

QUARTERLY HIV SURVEILLANCE REPORT, MICHIGAN July 2012

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General HIV

HIV (Human Immunodeficiency Virus)

Diagnosis with HIV requires both a positive HIV screening and positive supplemental antibody test or detectable quantity on a virologic test. A standard case definition for HIV infection is used by all states for surveillance. Specific information is required in order to count a case of HIV infection, including a method to uniquely identify an individual. Each case is classified in a HIV infection stage (see below). Once a case reaches stage 3 (AIDS), the case is always considered stage 3 for surveillance purposes, even if his/her health improves (MMWR; December 5, 2008 / Vol. 57 / No. RR--10 / Pg. 1 - 12).

HIV Infection Stages

Stage 1: A case does not have any of the conditions associated with severe HIV infection (called an AIDS-defining condition) and has ≥ 500 CD4 cells/ μ l.

Stage 2: A case has no AIDS-defining condition, but the level of CD4 cells has fallen to 200-499 cells/ μ l.

Stage 3: Diagnosis with any one of 26 AIDS-defining conditions which are indicative of a severe immune deficiency, or a laboratory test demonstrating severe immune deficiency: CD4 count <200 cells/ μ l or CD4 percent $<14\%$. **Previously referred to as AIDS.**

Stage unknown: A case of HIV without information available on CD4 levels or AIDS-defining conditions.

AIDS (Acquired Immune Deficiency Syndrome)

Now referred to as stage 3 HIV infection.

HAART

Highly Active Antiretroviral Therapy.

Pediatric Cases

Children < 13 years at the time of diagnosis.

Epidemiology Terms

Epidemiology

The study of the distribution, determinates, and frequency of disease in humans.

GIS (Geographic Information System)

The display and analysis of geographic data in map format.

Incidence

Number of persons who become infected with a disease in a certain period of time, usually a year.

New Diagnoses

Number of cases newly diagnosed over a given period of time, usually a year. In HIV surveillance, new diagnoses do not necessarily represent new infections, as newly diagnosed cases may have been infected for many years. Thus, only some newly diagnosed cases are also incident cases.

Prevalence

Total number of persons currently living with a disease at one point in time. See page iii for a description of estimated prevalence in Michigan.

Public Health Surveillance

The ongoing collection, analysis, interpretation, dissemination, and evaluation of population-based information about persons with a condition or risk factor of public health concern.

Rate

Count of infected cases divided by the number of persons in the population (infected and uninfected). This calculation is multiplied by a multiple of 10, usually 1,000 or 100,000. Allows one to measure the impact of a disease on populations of varying size.

Administrative Info

CDC

U.S. Centers for Disease Control and Prevention

eHARS (enhanced HIV/AIDS Reporting System)

A standardized database developed by CDC for national reporting of HIV infection.

HAPIS

HIV/AIDS Prevention and Intervention Section

MDCH

Michigan Department of Community Health

Michigan HIV Surveillance Activities

Core HIV Surveillance

Population-based surveillance system of diagnosed adult, adolescent, and pediatric HIV cases.

Nilsa Mack, (517) 335-8165 or Eve Mokotoff, (313) 876-4769

MMP (Medical Monitoring Project)

Project providing information on health-related and risk behaviors, access to and use of prevention and support services, and other data on HIV-infected persons in care in Michigan.

Meosia Lee-Turner, MI MMP Coordinator, (313) 876-0072

NHBS (National HIV Behavioral Surveillance)

Surveillance system to identify behaviors that place individuals at risk for contracting HIV as well as access to prevention services among groups of uninfected persons at highest risk for HIV infection: MSM, IDU, and Heterosexuals at risk for contracting HIV.

Emily Higgins, MI NHBS Coordinator, (313) 876-0176

STARHS (Serologic Testing Algorithm for Recent HIV Seroconversion)

HIV Incidence Surveillance that enables estimation of new HIV infections in Michigan.

Marianne O'Connor, MI STARHS Coordinator, (313) 876-0854

VARHS (Variant, Atypical, and Resistant HIV Surveillance)

Surveillance of drug-resistant and sub-type HIV strains using viral genotyping of remnant sera.

Mary-Grace Brandt, MI VARHS Coordinator, (313) 876-4115

Risk Transmission and Exposure Categories - Overview

Risk Transmission Categories

Risk transmission categories are the hierarchical risk categories that have been used to display HIV transmission risk in the Michigan and national HIV infection statistics since the 1980s. When the transmission categories were created, the order from top to bottom was meant to represent the most likely route through which HIV was transmitted and thus implies that some modes of transmission are more efficient than others. The hierarchy was established based on what was known at the beginning of the epidemic about how HIV was transmitted, when almost all cases were among males and there was little documented heterosexual transmission. Since then, the hierarchy has not changed, even though our understanding of the most efficient HIV transmission routes has changed.

Background on Hierarchy

The hierarchy algorithm is calculated using data from individual patient history questions collected on the case report form (Section VIII). In this hierarchy, all cases are assigned a single mode of transmission with the exception of males who report both sex with other males and injection drug use (categorized as Men who Have Sex with Men/Injection Drug Users (MSM/IDU)). Over time, concerns have been raised that use of hierarchical categories masks the identification of multiple risks that a case may have. For example, a woman who has documented risk of both injection drug use and sex with a male partner who has injected drugs would be assigned a risk of injection drug use (IDU), rather than both IDU and heterosexual sex, because the IDU category is ranked higher in the transmission risk hierarchy. Therefore, this woman's risk of heterosexual sex would not be represented.

There is a national effort toward representing mode of HIV transmission more comprehensively. Beginning in January 2009, Michigan began presenting data on mode of transmission in two ways. First, the traditional risk categories continue to be used in the same tables in which they previously appeared. Second, Table 2 on page 2 displays exposure categories, which present mode of HIV exposure in a manner that allows more complete presentation of the reported risk factor information.

Exposure Categories

The exposure categories shown on page 2 convey all known modes of HIV exposure. Like the traditional risk transmission categories, the exposure categories are mutually exclusive, meaning that each case is only included in one category. Exposure categories, however, allow readers to see all the reported ways in which a case may have been exposed to HIV without stating definitively how the case was infected. Categories are displayed in order of decreasing HIV prevalence. In order to display the most accurate information possible, we request that persons who complete the Michigan Adult HIV/AIDS Confidential Case Report Form indicate a 'Yes', 'No', or 'Unknown' answer to each patient history questions in Section VIII. Patient History of the form.

Risk Transmission & Exposure Categories - Definitions

Blood Recipients

Hemophiliacs, blood transfusion recipients, and organ recipients who received blood products prior to 1985 & persons documented to have ever received an infected organ or unit of blood.

Heterosexual Contact (HC):

Heterosexual Contact w/ Female Risk (HCFR): Males whose female sexual partners are known to be HIV-infected or at high risk for HIV. These partners meet one of the following criteria: IDU, hemophiliac, HIV infected transfusion recipient, or other HIV infected person of unknown risk (**applies to risk transmission categories**).

Heterosexual Contact w/ Female (HCF): Males who have had sex with a female regardless of what is known about the female's HIV status or behaviors (**applies to exposure categories**).

Heterosexual Contact w/ Male (HCM): Females who have had sex with a male regardless of what is known about the male's HIV status or behaviors (**applies to both risk transmission and exposure categories**).

Injection Drug Users (IDU)

Persons who have a history of injection drug use.

Men who have sex with men (MSM)

Males who have a history of sexual contact with other males.

MSM/IDU

MSM who also have a history of injection drug use.

Behaviorally Bisexual Men

MSM who also have a history of sexual contact with females. Also referred to as "MSM & Sex with Female".

Perinatal

HIV transmission from mother to child during birth or through breastfeeding.

Undetermined

Males and females with no identified risk.

Males whose only documented risk is sex with a female, and their female partner's risk and HIV status is unknown (**note: these males meet the definition of heterosexual contact w/ female (HCF) in the exposure categories, but they remain "undetermined" risk in the transmission categories**).

HIV Surveillance in Michigan

Background

Reports of HIV infection are submitted to state and local health departments under Michigan law by providers making initial diagnoses or treating previously diagnosed persons. In addition, laboratories have been required to report HIV-related results since April 2005 (MCL 333.5114). Anonymous HIV tests (without name or other identifier) are excluded from this report because we cannot de-duplicate tests, update status, or obtain missing data. In April 2012, we changed the way we present anonymous numbers. Previously, we presented the cumulative number of anonymous case report forms in Michigan to date. We will now be presenting *the number of positive anonymous tests* (since we cannot know how many individuals these tests represent) *reported each quarter* since the last Quarterly Analysis. A total of 7 anonymous positive HIV tests were reported in Michigan between April 1 and June 30, 2012.

HIV Surveillance in Michigan (Continued)

HIV Prevalence Estimates for Michigan

HIV prevalence estimates are updated annually in the January edition of this quarterly analysis. These estimates are based on reported cases diagnosed with HIV infection while residents of Michigan, regardless of current residence, which is the national standard established by the CDC. Estimates are calculated by adding the following three components and rounding up to the nearest 100: 1) the number of reported cases living with HIV infection, 2) the number of diagnosed HIV infected cases not yet reported, estimated at 10 percent of the reported cases living with HIV infection, and 3) the number of HIV infected cases that have not yet been tested, estimated at 21 percent of the total cases living with HIV infection (identical to the CDC estimate). The current prevalence estimate is 19,300 cases.

HIV prevalence estimates for each subgroup are calculated by multiplying the proportion of total cases in that group by 19,300 (the current total prevalence estimate). For example, 78 percent of HIV infection reports are among males. Therefore, the number of HIV-infected males in Michigan is estimated to be 14,980 (77.59% X 19,300 rounded to the nearest 10; extra decimals included for accurate calculation). Since the estimates are rounded, totals may not equal 19,300. The minimum estimate is 10.

Prison estimates of HIV infection are calculated differently than the aforementioned categorical estimates. All prisoners are tested for HIV upon entry to prison; therefore, there is no need to account for unreported and untested cases. The prison prevalence estimate is calculated by rounding the reported number of persons living with HIV infection and diagnosed in prison to the nearest 10.

County estimates of HIV infection are calculated similarly to the categorical estimates; however, for county calculations the proportion of cases in a particular county is multiplied by the statewide estimate minus the prison estimate (19,300 - 740 = 18,560). For example, 12 percent of HIV infection cases (not including cases in prison) were living in Oakland County at diagnosis. Therefore, the number of HIV-infected persons who were living in Oakland County at the time of diagnosis is estimated to be 2,270 (12.25% x 18,560). Since the estimates are rounded to the nearest 10, county totals may not equal 18,560. The method of calculating prevalence estimates for county of residence was revised as of April 2008; thus, county estimates presented prior to this date may differ from current and future estimates.

HIV Surveillance Staff Contacts

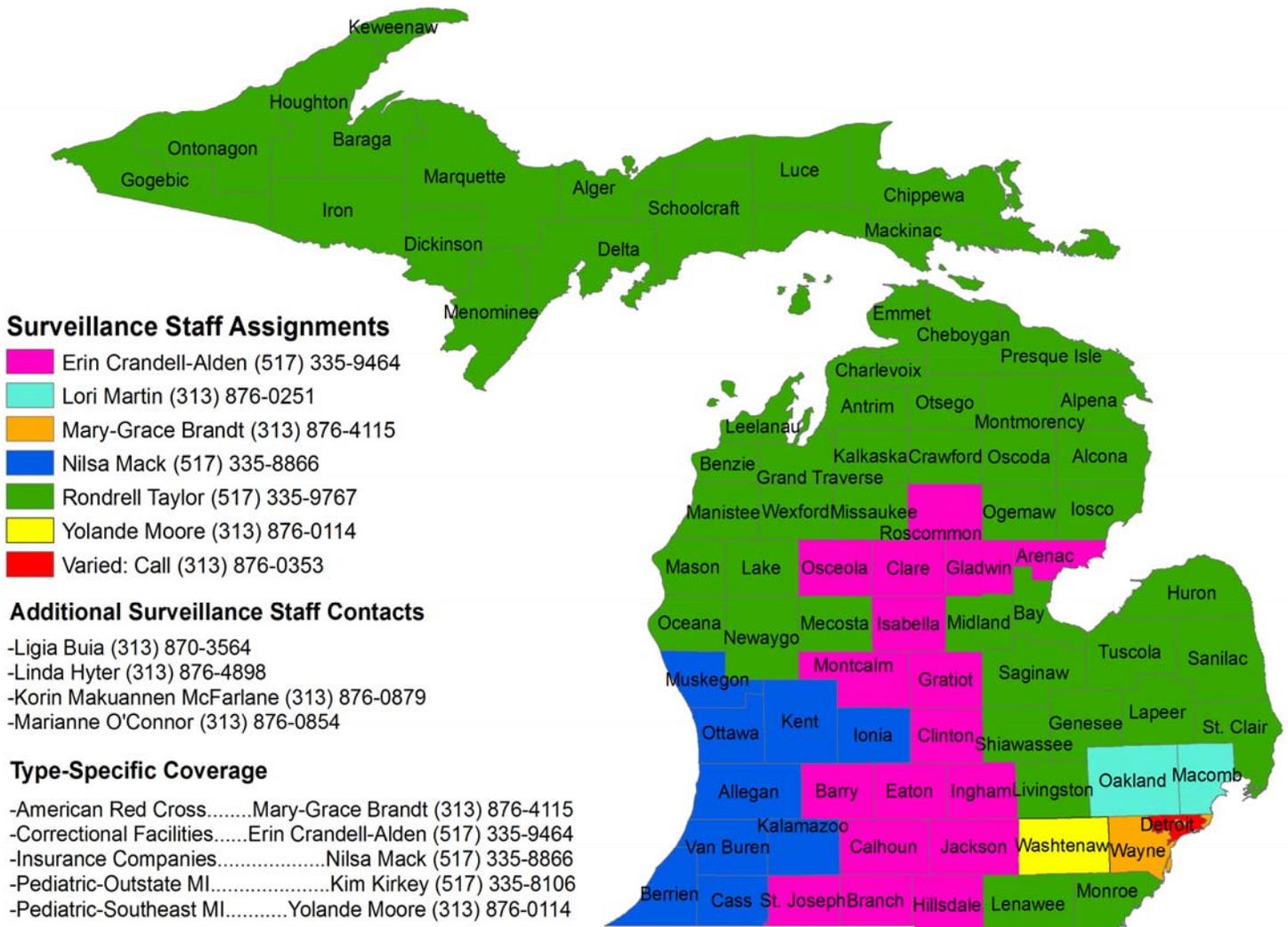


TABLE 1. Demographic Information on Prevalent HIV Infection Cases

	REPORTED HIV INFECTION PREVALENCE								CENSUS 2010	
	EST PREV*	HIV Infection Non-Stage 3		HIV Infection Stage 3 (AIDS)		Total		Rate per 100,000 ^{††}	Num	Percent
	Num	Num	Percent	Num	Percent	Num	Percent			
RACE/ETHNICITY[§]										
White	6,610	2,418	34%	2,727	34%	5,145	34%	68	7,569,939	77%
Black	11,260	4,143	59%	4,624	58%	8,767	58%	634	1,383,756	14%
Hispanic	830	288	4%	358	4%	646	4%	148	436,358	4%
Asian/NH/PI	110	43	1%	44	1%	87	1%	36	238,660	2%
Am Indian/AN	50	21	<1%	15	<1%	36	<1%	66	54,665	1%
Multi/Other/Unk	440	144	2%	198	2%	342	2%	N/A	200,262	2%
SEX[¶] & RACE										
Male	14,980	5,381	76%	6,276	79%	11,657	78%	240	4,848,114	49%
White Male	5,780	2,057	29%	2,439	31%	4,496	30%	121	3,728,507	38%
Black Male	8,110	2,953	42%	3,359	42%	6,312	42%	960	657,181	7%
Hispanic Male	650	222	3%	281	4%	503	3%	227	221,913	2%
Other Male	440	149	2%	197	2%	346	2%	144	240,513	2%
Female	4,320	1,676	24%	1,690	21%	3,366	22%	67	5,035,526	51%
White Female	830	361	5%	288	4%	649	4%	17	3,841,432	39%
Black Female	3,150	1,190	17%	1,265	16%	2,455	16%	338	726,575	7%
Hispanic Female	180	66	1%	77	1%	143	1%	67	214,445	2%
Other Female	150	59	1%	60	1%	119	1%	47	253,074	3%
RISK*										
Male-Male Sex (MSM)	9,490	3,434	49%	3,955	50%	7,389	49%	--	--	--
Injection Drug Use (IDU)	1,750	537	8%	829	10%	1,366	9%	--	--	--
MSM/IDU	770	254	4%	343	4%	597	4%	--	--	--
Blood Products	110	28	<1%	56	1%	84	1%	--	--	--
Heterosexual Contact (HC)	3,430	1,269	18%	1,404	18%	2,673	18%	--	--	--
HCFR (Males)	660	220	3%	292	4%	512	3%	--	--	--
HCM (Females)	2,780	1,049	15%	1,112	14%	2,161	14%	--	--	--
Perinatal	220	104	1%	67	1%	171	1%	--	--	--
Undetermined	3,520	1,431	20%	1,312	16%	2,743	18%	--	--	--
AGE AT HIV DIAGNOSIS										
0 - 12 years	250	119	2%	76	1%	195	1%	--	--	--
13 - 19 years	990	462	7%	309	4%	771	5%	--	--	--
20 - 24 years	2,740	1,232	17%	898	11%	2,130	14%	--	--	--
25 - 29 years	3,260	1,286	18%	1,251	16%	2,537	17%	--	--	--
30 - 39 years	6,520	2,156	31%	2,920	37%	5,076	34%	--	--	--
40 - 49 years	3,890	1,256	18%	1,770	22%	3,026	20%	--	--	--
50 - 59 years	1,340	449	6%	597	7%	1,046	7%	--	--	--
60 years and over	310	94	1%	145	2%	239	2%	--	--	--
Unspecified	10	3	<1%	0	0%	3	<1%	--	--	--
AREA OF RESIDENCE AT DIAGNOSIS^{**}										
Detroit Metro	12,620	4,506	64%	5,215	65%	9,721	65%	228	4,267,304	43%
Out-State	5,940	2,203	31%	2,372	30%	4,575	30%	81	5,616,336	57%
Prison/Unknown	740	348	5%	379	5%	727	5%	N/A	N/A	N/A
TOTAL	19,300	7,057	100%	7,966	100%	15,023	100%	152	9,883,640	100%

*See pages ii and iii for descriptions of prevalence estimate calculations and risk category groupings. Risk categories used in Michigan are redefined as of January 2012. NOTE: Heterosexual contact for males includes only males whose sexual partners are known to be HIV infected or at high risk for HIV (HCFR). Heterosexual contact for females includes all females who have had sex with a male regardless of what is known about the male's HIV status or behaviors (HCM).

[†] To calculate "1 out of x" statements for rate, divide the census number by the total reported prevalence. For example, for non-Hispanic whites: 7,569,939/5,145 = 1,471. Thus, 1 out of every 1,471 non-Hispanic white persons in Michigan are living with HIV.

[‡] Rates are not reported for risk categories and age at diagnosis because no reliable denominator data exist for these groups.

[§] In this report, persons described as white, black, Asian/Pacific Islander (PI), or American Indian/Alaska Native (AN) are all non-Hispanic; persons described as Hispanic may be of any race.

[¶] Detroit Metro Area consists of Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne Counties. The remaining counties comprise the Out-State area.

^{**} As of July 2012, there were 54 prevalent transgender HIV cases (2 female to male, 52 male to female). Due to small numbers, these individuals will continue to be classified according to birth sex in all tables.

TABLE 2. Risk Transmission and Exposure Categories for HIV on Prevalent Cases, by Sex

	Male		Female		Overall	
	Num	Percent	Num	Percent	Num	Percent
REPORTED HIV INFECTION PREVALENCE						
RISK TRANSMISSION CATEGORIES (CDC Hierarchy) *§						
(Mutually Exclusive: one case is represented in ONLY one category)						
Male-Male Sex (MSM)	7,389	63%	N/A	--	7,389	49%
Injection Drug Use (IDU)	809	7%	557	17%	1,366	9%
MSM/IDU	597	5%	N/A	--	597	4%
Blood Products	72	1%	12	<1%	84	1%
Heterosexual Contact (HC)	512	4%	2,161	64%	2,673	18%
HCFR (Males)	512	4%	N/A	--	512	3%
HCM (Females)	N/A	--	2,161	64%	2,161	14%
Perinatal	96	1%	75	2%	171	1%
Undetermined	2,182	19%	561	17%	2,743	18%
EXPOSURE CATEGORIES **†						
(Mutually Exclusive: one case is represented in ONLY one category)						
Male-Male Sex Only	4,781	41%	N/A	--	4,781	32%
MSM & HC	2,562	22%	N/A	--	2,562	17%
MSM & IDU	260	2%	N/A	--	260	2%
MSM & Blood Products	23	<1%	N/A	--	23	<1%
MSM & HC & IDU	322	3%	N/A	--	322	2%
MSM & HC & Blood Products	23	<1%	N/A	--	23	<1%
MSM & IDU & Blood Products	2	<1%	N/A	--	2	<1%
MSM & HC & IDU & Blood Products	13	<1%	N/A	--	13	<1%
Heterosexual Contact Only	1,895	16%	2,461	73%	4,356	29%
HC & IDU	615	5%	492	15%	1,107	7%
HC & Blood Products	48	<1%	35	1%	83	1%
HC & IDU & Blood Products	16	<1%	12	<1%	28	<1%
Injection Drug Use Only	176	2%	53	2%	229	2%
IDU & Blood Products	2	<1%	0	0%	2	<1%
Perinatal Exposure	96	1%	75	2%	171	1%
Exposure to Blood Products Only	37	<1%	3	<1%	40	<1%
Undetermined	786	7%	235	7%	1,021	7%
TOTAL	11,657	100%	3,366	100%	15,023	100%
SUMMARIZED EXPOSURE CATEGORIES**						
(NOT Mutually Exclusive: one case may be represented in multiple categories)						
Any MSM	7,986	69%	N/A	--	7,986	53%
Behaviorally Bisexual Men	2,920	25%	N/A	--	2,920	19%
Any Heterosexual Contact	5,494	47%	3,000	89%	8,494	57%
Any IDU	1,406	12%	557	17%	1,963	13%

*See page ii for descriptions of risk transmission and exposure categories.

§ Risk transmission categories are grouped based on hierarchical categories determined by the CDC. Any one person with multiple risks is only represented in the highest category, with the exception of MSM/IDU (based on the hierarchical algorithm).

† Exposure categories are mutually exclusive and grouped to allow all possible combinations of exposures that any one person may have. NOTE: Heterosexual contact (HC) in exposure categories includes males and females who had heterosexual contact, regardless of what is known about their partners' risk or HIV status.

** Summarized exposure categories are NOT mutually exclusive, i.e. a case may be represented in multiple categories. These summarized categories are meant to give a broader picture of exposure and will NOT add up to the total number of persons living with HIV infection.

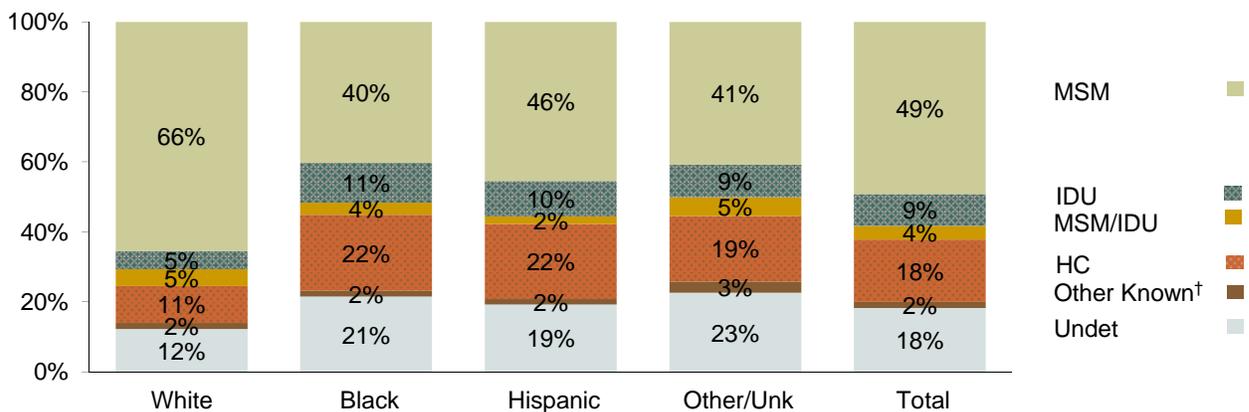
TABLE 3. Sex, Race, and Risk Among Prevalent HIV Infection Cases

MALE	White		Black		Hispanic		Other or Unknown		All Male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-Male sex	3,370	75%	3,535	56%	294	58%	190	55%	7,389	63%
Injection Drug Use	161	4%	578	9%	45	9%	25	7%	809	7%
MSM/IDU	249	6%	309	5%	14	3%	25	7%	597	5%
Blood Products	55	1%	14	<1%	1	<1%	2	1%	72	1%
Heterosexual Contact (HCFR)	100	2%	368	6%	32	6%	12	3%	512	4%
Perinatal	14	<1%	72	1%	2	<1%	8	2%	96	1%
Undetermined	547	12%	1,436	23%	115	23%	84	24%	2,182	19%
Male Subtotal	4,496	39%	6,312	54%	503	4%	346	3%	11,657	100%

FEMALE	White		Black		Hispanic		Other or Unknown		All Female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection Drug Use	105	16%	414	17%	20	14%	18	15%	557	17%
Blood Products	7	1%	4	<1%	1	1%	0	0%	12	<1%
Heterosexual Contact (HCM)	441	68%	1,538	63%	107	75%	75	63%	2,161	64%
Perinatal	12	2%	52	2%	6	4%	5	4%	75	2%
Undetermined	84	13%	447	18%	9	6%	21	18%	561	17%
Female Subtotal	649	19%	2,455	73%	143	4%	119	4%	3,366	100%

ALL	White		Black		Hispanic		Other or Unknown		Risk All	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-Male sex	3,370	66%	3,535	40%	294	46%	190	41%	7,389	49%
Injection Drug Use	266	5%	992	11%	65	10%	43	9%	1,366	9%
MSM/IDU	249	5%	309	4%	14	2%	25	5%	597	4%
Blood Products	62	1%	18	<1%	2	<1%	2	<1%	84	1%
Heterosexual Contact (HC)	541	11%	1,906	22%	139	22%	87	19%	2,673	18%
<i>HCFR (Males)</i>	100	2%	368	4%	32	5%	12	3%	512	3%
<i>HCM (Females)</i>	441	9%	1,538	18%	107	17%	75	16%	2,161	14%
Perinatal	26	1%	124	1%	8	1%	13	3%	171	1%
Undetermined	631	12%	1,883	21%	124	19%	105	23%	2,743	18%
RACE ALL	5,145	34%	8,767	58%	646	4%	465	3%	15,023	100%

FIGURE 1. Mode of HIV Transmission Among Prevalent Cases, by Race



†The 'Other Known' mode of transmission in Figure 1 is a combination of 'Blood Products' and 'Perinatal' from Table 3.

TABLE 4. Sex, Race, and Age at HIV Diagnosis Among Prevalent Cases

	White		Black		Hispanic		Other or Unknown		All Male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	24	1%	78	1%	2	<1%	9	3%	113	1%
13 - 19 years	78	2%	474	8%	17	3%	19	5%	588	5%
20 - 24 years	425	9%	1,124	18%	64	13%	45	13%	1,658	14%
25 - 29 years	746	17%	1,036	16%	104	21%	69	20%	1,955	17%
30 - 39 years	1,724	38%	1,933	31%	196	39%	124	36%	3,977	34%
40 - 49 years	1,057	24%	1,182	19%	79	16%	61	18%	2,379	20%
50 - 59 years	351	8%	406	6%	28	6%	16	5%	801	7%
60 years and over	91	2%	77	1%	13	3%	3	1%	184	2%
Male Subtotal*	4,496	39%	6,310	54%	503	4%	346	3%	11,655	100%

	White		Black		Hispanic		Other or Unknown		All Female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	13	2%	58	2%	6	4%	5	4%	82	2%
13 - 19 years	40	6%	129	5%	11	8%	3	3%	183	5%
20 - 24 years	113	17%	323	13%	21	15%	15	13%	472	14%
25 - 29 years	129	20%	412	17%	19	13%	22	18%	582	17%
30 - 39 years	202	31%	798	33%	55	38%	44	37%	1,099	33%
40 - 49 years	98	15%	510	21%	20	14%	19	16%	647	19%
50 - 59 years	46	7%	182	7%	8	6%	9	8%	245	7%
60 years and over	7	1%	43	2%	3	2%	2	2%	55	2%
Female Subtotal*	648	19%	2,455	73%	143	4%	119	4%	3,365	100%

	White		Black		Hispanic		Other or Unknown		Overall	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	37	1%	136	2%	8	1%	14	3%	195	1%
13 - 19 years	118	2%	603	7%	28	4%	22	5%	771	5%
20 - 24 years	538	10%	1,447	17%	85	13%	60	13%	2,130	14%
25 - 29 years	875	17%	1,448	17%	123	19%	91	20%	2,537	17%
30 - 39 years	1,926	37%	2,731	31%	251	39%	168	36%	5,076	34%
40 - 49 years	1,155	22%	1,692	19%	99	15%	80	17%	3,026	20%
50 - 59 years	397	8%	588	7%	36	6%	25	5%	1,046	7%
60 years and over	98	2%	120	1%	16	2%	5	1%	239	2%

RACE OVERALL * 5,144 34% 8,765 58% 646 4% 465 3% 15,020 100%

*Not included in this table are two black male cases and one white female case of unknown age at diagnosis.

FIGURE 2. Age at HIV Diagnosis Among Prevalent Cases, by Race

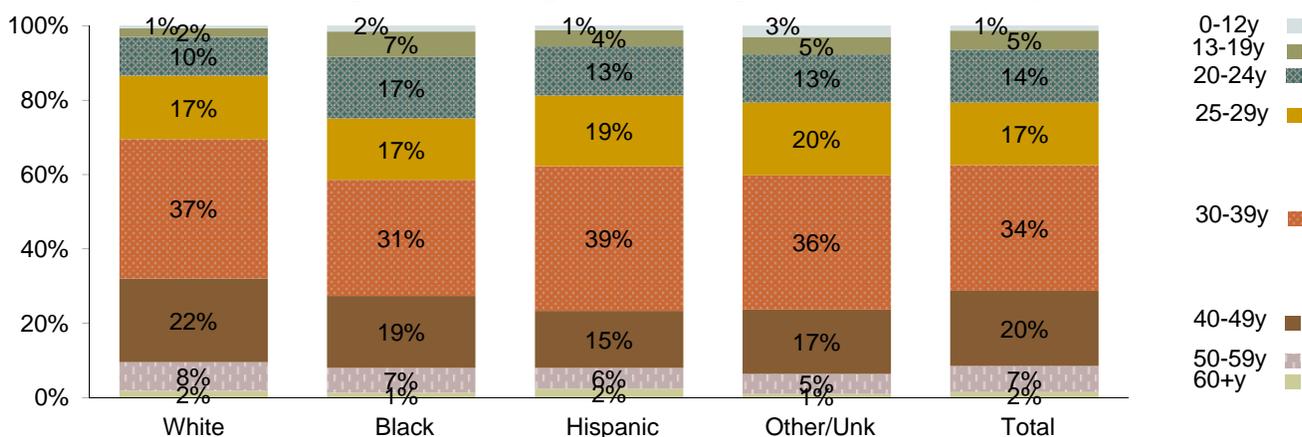


TABLE 5. New Diagnoses, Deaths, and Prevalence of HIV Infection, by Year

Year	<i>HIV Infection (all stages)</i>			<i>HIV Infection Stage 3 (AIDS)</i>		
	New HIV Diagnoses	Deaths	Prevalence	New Stage 3 Diagnoses	Deaths	Prevalence
1981	4	2	2	3	2	1
1982	3	0	5	2	0	3
1983	30	5	30	22	5	20
1984	70	17	83	50	17	53
1985	383	63	403	98	63	88
1986	491	103	791	168	100	156
1987	720	182	1,329	318	174	300
1988	905	266	1,968	493	257	536
1989	1,299	383	2,884	689	373	852
1990	1,442	454	3,872	795	434	1,213
1991	1,441	537	4,776	962	516	1,659
1992	1,489	666	5,599	1,232	634	2,257
1993	1,299	827	6,071	1,126	781	2,602
1994	1,211	905	6,377	1,013	846	2,769
1995	1,192	922	6,647	1,064	853	2,980
1996	1,118	636	7,129	858	587	3,251
1997	1,042	470	7,701	738	419	3,570
1998	901	410	8,192	650	357	3,863
1999	748	374	8,566	574	325	4,112
2000	927	391	9,102	652	338	4,426
2001	875	397	9,580	574	327	4,673
2002	767	378	9,969	577	321	4,929
2003	870	372	10,467	600	302	5,227
2004	890	350	11,007	564	280	5,511
2005	898	360	11,545	738	296	5,953
2006	803	345	12,003	612	277	6,288
2007	800	331	12,472	590	280	6,598
2008	795	344	12,923	546	282	6,862
2009	819	226	13,516	477	195	7,144
2010	772	163	14,125	513	147	7,510
2011	753	137	14,741	450	123	7,837
2012	303	21	15,023	143	14	7,966
TOTAL	26,060	11,037		17,891	9,925	

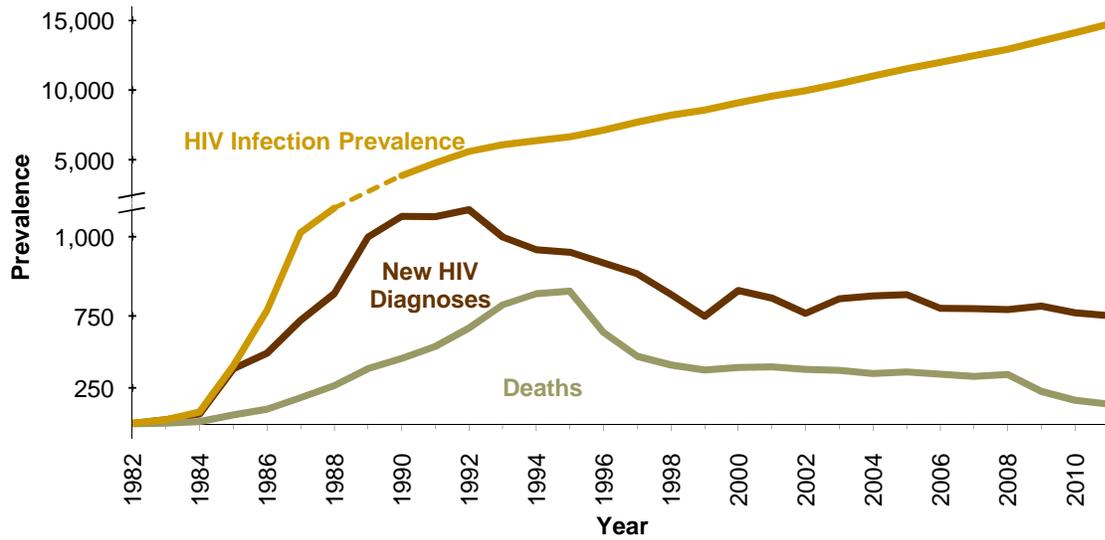
The prevalence of HIV in Michigan has steadily increased, since persons with HIV are living longer. This is largely due to improved anti-retroviral therapy.

The increase in HIV prevalence is also reflected in Figure 3 on page 6, which shows that the number of persons diagnosed, while stable for the last several years, is greater than the number of deaths each year. This directly contributes to the increase in prevalence. The current reported prevalence of HIV infection in Michigan is 15,023. The prevalence of Stage 3 infection, which is a subset of the overall HIV infection prevalence, is 7,966.

As implied, the HIV infection section displays data on all persons with HIV, including those with Stage 3 infection as well as those who have not progressed to Stage 3. Thus, persons represented in the Stage 3 section are also represented in the HIV infection section. The number of reported deaths includes deaths directly attributable to presence of HIV infection as well as deaths due to other causes.

NOTE: Reporting for recent years may not be complete. Data are not adjusted to account for reporting delays.

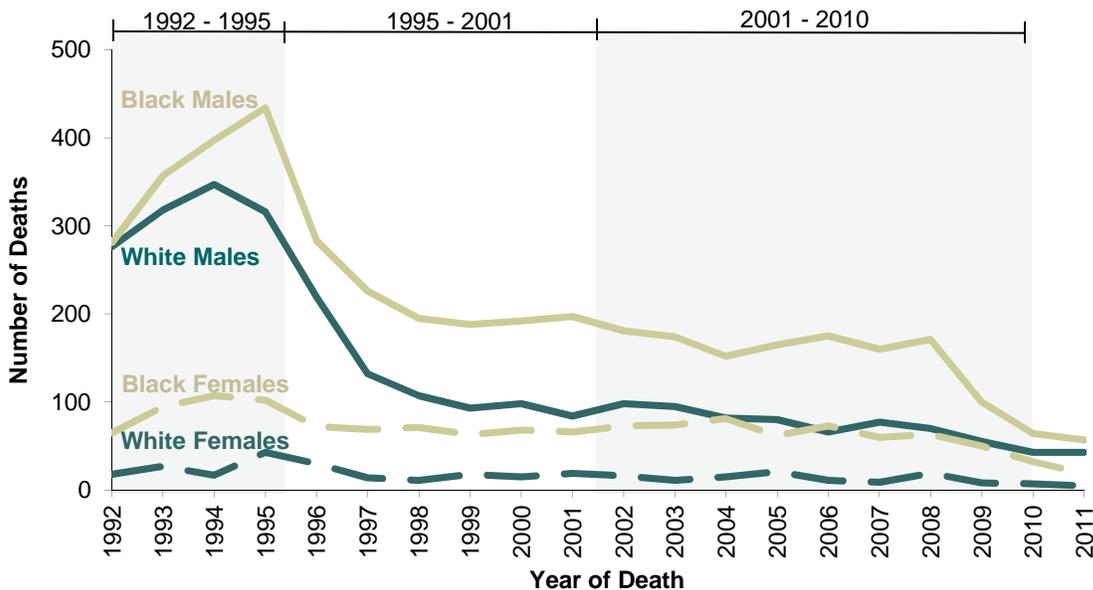
FIGURE 3. New Diagnoses[†], Deaths, and Prevalence of HIV Infection, by Year



[†] Reporting for 2011 is incomplete at this time.

Figure 4 (below) shows the number of HIV positive Michigan residents who are reported as deceased by a local health department, the Department of Vital Records via a data match or death certificate, a match with the National Death Index, or an alternate source. The number of deaths increased in all race/sex groups from the beginning of the epidemic through approximately 1994-1995. The number of deaths decreased markedly between 1995 and 1998 and then were relatively stable until 2001. It should be noted that the percent decrease in deaths among white males (73%) between 1995 and 2001 was more pronounced than the percent decrease among black males (55%), and the percent decrease among white females (56%) was larger than the percent decrease among black females (35%). Encouragingly, the number of deaths in black males has fallen substantially from 2001 to 2010 (68%), as have the number of deaths in white males (49%), black females (52%) and white females (63%).

FIGURE 4. HIV Infection Deaths[†], by Race/Sex



[†] Reporting for 2011 is incomplete at this time.

TABLE 6. Demographic Information on Persons Newly and Ever Diagnosed* with HIV

	2012 [†]						CUMULATIVE (through July 2012) [‡]					
	Male		Female		All		Male		Female		All	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
RACE/ETHNICITY												
White	80	33%	14	22%	94	31%	8,134	39%	1,021	19%	9,155	35%
Black	144	60%	41	64%	185	61%	11,277	55%	4,007	74%	15,284	59%
Hispanic	6	3%	5	8%	11	4%	780	4%	199	4%	979	4%
Asian/NH/PI	3	1%	0	0%	3	1%	73	<1%	29	1%	102	<1%
Am Indian/AN	1	<1%	1	2%	2	1%	43	<1%	16	<1%	59	<1%
Multi/Other/Unk	5	2%	3	5%	8	3%	360	2%	121	2%	481	2%
RISK[§]												
Male-Male Sex	149	62%	N/A	--	149	49%	12,247	59%	N/A	--	12,247	47%
Injection Drug Use	4	2%	3	5%	7	2%	2,716	13%	1,590	29%	4,306	17%
MSM/IDU	4	2%	N/A	--	4	1%	1,375	7%	N/A	--	1,375	5%
Blood Products	0	0%	0	0%	0	0%	307	1%	38	1%	345	1%
Heterosexual Contact (HC)	4	2%	35	55%	39	13%	807	4%	2,923	54%	3,730	14%
HCFR (Males)	4	2%	N/A	--	4	1%	807	4%	N/A	--	807	3%
HCM (Females)	N/A	--	35	55%	35	12%	N/A	--	2,923	54%	2,923	11%
Perinatal	1	<1%	1	2%	2	1%	138	1%	107	2%	245	1%
Undetermined	77	32%	25	39%	102	34%	3,077	15%	735	14%	3,812	15%
AGE AT HIV DIAGNOSIS												
0 - 12 years	1	<1%	1	2%	2	1%	183	1%	113	2%	296	1%
13 - 19 years	18	8%	2	3%	20	7%	679	3%	224	4%	903	3%
20 - 24 years	61	26%	8	13%	69	23%	2,158	10%	594	11%	2,752	11%
25 - 29 years	46	19%	16	25%	62	20%	3,300	16%	836	16%	4,136	16%
30 - 39 years	45	19%	10	16%	55	18%	7,481	36%	1,852	34%	9,333	36%
40 - 49 years	38	16%	17	27%	55	18%	4,729	23%	1,205	22%	5,934	23%
50 - 59 years	27	11%	7	11%	34	11%	1,655	8%	436	8%	2,091	8%
60 years and over	3	1%	3	5%	6	2%	480	2%	132	2%	612	2%
Unspecified	0	0%	0	0%	0	0%	2	<1%	1	<1%	3	<1%
Infection STATUS[¶]												
HIV Infection Non-Stage 3	195	82%	50	78%	245	81%	6,193	30%	1,976	37%	8,169	31%
HIV Infection Stage 3 (AIDS)	44	18%	14	22%	58	19%	14,474	70%	3,417	63%	17,891	69%
AIDS - Same time	40	17%	10	16%	50	17%	7,697	37%	1,513	28%	9,210	35%
AIDS - Short Lag	4	2%	4	6%	8	3%	1,603	8%	449	8%	2,052	8%
AIDS - Long lag	0	0%	0	0%	0	0%	5,174	25%	1,455	27%	6,629	25%
AREA OF RESIDENCE AT DIAGNOSIS[£]												
Detroit Metro	147	62%	49	77%	196	65%	13,609	66%	3,905	72%	17,514	67%
Out-State	90	38%	15	23%	105	35%	5,949	29%	1,383	26%	7,332	28%
Prison/Unknown	2	1%	0	0%	2	1%	1,109	5%	105	2%	1,214	5%
TOTAL	239	79%	64	21%	303	100%	20,667	79%	5,393	21%	26,060	100%

*Includes deceased cases.

†Data for cases diagnosed in 2012 are incomplete at this time.

§ See page ii for description of risk category groupings. Risk categories used in Michigan are redefined as of January 2012.

¶ The definitions of infection status are as follows (see page i for complete description of HIV infection stages):

HIV Infection Non-Stage 3: Has not progressed to Stage 3 Infection (AIDS) or no information is available on CD4 levels or AIDS-defining conditions

HIV Infection Stage 3 (AIDS):

AIDS - Same time = Diagnosed as Stage 3 Infection within 30 days of initial HIV diagnosis

AIDS - Short lag = Progressed to Stage 3 between 1 and 12 months after initial HIV diagnosis

AIDS - Long lag = Progressed to Stage 3 more than 12 months after initial HIV diagnosis

£ Detroit Metro Area consists of Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne Counties. The remaining counties comprise the Out-State area.

¶ As of July 2012, there were 76 cumulative transgender HIV cases (2 female to male, 74 male to female). Due to small numbers, these individuals will continue to be classified according to birth sex in all tables.

TABLE 7. Prevalent HIV Infection Cases, by County of Residence at Diagnosis

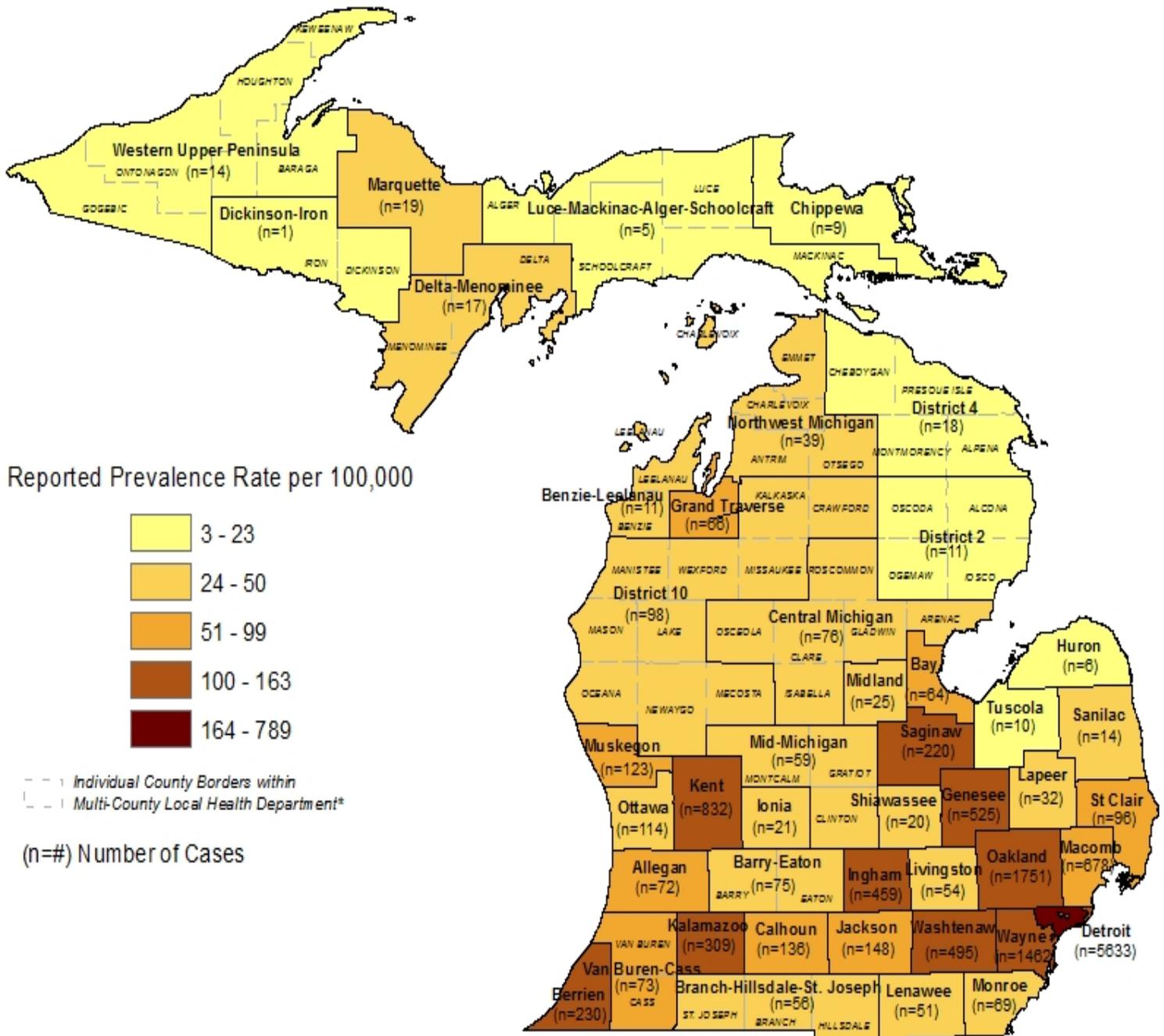
COUNTY	EST PREV	REPORTED PREVALENCE				CENSUS 2010	COUNTY	EST PREV	REPORTED PREVALENCE				CENSUS 2010
		HIV Infection Non-Stage 3	HIV Infection Stage 3	Total	Rate*				HIV Infection Non-Stage 3	HIV Infection Stage 3	Total	Rate*	
Alcona	10	0	0	0	0	10,942	Livingston	70	20	34	54	30	180,967
Alger	10	0	1	1	10	9,601	Luce	10	0	0	0	0	6,631
Allegan	90	25	47	72	65	111,408	Mackinac	10	2	2	4	36	11,113
Alpena	10	2	2	4	14	29,598	Macomb	880	336	342	678	81	840,978
Antrim	10	3	6	9	38	23,580	Manistee	20	5	7	12	49	24,733
Arenac	10	1	1	2	13	15,899	Marquette	20	8	11	19	28	67,077
Baraga	10	1	3	4	45	8,860	Mason	10	4	6	10	35	28,705
Barry	30	9	14	23	39	59,173	Mecosta	20	10	5	15	35	42,798
Bay	80	36	28	64	59	107,771	Menominee	10	3	1	4	17	24,029
Benzie	10	2	3	5	29	17,525	Midland	30	12	13	25	30	83,629
Berrien	300	93	137	230	147	156,813	Missaukee	10	4	5	9	61	14,849
Branch	20	12	3	15	33	45,248	Monroe	90	32	37	69	45	152,021
Calhoun	180	70	66	136	100	136,146	Montcalm	30	9	13	22	35	63,342
Cass	40	15	14	29	55	52,293	Montmorency	10	0	3	3	31	9,765
Charlevoix	10	3	8	11	42	25,949	Muskegon	160	65	58	123	71	172,188
Cheboygan	10	3	6	9	34	26,152	Newaygo	20	7	9	16	33	48,460
Chippewa	10	6	3	9	23	38,520	Oakland	2,270	871	880	1,751	146	1,202,362
Clare	20	3	10	13	42	30,926	Oceana	10	5	4	9	34	26,570
Clinton	40	18	11	29	38	75,382	Ogemaw	10	1	3	4	18	21,699
Crawford	10	1	3	4	28	14,074	Ontonagon	10	1	1	2	29	6,780
Delta	20	5	8	13	35	37,069	Osceola	10	1	2	3	13	23,528
Dickinson	10	0	0	0	0	26,168	Oscoda	10	1	0	1	12	8,640
Eaton	70	23	29	52	48	107,759	Otsego	10	4	7	11	46	24,164
Emmet	10	3	5	8	24	32,694	Ottawa	150	48	66	114	43	263,801
Genesee	680	261	264	525	123	425,790	Presque Isle	10	0	2	2	15	13,376
Gladwin	10	3	4	7	27	25,692	Roscommon	20	3	10	13	53	24,449
Gogebic	10	1	1	2	12	16,427	Saginaw	290	117	103	220	110	200,169
Grand Traverse	90	34	32	66	76	86,986	Sanilac	20	7	7	14	32	43,114
Gratiot	10	6	2	8	19	42,476	Schoolcraft	10	0	0	0	0	8,485
Hillsdale	10	3	5	8	17	46,688	Shiawassee	30	8	12	20	28	70,648
Houghton	10	3	3	6	16	36,628	St. Clair	120	53	43	96	59	163,040
Huron	10	2	4	6	18	33,118	St. Joseph	40	14	19	33	54	61,295
Ingham	600	250	209	459	163	280,895	Tuscola	10	4	6	10	18	55,729
Ionia	30	10	11	21	33	63,905	Van Buren	60	20	24	44	58	76,258
Iosco	10	4	2	6	23	25,887	Washtenaw	640	256	239	495	144	344,791
Iron	10	0	1	1	8	11,817	Wayne Total	9,210	3,201	3,894	7,095	390	1,820,584
Isabella	50	18	20	38	54	70,311	Wayne, excl. Detroit	1,900	638	824	1,462	132	1,106,807
Jackson	190	76	72	148	92	160,248	Detroit	7,320	2,563	3,070	5,633	789	713,777
Kalamazoo	400	161	148	309	123	250,331	Wexford	10	3	5	8	24	32,735
Kalkaska	10	4	0	4	23	17,153							
Kent	1,080	363	469	832	138	602,622	Detroit Metro[†]	12,620	4,506	5,215	9,721	228	4,267,304
Keweenaw	10	0	0	0	0	2,156	Out-State[†]	5,940	2,203	2,372	4,575	81	5,616,336
Lake	10	4	7	11	95	11,539							
Lapeer	40	13	19	32	36	88,319	Prisons[‡]	730	346	378	724	N/A	N/A
Leelanau	10	0	6	6	28	21,708	Unknown	10	2	1	3	N/A	N/A
Lenawee	70	24	27	51	51	99,892	TOTAL	19,300	7,057	7,966	15,023	152	9,883,640

*Rate is reported prevalence per 100,000 and is not an estimate.

[†] Detroit Metro Area consists of Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne Counties. The remaining counties constitute the Out-State area.

[‡] The Prevalence Estimate for prisons is calculated differently from the remainder of the state. Please see the Front Matter (p. iii) for further explanation.

FIGURE 5. Reported HIV Prevalence and Prevalence Rates, by Residence at Diagnosis



*To mitigate the effect of small numbers of cases, reported HIV prevalence rates and case numbers for multi-county health departments are listed for the health department as a whole and not the individual counties.

Table 8: Number of Deliveries and Births with Perinatal HIV Exposure, 2008 - 2012†

	Mothers	Infants
2008	39	41
2009	35	41
2010	41	41
2011	46	47
2012	12	12

FIGURE 6. Perinatal HIV Exposures, by Residence at Birth

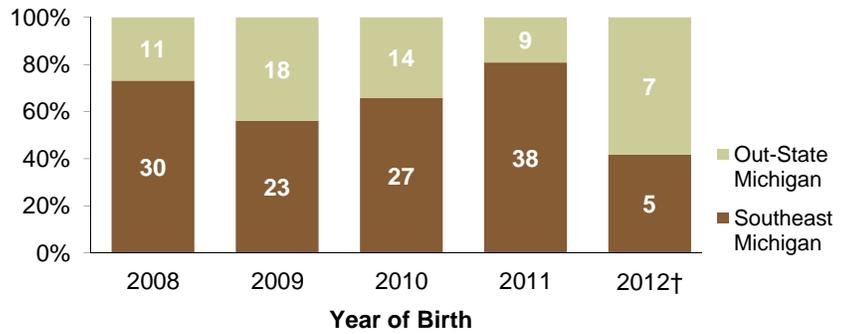


FIGURE 7. Perinatal HIV Exposures, by Infant Race

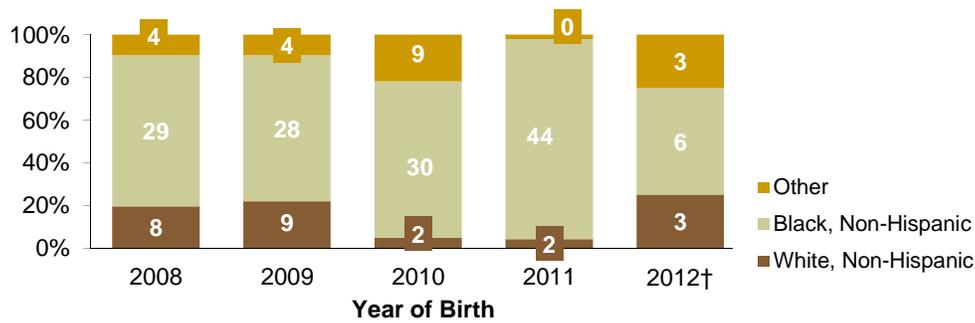


FIGURE 8. Perinatal HIV Exposures, by Maternal Risk

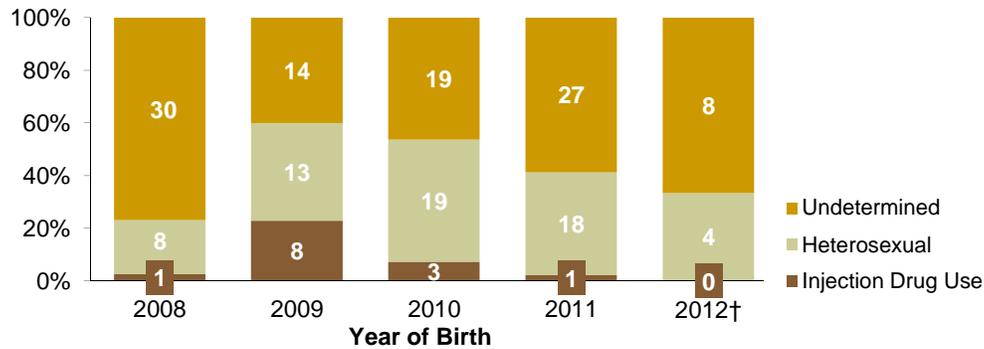


FIGURE 9. Infection Status of Perinatal HIV Exposures

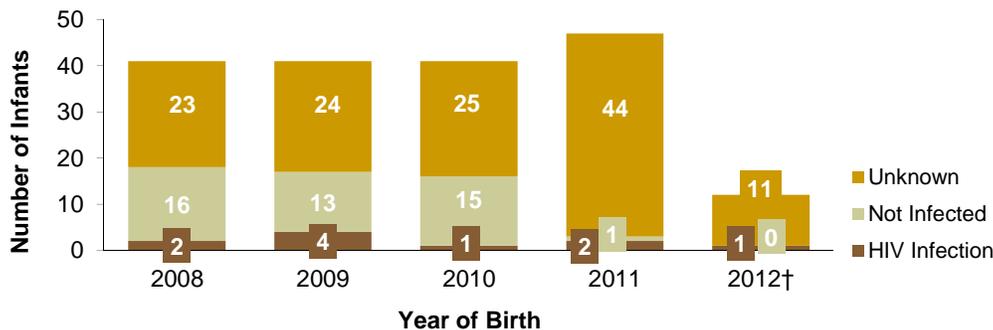


Figure 9 indicates the current infection status of infants born in Michigan to HIV positive women: the top portion of the bars shows number of infants confirmed to be infected with HIV disease; the middle portion shows those not infected with HIV, based on laboratory testing or physician exam; and the bottom portion shows the number of infants whose HIV infection status is unknown due to loss to follow-up or infection status reporting delay.

† Reporting for 2012 is incomplete at this time.