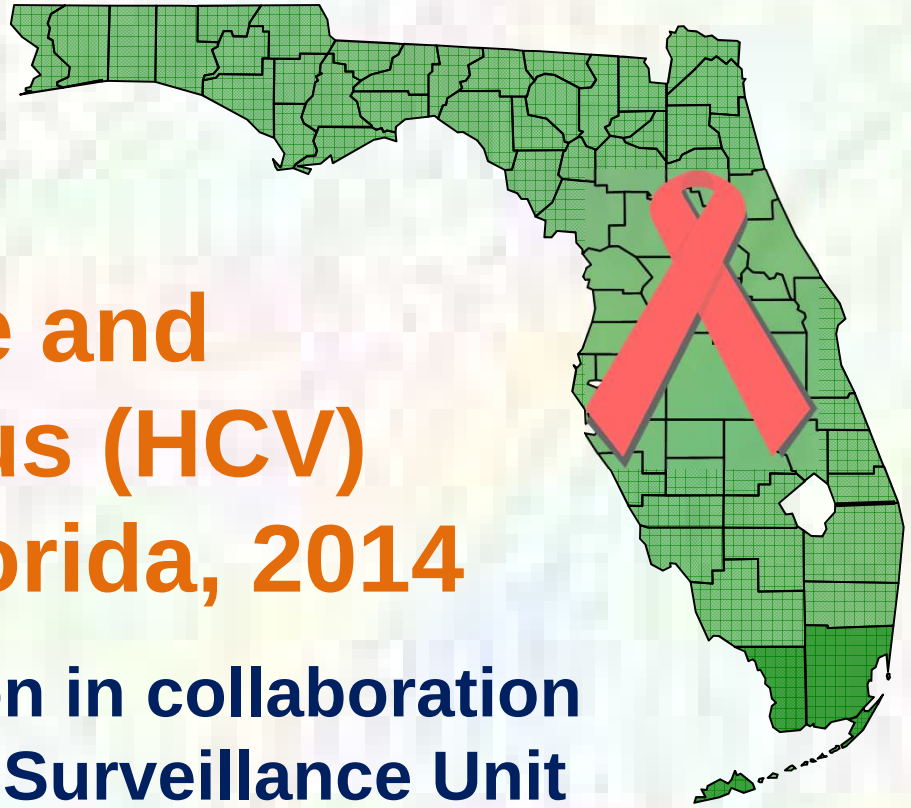
To protect, promote and improve the health of all people in Florida through integrated state, county, and community efforts.



HIV Disease and Hepatitis C Virus (HCV) Co-Infection – Florida, 2014

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 2014
Hepatitis C data from 2003-2014
Data sources: HIV/AIDS Reporting System & MERLIN

Created: 07/16/15
Revision: 08/13/15

Florida HEALTH

HIV/HCV Co-Infection - Florida

- This presentation contains data acquired from matching cases living with HIV disease through 2014 and reported in the HIV/AIDS database (eHARS) **WITH** the acute and chronic HCV data (confirmed, probable and suspect cases) reported between 2003 – 2014 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 persons living with HIV/AIDS (PLWHAs), who were living in Florida (regardless where diagnosed) through the most recent calendar year. Living data are also referred to as prevalence cases or living with HIV disease.
- 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

Area 1

Escambia
Okaloosa
Santa Rosa
Walton

Area 2a

Bay Calhoun
Gulf Holmes Jackson
Washington

Area 2b

Franklin Gadsden Jackson
Jefferson Leon Liberty
Madison Taylor Wakulla

Area 3

Alachua Bradford
Columbia
Dixie Gilchrest Hamilton
Lafayette Levy Putnam
Suwannee Union

Area 4

Baker
Clay
Duval
Nassau
St Johns

Area 5

Pasco
Pinellas

Area 6

Hernando
Hillsborough
Manatee

Area 7

Brevard
Orange
Osceola
Seminole

Area 8

Charlotte DeSoto
Glades Sarasota
Hendry Collier
Lee

Area 9

Palm Beach

Area 10

Broward

Area 11a

Dade

Area 11b

Monroe

Area 12

Flagler
Volusia

Area 13

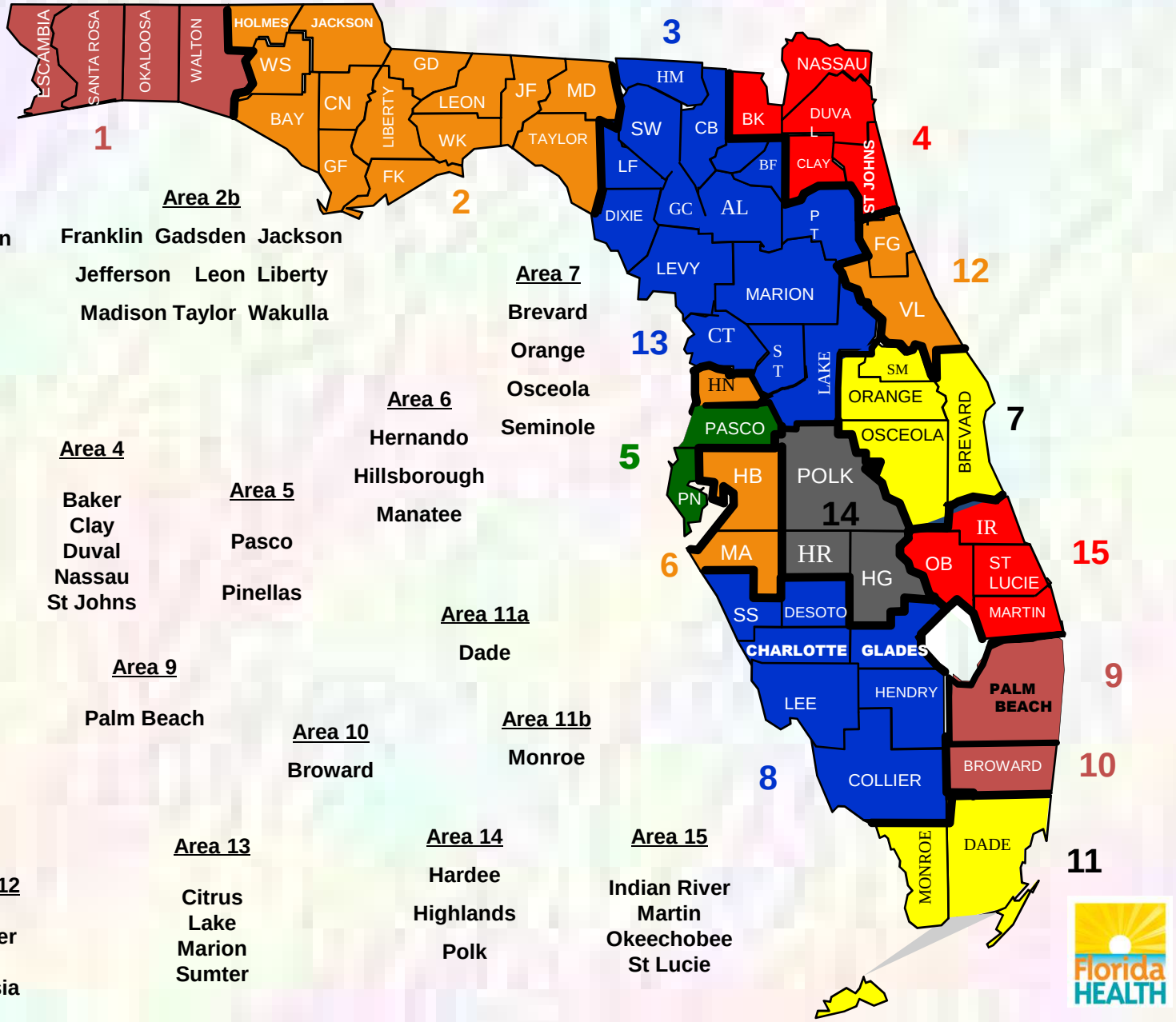
Citrus
Lake
Marion
Sumter

Area 14

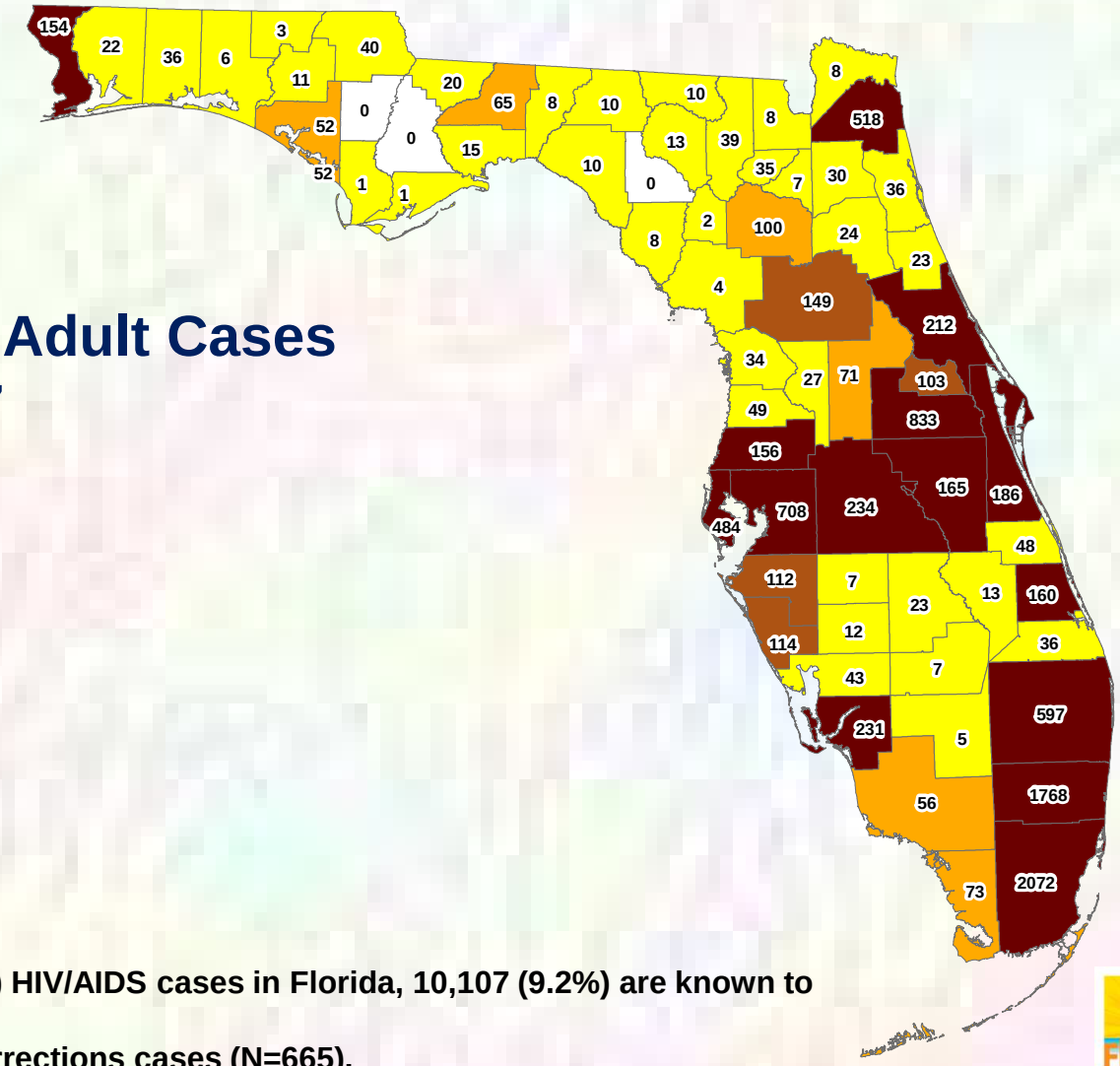
Hardee
Highlands
Polk

Area 15

Indian River
Martin
Okeechobee
St Lucie



HIV/HCV Co-infected Adult Cases, by County of Residence,* Living and Diagnosed through 2014, Florida



HIV/HCV Co-infected Adult Cases N=10,107

- 0 Cases
- 1 – 50 Cases
- 51 – 100 Cases
- 101 – 150 Cases
- Over 150 Cases

Note: Of the 109,791 living adult (age 13+) HIV/AIDS cases in Florida, 10,107 (9.2%) are known to be co-infected with HIV/HCV.
***County totals exclude Department of Corrections cases (N=665).**

HIV/HCV Co-infected Adult Cases, by County of Residence,* Living and Diagnosed through 2014, Florida (N=10,770)

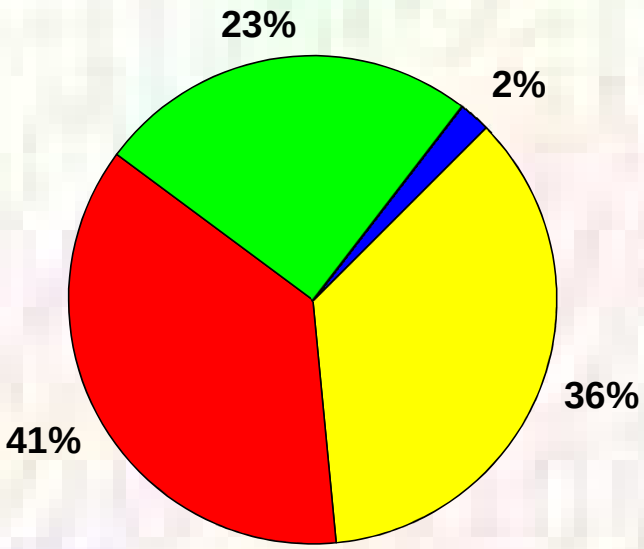
ALACHUA CO.	100	GLADES CO.	7	OKEECHOBEE CO.	13
BAKER CO.	8	GULF CO.	1	ORANGE CO.	833
BAY CO.	52	HAMILTON CO.	10	OSCEOLA CO.	165
BRADFORD CO.	7	HARDEE CO.	7	PALM BEACH CO.	597
BREVARD CO.	186	HENDRY CO.	5	PASCO CO.	156
BROWARD CO.	1,768	HERNANDO CO.	49	PINELLAS CO.	484
CALHOUN CO.	1	HIGHLANDS CO.	23	POLK CO.	234
CHARLOTTE CO.	43	HILLSBOROUGH CO.	708	PUTNAM CO.	24
CITRUS CO.	34	HOLMES CO.	3	SANTA ROSA CO.	22
CLAY CO.	30	INDIAN RIVER CO.	48	SARASOTA CO.	114
COLLIER CO.	56	JACKSON CO.	40	SEMINOLE CO.	103
COLUMBIA CO.	39	LAKE CO.	71	ST JOHNS CO.	36
DADE CO.	2,072	LEE CO.	231	ST LUCIE CO.	160
DE SOTO CO.	12	LEON CO.	65	SUMTER CO.	27
DIXIE CO.	8	LEVY CO.	4	SUWANNEE CO.	13
DUVAL CO.	518	LIBERTY CO.	1	TAYLOR CO.	10
ESCAMBIA CO.	154	MANATEE CO.	112	UNION CO.	35
FLAGLER CO.	23	MARION CO.	149	VOLUSIA CO.	212
FRANKLIN CO.	1	MARTIN CO.	36	WAKULLA CO.	15
GADSDEN CO.	20	MONROE CO.	73	WALTON CO.	6
GILCHRIST CO.	2	NASSAU CO.	8	WASHINGTON CO.	11
		OKALOOSA CO.	33		

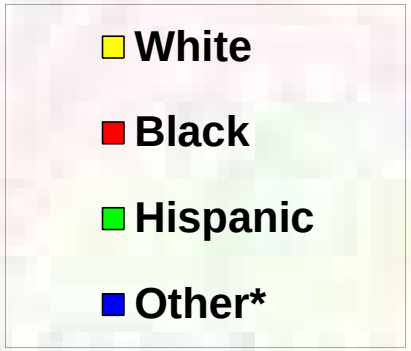
*** County totals exclude Department of Corrections cases (N=665).**

Florida HEALTH

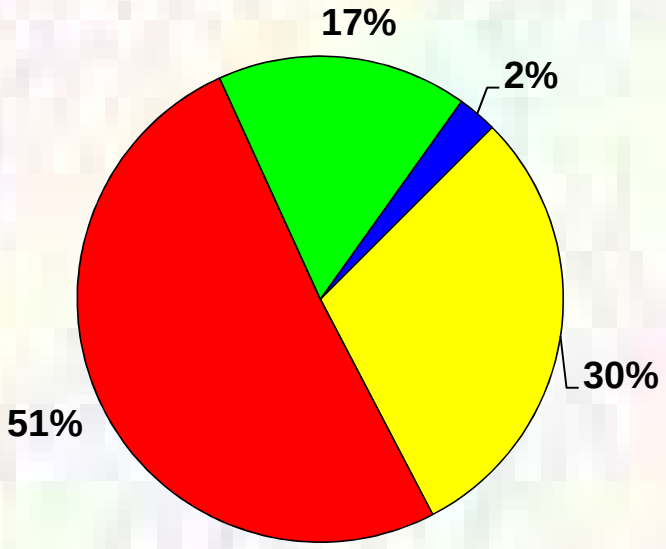
HIV/HCV Co-infected Adult Cases, by Race/Ethnicity, Living and Diagnosed through 2014, Florida

Males
N=7,767





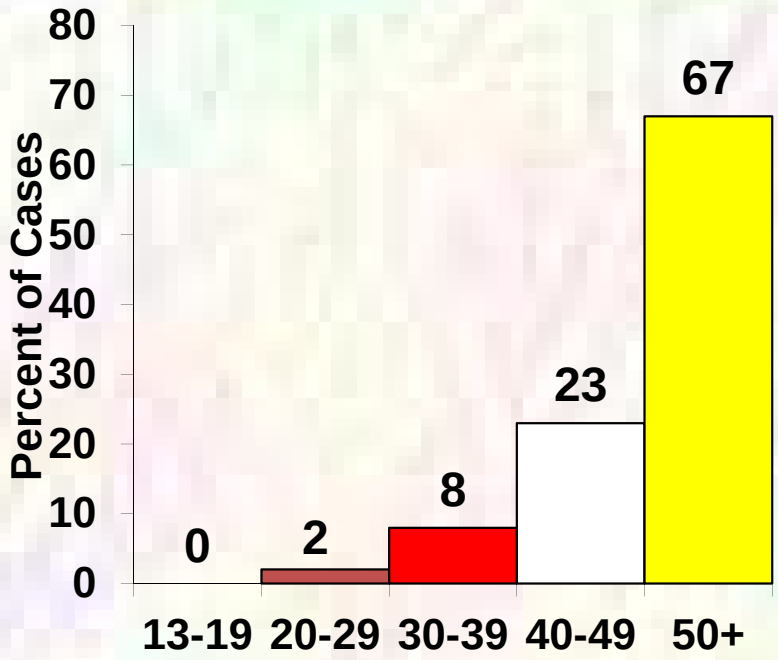
Females
N=3,003



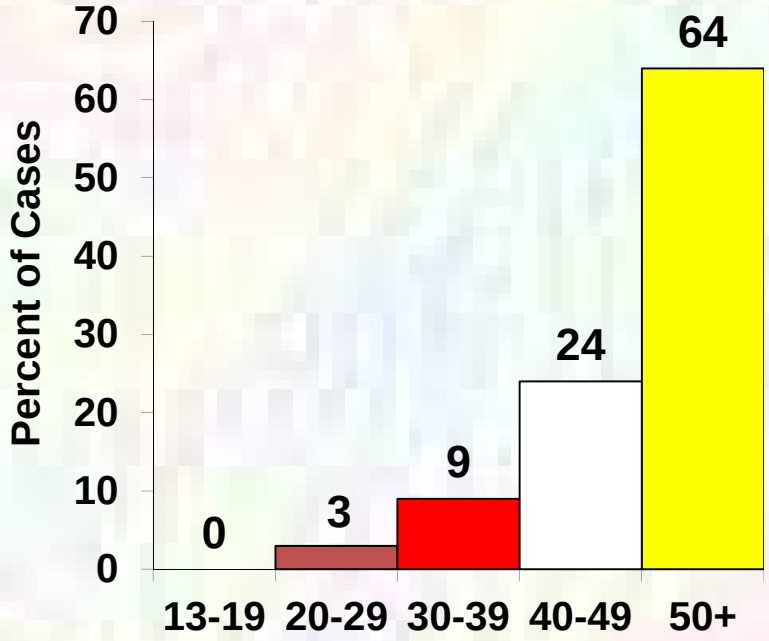
Note: Of the living HIV/HCV Co-infected Adult Cases through 2014: among males 41% are black, 34% are white and 23% are Hispanic. Among females, 51% are black, 30% are white and 17% are Hispanic.
***Other includes Asian/Pacific Islanders , Native Alaskans/American Indians and Multi-racial individuals.**

HIV/HCV Co-infected Adult Cases, by Sex and Current Age Group, Living and Diagnosed through 2014, Florida

Males
N=7,767



Females
N=3,003



Comment: In this snapshot of living HIV/HCV Co-infected Adult Cases through 2014, the highest proportion of cases for both males and females was among persons aged 50 or older.

Definitions of Mode of Exposure Categories

- **MSM =** Men who have sex with men or Male-to-male sexual contact with person with HIV/AIDS or known HIV risk
- **IDU =** Injection Drug User
- **MSM/IDU =** Men who have sex with men or Male-to-male sexual contact & 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.

Florida HEALTH

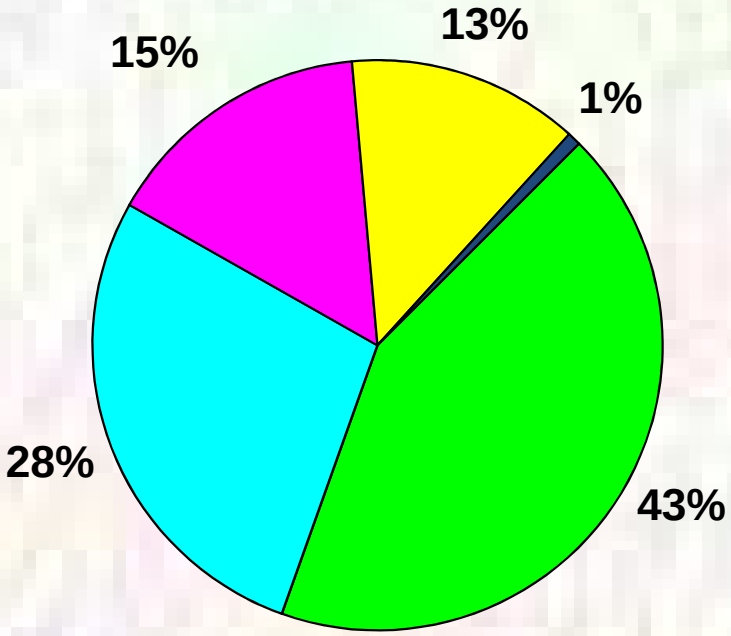
HIV/HCV co-infection is increasingly recognized worldwide. Rates are particularly high -- up to 90% -- among injection drug users (IDUs), since both viruses are readily transmitted via shared needles and other injection equipment.

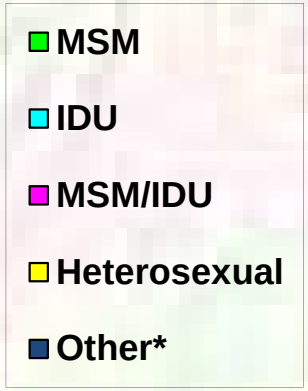
Source: Matthews, G. V., & Dore, G. J. (2008). HIV and hepatitis C coinfection. *Journal Of Gastroenterology & Hepatology*, *23*(7pt1), 1000-1008. Retrieved on March 21, 2014 from Academic Search Complete database, EBSCOhost. doi:10.1111/j.1440-1746.2008.05489.x

Florida HEALTH

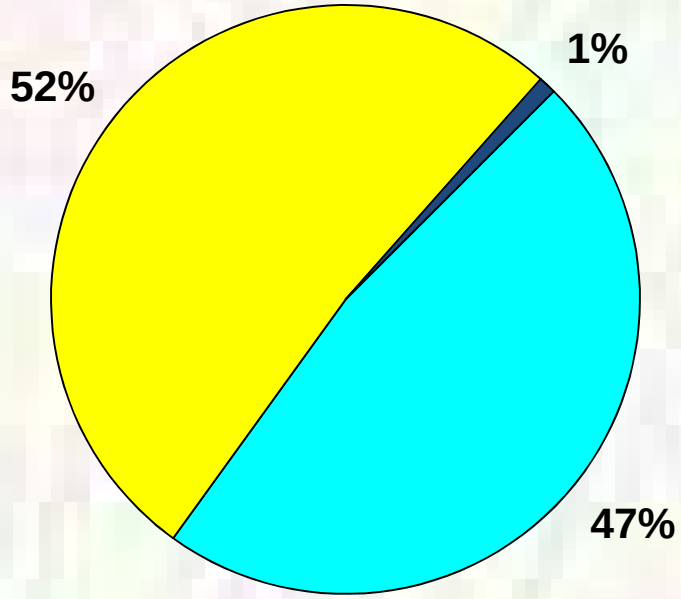
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Florida

Males N=7,767





Females N=3,003

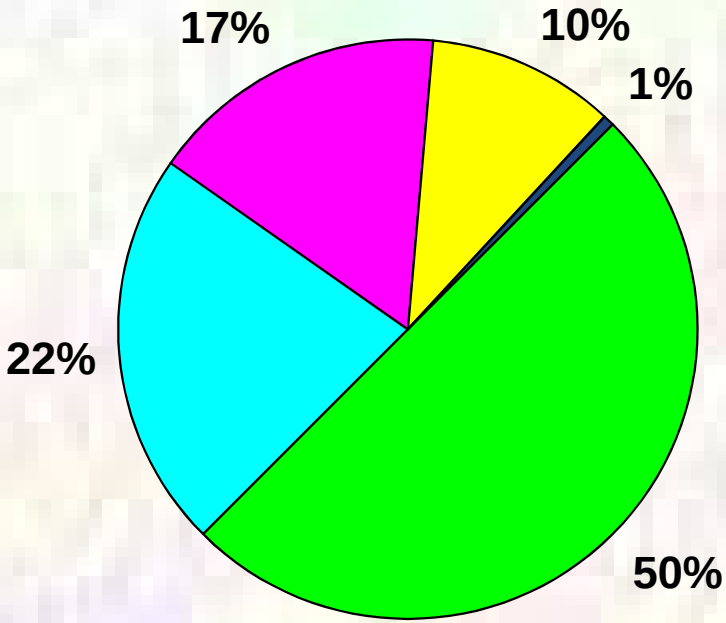


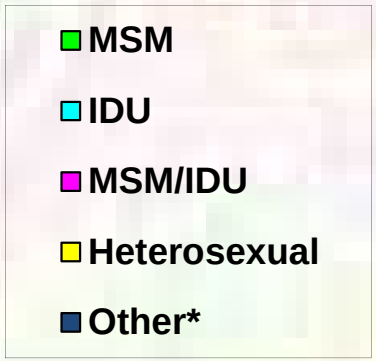
Note: Of the 109,791 living adult (age 13+) HIV/AIDS cases in Florida through 2014, approximately 9% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 43% of males and 47% of females have a documented IDU-related risk.

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

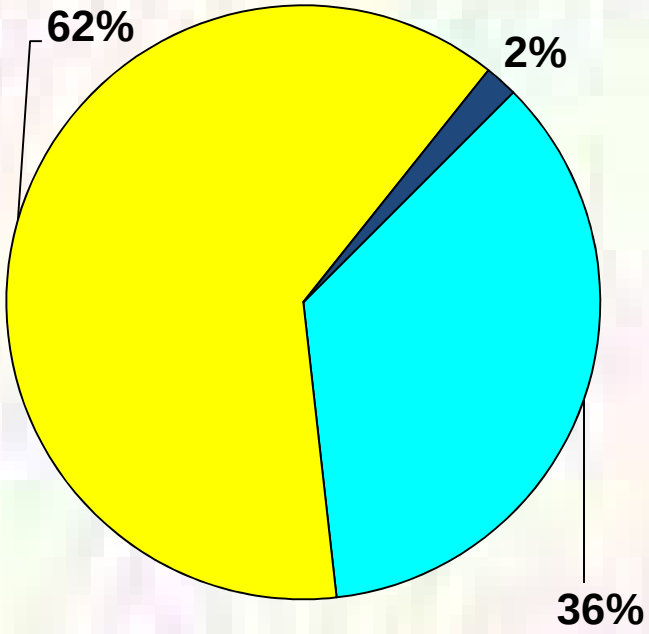
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 1

Males N=162





Females N=56



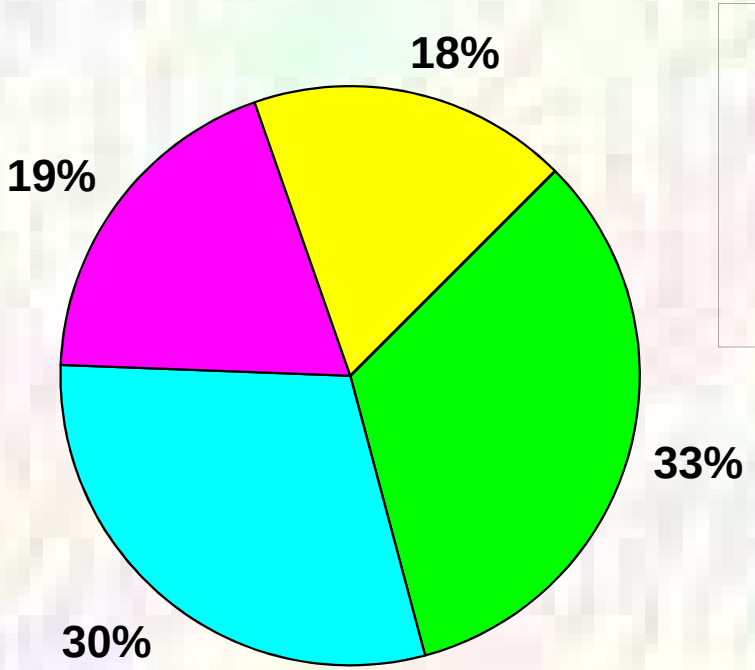
Note: Of the 1,952 living adult (age 13+) HIV/AIDS cases in Area 1 through 2014, 11% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 39% of males and 36% of females have a documented IDU-related risk.

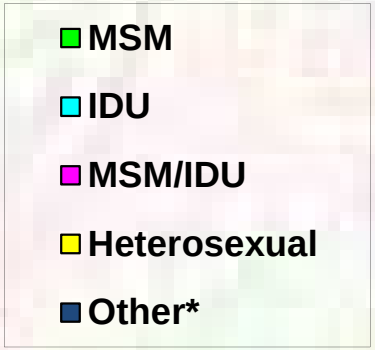
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

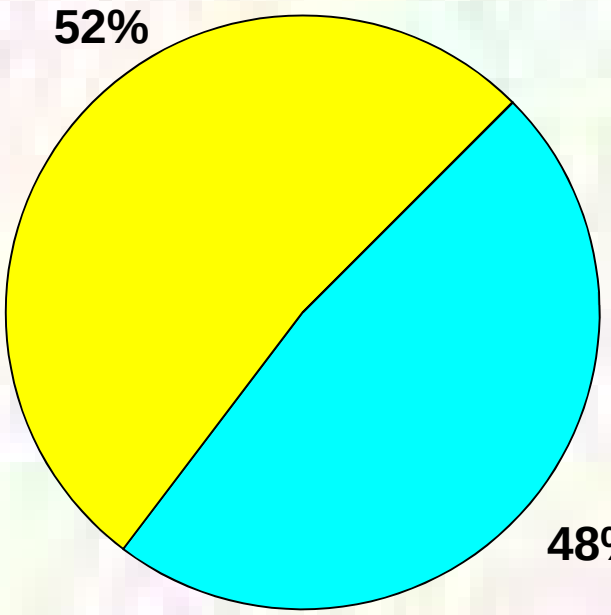
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 2a

Males N=84





Females N=23



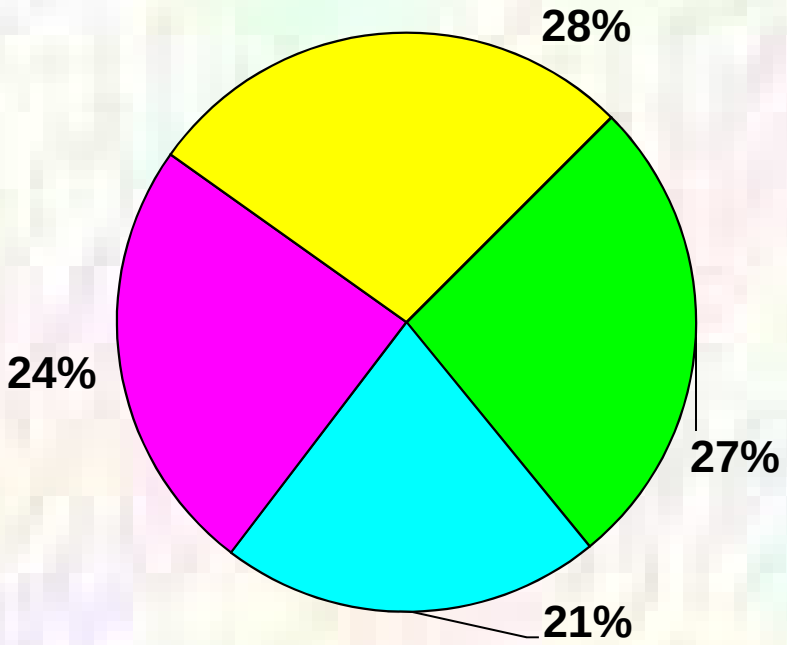
Note: Of the 867 living adult (age 13+) HIV/AIDS cases in Area 2a through 2014, 12% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 49% of males and 48% of females have a documented IDU-related risk.

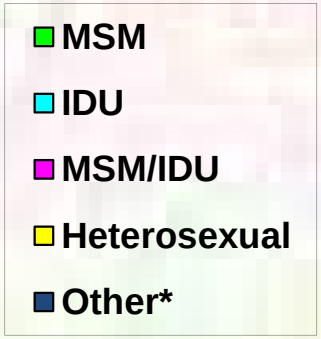
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

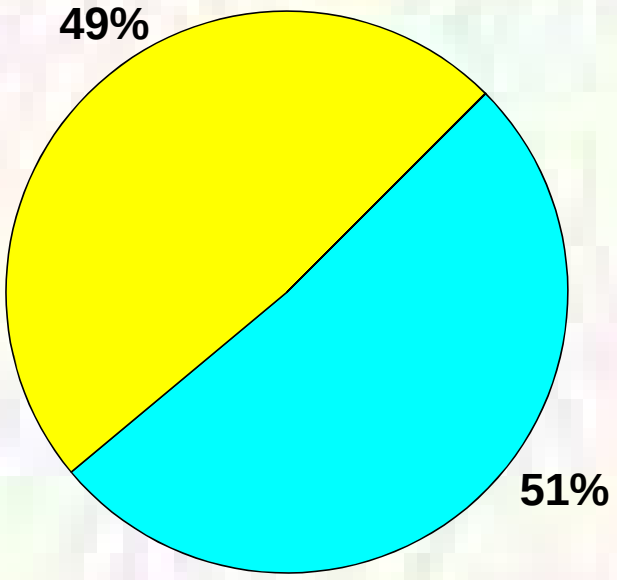
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 2b

Males N=94





Females N=35



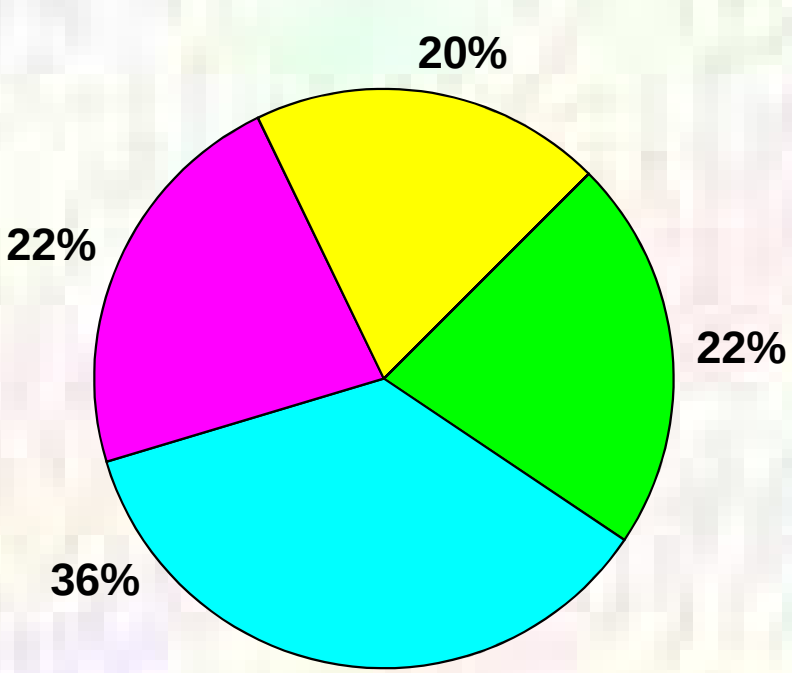
Note: Of the 1,851 living adult (age 13+) HIV/AIDS cases in Area 2b through 2014, 7% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 45% of males and 51% of females have a documented IDU-related risk.

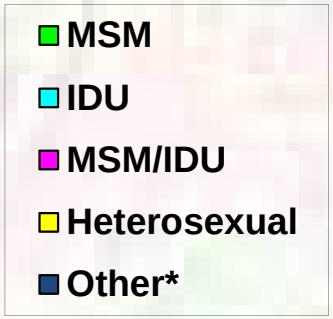
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

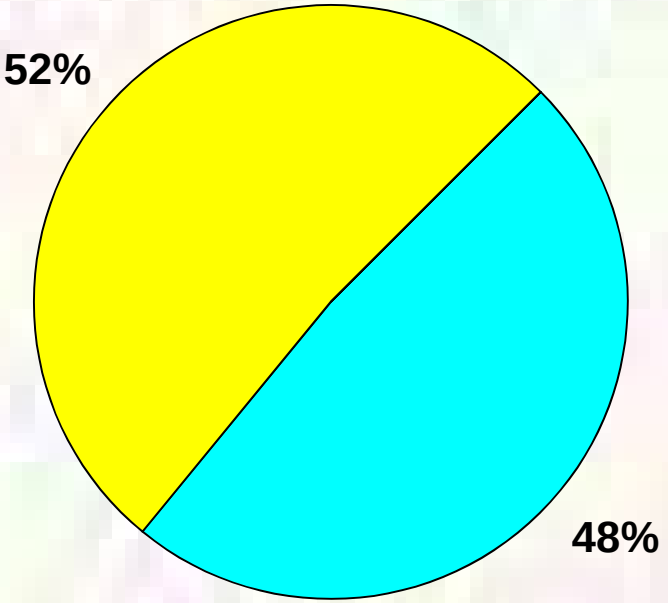
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 3

Males N=178





Females N=64



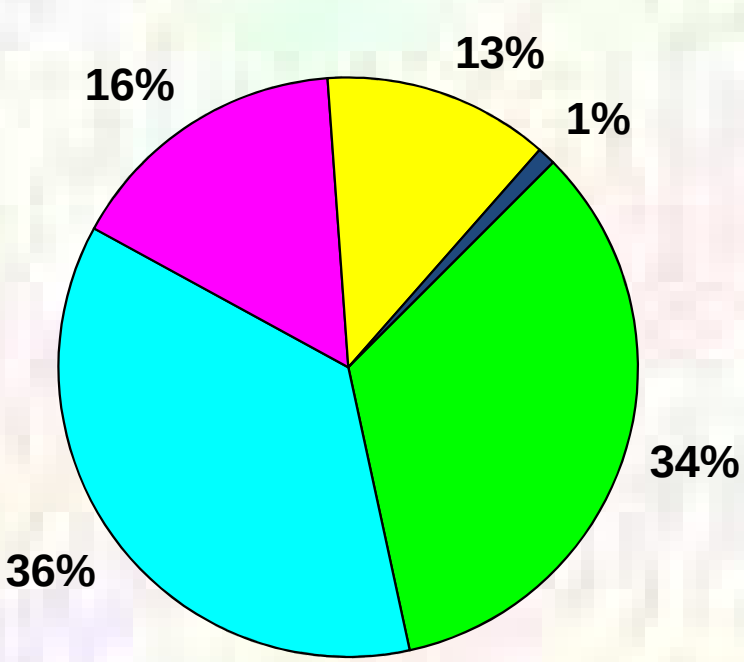
Note: Of the 2,037 living adult (age 13+) HIV/AIDS cases in Area 3 through 2014, 12% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 58% of males and 48% of females have a documented IDU-related risk.

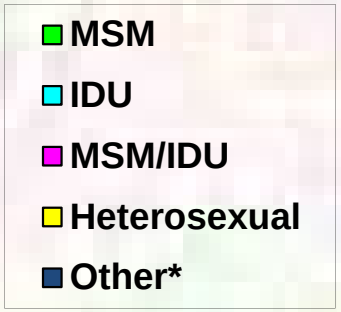
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

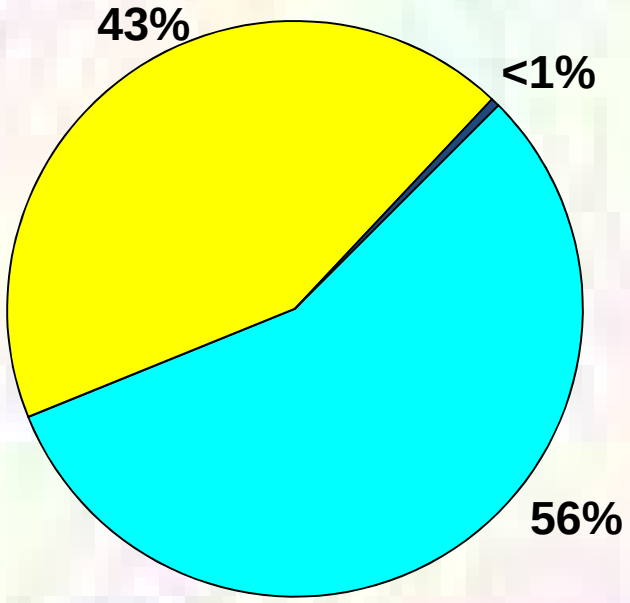
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 4

Males N=396





Females N=204



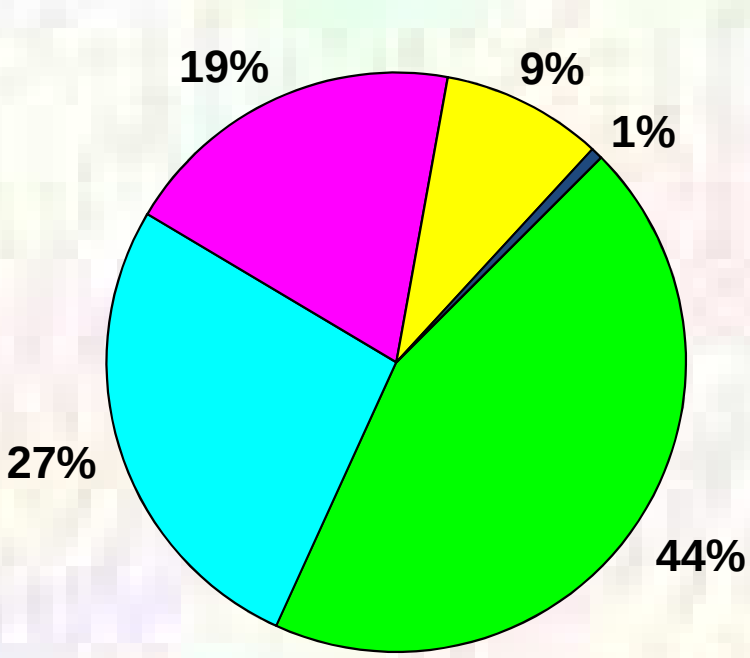
Note: Of the 6,714 living adult (age 13+) HIV/AIDS cases in Area 4 through 2014, 9% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 52% of males and 56% of females have a documented IDU-related risk.

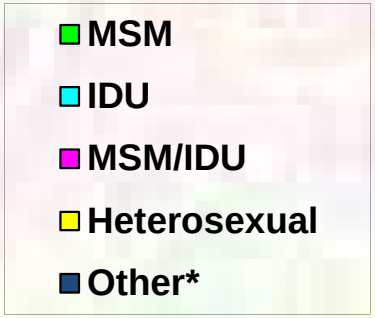
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

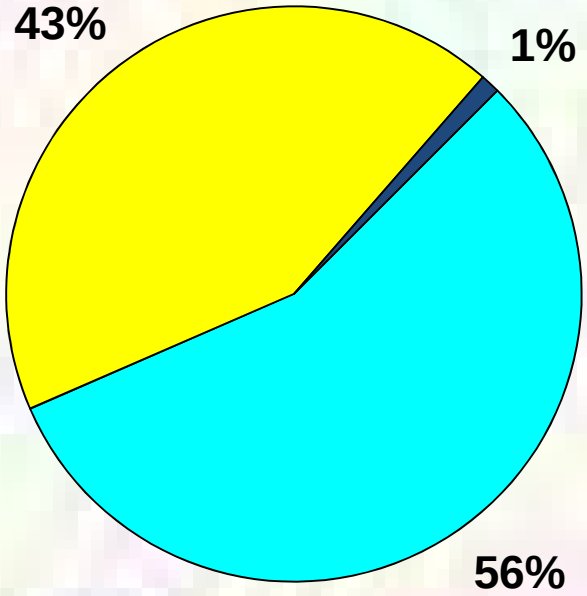
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 5

Males N=456





Females N=184



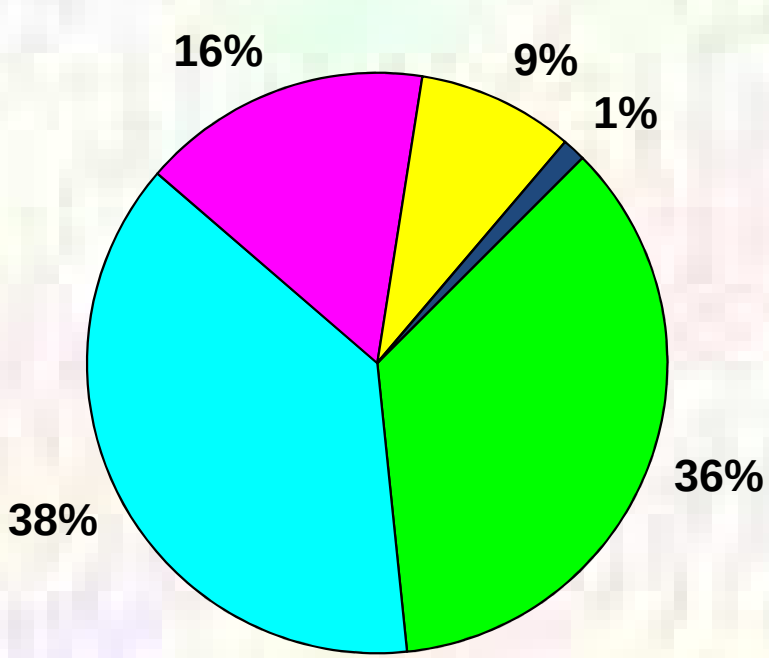
Note: Of the 5,216 living adult (age 13+) HIV/AIDS cases in Area 5 through 2014, 12% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 46% of males and 56% of females have a documented IDU-related risk.

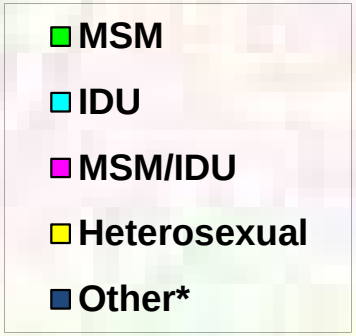
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

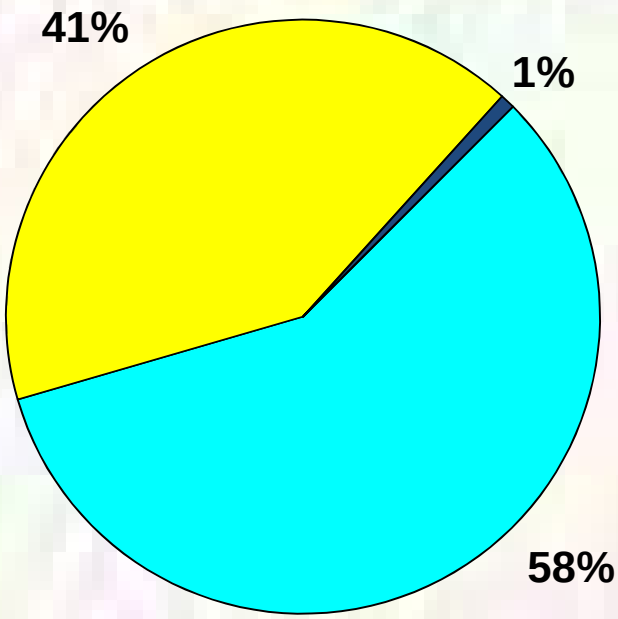
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 6

Males N=619





Females N=250

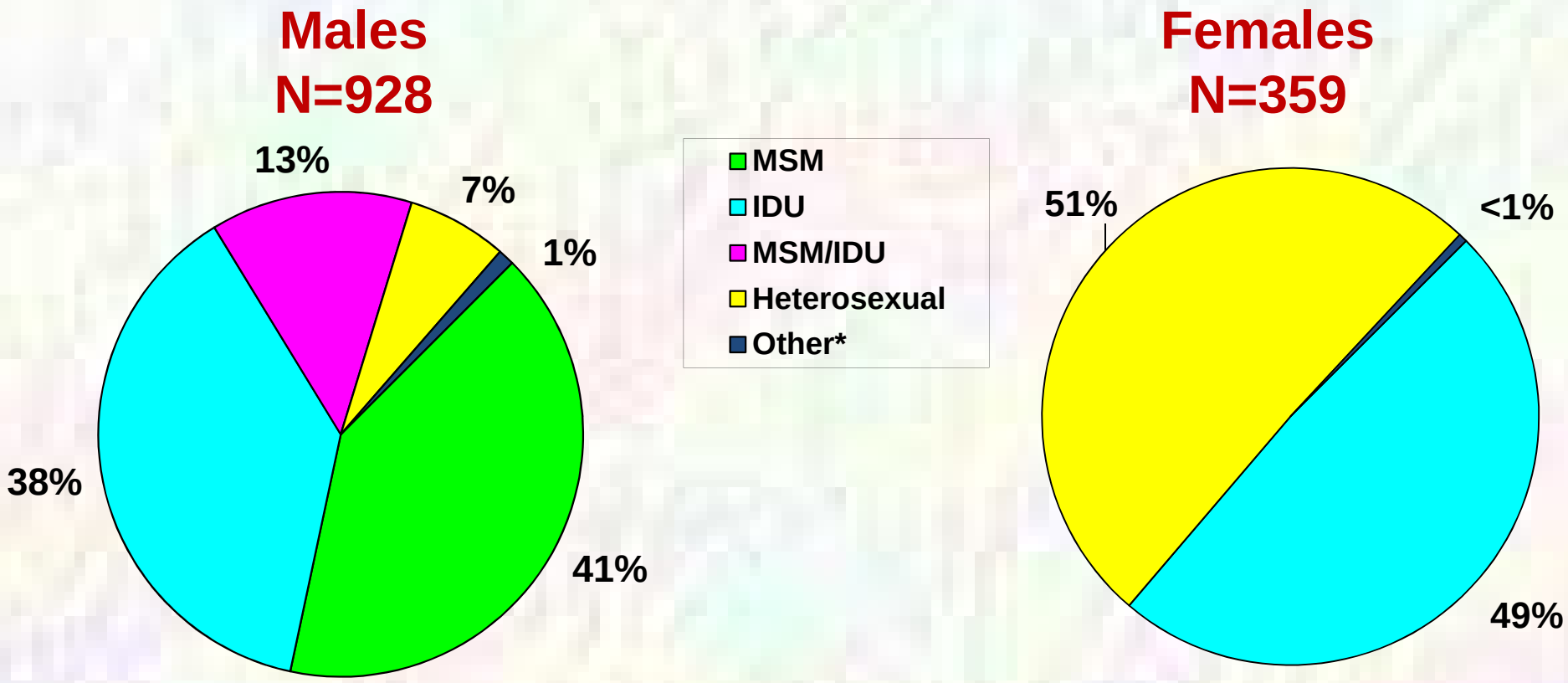


Note: Of the 7,970 living adult (age 13+) HIV/AIDS cases in Area 6 through 2014, 11% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 54% of males and 58% of females have a documented IDU-related risk.

* 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 Diagnosed through 2014, Area 7



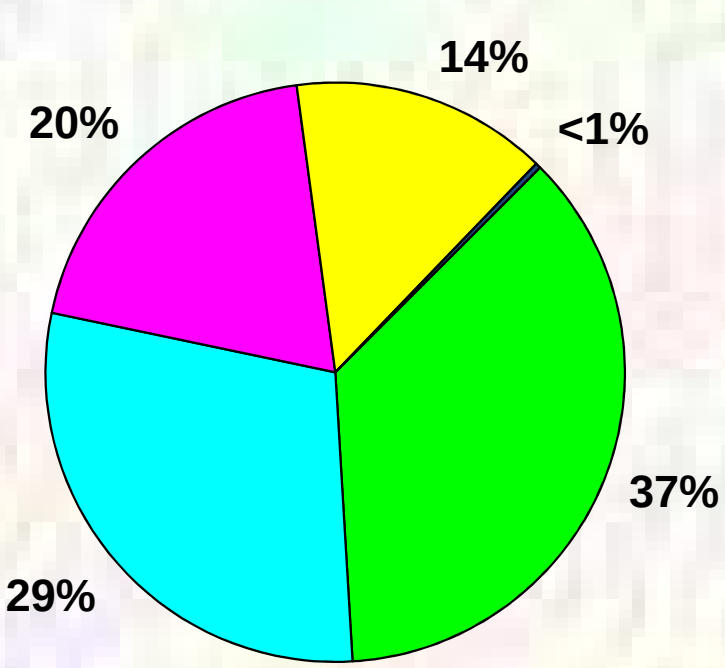
Note: Of the 11,858 living adult (age 13+) HIV/AIDS cases in Area 7 through 2014, 11% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 51% of males and 49% of females have a documented IDU-related risk.

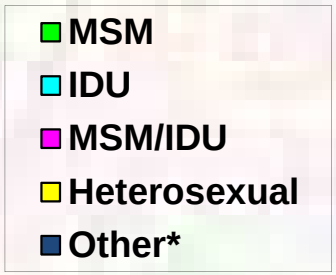
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

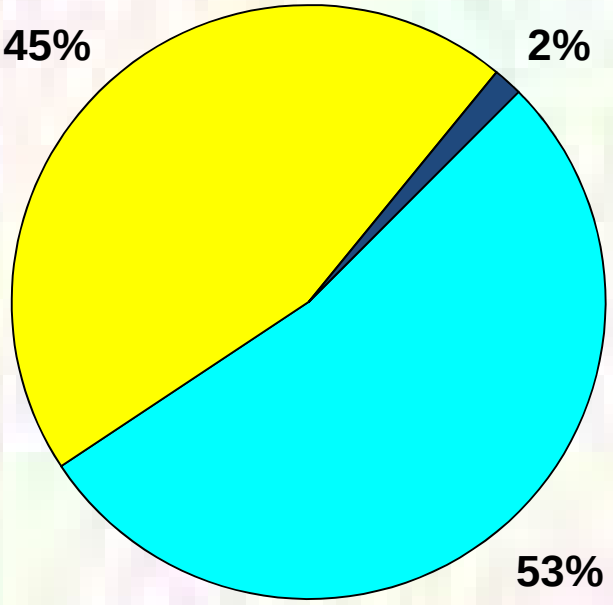
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 8

Males N=342





Females N=126



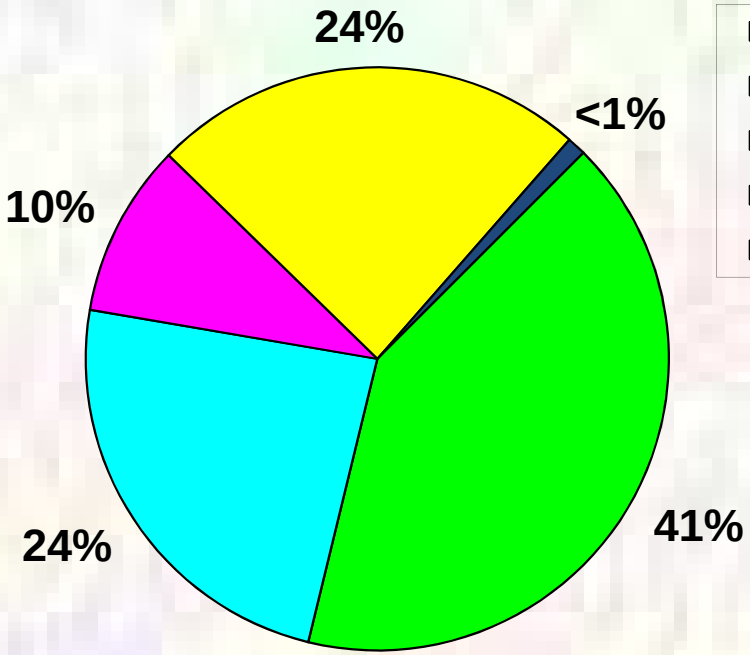
Note: Of the 4,460 living adult (age 13+) HIV/AIDS cases in Area 8 through 2014, 10% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 49% of males and 53% of females have a documented IDU-related risk.

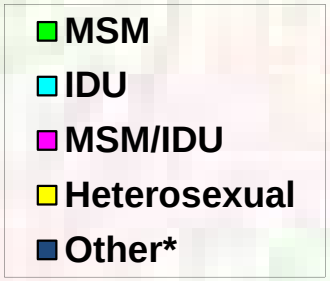
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

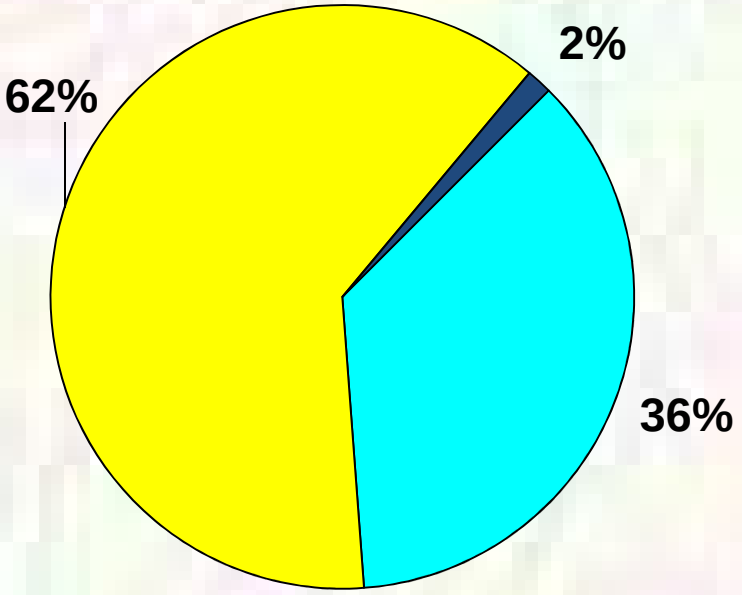
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 9

Males N=385





Females N=212



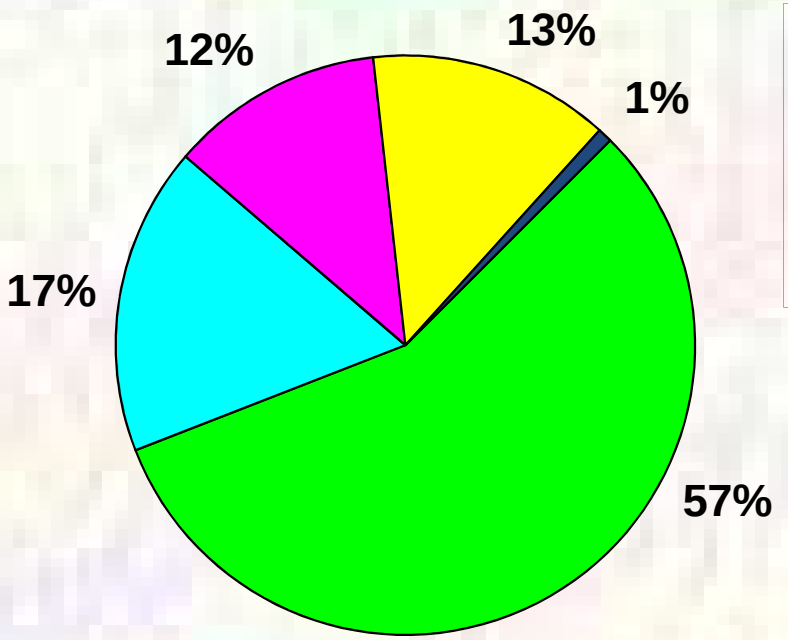
Note: Of the 8,004 living adult (age 13+) HIV/AIDS cases in Area 9 in 2014, 7% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 34% of males and 36% of females have a documented IDU-related risk.

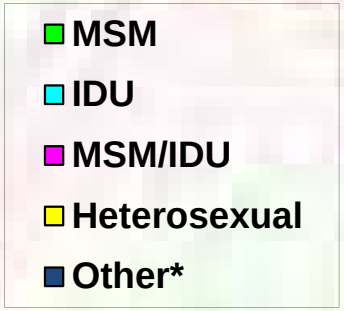
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

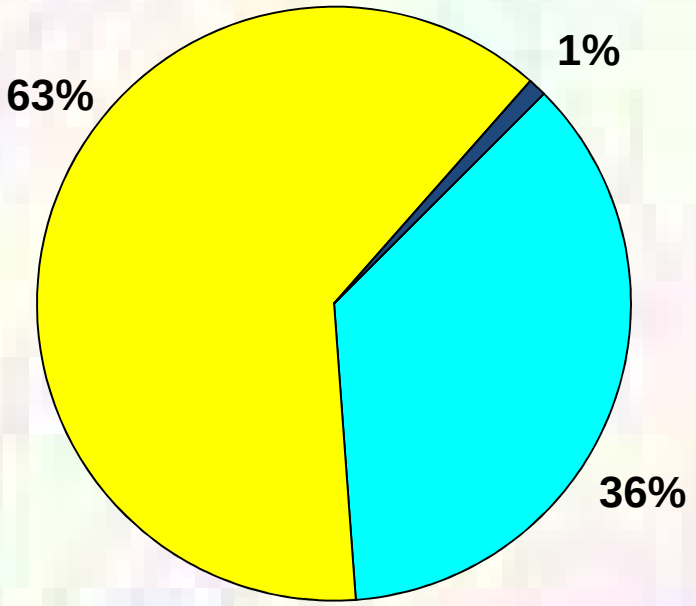
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 10

Males N=1,366





Females N=402



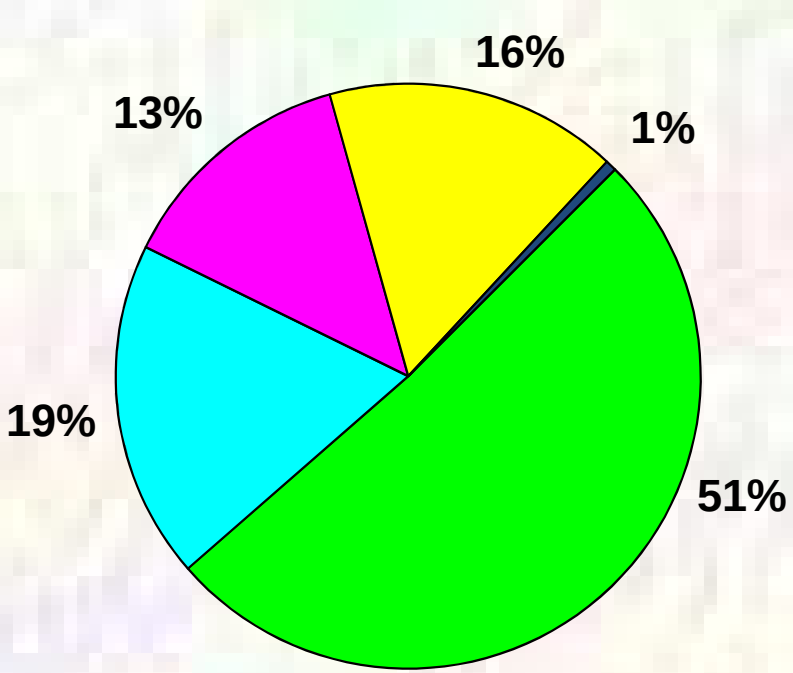
Note: Of the 19,369 living adult (age 13+) HIV/AIDS cases in Area 10 through 2014, 9% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 29% of males and 36% of females have a documented IDU-related risk.

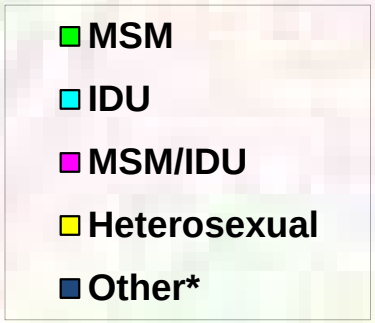
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

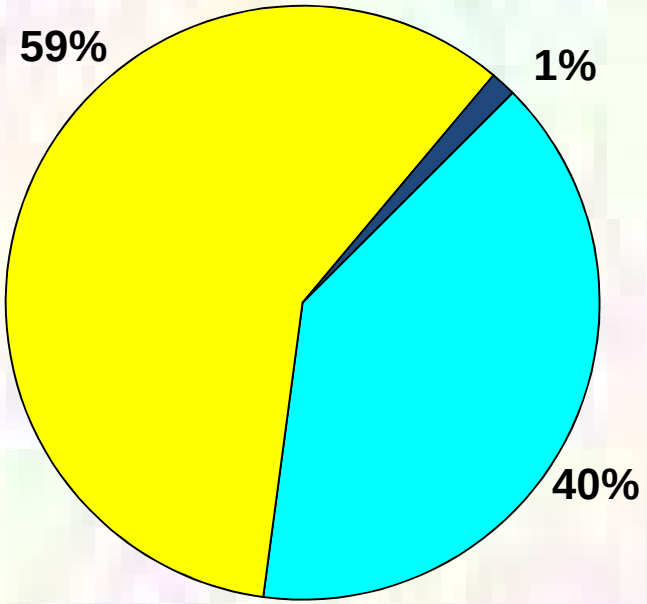
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 11a

Males N=1,492





Females N=578



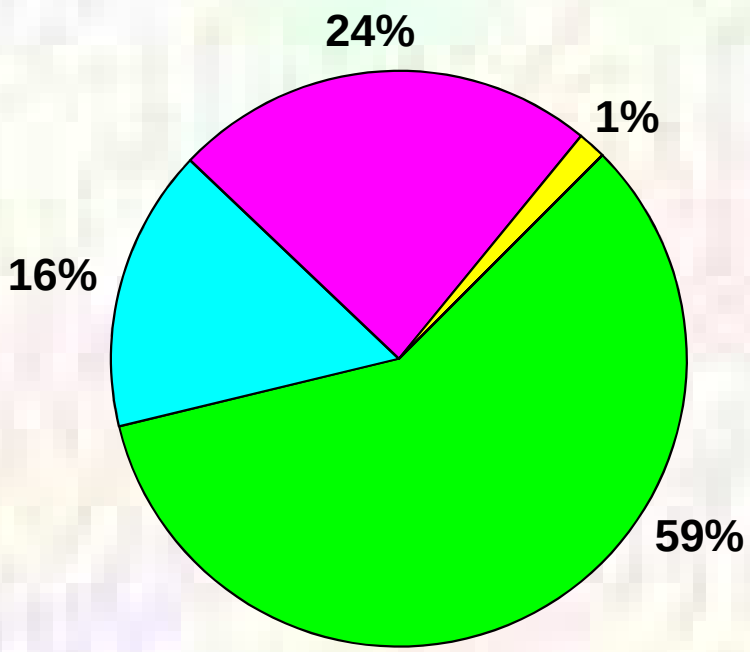
Note: Of the 26,011 living adult (age 13+) HIV/AIDS cases in Area 11a through 2014, 8% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 32% of males and 40% of females have a documented IDU-related risk.

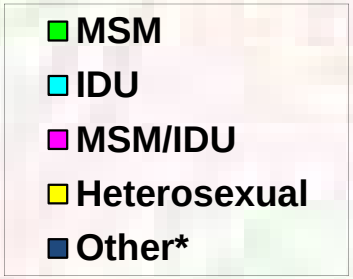
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

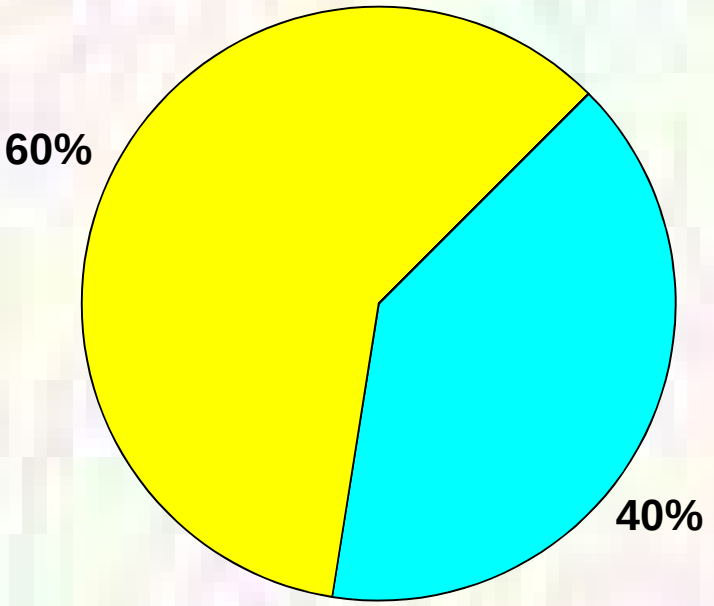
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 11b

Males N=63





Females N=10



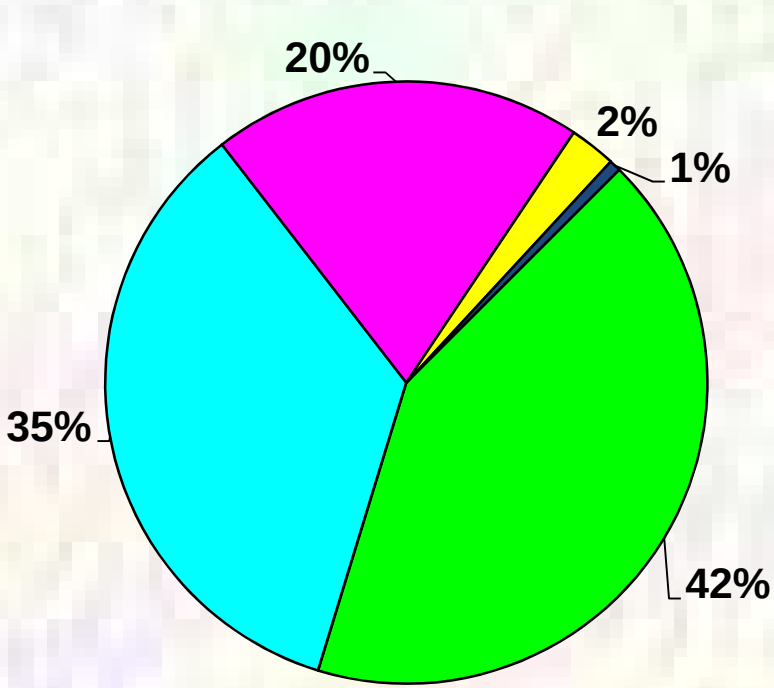
Note: Of the 658 living adult (age 13+) HIV/AIDS cases in Area 11b through 2014, 11% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 40% of males and 40% of females have a documented IDU-related risk.

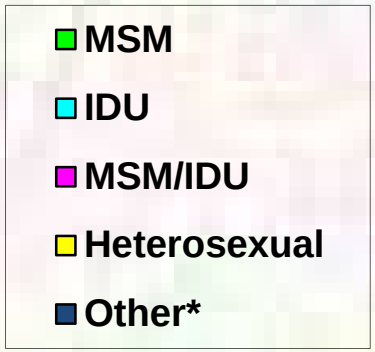
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

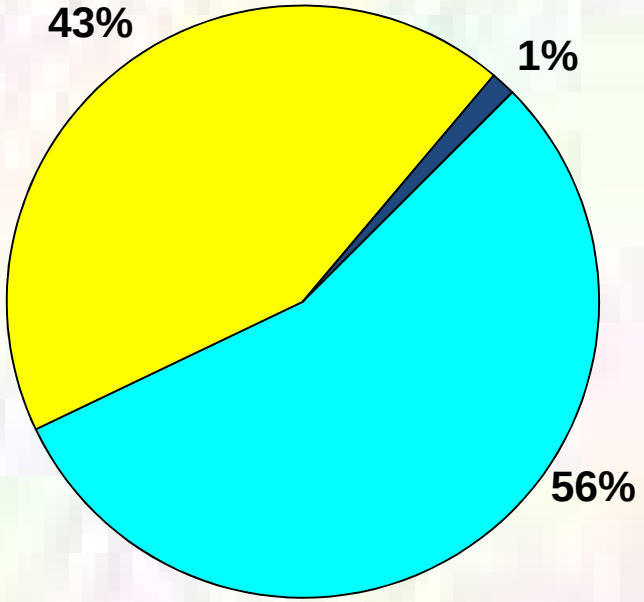
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 12

Males N=161





Females N=74



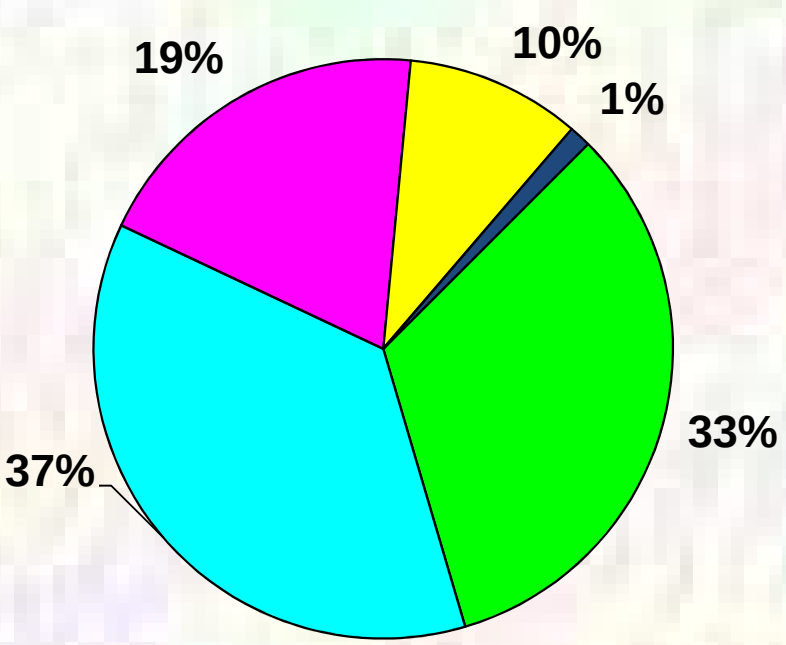
Note: Of the 1,781 living adult (age 13+) HIV/AIDS cases in Area 12 through 2014, 13% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 55% of males and 56% of females have a documented IDU-related risk.

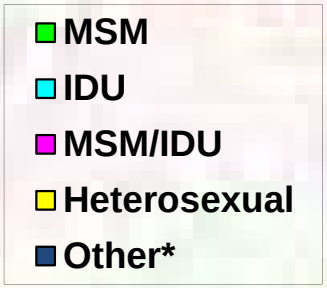
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

Note: NIRs have been redistributed.

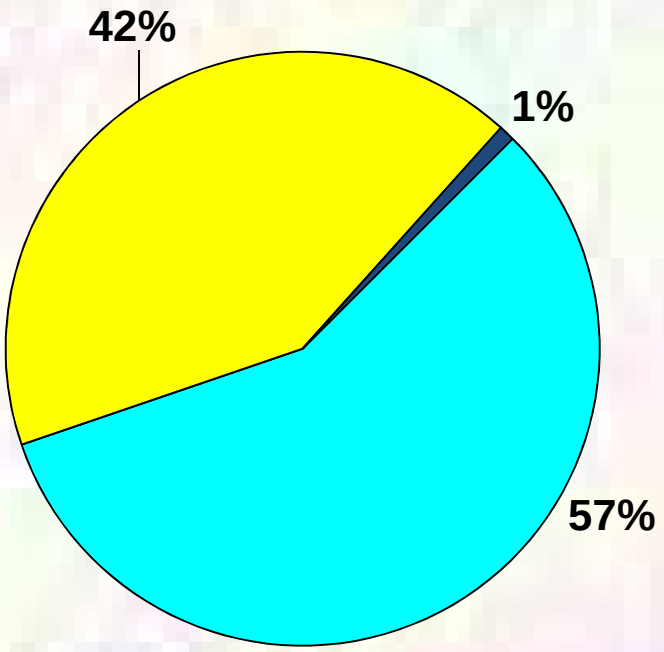
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 13

Males N=164





Females N=117



Note: Of the 2,134 living adult (age 13+) HIV/AIDS cases in Area 13 through 2014, 13% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 56% of males and 57% of females have a documented IDU-related risk.

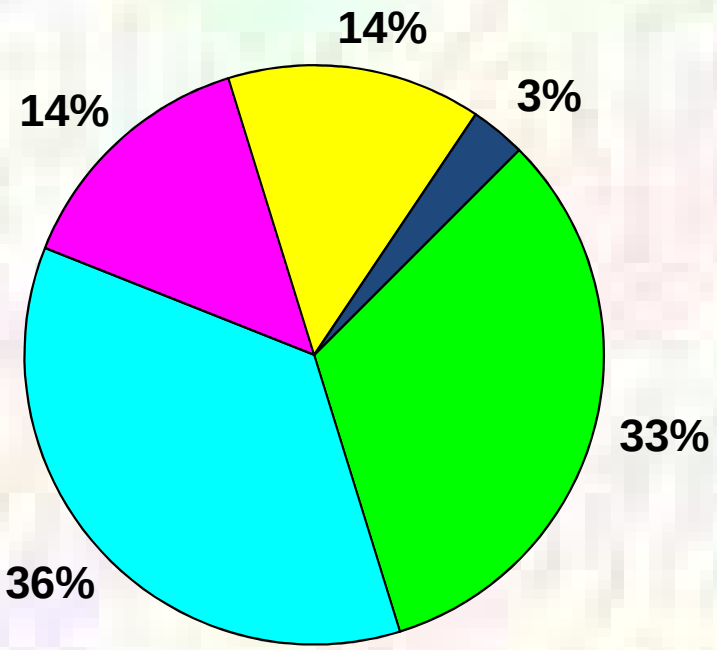
* Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.

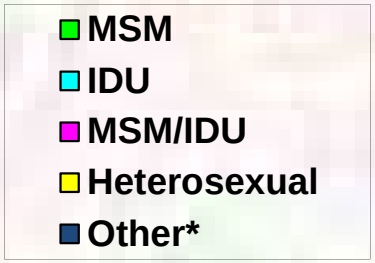
Note: NIRs have been redistributed.

Florida HEALTH

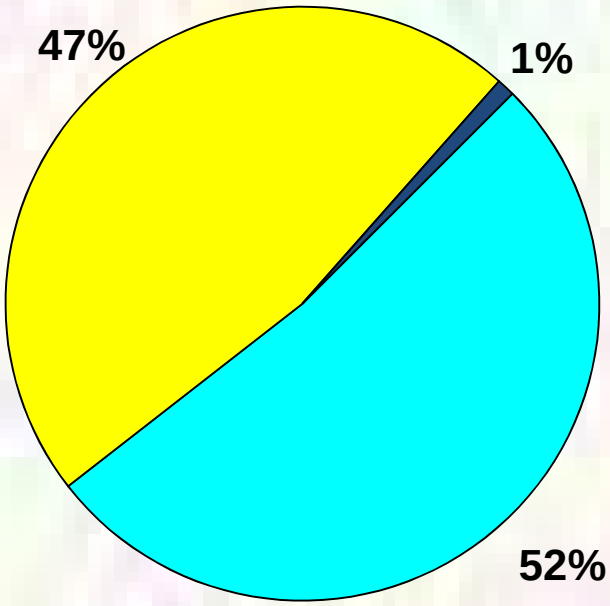
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 14

Males N=162





Females N=102



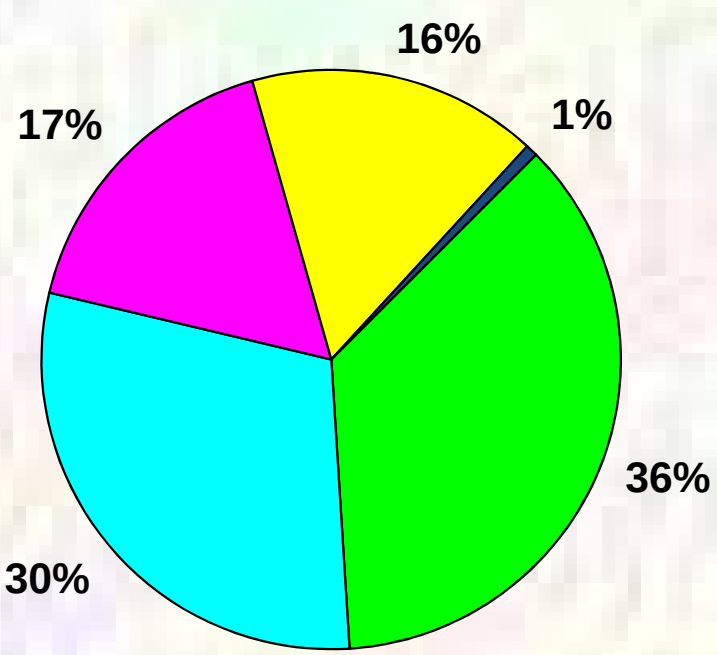
Note: Of the 2,390 living adult (age 13+) HIV/AIDS cases in Area 14 through 2014, 11% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 50% of males and 52% of females have a documented IDU-related risk.

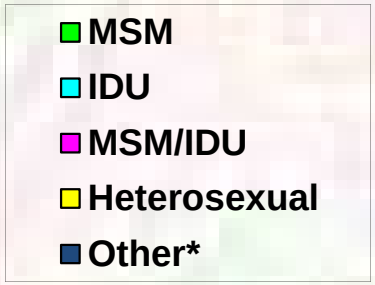
*** Other includes hemophilia, transfusion, perinatal, other pediatric risks and other confirmed risks.**

Note: NIRs have been redistributed.

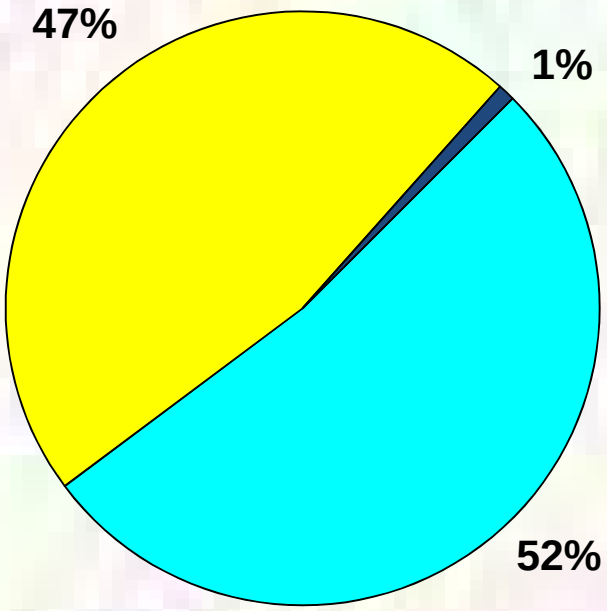
HIV/HCV Co-infected Adult Cases, by Sex and Mode of Exposure, Living and Diagnosed through 2014, Area 15

Males N=148





Females N=109

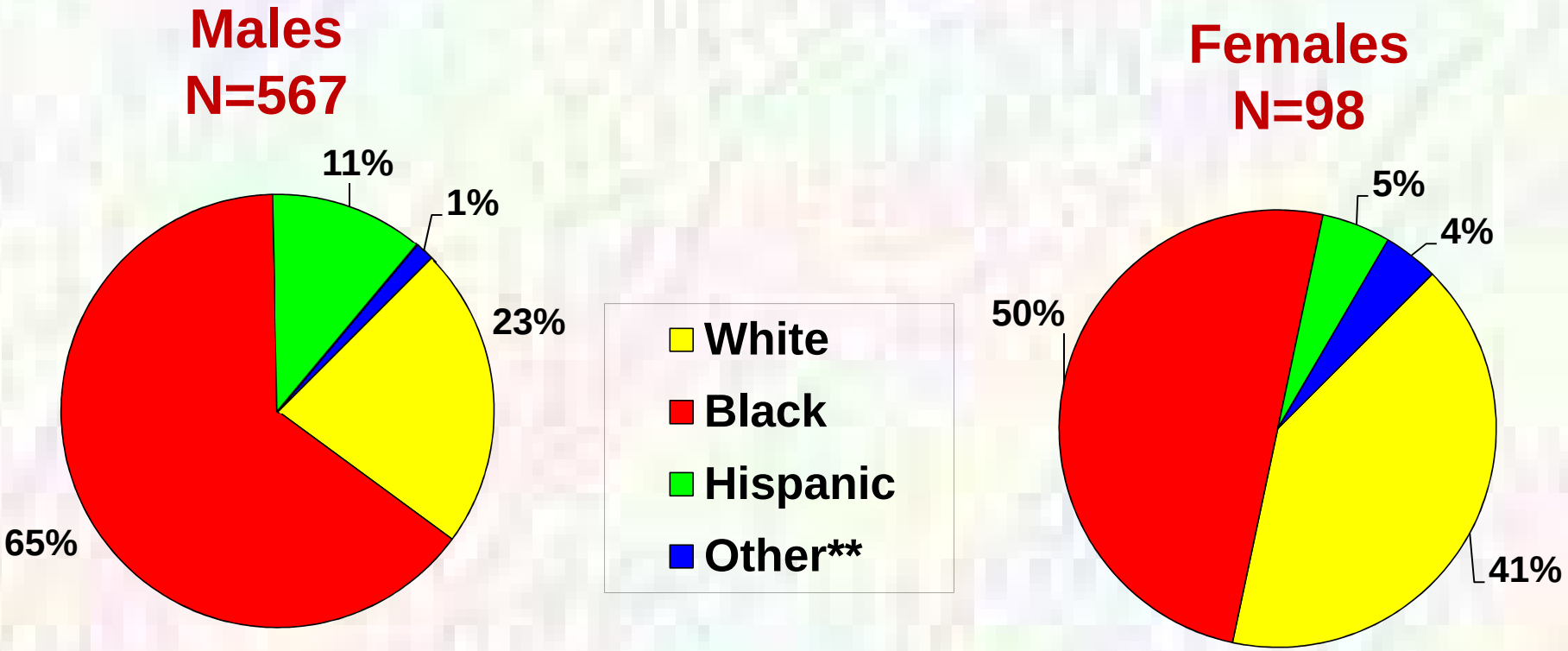


Note: Of the 2,288 living adult (age 13+) HIV/AIDS Cases in Area 15 through 2014, 11% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 47% of males and 52% of females have a documented IDU-related risk.

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

Note: NIRs have been redistributed.

HIV/HCV Co-infected Adult DOC/FCI* Cases, by Sex and Race/Ethnicity, Living and Diagnosed through 2014, Florida



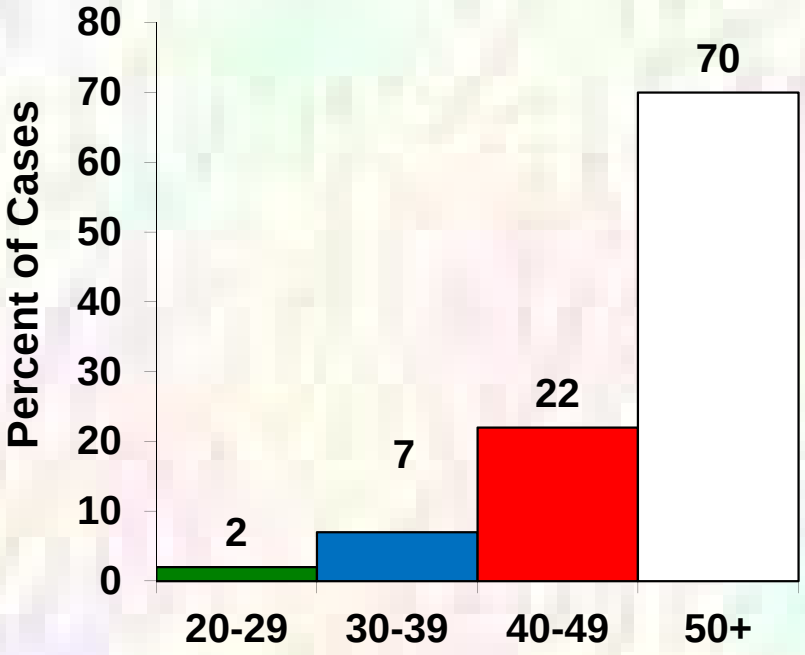
Note: Among incarcerated males living with HIV/HCV co-infection through 2014, 65% are black, 22% are white and 11% are Hispanic. Whereas among females, 50% are black, 41% are white and 5% are Hispanic.

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

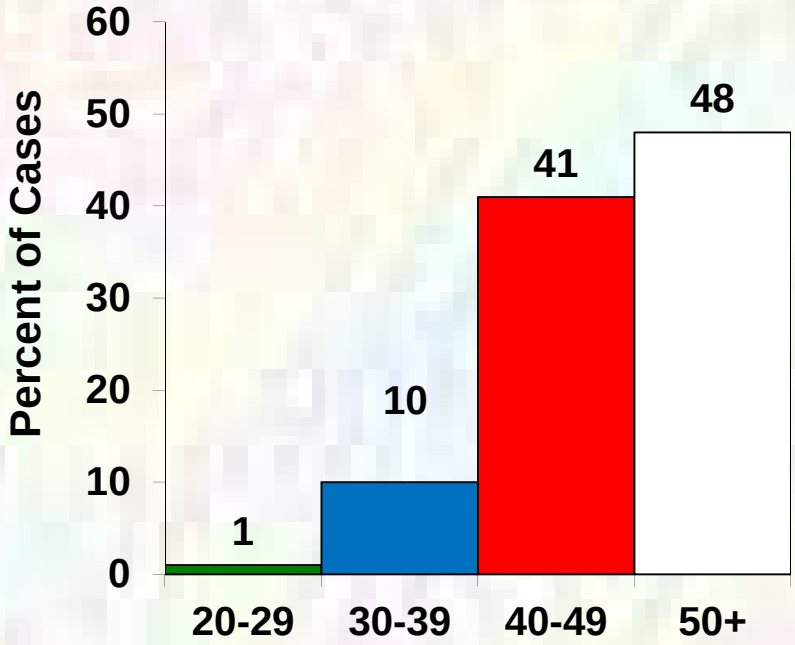
**** Other includes Asian/Pacific Islanders , Native Alaskans/American Indians and Multi-racial individuals.**

HIV/HCV Co-infected Adult DOC/FCI* Cases, by Sex and Age Group, Living and Diagnosed through 2014, Florida

Males N=567



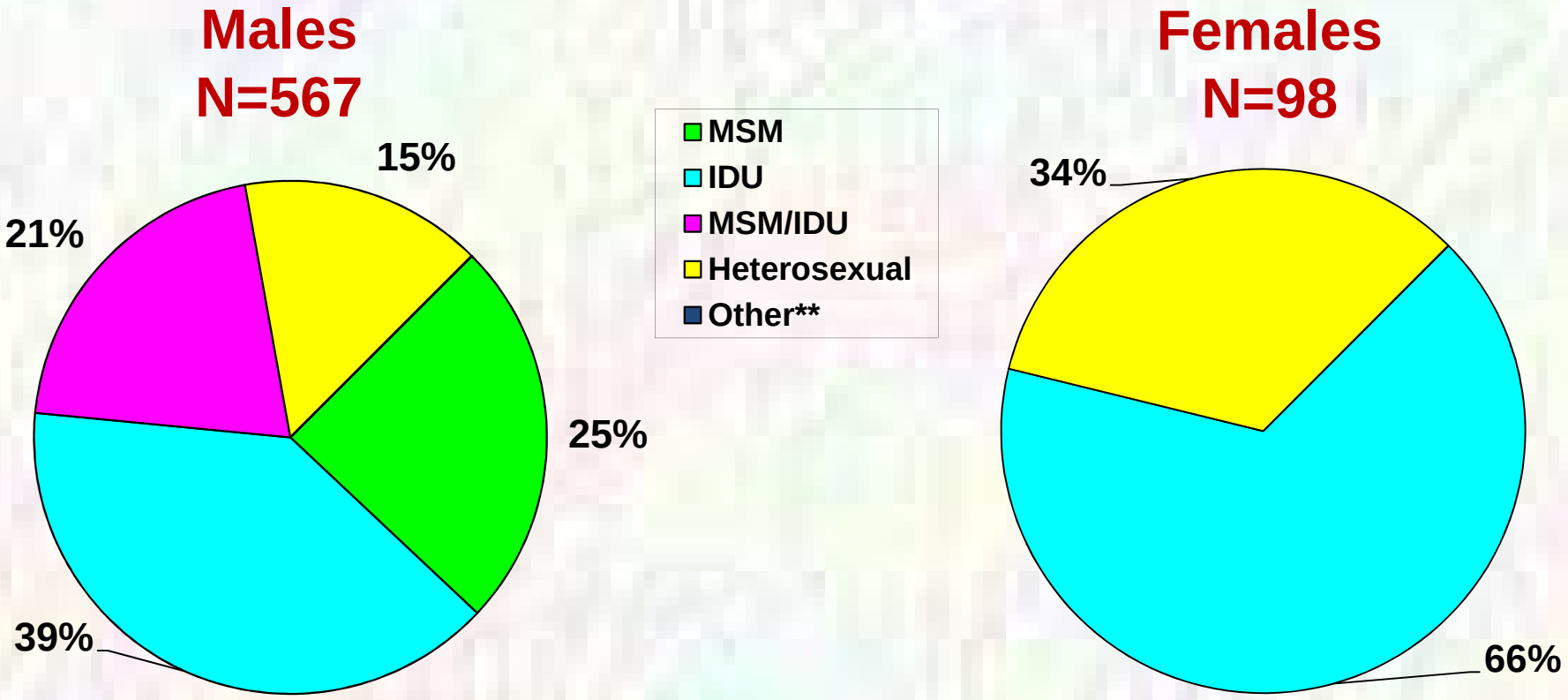
Females N=98



Note: There is a higher proportion of cases among adult males aged 50 or older living with HIV/HCV co-infection, similarly there is a higher proportion of cases among females aged 50 or 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 Diagnosed through 2014, Florida



Note: Of the 4,085 adults (age 13+) living with HIV disease who were reported from DOC/FCI facilities in Florida through 2014, 16% were known to be co-infected with HIV/HCV. Among adults co-infected with HIV/HCV, 60% of males and 66% 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 individuals 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

Florida HEALTH

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Slide Sets and Fact Sheets
Annual Reports and Epi Profiles
http://www.floridahealth.gov/diseases-and-conditions/aids/surveillance/index.html

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Surveillance Reports, fact sheets and slide sets
http://www.cdc.gov/hiv/topics/surveillance/resources/reports/index.htm

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