Michigan Department of Community Health

Rick Snyder, Governor
James K. Haveman, Director

QUARTERLY HIV SURVEILLANCE REPORT, MICHIGAN
January 2013

Table of Contents: HIV Surveillance Statistics of Persons Diagnosed in Michigan

HIV/STD/VH/TB Epidemiology Section
Division of Communicable Disease
Bureau of Disease Control, Prevention and Epidemiology
Michigan Department of Community Health

Lansing - HIV Surveillance Office
201 Townsend St., 5th Floor
Lansing, MI 48913
517-335-8165

MDCH - South Oakland Health Center
27725 Greenfield Rd, Office 57A
Southfield, MI 48076
248-424-7910

****WEBSITE**** **http://www.michigan.gov/hivstd** ****WEBSITE****

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/µl.
Stage 2: A case has no AIDS-defining condition, but the level of CD4 cells has fallen to 200-499 cells/µl.
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/µl 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 Mary-Grace Brandt, (313) 876-4115

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-positive 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-positive or at high risk for HIV. These partners meet one of the following criteria: IDU, hemophiliac, HIV-positive transfusion recipient, or other HIV-positive 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) *conducted each quarter* since the last Quarterly Analysis. A total of 15 anonymous positive HIV tests were conducted and reported in Michigan between October 1 and December 31, 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 infection cases not yet reported, estimated at 10 percent of the reported cases living with HIV infection, and 3) the number of HIV infection 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 19,800 cases.

HIV prevalence estimates for each subgroup are calculated by multiplying the proportion of total cases in that group by 19,800 (the current total prevalence estimate). For example, 78 percent of HIV infection reports are among males. Therefore, the number of HIV-positive males in Michigan is estimated to be 15,390 (77.75% X 19,800 rounded to the nearest 10; extra decimals included for accurate calculation). Since the estimates are rounded, totals may not equal 19,800. The minimum estimate is 10.

Prison estimates of HIV infection are calculated differently than the aforementioned subgroup 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 subgroup estimates; however, for county calculations the proportion of cases in a particular county is multiplied by the statewide estimate minus the prison estimate (19,800 - 710 = 19,090). 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-positive persons who were living in Oakland County at the time of diagnosis is estimated to be 2,370 (12.43% x 19,090). Since the estimates are rounded to the nearest 10, county totals may not equal 19,090. 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

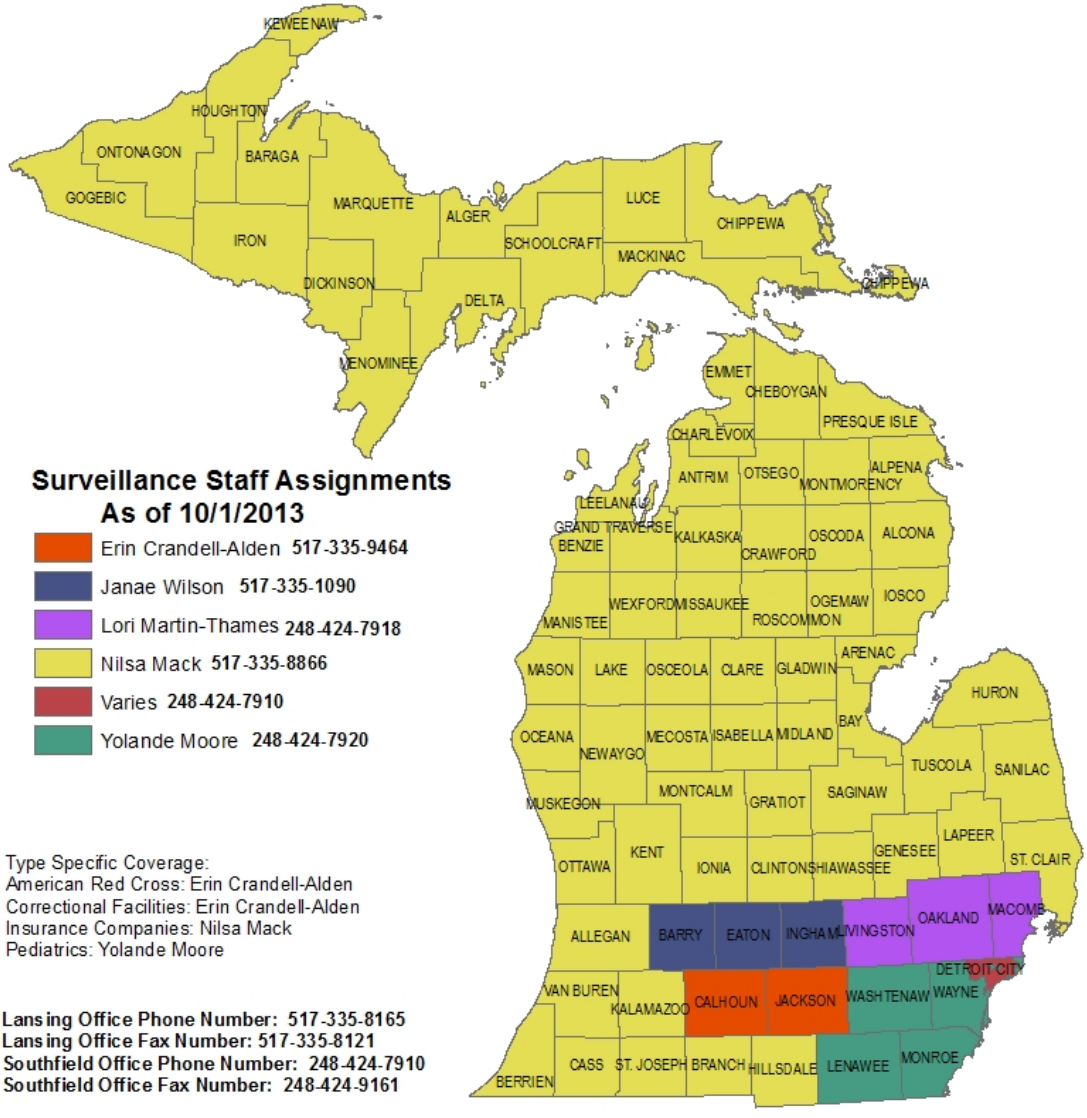


TABLE 1. Demographic Information on Prevalent HIV Infection Cases

REPORTED HIV INFECTION PREVALENCE

	EST PREV*	HIV Infection Non-Stage 3		HIV Infection Stage 3 (AIDS)		Total			CENSUS 2011 ESTIMATES	
	Num	Num	Percent	Num	Percent	Num	Percent	Rate per 100,000†‡	Num	Percent
RACE/ETHNICITY§										
White	6,690	2,428	34%	2,666	34%	5,094	34%	68	7,546,042	76%
Black	11,510	4,197	59%	4,568	58%	8,765	58%	631	1,388,219	14%
Hispanic	850	291	4%	360	5%	651	4%	145	447,917	5%
Asian/NH/PI	120	48	1%	45	1%	93	1%	37	250,023	3%
Am Indian/AN	50	21	<1%	15	<1%	36	<1%	65	55,072	1%
Multi/Other/Unk	580	184	3%	258	3%	442	3%	N/A	188,914	2%
SEX¶ & RACE										
Male	15,390	5,493	77%	6,232	79%	11,725	78%	242	4,845,945	49%
White Male	*5,850*	*2,070*	*29%*	*2,385*	*30%*	*4,455*	*30%*	*120*	*3,718,217*	*38%*
Black Male	*8,310*	*3,017*	*42%*	*3,315*	*42%*	*6,332*	*42%*	*960*	*659,263*	*7%*
Hispanic Male	*670*	*223*	*3%*	*285*	*4%*	*508*	*3%*	*223*	*227,589*	*2%*
Other Male	*560*	*183*	*3%*	*247*	*3%*	*430*	*3%*	*179*	*240,876*	*2%*
Female	4,410	1,676	23%	1,680	21%	3,356	22%	67	5,030,242	51%
White Female	*840*	*358*	*5%*	*281*	*4%*	*639*	*4%*	*17*	*3,827,825*	*39%*
Black Female	*3,190*	*1,180*	*16%*	*1,253*	*16%*	*2,433*	*16%*	*334*	*728,956*	*7%*
Hispanic Female	*190*	*68*	*1%*	*75*	*1%*	*143*	*1%*	*65*	*220,328*	*2%*
Other Female	*190*	*70*	*1%*	*71*	*1%*	*141*	*1%*	*56*	*253,133*	*3%*
RISK*										
Male-Male Sex (MSM)	9,850	3,547	49%	3,953	50%	7,500	50%	--	--	--
Injection Drug Use (IDU)	1,700	509	7%	785	10%	1,294	9%	--	--	--
MSM/IDU	760	251	4%	325	4%	576	4%	--	--	--
Blood Products	110	26	<1%	55	1%	81	1%	--	--	--
Heterosexual Contact (HC)	3,520	1,265	18%	1,417	18%	2,682	18%	--	--	--
HCFR (Males)	*670*	*212*	*3%*	*297*	*4%*	*509*	*3%*	--		
HCM (Females)	*2,850*	*1,053*	*15%*	*1,120*	*14%*	*2,173*	*14%*	--		
Perinatal	230	105	1%	69	1%	174	1%	--	--	--
Undetermined	3,640	1,466	20%	1,308	17%	2,774	18%	--	--	--
									--	--
AGE AT HIV DIAGNOSIS									--	--
0 - 12 years	260	119	2%	79	1%	198	1%	--	--	--
13 - 19 years	1,050	484	7%	314	4%	798	5%	--	--	--
20 - 24 years	2,910	1,294	18%	923	12%	2,217	15%	--	--	--
25 - 29 years	3,360	1,311	18%	1,251	16%	2,562	17%	--	--	--
30 - 39 years	6,630	2,162	30%	2,886	36%	5,048	33%	--	--	--
40 - 49 years	3,920	1,254	17%	1,735	22%	2,989	20%	--	--	--
50 - 59 years	1,360	446	6%	588	7%	1,034	7%	--	--	--
60 years and over	300	96	1%	136	2%	232	2%	--	--	--
Unspecified	10	3	<1%	0	0%	3	<1%	--	--	--
AREA OF RESIDENCE AT DIAGNOSIS¥										
Detroit Metro	12,980	4,611	64%	5,165	65%	9,776	65%	230	4,255,670	43%
Out-State	6,100	2,223	31%	2,372	30%	4,595	30%	82	5,620,517	57%
Prison/Unknown	720	335	5%	375	5%	710	5%	N/A	N/A	N/A
TOTAL	**19,800**	**7,169**	**100%**	**7,912**	**100%**	**15,081**	**100%**	**153**	**9,876,187**	**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 x" statements for rate, divide the census number by the total reported prevalence. For example, for non-Hispanic whites: 7,546,042/ 5,094 = 1,481. Thus, 1 out of every 1,481 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/Native Hawaiian/Pacific Islander (Asian/NH/PI), or American Indian/Alaska Native (Am Indian/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 January 2013, there were 66 prevalent transgender HIV cases (2 female to male, 64 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

REPORTED HIV INFECTION PREVALENCE

	Male		Female		Overall	
	Num	Percent	Num	Percent	Num	Percent
RISK TRANSMISSION CATEGORIES (CDC Hierarchy)*§						
(Mutually Exclusive: one case is represented in ONLY one category)						
Male-Male Sex (MSM)	7,500	64%	N/A	--	7,500	50%
Injection Drug Use (IDU)	762	6%	532	16%	1,294	9%
MSM/IDU	576	5%	N/A	--	576	4%
Blood Products	69	1%	12	<1%	81	1%
Heterosexual Contact (HC)	509	4%	2,173	65%	2,682	18%
HCFR (Males)	*509*	*4%*	*N/A*	*--*	*509*	*3%*
HCM (Females)	*N/A*	*--*	*2,173*	*65%*	*2,173*	*14%*
Perinatal	97	1%	77	2%	174	1%
Undetermined	2,212	19%	562	17%	2,774	18%
EXPOSURE CATEGORIES*†						
(Mutually Exclusive: one case is represented in ONLY one category)						
Male-Male Sex Only	4,874	42%	N/A	--	4,874	32%
MSM & HC	2,580	22%	N/A	--	2,580	17%
MSM & IDU	254	2%	N/A	--	254	2%
MSM & Blood Products	23	<1%	N/A	--	23	<1%
MSM & HC & IDU	307	3%	N/A	--	307	2%
MSM & HC & Blood Products	23	<1%	N/A	--	23	<1%
MSM & IDU & Blood Products	3	<1%	N/A	--	3	<1%
MSM & HC & IDU & Blood Products	12	<1%	N/A	--	12	<1%
Heterosexual Contact Only	1,896	16%	2,476	74%	4,372	29%
HC & IDU	585	5%	470	14%	1,055	7%
HC & Blood Products	47	<1%	34	1%	81	1%
HC & IDU & Blood Products	16	<1%	11	<1%	27	<1%
Injection Drug Use Only	159	1%	51	2%	210	1%
IDU & Blood Products	2	<1%	0	0%	2	<1%
Perinatal Exposure	97	1%	77	2%	174	1%
Exposure to Blood Products Only	35	<1%	3	<1%	38	<1%
Undetermined	812	7%	234	7%	1,046	7%
TOTAL	***11,725***	***100%***	***3,356***	***100%***	***15,081***	***100%***
SUMMARIZED EXPOSURE CATEGORIES¥						
(NOT Mutually Exclusive: one case may be represented in multiple categories)						
Any MSM	8,076	69%	N/A	--	8,076	54%
Behaviorally Bisexual Men	2,922	25%	N/A	--	2,922	19%
Any Heterosexual Contact	5,466	47%	2,991	89%	8,457	56%
Any IDU	1,338	11%	532	16%	1,870	12%

**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.

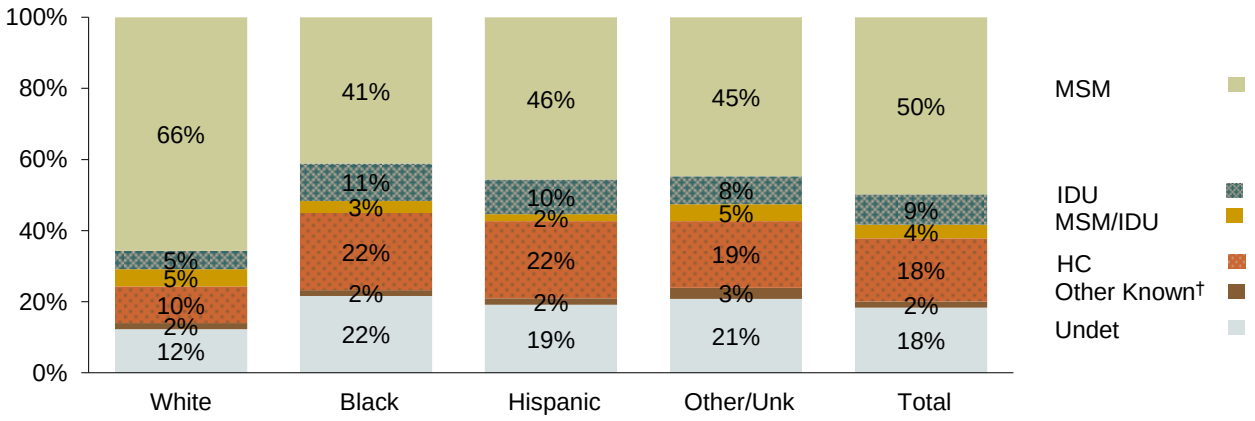
TABLE 3. Sex, Race, and Risk Among Prevalent HIV Infection Cases

MALE	**White**		**Black**		**Hispanic**		**Other or Unknown**		**All Male**	
	Num	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**
Male-Male sex	3,344	75%	3,604	57%	297	58%	255	59%	7,500	64%
Injection Drug Use	155	3%	537	8%	44	9%	26	6%	762	6%
MSM/IDU	244	5%	292	5%	13	3%	27	6%	576	5%
Blood Products	53	1%	12	<1%	1	<1%	3	1%	69	1%
Heterosexual Contact (HCFR)	95	2%	367	6%	34	7%	13	3%	509	4%
Perinatal	13	<1%	71	1%	4	1%	9	2%	97	1%
Undetermined	551	12%	1,449	23%	115	23%	97	23%	2,212	19%
Male Subtotal	**4,455**	**38%**	**6,332**	**54%**	**508**	**4%**	**430**	**4%**	**11,725**	**100%**

FEMALE	**White**		**Black**		**Hispanic**		**Other or Unknown**		**All Female**	
	Num	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**
Injection Drug Use	109	17%	385	16%	19	13%	19	13%	532	16%
Blood Products	7	1%	3	<1%	1	1%	1	1%	12	<1%
Heterosexual Contact (HCM)	433	68%	1,539	63%	107	75%	94	67%	2,173	65%
Perinatal	12	2%	54	2%	6	4%	5	4%	77	2%
Undetermined	78	12%	452	19%	10	7%	22	16%	562	17%
Female Subtotal	**639**	**19%**	**2,433**	**72%**	**143**	**4%**	**141**	**4%**	**3,356**	**100%**

ALL	**White**		**Black**		**Hispanic**		**Other or Unknown**		**Risk All**	
	Num	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**
Male-Male sex	3,344	66%	3,604	41%	297	46%	255	45%	7,500	50%
Injection Drug Use	264	5%	922	11%	63	10%	45	8%	1,294	9%
MSM/IDU	244	5%	292	3%	13	2%	27	5%	576	4%
Blood Products	60	1%	15	<1%	2	<1%	4	1%	81	1%
Heterosexual Contact (HC)	528	10%	1,906	22%	141	22%	107	19%	2,682	18%
HCFR (Males)	*95*	*2%*	*367*	*4%*	*34*	*5%*	*13*	*2%*	*509*	*3%*
HCM (Females)	*433*	*9%*	*1,539*	*18%*	*107*	*16%*	*94*	*16%*	*2,173*	*14%*
Perinatal	25	<1%	125	1%	10	2%	14	2%	174	1%
Undetermined	629	12%	1,901	22%	125	19%	119	21%	2,774	18%
RACE ALL	***5,094***	***34%***	***8,765***	***58%***	***651***	***4%***	***571***	***4%***	***15,081***	***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

MALE	**White**		**Black**		**Hispanic**		**Other or Unknown**		**All Male**	
	Num	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**
0 - 12 years	24	1%	76	1%	4	1%	10	2%	114	1%
13 - 19 years	79	2%	496	8%	15	3%	22	5%	612	5%
20 - 24 years	429	10%	1,181	19%	66	13%	64	15%	1,740	15%
25 - 29 years	740	17%	1,055	17%	102	20%	84	20%	1,981	17%
30 - 39 years	1,707	38%	1,914	30%	195	38%	148	34%	3,964	34%
40 - 49 years	1,044	23%	1,138	18%	81	16%	78	18%	2,341	20%
50 - 59 years	346	8%	397	6%	32	6%	20	5%	795	7%
60 years and over	86	2%	73	1%	13	3%	4	1%	176	2%
Male Subtotal*	**4,455**	**38%**	**6,330**	**54%**	**508**	**4%**	**430**	**4%**	**11,723**	**100%**

FEMALE	**White**		**Black**		**Hispanic**		**Other or Unknown**		**All Female**	
	Num	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**
0 - 12 years	13	2%	60	2%	6	4%	5	4%	84	3%
13 - 19 years	43	7%	127	5%	11	8%	5	4%	186	6%
20 - 24 years	111	17%	327	13%	22	15%	17	12%	477	14%
25 - 29 years	123	19%	408	17%	20	14%	30	21%	581	17%
30 - 39 years	199	31%	783	32%	56	39%	46	33%	1,084	32%
40 - 49 years	96	15%	509	21%	19	13%	24	17%	648	19%
50 - 59 years	47	7%	173	7%	8	6%	11	8%	239	7%
60 years and over	6	1%	46	2%	1	1%	3	2%	56	2%
Female Subtotal*	**638**	**19%**	**2,433**	**73%**	**143**	**4%**	**141**	**4%**	**3,355**	**100%**

ALL	**White**		**Black**		**Hispanic**		**Other or Unknown**		**Overall**	
	Num	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**	**Num**	**Percent**
0 - 12 years	37	1%	136	2%	10	2%	15	3%	198	1%
13 - 19 years	122	2%	623	7%	26	4%	27	5%	798	5%
20 - 24 years	540	11%	1,508	17%	88	14%	81	14%	2,217	15%
25 - 29 years	863	17%	1,463	17%	122	19%	114	20%	2,562	17%
30 - 39 years	1,906	37%	2,697	31%	251	39%	194	34%	5,048	33%
40 - 49 years	1,140	22%	1,647	19%	100	15%	102	18%	2,989	20%
50 - 59 years	393	8%	570	7%	40	6%	31	5%	1,034	7%
60 years and over	92	2%	119	1%	14	2%	7	1%	232	2%
RACE OVERALL*	***5,093***	***34%***	***8,763***	***58%***	***651***	***4%***	***571***	***4%***	***15,078***	***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

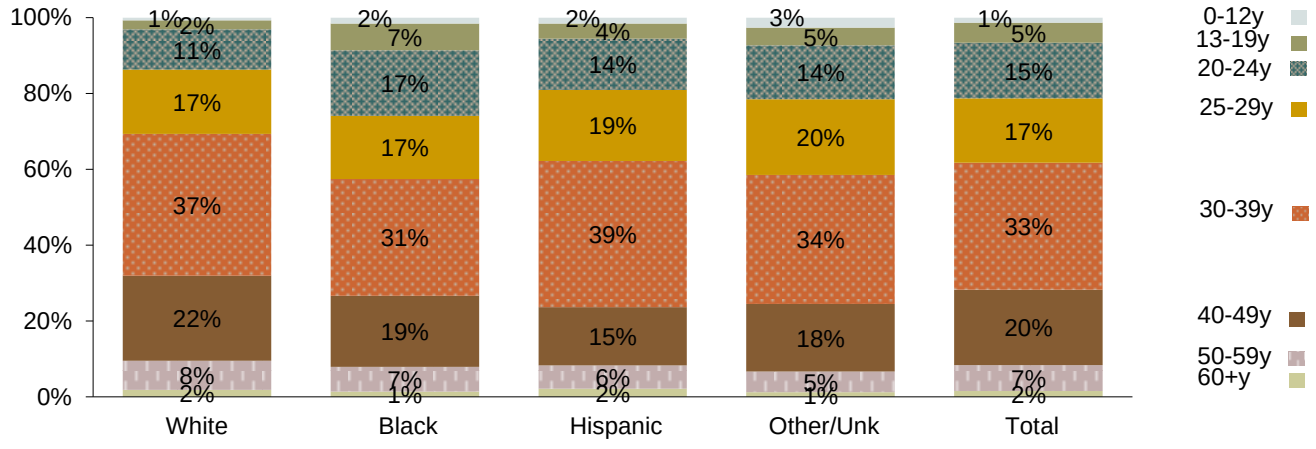


TABLE 5. New Diagnoses, Deaths, and Prevalence of HIV Infection, by Year

	HIV Infection (all stages)			*HIV Infection Stage 3 (AIDS)*		
Year	**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	71	17	84	50	17	53
1985	383	63	404	98	63	88
1986	491	103	792	168	100	156
1987	720	182	1,330	318	174	300
1988	905	266	1,969	493	257	536
1989	1,300	383	2,886	689	373	852
1990	1,442	454	3,874	795	434	1,213
1991	1,442	537	4,779	962	516	1,659
1992	1,491	666	5,604	1,232	634	2,257
1993	1,300	827	6,077	1,127	781	2,603
1994	1,211	907	6,381	1,013	848	2,768
1995	1,190	921	6,650	1,065	852	2,981
1996	1,118	636	7,132	858	587	3,252
1997	1,042	470	7,704	737	419	3,570
1998	897	410	8,191	648	356	3,862
1999	746	374	8,563	575	325	4,112
2000	922	391	9,094	651	338	4,425
2001	876	397	9,573	573	327	4,671
2002	764	378	9,959	577	321	4,927
2003	870	373	10,456	602	303	5,226
2004	887	350	10,993	563	280	5,509
2005	896	365	11,524	738	298	5,949
2006	806	351	11,979	613	282	6,280
2007	800	333	12,446	589	281	6,588
2008	792	347	12,891	547	283	6,852
2009	825	287	13,429	479	233	7,098
2010	783	286	13,926	517	233	7,382
2011	798	257	14,467	466	208	7,640
2012	716	102	***15,081***	360	88	***7,912***
TOTAL	***26,521***	***11,440***		***18,130***	***10,218***	

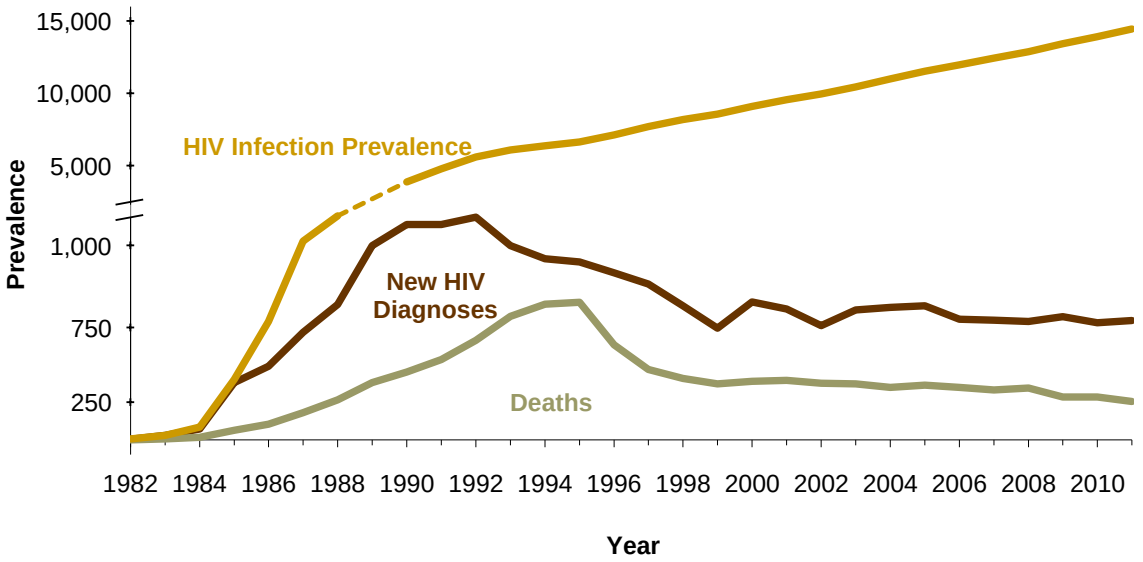
The prevalence of HIV in Michigan has steadily increased, since persons with HIV are living longer. This is largely due to improved anti-retroviral therapy.

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 15,081. The prevalence of Stage 3 infection, which is a subset of the overall HIV infection prevalence, is 7,912.

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.

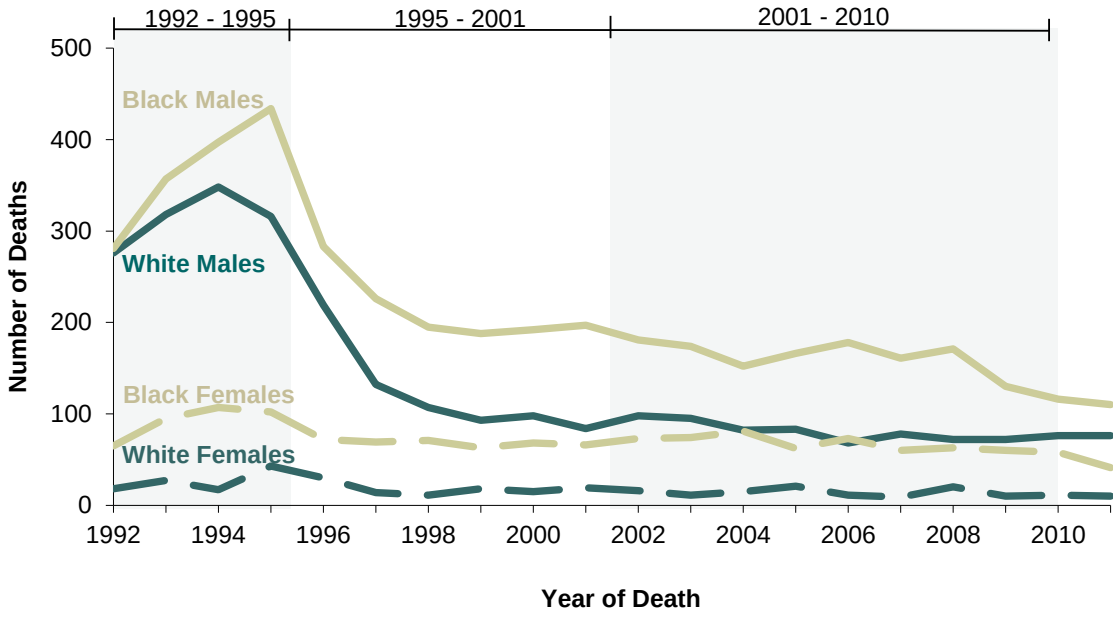
FIGURE 3. New Diagnoses, Deaths,† and Prevalence of HIV Infection, by Year



† Reporting for 2011 deaths 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 (41%), as have the number of deaths in white males (10%), black females (12%), and white females (42%).

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



† Reporting for 2011 deaths is incomplete at this time.

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

	2012†						CUMULATIVE (through January 2013)¶					
	Male		Female		All		Male		Female		All	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
RACE/ETHNICITY												
White	185	32%	25	18%	210	29%	8,205	39%	1,027	19%	9,232	35%
Black	341	59%	94	69%	435	61%	11,475	55%	4,055	74%	15,530	59%
Hispanic	21	4%	8	6%	29	4%	796	4%	204	4%	1,000	4%
Asian/NH/PI	6	1%	1	1%	7	1%	78	<1%	31	1%	109	<1%
Am Indian/AN	2	<1%	1	1%	3	<1%	43	<1%	16	<1%	59	<1%
Multi/Other/Unk	25	4%	7	5%	32	4%	448	2%	143	3%	591	2%
RISK§												
Male-Male Sex	360	62%	N/A	--	360	50%	12,519	59%	N/A	--	12,519	47%
Injection Drug Use	11	2%	7	5%	18	3%	2,723	13%	1,602	29%	4,325	16%
MSM/IDU	11	2%	N/A	--	11	2%	1,381	7%	N/A	--	1,381	5%
Blood Products	0	0%	0	0%	0	0%	307	1%	38	1%	345	1%
Heterosexual Contact (HC)	11	2%	73	54%	84	12%	814	4%	2,976	54%	3,790	14%
HCFR (Males)	*11*	*2%*	*N/A*	*--*	*11*	*2%*	*814*	*4%*	*N/A*	*--*	*814*	*3%*
HCM (Females)	*N/A*	*--*	*73*	*54%*	*73*	*10%*	*N/A*	*--*	*2,976*	*54%*	*2,976*	*11%*
Perinatal	1	<1%	1	1%	2	<1%	140	1%	109	2%	249	1%
Undetermined	186	32%	55	40%	241	34%	3,161	15%	751	14%	3,912	15%
AGE AT HIV DIAGNOSIS												
0 - 12 years	1	<1%	1	1%	2	<1%	185	1%	115	2%	300	1%
13 - 19 years	44	8%	6	4%	50	7%	710	3%	230	4%	940	4%
20 - 24 years	155	27%	15	11%	170	24%	2,258	11%	605	11%	2,863	11%
25 - 29 years	99	17%	26	19%	125	17%	3,360	16%	844	15%	4,204	16%
30 - 39 years	121	21%	28	21%	149	21%	7,567	36%	1,870	34%	9,437	36%
40 - 49 years	93	16%	37	27%	130	18%	4,787	23%	1,232	22%	6,019	23%
50 - 59 years	55	9%	14	10%	69	10%	1,687	8%	442	8%	2,129	8%
60 years and over	12	2%	9	7%	21	3%	489	2%	137	3%	626	2%
Unspecified	0	0%	0	0%	0	0%	2	<1%	1	<1%	3	<1%
Infection STATUS¥												
HIV Infection Non-Stage 3	443	76%	104	76%	547	76%	6,392	30%	1,999	37%	8,391	32%
HIV Infection Stage 3 (AIDS)	137	24%	32	24%	169	24%	14,653	70%	3,477	63%	18,130	68%
AIDS - Same time	*109*	*19%*	*24*	*18%*	*133*	*19%*	*7,766*	*37%*	*1,526*	*28%*	*9,292*	*35%*
AIDS - Short Lag	*28*	*5%*	*8*	*6%*	*36*	*5%*	*1,635*	*8%*	*455*	*8%*	*2,090*	*8%*
AIDS - Long lag	*0*	*0%*	*0*	*0%*	*0*	*0%*	*5,252*	*25%*	*1,496*	*27%*	*6,748*	*25%*
AREA OF RESIDENCE AT DIAGNOSIS£												
Detroit Metro	391	67%	104	76%	495	69%	13,899	66%	3,964	72%	17,863	67%
Out-State	185	32%	32	24%	217	30%	6,034	29%	1,406	26%	7,440	28%
Prison/Unknown	4	1%	0	0%	4	1%	1,112	5%	106	2%	1,218	5%
TOTAL	***580***	***81%***	***136***	***19%***	***716***	***100%***	***21,045***	***79%***	***5,476***	***21%***	***26,521***	***100%***

**Includes deceased cases.*

†Data for cases diagnosed in 2012 may be 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 January 2013, there were 88 cumulative transgender HIV cases (2 female to male, 86 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 2011 ESTIMATES	COUNTY	EST PREV	REPORTED PREVALENCE				CENSUS 2011 ESTIMATES
	Number	HIV Infection Non-Stage 3	HIV Infection Stage 3	Total	Rate*			Number	HIV Infection Non-Stage 3	HIV Infection Stage 3	Total	Rate*	
Alcona	10	0	0	0	0	10,800	Livingston	70	21	35	56	31	181,722
Alger	10	0	1	1	11	9,513	Luce	10	0	0	0	0	6,584
Allegan	90	25	46	71	64	111,234	Mackinac	10	2	2	4	36	11,037
Alpena	10	2	2	4	14	29,386	Macomb	930	360	344	704	84	842,145
Antrim	10	3	6	9	39	23,316	Manistee	20	5	7	12	49	24,709
Arenac	10	1	1	2	13	15,649	Marquette	30	8	12	20	30	67,694
Baraga	10	1	2	3	34	8,808	Mason	10	4	7	11	38	28,678
Barry	30	8	14	22	37	58,820	Mecosta	20	11	6	17	39	43,300
Bay	80	35	26	61	57	107,110	Menominee	10	3	1	4	17	23,930
Benzie	10	2	3	5	29	17,443	Midland	30	12	13	25	30	84,063
Berrien	310	97	137	234	149	156,941	Missaukee	10	4	5	9	60	14,911
Branch	20	13	3	16	35	45,197	Monroe	100	35	39	74	49	151,560
Calhoun	180	68	71	139	103	135,490	Montcalm	30	9	13	22	35	63,185
Cass	40	15	14	29	56	51,988	Montmorency	10	0	3	3	31	9,653
Charlevoix	20	3	9	12	46	25,998	Muskegon	160	66	54	120	70	171,302
Cheboygan	10	3	5	8	31	25,918	Newaygo	20	5	10	15	31	48,352
Chippewa	10	6	3	9	23	38,797	Oakland	2,370	899	888	1,787	148	1,210,145
Clare	20	3	10	13	42	31,033	Oceana	10	5	5	10	38	26,523
Clinton	40	17	13	30	40	75,469	Ogemaw	10	1	3	4	19	21,570
Crawford	10	1	3	4	29	14,014	Ontonagon	10	1	1	2	30	6,598
Delta	20	5	8	13	35	37,105	Osceola	10	1	2	3	13	23,510
Dickinson	10	0	0	0	0	26,185	Oscoda	10	1	0	1	12	8,608
Eaton	70	22	31	53	49	108,056	Otsego	10	4	7	11	46	24,078
Emmet	10	2	5	7	21	32,848	Ottawa	150	44	69	113	42	266,300
Genesee	690	260	258	518	123	422,080	Presque Isle	10	0	2	2	15	13,155
Gladwin	10	3	4	7	27	25,851	Roscommon	20	3	10	13	53	24,414
Gogebic	10	1	1	2	12	16,281	Saginaw	290	113	104	217	109	199,088
Grand Traverse	90	34	31	65	74	88,349	Sanilac	20	7	7	14	33	42,605
Gratiot	10	6	3	9	21	42,145	Schoolcraft	10	0	0	0	0	8,490
Hillsdale	10	3	5	8	17	46,514	Shiawassee	30	8	12	20	29	69,841
Houghton	10	4	3	7	19	36,638	St. Clair	120	51	41	92	57	161,642
Huron	10	2	4	6	18	32,675	St. Joseph	40	14	18	32	52	61,136
Ingham	620	253	212	465	165	281,613	Tuscola	10	5	5	10	18	55,422
Ionia	30	9	11	20	31	63,979	Van Buren	60	23	24	47	62	76,131
Iosco	10	3	3	6	23	25,541	Washtenaw	660	256	240	496	143	347,962
Iron	10	0	1	1	8	11,796	Wayne Total	9,410	3,251	3,834	7,085	393	1,802,096
Isabella	50	18	20	38	54	70,622	*Wayne, excl. Detroit*	*1,980*	*662*	*832*	*1,494*	*136*	*1,095,456*
Jackson	200	78	69	147	92	159,748	*Detroit*[†]	*7,430*	*2,589*	*3,002*	*5,591*	*791*	*706,640*
Kalamazoo	420	167	151	318	126	252,074	Wexford	10	3	5	8	24	32,718
Kalkaska	10	4	0	4	23	17,160							
Kent	1,110	379	460	839	138	608,453	**Detroit Metro**[£]	12,980	4,611	5,165	9,776	230	4,255,670
Keweenaw	10	0	0	0	0	2,173	**Out-State**[£]	6,100	2,223	2,372	4,595	82	5,620,517
Lake	10	4	7	11	95	11,539							
Lapeer	50	15	19	34	39	88,082	**Prisons**[¶]	710	333	374	707	N/A	N/A
Leelanau	10	0	7	7	33	21,459	**Unknown**	10	2	1	3	N/A	N/A
Lenawee	70	24	27	51	51	99,440	***TOTAL***	***19,800***	***7,169***	***7,912***	***15,081***	***153***	***9,876,187***

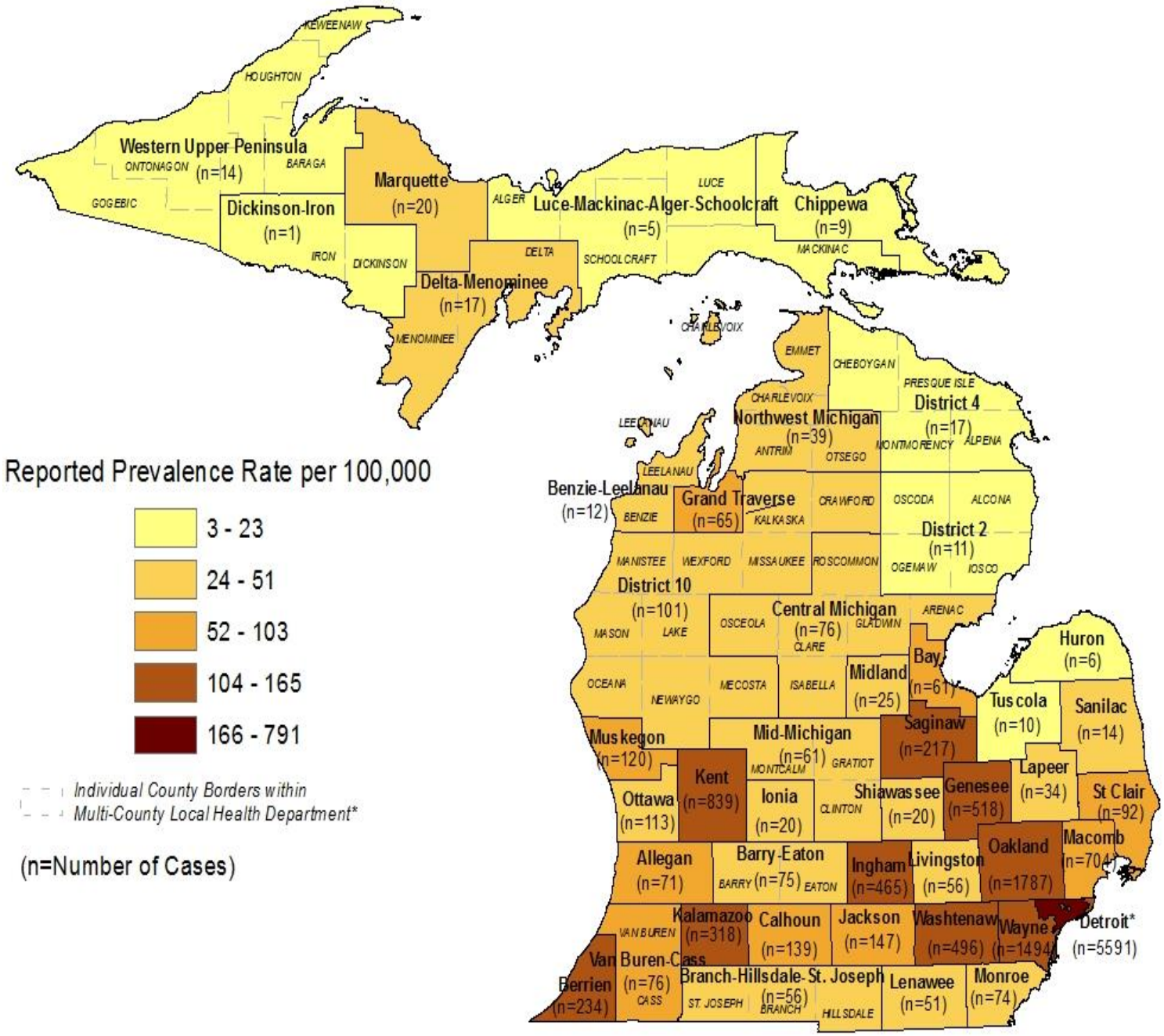
**Rate is reported prevalence per 100,000 and is not an estimate.*

[†] The prevalence rate for the City of Detroit is an overestimate due to significant population decline in the city between 2000 and 2010 (population loss of 25%). MDCH is currently developing a method to calculate estimates that adjust for this population change.

[£] 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.

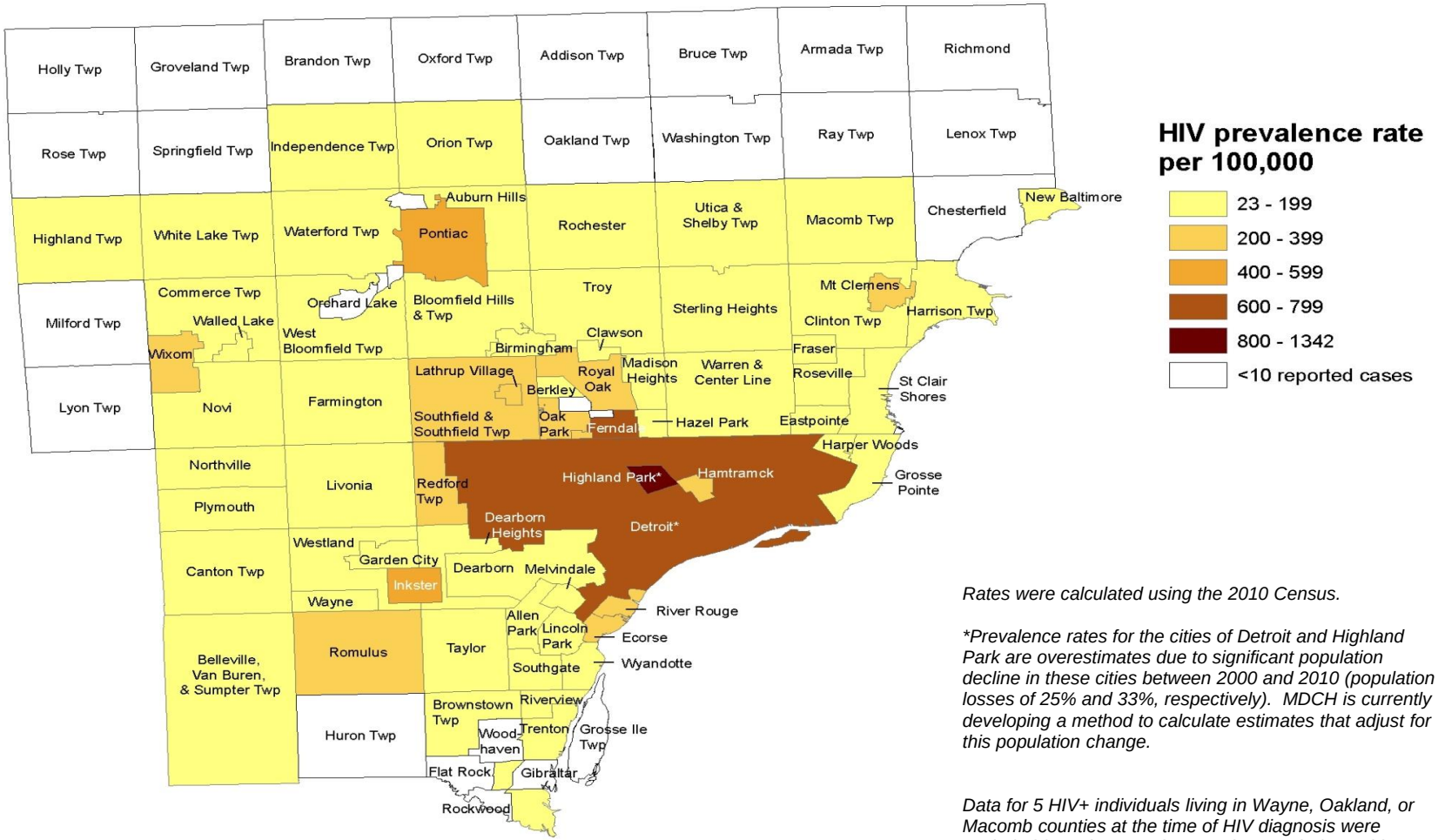
FIGURE 5. Reported HIV Prevalence and Prevalence Rates, by Residence at Diagnosis



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.

**The prevalence rate for the City of Detroit is an overestimate due to significant population decline in the city between 2000 and 2010 (population loss of 25%). MDCH is currently developing a method to calculate estimates that adjust for this population change.*

FIGURE 6. Reported HIV Prevalence Rates, by City of Residence at Diagnosis in Wayne, Oakland, and Macomb Counties as of January 1, 2013 (N=9,576)



Rates were calculated using the 2010 Census.

**Prevalence rates for the cities of Detroit and Highland Park are overestimates due to significant population decline in these cities between 2000 and 2010 (population losses of 25% and 33%, respectively). MDCH is currently developing a method to calculate estimates that adjust for this population change.*

Data for 5 HIV+ individuals living in Wayne, Oakland, or Macomb counties at the time of HIV diagnosis were excluded from the map due to unknown city/township at diagnosis.

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

	Mothers	Infants
2008	39	41
2009	36	42
2010	42	42
2011	54	54
2012*	40	41

FIGURE 7. Perinatal HIV Exposures, by Residence at Birth

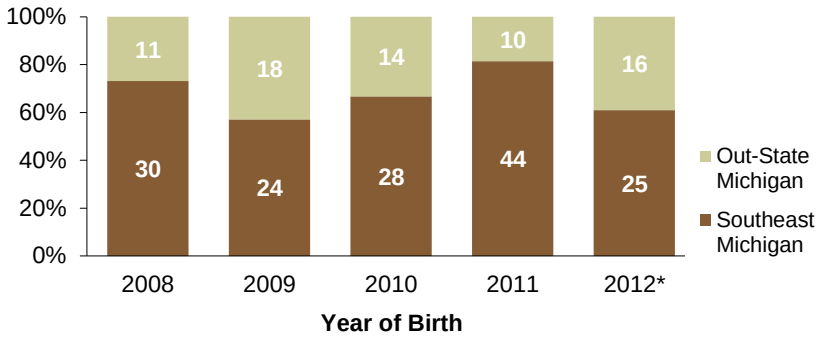


FIGURE 8. Perinatal HIV Exposures, by Infant Race

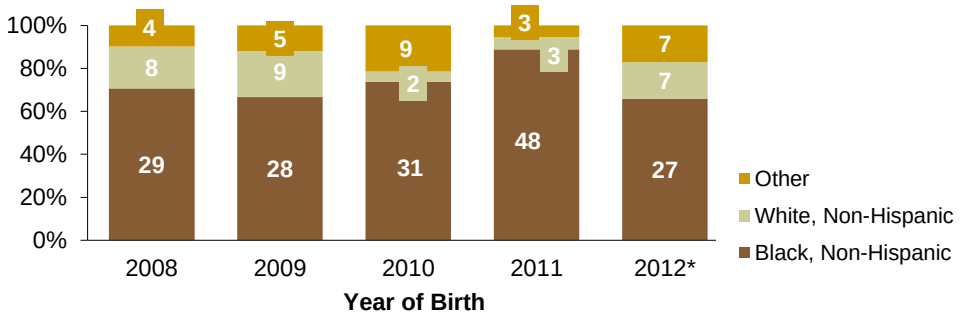


FIGURE 9. Perinatal HIV Exposures, by Maternal Risk†

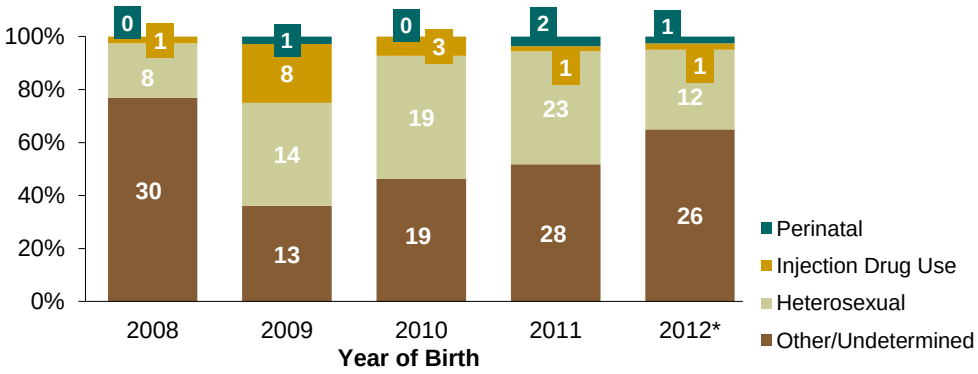


FIGURE 10. Infection Status of Perinatal HIV Exposures

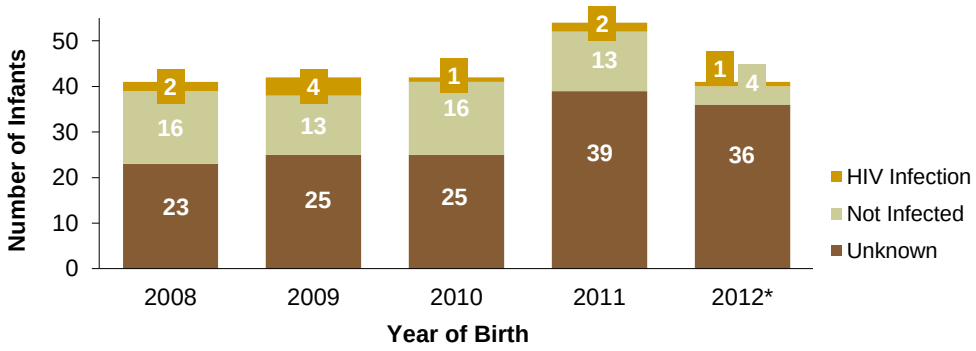


Figure 10 indicates the current infection status of infants born in Michigan to HIV-positive women: the top portion of the bars shows number of infants confirmed to be infected with HIV; the middle portion shows those not infected with HIV, based on laboratory testing or physician exam; and the bottom 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.*

†'Perinatal' indicates the mother was herself perinatally exposed to HIV. One mother with a birth in 2010 had exposure to HIV-infected blood products; this case was included in Other/Undetermined.