

# Maryland HIV/AIDS Epidemiological Profile

Second Quarter 2011

Data reported through June 30, 2011



Center for HIV Surveillance and Epidemiology  
Infectious Disease and Environmental Health Administration  
Maryland Department of Health and Mental Hygiene  
<http://ideha.dhmh.maryland.gov/chse>  
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## Table of Contents

Section I – Background Information	Page 1
Section II – Adult/Adolescent Cases by Jurisdiction	Page 4
Table 1 – Adult/Adolescent HIV Cases by Jurisdiction, Diagnoses during 7/1/2009-6/30/2010	
Table 2 – Adult/Adolescent AIDS Cases by Jurisdiction, Diagnoses during 7/1/2009-6/30/2010	
Table 3 – Adult/Adolescent HIV Cases by Jurisdiction, Alive on 6/30/2010	
Table 4 – CD4 Testing for Adult/Adolescent HIV Cases by Jurisdiction, Alive on 6/30/2010	
Table 5 – HIV Viral Load Testing for Adult/Adolescent HIV Cases by Jurisdiction, Alive on 6/30/2010	

## Section I – Background Information

### HIV/AIDS Reporting Requirements

The Maryland HIV/AIDS Reporting Act of 2007 went into effect on April 24, 2007. The law expanded HIV/AIDS reporting and required that HIV cases be reported by name. The following highlights the reporting requirements of Health-General Articles 18-201.1, 18-202.1, and 18-205 of the Annotated Code of Maryland, as specified in COMAR 10.18.02.

- Physicians are required to report patients in their care with diagnoses of HIV or AIDS immediately to the Local Health Department where the physician's office is located by mailing DHMH Form 1140. Reports are also accepted by phone.
- Physicians are required to report infants born to HIV positive mothers within 48 hours to the State Health Department by mailing DHMH Form 1140. Reports are also accepted by phone.
- Clinical and infection control practitioners in hospitals, nursing homes, hospice facilities, medical clinics in correctional facilities, inpatient psychiatric facilities, and inpatient drug rehabilitation facilities are required to report patients in the care of the institution with diagnoses of HIV or AIDS within 48 hours to the Local Health Department where the institution is located by mailing DHMH Form 1140. Reports are also accepted by phone. Facilities with large volumes are encouraged to contact the State Health Department to establish electronic reporting.
- Laboratory directors are required to report patients with laboratory results indicating HIV infection (e.g., positive confirmatory HIV diagnostic tests, all CD4 immunological tests, all HIV viral load tests, and all HIV genotype and phenotype tests) within 48 hours to the Local Health Department where the laboratory is located, or if out of state to the Maryland State Health Department, by mailing DHMH Form 4492. Laboratories are encouraged to contact the State Health Department to establish electronic reporting.

Reporting forms and instructions are available at: <http://ideha.dhmh.maryland.gov/chse/reporting-material.aspx>

## For Assistance with HIV/AIDS Reporting

For assistance with reporting, including establishment of routine, electronic, or other alternate methods of reporting to the Health Department, please contact the Center for HIV Surveillance and Epidemiology at the Maryland Department of Health and Mental Hygiene (410-767-5061).

## Limitations in the HIV/AIDS Data

This epidemiological profile only contains data for HIV and AIDS cases that have been diagnosed by a health care provider, were reported to the health department by name, and were residents of Maryland at the time of diagnosis. Nationally, it has been estimated that 21% of people living with HIV infection are undiagnosed. In addition, despite a massive effort during which over 17,000 HIV cases were reported after the Maryland HIV reporting law changed on April 24, 2007, not all diagnosed HIV cases previously reported by Maryland's code-based identifier were located and re-reported by name, so the number of living HIV cases is lower than previously reported. Many of the re-reported HIV cases were identified by a recent diagnosis and not by their earliest diagnosis, resulting in an under-reporting of HIV diagnoses before 2001 and an over-reporting of HIV diagnoses from 2001 to 2008. Caution should be exercised in using the number of living HIV cases without AIDS and in interpreting trends in the number of reported HIV diagnoses. Additionally, the laboratory data are only available for cases receiving medical care, usually only at facilities in Maryland, and only includes test results that have been reported to the health department.

## Stages of a Case of HIV/AIDS

Untreated HIV disease progresses from HIV infection to AIDS to death. These are biological events that occur whether or not a person receives any medical care. For example, a person can be HIV infected but never have an HIV test and so they do not have an HIV diagnosis. A medical provider diagnoses that these biological events have occurred and records them as a medical event. The law requires medical providers to report these medical events to the Health Department, thereby creating a surveillance event.

Time Point	Biological Event	Medical Event	Surveillance Event
1	HIV Infection		
2		HIV Diagnosis	
3			HIV Report
4	AIDS Conditions		
5		AIDS Diagnosis	
6			AIDS Report
7	Death		
8		Death Diagnosis	
9			Death Report

A case of HIV/AIDS can only move through time in one direction, from HIV infection to death report [from time point 1 to time point 9], but may skip over individual stages. Events can occur simultaneously, but usually there is a time lag between them. The time lag between events can be measured in days, months, and years.

For example, the time between HIV infection [time point 1] and the test that diagnoses HIV [time point 2] may be several years, and it may then take several days for the laboratory and physician to report the diagnosis to the health department [time point 3]. In a second example, a person with diagnosed and reported HIV infection [time point 3] may die [time point 7] without developing AIDS, thereby skipping the three AIDS events (conditions, diagnosis, and report [time points 4, 5 and 6]). And in a third example, a person with undiagnosed HIV infection [time point 1] may become sick, enter the hospital, and die [time point 7] of what is later determined to be AIDS. In that situation, HIV diagnosis [time point 2], AIDS diagnosis [time point 5], and death diagnosis [time point 8] would all occur at the same time, and that would probably be many years after the initial HIV infection [time point 1].

## **Changes in Case Terminology**

The terminology for HIV and AIDS cases was changed from earlier epidemiological profiles to be more precise, with Reported Diagnoses replacing Incidence and Living Cases replacing Prevalence. Incidence is a measure of the number of new events (such as HIV infections) in a population during a period of time. Prevalence is a measure of the number of people living with a condition (such as HIV) in a population at a certain time. Prevalence includes both new and old cases. For HIV, Incidence and Prevalence cannot be directly measured and must be estimated using statistical methods. The HIV surveillance system is able to provide the actual number of diagnoses and deaths that are reported in the population.

For this epidemiological profile, the reports received through a certain time (the end of the second quarter) are used to generate the number of diagnoses during the prior years. This one year lag allows for delays in reporting and time to complete investigations. For example, the Reported HIV Diagnoses for 7/1/2009-6/30/2010 are the total of the reported HIV cases with or without an AIDS diagnosis, diagnosed with HIV during 7/1/2009-6/30/2010, as reported by name through 6/30/2011.

To calculate the number of Living Cases we count up all of the Reported Diagnoses from the beginning of the epidemic (all the new cases each year) and subtract all of the Reported Deaths. For example, the Total Living HIV Cases on 6/30/2010 are the total of the reported HIV Cases with or without an AIDS diagnosis and not reported to have died as of 6/30/2010 as reported by name through 6/30/2011.

## **Changes in this Epidemiological Profile**

This quarterly update to the Maryland HIV/AIDS Epidemiological Profile contains only the five tables of adult/adolescent cases by jurisdiction. The full set of tables and figures by demographics and other descriptive variables will be available in the year-end fourth quarter report. Population data have been updated to use the April 1, 2010 Census.

## **Laboratory Data**

CD4 tests are measures of a person's immune system function. An HIV infected person is considered to have AIDS if they have less than 200 CD4 cells per microliter of blood. Viral load (VL) tests are measures of the amount of HIV in a person's body. The goal of HIV treatment is to have a very low number of copies of virus per milliliter of blood, below what the test can measure, which is called an undetectable level. Treatment recommendations are that a person in HIV medical care should have their CD4 and VL levels measured at least 2-3 times per year. We use the presence of these lab tests as an indicator that either a newly diagnosed person has been linked to care or that a person living with HIV infection is "in care".

## **Sources of Data**

Information on HIV and AIDS diagnoses, including residence at diagnosis, vital status, and CD4 and HIV viral load test results are from the Maryland Department of Health and Mental Hygiene's Enhanced HIV/AIDS Reporting System (eHARS), June 30, 2011.

Population data are from the Maryland Department of Planning's U.S. Census tables for April 1, 2010.

## Section II – Adult/Adolescent Cases by Jurisdiction

**Table 1 – Adult/Adolescent HIV Cases by Jurisdiction, Diagnoses during 7/1/2009-6/30/2010**

Age 13+ Population Census for 4/1/10, Number, Percent of Total, and Rate per 100,000 Population of Reported Adult/Adolescent HIV Cases, Age 13+ at HIV Diagnosis, with or without an AIDS Diagnosis, Diagnosed with HIV during 7/1/09-6/30/10 (Adult/Adolescent Reported HIV Diagnoses), Number and Percent by Jurisdiction of Adult/Adolescent Reported HIV Diagnoses with a First Reported CD4 Test Result in the 12 Months following HIV Diagnosis (First CD4 Test Result) and Median Count of the First CD4 Test Results, Percent by Jurisdiction of Adult/Adolescent Reported HIV Diagnoses with a Reported CD4 Test Result or a Reported HIV Viral Load Test Result in the 3 Months following HIV Diagnosis (Linked to Care), and Percent by Jurisdiction of Adult/Adolescent Reported HIV Diagnoses with an AIDS Diagnosis in the 12 Months following HIV Diagnosis (Late HIV Diagnosis), by Jurisdiction of Residence at HIV Diagnosis, as Reported by Name through 6/30/11

JURISDICTION OF RESIDENCE AT HIV DIAGNOSIS	Population Age 13+	Adult/Adolescent Reported HIV Diagnoses							
		No.	% of Total	Rate	First CD4 Test Result			% Linked to Care	% Late HIV Diagnosis
	No.				No. with Test	% with Test	Median Count		
Allegany	65,633	6	0.4%	9.1	5	83.3%	118	100.0%	50.0%
Anne Arundel	447,832	73	4.8%	16.3	52	71.2%	271	67.1%	38.4%
Baltimore City	523,765	461	30.0%	88.0	290	62.9%	353	53.6%	22.8%
Baltimore	679,962	279	18.2%	41.0	204	73.1%	365	64.9%	29.7%
Calvert	73,081	5	0.3%	6.8	3	60.0%	***	40.0%	20.0%
Caroline	27,079	1	0.1%	3.7	1	100.0%	***	***	***
Carroll	139,110	12	0.8%	8.6	7	58.3%	258	66.7%	33.3%
Cecil	83,329	4	0.3%	4.8	2	50.0%	***	***	***
Charles	119,879	24	1.6%	20.0	10	41.7%	195	45.8%	37.5%
Dorchester	27,566	6	0.4%	21.8	3	50.0%	***	66.7%	50.0%
Frederick	191,880	15	1.0%	7.8	10	66.7%	610	53.3%	26.7%
Garrett	25,652	0	0.0%	0.0	0	--	--	--	--
Harford	202,695	17	1.1%	8.4	12	70.6%	277	76.5%	29.4%
Howard	235,694	24	1.6%	10.2	17	70.8%	296	54.2%	29.2%
Kent	17,652	0	0.0%	0.0	0	--	--	--	--
Montgomery	804,947	159	10.4%	19.8	103	64.8%	296	57.9%	32.7%
Prince George's	716,820	354	23.1%	49.4	187	52.8%	287	48.6%	27.4%
Queen Anne's	39,860	3	0.2%	7.5	3	100.0%	***	***	***
Saint Mary's	85,350	5	0.3%	5.9	3	60.0%	***	60.0%	40.0%
Somerset	23,267	4	0.3%	17.2	4	100.0%	***	***	***
Talbot	32,593	3	0.2%	9.2	2	66.7%	***	***	***
Washington	123,306	10	0.7%	8.1	10	100.0%	419	80.0%	30.0%
Wicomico	82,846	13	0.8%	15.7	10	76.9%	422	76.9%	30.8%
Worcester	44,980	4	0.3%	8.9	4	100.0%	***	***	***
Corrections	--	53	3.5%	--	41	77.4%	465	67.9%	17.0%
TOTAL	4,814,779	1,535	100.0%	31.9	983	64.0%	328	57.3%	27.9%

\*\*\* Data withheld due to low population and/or case counts

**Table 2 – Adult/Adolescent AIDS Cases by Jurisdiction, Diagnoses during 7/1/2009-6/30/2010**

Age 13+ Population Census for 4/1/10, Number, Percent of Total, and Rate per 100,000 Population of Reported Adult/Adolescent HIV Cases, Age 13+ at HIV Diagnosis, with an AIDS Diagnosis, Diagnosed with AIDS during 7/1/09-6/31/10 (Adult/Adolescent Reported AIDS Diagnoses), and Average Years from HIV Diagnosis to AIDS Diagnosis, and Percent by Jurisdiction of Adult/Adolescent Reported AIDS Diagnoses with an HIV Diagnosis in the 12 Months preceding AIDS Diagnosis (Late HIV Diagnosis), by Jurisdiction of Residence at AIDS Diagnosis, as Reported by Name through 6/30/11

JURISDICTION OF RESIDENCE AT AIDS DIAGNOSIS	Population Age 13+	Adult/Adolescent Reported AIDS Diagnoses				
	No.	No.	% of Total	Rate	Years from HIV Diagnosis	% Late HIV Diagnosis
Allegany	65,633	3	0.4%	4.6	***	***
Anne Arundel	447,832	49	6.5%	10.9	2.3	53.1%
Baltimore City	523,765	247	32.7%	47.2	4.0	41.7%
Baltimore	679,962	146	19.3%	21.5	3.5	47.3%
Calvert	73,081	2	0.3%	2.7	***	***
Caroline	27,079	1	0.1%	3.7	***	***
Carroll	139,110	4	0.5%	2.9	***	***
Cecil	83,329	3	0.4%	3.6	***	***
Charles	119,879	10	1.3%	8.3	2.0	80.0%
Dorchester	27,566	5	0.7%	18.1	4.3	60.0%
Frederick	191,880	7	0.9%	3.6	2.8	71.4%
Garrett	25,652	0	0.0%	0.0	--	--
Harford	202,695	9	1.2%	4.4	4.0	55.6%
Howard	235,694	9	1.2%	3.8	0.8	88.9%
Kent	17,652	1	0.1%	5.7	***	***
Montgomery	804,947	69	9.1%	8.6	1.5	82.6%
Prince George's	716,820	140	18.5%	19.5	2.2	71.4%
Queen Anne's	39,860	3	0.4%	7.5	***	***
Saint Mary's	85,350	4	0.5%	4.7	***	***
Somerset	23,267	1	0.1%	4.3	***	***
Talbot	32,593	1	0.1%	3.1	***	***
Washington	123,306	8	1.1%	6.5	4.6	37.5%
Wicomico	82,846	10	1.3%	12.1	2.3	60.0%
Worcester	44,980	1	0.1%	2.2	***	***
Corrections	--	22	2.9%	--	3.5	50.0%
<b>TOTAL</b>	<b>4,814,779</b>	<b>755</b>	<b>100.0%</b>	<b>15.7</b>	<b>3.1</b>	<b>55.8%</b>

\*\*\* Data withheld due to low population and/or case counts

**Table 3 – Adult/Adolescent HIV Cases by Jurisdiction, Alive on 6/30/2010**

Age 13+ Population Census for 4/1/10, Number, Percent of Total, and Rate per 100,000 Population of Reported Adult/Adolescent HIV Cases, Age 13+ at HIV Diagnosis, with or without an AIDS Diagnosis and Not Reported to Have Died as of 6/30/10 (Adult/Adolescent Living HIV Cases without AIDS, Living HIV Cases with AIDS, and Total Living HIV Cases), and Ratio of People per Case (1 case in every X people) for Total Living HIV Cases, by Jurisdiction of Residence at the Latter of HIV or AIDS Diagnosis, as Reported by Name through 6/30/11

JURISDICTION OF RESIDENCE AT DIAGNOSIS	Population Age 13+	Adult/Adolescent Living HIV Cases without AIDS			Adult/Adolescent Living HIV Cases with AIDS			Adult/Adolescent Total Living HIV Cases			
	No.	No.	% of Total	Rate	No.	% of Total	Rate	No.	% of Total	Rate	Ratio (1 in X)
Allegany	65,633	35	0.3%	53.3	37	0.2%	56.4	72	0.2%	109.7	911
Anne Arundel	447,832	422	3.4%	94.2	610	3.6%	136.2	1,032	3.6%	230.4	433
Baltimore City	523,765	5,608	45.5%	1,070.7	7,304	43.6%	1,394.5	12,912	44.4%	2,465.2	40
Baltimore	679,962	1,035	8.4%	152.2	1,475	8.8%	216.9	2,510	8.6%	369.1	270
Calvert	73,081	38	0.3%	52.0	57	0.3%	78.0	95	0.3%	130.0	769
Caroline	27,079	28	0.2%	103.4	26	0.2%	96.0	54	0.2%	199.4	501
Carroll	139,110	60	0.5%	43.1	66	0.4%	47.4	126	0.4%	90.6	1,104
Cecil	83,329	45	0.4%	54.0	61	0.4%	73.2	106	0.4%	127.2	786
Charles	119,879	141	1.1%	117.6	149	0.9%	124.3	290	1.0%	241.9	413
Dorchester	27,566	32	0.3%	116.1	68	0.4%	246.7	100	0.3%	362.8	275
Frederick	191,880	115	0.9%	59.9	151	0.9%	78.7	266	0.9%	138.6	721
Garrett	25,652	3	0.0%	11.7	4	0.0%	15.6	7	0.0%	27.3	3,664
Harford	202,695	140	1.1%	69.1	212	1.3%	104.6	352	1.2%	173.7	575
Howard	235,694	178	1.4%	75.5	211	1.3%	89.5	389	1.3%	165.0	605
Kent	17,652	14	0.1%	79.3	19	0.1%	107.6	33	0.1%	186.9	534
Montgomery	804,947	1,230	10.0%	152.8	1,751	10.5%	217.5	2,981	10.3%	370.3	270
Prince George's	716,820	2,299	18.6%	320.7	3,093	18.5%	431.5	5,392	18.5%	752.2	132
Queen Anne's	39,860	15	0.1%	37.6	29	0.2%	72.8	44	0.2%	110.4	905
Saint Mary's	85,350	43	0.3%	50.4	56	0.3%	65.6	99	0.3%	116.0	862
Somerset	23,267	19	0.2%	81.7	28	0.2%	120.3	47	0.2%	202.0	495
Talbot	32,593	25	0.2%	76.7	30	0.2%	92.0	55	0.2%	168.7	592
Washington	123,306	159	1.3%	128.9	126	0.8%	102.2	285	1.0%	231.1	432
Wicomico	82,846	105	0.9%	126.7	114	0.7%	137.6	219	0.8%	264.3	378
Worcester	44,980	34	0.3%	75.6	45	0.3%	100.0	79	0.3%	175.6	569
Corrections	0	512	4.2%	--	1,013	6.1%	--	1,525	5.2%	--	--
TOTAL	4,814,779	12,335	100.0%	256.2	16,735	100.0%	347.6	29,070	100.0%	603.8	165

**Table 4 – CD4 Testing for Adult/Adolescent HIV Cases by Jurisdiction, Alive on 6/30/2010**

Number of Adult/Adolescent Reported HIV Cases, Age 13+ at HIV Diagnosis, with or without an AIDS Diagnosis and Not Reported to Have Died as of 6/30/10 (Adult/Adolescent Total Living HIV Cases), Number and Percent by Jurisdiction of Adult/Adolescent Total Living HIV Cases with a Reported CD4 Test Result in the Previous 12 Months (Recent CD4 Test Result), and Median Count in Cells per Microliter and Percent Distribution by Jurisdiction of Counts for the Last Recent CD4 Test Results, by Jurisdiction of Residence at the Latter of HIV or AIDS Diagnosis, as Reported by Name through 6/30/11

JURISDICTION OF RESIDENCE AT DIAGNOSIS	Adult/Adolescent Total Living HIV Cases								
	No.	Recent CD4 Test Result						350-499	500+
		No. with Test	% with Test	Median Count	<200	200-349			
Allegany	72	40	55.6%	511	***	***	***	***	
Anne Arundel	1,032	293	28.4%	409	25.6%	17.4%	16.7%	40.3%	
Baltimore City	12,912	3,949	30.6%	410	22.5%	19.2%	20.3%	38.0%	
Baltimore	2,510	838	33.4%	387	28.3%	16.6%	18.7%	36.4%	
Calvert	95	8	8.4%	384	***	***	***	***	
Caroline	54	8	14.8%	457	***	***	***	***	
Carroll	126	26	20.6%	465	***	***	***	***	
Cecil	106	15	14.2%	440	***	***	***	***	
Charles	290	39	13.4%	261	***	***	***	***	
Dorchester	100	21	21.0%	249	***	***	***	***	
Frederick	266	55	20.7%	441	20.0%	12.7%	25.5%	41.8%	
Garrett	7	2	28.6%	***	***	***	***	***	
Harford	352	94	26.7%	370	29.8%	14.9%	21.3%	34.0%	
Howard	389	92	23.7%	498	23.9%	16.3%	9.8%	50.0%	
Kent	33	5	15.2%	590	***	***	***	***	
Montgomery	2,981	645	21.6%	444	18.9%	18.0%	22.2%	40.9%	
Prince George's	5,392	1,129	20.9%	431	22.0%	16.7%	20.6%	40.7%	
Queen Anne's	44	10	22.7%	125	***	***	***	***	
Saint Mary's	99	20	20.2%	389	***	***	***	***	
Somerset	47	9	19.1%	574	***	***	***	***	
Talbot	55	12	21.8%	499	***	***	***	***	
Washington	285	127	44.6%	522	11.0%	17.3%	20.5%	51.2%	
Wicomico	219	49	22.4%	407	***	***	***	***	
Worcester	79	15	19.0%	387	***	***	***	***	
Corrections	1,525	620	40.7%	403	24.0%	20.5%	20.5%	35.0%	
TOTAL	29,070	8,121	27.9%	415	23.2%	18.1%	20.1%	38.6%	

\*\*\* Data withheld due to low population and/or case counts

**Table 5 – HIV Viral Load Testing for Adult/Adolescent HIV Cases by Jurisdiction, Alive on 6/30/2010**

Number of Adult/Adolescent Reported HIV Cases, Age 13+ at HIV Diagnosis, with or without an AIDS Diagnosis and Not Reported to Have Died as of 6/30/10 (Adult/Adolescent Total Living HIV Cases), Number and Percent by Jurisdiction of Adult/Adolescent Total Living HIV Cases with a Reported HIV Viral Load Test Result in the Previous 12 Months (Recent Viral Load Test Result), Percent by Jurisdiction of the Last Recent Viral Load Test Results that were Undetectable, and the Median Detectable Result in Copies per Milliliter, by Jurisdiction of Residence at the Letter of HIV or AIDS Diagnosis, as Reported by Name through 6/30/11

JURISDICTION OF RESIDENCE AT DIAGNOSIS	Adult/Adolescent Total Living HIV Cases				
	No.	Recent Viral Load Test Result			
		No. with Test	% with Test	% Un-detectable	Median Detectable
Allegany	72	42	58.3%	64.3%	13,186
Anne Arundel	1,032	239	23.2%	37.7%	2,785
Baltimore City	12,912	3,036	23.5%	38.6%	4,613
Baltimore	2,510	690	27.5%	38.8%	5,562
Calvert	95	6	6.3%	***	***
Caroline	54	5	9.3%	***	***
Carroll	126	24	19.0%	29.2%	2,651
Cecil	106	11	10.4%	54.5%	100
Charles	290	35	12.1%	22.9%	1,587
Dorchester	100	11	11.0%	***	***
Frederick	266	50	18.8%	58.0%	14,900
Garrett	7	2	28.6%	***	***
Harford	352	78	22.2%	48.7%	4,796
Howard	389	78	20.1%	50.0%	1,603
Kent	33	3	9.1%	***	***
Montgomery	2,981	619	20.8%	61.2%	4,087
Prince George's	5,392	1,072	19.9%	49.7%	7,429
Queen Anne's	44	8	18.2%	***	***
Saint Mary's	99	13	13.1%	***	***
Somerset	47	10	21.3%	***	***
Talbot	55	8	14.5%	***	***
Washington	285	117	41.1%	76.1%	7,111
Wicomico	219	54	24.7%	29.6%	24,258
Worcester	79	13	16.5%	46.2%	30,360
Corrections	1,525	427	28.0%	37.5%	3,357
TOTAL	29,070	6,651	22.9%	43.4%	5,095

\*\*\* Data withheld due to low population and/or case counts