Surveillance and Epidemiology of HIV and AIDS in Los Angeles County

HIV Commission – February 9, 2012

Douglas M. Frye, MD, MPH
Division of HIV and STD programs
Los Angeles County Department of Public Health
HIV in L.A. County
LA COUNTY HIV EPIDEMIOLOGY PROGRAM

2012 Estimated Number of Persons Living with HIV and AIDS in LAC

<table>
<thead>
<tr>
<th>Category</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unaware HIV (1)</td>
<td>12,800</td>
</tr>
<tr>
<td>Pending HIV Cases (2)</td>
<td>1,600</td>
</tr>
<tr>
<td>Reported Coded Living HIV (3)</td>
<td>1,200</td>
</tr>
<tr>
<td>Reported Named Living HIV (4)</td>
<td>43,900</td>
</tr>
</tbody>
</table>

Source: LAC Division of HIV and STD Programs, reported as of 12/31/2011.

(1) Estimate that 21.5% of HIV+ in LA County are unaware of their infection; modified from CDC estimate.
(2) Of 4,853 notifications pending investigation, estimate half of 2,400 who have detectable VL or confirmatory test to be unduplicated cases.
(3) Out of the 3,200 cases reported as code, half are thought to represent unduplicated cases.

Number of Persons Reported Living with HIV Infection and AIDS by Year, LAC, 1991-2011

## Reported Persons living with HIV Infection from *HIV/AIDS Annual Surveillance Summary*

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>No. living with HIV/AIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. (40 states)</td>
<td>652,294*</td>
</tr>
<tr>
<td>California</td>
<td>112,550**</td>
</tr>
<tr>
<td>LA County</td>
<td>43,936***</td>
</tr>
</tbody>
</table>


**Reported as of 12/31/11, California Office of AIDS, HIV/AIDS Surveillance Section.*

***Reported as of 12/31/11.
Rates of Diagnoses of HIV Infection among Adults and Adolescents, 2009—40 states and 5 U.S. Dependent Areas

N=42,793

Total Rate = 21.1

Rates per 100,000 population
- <10.0
- 10.0 – 19.9
- 20.0 – 29.9
- ≥30.0

American Samoa 0.0
Guam 2.9
Northern Mariana Islands 0.0
Puerto Rico 27.5
U.S. Virgin Islands 38.1

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting.
Comparison of Cumulative HIV/AIDS Cases (n=77,866) and Cases Diagnosed in 2009 (n=2,137), by Age at Diagnosis – LA County

Current Age of Persons Living with HIV in LAC (n=43,902)

Percent Persons Living with AIDS and HIV Whose Current Age is 50+ Years – by Year, LAC, 2003-11

* Data provisional due to reporting delay.

Percent Perinatal HIV Transmission by Birth Year, LA County, 1996 – 2011

Source: HIV Epidemiology Program, LAC-DPH; data as of Dec 31, 2011
Diagnoses of HIV Infection among Adults and Adolescents, by Sex, 2006–2009—40 States and 5 U.S. Dependent Areas

Note: Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting.
Percent Persons Diagnosed with HIV by Gender and Year, LAC, 2006-11

- Male: 87%
- Female: 12%
- Transgender: 1%


* Data provisional due to reporting delay.
Diagnoses of HIV Infection among Adults and Adolescents, by Race/Ethnicity, 2006–2009—40 States and 5 U.S. Dependent Areas

Note: Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting. *Hispanics/Latinos can be of any race.
Percent of HIV Diagnoses Among Adults/Adolescents, by Race/Ethnicity* and Year of HIV Diagnosis LAC, 2006-2011

** Data provisional due to reporting delay.

** Source: HIV/AIDS Surveillance Summary, data as of December 2011.
Living with HIV/AIDS

- White: 40%
- Latino: 34%
- Black: 21%
- Asian: 3.3%
- AI/AN: <1%

Diagnosed in 2009

- White: 46%
- Latino: 24%
- Black: 25%
- Asian: <1%
- AI/AN: <1%

Comparison of Persons Living with HIV, by Gender and Race/Ethnicity, 2010 - LAC

Male (n=38,874)
- White: 40%
- Latino: 36%
- Asian: 19%
- Black: 3%
- AI/AN: <1%

Female (n=5,062)
- White: 44%
- Latino: 36%
- Asian: 15%
- Black: 3%
- AI/AN: <1%

Comparison of Persons Diagnosed with HIV in 2010, by Gender and Race/Ethnicity - LAC

Male (n=1,835)
- 45% White
- 27% Latino
- 22% Black
- 4% Asian
- 1% A/PI

Female (n=227)*
- 43% White
- 40% Latino
- 14% Black
- 1% A/PI

* A/PI and Am. Indian/AK Native each w/ fewer than 5 cases.

Proportion of Persons Living with HIV/AIDS by Race/Ethnicity and Sex, LAC 2011

Persons Living with HIV/AIDS in LAC per 100,000 population* by Race/Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Per 100,000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>966</td>
</tr>
<tr>
<td>AI/AN</td>
<td>690</td>
</tr>
<tr>
<td>White</td>
<td>485</td>
</tr>
<tr>
<td>Latino</td>
<td>354</td>
</tr>
<tr>
<td>A/PI</td>
<td>100</td>
</tr>
</tbody>
</table>

*Sometimes called “Prevalence Rate”; it is really a proportion.

Estimated Rates of Diagnoses of HIV Infection among Adults and Adolescents, by Sex and Race/Ethnicity, 2009—40 States

Note: Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays, but not for incomplete reporting.

*Hispanics/Latinos can be of any race.
RATES OF HIV DIAGNOSES AMONG MEN BY RACE/ETHNICITY*, LAC, 2006-2011

Rate per 100,000

Year of HIV Diagnosis

- African-American
- Hispanic/Latino
- White
- Asian/PI

RATES OF HIV DIAGNOSES AMONG WOMEN BY RACE/ETHNICITY*, LAC, 2006-2011

Rate per 100,000

Year of HIV Diagnosis

06 07 08 09** 10** 11**

African-American
Hispanic/Latino
White
Asian/PI

Diagnoses of HIV Infection among Adults and Adolescents, by Transmission Category, 2006–2009—40 States and 5 U.S. Dependent Areas

Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays and missing risk-factor information, but not for incomplete reporting.

*a Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.

*b Includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified.
Percent of HIV Diagnoses Among Adults/Adolescents, by Transmission Category* and Year of HIV Diagnosis, Los Angeles County, 2006-2011

- MSM 81%
- IDU 4%
- MSM/IDU 4%
- HETERO 12%

* Persons with an undetermined transmission category are assigned a risk factor using multiple imputation (MI) methods (see technical notes in HIV/AIDS Surveillance Summary). Other risks include hemophilia or coagulation disorder, transfusion recipient, perinatal exposure, and confirmed other risk.

** Data are provisional due to reporting delay.

Comparison of Persons living with HIV/AIDS and HIV/AIDS Diagnoses in 2009, by Transmission Category*

<table>
<thead>
<tr>
<th>Living with HIV/AIDS</th>
<th>Diagnosed in 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>12%</td>
</tr>
<tr>
<td>IDU</td>
<td>3%</td>
</tr>
<tr>
<td>MSM/IDU</td>
<td>3%</td>
</tr>
<tr>
<td>Heterosex</td>
<td>3%</td>
</tr>
<tr>
<td>Other**</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Other risks include hemophilia or coagulation disorder, transfusion recipient, and perinatal exposure.</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Persons with an undetermined transmission category are assigned a risk factor using multiple imputation (MI) methods (see technical notes in HIV/AIDS Surveillance Summary).**

Transmission Category* for Persons Living with HIV/AIDS**, by Gender in Los Angeles County

Male (n=37,421)

- MSM (87%)
- IDU (3.4%)
- Heterosexual contact (2.4%)
- Other (<1%)
- Undetermined (<1%)

Female (n=4,943)

- Heterosexual contact (75%)
- IDU (21%)
- Other (4%)
- Undetermined (<1%)

* Persons with an undetermined transmission category are assigned a risk factor using multiple imputation (MI) methods. Other risks include hemophilia or coagulation disorder, transfusion recipient, perinatal exposure and confirmed other risk.
** Data are provisional due to reporting delay.

Adults and Adolescents Living with a Diagnosis of HIV Infection, by Sex and Transmission Category, year-end 2008—40 States and 5 U.S. Dependent Areas

**Males**
- N=492,174
- Male-to-male sexual contact: 1%
- Injection drug use: 12%
- Male-to-male sexual contact and IDU: 17%
- 63%
- Other: 7%

**Females**
- N=182,206
- Heterosexual contact: 26%
- Other: 73%

*Note. Data include persons with a diagnosis of HIV infection regardless of stage of disease at diagnosis. All displayed data have been statistically adjusted to account for reporting delays and missing risk-factor information, but not for incomplete reporting.*

*a* Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.

*b* Includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified.
Geographic Distribution of HIV in L.A. County
Number, Percent and Rate per 100,000 Population of Persons Living with HIV, by Service Planning Area LAC (N=43,936)

Legend

- Number of persons (%)
- Rate per 100,000 population

1. Persons with HIV are based on named reports from April 2006 to December 2011.
2. Rates are based on population estimates (PEPS) for 2010.
Persons Living with HIV per 100,000 Population, by Zip Code and Service Planning Area in LAC (N=43,936)

Data are provisional due to reporting delay. ZIP code information is based on the residence at the time of diagnosis or the most recently reported residential information.
New HIV Diagnoses in 2007-2009 by Zip code and Service Planning Area in LAC (N=6,612)

New HIV diagnoses in 2008-2010, by ZIP code

- 100 to 457
- 50 to 99
- 25 to 49
- 10 to 24
- 5 to 9
- < 5

Data are provisional due to reporting delay. ZIP code information is based on the residence at the time of diagnosis.
National GIS Interactive Maps for HIV

• **Atlas:** Interactive tool for accessing HIV, AIDS, chlamydia, gonorrhea, and primary and secondary syphilis data collected by CDC’s National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP) – can do custom analyses

• **AIDSVu:** Emory University site with new public health tool that makes data on the geography of HIV in the United States, including LA County
Nearest Neighbor Hierarchical Clustering Summary

HIV/STI Clusters
- **HIV Cases**
- **Syphilis and HIV co-Infection**
- **Syphilis, no HIV**
- **GC and HIV co-Infection**
- **GC, no HIV**
- **Los Angeles County**

1Nearest Neighbor Hierarchical Clusters output at 1.0 standard deviations using fixed-distance band threshold

Source: *DHSP Research and Evaluation.*
AIDS in L.A. County
Annual Number of AIDS diagnoses and AIDS reports in 1986-2011, LA County

Number of AIDS Diagnoses among Adults/Adolescents by Race/Ethnicity and Year of Diagnosis, LAC, 1992-2011

Proportion of AIDS Diagnoses among Adults/Adolescents by Race/Ethnicity and Year of Diagnosis, LAC, 1992-2011

Surveillance Issues
Surveillance Issues

- HIV Registry considered mature, but still with backlog of cases to investigate – meeting timeliness and completeness requirements of CDC grantor
- Completed transfer of I-HARS databases to PHIS
- Completed transfer of eHARS to State Office of AIDS
- New CDC FOA for CY2013 for surveillance will concentrate funds into core surveillance and be more aligned with HIV prevalence, should include new funding for electronic laboratory reporting
Continuing Areas of Focus

- Surveillance data used to evaluate National HIV/AIDS Strategy objectives
- Geographic presentation and analysis of data
- Need to increase electronic lab and case reporting capacity
- Ability to use HIV Surveillance Data for Public Health purposes – PS, linking to care, lost to care, viral load suppression
HIV/AIDS Case Definition Consultation

• AIDS case defining conditions – the role OIs
• Staging system for HIV in adults/adolescents
• Pediatric case definition and staging system
• Physician-documented diagnosis
• Acute and subacute HIV infection
• New testing algorithms to confirm HIV infection
• HIV-2
Contact Information

Douglas Frye
HIV Epidemiology
Phone: (213) 351 – 8190

For HIV Statistics and to Report a Case:
http://www.publichealth.lacounty.gov/hiv/