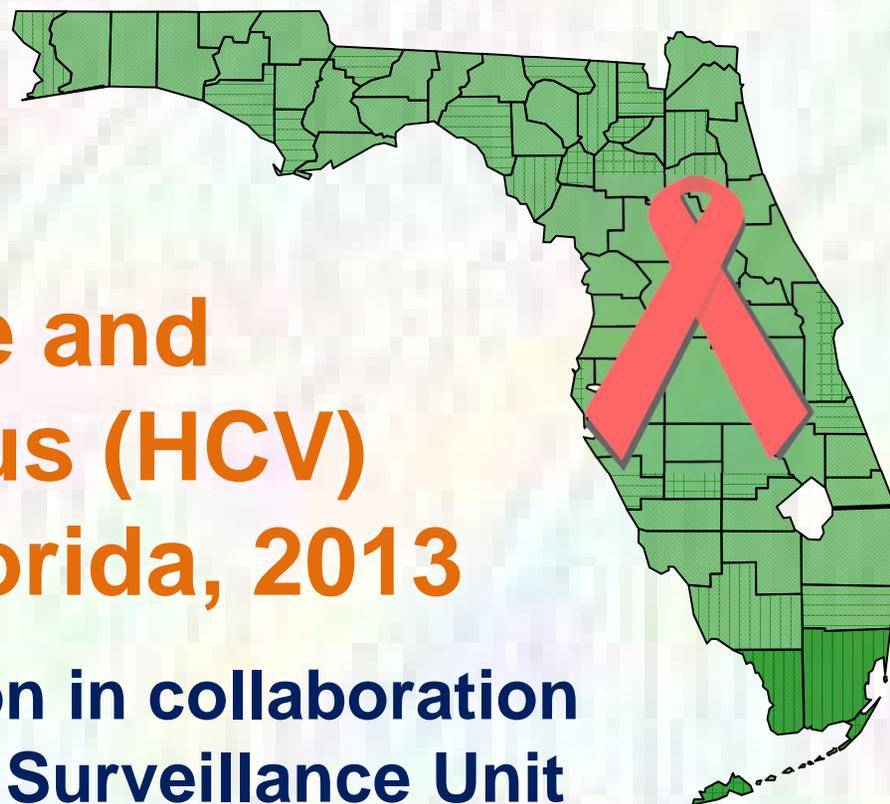


To protect, promote and improve the health of all people in Florida through integrated state, county, and community efforts.



HIV Disease and Hepatitis C Virus (HCV) Co-Infection – Florida, 2013

**STD and Hepatitis Section in collaboration
with HIV/AIDS Section – Surveillance Unit
Division of Disease Control and Health Protection**

HIV Disease data from 1981 through December 2013

Hepatitis C data from 2003-2013

Data sources: HIV/AIDS Reporting System & MERLIN

Created: 12/21/13

Revision: 09/03/14



HIV/HCV

Co-Infection - Florida

- This presentation contains data acquired from matching cases living with HIV disease through 2013 and reported in the HIV/AIDS database (eHARS) **WITH** the acute and chronic HCV data (confirmed, probable and suspect cases) reported between 2003 – 2013 in the MERLIN database.
- All matched cases and HIV disease cases noting a history of HCV in eHARS were considered co-infected with HIV and HCV and were analyzed further. County data exclude Department of Correction (DOC) cases.

HIV/HCV

Co-Infection – Florida (cont)

- Infection with more than one pathogen is called co-infection. When modes of transmission for pathogens are the same or significantly overlap, which can occur with HIV and hepatitis, infection with more than one pathogen is likely.
- Potentially severe concurrent illnesses to HIV infection, like viral hepatitis, may increase mid- to long-range morbidity and mortality. Chronic hepatitis C is common in the HIV-infected population. Infection by hepatitis viruses in HIV-infected patients may impact health status, decrease quality of life and increase health care costs.

Cases Living with HIV Disease

- Ⓡ Data in these slides represent cases living with HIV disease, also referred to as Persons Living with HIV/AIDS (PLWHAs), who were reported through the most recent calendar year. Living data are also referred to as prevalence cases.**
- Ⓡ HIV prevalence data are generated later in the year, usually in July, when most of the “expected” death data are complete.**
- Ⓡ Adult cases represent ages 13 and older, pediatric cases are those under the age of 13. For data by year, the age is by age of diagnosis. For living data, the age is by current age at the end of the most recent calendar year, regardless of age at diagnosis.**
- Ⓡ Unless otherwise noted, whites are non-Hispanic and blacks are non-Hispanic.**
- Ⓡ Total statewide data will include Department of Correction (DOC) cases unless otherwise noted. County data will exclude DOC cases.**

HIV/HCV

Co-Infection – Florida (cont)

- HCV is *more* serious in HIV-infected persons. It leads to liver damage more quickly. Co-infection with HCV may also affect the treatment of HIV infection.
- Therefore, it is important for HIV-infected persons to know whether they are also infected with HCV and, if they aren't, to take steps to prevent infection.

HIV/HCV

Co-Infection – Florida (cont)

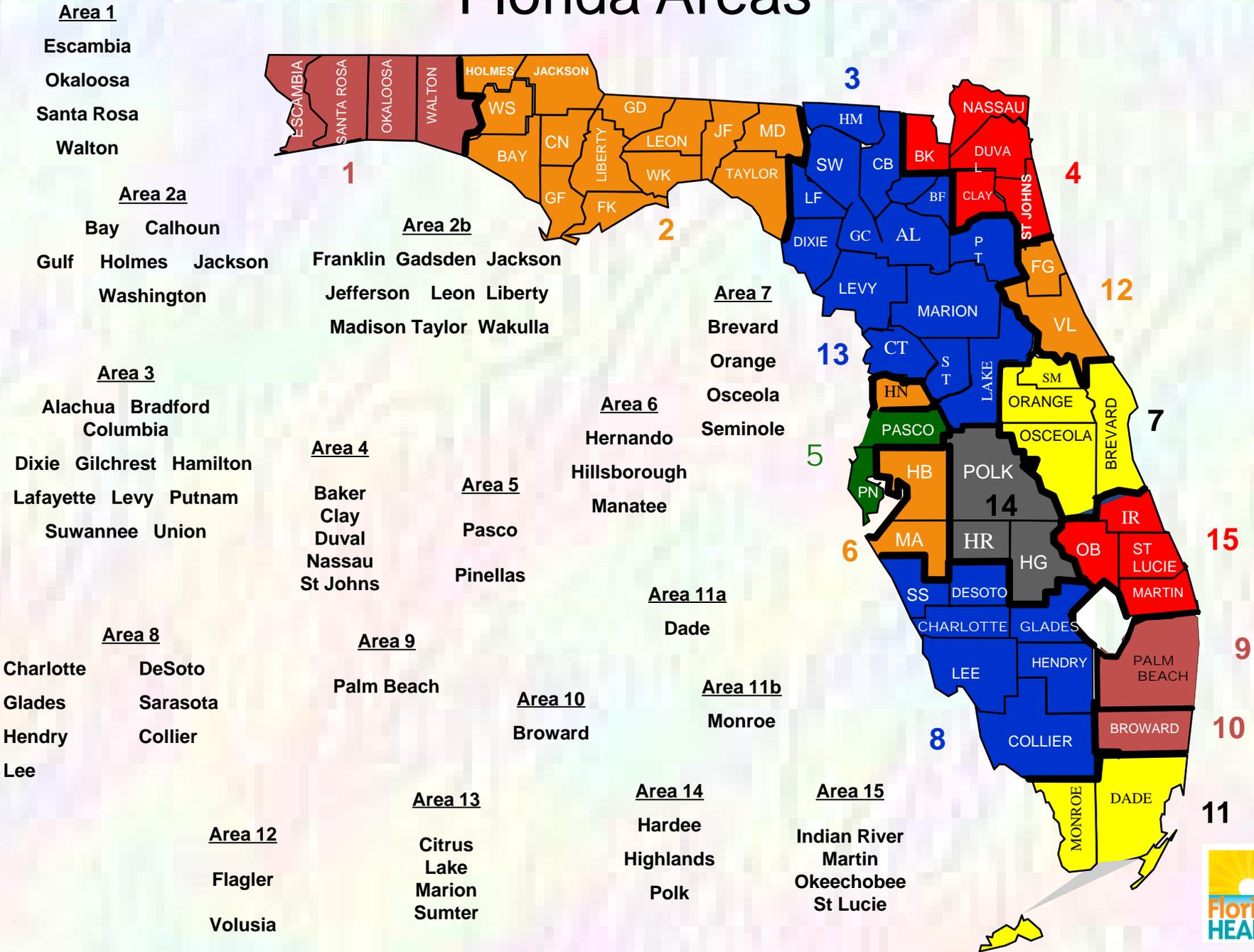
- Injection drug use is one of the main ways people become infected with HIV and with HCV. In fact, 50%-90% of HIV-infected injection drug users are also co-infected with HCV.
- Persons who received blood products for either hemophilia or a transfusion prior to 1987 are at increased risk of HCV infection.
- Heterosexual sex or perinatal exposure can also transmit HCV infection. However, these risks are much lower for acquiring HCV than for acquiring HIV.

HIV/HCV

Co-Infection – Florida (cont)

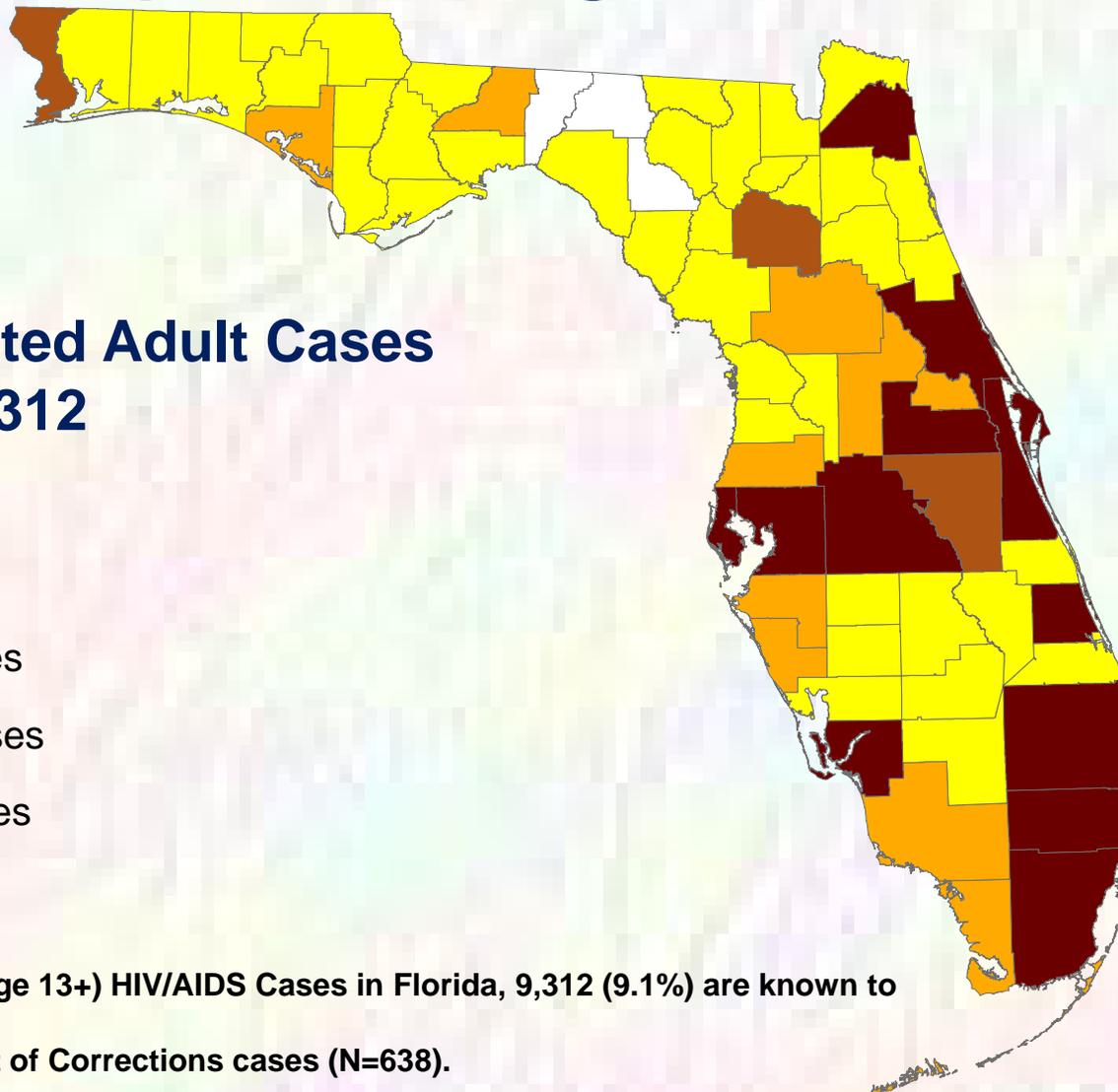
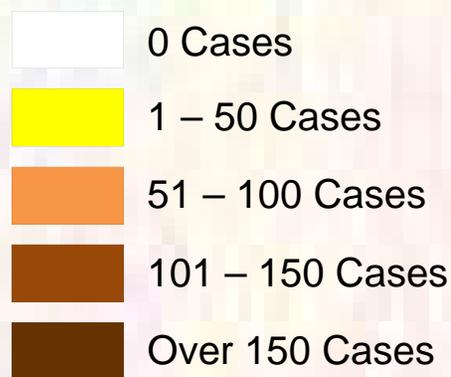
- Limitations of the data:
 - Documentation of hepatitis C is **NOT** complete.
 - One-third to one-half of people chronically infected with HCV are unaware of their infection and have not been reported into MERLIN (the reporting system for HCV).
 - Social Security Numbers are usually **NOT** reported in MERLIN, making it impossible to validate many cases who are reported in both MERLIN and the HIV/AIDS reporting system.
- Therefore, keep in mind that these data represent a *minimal estimate* of HIV/HCV co-infection in Florida.

Florida Areas



HIV/HCV Co-infected Adult Cases, by County of Residence,* Living and Reported through 2013, Florida

HIV/HCV Co-infected Adult Cases N=9,312



Note: Of the 102,189 living adult (age 13+) HIV/AIDS Cases in Florida, 9,312 (9.1%) are known to be co-infected with HIV/HCV.

*County totals exclude Department of Corrections cases (N=638).

HIV/HCV Co-infected Adult Cases, by County of Residence,* Living and Reported through 2013, Florida

ALACHUA CO.	102	GLADES CO.	2	OKEECHOBEE CO.	8
BAKER CO.	4	GULF CO.	2	ORANGE CO.	692
BAY CO.	54	HAMILTON CO.	2	OSCEOLA CO.	118
BRADFORD CO.	2	HARDEE CO.	6	PALM BEACH CO.	565
BREVARD CO.	175	HENDRY CO.	8	PASCO CO.	98
BROWARD CO.	1,491	HERNANDO CO.	20	PINELLAS CO.	411
CALHOUN CO.	1	HIGHLANDS CO.	19	POLK CO.	202
CHARLOTTE CO.	28	HILLSBOROUGH CO.	603	PUTNAM CO.	26
CITRUS CO.	22	HOLMES CO.	2	SANTA ROSA CO.	13
CLAY CO.	26	INDIAN RIVER CO.	34	SARASOTA CO.	93
COLLIER CO.	65	JACKSON CO.	8	SEMINOLE CO.	83
COLUMBIA CO.	16	LAKE CO.	57	ST JOHNS CO.	22
DADE CO.	2,042	LEE CO.	187	ST LUCIE CO.	155
DE SOTO CO.	11	LEON CO.	55	SUMTER CO.	10
DIXIE CO.	4	LEVY CO.	8	SUWANNEE CO.	4
DUVAL CO.	475	LIBERTY CO.	1	TAYLOR CO.	1
ESCAMBIA CO.	128	MANATEE CO.	86	UNION CO.	3
FLAGLER CO.	13	MARION CO.	89	VOLUSIA CO.	163
FRANKLIN CO.	1	MARTIN CO.	29	WAKULLA CO.	1
GADSDEN CO.	9	MONROE CO.	72	WALTON CO.	2
GILCHRIST CO.	3	NASSAU CO.	8	WASHINGTON CO.	1
		OKALOOSA CO.	33		

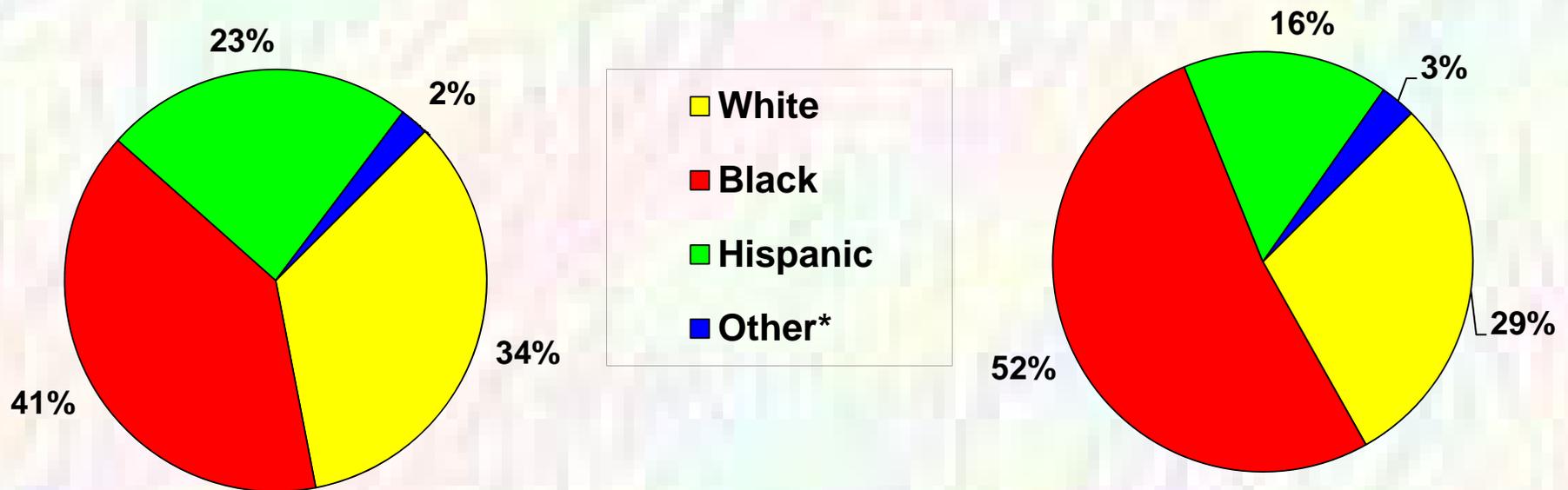
* County totals exclude Department of Corrections cases (N=638).



HIV/HCV Co-infected Adult Cases, by Race/Ethnicity, Living and Reported through 2013, Florida

Males
N=6,542

Females
N=2,768

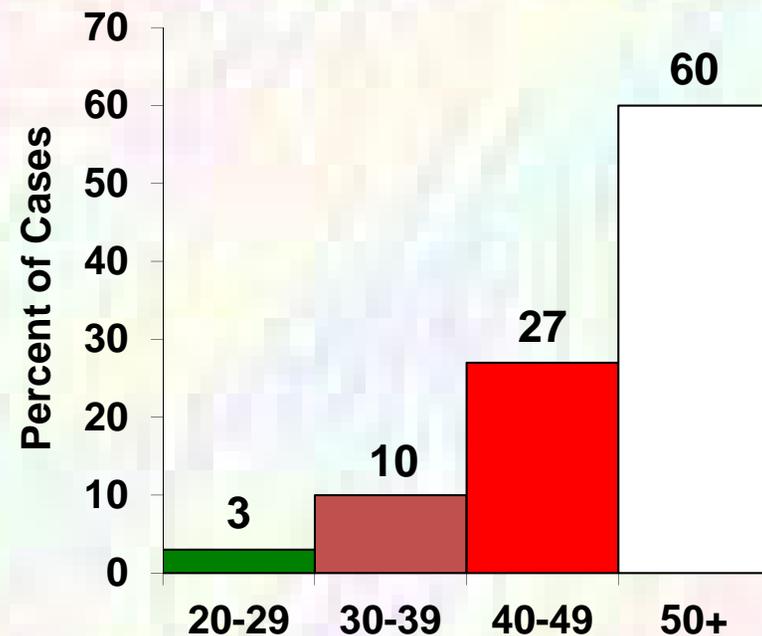
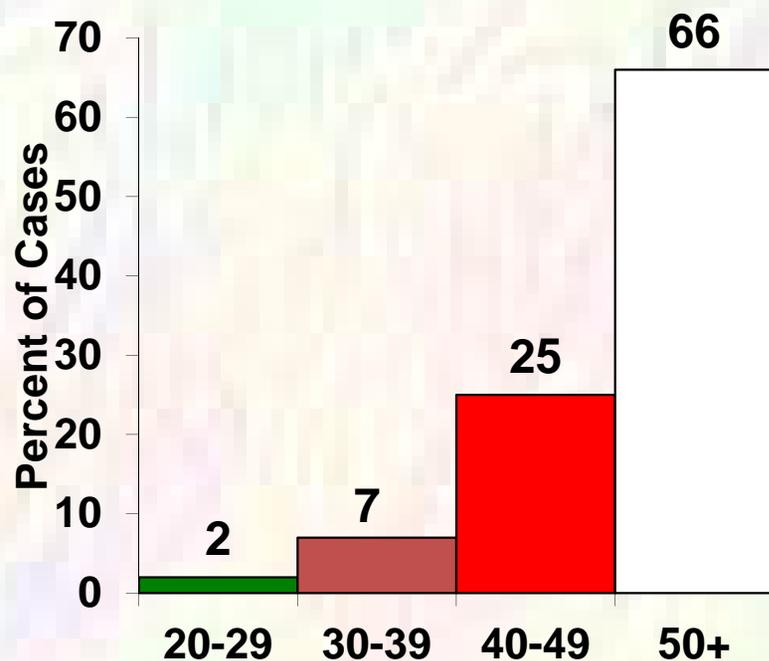


Note: Of the living HIV/HCV Co-infected Adult Cases through 2013: among males 41% are black, 34% are white and 23% are Hispanic. Among females, 52% are black, 29% are white and 16% are Hispanic.
*Other includes Asian/Pacific Islanders , Native Alaskans/American Indians and mixed races.

HIV/HCV Co-infected Adult Cases, by Sex and Current Age Group, Living and Reported through 2013, Florida

Males
N=6,542

Females
N=2,768



Comment: In this snapshot of living HIV/HCV Co-infected Adult Cases through 2013, the highest proportion of cases for both males and females was among persons aged 50 and older.



Definitions of Mode of Exposure Categories

- ◆ **MSM** = Men who have sex with men
- ◆ **IDU** = Injection Drug User
- ◆ **MSM/IDU** = Men who have sex with men & Injection Drug User
- ◆ **Heterosexual** = Heterosexual contact with person with HIV/AIDS or known HIV risk
- ◆ **OTHER** = includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.
- ◆ **NIR** = Cases reported with No Identified Risk
- ◆ **Redistribution of NIRs** = This illustrates the effect of statistically assigning (redistributing) the NIRs to recognized exposure (risk) categories by applying the proportions of historically reclassified NIRs to the unresolved NIRs.

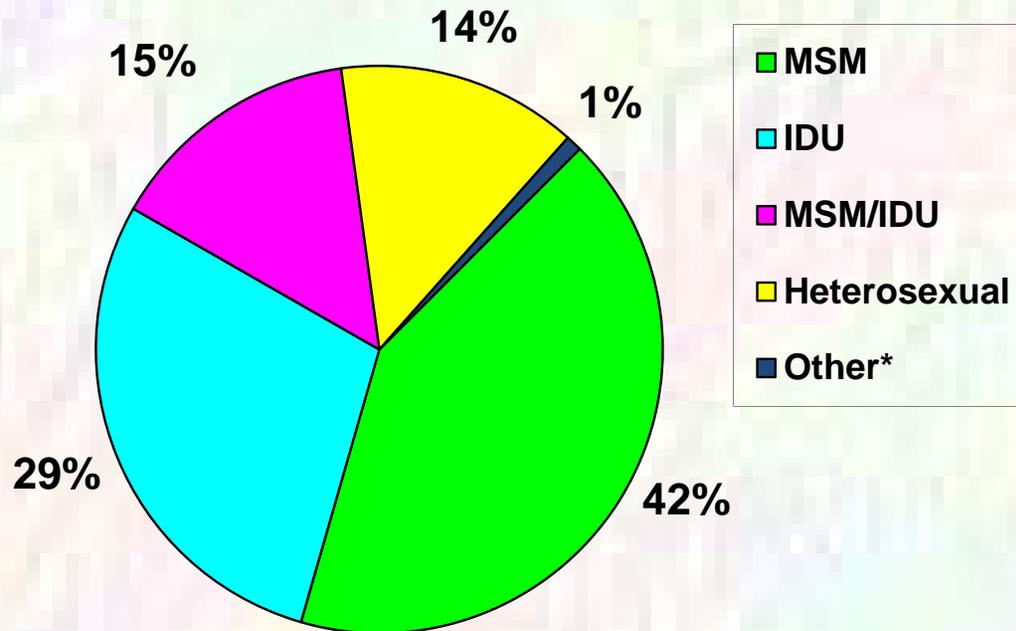
HIV/HCV co-infection is increasingly recognized worldwide. Rates are particularly high -- up to 90% -- among injection drug users (IDUs), since both viruses are readily transmitted via shared needles and other injection equipment.

Source: Matthews, G. V., & Dore, G. J. (2008). HIV and hepatitis C coinfection. *Journal Of Gastroenterology & Hepatology*, 23(7pt1), 1000-1008. Retrieved on March 21, 2014 from Academic Search Complete database, EBSCOhost. doi:10.1111/j.1440-1746.2008.05489.x

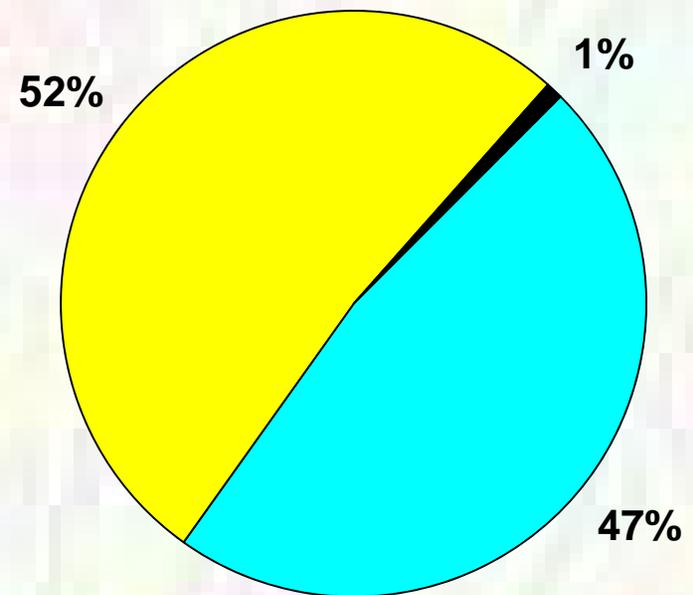


HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Florida

Males
N=6,542



Females
N=2,768

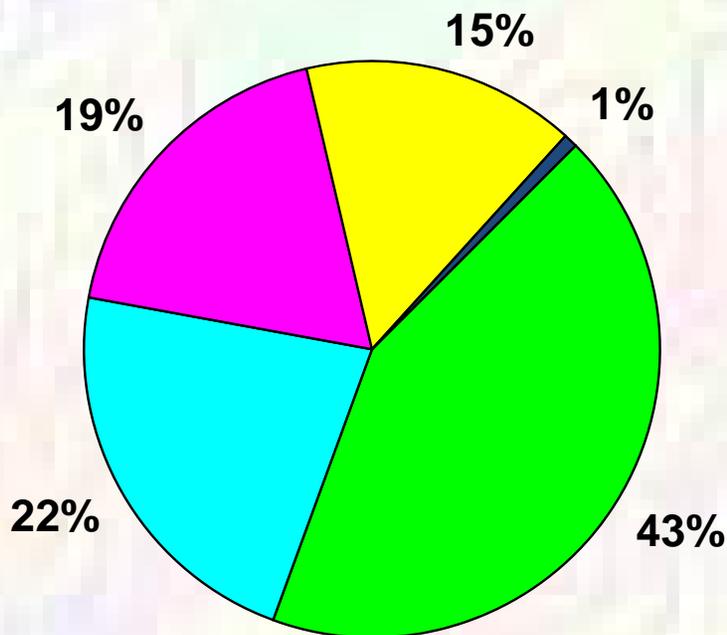


Note: Of the 102,189 living adult (age 13+) HIV/AIDS cases in Florida through 2013, 9% were known to be co-infected with HIV/HCV; Overall, 44% of males and 47% of females have a documented IDU-related risk.

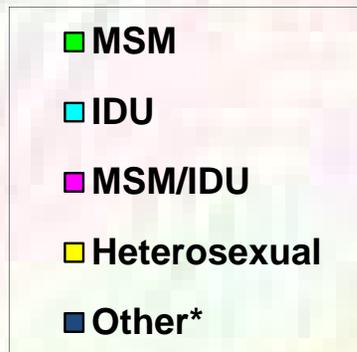
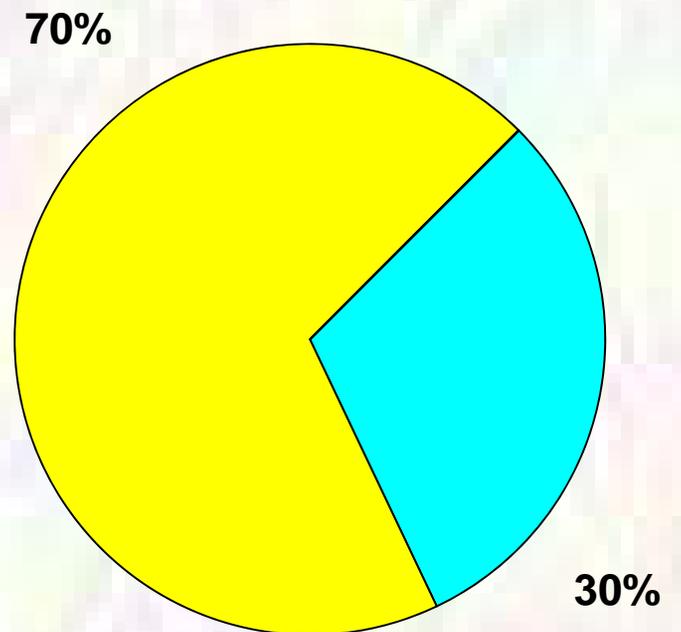
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks. NIRs redistributed.

HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 1

**Males
N=130**



**Females
N=46**



Note: Of the 1,695 living adult (age 13+) HIV/AIDS Cases in Area 1 through 2013, 10% were known to be co-infected with HIV/HCV. Overall, 41% of males and 30% of females have a documented IDU-related risk.

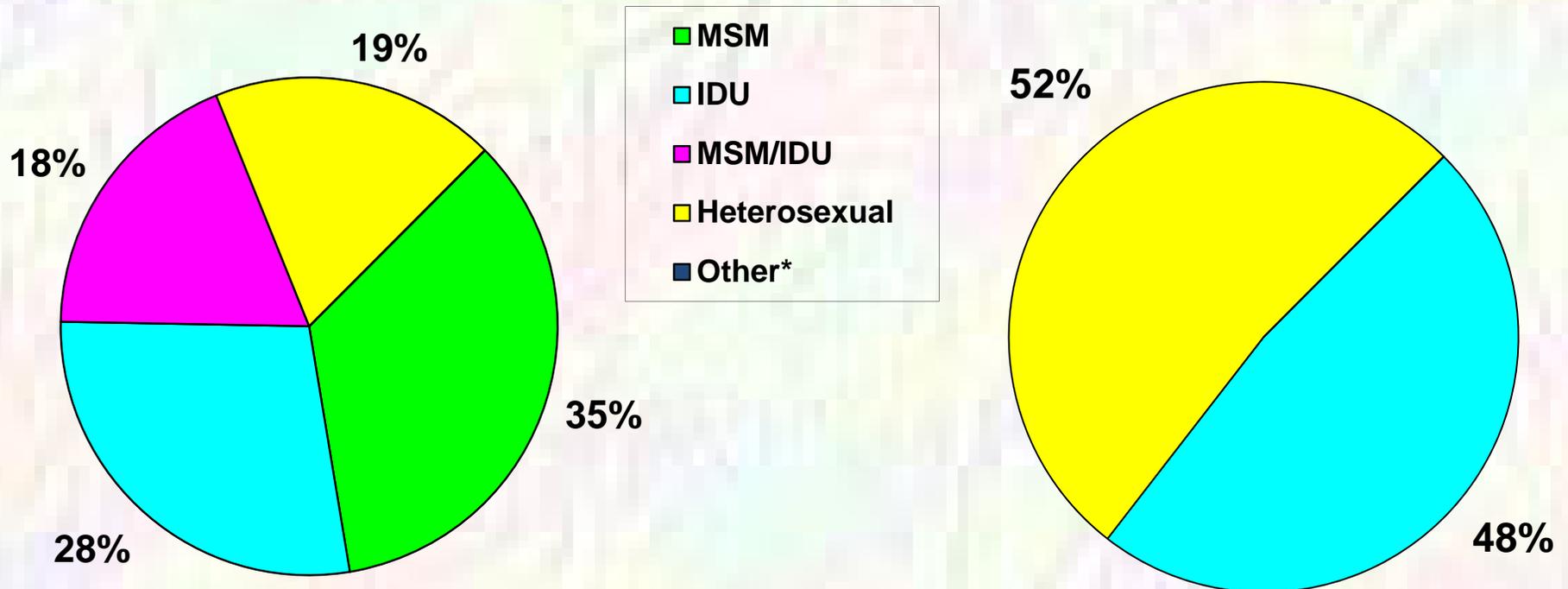
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 2a

**Males
N=43**

**Females
N=25**



Note: Of the 576 living adult (age 13+) HIV/AIDS Cases in Area 2a through 2013, 12% were known to be co-infected with HIV/HCV. Overall, 46% of males and 48% of females have a documented IDU-related risk.

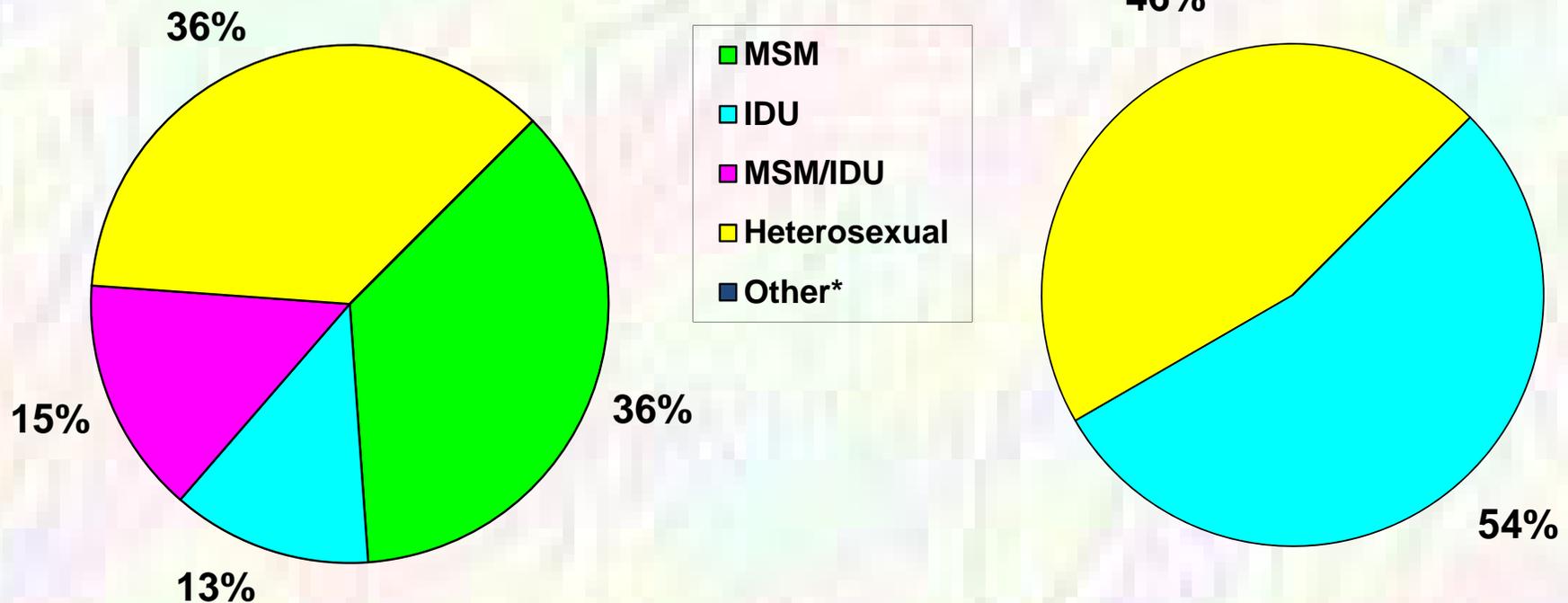
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 2b

**Males
N=44**

**Females
N=24**



Note: Of the 1,567 living adult (age 13+) HIV/AIDS Cases in Area 2b through 2013, 4% were known to be co-infected with HIV/HCV. Overall, 28% of males and 54% of females have a documented IDU-related risk.

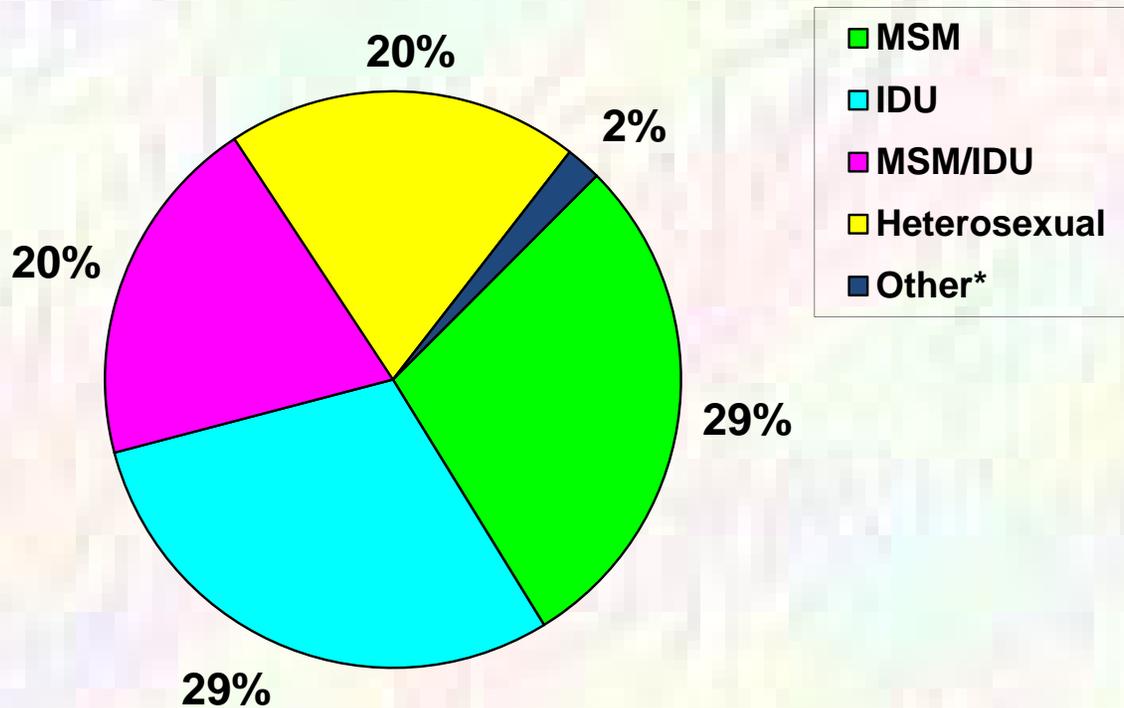
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

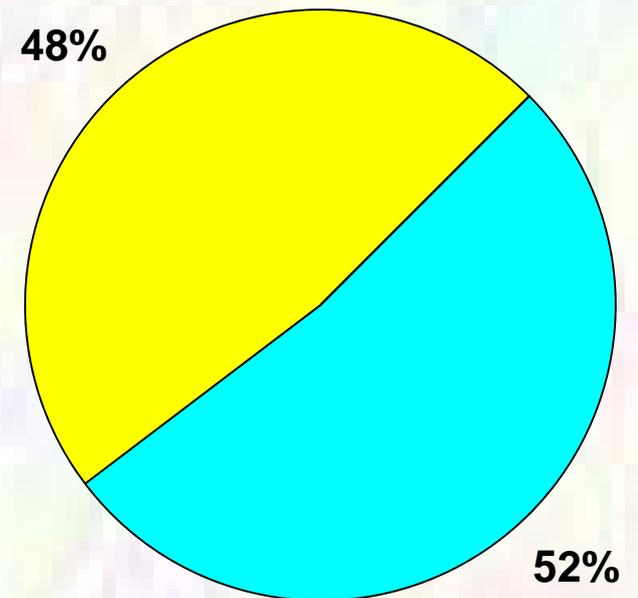


HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 3

**Males
N=101**



**Females
N=69**



Note: Of the 1,607 living adult (age 13+) HIV/AIDS Cases in Area 3 through 2013, 11% were known to be co-infected with HIV/HCV. Overall, 49% of males and 52% of females have a documented IDU-related risk.

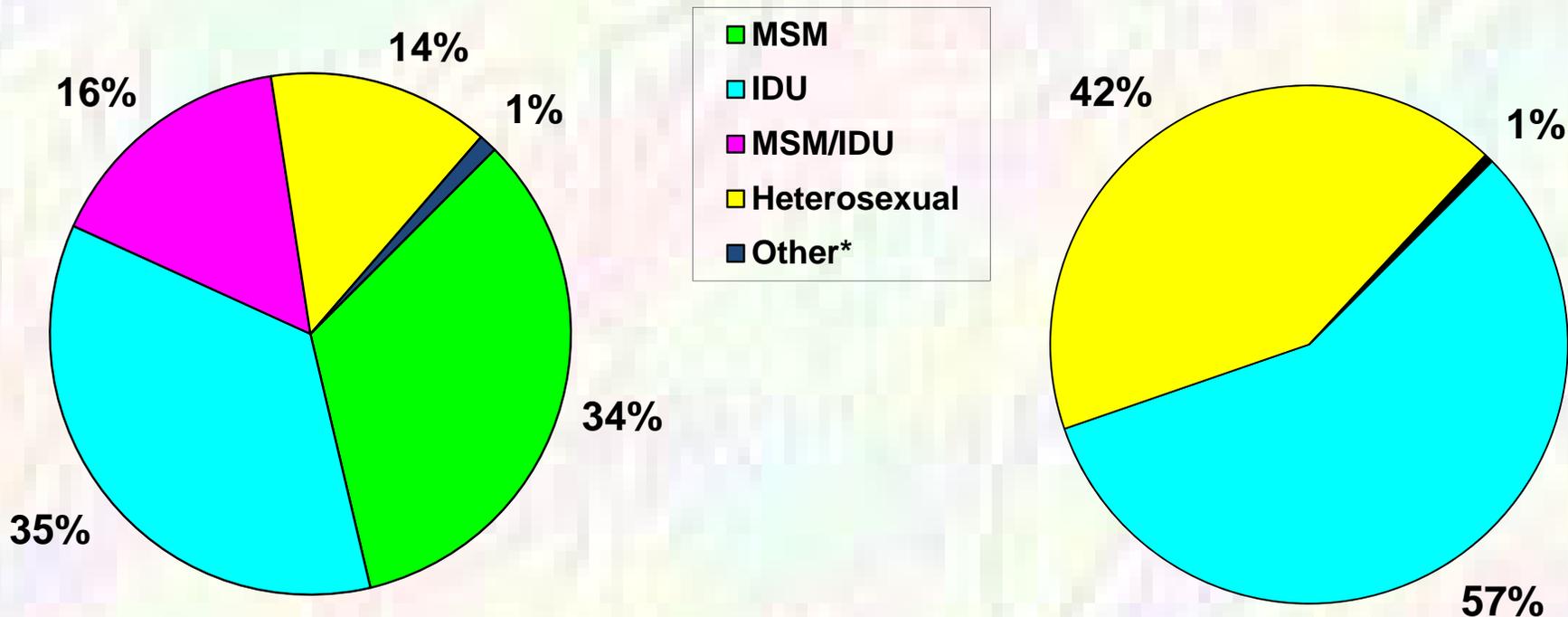
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 4

**Males
N=355**

**Females
N=180**



Note: Of the 6,312 living adult (age 13+) HIV/AIDS Cases in Area 4 through 2013, 8% were known to be co-infected with HIV/HCV. Overall, 51% of males and 57% of females have a documented IDU-related risk.

* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

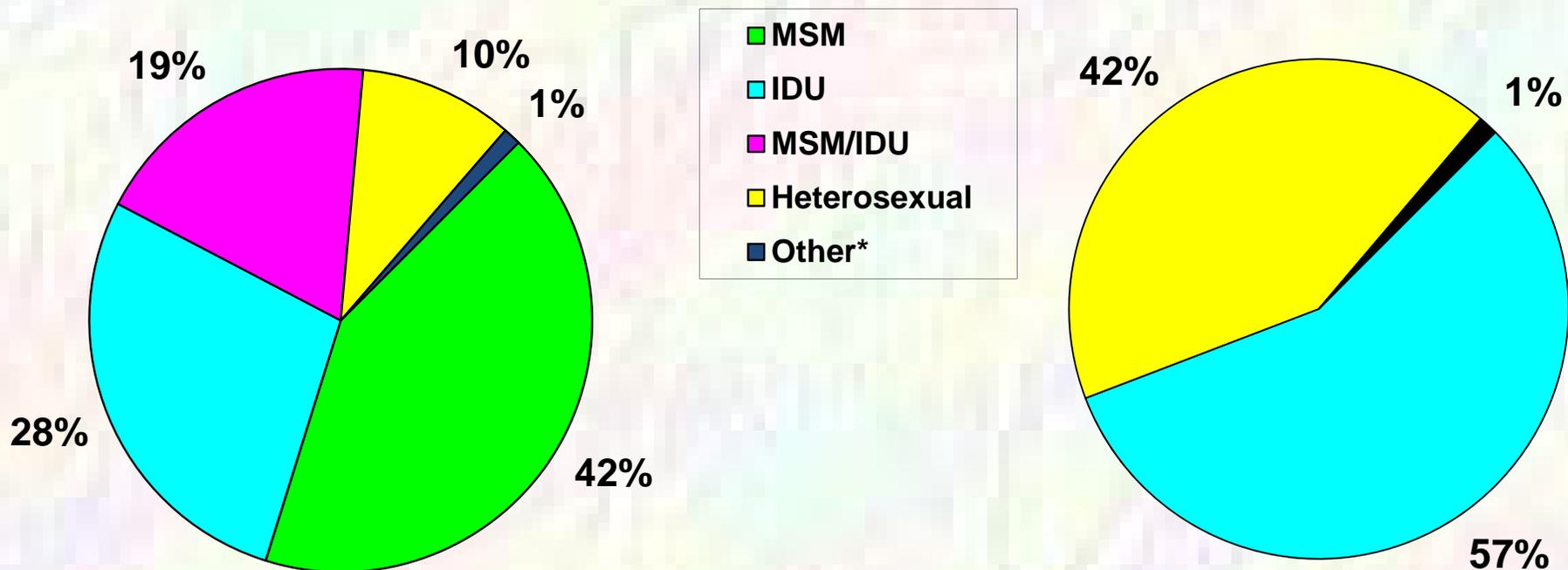
Note: NIRs have been redistributed.



HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 5

**Males
N=352**

**Females
N=157**



Note: Of the 4,385 living adult (age 13+) HIV/AIDS Cases in Area 5 through 2013, 12% were known to be co-infected with HIV/HCV. Overall, 47% of males and 57% of females have a documented IDU-related risk.

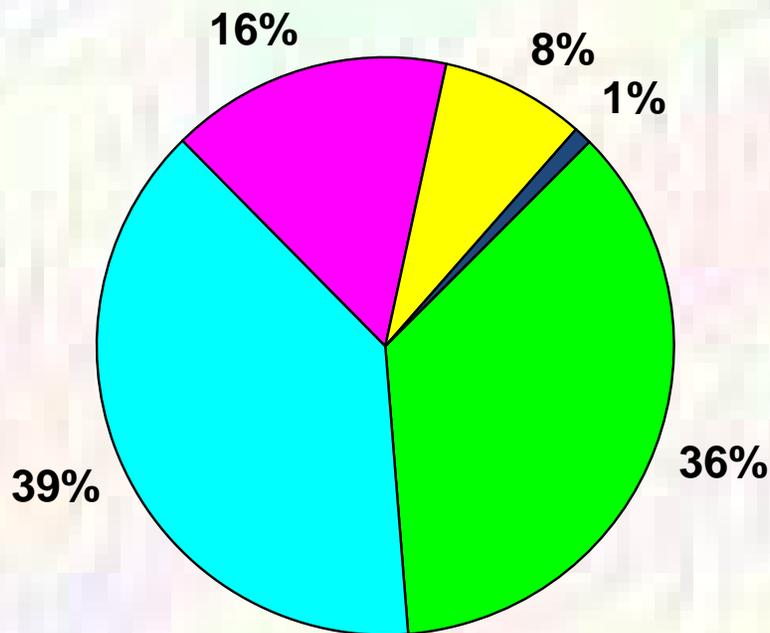
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

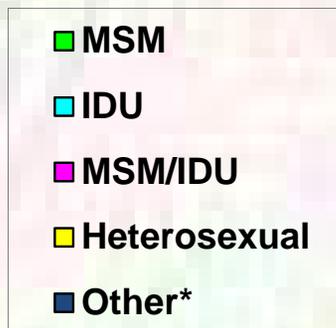
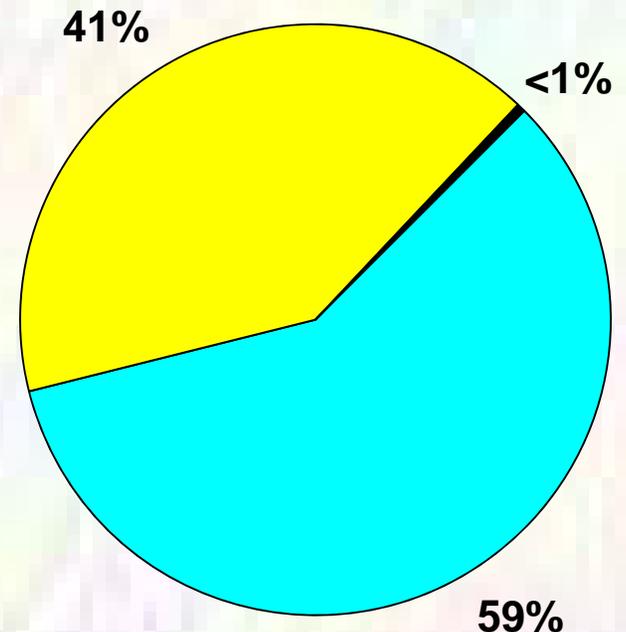


HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 6

**Males
N=494**



**Females
N=215**



Note: Of the 7,360 living adult (age 13+) HIV/AIDS Cases in Area 6 through 2013, 10% were known to be co-infected with HIV/HCV. Overall, 55% of males and 59% of females have a documented IDU-related risk.

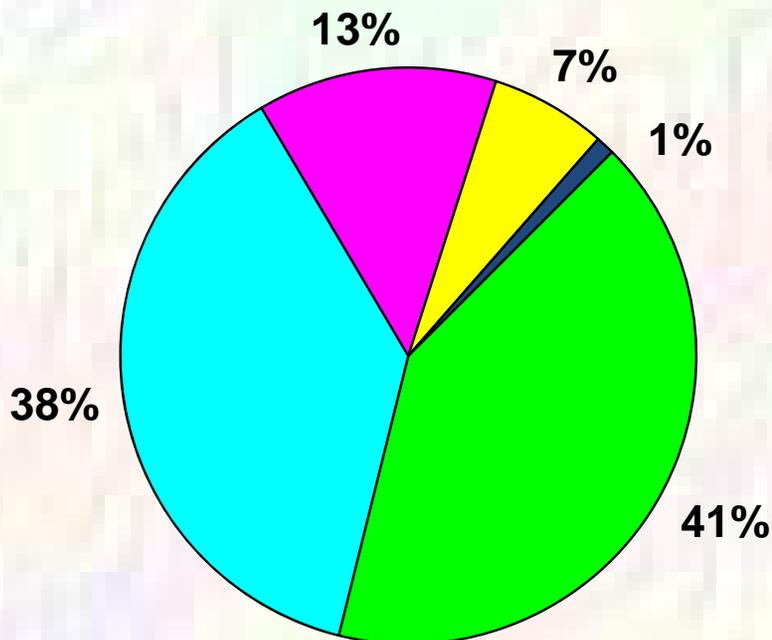
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

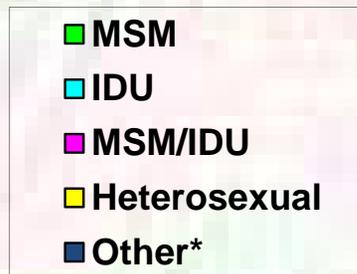
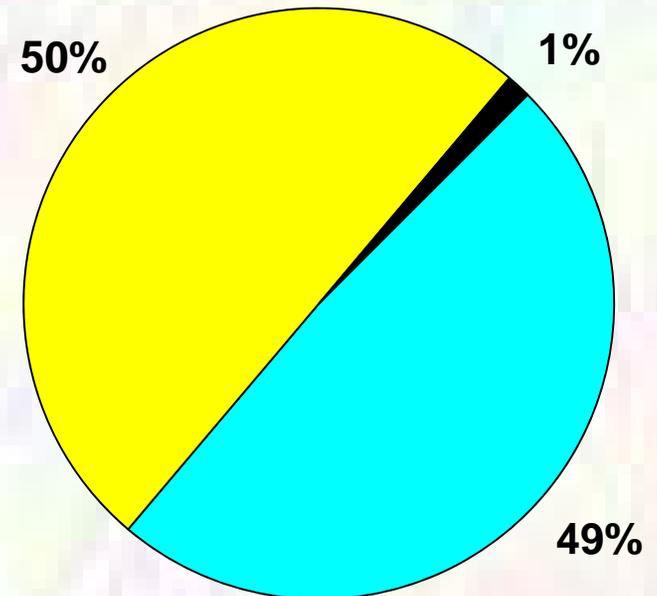


HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 7

**Males
N=766**



**Females
N=302**



Note: Of the 10,745 living adult (age 13+) HIV/AIDS Cases in Area 7 through 2013, 10% were known to be co-infected with HIV/HCV. Overall, 51% of males and 49% of females have a documented IDU-related risk.

* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

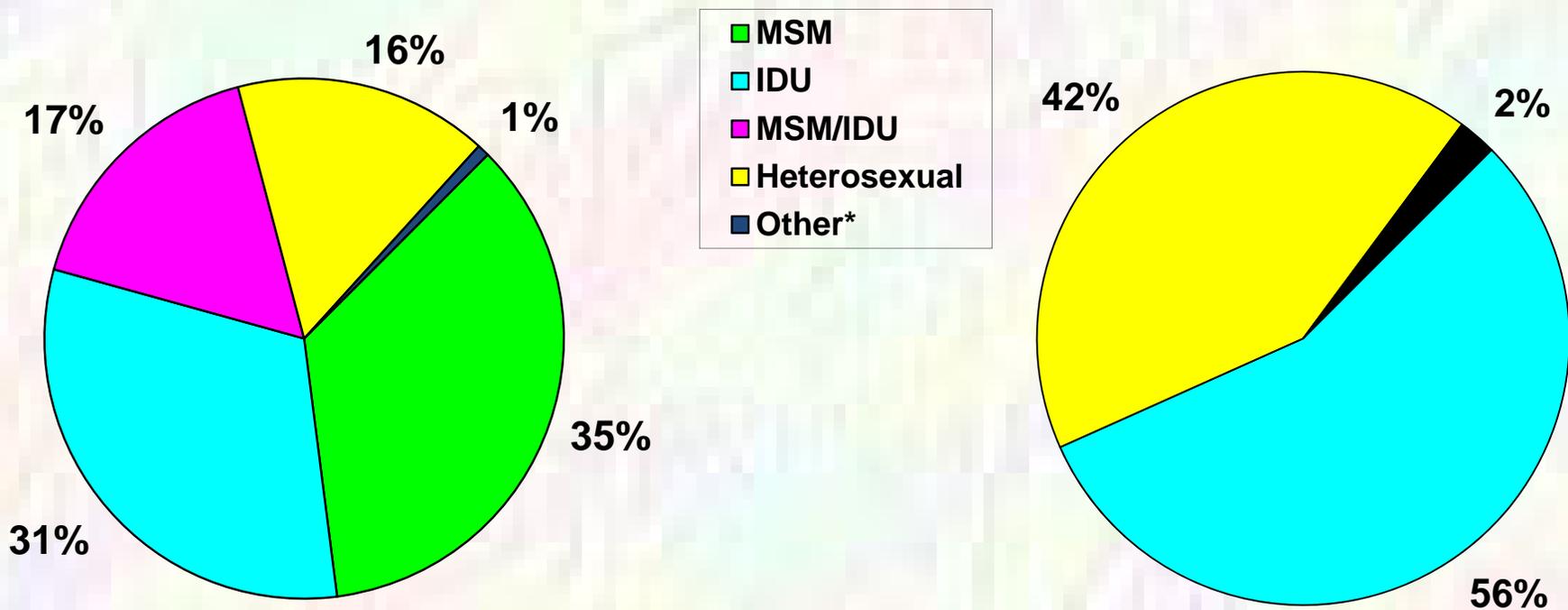
Note: NIRs have been redistributed.



HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 8

**Males
N=265**

**Females
N=129**



Note: Of the 4,028 living adult (age 13+) HIV/AIDS Cases in Area 8 through 2013, 10% were known to be co-infected with HIV/HCV. Overall, 48% of males and 56% of females have a documented IDU-related risk.

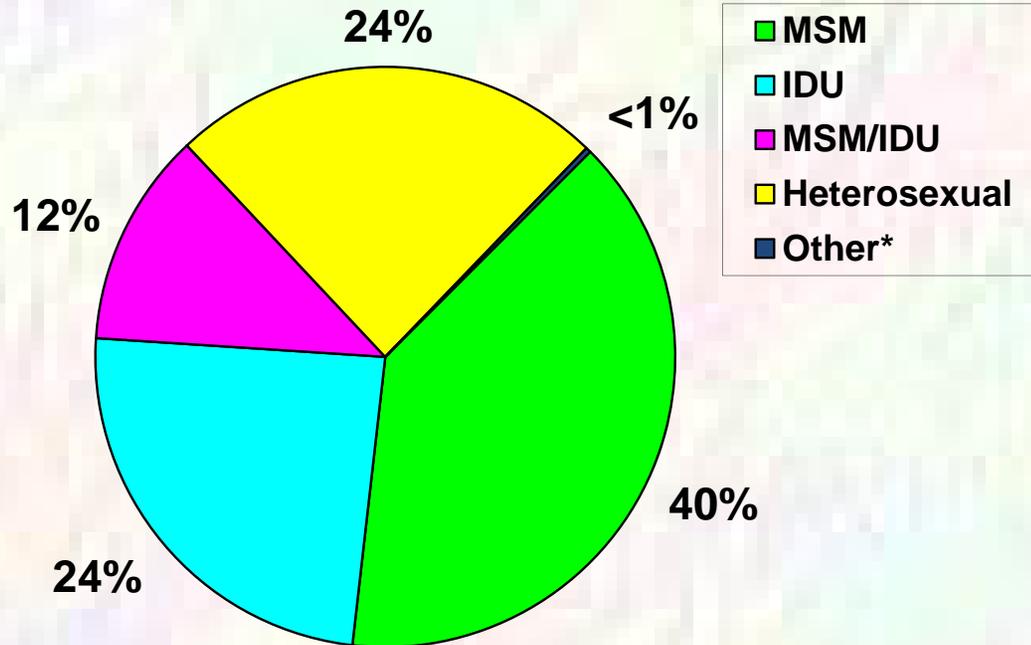
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

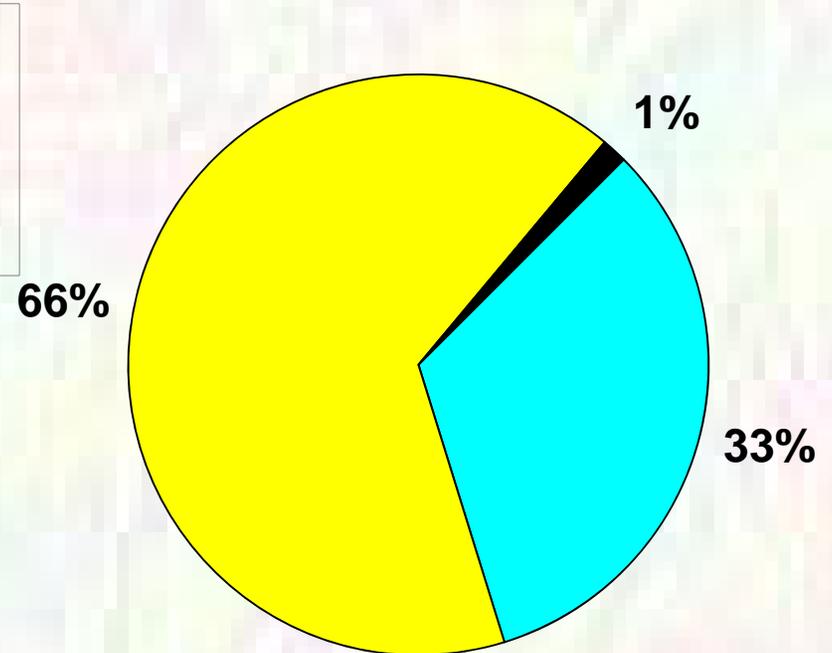


HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 9

**Males
N=351**



**Females
N=214**



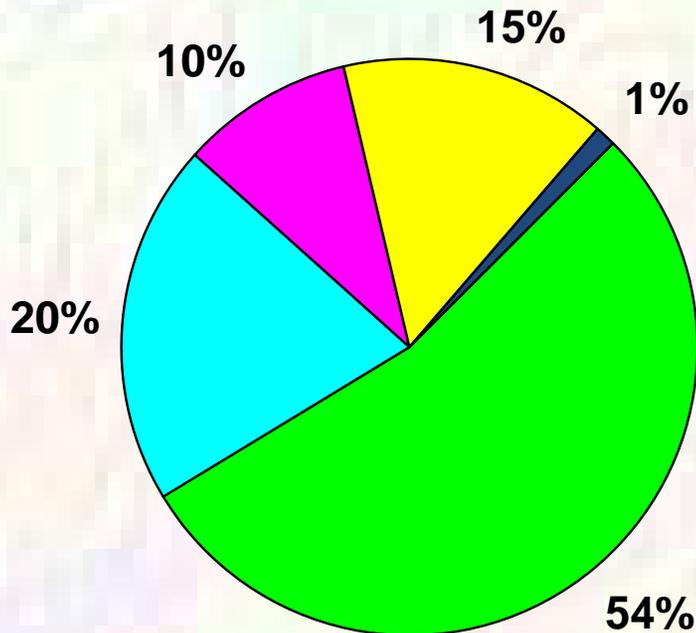
Note: Of the 7,981 living adult (age 13+) HIV/AIDS Cases in Area 9 in 2013, 7% were known to be co-infected with HIV/HCV. Overall, 36% of males and 33% of females have a documented IDU-related risk. This area has the lowest proportion of HIV/HCV co-infected cases in the state.

* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

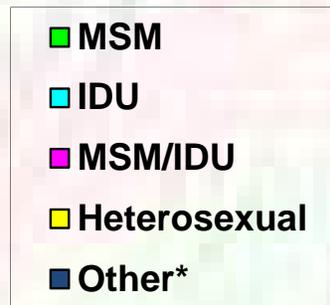
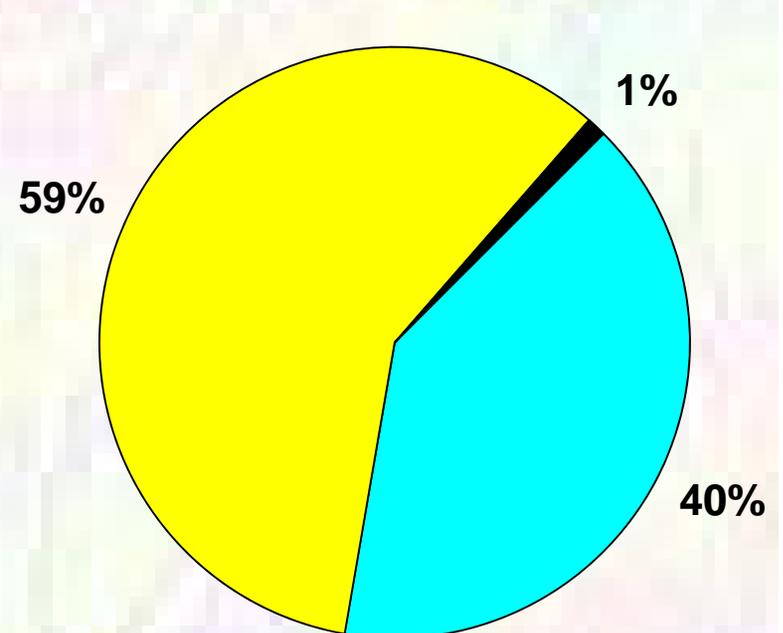
Note: NIRs have been redistributed.

HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 10

Males
N=1,113



Females
N=378



Note: Of the 17,248 living adult (age 13+) HIV/AIDS Cases in Area 10 through 2013, 9% were known to be co-infected with HIV/HCV. Overall, 30% of males and 40% of females have a documented IDU-related risk.

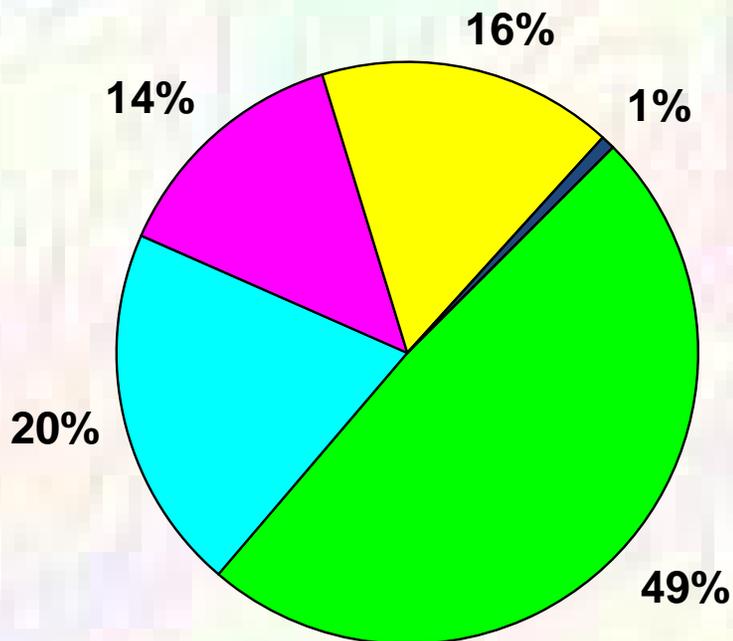
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

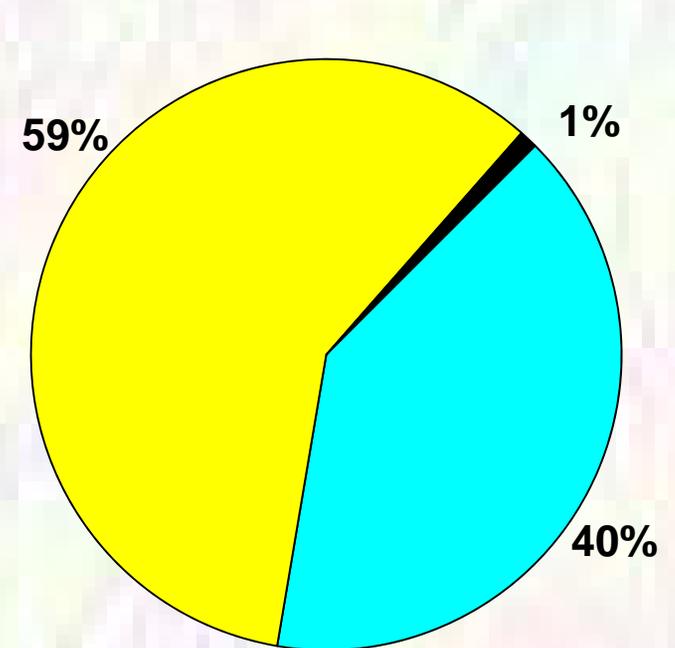


HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 11a

**Males
N=1,440**



**Females
N=600**



Note: Of the 26,490 living adult (age 13+) HIV/AIDS Cases in Area 11a through 2013, 8% were known to be co-infected with HIV/HCV. Overall, 34% of males and 40% of females have a documented IDU-related risk.

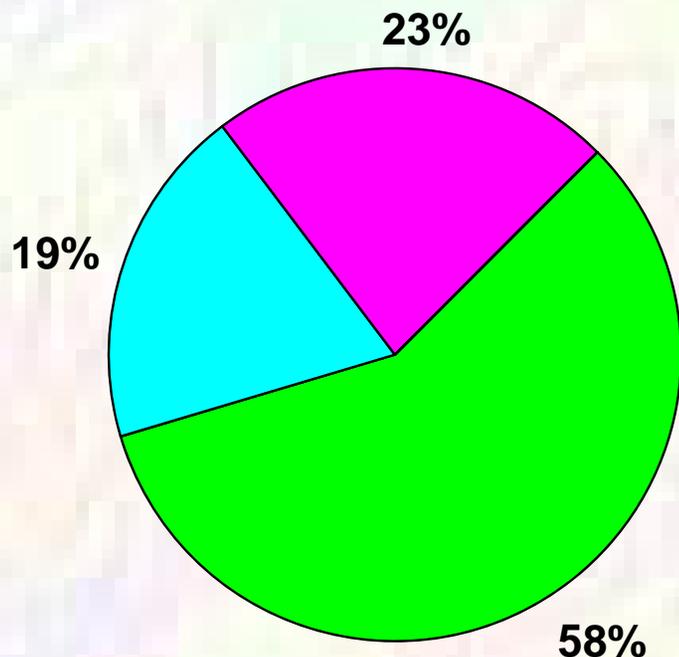
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

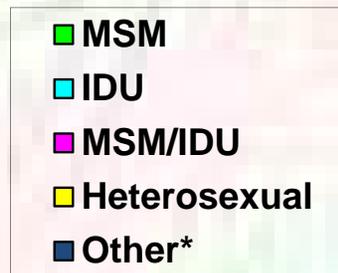
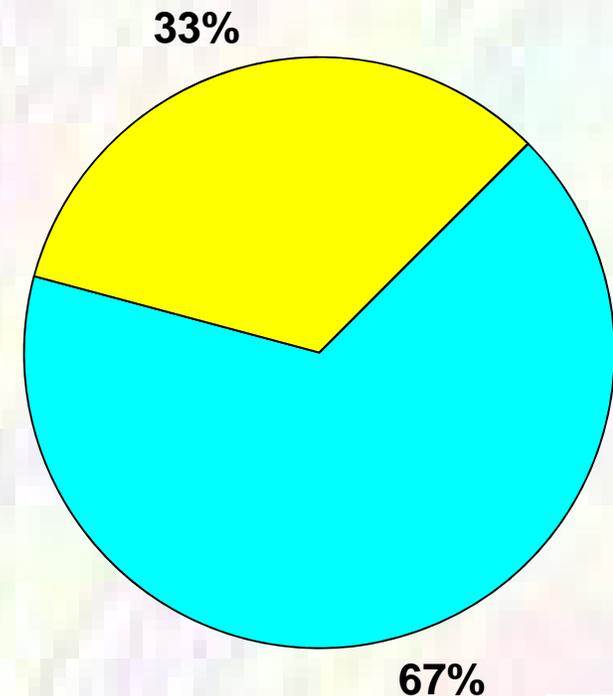


HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 11b

Males
N=57



Females
N=15



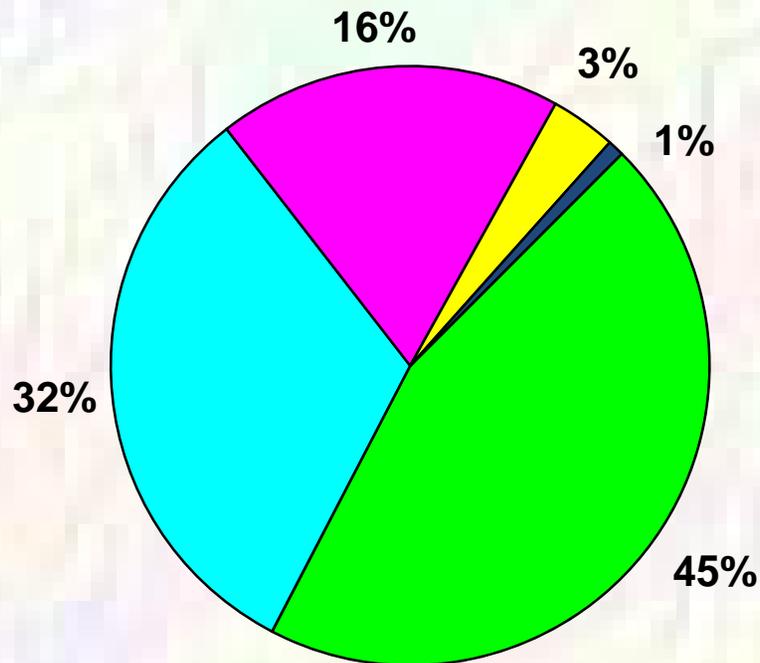
Note: Of the 686 living adult (age 13+) HIV/AIDS Cases in Area 11b through 2013, 11% were known to be co-infected with HIV/HCV. Overall, 42% of males and 67% of females have a documented IDU-related risk.

* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

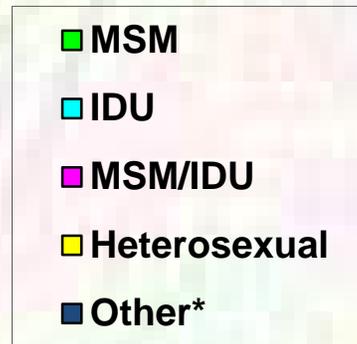
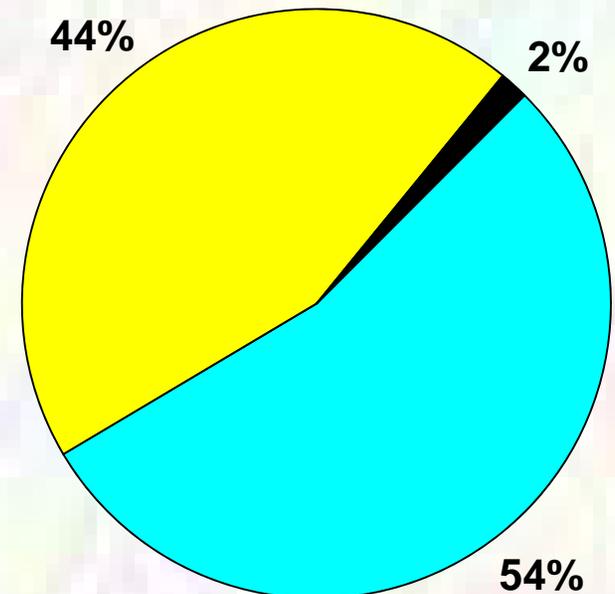
Note: NIRs have been redistributed.

HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 12

**Males
N=113**



**Females
N=63**



Note: Of the 1,517 living adult (age 13+) HIV/AIDS Cases in Area 12 through 2013, 12% were known to be co-infected with HIV/HCV. Overall, 48% of males and 54% of females have a documented IDU-related risk.

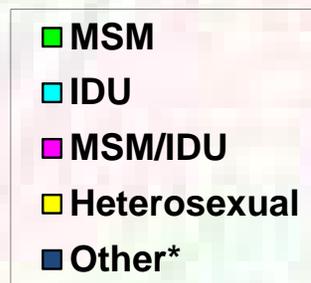
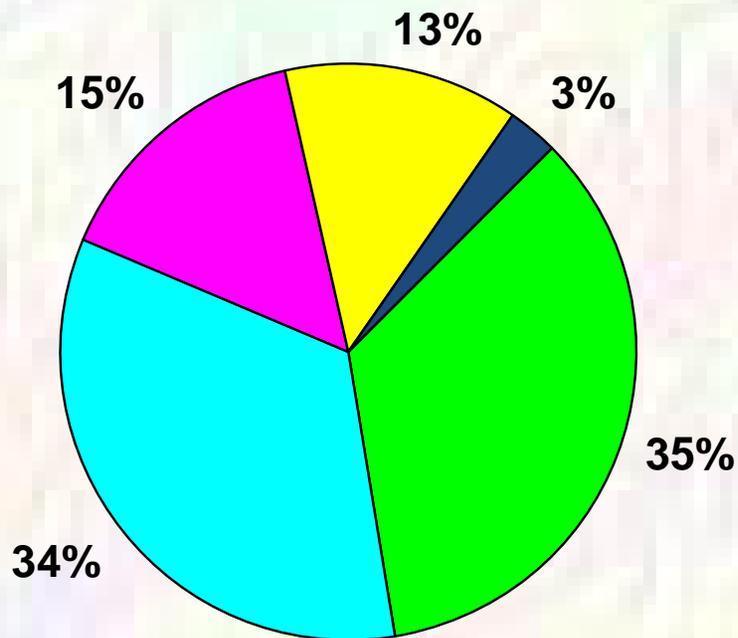
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

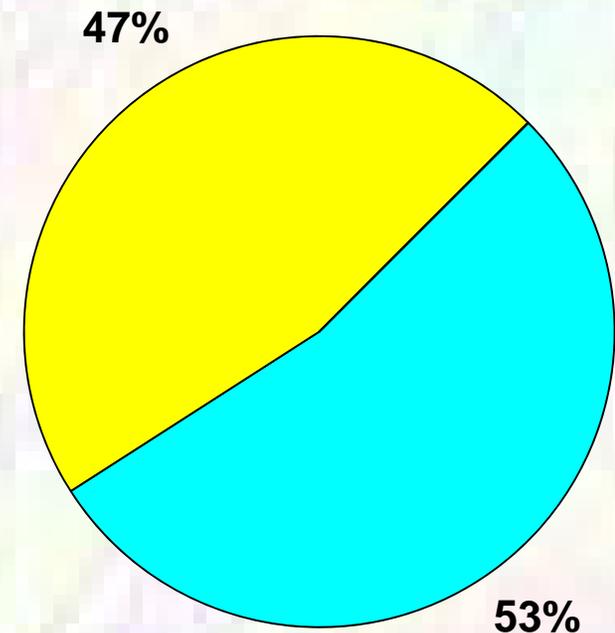


HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 13

Males
N=106



Females
N=72



Note: Of the 1,411 living adult (age 13+) HIV/AIDS Cases in Area 13 through 2013, 13% were known to be co-infected with HIV/HCV. Overall, 49% of males and 53% of females have a documented IDU-related risk.

* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

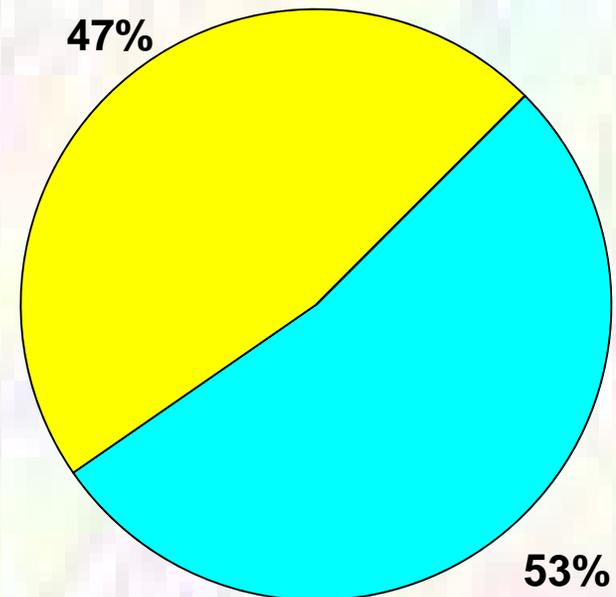
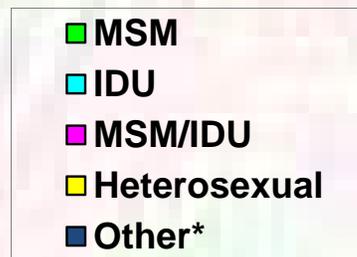
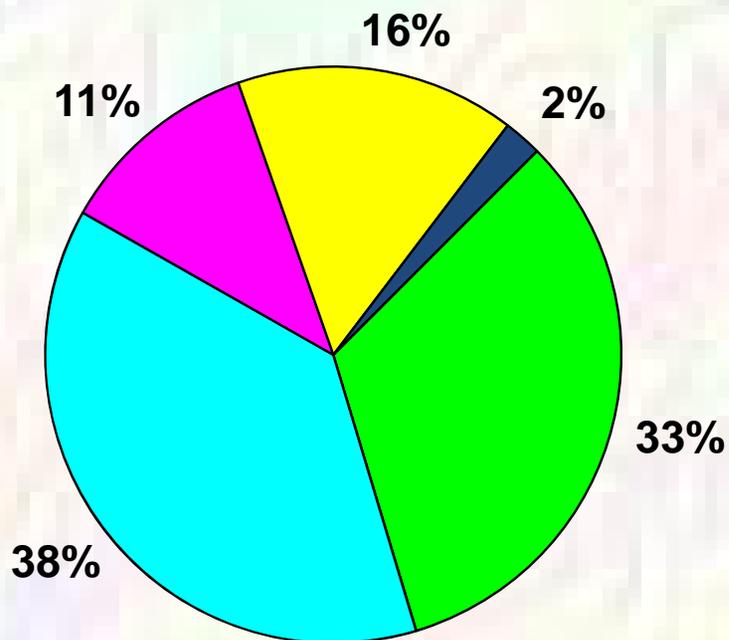
Note: NIRs have been redistributed.



HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 14

**Males
N=140**

**Females
N=87**



Note: Of the 2,020 living adult (age 13+) HIV/AIDS Cases in Area 14 through 2013, 11% were known to be co-infected with HIV/HCV. Overall, 49% of males and 53% of females have a documented IDU-related risk.

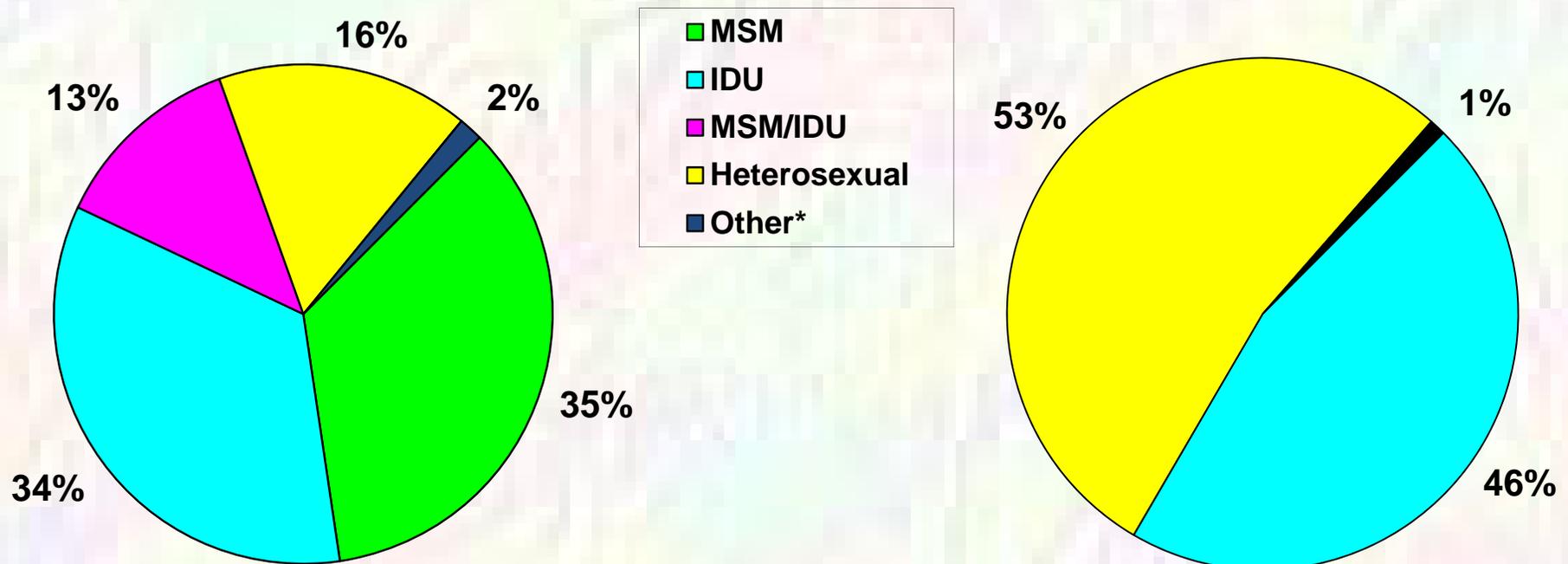
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Area 15

Males
N=128

Females
N=98



Note: Of the 2,288 living adult (age 13+) HIV/AIDS Cases in Area 15 through 2013, 10% were known to be co-infected with HIV/HCV. Overall, 47% of males and 46% of females have a documented IDU-related risk.

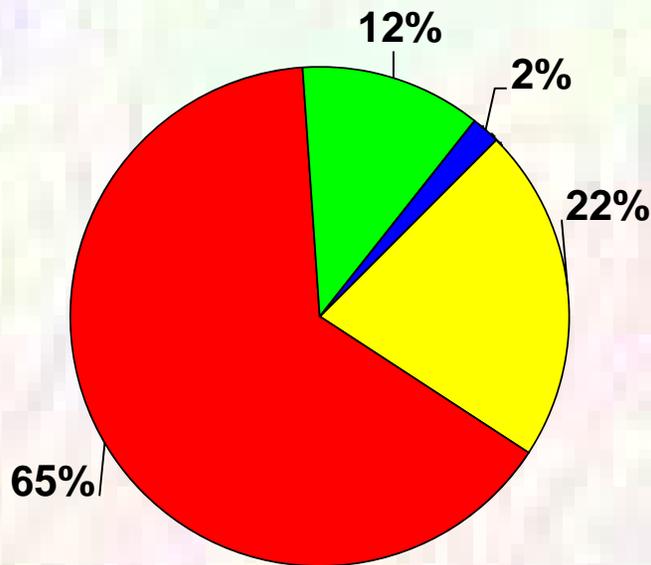
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

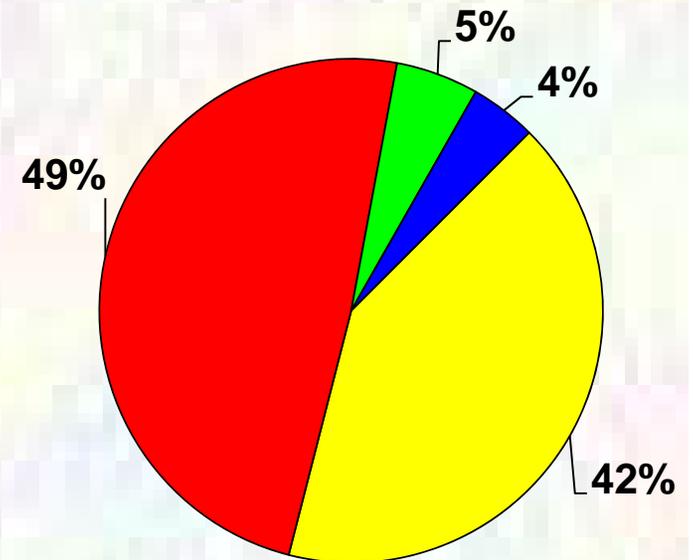


HIV/HCV Co-infected Adult DOC/FCI* Cases, by Sex and Race/Ethnicity, Living and Reported through 2013, Florida

**Males
N=544**



**Females
N=94**



White
Black
Hispanic
Other**

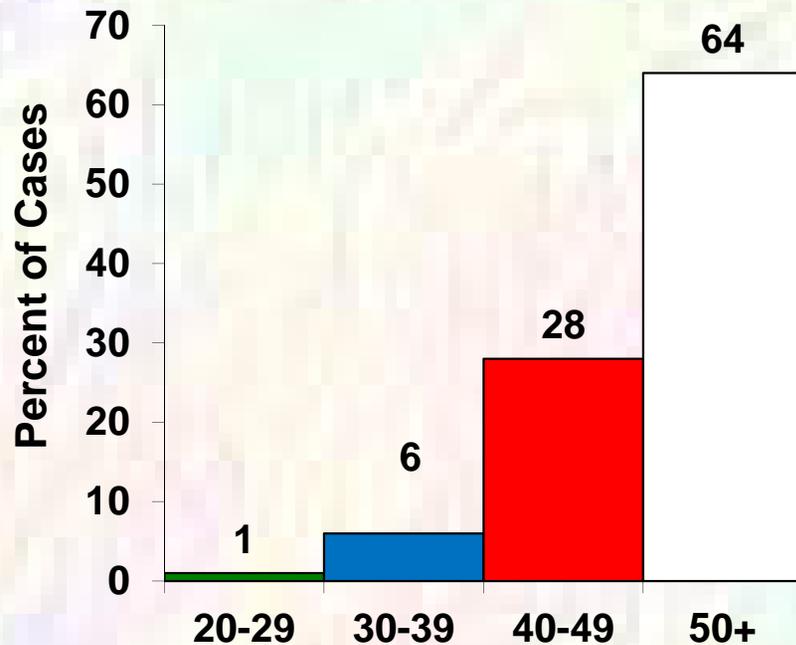
Note: Among incarcerated males living with HIV/HCV co-infection through 2013, 65% are black, 22% are white and 12% are Hispanic. Whereas among females, 49% are black, 42% are white and 5% are Hispanic.

* DOC/FCI are acronyms for Department of Corrections and Federal Correctional Institution.

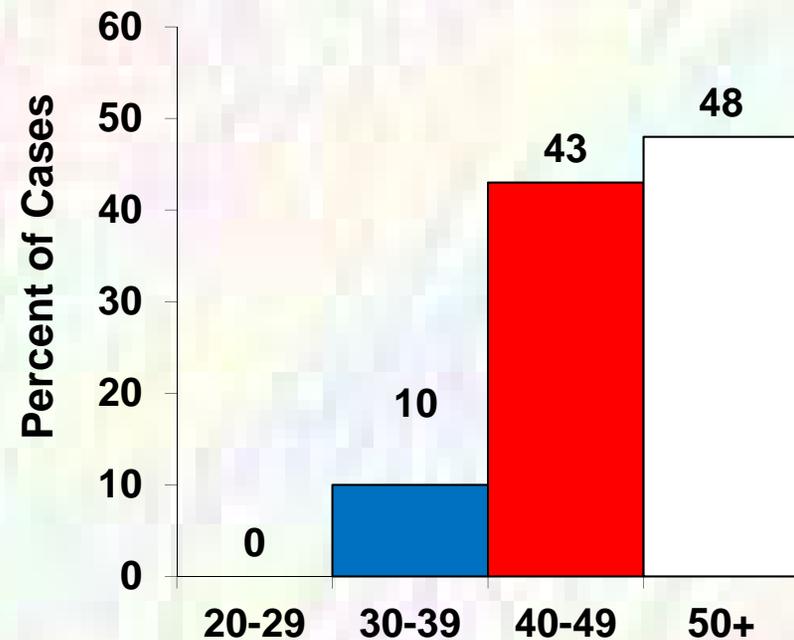
** Other includes Asian/Pacific Islanders, Native Alaskans/American Indians and mixed races.

HIV/HCV Co-infected Adult DOC/FCI* Cases, by Sex and Age Group, Living and Reported through 2013, Florida

Males
N=544



Females
N=94



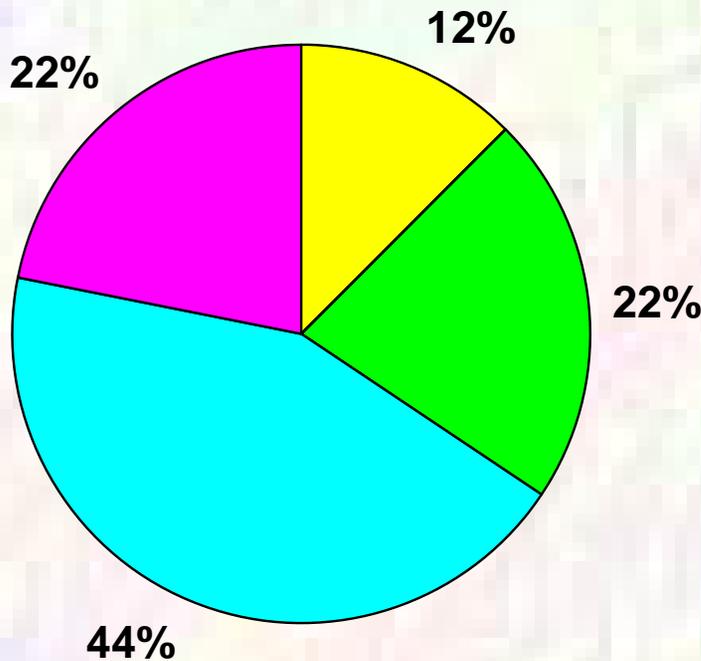
Note: There is a higher proportion of cases among adult males aged 50 and older living with HIV/HCV co-infection, similarly there is a higher proportion of cases among females aged 50 and older.

* DOC/FCI are acronyms for Department of Corrections and Federal Correctional Institution.

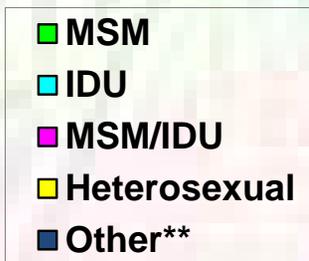
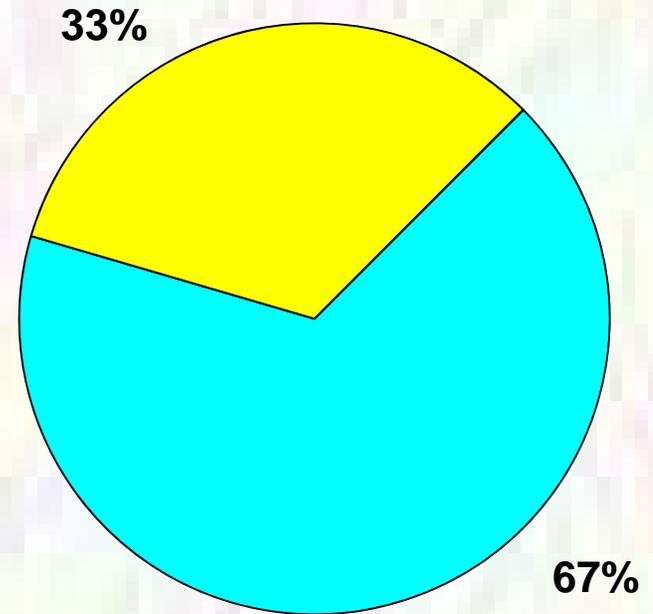


HIV/HCV Co-infected Adult DOC/FCI* Cases, by Sex and Mode of Exposure, Living and Reported through 2013, Florida

**Males
N=544**



**Females
N=94**



Note: Of the 4,273 adults (age 13+) living with HIV disease who were reported from DOC/FCI facilities in Florida through 2013, 15% were known to be co-infected with HIV/HCV. Overall, 66% of males and 67% of females have a documented IDU-related risk.

* DOC/FCI are acronyms for Department of Corrections and Federal Correctional Institution.

** Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Special Note: NIRs have been redistributed.

After acute HCV infection, progression to chronic hepatitis C is increased from 70%-85% in HIV negative people to more than 90% in HIV positive individuals, particularly those with advanced immunosuppression. Studies have also shown that co-infected people have higher HCV RNA levels, again correlated with degree of immune suppression.

Liver disease is a leading cause of death in HIV-infected individuals in countries with high rates of HIV-HCV co-infection, even in individuals with CD4 counts > 200 cells/mm³.

Source: Matthews, G. V., & Dore, G. J. (2008). HIV and hepatitis C co-infection. *Journal Of Gastroenterology & Hepatology*, 23(7pt1), 1000-1008. Retrieved on March 21, 2014 from Academic Search Complete database, EBSCOhost. doi:10.1111/j.1440-1746.2008.05489.x



For Florida HIV/AIDS Surveillance Data

Contact: (850) 245-4444

Lorene Maddox, MPH Ext. 2613
Tracina Bush, BSW Ext. 2612
Madgene Moise, MPH Ext. 2373



Visit Florida's internet site for:

Monthly Surveillance Reports

Slide Sets and Fact Sheets

Annual Reports and Epi Profiles

<http://www.floridahealth.gov/diseases-and-conditions/aids/surveillance/index.html>

Visit CDC's HIV/AIDS internet site for:

Surveillance Reports, fact sheets and slide sets

<http://www.cdc.gov/hiv/topics/surveillance/resources/reports/index.htm>

For Florida Hepatitis Surveillance Data

Contact: (850) 245-4444

Philip E. Reichert, MPH

(850) 245-4426

Internet <http://www.floridaaids.org> or <http://www.flahepatitis.org>

Intranet <http://dohiws.doh.state.fl.us>