



# ANNUAL HIV SURVEILLANCE REPORT CITY OF DETROIT July 2015

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## General HIV

### AIDS (Acquired Immune Deficiency Syndrome)

Now referred to as stage 3 HIV infection (see "HIV Infection Stages" below).

### 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.

## Prevalence Estimate Calculations

HIV prevalence estimates include all persons living in DETROIT at HIV diagnosis (any stage) who were diagnosed by January 1, 2014, and incorporates an approximation of those not yet diagnosed. All estimates are rounded to the nearest ten, and the minimum estimate given is 10. Prevalence estimates were most recently revised in July 2014.

## Risk Transmission Categories - Definitions

### Blood Recipients

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

### Heterosexual Contact (HC):

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

*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.

### Please note:

-Males whose only documented risk is sex with a female, and their female partner's risk and HIV status is unknown fall into the undetermined risk category.

-Exposure categories are only calculated at the state level due to small numbers at the county and city level. For more information regarding exposure categories, and how they differ from transmission categories, please refer to the statewide statistics.

### 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 men.

### MSM/IDU

MSM who also have a history of injection drug use.

### Perinatal

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

### Undetermined

Males and females with no identified risk.



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**TABLE 1. Demographic Information on Prevalent HIV Infection Cases Living in DETROIT at Diagnosis**

	<b>REPORTED PREVALENCE<sup>†</sup></b>								<b>CENSUS 2013 ESTIMATES</b>	
	<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>Num</b>	<b>Percent</b>
	<b>Num</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	410	174	6%	178	6%	352	6%	606	58,044	8%
Black	6,080	2,391	89%	2,810	89%	5,201	89%	901	577,224	79%
Hispanic	200	72	3%	99	3%	171	3%	341	50,161	7%
Asian/PI	10	<5	**	7	<1%	11	<1%	125	8,771	1%
Am Indian/AN	10	7	<1%	<5	**	8	<1%	---	2,390	<1%
Multi/Other/Unk	130	47	2%	64	2%	111	2%	318	34,902	5%
<b>SEX &amp; RACE</b>										
Male	5,030	1,989	74%	2,317	73%	4,306	74%	1,240	347,387	47%
White Male	330	134	5%	151	5%	285	5%	940	30,317	4%
Black Male	4,430	1,754	65%	2,039	65%	3,793	65%	1,414	268,256	37%
Hispanic Male	150	54	2%	74	2%	128	2%	499	25,642	4%
Other Male	120	47	2%	53	2%	100	2%	432	23,172	3%
Female	1,810	706	26%	842	27%	1,548	26%	403	384,105	53%
White Female	80	40	1%	27	1%	67	1%	242	27,727	4%
Black Female	1,650	637	24%	771	24%	1,408	24%	456	308,968	42%
Hispanic Female	50	18	1%	25	1%	43	1%	175	24,519	3%
Other Female	40	11	<1%	19	1%	30	1%	131	22,891	3%
<b>RISK*</b>										
Male-Male Sex (MSM)	3,270	1,309	49%	1,490	47%	2,799	48%	--	--	--
Injection Drug Use (IDU)	690	202	7%	387	12%	589	10%	--	--	--
MSM/IDU	180	58	2%	100	3%	158	3%	--	--	--
Blood Products	10	0	0%	10	<1%	10	<1%	--	--	--
Heterosexual Contact (HC)	1,390	523	19%	667	21%	1,190	20%	--	--	--
HCFR (Males)	250	89	3%	129	4%	218	4%	--	--	--
HCM (Females)	1,140	434	16%	538	17%	972	17%	--	--	--
Perinatal	100	50	2%	32	1%	82	1%	--	--	--
Undetermined	1,200	553	21%	473	15%	1,026	18%	--	--	--
<b>AGE AT HIV DIAGNOSIS</b>										
0 - 12 years	100	52	2%	32	1%	84	1%	--	--	--
13 - 19 years	490	247	9%	171	5%	418	7%	--	--	--
20 - 24 years	1,190	582	22%	436	14%	1,018	17%	--	--	--
25 - 29 years	1,100	477	18%	463	15%	940	16%	--	--	--
30 - 39 years	2,050	686	25%	1,066	34%	1,752	30%	--	--	--
40 - 49 years	1,310	424	16%	696	22%	1,120	19%	--	--	--
50 - 59 years	500	186	7%	242	8%	428	7%	--	--	--
60 years and over	110	41	2%	53	2%	94	2%	--	--	--
Unspecified	0	0	0%	0	0%	0	0%	--	--	--
<b>TOTAL</b>	<b>6,840</b>	<b>2,695</b>	<b>100%</b>	<b>3,159</b>	<b>100%</b>	<b>5,854</b>	<b>100%</b>	<b>800</b>	<b>731,492</b>	<b>100%</b>

\*See front matter page i 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> Includes reports that contain patient name or are otherwise unduplicated. <5 and "\*" = 1, 2, 3, or 4 cases.

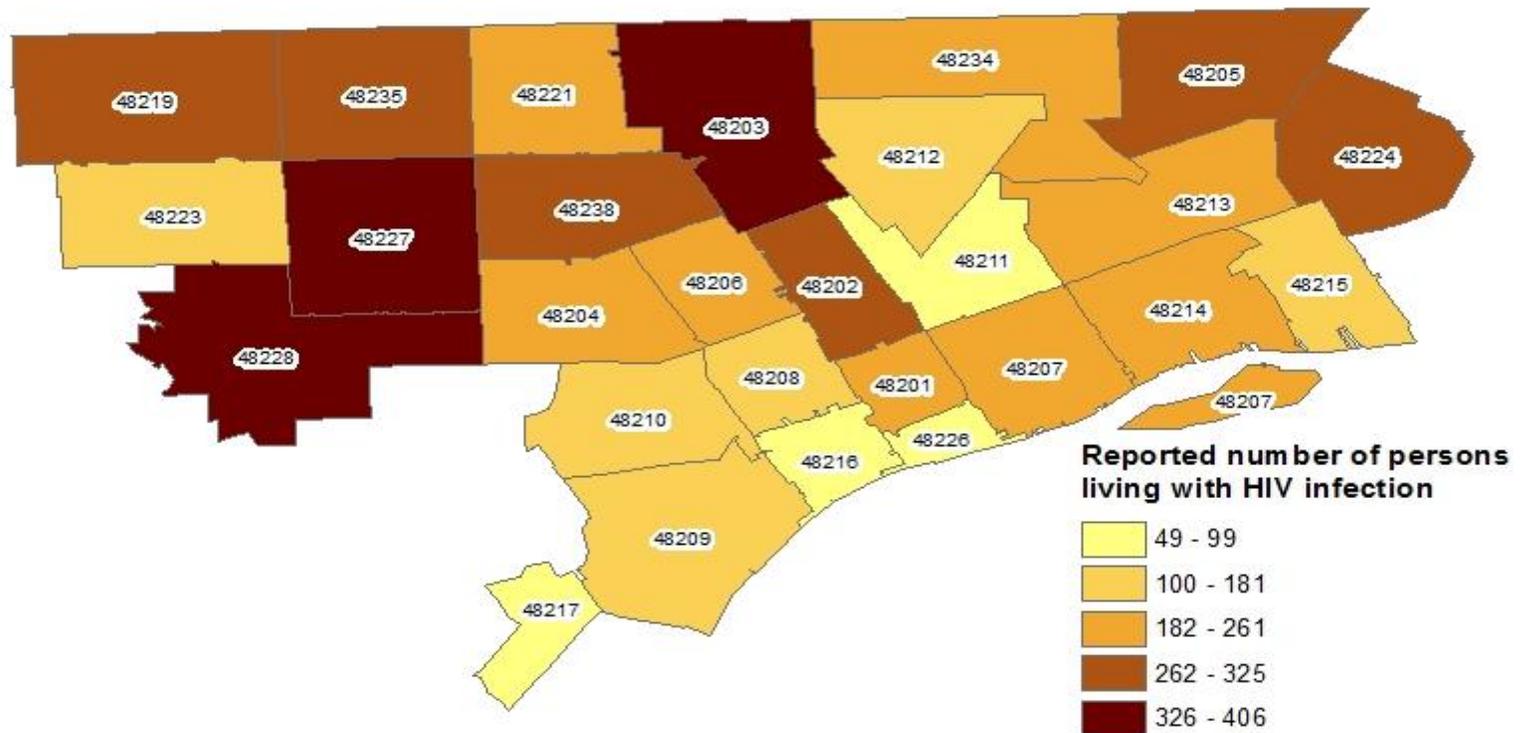
<sup>‡</sup> To calculate "1 out of x" statements, divide the census number by total reported prevalence. For example, for non-Hispanic whites: 58,044 / 352 = 165. Thus, 1 out of every 165 non-Hispanic white persons in DETROIT are living with HIV. Rates and "1 out of x" statements are not reliable for <10 cases. Thus, rates for <10 cases are shown as "----".

<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/Pacific Islander (PI), or American Indian/Alaska Native (AN) are all non-Hispanic; persons described as Hispanic might be of any race.

**TABLE 2. Sex, Race, and Risk Among Prevalent HIV Infection Cases Living in DETROIT at Diagnosis**

<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	234	82%	2,426	64%	72	56%	67	67%	2,799	65%
Injection Drug Use	10	4%	274	7%	12	9%	<5	**	299	7%
MSM/IDU	9	3%	142	4%	<5	**	6	6%	158	4%
Blood Products	<5	**	5	<1%	0	0%	0	0%	8	<1%
Heterosexual Contact (HCFR)	6	2%	200	5%	9	7%	<5	**	218	5%
Perinatal	<5	**	40	1%	<5	**	<5	**	47	1%
Undetermined	22	8%	706	19%	31	24%	18	18%	777	18%
<b>Male Subtotal</b>	<b>285</b>	<b>7%</b>	<b>3,793</b>	<b>88%</b>	<b>128</b>	<b>3%</b>	<b>100</b>	<b>2%</b>	<b>4,306</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	23	34%	249	18%	9	21%	9	30%	290	19%
Blood Products	0	0%	<5	**	0	0%	0	0%	<5	**
Heterosexual Contact (HCM)	34	51%	892	63%	27	63%	19	63%	972	63%
Perinatal	<5	**	32	2%	<5	**	<5	**	35	2%
Undetermined	9	13%	233	17%	6	14%	<5	**	249	16%
<b>Female Subtotal</b>	<b>67</b>	<b>4%</b>	<b>1,408</b>	<b>91%</b>	<b>43</b>	<b>3%</b>	<b>30</b>	<b>2%</b>	<b>1,548</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	234	66%	2,426	47%	72	42%	67	52%	2,799	48%
Injection Drug Use	33	9%	523	10%	21	12%	12	9%	589	10%
MSM/IDU	9	3%	142	3%	<5	**	6	5%	158	3%
Blood Products	<5	**	7	<1%	0	0%	0	0%	10	<1%
Heterosexual Contact (HC)	40	11%	1,092	21%	36	21%	22	17%	1,190	20%
HCFR (Males)	6	2%	200	4%	9	5%	<5	**	218	4%
HCM (Females)	34	10%	892	17%	27	16%	19	15%	972	17%
Perinatal	<5	**	72	1%	<5	**	<5	**	82	1%
Undetermined	31	9%	939	18%	37	22%	19	15%	1,026	18%
<b>RACE ALL</b>	<b>352</b>	<b>6%</b>	<b>5,201</b>	<b>89%</b>	<b>171</b>	<b>3%</b>	<b>130</b>	<b>2%</b>	<b>5,854</b>	<b>100%</b>

**FIGURE 1. Prevalent HIV Infection Cases According to Zip Code of Residence at Diagnosis**

The above map includes 6,072 reported persons living with HIV by residence at diagnosis: 5,854 were residents of the City of Detroit and 218 were residents of Highland Park or Hamtramck at time of diagnosis (the map excludes 68 cases with an unknown or unmappable zip code). Highland Park and Hamtramck are included in this map for completeness, because these cities share zip codes with the City of Detroit. This map should not be compared with Detroit maps that exclude Highland Park and Hamtramck.

The darker shading indicates a higher number of cases residing in the zip code at HIV diagnosis. Since raw numbers of cases do not adjust for the size of the general population living in each zip code, a high number of cases does not directly translate to a high rate (concentration) of disease but instead may reflect a larger number of people living in that zip code. Large changes in the Detroit population have occurred over the past decade and these changes vary by zip code; thus, there is no reliable count of the general population with which to calculate the percent of persons in each zip code living with HIV infection. We are currently working on a method to calculate percentages that adjust for this population change.

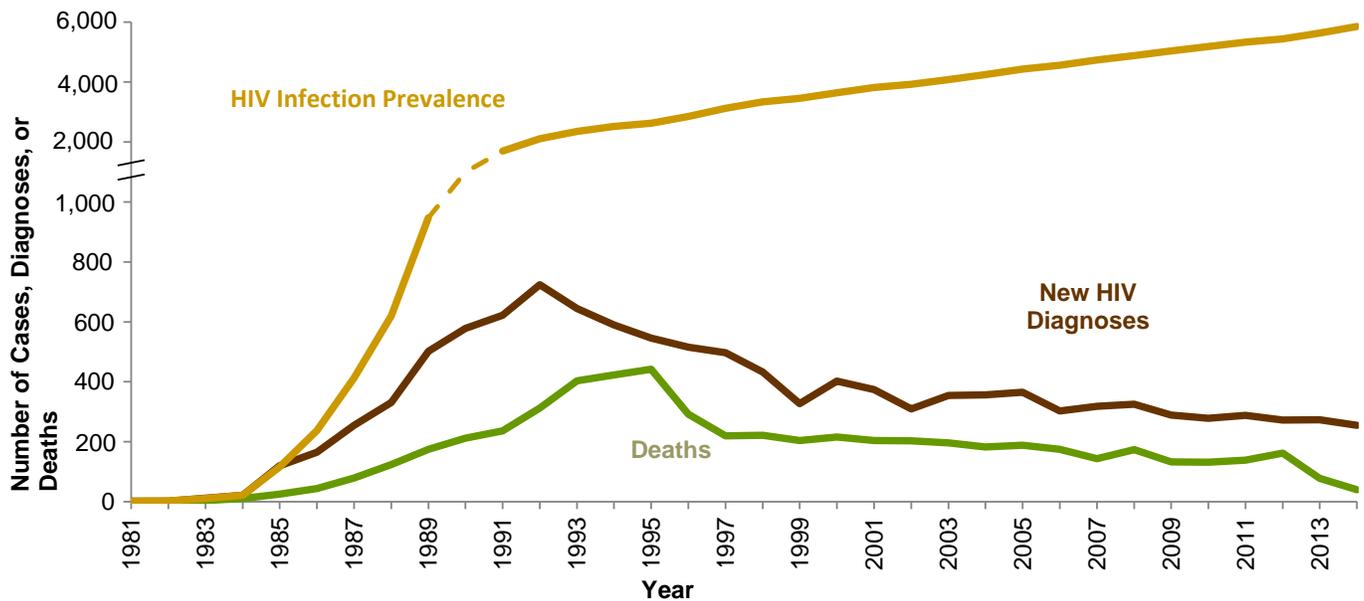
**TABLE 3. New Diagnoses, Deaths, and Prevalence of HIV Infection in DETROIT by Year**

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	2	1	1	2	1	1
1982	2	0	3	2	0	3
1983	12	4	11	10	4	9
1984	21	11	21	21	11	19
1985	120	25	116	40	25	34
1986	165	44	237	74	41	67
1987	255	79	413	140	74	133
1988	331	124	620	212	122	223
1989	502	175	947	302	167	358
1990	578	212	1,313	346	203	501
1991	622	236	1,699	417	223	695
1992	724	312	2,111	586	295	986
1993	645	403	2,353	515	378	1,123
1994	590	423	2,520	482	393	1,212
1995	546	442	2,624	470	405	1,277
1996	516	292	2,848	379	273	1,383
1997	497	220	3,125	332	195	1,520
1998	433	222	3,336	311	193	1,638
1999	327	204	3,459	291	179	1,750
2000	402	216	3,645	323	183	1,890
2001	374	204	3,815	247	172	1,965
2002	310	203	3,922	257	176	2,046
2003	354	196	4,080	268	160	2,154
2004	356	183	4,253	261	153	2,262
2005	365	188	4,430	303	155	2,410
2006	303	175	4,558	220	143	2,487
2007	318	144	4,732	218	126	2,579
2008	325	174	4,883	222	136	2,665
2009	289	133	5,039	192	106	2,751
2010	278	132	5,185	200	116	2,835
2011	288	139	5,334	192	109	2,918
2012	272	162	5,444	148	128	2,938
2013	273	78	5,639	182	64	3,056
2014	255	40	<b>5,854</b>	133	30	<b>3,159</b>
<b>TOTAL</b>	<b>11,650</b>	<b>5,796</b>		<b>8,298</b>	<b>5,139</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 1 on page 5, 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 DETROIT is 5,854. The prevalence of Stage 3 infection, which is a subset of the overall HIV infection prevalence, is 3,159.

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 2. New Diagnoses, Deaths, and Prevalence of HIV Infection in DETROIT, by Year****TABLE 4. Comparison of HIV Infection Prevalence in DETROIT to State**

<i>Residence at Diagnosis</i>	<i>Estimated Prevalence</i>	<i>Reported Prevalence</i>				<i>Cumulative Stage 3</i>
		<i>HIV Infection Non-Stage 3</i>	<i>HIV Infection Stage 3 (AIDS)</i>	<i>Total</i>	<i>Rate</i>	
<b>Detroit</b>	6,840	2,695	3,159	5,854	800	8,298
<b>Michigan Total</b>	18,800	7,799	8,391	16,190	163	18,232



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