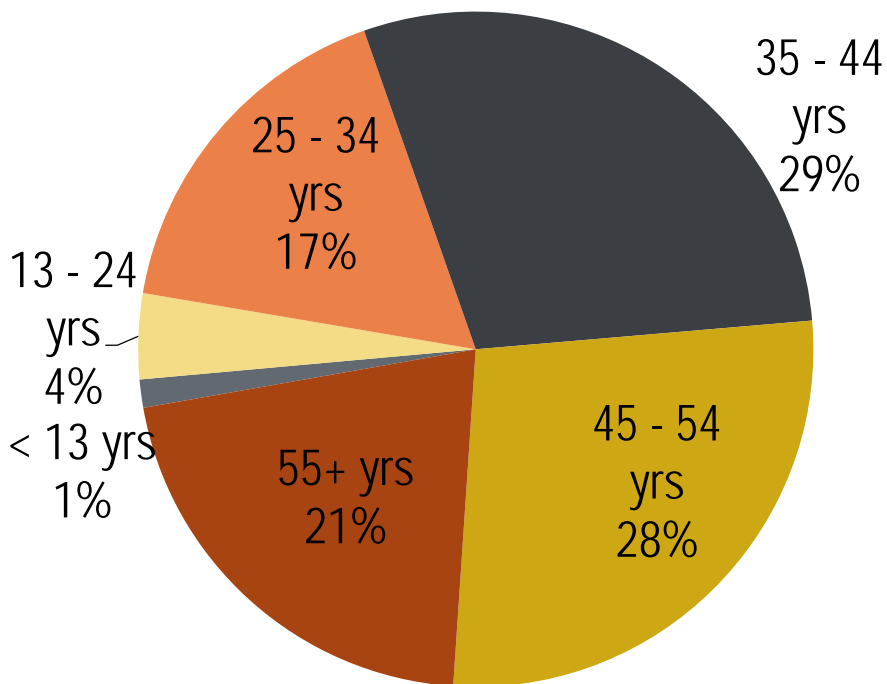


# Persons Living with HIV/AIDS in Minnesota by Age<sup>†</sup> and Gender, 2016

Males (n = 6,474)



Females (n = 2,075)



n = Number of persons

<sup>†</sup> Age missing for 5 people .

Data Source: Minnesota HIV/AIDS Surveillance System

*HIV/AIDS in Minnesota: Annual Review*

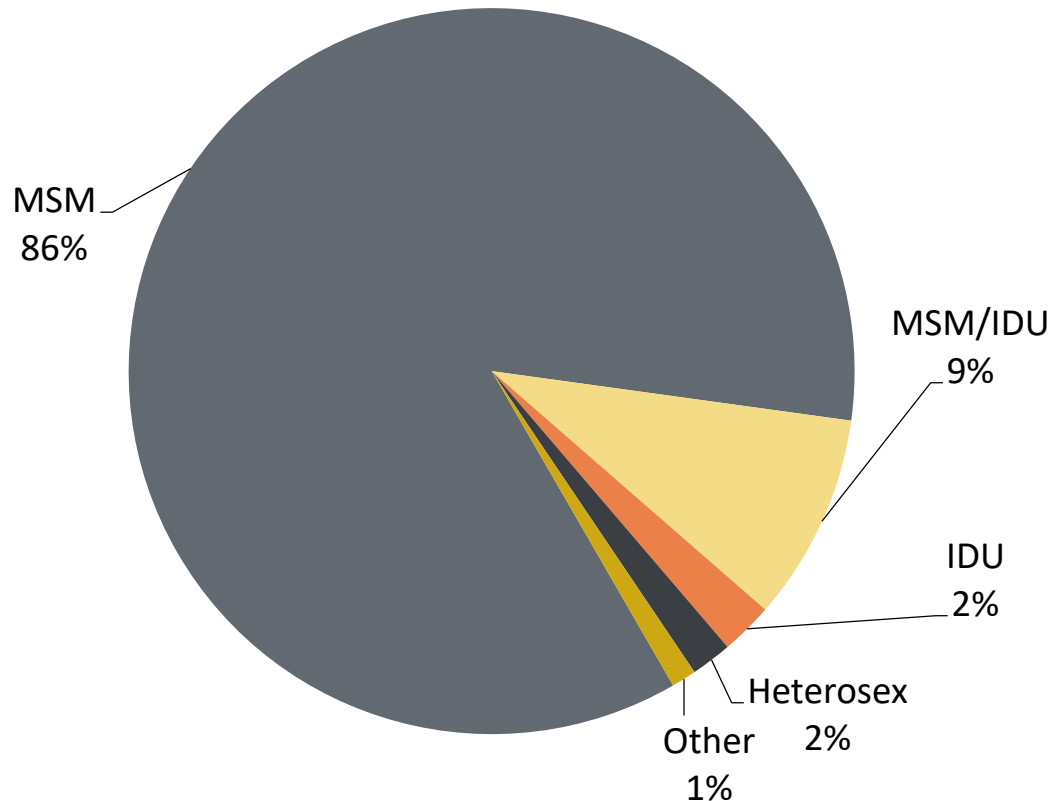


# Mode of Exposure



# Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

White Males (n = 3,627)



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

<sup>†</sup> Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Surveillance Technical Notes.

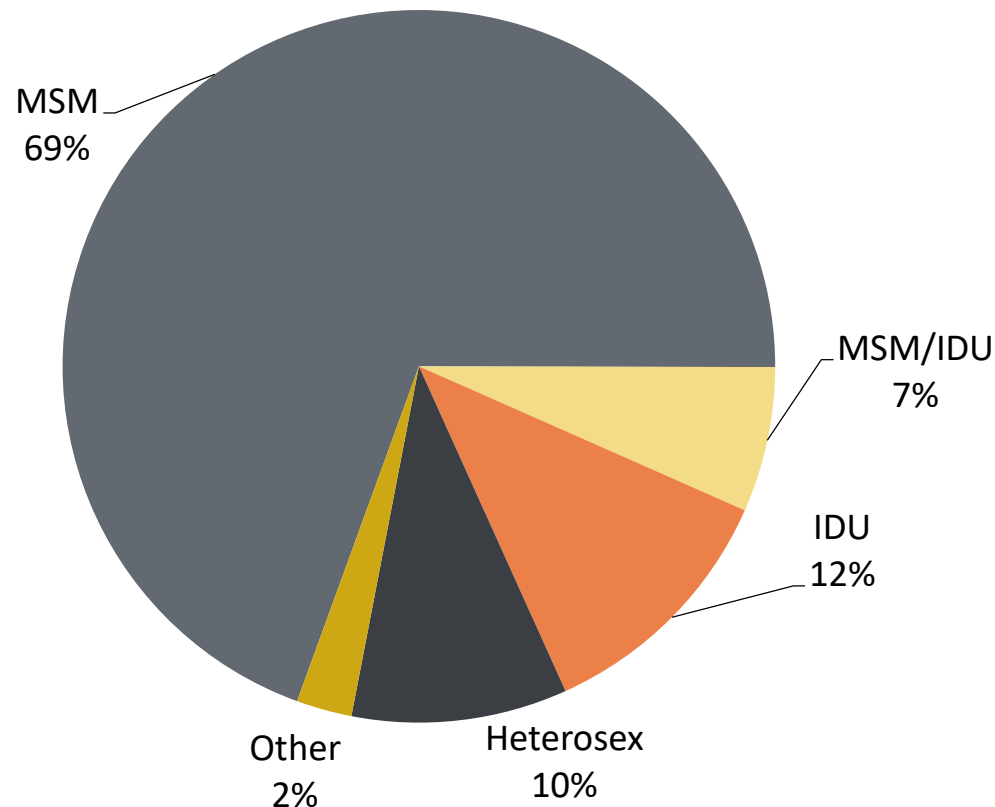
Data Source: Minnesota HIV/AIDS Surveillance System

*HIV/AIDS in Minnesota: Annual Review*



# Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

African American Males<sup>††</sup> (n = 1,281)



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

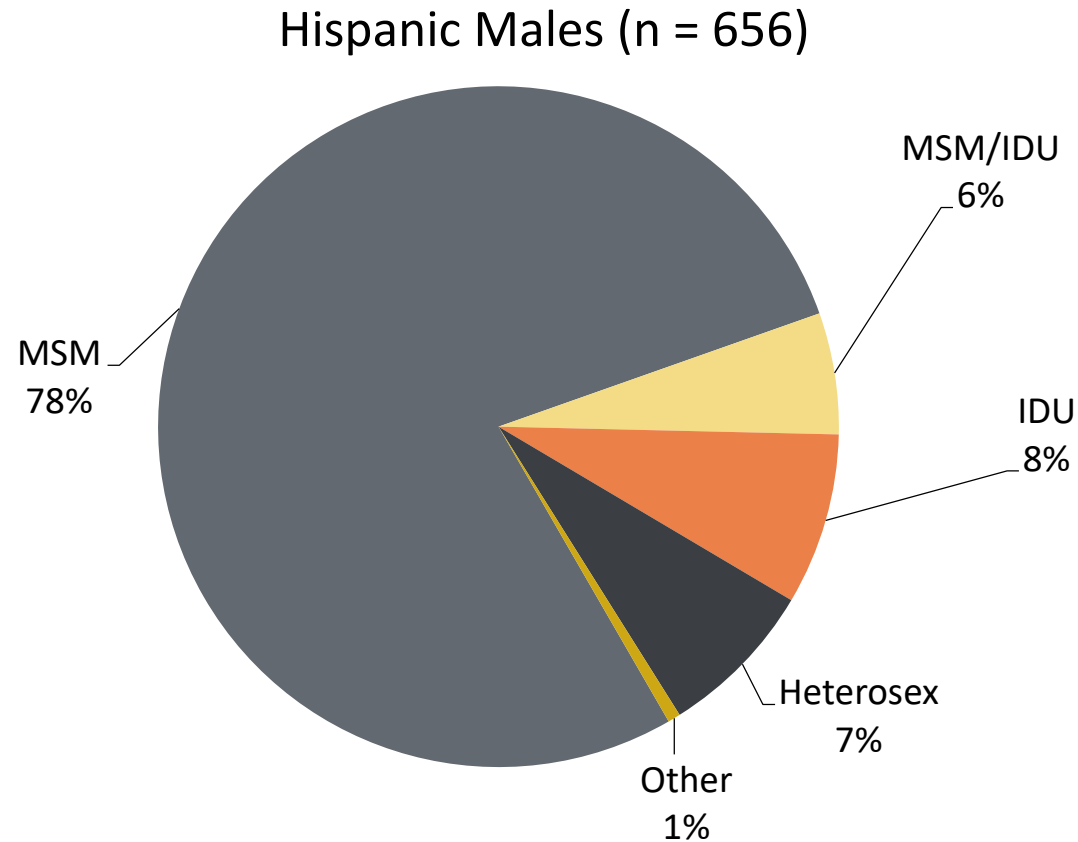
<sup>†</sup> Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Surveillance Technical Notes.

Data Source: Minnesota HIV/AIDS Surveillance System

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## Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

<sup>†</sup> Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Surveillance Technical Notes.

Data Source: Minnesota HIV/AIDS Surveillance System

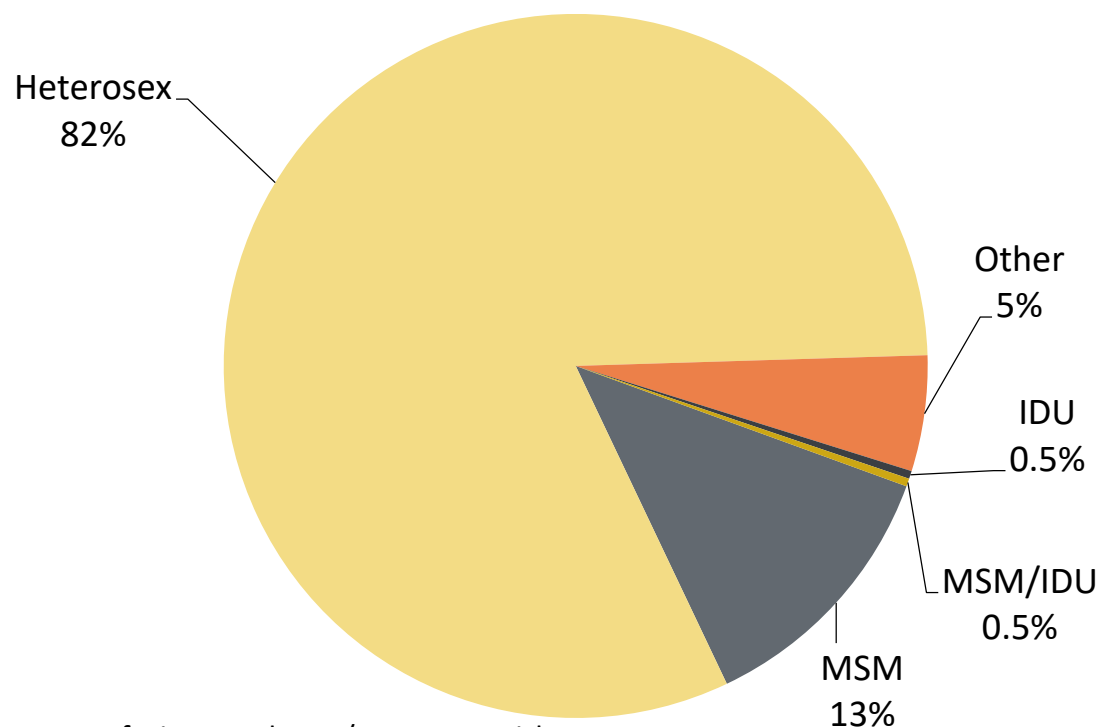
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# Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

African-born Males<sup>††</sup> (n = 552)



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

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

For additional detail see the HIV Surveillance Technical Notes.

<sup>††</sup> Refers to Black, African-born males.

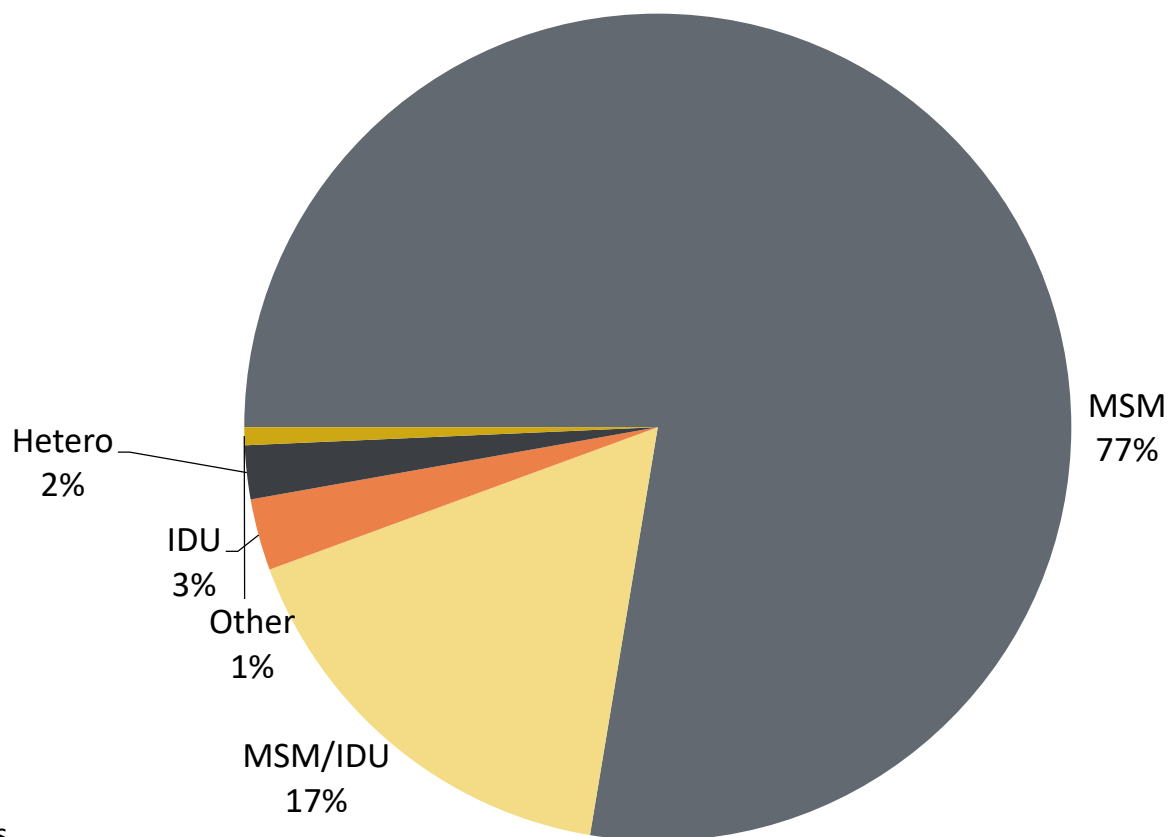
Data Source: Minnesota HIV/AIDS Surveillance System

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# Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

Multi-racial Males (n = 155)



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

<sup>†</sup> Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Surveillance Technical Notes.

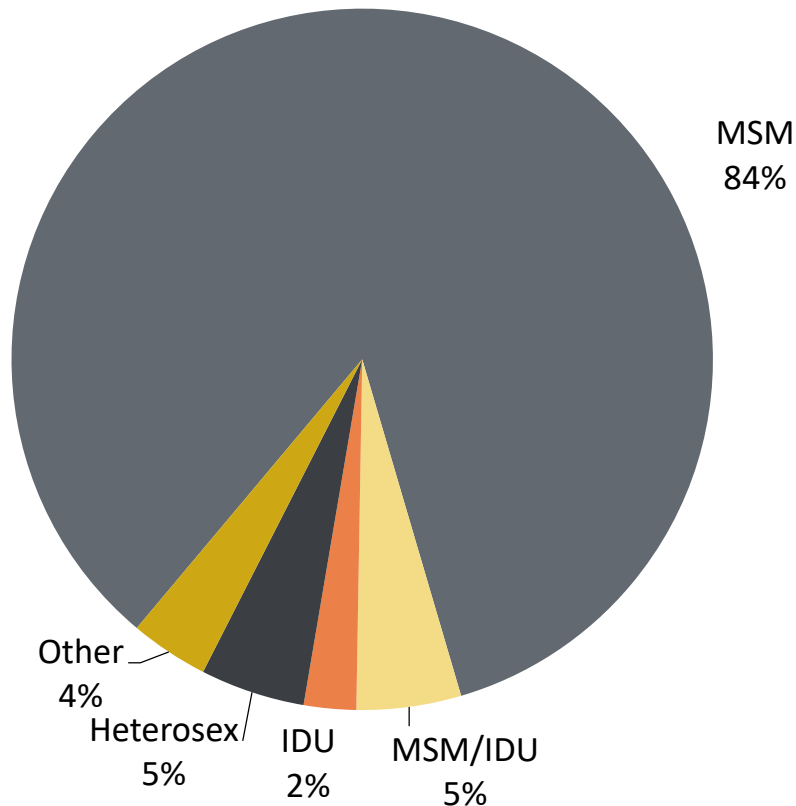
Data Source: Minnesota HIV/AIDS Surveillance System

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# Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

Asian Males (n = 130)



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

<sup>†</sup> Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Surveillance Technical Notes.

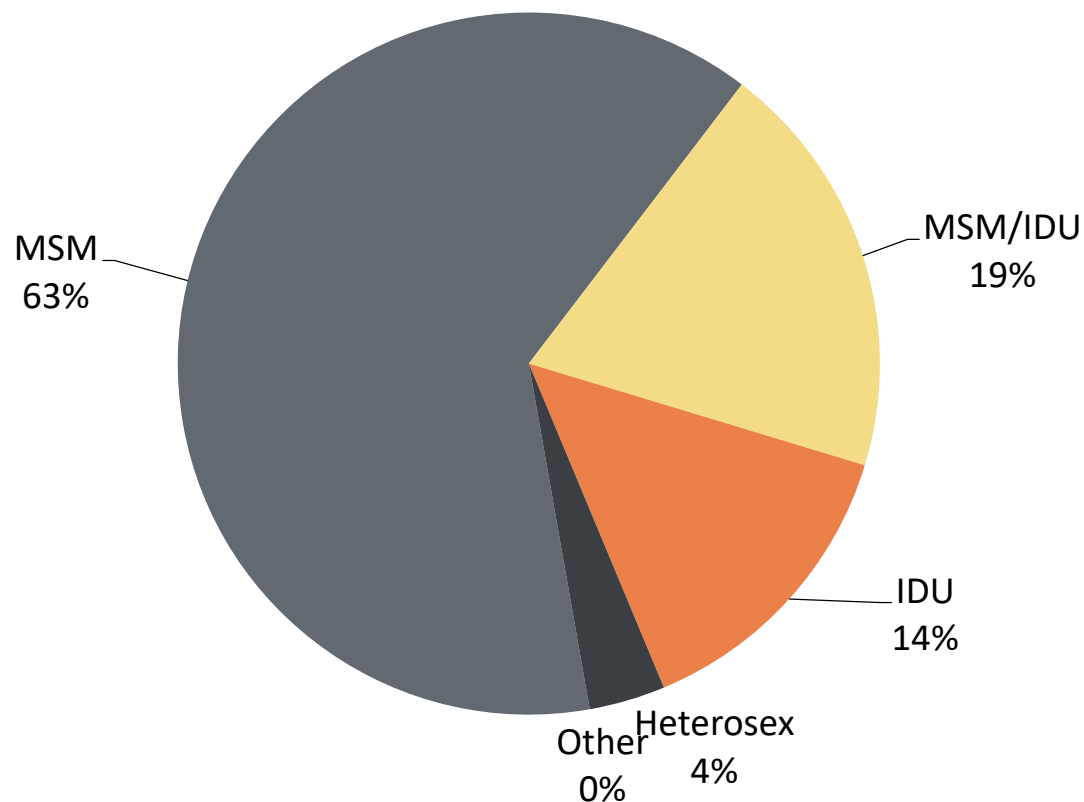
Data Source: Minnesota HIV/AIDS Surveillance System

*HIV/AIDS in Minnesota: Annual Review*



# Males Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

American Indian Males (n = 63)



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

<sup>†</sup> Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Surveillance Technical Notes.

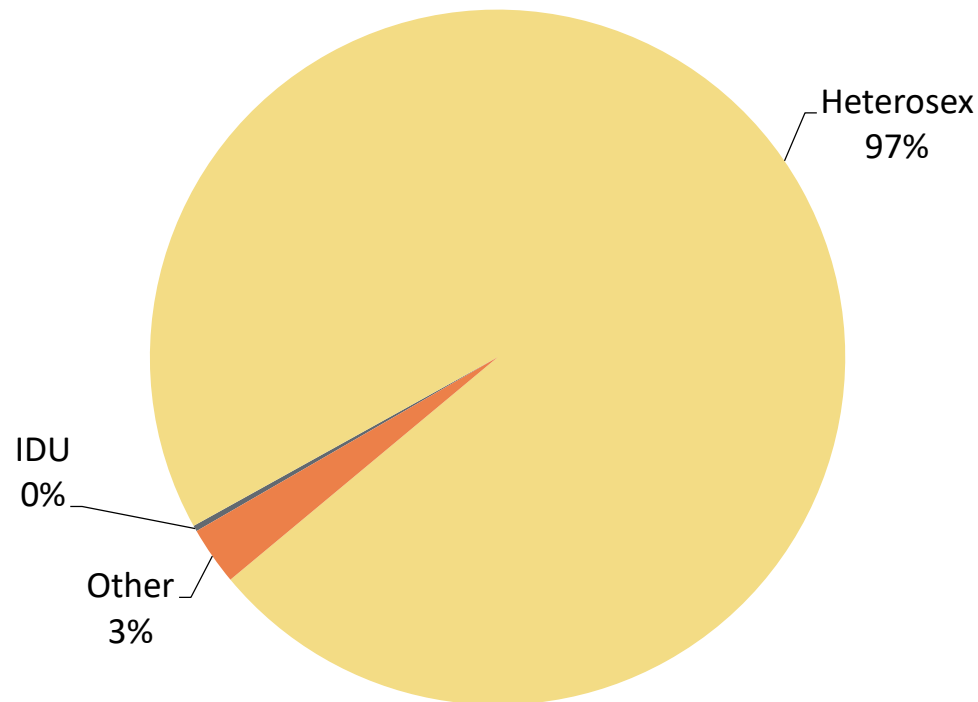
Data Source: Minnesota HIV/AIDS Surveillance System

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# Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

African-born Females<sup>††</sup> (n = 731)



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

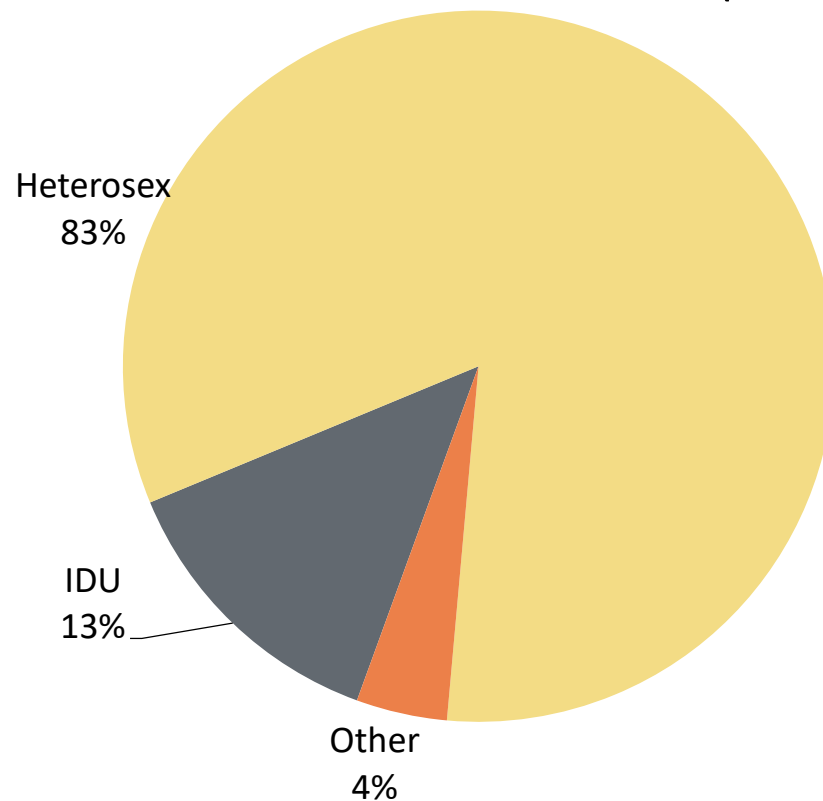
<sup>†</sup> Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Surveillance Technical Notes.

<sup>††</sup> Refers to Black, African-born females.



# Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

African American Females<sup>††</sup> (n = 555)



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

<sup>†</sup> Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Surveillance Technical Notes.

<sup>††</sup> Refers to Black, African American (not African-born) females.

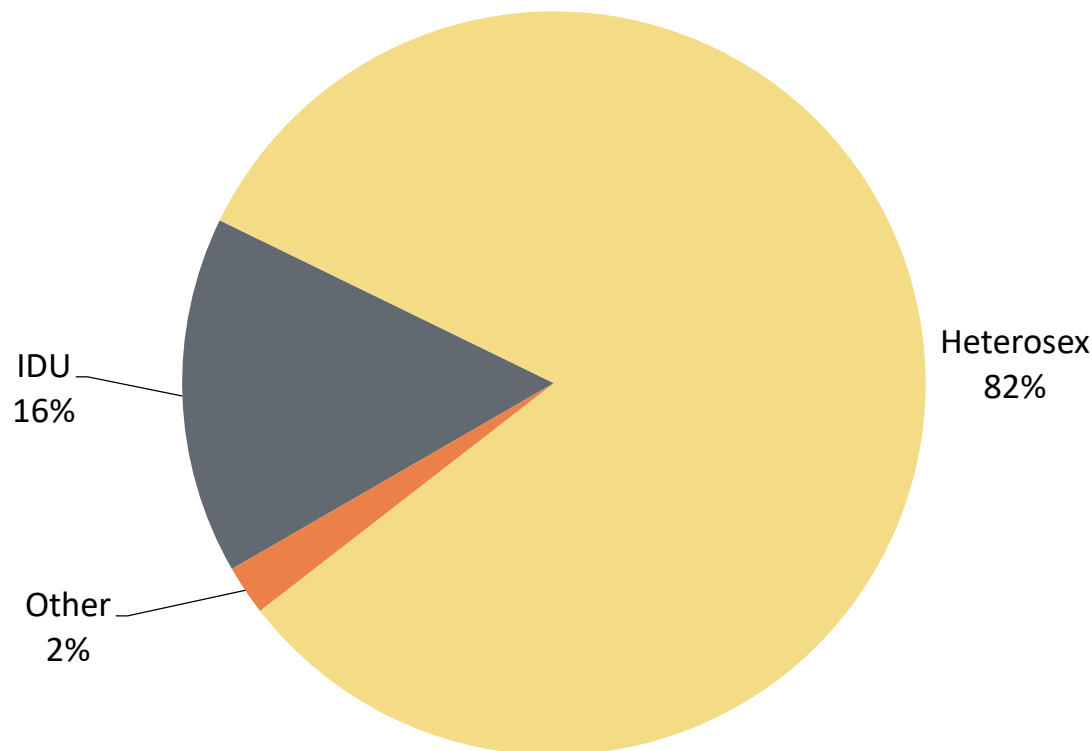
Data Source: Minnesota HIV/AIDS Surveillance System

*HIV/AIDS in Minnesota: Annual Review*



# Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

White Females (n = 480)



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

<sup>†</sup> Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Surveillance Technical Notes.

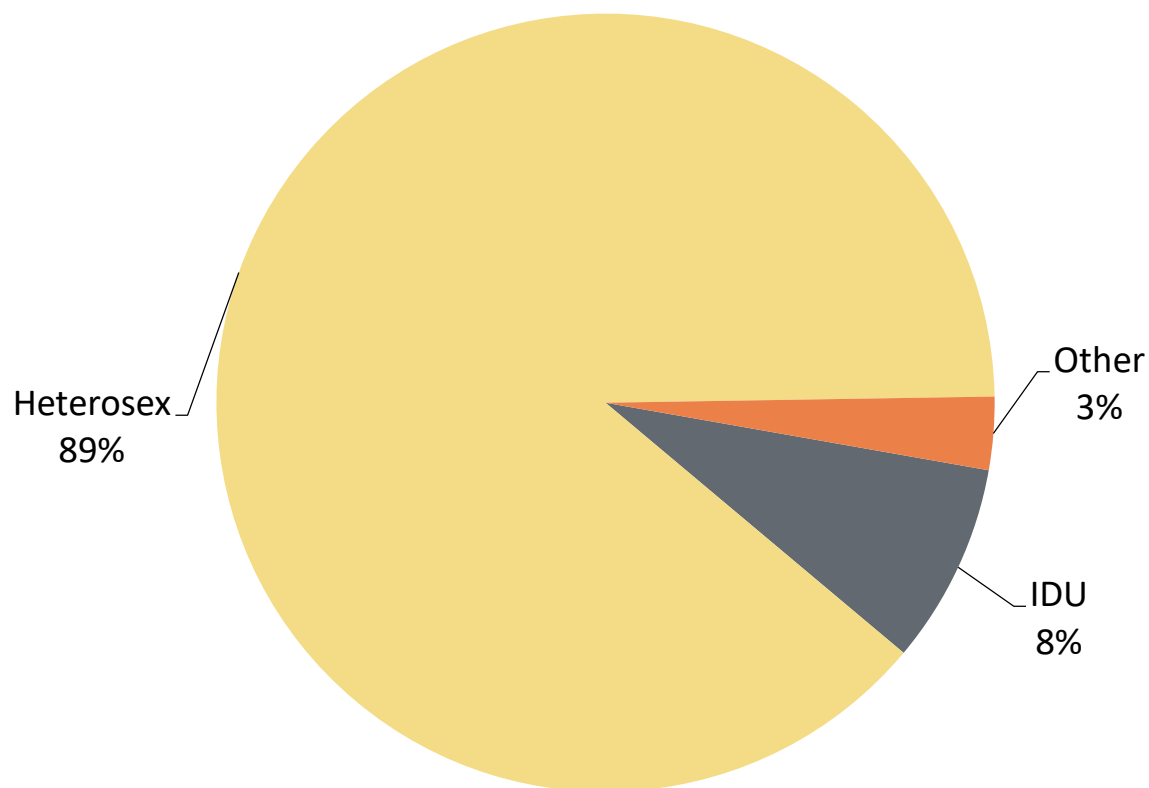
Data Source: Minnesota HIV/AIDS Surveillance System

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# Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

Hispanic Females (n = 140)



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

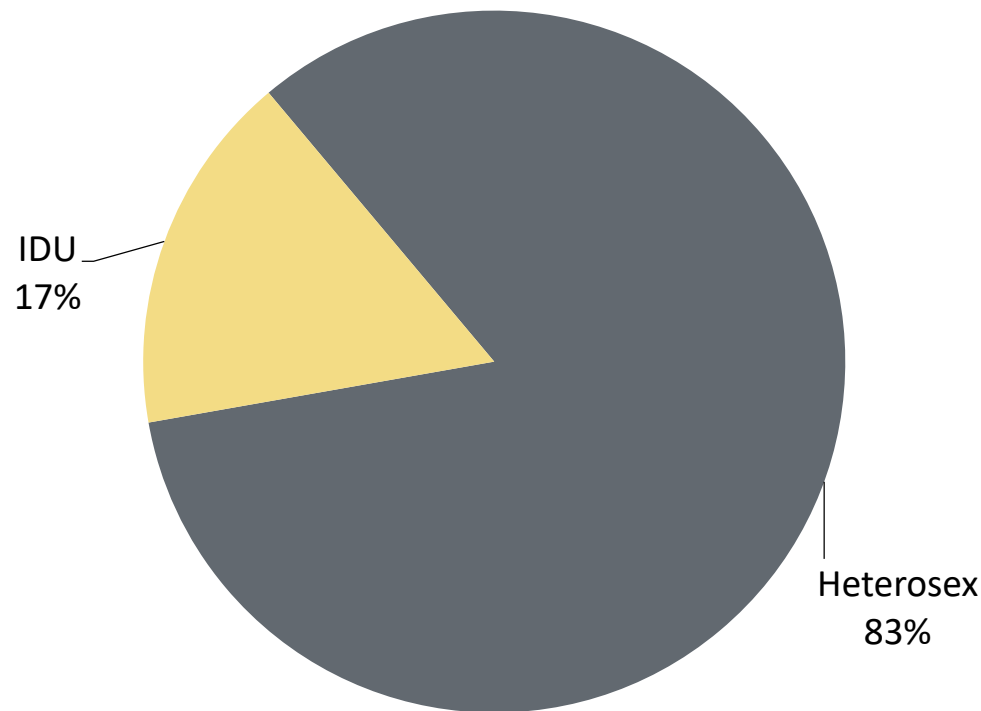
<sup>†</sup> Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Surveillance Technical Notes.





# Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

American Indian Females (n = 51)



n = Number of persons

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

IDU = Injecting drug use

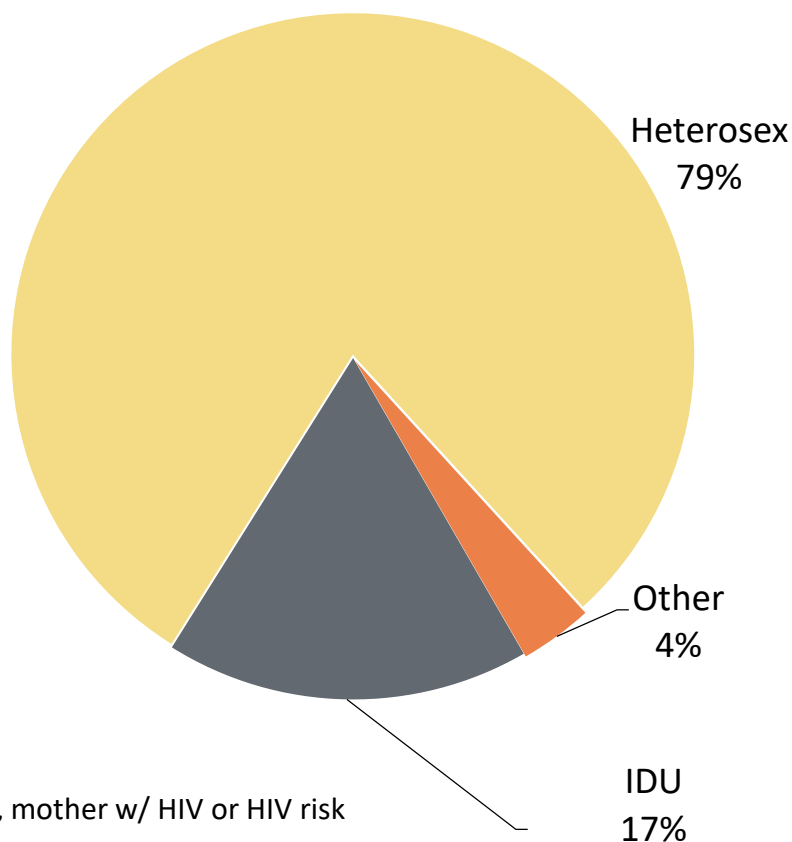
Heterosex = Heterosexual contact

<sup>†</sup> Mode of Exposure has been estimated using prevalent cases with known risk. For additional detail see the HIV Surveillance Technical Notes.



# Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

Multi-racial Females (n = 59)



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

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

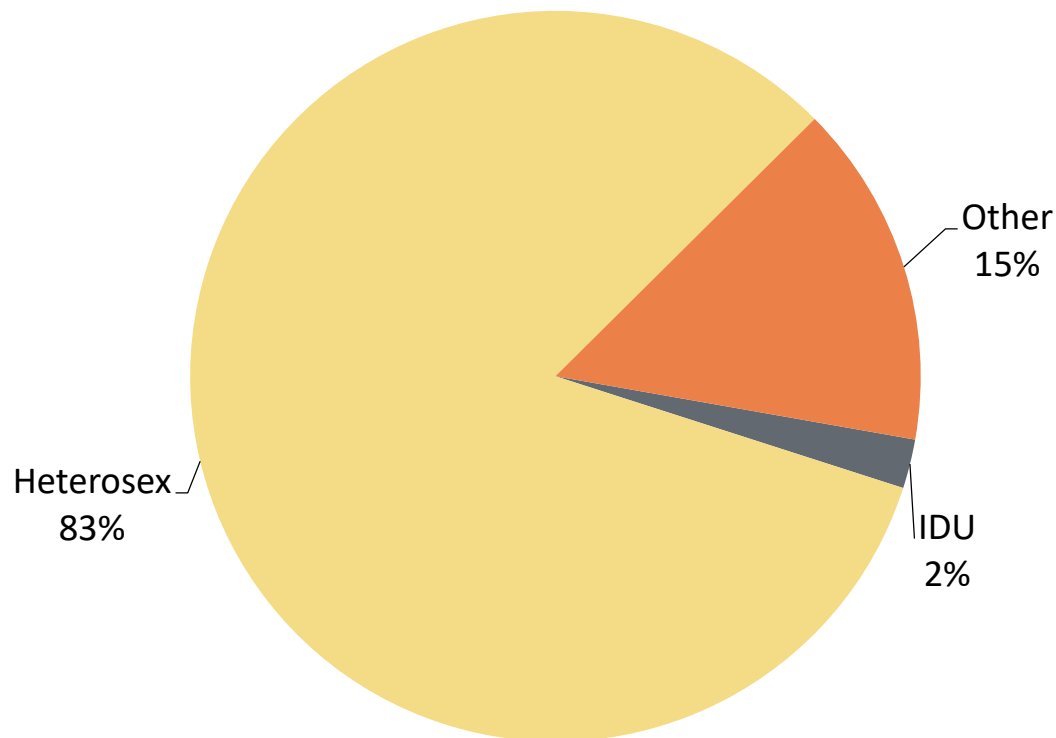
For additional detail see the HIV Surveillance Technical Notes.



# Females Living with HIV/AIDS in Minnesota by Estimated Mode of Exposure<sup>†</sup>, 2016

Asian Females (n = 53)

CAUTION: Small number of cases – interpret carefully.



n = Number of persons

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

IDU = Injecting drug use

Heterosex = Heterosexual contact

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

For additional detail see the HIV Surveillance Technical Notes.

# Populations of Interest

# HIV and Hepatitis B, C co-infection

## HIV and Hepatitis B and C

- As of December 31, 2016\* , 8,554 persons are assumed alive and living in Minnesota with HIV/AIDS
  - Of these 8,554 persons, 776 (9%) are co-infected with either Hepatitis B, C or both
    - Of the 776, 316 (41%) are living with HIV and Hep B
    - Of the 776, 416 (53%) are living with HIV and Hep C
    - Of the 776, 44 ( 6%) are living with HIV and Hep B/Hep C

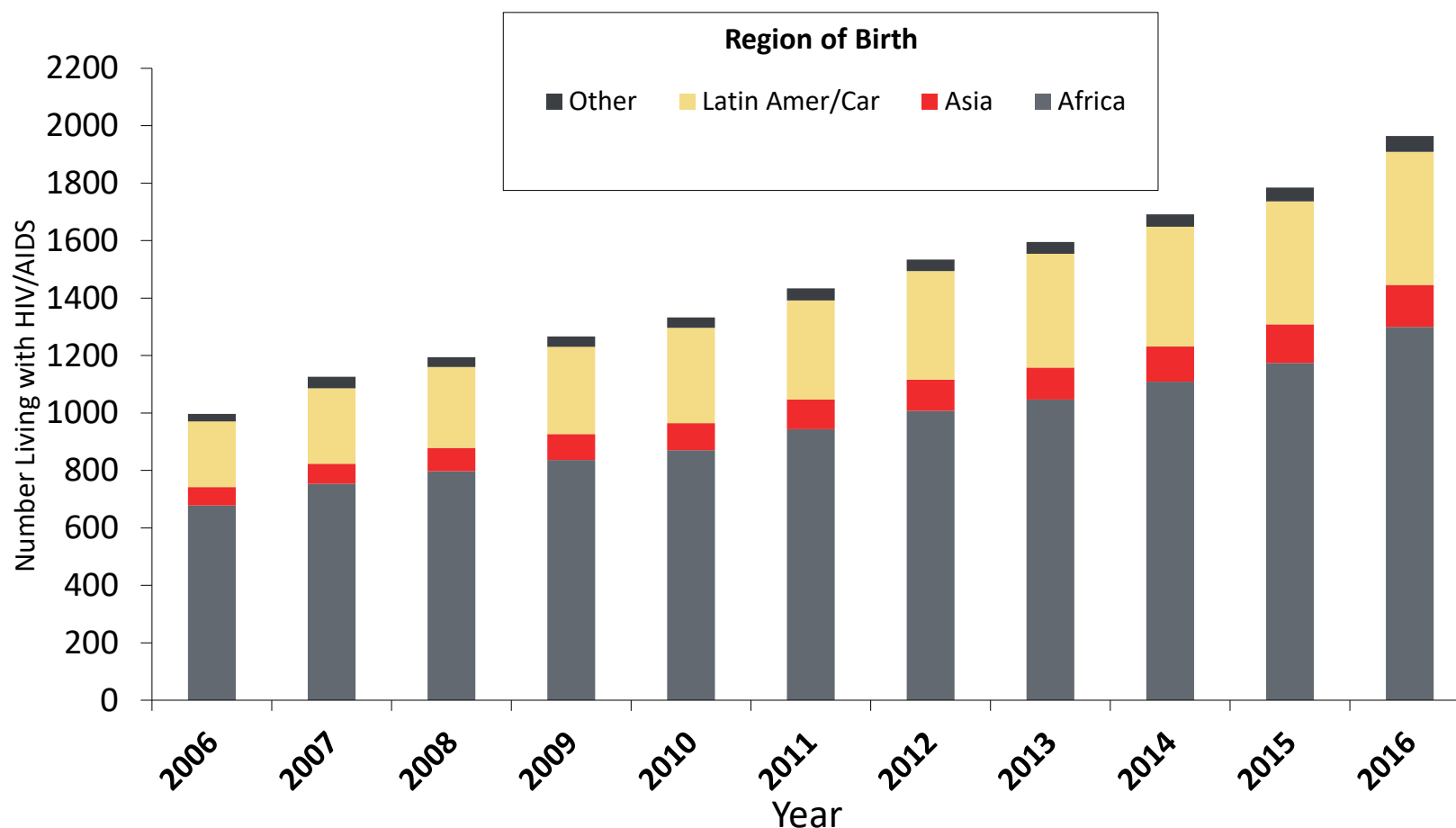
\* This number includes persons who reported Minnesota as their current state of residence, regardless of residence at time of diagnosis. Includes state prisoners and refugees arriving through the HIV+ Refugee Resettlement Program, as well as, HIV+ refugee/immigrants arriving through other programs.

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

*HIV/AIDS in Minnesota: Annual Review*



# Foreign-Born Persons Living with HIV/AIDS in Minnesota by Region of Birth, 2006-2016



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

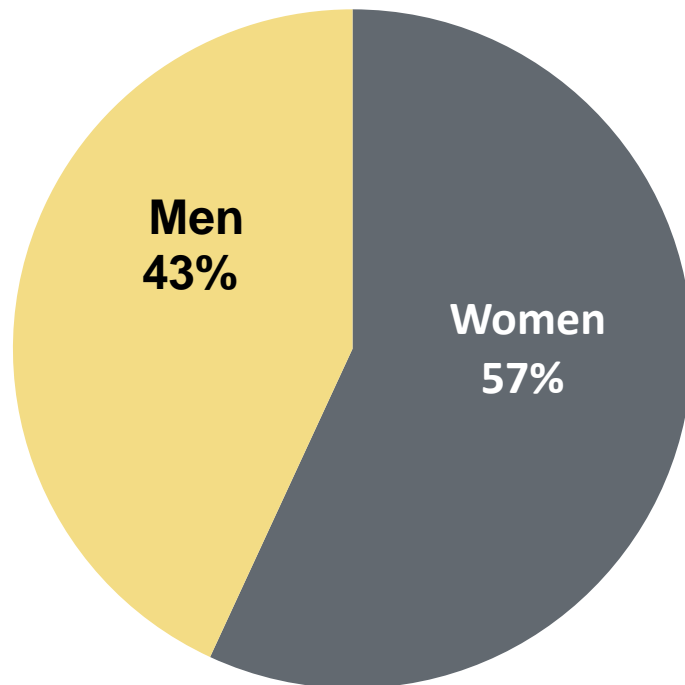
Data Source: Minnesota HIV/AIDS Surveillance System

*HIV/AIDS in Minnesota: Annual Review*

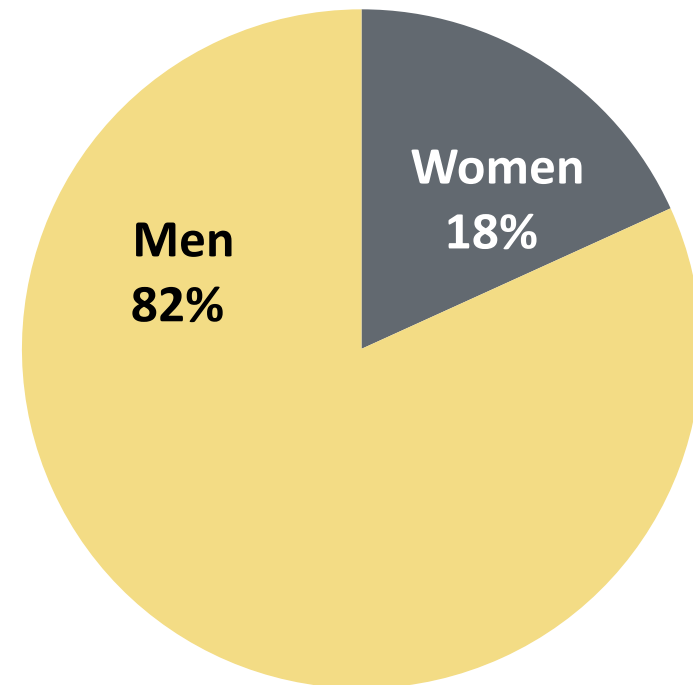


# African-Born<sup>†</sup> Persons Living with HIV/AIDS Compared to Other Minnesota Cases by Gender, 2016

African-born Persons  
Total Number = 1,299



U.S.-born Cases  
Total Number = 6,590



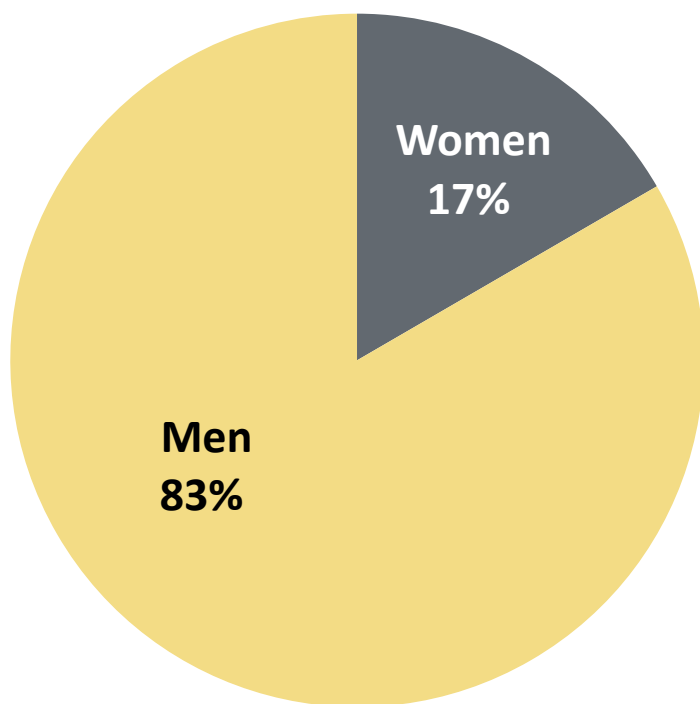
<sup>†</sup> Includes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program and other refugee/immigrant programs. Also includes 1 White African-born persons and 2 multi-racial African-born person.



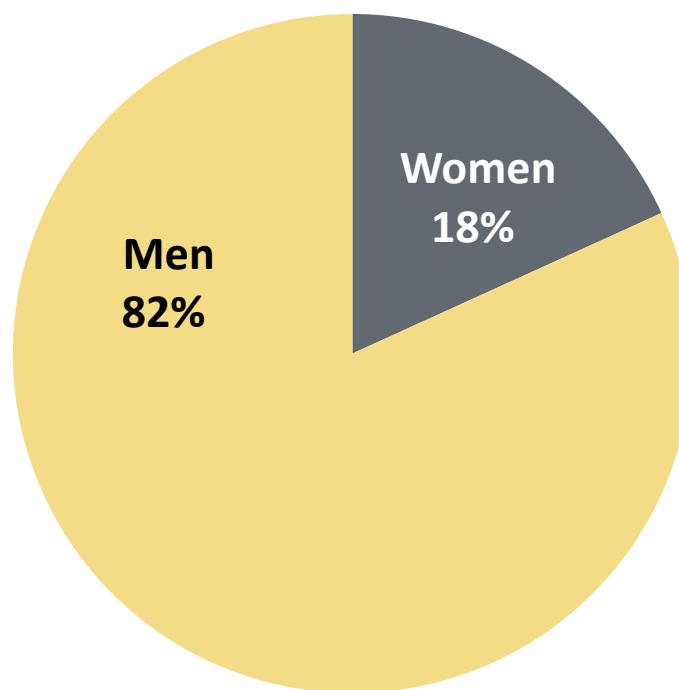


# Persons Living with HIV/AIDS born in Latin America/Caribbean<sup>†</sup> Countries Compared to Other Minnesota Cases by Gender, 2016

Latin/Caribbean Persons  
Total Number = 463



U.S.-born Cases  
Total Number = 6,590



<sup>†</sup> Includes Mexico and all Central/South American and Caribbean countries.



## Countries of Birth Among Foreign-Born Persons<sup>†</sup> Living with HIV/AIDS, Minnesota, 2016

- Ethiopia/Oromia (n=291)
- Mexico (n=267)
- Liberia (n=219)
- Kenya (n=166)
- Somalia (n=132)
- Cameroon (n=101)
- Sudan (n=73)
- Other<sup>^</sup> (n=748)

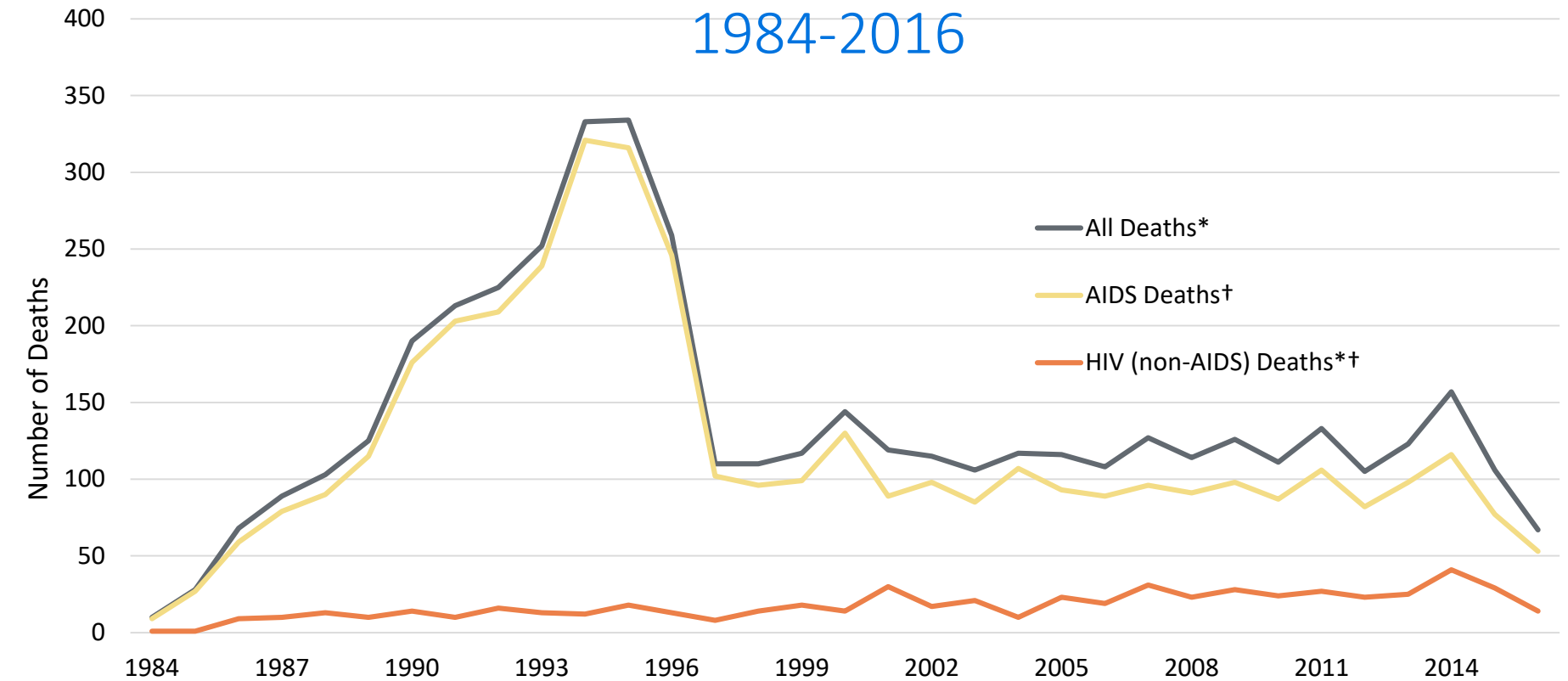
<sup>†</sup> Includes persons arriving to Minnesota through the HIV+ Refugee Resettlement Program, as well as other refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota.

<sup>^</sup> Includes 100 additional countries.

# Mortality



# Reported Deaths among persons with HIV in Minnesota , 1984-2016



\* Number of deaths known to have occurred among all people living with HIV infection in Minnesota, regardless of location of diagnosis and cause of death.

† Number of deaths known to have occurred among people living with AIDS in Minnesota in a given calendar year, regardless of location of diagnosis and cause of death

\* † Number of deaths known to have occurred among people living with HIV (non-AIDS) in Minnesota in a given calendar year, regardless of location of diagnosis and cause of death

# 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 MDH in compliance with state rules<sup>1</sup>. 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<sup>2</sup>) 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.

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<sup>1</sup> Minnesota Rule 4605.7040

<sup>2</sup> MMWR 1992;41[no.RR-17]:1-19

## New HIV Diagnoses

New HIV diagnoses refer to persons who are diagnosed with HIV infection and newly reported to 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 diagnosis are displayed by year of earliest HIV diagnosis. The number of new HIV diagnoses 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 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 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 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<sup>3</sup> 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.

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<sup>3</sup> Incubation period is the time between initial infection with the virus and the development of disease symptoms.

## Mode of Exposure Hierarchy

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

1. MSM
2. IDU
3. MSM/IDU
4. Hemophilia patient
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<sup>4</sup>. 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 MDH 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 2016, we would use cases diagnosed between 2014 and 2016. For females an additional step was added to the process. If females reported sex with males but did not report injecting drug use or receipt of blood products, 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

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<sup>4</sup> MMWR 2001; 50(RR-6):31-40.

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.

## 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 Laumann et al. where 9% of the urban population, 4% of the suburban population and 1% of the rural population are estimated to be MSM.

$$\text{MSM}_{\text{state } i} = (\text{rural pop}_{\text{state } i} \times 0.01\%) + (\text{suburban pop}_{\text{state } i} \times 0.04\%) + (\text{urban pop}_{\text{state } i} \times 0.09\%)$$

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 assigned as rural. In 2016, 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.

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<sup>5</sup> 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

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)**

MDH continues to participate in RIDR. RIDR is a CDC project aimed at eliminating duplicate reports of HIV and AIDS cases among states. Each case of HIV and AIDS is assigned to the state (or states when the diagnosis of HIV and AIDS occurs in two different states) where a person was first diagnosed. RIDR was the second such de-duplication initiative by CDC. The first initiative, IDEP, looked at cases reported through December 31, 2001. RIDR is now an ongoing activity that all states are expected to undertake. CDC will release a RIDR report every 6 months which will affect the ownership of Minnesota cases. While the Surveillance staff will always inquire about previous diagnosis and will check with CDC to determine if the case has been previously reported, it is possible that cases we believe to have been initially diagnosed in Minnesota were in fact diagnosed in another state. Ongoing participation in this initiative will allow for proper attribution of incident and prevalent cases in Minnesota.

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 **Minnesota**  
Department of Health  
**STD, HIV AND TB SECTION**

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Table 1. Number of New Cases and Rates (per 100,000 persons) of HIV Diagnoses, HIV (non-AIDS), & AIDS (New Diagnosis AIDS, Progressed to AIDS)<sup>I</sup> Minnesota, 1982-2016

Year	HIV Diagnosis <sup>III</sup>		HIV (non-AIDS) <sup>III</sup>		New AIDS Diagnosis		Progressed to AIDS		Total AIDS <sup>IV</sup>	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
<b>1982-1999</b>	6,060	--	5,056	--	1004	--	2529	--	3,533	--
<b>2000</b>	283	5.8	220	4.5	63	1.3	110	2.2	173	3.5
<b>2001</b>	283	5.7	232	4.7	51	1.0	94	1.9	145	2.9
<b>2002</b>	308	6.1	250	5.0	58	1.2	118	2.4	176	3.5
<b>2003</b>	280	5.5	227	4.5	53	1.0	142	2.8	195	3.9
<b>2004</b>	309	6.1	241	4.7	68	1.3	178	3.5	246	4.8
<b>2005</b>	306	6.0	247	4.8	59	1.2	157	3.1	216	4.2
<b>2006</b>	318	6.2	271	5.2	47	0.9	149	2.9	196	3.8
<b>2007</b>	331	6.4	265	5.1	66	1.3	123	2.4	189	3.6
<b>2008</b>	322	6.1	249	4.7	73	1.4	129	2.5	202	3.8
<b>2009</b>	369	7.0	280	5.3	89	1.7	101	1.9	190	3.6
<b>2010</b>	331	6.2	248	4.7	83	1.6	98	1.8	181	3.4
<b>2011</b>	293	5.5	220	4.1	73	1.4	113	2.1	186	3.5
<b>2012</b>	313	5.9	237	4.5	76	1.4	123	2.3	199	3.8
<b>2013</b>	304	5.7	219	4.1	85	1.6	79	1.5	164	3.1
<b>2014</b>	311	5.9	238	4.5	73	1.4	95	1.8	168	3.2
<b>2015</b>	298	5.6	232	4.4	66	1.2	80	1.5	146	2.8
<b>2016</b>	290	5.5	229	4.3	61	1.2	70	1.3	131	2.5
<b>Cumulative Total<sup>II</sup></b>	<b>11,309</b>	<b>213.2</b>	<b>9,161</b>	<b>172.7</b>	<b>2148</b>	<b>40.5</b>	<b>4488</b>	<b>84.6</b>	<b>6,636</b>	<b>125.1</b>

## Notes

<sup>I</sup> HIV Diagnosis = New cases of HIV diagnosis (both HIV (non-AIDS) and AIDS at first diagnosis) diagnosed within a given calendar year. HIV (non-AIDS) = New cases of HIV diagnosis (excluding AIDS at first diagnosis) diagnosed within a given calendar year. New AIDS Diagnosis= AIDS at first diagnosis. Progressed to AIDS= diagnosis of HIV (non-AIDS) in a previous year with a diagnosis of AIDS in given calendar year. Total AIDS = All new cases of AIDS diagnosed within a given calendar year, including AIDS at first diagnosis.

<sup>II</sup> 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 (2010-2013), 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.

<sup>III</sup> 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

<sup>IV</sup> 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.

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).

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Table 2. Number of Cases and Rates (per 100,000 persons) of HIV Diagnosis by Residence, Age, and Gender<sup>1</sup> Minnesota, 2016

Group	Males		Females		Total		HIV Infection Rate
	Cases	%	Cases	%	Cases	%	
<b>Residence<sup>11</sup></b>							
Minneapolis	79	35%	13	20%	92	32%	24.0
St. Paul	20	9%	8	12%	28	10%	9.8
Suburban	83	37%	35	54%	118	41%	5.4
Greater Minnesota	43	19%	9	14%	52	18%	2.1
<b>Total</b>	<b>225</b>	<b>100%</b>	<b>65</b>	<b>100%</b>	<b>290</b>	<b>100%</b>	<b>5.5</b>
<b>Age</b>							
<13 yrs	1	0%	2	3%	3	1%	0.3
13-19 yrs	12	5%	3	5%	15	5%	2.9
20-24 yrs	41	18%	11	17%	52	18%	14.6
25-29 yrs	43	19%	9	14%	52	18%	14.0
30-34 yrs	32	14%	8	12%	40	14%	11.7
35-39 yrs	21	9%	16	25%	37	13%	11.3
40-44 yrs	25	11%	4	6%	29	10%	8.2
45-49 yrs	17	8%	4	6%	21	7%	5.2
50-54 yrs	15	7%	1	2%	16	6%	4.0
55-59 yrs	11	5%	2	3%	13	4%	3.7
60+ yrs	7	3%	5	8%	12	4%	1.2
<b>Total</b>	<b>225</b>	<b>100%</b>	<b>65</b>	<b>100%</b>	<b>290</b>	<b>100%</b>	<b>5.5</b>
<b>State Totals</b>	<b>225</b>		<b>65</b>		<b>290</b>		<b>5.5</b>

## Notes

<sup>1</sup>HIV Diagnosis includes all new cases of HIV diagnosis (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2016.

<sup>11</sup>Residence at time of HIV diagnosis (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 (1 diagnosis in 2016).

Rates calculated using U.S. Census 2010 data. Percentages may not add to 100 due to rounding.

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Table 3. Number of Cases and Rates (per 100,000 persons) of HIV Diagnosis by Race/Ethnicity & Mode of Exposure<sup>I</sup> Minnesota, 2016

	Males			Females			Total		
Group	Cases	%	Rate <sup>IV</sup>	Cases	%	Rate <sup>IV</sup>	Cases	%	Rate <sup>III</sup>
<b>Race/Ethnicity</b>									
White, non-Hispanic	102	45%	4.7	17	26%	0.8	119	41%	2.7
Black <sup>II</sup> , African-American, non-Hispanic	47	21%	X	13	20%	X	60	21%	31.3
Black <sup>II</sup> , African-born <sup>III</sup> , non-Hispanic	38	17%	X	32	49%	X	70	24%	90.3
Hispanic, any race	23	10%	17.4	1	2%	0.8	24	8%	9.6
American Indian, non-Hispanic	1	0%	#	0	0%	#	1	0%	#
Asian/PI, non-Hispanic	10	4%	9.5	2	3%	#	12	4%	5.6
Other <sup>II</sup> , non-Hispanic	4	2%	X	0	0%	X	4	1%	X
<b>Total</b>	<b>225</b>	<b>100%</b>	<b>8.5</b>	<b>65</b>	<b>100%</b>	<b>2.4</b>	<b>290</b>	<b>100%</b>	<b>5.5</b>
<b>Mode of Exposure</b>									
MSM	119	53%	X	--	--	X	119	41%	X
IDU	3	1%	X	2	3%	X	5	2%	X
MSM/IDU	22	10%	X	--	--	X	22	8%	X
Heterosexual (Total)	(13)	6%	X	(52)	80%	X	(65)	22%	X
with IDU	2	--	X	1	--	X	3	--	X
with Bisexual Male	0	--	X	1	--	X	1	--	X
with Hemophiliac/other	0	--	X	0	--	X	0	--	X



with HIV+	11	--	X	18	--	X	29	--	X
Hetero, unknown risk <sup>v</sup>	0	--	X	32	--	X	32	--	X
Perinatal	1	0%	X	2	3%	X	3	1%	X
Other	0	0%	X	0	0%	X	0	0%	X
Unspecified	67	30%	X	9	14%	X	76	26%	X
No Interview, Unspecified	0	0%	X	0	0%	X	0	0%	X
<b>Total</b>	<b>225</b>	<b>100%</b>	<b>8.5</b>	<b>65</b>	<b>100%</b>	<b>2.4</b>	<b>290</b>	<b>100%</b>	<b>5.5</b>

## Notes

<sup>i</sup> HIV Diagnosis includes all new cases of HIV diagnosis (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2016.

<sup>ii</sup> 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

<sup>iii</sup> 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 (191,584) was calculated by subtracting the U.S. Census estimate for African-born persons (77,557) from the total Black population (269,141). Note that this assumes that all African-born persons are Black (as opposed to another race).

<sup>iv</sup> 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.

<sup>v</sup> 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.

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Table 4. Number of Cases and Rates (per 100,000 persons) of HIV Diagnosis by County of Residence -- Minnesota, 2016

County	HIV Diagnosis Cases	HIV Diagnosis Rate <sup>III</sup>
Aitkin	0	-
Anoka	20	6.0
Becker	0	-
Beltrami	2	-
Benton	2	-
Big Stone	0	-
Blue Earth	0	-
Brown	0	-
Carlton	1	-
Carver	0	-
Cass	0	-
Chippewa	1	-
Chisago	1	-
Clay	3	-
Clearwater	1	-
Cook	0	-
Cottonwood	1	-
Crow Wing	0	-
Dakota	21	5.3
Dodge	0	-
Douglas	2	-
Faribault	0	-
Fillmore	0	-
Freeborn	1	-
Goodhue	1	-
Grant	1	-
Hennepin	149	12.9
Houston	0	-
Hubbard	0	-
Isanti	1	-
Itasca	0	-
Jackson	0	-
Kanabec	0	-

County	HIV Diagnosis Cases	HIV Diagnosis Rate <sup>III</sup>
Kandiyohi	1	-
Kittson	0	-
Koochiching	0	-
Lac Qui Parle	0	-
Lake	0	-
Lake of the Woods	0	-
Le Sueur	0	-
Lincoln	0	-
Lyon	0	-
McLeod	0	-
Mahnomen	0	-
Marshall	0	-
Martin	1	-
Meeker	0	-
Mille Lacs	0	-
Morrison	0	-
Mower	4	-
Murray	0	-
Nicollet	0	-
Nobles	1	-
Norman	0	-
Olmsted	3	-
Otter Tail	1	-
Pennington	0	-
Pine	1	-
Pipestone	0	-
Polk	2	-
Pope	0	-
Ramsey	38	7.5
Red Lake	0	-
Redwood	0	-
Renville	0	-
Rice	1	-
Rock	0	-
Roseau	2	-
St. Louis	3	-
Scott	4	-
Sherburne	4	-
Sibley	0	-
Stearns	5	3.3

County	HIV Diagnosis Cases	HIV Diagnosis Rate <sup>III</sup>
Steele	0	-
Stevens	0	-
Swift	0	-
Todd	0	-
Traverse	0	-
Wabasha	0	-
Wadena	0	-
Waseca	0	-
Washington	6	2.5
Watonwan	0	-
Wilkin	0	-
Winona	1	-
Wright	4	-
Yellow Medicine	0	-
<b>State Total</b>	<b>290</b>	<b>5.5</b>

## Notes

<sup>I</sup>HIV Diagnosis includes all new cases of HIV diagnosis (both HIV (non-AIDS) and AIDS at first diagnosis) among Minnesota residents in 2016.

<sup>II</sup>Residence at time of HIV diagnosis (both HIV (non-AIDS) and AIDS at first diagnosis)

<sup>III</sup>Rates calculated using U.S. Census 2010 data. Rates not calculated for counties with fewer than 5 cases.

Numbers and rates exclude federal and private prisoners and refugees in the HIV-Positive Refugee Resettlement Program, as well as, refugee/immigrants with an HIV diagnosis prior to arrival in Minnesota. HIV infection was diagnosed among one state prisoner during 2016 (State correctional facilities are located in the following counties: Anoka, Carlton, Chisago, Goodhue, Itasca, Rice, Scott, Sherburne, and Washington).

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Table 5a. Perinatal HIV Exposure<sup>I</sup>: Number of Births to HIV-Infected Women<sup>II</sup> by Year of Child's Birth and Mother's Race/Ethnicity, Minnesota 1982-2016

Year(s)	Race/Ethnicity of Mother							Total	Foreign-born Mothers <sup>IV</sup>	
	White	Black, African-American <sup>III</sup>	Black, African-born <sup>III</sup>	Hispanic	American Indian	Asian/PI	Multi-racial		Number	(% of total in time period)
1982-1999	84	66	10	9	14	4	3	190	20	11%
2000	12	10	7	2	1	1	0	33	9	27%
2001	1	20	11	1	2	0	1	36	14	39%
2002	9	6	13	3	2	0	3	36	14	39%
2003	5	14	18	6	1	1	2	47	21	45%
2004	7	13	22	3	2	1	1	49	24	49%
2005	7	8	20	3	0	2	1	41	25	61%
2006	7	14	21	6	1	1	2	52	27	52%
2007 <sup>^</sup>	16	12	24	2	2	1	2	59	29	49%
2008	3	12	26	6	0	3	3	53	34	64%
2009	16	13	34	4	1	2	1	71	39	55%
2010 <sup>^</sup>	7	14	22	2	2	1	3	51	23	45%
2011 <sup>^</sup>	10	10	28	9	4	1	3	65	35	54%
2012 <sup>^</sup>	14	11	26	3	2	0	3	59	32	54%
2013 <sup>^</sup>	8	11	31	5	4	1	1	61	34	56%
2014 <sup>^</sup>	5	7	41	4	1	2	4	64	45	70%
2015 <sup>^</sup>	3	10	30	3	0	0	5	51	32	63%
2016 <sup>^</sup>	6	8	32	5	0	3	6	60	38	63%
Cumulative Total	220	259	416	76	39	24	44	1,078	495	46%

## Notes

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.

<sup>I</sup> Exposure of child to HIV during pregnancy, at birth, and/or during breastfeeding.

<sup>II</sup> HIV-infected women may or may not have progressed to an AIDS diagnosis.

<sup>III</sup> African-born Blacks are reported separately from other Blacks (born in the U.S. or elsewhere).

<sup>IV</sup> Mothers' places of birth include: Africa (392), Asia/Pacific Islands (20), Central America/Caribbean (17), Europe (4), Mexico (16), and South America (8).

<sup>^</sup> Mother's race was missing for 1 birth in 2007, 3 births in 2011, 1 birth in 2012, 1 birth in 2013, 1 birth in 2014, and 3 in 2016. Country of mother's birth was missing for 1 birth in 2010, 1 birth in 2011, 1 birth in 2012, 1 birth in 2013, 3 births in 2014, 2 birth in 2015 and 3 births in 2016.

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Table 5b. Perinatal HIV Transmission<sup>1</sup>: Number of Perinatally-Acquired HIV/AIDS Cases by Year of Child's Birth and Mother's Race/Ethnicity, Minnesota 1982-2016

[illegible]



Year(s)	Race/Ethnicity of Mother							Total	Foreign-born Mothers <sup>III</sup>	
	White	Black, African-American <sup>I</sup>	Black, African-born <sup>I</sup>	Hispanic	American Indian	Asian/PI	Multi-racial		Number	(% of total in time period)
<b>Cumulative Total</b>	19	8	9	4	2	2	0	44	14	32%
<b>Rate of Transmission 2014 - 2016</b>	0.0%	8.0%	1.0%	0.0%	0.0%	0.0%	0.0%	1.7%	0.9%	--
<b>Cumulative Rate of Transmission<sup>IV</sup></b>	8.6%	3.1%	2.2%	5.3%	5.1%	--	--	4.1%	2.8%	--

## Notes

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.

<sup>I</sup> Transmission of HIV from mother to child during pregnancy, at birth, and/or during breastfeeding.

<sup>II</sup> African-born Blacks are reported separately from other Blacks (born in the U.S. or elsewhere).

<sup>III</sup> Mothers' places of birth include: Africa (9), Asia/Pacific Islands (2), Central America/Caribbean (1), Europe (1), Mexico (1).

<sup>IV</sup> 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.

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Table 1. Number<sup>I</sup> and Rate<sup>II</sup> (per 100,000 persons) of Persons Living with HIV (non-AIDS) and AIDS by Residence, Age, and Gender Minnesota, 2016

Group	HIV (non-AIDS)		AIDS		Total		HIV/AIDS
	Cases	%	Cases	%	Cases	%	Prevalence Rate
<b>Residence<sup>III</sup></b>							
Minneapolis	1,732	38%	1,402	35%	3,134	37%	819.2
St. Paul	590	13%	518	13%	1,108	13%	388.7
Suburban	1,341	29%	1,358	34%	2,699	32%	123.7
Greater Minnesota	900	20%	698	18%	1,598	19%	65.1
<b>Total</b>	<b>4,563</b>	<b>100%</b>	<b>3,976</b>	<b>100%</b>	<b>8,539</b>	<b>100%</b>	<b>161.0</b>
<b>Age<sup>IV</sup></b>							
<13 yrs	49	1%	3	<1%	52	1%	5.6
13-19 yrs	61	1%	13	<1%	74	1%	14.5
20-24 yrs	161	4%	35	1%	196	2%	55.1
25-29 yrs	416	9%	117	3%	533	6%	143.0
30-34 yrs	508	11%	253	6%	761	9%	221.9
35-39 yrs	514	11%	371	9%	885	10%	269.7
40-44 yrs	510	11%	443	11%	953	11%	270.0
45-49 yrs	640	14%	575	14%	1,215	14%	299.1
50-54 yrs	665	15%	841	21%	1,506	18%	374.9
55-59 yrs	494	11%	664	17%	1,158	14%	331.2
60+ yrs	552	12%	664	17%	1,216	14%	126.3
<b>Total</b>	<b>4,570</b>	<b>100%</b>	<b>3,979</b>	<b>100%</b>	<b>8,549</b>	<b>100%</b>	<b>161.2</b>
<b>Gender</b>							
Male	3,428	75%	3,051	77%	6,479	76%	246.2
Female	1,147	25%	928	23%	2,075	24%	77.7
<b>Total</b>	<b>4,575</b>	<b>100%</b>	<b>3,979</b>	<b>100%</b>	<b>8,554</b>	<b>100%</b>	<b>161.3</b>
<b>StateTotals</b>	<b>4,575</b>		<b>3,979</b>		<b>8,554</b>		<b>161.3</b>

## Notes

<sup>I</sup> Cases reported to MDH, assumed to be alive, and currently residing in Minnesota as of December 31, 2015.

<sup>II</sup> 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.

<sup>III</sup> Residence information missing for 61 persons living with HIV and 5 persons living with AIDS.

<sup>IV</sup> Age missing for 5 persons living with HIV and 0 persons living with AIDS.

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

Numbers exclude federal and private prisoners, but include 134 state prisoners, 167 refugees in the HIV-Positive Refugee Resettlement Program, and 175 additional refugees/immigrants with HIV infection prior to resettling in Minnesota.

Percentages may not add to 100 due to rounding.

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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<sup>1</sup> - Minnesota, 2016

	Males				Females				Total				
Group	HIV (non-AIDS)	AIDS	Total		HIV (non-AIDS)	AIDS	Total		HIV (non-AIDS)	AIDS	Grand Total		
			Cases	%			Cases	%			Cases	%	Rate <sup>III</sup>
Race/Ethnicity													
White, non-Hispanic	2,024	1,603	3,627	56%	271	209	480	23%	2,295	1,812	4,107	48%	93.2
Black <sup>II</sup> , African-American, non-Hispanic	660	621	1,281	20%	294	261	555	27%	954	882	1,836	21%	958.3
Black <sup>II</sup> , African-born, non-Hispanic	262	290	552	9%	421	310	731	35%	683	600	1,283	15%	1654.3
Hispanic, any race	293	363	656	10%	73	67	140	7%	366	430	796	9%	318.1
American Indian, non-Hispanic	27	36	63	1%	24	27	51	2%	51	63	114	1%	205.7
Asian/PI, non-Hispanic	70	60	130	2%	29	24	53	3%	99	84	183	2%	85.2
Other <sup>II</sup> , non-Hispanic	88	77	165	3%	32	30	62	3%	120	107	227	3%	X
Total	3,424	3,050	6,474	100%	1,144	928	2,072	100%	4,568	3,978	8,546	100%	161.1
Mode of Exposure													
MSM	2,371	1,869	4,240	65%	--	--	--	--	2,371	1,869	4,240	50%	X
IDU	106	150	256	4%	77	64	141	7%	183	214	397	5%	X
MSM/IDU	224	223	447	7%	--	--	--	--	224	223	447	5%	X
Heterosexual (Total)	(113)	(160)	(273)	4%	(914)	(760)	(1674)	82%	(1027)	(920)	(1947)	23%	X
With IDU	25	38	63	--	67	91	158	--	92	129	221	--	X
with Bisexual Male	-	-	-	--	47	46	93	--	47	46	93	--	X
with Hemophiliac/other	4	1	5	--	5	2	7	--	9	3	12	--	X

	Males				Females				Total				
Group	HIV (non-AIDS)	AIDS	Total		HIV (non-AIDS)	AIDS	Total		HIV (non-AIDS)	AIDS	Grand Total		
			Cases	%			Cases	%			Cases	%	Rate <sup>III</sup>
With HIV +	84	121	205	--	297	210	507	--	381	331	712	--	X
Hetero, unknown risk <sup>IV</sup>	0	0	0	--	498	411	909		498	411	909		
Perinatal	45	25	70	1%	64	20	84	4%	109	45	154	2%	X
Other	5	17	22	0%	3	3	6	0%	8	20	28	0%	X
Unspecified	382	413	795	12%	62	37	99	5%	444	450	894	11%	X
No Interview, Unspecified	179	192	371	6%	24	12	36	2%	203	204	407	5%	X
<b>Total</b>	<b>3,425</b>	<b>3,049</b>	<b>6,474</b>	<b>100%</b>	<b>1,144</b>	<b>896</b>	<b>2,040</b>	<b>100%</b>	<b>4,569</b>	<b>3,945</b>	<b>8,514</b>	<b>100%</b>	<b>160.5</b>

## Notes

<sup>I</sup> Cases reported to MDH, assumed to be alive and currently residing in Minnesota as of December 31, 2015.

<sup>II</sup> 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 or missing race.

<sup>III</sup> 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 (191,584) was calculated by subtracting the U.S. Census estimate for African-born persons (77,557) from the total Black population (269,141). Note that this assumes that all African-born persons are Black (as opposed to another race).

<sup>IV</sup> 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 134 state prisoners, 167 refugees in the HIV-Positive Refugee Resettlement Program, and 175 additional refugees/immigrants with HIV infection prior to resettling in Minnesota.

Percentages may not add to 100 due to rounding.

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Table 3. Number and Rate (per 100,000) of Persons Living with HIV (non-AIDS) and AIDS by County of Residence<sup>I</sup> -- Minnesota, 2016

County <sup>II</sup>	HIV (non-AIDS)	AIDS	Total	Rate <sup>III</sup>
Aitkin	4	3	7	43.2
Anoka	224	198	422	127.6
Becker	8	6	14	43.1
Beltrami	13	14	27	60.8
Benton	22	20	42	109.2
Big Stone	0	1	1	-
Blue Earth	18	21	39	60.9
Brown	4	6	10	38.6
Carlton	9	7	16	45.2
Carver	29	31	60	65.9
Cass	8	11	19	66.5
Chippewa	4	6	10	80.4
Chisago	11	8	19	35.3
Clay	21	18	39	66.1
Clearwater	2	1	3	-
Cook	1	3	4	-
Cottonwood	2	6	8	68.5
Crow Wing	8	8	16	25.6
Dakota	231	198	429	107.6
Dodge	3	3	6	29.9
Douglas	8	7	15	41.7
Faribault	1	6	7	48.1
Fillmore	8	1	9	43.1
Freeborn	6	6	12	38.4
Goodhue	8	10	18	39.0
Grant	4	4	8	132.9
Hennepin	2,524	2,043	4,567	396.3
Houston	3	5	8	42.0
Hubbard	3	5	8	39.2
Isanti	13	11	24	63.5
Itasca	8	9	17	37.7
Jackson	3	11	14	136.4
Kanabec	2	6	8	49.3
Kandiyohi	23	14	37	87.6



<b>County<sup>II</sup></b>	<b>HIV (non-AIDS)</b>	<b>AIDS</b>	<b>Total</b>	<b>Rate<sup>III</sup></b>
Kittson	1	1	2	-
Koochiching	0	1	1	-
Lac Qui Parle	1	2	3	-
Lake	2	1	3	-
Lake of the Woods	0	0	0	-
Le Sueur	7	6	13	46.9
Lincoln	3	1	4	-
Lyon	8	2	10	38.7
McLeod	12	12	24	65.5
Mahnomen	0	1	1	-
Marshall	1	0	1	-
Martin	9	6	15	72.0
Meeker	6	3	9	38.6
Mille Lacs	3	10	13	49.8
Morrison	4	8	12	36.1
Mower	28	37	65	166.0
Murray	3	0	3	-
Nicollet	7	9	16	48.9
Nobles	11	11	22	102.9
Norman	2	0	2	-
Olmsted	76	84	160	110.9
Otter Tail	11	4	15	26.2
Pennington	3	2	5	35.9
Pine	8	6	14	47.1
Pipestone	2	0	2	-
Polk	6	12	18	57.0
Pope	3	4	7	63.7
Ramsey	709	672	1,381	271.5
Red Lake	0	1	1	-
Redwood	2	1	3	-
Renville	2	6	8	50.9
Rice	35	29	64	99.8
Rock	3	3	6	61.9
Roseau	2	0	2	-
St. Louis	75	82	157	78.4
Scott	50	59	109	83.9
Sherburne	23	19	42	47.5
Sibley	1	2	3	-
Stearns	29	40	69	45.8
Steele	5	6	11	30.1

<b>County<sup>I</sup></b>	<b>HIV (non-AIDS)</b>	<b>AIDS</b>	<b>Total</b>	<b>Rate<sup>III</sup></b>
Stevens	1	1	2	-
Swift	1	2	3	-
Todd	1	0	1	-
Traverse	0	0	0	-
Wabasha	2	5	7	32.3
Wadena	2	1	3	-
Waseca	5	4	9	47.0
Washington	117	77	194	81.5
Watonwan	1	1	2	-
Wilkin	1	3	4	-
Winona	19	8	27	52.5
Wright	25	22	47	37.7
Yellow Medicine	0	2	2	-
<b>State Total<sup>I</sup></b>	<b>4,564</b>	<b>3,976</b>	<b>8,540</b>	<b>173.6</b>

## Notes

<sup>I</sup> Cases reported to the MDH, assumed to be alive and currently residing in a Minnesota county as of December 31, 2016.

<sup>II</sup> Residence information missing for 12 persons living with HIV and 3 persons living with AIDS. Total rate is based on all cases in the state (n=8,554)

Numbers by county exclude federal, and private prisoners, but include 168 refugees in the HIV-Positive Refugee Resettlement Program and 171 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 prisoners is 157. State correctional facilities are located in the following counties: Anoka, Carlton, Chisago, Goodhue, Itasca, Rice, Scott, Sherburne, and Washington.

<sup>III</sup> 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.

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Table 4. Number of HIV (non-AIDS) Cases, AIDS Cases, AIDS Deaths, People Living with HIV/AIDS (PLWHA), and All Deaths<sup>I</sup> Minnesota 2005-2016

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>HIV (non-AIDS)</b>	247	271	265	249	280	248	220	237	219	238	232	229
<b>AIDS<sup>II</sup></b>	216	196	189	202	190	181	186	199	164	168	146	131
<b>PLWHA</b>	5,233	5,566	5,950	6,221	6,552	6,814	7,136	7,516	7,723	7,988	8,215	8,554
<b>All deaths</b>	116	108	127	114	126	111	133	105	123	157	106	67

## Notes

<sup>I</sup> 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. All deaths= Number of deaths known to have occurred among all people living with HIV infection in Minnesota, regardless of location of diagnosis and cause of death.

<sup>II</sup>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.

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 Minnesota HIV Surveillance Report, 2015 New HIV Infections, Table 1 for cumulative totals.

Case numbers exclude federal and private prisoners.

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