

# ANNUAL HIV SURVEILLANCE REPORT, MICHIGAN July 2014

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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  $\geq 500$  CD4 cells/ $\mu$ l.

*Stage 2:* A case has no AIDS-defining condition, but the level of CD4 cells has fallen to 200-499 cells/ $\mu$ 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/ $\mu$ 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) 335-8866 or Mary-Grace Brandt, (248) 424-7913*

### 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, (248) 424-7924*

### 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, (248) 424-7916*

### 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, (248) 424-7922*

## 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 year* since the last Annual Analysis. A total of 40 anonymous positive HIV tests were conducted and reported in 2013.

## HIV Surveillance in Michigan (Continued)

### HIV Prevalence Estimates for Michigan

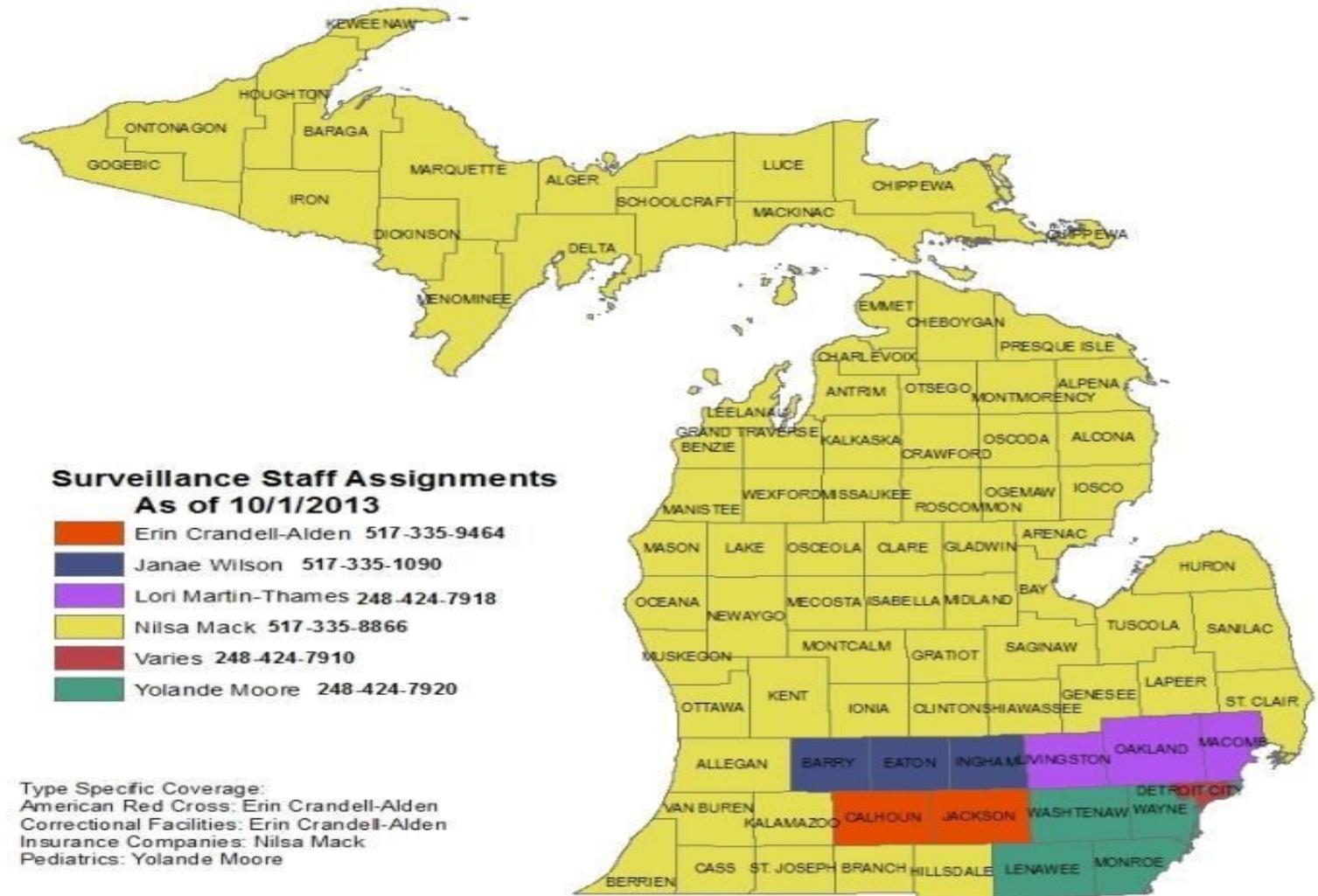
HIV prevalence estimates are updated annually in July. These estimates are based on reported cases diagnosed with HIV infection before January 1, 2014. Michigan prevalence includes persons diagnosed with HIV while residents of Michigan, regardless of current residence, which is the national standard established by the CDC. Estimates are calculated by adding the following two components and rounding up to the nearest 100: 1) the number of reported cases living with HIV infection, 2) the number of HIV infection cases that have not yet been tested, estimated at 18 percent of the total cases living with HIV infection (identical to the CDC estimate). The current prevalence estimate is 19,100 cases.

HIV prevalence estimates for each subgroup are calculated by multiplying the proportion of total cases in that group by 19,100 (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 14,910 (78.081% X 19,100 rounded to the nearest 10; extra decimals included for accurate calculation). Since the estimates are rounded, totals may not equal 19,100. 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 (19,100 - 700 = 18,400). 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 2,320 (12.0% x 19,100). Since the estimates are rounded to the nearest 10, county totals may not equal 19,100. 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**

	<b>EST PREV*</b>	<b>HIV Infection Non-Stage 3</b>		<b>HIV Infection Stage 3 (AIDS)</b>		<b>Total</b>		<b>Rate per 100,000<sup>††</sup></b>	<b>CENSUS 2013 ESTIMATES</b>	
	<b>Num</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>		<b>Num</b>	<b>Percent</b>
<b>RACE/ETHNICITY<sup>§</sup></b>										
White	6,240	2,418	33%	2,699	32%	5,117	33%	68	7,526,805	76%
Black	11,030	4,233	58%	4,809	58%	9,042	58%	655	1,380,631	14%
Hispanic	840	307	4%	383	5%	690	4%	148	466,594	5%
Asian/NH/PI	120	53	1%	47	1%	100	1%	37	268,389	3%
Am Indian/AN	40	20	<1%	16	<1%	36	<1%	64	56,012	1%
Multi/Other/Unk	820	288	4%	383	5%	671	4%	N/A	197,191	2%
<b>SEX<sup>¶</sup> &amp; RACE</b>										
Male	14,910	5,658	77%	6,565	79%	12,223	78%	252	4,859,284	49%
White Male	5,460	2,066	28%	2,411	29%	4,477	29%	121	3,712,234	38%
Black Male	8,030	3,088	42%	3,495	42%	6,583	42%	1005	655,024	7%
Hispanic Male	660	238	3%	307	4%	545	3%	230	237,157	2%
Other Male	750	266	4%	352	4%	618	4%	242	254,869	3%
Female	4,190	1,661	23%	1,772	21%	3,433	22%	65	5,291,207	53%
White Female	780	352	5%	288	3%	640	4%	17	3,814,571	39%
Black Female	3,000	1,145	16%	1,314	16%	2,459	16%	339	725,607	7%
Hispanic Female	180	69	1%	76	1%	145	1%	63	229,437	2%
Other Female	230	95	1%	94	1%	189	1%	36	521,592	5%
<b>RISK*</b>										
Male-Male Sex (MSM)	9,830	3,841	52%	4,216	51%	8,057	51%	--	--	--
Injection Drug Use (IDU)	1,570	484	7%	805	10%	1,289	8%	--	--	--
MSM/IDU	710	248	3%	334	4%	582	4%	--	--	--
Blood Products	100	23	<1%	56	1%	79	1%	--	--	--
Heterosexual Contact (HC)	3,540	1,331	18%	1,568	19%	2,899	19%	--	--	--
HCFR (Males)	760	256	3%	363	4%	619	4%	--	--	--
HCM (Females)	2,780	1,075	15%	1,205	14%	2,280	15%	--	--	--
Perinatal	220	107	1%	73	1%	180	1%	--	--	--
Undetermined	3,140	1,285	18%	1,285	15%	2,570	16%	--	--	--
<b>AGE AT HIV DIAGNOSIS</b>										
0 - 12 years	250	120	2%	82	1%	202	1%	--	--	--
13 - 19 years	1,060	515	7%	354	4%	869	6%	--	--	--
20 - 24 years	2,900	1,369	19%	1,012	12%	2,381	15%	--	--	--
25 - 29 years	3,280	1,351	18%	1,336	16%	2,687	17%	--	--	--
30 - 39 years	6,220	2,159	29%	2,939	35%	5,098	33%	--	--	--
40 - 49 years	3,740	1,240	17%	1,823	22%	3,063	20%	--	--	--
50 - 59 years	1,340	457	6%	645	8%	1,102	7%	--	--	--
60 years and over	310	105	1%	146	2%	251	2%	--	--	--
Unspecified	10	3	<1%	0	0%	3	<1%	--	--	--
<b>AREA OF RESIDENCE AT DIAGNOSIS*</b>										
Detroit Metro	12,490	4,698	64%	5,456	65%	10,154	65%	238	4,260,916	43%
Out-State	5,910	2,309	32%	2,500	30%	4,809	31%	85	5,634,706	57%
Prison/Unknown	710	312	4%	381	5%	693	4%	N/A	N/A	N/A
<b>TOTAL</b>	<b>19,100</b>	<b>7,319</b>	<b>100%</b>	<b>8,337</b>	<b>100%</b>	<b>15,656</b>	<b>100%</b>	<b>158</b>	<b>9,895,622</b>	<b>100%</b>

\*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).

<sup>†</sup> To calculate "1 out of x" statements for rate, divide the census number by the total reported prevalence. For example, for non-Hispanic whites: 7,526,805 / 5,117 = 1,442. Thus, 1 out of every 1,442 non-Hispanic white persons in Michigan are living with HIV.

<sup>‡</sup> Rates are not reported for risk categories and age at diagnosis because no reliable denominator data exist for these groups.

<sup>§</sup> 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.

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

<sup>¶¶</sup> As of January 1, 2014, there were 77 prevalent transgender HIV cases (2 female to male, 75 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
<b>REPORTED HIV INFECTION PREVALENCE</b>						
<b>RISK TRANSMISSION CATEGORIES (CDC Hierarchy)*<sup>§</sup></b>						
<b>(Mutually Exclusive: one case is represented in ONLY one category)</b>						
Male-Male Sex (MSM)	8,057	66%	0	--	8,057	51%
Injection Drug Use (IDU)	751	6%	538	16%	1,289	8%
MSM/IDU	582	5%	0	--	582	4%
Blood Products	68	1%	11	<1%	79	1%
Heterosexual Contact (HC)	619	5%	2,280	66%	2,899	19%
HCFR (Males)	619	5%	0	--	619	4%
HCM (Females)	0	--	2,280	66%	2,280	15%
Perinatal	98	1%	82	2%	180	1%
Undetermined	2,048	17%	522	15%	2,570	16%
<b>EXPOSURE CATEGORIES*<sup>†</sup></b>						
<b>(Mutually Exclusive: one case is represented in ONLY one category)</b>						
Male-Male Sex Only	5,185	42%	0	--	5,185	33%
MSM & HC	2,828	23%	0	--	2,828	18%
MSM & IDU	258	2%	0	--	258	2%
MSM & Blood Products	21	<1%	0	--	21	<1%
MSM & HC & IDU	310	3%	0	--	310	2%
MSM & HC & Blood Products	23	<1%	0	--	23	<1%
MSM & IDU & Blood Products	3	<1%	0	--	3	<1%
MSM & HC & IDU & Blood Products	11	<1%	0	--	11	<1%
Heterosexual Contact Only	2,077	17%	2,613	76%	4,690	30%
HC & IDU	575	5%	472	14%	1,047	7%
HC & Blood Products	47	<1%	34	1%	81	1%
HC & IDU & Blood Products	16	<1%	10	<1%	26	<1%
Injection Drug Use Only	158	1%	56	2%	214	1%
IDU & Blood Products	2	<1%	0	0%	2	<1%
Perinatal Exposure	98	1%	82	2%	180	1%
Exposure to Blood Products Only	35	<1%	3	<1%	38	<1%
Undetermined	576	5%	163	5%	739	5%
<b>TOTAL</b>	<b>12,223</b>	<b>100%</b>	<b>3,433</b>	<b>100%</b>	<b>15,656</b>	<b>100%</b>
<b>SUMMARIZED EXPOSURE CATEGORIES*<sup>‡</sup></b>						
<b>(NOT Mutually Exclusive: one case may be represented in multiple categories)</b>						
Any MSM	8,639	71%	N/A	--	8,639	55%
Behaviorally Bisexual Men	3,172	26%	N/A	--	3,172	20%
Any Heterosexual Contact	5,887	48%	3,129	91%	9,016	58%
Any IDU	1,333	11%	538	16%	1,871	12%

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

<sup>§</sup> 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).

<sup>†</sup> 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.

<sup>‡</sup> 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**

<b>MALE</b>	<b>White</b>		<b>Black</b>		<b>Hispanic</b>		<b>Other or Unknown</b>		<b>All Male</b>	
	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>
Male-Male sex	3,405	76%	3,924	60%	332	61%	396	64%	8,057	66%
Injection Drug Use	155	3%	524	8%	42	8%	30	5%	751	6%
MSM/IDU	244	5%	282	4%	15	3%	41	7%	582	5%
Blood Products	51	1%	11	<1%	1	<1%	5	1%	68	1%
Heterosexual Contact (HCFR)	122	3%	435	7%	43	8%	19	3%	619	5%
Perinatal	13	<1%	71	1%	5	1%	9	1%	98	1%
Undetermined	487	11%	1,336	20%	107	20%	118	19%	2,048	17%
<b>Male Subtotal</b>	<b>4,477</b>	<b>37%</b>	<b>6,583</b>	<b>54%</b>	<b>545</b>	<b>4%</b>	<b>618</b>	<b>5%</b>	<b>12,223</b>	<b>100%</b>

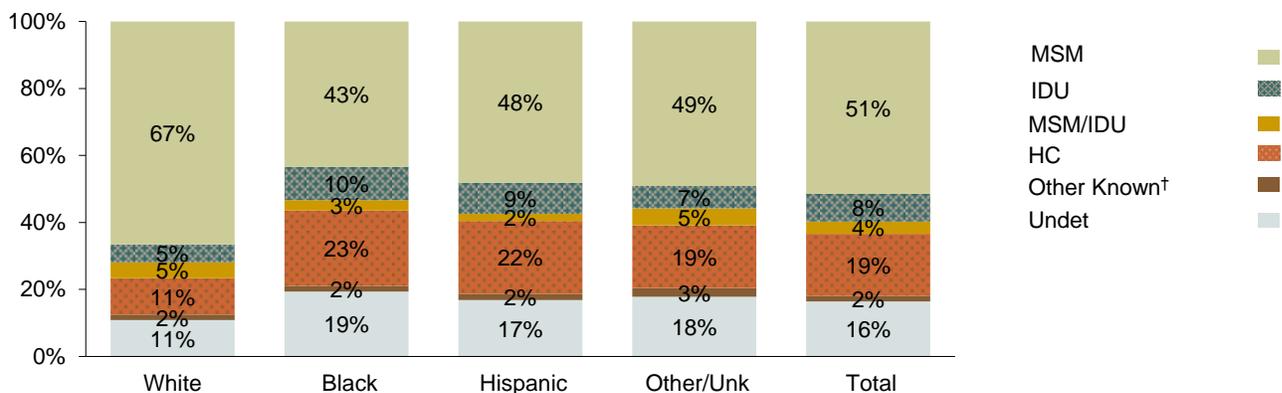
  

<b>FEMALE</b>	<b>White</b>		<b>Black</b>		<b>Hispanic</b>		<b>Other or Unknown</b>		<b>All Female</b>	
	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>
Injection Drug Use	117	18%	375	15%	22	15%	24	13%	538	16%
Blood Products	7	1%	2	<1%	1	1%	1	1%	11	<1%
Heterosexual Contact (HCM)	436	68%	1,605	65%	107	74%	132	70%	2,280	66%
Perinatal	11	2%	59	2%	6	4%	6	3%	82	2%
Undetermined	69	11%	418	17%	9	6%	26	14%	522	15%
<b>Female Subtotal</b>	<b>640</b>	<b>19%</b>	<b>2,459</b>	<b>72%</b>	<b>145</b>	<b>4%</b>	<b>189</b>	<b>6%</b>	<b>3,433</b>	<b>100%</b>

<b>ALL</b>	<b>White</b>		<b>Black</b>		<b>Hispanic</b>		<b>Other or Unknown</b>		<b>Risk All</b>	
	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>
Male-Male sex	3,405	67%	3,924	43%	332	48%	396	49%	8,057	51%
Injection Drug Use	272	5%	899	10%	64	9%	54	7%	1,289	8%
MSM/IDU	244	5%	282	3%	15	2%	41	5%	582	4%
Blood Products	58	1%	13	<1%	2	<1%	6	1%	79	1%
Heterosexual Contact (HC)	558	11%	2,040	23%	150	22%	151	19%	2,899	19%
HCFR (Males)	122	2%	435	5%	43	6%	19	2%	619	4%
HCM (Females)	436	9%	1,605	18%	107	16%	132	16%	2,280	15%
Perinatal	24	<1%	130	1%	11	2%	15	2%	180	1%
Undetermined	556	11%	1,754	19%	116	17%	144	18%	2,570	16%
<b>RACE ALL</b>	<b>5,117</b>	<b>33%</b>	<b>9,042</b>	<b>58%</b>	<b>690</b>	<b>4%</b>	<b>807</b>	<b>5%</b>	<b>15,656</b>	<b>100%</b>

**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%	76	1%	5	1%	10	2%	115	1%
13 - 19 years	79	2%	539	8%	18	3%	30	5%	666	5%
20 - 24 years	433	10%	1,291	20%	74	14%	96	16%	1,894	15%
25 - 29 years	761	17%	1,117	17%	112	21%	113	18%	2,103	17%
30 - 39 years	1,674	37%	1,903	29%	204	37%	217	35%	3,998	33%
40 - 49 years	1,051	23%	1,158	18%	87	16%	107	17%	2,403	20%
50 - 59 years	366	8%	416	6%	33	6%	39	6%	854	7%
60 years and over	89	2%	81	1%	12	2%	6	1%	188	2%
<b>Male Subtotal*</b>	<b>4,477</b>	<b>37%</b>	<b>6,583</b>	<b>54%</b>	<b>545</b>	<b>4%</b>	<b>618</b>	<b>5%</b>	<b>12,223</b>	<b>100%</b>

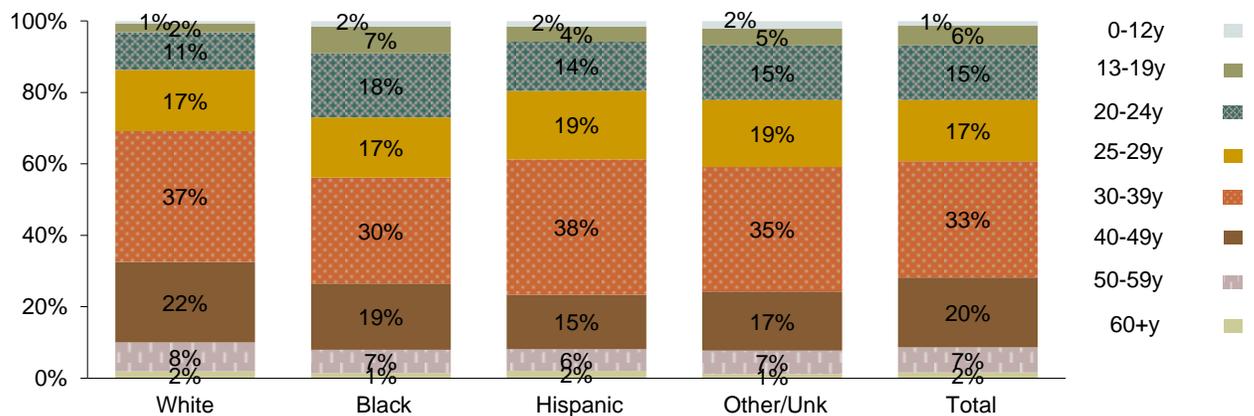
	White		Black		Hispanic		Other or Unknown		All Female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	11	2%	63	3%	6	4%	7	4%	87	3%
13 - 19 years	46	7%	138	6%	11	8%	8	4%	203	6%
20 - 24 years	105	16%	334	14%	21	14%	27	14%	487	14%
25 - 29 years	118	18%	407	17%	20	14%	39	21%	584	17%
30 - 39 years	201	31%	777	32%	58	40%	64	34%	1,100	32%
40 - 49 years	99	15%	516	21%	18	12%	27	14%	660	19%
50 - 59 years	51	8%	174	7%	9	6%	14	7%	248	7%
60 years and over	8	1%	50	2%	2	1%	3	2%	63	2%
<b>Female Subtotal*</b>	<b>640</b>	<b>19%</b>	<b>2,459</b>	<b>72%</b>	<b>145</b>	<b>4%</b>	<b>189</b>	<b>6%</b>	<b>3,433</b>	<b>100%</b>

	White		Black		Hispanic		Other or Unknown		Overall	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	35	1%	139	2%	11	2%	17	2%	202	1%
13 - 19 years	125	2%	677	7%	29	4%	38	5%	869	6%
20 - 24 years	538	11%	1,625	18%	95	14%	123	15%	2,381	15%
25 - 29 years	879	17%	1,524	17%	132	19%	152	19%	2,687	17%
30 - 39 years	1,875	37%	2,680	30%	262	38%	281	35%	5,098	33%
40 - 49 years	1,150	22%	1,674	19%	105	15%	134	17%	3,063	20%
50 - 59 years	417	8%	590	7%	42	6%	53	7%	1,102	7%
60 years and over	97	2%	131	1%	14	2%	9	1%	251	2%

**RACE OVERALL\* 5,117 33% 9,042 58% 690 4% 807 5% 15,656 100%**

\*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**

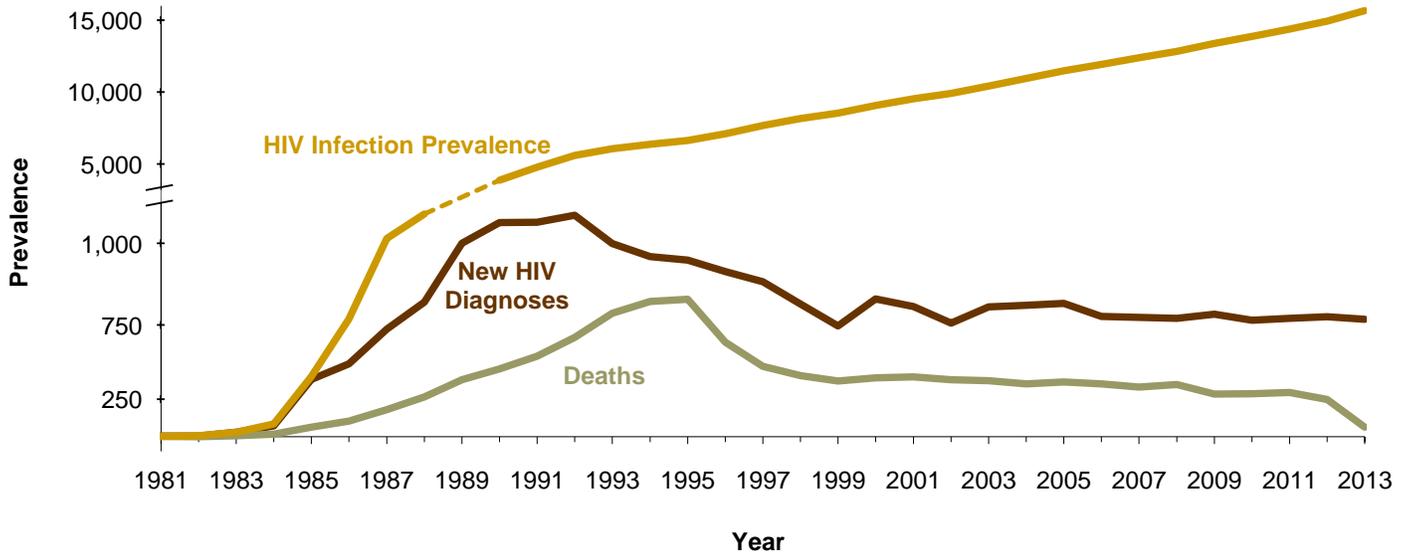
Year	<i>HIV Infection (all stages)</i>			<i>HIV Infection Stage 3 (AIDS)</i>		
	New HIV Diagnoses	Deaths	Prevalence	New Stage 3 Diagnoses	Deaths	Prevalence
1981	4	2	2	3	2	1
1982	3	0	5	2	0	3
1983	30	5	30	22	5	20
1984	71	17	84	50	17	53
1985	384	63	405	98	63	88
1986	490	103	792	168	100	156
1987	723	182	1,333	318	174	300
1988	905	266	1,972	493	257	536
1989	1,301	383	2,890	690	373	853
1990	1,442	455	3,877	795	435	1,213
1991	1,444	541	4,780	962	519	1,656
1992	1,490	668	5,602	1,231	636	2,251
1993	1,299	830	6,071	1,126	783	2,594
1994	1,212	910	6,373	1,014	850	2,758
1995	1,189	925	6,637	1,064	856	2,966
1996	1,112	635	7,114	857	586	3,237
1997	1,043	472	7,685	738	421	3,554
1998	892	411	8,166	645	356	3,843
1999	744	375	8,535	575	326	4,092
2000	927	395	9,067	652	339	4,405
2001	876	402	9,541	572	330	4,647
2002	765	382	9,924	575	324	4,898
2003	873	376	10,421	600	303	5,195
2004	885	355	10,951	564	282	5,477
2005	896	368	11,479	739	301	5,915
2006	809	354	11,934	614	285	6,244
2007	803	334	12,403	589	281	6,552
2008	796	350	12,849	550	284	6,818
2009	824	287	13,386	480	233	7,065
2010	784	288	13,882	520	235	7,350
2011	796	296	14,382	473	235	7,588
2012	806	249	14,939	440	206	7,822
2013	789	63	<b>15,665</b>	471	53	<b>8,240</b>
<b>TOTAL</b>	<b>27,407</b>	<b>11,742</b>		<b>18,690</b>	<b>10,450</b>	

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 15,665. The prevalence of Stage 3 infection, which is a subset of the overall HIV infection prevalence, is 8,240.

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.

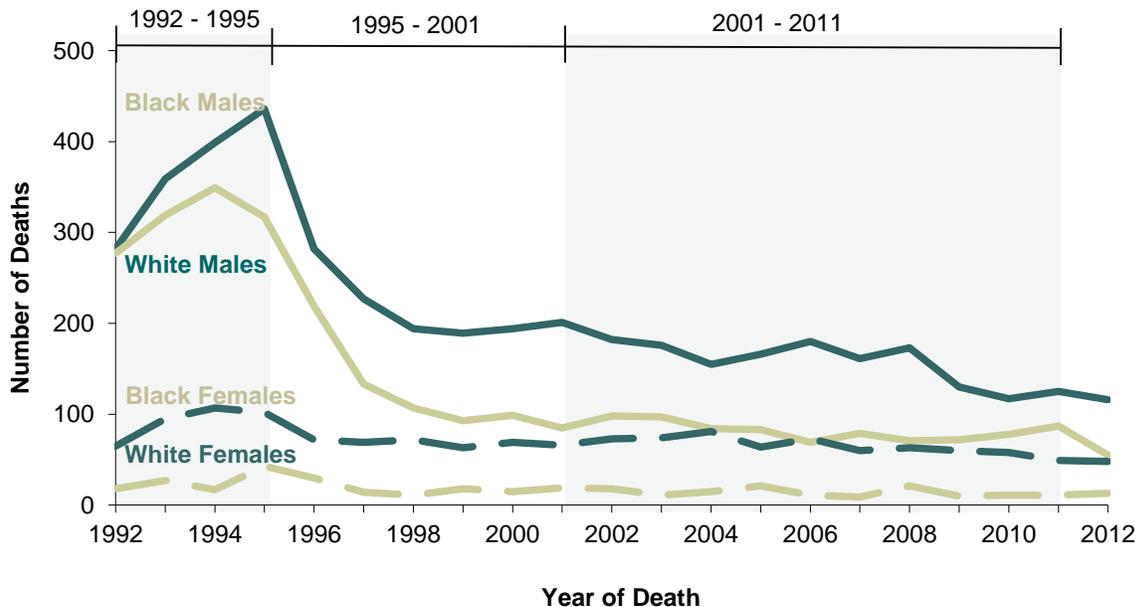
**FIGURE 3. New Diagnoses, Deaths,<sup>†</sup> and Prevalence of HIV Infection, by Year**



<sup>†</sup> Reporting for 2012 and 2013 deaths are 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 2011 (38%), as have the number of deaths in black females (26%), and white females (42%). There was a 2% increase in deaths among white males from 2001 to 2011, although it should be noted that the number of deaths steadily decreased in white males from 2002 to 2010.

**FIGURE 4. HIV Infection Deaths,<sup>†</sup> by Race/Sex**



<sup>†</sup> Reporting for 2012 deaths is incomplete at this time.

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

	2013						CUMULATIVE (through January 2014) <sup>†</sup>					
	Male		Female		All		Male		Female		All	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
<b>RACE/ETHNICITY</b>												
White	177	27%	31	23%	208	26%	8,303	38%	1,044	19%	9,347	34%
Black	415	64%	88	65%	503	64%	11,866	54%	4,138	74%	16,004	58%
Hispanic	27	4%	7	5%	34	4%	844	4%	207	4%	1,051	4%
Asian/NH/PI	8	1%	2	1%	10	1%	82	<1%	35	1%	117	<1%
Am Indian/AN	0	0%	0	0%	0	0%	43	<1%	16	<1%	59	<1%
Multi/Other/Unk	26	4%	8	6%	34	4%	641	3%	188	3%	829	3%
<b>RISK<sup>§</sup></b>												
Male-Male Sex	388	59%	0	--	388	49%	13,214	61%	0	--	13,214	48%
Injection Drug Use	12	2%	18	13%	30	4%	2,745	13%	1,631	29%	4,376	16%
MSM/IDU	12	2%	0	--	12	2%	1,408	6%	0	--	1,408	5%
Blood Products	0	0%	0	0%	0	0%	307	1%	38	1%	345	1%
Heterosexual Contact (HC)	28	4%	81	60%	109	14%	950	4%	3,131	56%	4,081	15%
HCFR (Males)	28	4%	0	--	28	4%	950	4%	0	--	950	3%
HCM (Females)	0	--	81	60%	81	10%	0	--	3,131	56%	3,131	11%
Perinatal	1	<1%	3	2%	4	1%	141	1%	114	2%	255	1%
Undetermined	212	32%	34	25%	246	31%	3,014	14%	714	13%	3,728	14%
<b>AGE AT HIV DIAGNOSIS</b>												
0 - 12 years	0	0%	1	1%	1	<1%	186	1%	118	2%	304	1%
13 - 19 years	53	8%	10	7%	63	8%	768	4%	247	4%	1,015	4%
20 - 24 years	153	23%	13	10%	166	21%	2,436	11%	619	11%	3,055	11%
25 - 29 years	124	19%	12	9%	136	17%	3,504	16%	857	15%	4,361	16%
30 - 39 years	108	17%	48	35%	156	20%	7,681	35%	1,914	34%	9,595	35%
40 - 49 years	109	17%	25	18%	134	17%	4,910	23%	1,262	22%	6,172	23%
50 - 59 years	75	11%	18	13%	93	12%	1,772	8%	461	8%	2,233	8%
60 years and over	31	5%	9	7%	40	5%	520	2%	149	3%	669	2%
Unspecified	0	0%	0	0%	0	0%	2	<1%	1	<1%	3	<1%
<b>Infection STATUS<sup>‡</sup></b>												
HIV Infection Non-Stage 3	432	66%	98	72%	530	67%	6,613	30%	2,000	36%	8,613	31%
HIV Infection Stage 3 (AIDS)	221	34%	38	28%	259	33%	15,166	70%	3,628	64%	18,794	69%
AIDS - Same time	178	27%	30	22%	208	26%	7,964	37%	1,557	28%	9,521	35%
AIDS - Short Lag	39	6%	8	6%	47	6%	1,699	8%	475	8%	2,174	8%
AIDS - Long lag	4	1%	0	0%	4	1%	5,503	25%	1,596	28%	7,099	26%
<b>AREA OF RESIDENCE AT DIAGNOSIS<sup>£</sup></b>												
Detroit Metro	440	67%	89	65%	529	67%	14,398	66%	4,064	72%	18,462	67%
Out-State	209	32%	47	35%	256	32%	6,272	29%	1,459	26%	7,731	28%
Prison/Unknown	4	1%	0	0%	4	1%	1,109	5%	105	2%	1,214	4%
<b>TOTAL</b>	<b>653</b>	<b>83%</b>	<b>136</b>	<b>17%</b>	<b>789</b>	<b>100%</b>	<b>21,779</b>	<b>79%</b>	<b>5,628</b>	<b>21%</b>	<b>27,407</b>	<b>100%</b>

\*Includes deceased cases.

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

<sup>£</sup> Detroit Metro Area consists of Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne Counties. The remaining counties comprise the Out-State area.<sup>†</sup> As of January 2014, there were 102 cumulative transgender HIV cases (2 female to male, 100 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 Number	REPORTED PREVALENCE				CENSUS 2013 ESTIMATES	COUNTY	EST PREV Number	REPORTED PREVALENCE				CENSUS 2013 ESTIMATES
		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	10,578	Livingston	80	25	38	63	34	184,443
Alger	10	0	1	1	11	9,522	Luce	10	0	0	0	0	6,502
Allegan	90	25	50	75	67	112,531	Mackinac	10	4	2	6	54	11,061
Alpena	10	2	3	5	17	29,091	Macomb	930	393	364	757	89	854,769
Antrim	10	3	6	9	39	23,370	Manistee	10	5	7	12	49	24,450
Arenac	10	1	1	2	13	15,487	Marquette	20	8	12	20	30	67,700
Baraga	10	1	2	3	35	8,695	Mason	10	4	7	11	38	28,605
Barry	30	8	17	25	42	59,097	Mecosta	20	11	7	18	42	43,108
Bay	80	35	26	61	57	106,832	Menominee	10	3	1	4	17	23,791
Benzie	10	3	2	5	29	17,428	Midland	30	14	14	28	33	83,919
Berrien	300	103	137	240	155	155,252	Missaukee	10	4	5	9	60	15,051
Branch	20	13	4	17	39	43,649	Monroe	90	38	37	75	50	150,376
Calhoun	180	70	76	146	108	135,012	Montcalm	30	8	14	22	35	63,105
Cass	40	16	15	31	60	51,910	Montmorency	10	0	3	3	32	9,350
Charlevoix	10	3	9	12	46	26,129	Muskegon	150	69	55	124	73	171,008
Cheboygan	10	4	5	9	35	25,726	Newaygo	20	6	11	17	35	48,001
Chippewa	10	5	5	10	26	38,696	Oakland	2,320	940	950	1890	153	1,231,640
Clare	20	4	11	15	49	30,569	Oceana	10	5	6	11	42	26,245
Clinton	40	19	15	34	44	76,739	Ogemaw	10	1	3	4	19	21,234
Crawford	10	1	4	5	36	13,904	Ontonagon	10	1	1	2	32	6,322
Delta	10	4	8	12	33	36,905	Osceola	10	1	2	3	13	23,259
Dickinson	10	1	0	1	4	26,098	Oscoda	10	2	1	3	36	8,379
Eaton	70	22	33	55	51	108,348	Otsego	10	4	6	10	41	24,129
Emmet	10	2	6	8	24	33,140	Ottawa	150	46	72	118	43	272,701
Genesee	650	261	268	529	127	415,376	Presque Isle	10	0	2	2	15	13,062
Gladwin	10	3	4	7	27	25,493	Roscommon	20	3	13	16	67	24,014
Gogebic	10	1	1	2	13	15,916	Saginaw	290	124	111	235	120	196,542
Grand Traverse	80	33	32	65	72	89,987	Sanilac	20	7	7	14	33	41,823
Gratiot	10	6	3	9	21	41,968	Schoolcraft	10	0	0	0	0	8,247
Hillsdale	10	4	6	10	22	46,101	Shiawassee	20	8	12	20	29	68,900
Houghton	10	4	3	7	19	36,225	St. Clair	120	53	43	96	60	160,469
Huron	10	2	5	7	22	32,224	St. Joseph	40	14	19	33	54	60,964
Ingham	590	260	222	482	171	282,234	Tuscola	20	7	6	13	24	54,263
Ionia	30	10	13	23	36	64,073	Van Buren	60	21	26	47	62	75,455
Iosco	10	3	3	6	24	25,429	Washtenaw	650	278	251	529	149	354,240
Iron	10	0	1	1	9	11,516	Wayne Total	8,980	3,257	4,043	7,300	411	1,775,273
Isabella	50	19	22	41	58	70,436	Wayne, excl. Detroit	1,930	690	882	1572	153	1,029,126
Jackson	200	80	84	164	102	160,369	Detroit†	7,040	2567	3161	5728	768	746,147
Kalamazoo	400	170	155	325	127	256,725	Wexford	10	3	4	7	21	32,645
Kalkaska	10	4	0	4	23	17,196							
Kent	1,080	391	484	875	141	621,700	<b>Detroit Metro<sup>‡</sup></b>	12,490	4,698	5,456	10,154	238	4,260,916
Keweenaw	10	0	0	0	0	2,191	<b>Out-State<sup>‡</sup></b>	5,910	2,309	2,500	4,809	85	5,634,706
Lake	10	4	7	11	97	11,386							
Lapeer	40	17	19	36	41	88,389	<b>Prisons<sup>¶</sup></b>	700	311	381	692	N/A	N/A
Leelanau	10	0	6	6	28	21,747	<b>Unknown</b>	10	1	0	1	N/A	N/A
Lenawee	60	23	27	50	50	99,188	<b>TOTAL</b>	<b>19,100</b>	<b>7,319</b>	<b>8,337</b>	<b>15,656</b>	<b>158</b>	<b>9,895,622</b>

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

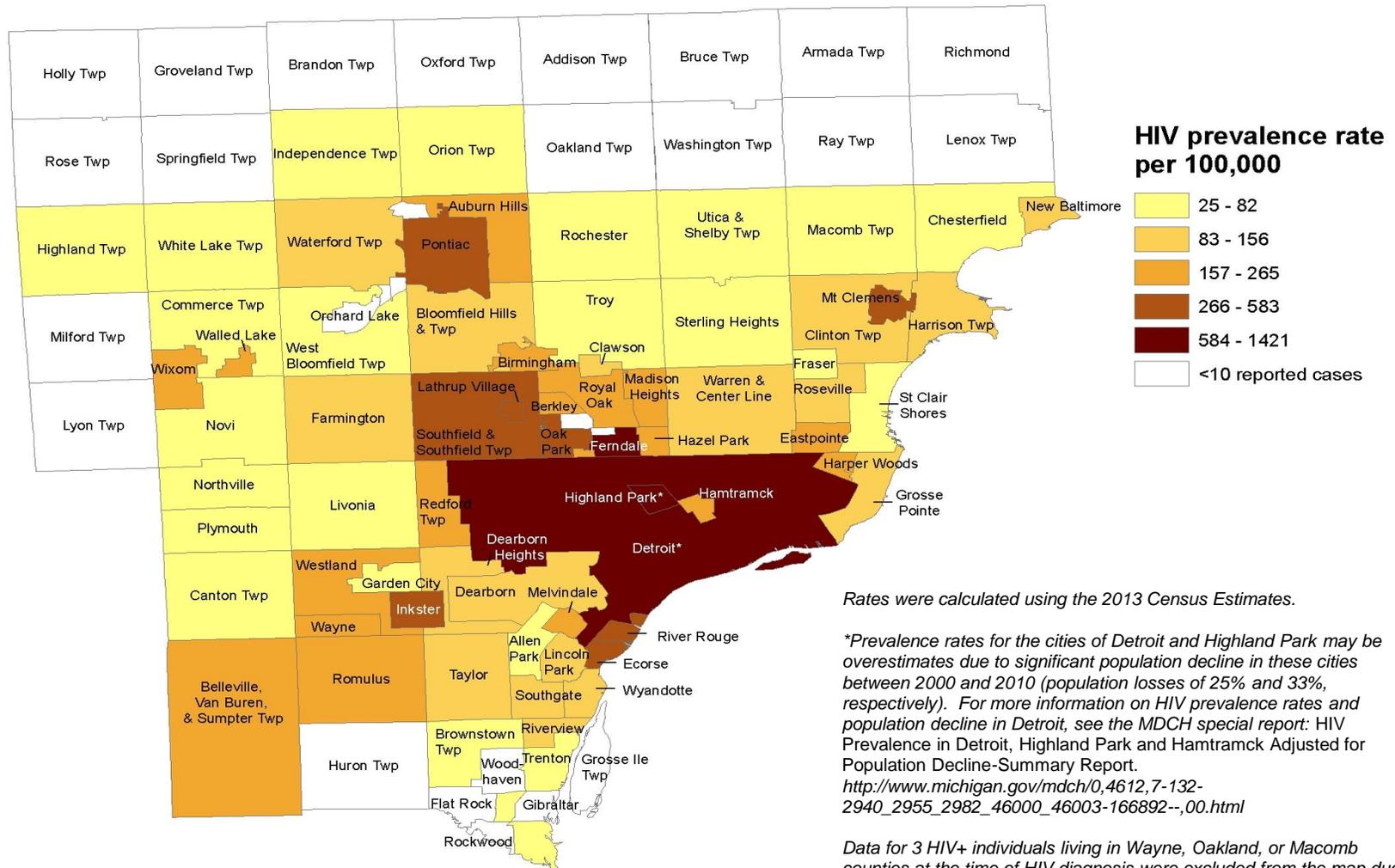
† The prevalence rate for the City of Detroit is an overestimate due to significant population decline in the city between 2000 and 2010 (population loss of 25%). For more information on the Detroit HIV prevalence rate estimate see "HIV Prevalence in Detroit, Highland Park and Hamtramck Adjusted for Population Decline-Summary Report" on our website: [http://www.michigan.gov/mdch/0,4612,7-132-2940\\_2955\\_2982\\_46000\\_46003-166892--,00.html](http://www.michigan.gov/mdch/0,4612,7-132-2940_2955_2982_46000_46003-166892--,00.html)

‡ 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.



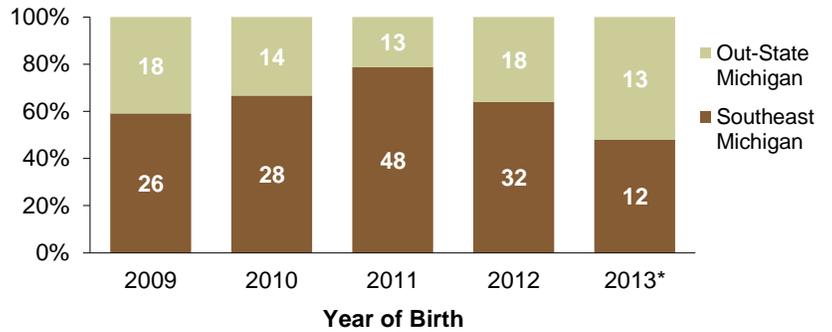
**FIGURE 6. Reported HIV Prevalence Rates, by City of Residence at Diagnosis in Wayne, Oakland, and Macomb Counties as of January 1, 2014 (N=10,098)**



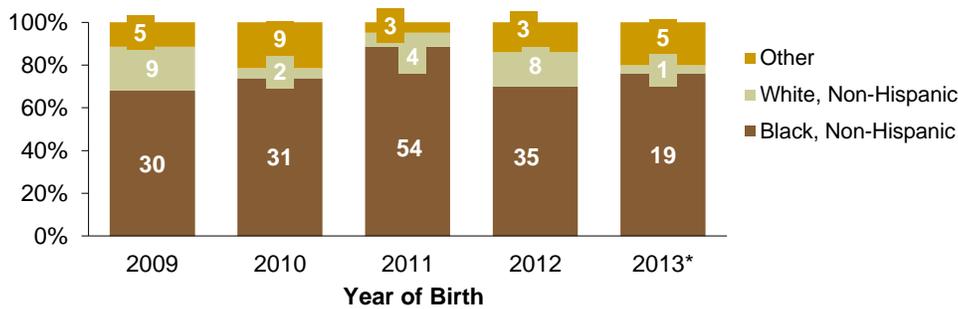
**Table 8: Number of Deliveries and Births with Perinatal HIV Exposure, 2009-2013\***

	Mothers	Infants
2009	37	44
2010	42	42
2011	61	61
2012	49	50
2013*	25	25

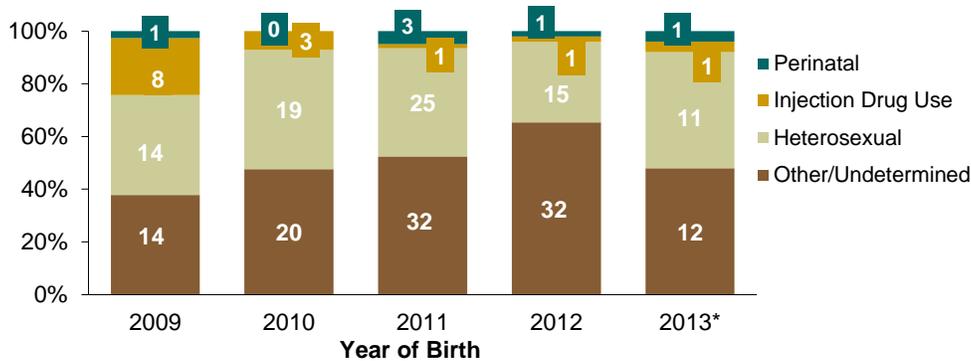
**FIGURE 7. Perinatal HIV Exposures, by Residence at Birth**



**FIGURE 8. Perinatal HIV Exposures, by Infant Race**



**FIGURE 9. Perinatal HIV Exposures, by Maternal Risk†**



**FIGURE 10. Infection Status of Perinatal HIV Exposures**

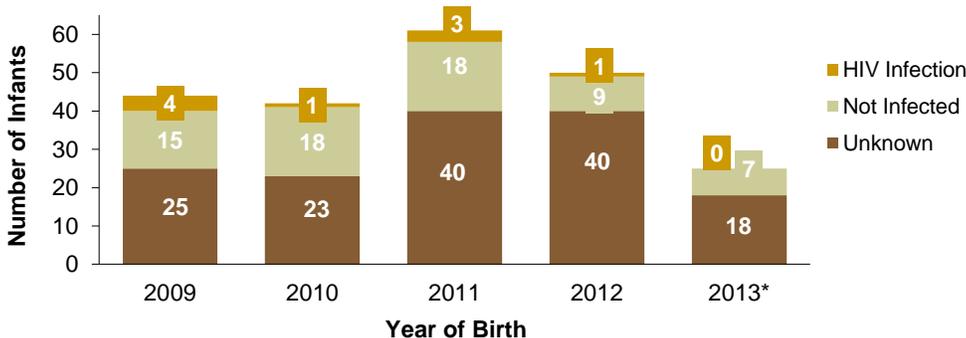


Figure 10 indicates the current infection status of infants born in Michigan to HIV-positive women: the top portion of the bars shows number of infants confirmed to be infected with HIV; the middle portion shows those not infected with HIV, based on laboratory testing or physician exam; and the bottom 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 2013 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.