

# ANNUAL HIV SURVEILLANCE REPORT, MICHIGAN January 2014

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

<b>Front Matter</b>	<b>Page</b>
Acronyms and Definitions	i
Risk Transmission and Exposure Categories	ii
Surveillance in Michigan	iii
<b>Section 1: Data on Prevalent Cases</b>	
Table 1. Demographic Information on Prevalent HIV Infection Cases	1
Table 2. Risk Transmission and Exposure Categories for HIV on Prevalent Cases, by Sex	2
Table 3. Sex, Race, and Risk Among Prevalent HIV Infection Cases	3
Figure 1. Mode of HIV Transmission Among Prevalent Cases, by Race	3
Table 4. Sex, Race, and Age at HIV Diagnosis Among Prevalent Cases	4
Figure 2. Age at HIV Diagnosis Among Prevalent Cases, by Race	4
<b>Section 2: New Diagnoses, Deaths, and Prevalence</b>	
Table 5. New Diagnoses, Deaths, and Prevalence of HIV Infection, by Year	5
Figure 3. New Diagnoses, Deaths, and Prevalence of HIV Infection, by Year	6
Figure 4. HIV Infection Deaths, by Race/Sex	6
<b>Section 3: Data on Newly and Ever Diagnosed Cases</b>	
Table 6. Demographic Information on Persons Newly and Ever Diagnosed with HIV	7
<b>Section 4: Geographic Distribution of HIV Infection</b>	
Table 7. Prevalent HIV Infection Cases, by County of Residence at Diagnosis	8
Figure 5. Reported HIV Prevalence and Prevalence Rates, by Residence at Diagnosis	9
Figure 6. Reported HIV Prevalence Rates, by City of Residence at Diagnosis in Wayne, Oakland, and Macomb Counties	10
<b>Section 5: Data on Perinatally HIV Exposed Infants</b>	
Table 8. Number of Deliveries and Births with Perinatal HIV Exposure, 2008 - 2012	11
Figure 7. Perinatal HIV Exposures, by Residence at Birth	11
Figure 8. Perinatal HIV Exposures, by Infant Race	11
Figure 9. Perinatal HIV Exposures, by Maternal Risk	11
Figure 10. Infection Status of Perinatal HIV Exposures	11

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

## 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

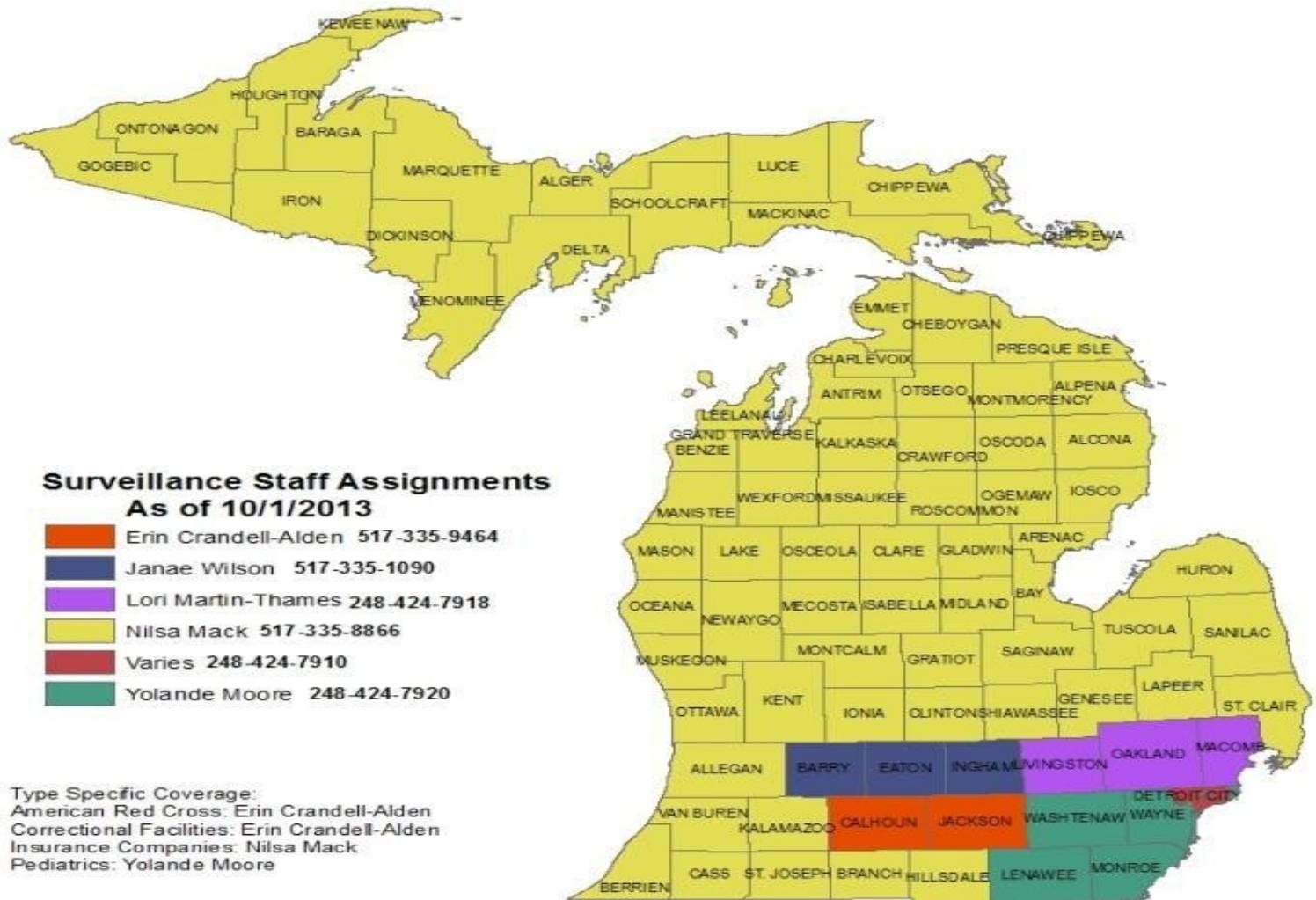
HIV prevalence estimates are updated annually in January. These estimates are based on reported cases diagnosed with HIV infection while residents of Michigan, regardless of current residence, which is the national standard established by the CDC. Estimates are calculated by adding the following three 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 5 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 18 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 15,440 ( $77.9996\% \times 19,800$  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 2,400 ( $12.54\% \times 19,090$ ). 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**

	<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 2012 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	6,570	2,464	33%	2,702	33%	5,166	33%	69	7,533,928	76%
Black	11,450	4,266	58%	4,744	58%	9,010	58%	650	1,386,032	14%
Hispanic	870	310	4%	373	5%	683	4%	150	456,330	5%
Asian/NH/PI	130	55	1%	47	1%	102	1%	39	258,620	3%
Am Indian/AN	50	20	<1%	16	<1%	36	<1%	65	55,583	1%
Multi/Other/Unk	740	255	3%	325	4%	580	4%	N/A	192,867	2%
<b>SEX<sup>¶</sup> &amp; RACE</b>										
Male	15,440	5,681	77%	6,469	79%	12,150	78%	250	4,850,511	49%
White Male	5,740	2,105	29%	2,411	29%	4,516	29%	122	3,713,171	38%
Black Male	8,330	3,099	42%	3,456	42%	6,555	42%	996	657,943	7%
Hispanic Male	680	239	3%	296	4%	535	3%	231	231,857	2%
Other Male	690	238	3%	306	4%	544	3%	220	247,540	3%
Female	4,360	1,689	23%	1,738	21%	3,427	22%	68	5,032,849	51%
White Female	830	359	5%	291	4%	650	4%	17	3,820,757	39%
Black Female	3,120	1,167	16%	1,288	16%	2,455	16%	337	728,089	7%
Hispanic Female	190	71	1%	77	1%	148	1%	66	224,473	2%
Other Female	220	92	1%	82	1%	174	1%	67	259,530	3%
<b>RISK*</b>										
Male-Male Sex (MSM)	10,160	3,833	52%	4,159	51%	7,992	51%	--	--	--
Injection Drug Use (IDU)	1,640	494	7%	793	10%	1,287	8%	--	--	--
MSM/IDU	730	248	3%	327	4%	575	4%	--	--	--
Blood Products	100	24	<1%	55	1%	79	1%	--	--	--
Heterosexual Contact (HC)	3,670	1,345	18%	1,545	19%	2,890	19%	--	--	--
HCFR (Males)	780	261	4%	356	4%	617	4%	--	--	--
HCM (Females)	2,890	1,084	15%	1,189	14%	2,273	15%	--	--	--
Perinatal	230	110	1%	70	1%	180	1%	--	--	--
Undetermined	3,270	1,316	18%	1,258	15%	2,574	17%	--	--	--
<b>AGE AT HIV DIAGNOSIS</b>										
0 - 12 years	260	123	2%	79	1%	202	1%	--	--	--
13 - 19 years	1,090	514	7%	342	4%	856	5%	--	--	--
20 - 24 years	2,980	1,361	18%	987	12%	2,348	15%	--	--	--
25 - 29 years	3,390	1,359	18%	1,310	16%	2,669	17%	--	--	--
30 - 39 years	6,480	2,181	30%	2,918	36%	5,099	33%	--	--	--
40 - 49 years	3,870	1,255	17%	1,792	22%	3,047	20%	--	--	--
50 - 59 years	1,400	472	6%	632	8%	1,104	7%	--	--	--
60 years and over	320	102	1%	147	2%	249	2%	--	--	--
Unspecified	10	3	<1%	0	0%	3	<1%	--	--	--
<b>AREA OF RESIDENCE AT DIAGNOSIS*</b>										
Detroit Metro	12,940	4,722	64%	5,362	65%	10,084	65%	237	4,260,270	43%
Out-State	6,160	2,332	32%	2,466	30%	4,798	31%	85	5,623,090	57%
Prison/Unknown	710	316	4%	379	5%	695	4%	N/A	N/A	N/A
<b>TOTAL</b>	<b>19,800</b>	<b>7,370</b>	<b>100%</b>	<b>8,207</b>	<b>100%</b>	<b>15,577</b>	<b>100%</b>	<b>158</b>	<b>9,883,360</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: 7,533,928/ 5,166 = 1,458. Thus, 1 out of every 1,458 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 2014, there were 75 prevalent transgender HIV cases (2 female to male, 73 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)*§</b>						
<b>(Mutually Exclusive: one case is represented in ONLY one category)</b>						
Male-Male Sex (MSM)	7,992	66%	N/A	--	7,992	51%
Injection Drug Use (IDU)	751	6%	536	16%	1,287	8%
MSM/IDU	575	5%	N/A	--	575	4%
Blood Products	68	1%	11	<1%	79	1%
Heterosexual Contact (HC)	617	5%	2,273	66%	2,890	19%
HCFR (Males)	617	5%	N/A	--	617	4%
HCM (Females)	N/A	--	2,273	66%	2,273	15%
Perinatal	98	1%	82	2%	180	1%
Undetermined	2,049	17%	525	15%	2,574	17%
<b>EXPOSURE CATEGORIES*†</b>						
<b>(Mutually Exclusive: one case is represented in ONLY one category)</b>						
Male-Male Sex Only	5,148	42%	0	--	5,148	33%
MSM & HC	2,800	23%	0	--	2,800	18%
MSM & IDU	253	2%	0	--	253	2%
MSM & Blood Products	21	<1%	0	--	21	<1%
MSM & HC & IDU	308	3%	0	--	308	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	2,067	17%	2,607	76%	4,674	30%
HC & IDU	573	5%	470	14%	1,043	7%
HC & Blood Products	46	<1%	33	1%	79	1%
HC & IDU & Blood Products	16	<1%	10	<1%	26	<1%
Injection Drug Use Only	160	1%	56	2%	216	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	586	5%	166	5%	752	5%
<b>TOTAL</b>	<b>12,150</b>	<b>100%</b>	<b>3,427</b>	<b>100%</b>	<b>15,577</b>	<b>100%</b>
<b>SUMMARIZED EXPOSURE CATEGORIES*‡</b>						
<b>(NOT Mutually Exclusive: one case may be represented in multiple categories)</b>						
Any MSM	8,567	71%	N/A	--	8,567	55%
Behaviorally Bisexual Men	3,142	26%	N/A	--	3,142	20%
Any Heterosexual Contact	5,844	48%	3,120	91%	8,964	58%
Any IDU	1,326	11%	536	16%	1,862	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**

<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	3,444	76%	3,886	59%	322	60%	340	63%	7,992	66%
Injection Drug Use	154	3%	526	8%	43	8%	28	5%	751	6%
MSM/IDU	241	5%	282	4%	15	3%	37	7%	575	5%
Blood Products	52	1%	12	<1%	1	<1%	3	1%	68	1%
Heterosexual Contact (HCFR)	123	3%	434	7%	41	8%	19	3%	617	5%
Perinatal	13	<1%	72	1%	4	1%	9	2%	98	1%
Undetermined	489	11%	1,343	20%	109	20%	108	20%	2,049	17%
<b>Male Subtotal</b>	<b>4,516</b>	<b>37%</b>	<b>6,555</b>	<b>54%</b>	<b>535</b>	<b>4%</b>	<b>544</b>	<b>4%</b>	<b>12,150</b>	<b>100%</b>

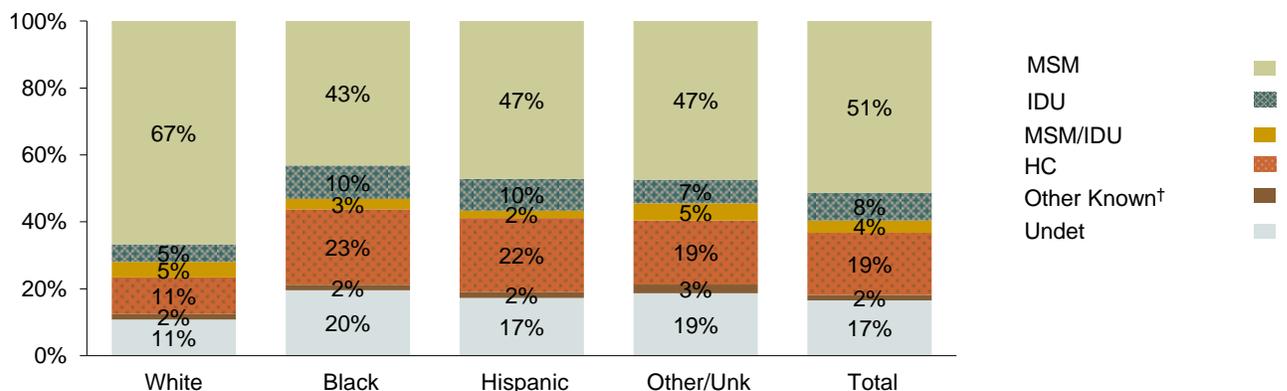
  

<b>FEMALE</b>	<b>White</b>		<b>Black</b>		<b>Hispanic</b>		<b>Other or Unknown</b>		<b>All Female</b>	
	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>	<b>Num</b>	<b>Percent</b>
Injection Drug Use	117	18%	374	15%	22	15%	23	13%	536	16%
Blood Products	7	1%	2	<1%	1	1%	1	1%	11	<1%
Heterosexual Contact (HCM)	445	68%	1,600	65%	110	74%	118	68%	2,273	66%
Perinatal	11	2%	59	2%	6	4%	6	3%	82	2%
Undetermined	70	11%	420	17%	9	6%	26	15%	525	15%
<b>Female Subtotal</b>	<b>650</b>	<b>19%</b>	<b>2,455</b>	<b>72%</b>	<b>148</b>	<b>4%</b>	<b>174</b>	<b>5%</b>	<b>3,427</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	3,444	67%	3,886	43%	322	47%	340	47%	7,992	51%
Injection Drug Use	271	5%	900	10%	65	10%	51	7%	1,287	8%
MSM/IDU	241	5%	282	3%	15	2%	37	5%	575	4%
Blood Products	59	1%	14	<1%	2	<1%	4	1%	79	1%
Heterosexual Contact (HC)	568	11%	2,034	23%	151	22%	137	19%	2,890	19%
HCFR (Males)	123	2%	434	5%	41	6%	19	3%	617	4%
HCM (Females)	445	9%	1,600	18%	110	16%	118	16%	2,273	15%
Perinatal	24	<1%	131	1%	10	1%	15	2%	180	1%
Undetermined	559	11%	1,763	20%	118	17%	134	19%	2,574	17%
<b>RACE ALL</b>	<b>5,166</b>	<b>33%</b>	<b>9,010</b>	<b>58%</b>	<b>683</b>	<b>4%</b>	<b>718</b>	<b>5%</b>	<b>15,577</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%	77	1%	4	1%	10	2%	115	1%
13 - 19 years	79	2%	534	8%	17	3%	28	5%	658	5%
20 - 24 years	430	10%	1,267	19%	71	13%	93	17%	1,861	15%
25 - 29 years	762	17%	1,111	17%	112	21%	98	18%	2,083	17%
30 - 39 years	1,702	38%	1,910	29%	201	38%	184	34%	3,997	33%
40 - 49 years	1,054	23%	1,159	18%	84	16%	93	17%	2,390	20%
50 - 59 years	375	8%	414	6%	33	6%	33	6%	855	7%
60 years and over	90	2%	81	1%	13	2%	5	1%	189	2%
<b>Male Subtotal*</b>	<b>4,516</b>	<b>37%</b>	<b>6,555</b>	<b>54%</b>	<b>535</b>	<b>4%</b>	<b>544</b>	<b>4%</b>	<b>12,150</b>	<b>100%</b>

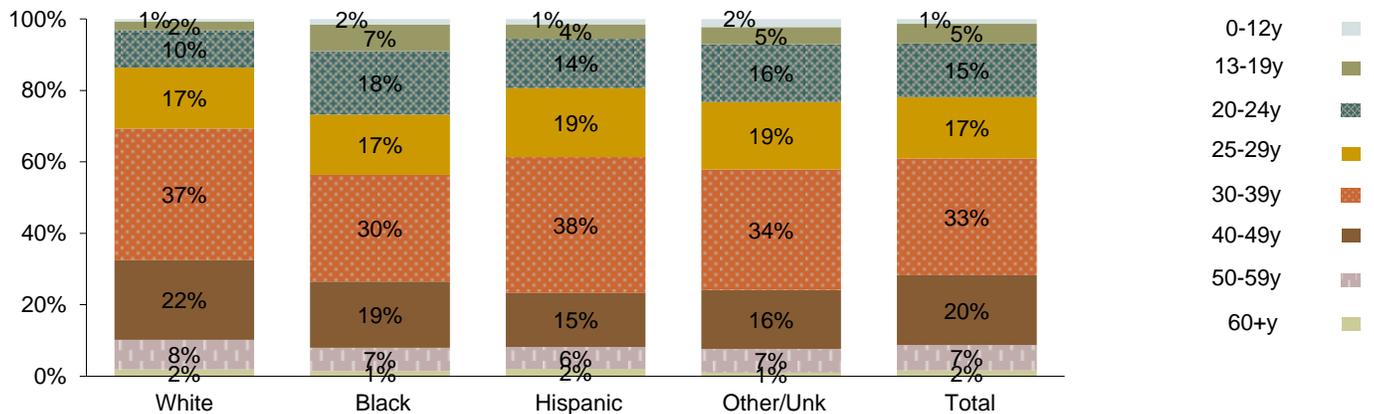
	White		Black		Hispanic		Other or Unknown		All Female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	12	2%	63	3%	6	4%	6	3%	87	3%
13 - 19 years	45	7%	135	5%	11	7%	7	4%	198	6%
20 - 24 years	110	17%	331	13%	23	16%	23	13%	487	14%
25 - 29 years	121	19%	408	17%	20	14%	37	21%	586	17%
30 - 39 years	201	31%	783	32%	59	40%	59	34%	1,102	32%
40 - 49 years	101	16%	512	21%	19	13%	25	14%	657	19%
50 - 59 years	51	8%	174	7%	9	6%	15	9%	249	7%
60 years and over	8	1%	49	2%	1	1%	2	1%	60	2%
<b>Female Subtotal*</b>	<b>650</b>	<b>19%</b>	<b>2,455</b>	<b>72%</b>	<b>148</b>	<b>4%</b>	<b>174</b>	<b>5%</b>	<b>3,427</b>	<b>100%</b>

	White		Black		Hispanic		Other or Unknown		Overall	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	36	1%	140	2%	10	1%	16	2%	202	1%
13 - 19 years	124	2%	669	7%	28	4%	35	5%	856	5%
20 - 24 years	540	10%	1,598	18%	94	14%	116	16%	2,348	15%
25 - 29 years	883	17%	1,519	17%	132	19%	135	19%	2,669	17%
30 - 39 years	1,903	37%	2,693	30%	260	38%	243	34%	5,099	33%
40 - 49 years	1,155	22%	1,671	19%	103	15%	118	16%	3,047	20%
50 - 59 years	426	8%	588	7%	42	6%	48	7%	1,104	7%
60 years and over	98	2%	130	1%	14	2%	7	1%	249	2%

**RACE OVERALL\* 5,166 33% 9,010 58% 683 4% 718 5% 15,577 100%**

\*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>		
	<b>New HIV Diagnoses</b>	<b>Deaths</b>	<b>Prevalence</b>	<b>New Stage 3 Diagnoses</b>	<b>Deaths</b>	<b>Prevalence</b>
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	490	103	791	168	100	156
1987	723	182	1,332	318	174	300
1988	904	266	1,970	493	257	536
1989	1,302	383	2,889	690	373	853
1990	1,442	455	3,876	795	435	1,213
1991	1,444	541	4,779	962	519	1,656
1992	1,491	668	5,602	1,231	636	2,251
1993	1,299	830	6,071	1,127	783	2,595
1994	1,212	910	6,373	1,014	850	2,759
1995	1,190	925	6,638	1,064	856	2,967
1996	1,114	635	7,117	858	586	3,239
1997	1,044	472	7,689	738	421	3,556
1998	895	411	8,173	646	356	3,846
1999	745	375	8,543	575	326	4,095
2000	925	395	9,073	651	339	4,407
2001	877	402	9,548	572	330	4,649
2002	766	382	9,932	576	324	4,901
2003	873	376	10,429	600	303	5,198
2004	884	355	10,958	563	282	5,479
2005	894	368	11,484	739	301	5,917
2006	806	354	11,936	614	285	6,246
2007	800	334	12,402	589	281	6,554
2008	799	350	12,851	551	284	6,821
2009	824	287	13,388	480	233	7,068
2010	784	289	13,883	519	235	7,352
2011	792	296	14,379	473	235	7,590
2012	806	247	14,938	439	205	7,824
2013	694	55	<b>15,577</b>	428	45	<b>8,207</b>
<b>TOTAL</b>	<b>27,310</b>	<b>11,733</b>		<b>18,648</b>	<b>10,441</b>	

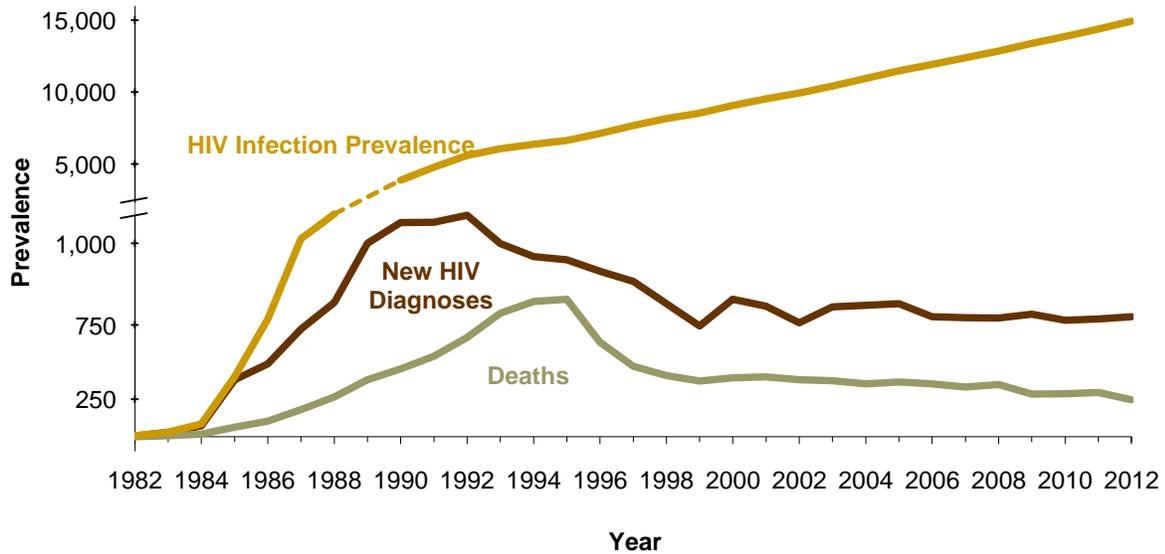
The prevalence of HIV in Michigan has steadily increased, since persons with HIV are living longer. This is largely due to improved anti-retroviral therapy.

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 15,577. The prevalence of Stage 3 infection, which is a subset of the overall HIV infection prevalence, is 8,207.

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.

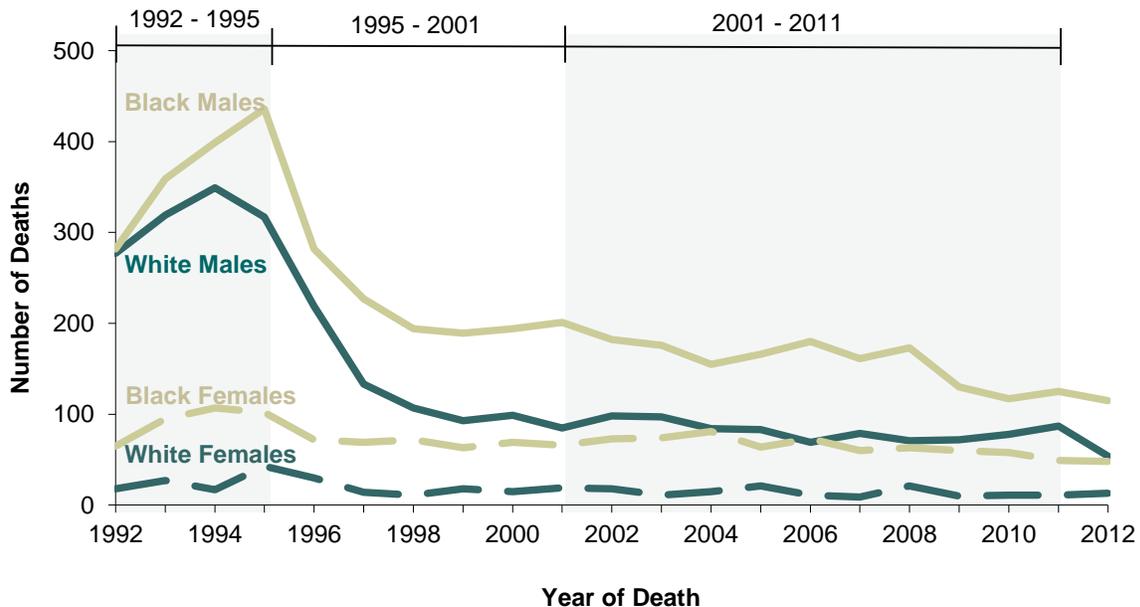
**FIGURE 3. New Diagnoses, Deaths,<sup>†</sup> and Prevalence of HIV Infection, by Year**



<sup>†</sup> Reporting for 2012 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 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 <sup>†</sup>						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	159	28%	27	22%	186	27%	8,336	38%	1,053	19%	9,389	34%
Black	364	64%	79	65%	443	64%	11,831	55%	4,131	74%	15,962	58%
Hispanic	23	4%	6	5%	29	4%	834	4%	209	4%	1,043	4%
Asian/NH/PI	6	1%	3	2%	9	1%	83	<1%	36	1%	119	<1%
Am Indian/AN	0	0%	1	1%	1	<1%	43	<1%	16	<1%	59	<1%
Multi/Other/Unk	21	4%	6	5%	27	4%	566	3%	172	3%	738	3%
<b>RISK<sup>§</sup></b>												
Male-Male Sex	325	57%	N/A	--	325	47%	13,143	61%	N/A	--	13,143	48%
Injection Drug Use	13	2%	15	12%	28	4%	2,745	13%	1,629	29%	4,374	16%
MSM/IDU	11	2%	N/A	--	11	2%	1,399	6%	N/A	--	1,399	5%
Blood Products	0	0%	0	0%	0	0%	307	1%	38	1%	345	1%
Heterosexual Contact (HC)	25	4%	68	56%	93	13%	946	4%	3,118	56%	4,064	15%
HCFR (Males)	25	4%	N/A	--	25	4%	946	4%	N/A	--	946	3%
HCM (Females)	N/A	--	68	56%	68	10%	N/A	--	3,118	56%	3,118	11%
Perinatal	1	<1%	3	2%	4	1%	141	1%	114	2%	255	1%
Undetermined	198	35%	35	29%	233	34%	3,012	14%	718	13%	3,730	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	46	8%	7	6%	53	8%	761	4%	242	4%	1,003	4%
20 - 24 years	122	21%	10	8%	132	19%	2,403	11%	619	11%	3,022	11%
25 - 29 years	110	19%	11	9%	121	17%	3,484	16%	858	15%	4,342	16%
30 - 39 years	97	17%	45	37%	142	20%	7,676	35%	1,914	34%	9,590	35%
40 - 49 years	96	17%	23	19%	119	17%	4,893	23%	1,257	22%	6,150	23%
50 - 59 years	73	13%	18	15%	91	13%	1,770	8%	462	8%	2,232	8%
60 years and over	29	5%	6	5%	35	5%	518	2%	146	3%	664	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	385	67%	88	72%	473	68%	6,635	31%	2,027	36%	8,662	32%
HIV Infection Stage 3 (AIDS)	188	33%	33	27%	221	32%	15,058	69%	3,590	64%	18,648	68%
AIDS - Same time	158	28%	28	23%	186	27%	7,946	37%	1,554	28%	9,500	35%
AIDS - Short Lag	30	5%	5	4%	35	5%	1,689	8%	473	8%	2,162	8%
AIDS - Long lag	0	0%	0	0%	0	0%	5,423	25%	1,563	28%	6,986	26%
<b>AREA OF RESIDENCE AT DIAGNOSIS<sup>£</sup></b>												
Detroit Metro	385	67%	77	63%	462	66%	14,335	66%	4,052	72%	18,387	67%
Out-State	185	32%	44	36%	229	33%	6,248	29%	1,460	26%	7,708	28%
Prison/Unknown	3	1%	0	0%	3	<1%	1,110	5%	105	2%	1,215	4%
<b>TOTAL</b>	<b>573</b>	<b>82%</b>	<b>122</b>	<b>18%</b>	<b>695</b>	<b>100%</b>	<b>21,693</b>	<b>79%</b>	<b>5,617</b>	<b>21%</b>	<b>27,310</b>	<b>100%</b>

\*Includes deceased cases.

†Data for cases diagnosed in 2013 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 2014, there were 100 cumulative transgender HIV cases (2 female to male, 98 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 2012 ESTIMATES	COUNTY	EST PREV	REPORTED PREVALENCE				CENSUS 2012 ESTIMATES		
		Number	HIV	HIV	Total				Rate*	Number	HIV	HIV		Total	Rate*
			Infection Non-Stage 3	Infection Stage 3							Infection Non-Stage 3	Infection Stage 3			
Alcona	10	0	0	0	0	10,635	Livingston	80	24	37	61	33	182,838		
Alger	10	0	1	1	10	9,541	Luce	10	0	0	0	0	6,522		
Allegan	90	24	50	74	66	112,039	Mackinac	10	4	2	6	54	11,137		
Alpena	10	3	4	7	24	29,234	Macomb	960	392	359	751	89	847,383		
Antrim	10	3	6	9	38	23,406	Manistee	20	5	7	12	49	24,672		
Arenac	10	1	1	2	13	15,477	Marquette	30	8	12	20	29	67,906		
Baraga	10	1	2	3	35	8,683	Mason	10	4	7	11	38	28,680		
Barry	30	9	15	24	41	58,990	Mecosta	20	11	6	17	39	43,318		
Bay	80	35	26	61	57	106,935	Menominee	10	3	1	4	17	23,815		
Benzie	10	3	2	5	29	17,465	Midland	30	14	13	27	32	83,822		
Berrien	310	104	136	240	154	156,067	Missaukee	10	4	5	9	60	15,031		
Branch	20	13	4	17	39	43,868	Monroe	100	38	37	75	50	151,048		
Calhoun	190	71	74	145	107	135,099	Montcalm	30	8	13	21	33	63,097		
Cass	40	16	15	31	59	52,242	Montmorency	10	0	3	3	32	9,476		
Charlevoix	20	3	9	12	46	26,023	Muskegon	160	69	54	123	72	170,182		
Cheboygan	10	4	5	9	35	25,835	Newaygo	20	6	11	17	35	47,959		
Chippewa	10	6	4	10	26	38,917	Oakland	2,400	929	938	1867	153	1,220,657		
Clare	20	4	11	15	49	30,753	Oceana	10	5	5	10	38	26,310		
Clinton	40	19	14	33	43	76,001	Ogemaw	10	1	3	4	19	21,437		
Crawford	10	1	4	5	36	14,009	Ontonagon	10	1	1	2	31	6,413		
Delta	20	4	8	12	33	36,884	Osceola	10	1	2	3	13	23,276		
Dickinson	10	1	0	1	4	26,220	Oscoda	10	2	1	3	35	8,592		
Eaton	70	22	33	55	51	108,008	Otsego	10	4	6	10	42	24,020		
Emmet	10	2	5	7	21	32,915	Ottawa	150	46	72	118	44	269,099		
Genesee	680	269	263	532	127	418,408	Presque Isle	10	0	2	2	15	13,129		
Gladwin	10	3	5	8	31	25,484	Roscommon	20	3	11	14	58	24,106		
Gogebic	10	1	1	2	12	16,084	Saginaw	300	126	111	237	119	198,353		
Grand Traverse	80	34	31	65	73	89,112	Sanilac	20	7	7	14	33	42,268		
Gratiot	10	6	3	9	21	42,063	Schoolcraft	10	0	0	0	0	8,343		
Hillsdale	10	4	6	10	22	46,229	Shiawassee	30	8	12	20	29	69,232		
Houghton	10	4	3	7	19	36,520	St. Clair	120	51	42	93	58	160,644		
Huron	10	2	5	7	22	32,463	St. Joseph	40	15	18	33	54	60,796		
Ingham	620	261	220	481	171	281,723	Tuscola	20	6	6	12	22	54,662		
Ionia	30	10	13	23	36	63,941	Van Buren	60	23	25	48	64	75,454		
Iosco	10	3	3	6	24	25,357	Washtenaw	680	280	248	528	150	350,946		
Iron	10	0	1	1	9	11,587	Wayne Total	9,320	3,295	3,967	7,262	405	1,792,365		
Isabella	50	19	21	40	57	70,617	Wayne, excl. Detroit	2,000	694	868	1562	149	1,046,218		
Jackson	210	80	83	163	102	160,309	Detroit†	7,320	2601	3099	5700	764	746,147		
Kalamazoo	420	174	150	324	127	254,580	Wexford	10	3	4	7	21	32,608		
Kalkaska	10	4	0	4	23	17,099									
Kent	1,120	389	483	872	142	614,462	<b>Detroit Metro<sup>‡</sup></b>	12,940	4,722	5,362	10,084	237	4,260,270		
Keweenaw	10	0	0	0	0	2,215	<b>Out-State<sup>‡</sup></b>	6,160	2,332	2,466	4,798	85	5,623,090		
Lake	10	4	7	11	96	11,498									
Lapeer	50	17	19	36	41	88,173	<b>Prisons<sup>¶</sup></b>	700	315	379	694	N/A	N/A		
Leelanau	10	0	6	6	28	21,607	<b>Unknown</b>	10	1	0	1	N/A	N/A		
Lenawee	70	25	28	53	54	98,987	<b>TOTAL</b>	<b>19,800</b>	<b>7,370</b>	<b>8,207</b>	<b>15,577</b>	<b>158</b>	<b>9,883,360</b>		

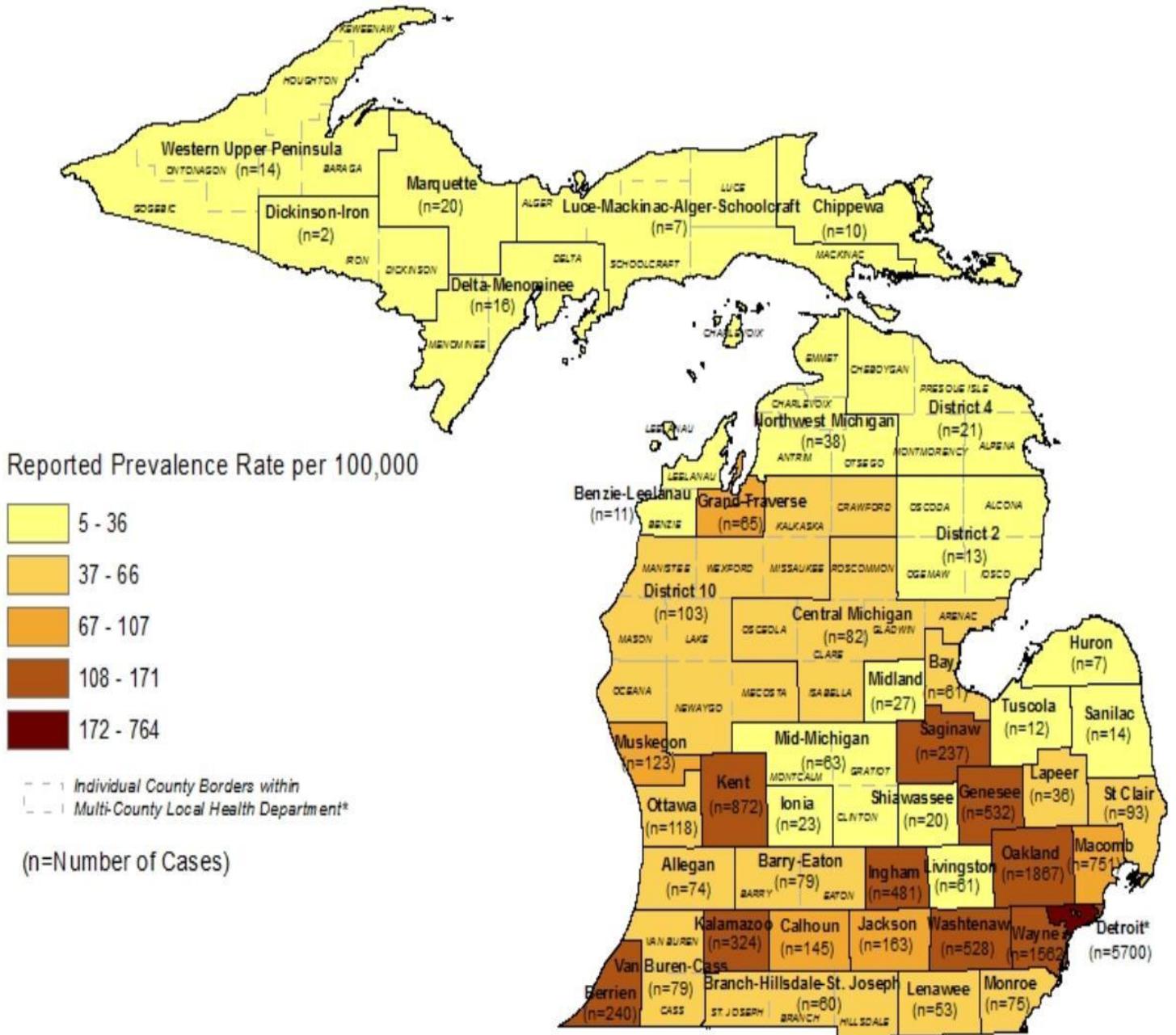
\*Rate is reported prevalence per 100,000 and is not an estimate.

† 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.

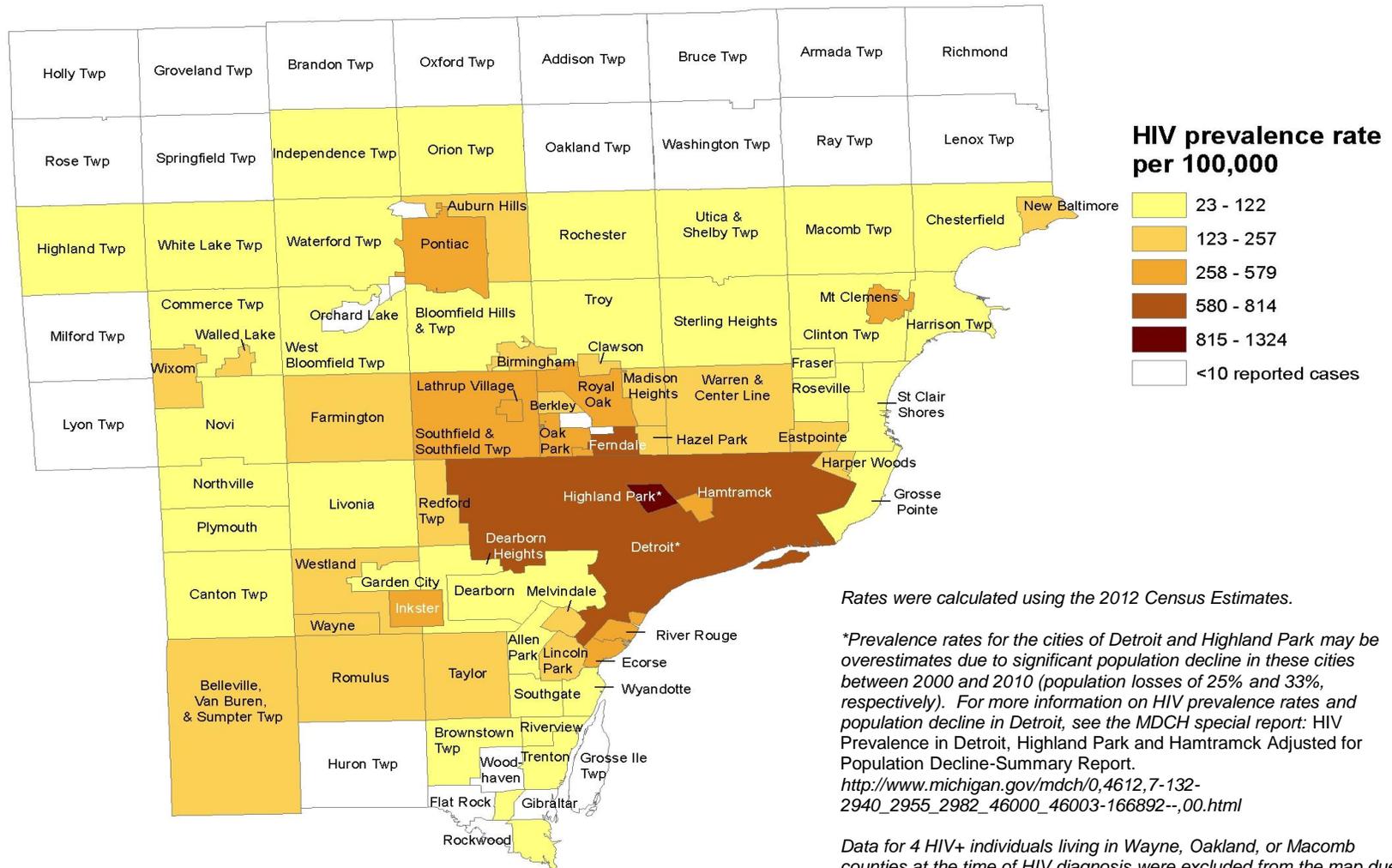
**FIGURE 5. Reported HIV Prevalence and Prevalence Rates, by Residence at Diagnosis**



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.

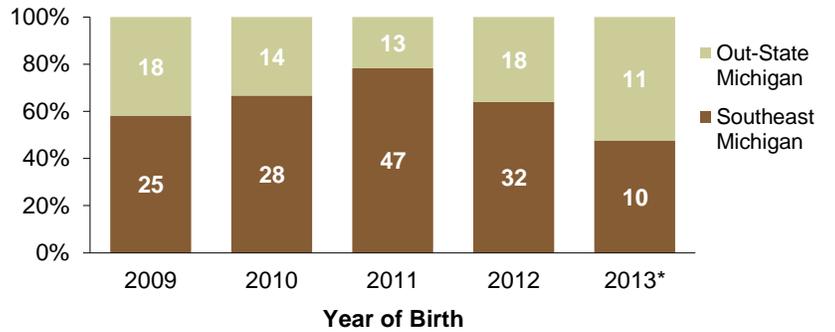
**FIGURE 6. Reported HIV Prevalence Rates, by City of Residence at Diagnosis in Wayne, Oakland, and Macomb Counties as of January 1, 2014 (N=9,876)**



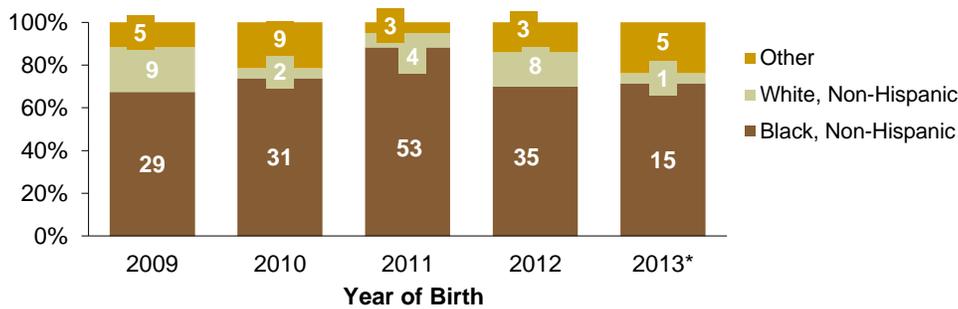
**Table 8: Number of Deliveries and Births with Perinatal HIV Exposure, 2009-2013\***

	Mothers	Infants
2009	37	43
2010	42	42
2011	60	60
2012	49	50
2013*	21	21

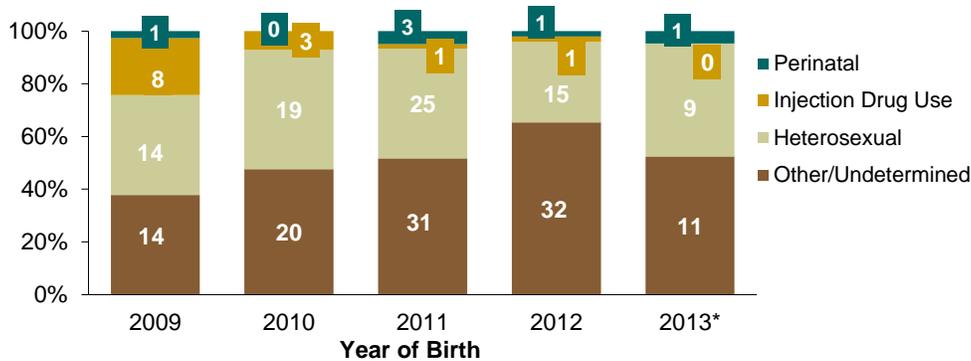
**FIGURE 7. Perinatal HIV Exposures, by Residence at Birth**



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



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



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

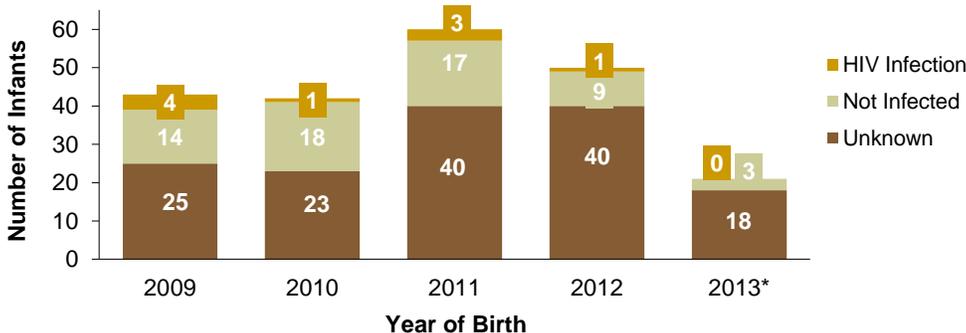


Figure 10 indicates the current infection status of infants born in Michigan to HIV-positive women: the top portion of the bars shows number of infants confirmed to be infected with HIV; the middle portion shows those not infected with HIV, based on laboratory testing or physician exam; and the bottom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