EOSCAPE™ High-Performance Molecular Diagnostics Systems

Next-Generation Nucleic Acid Testing Technology for the Clinical Laboratory and Point-of-Care

Overcoming Health Disparities in the Bay Area using HIV/AIDS as a Model
May 23, 2012


* Wave 80 Biosciences, San Francisco, CA
** Positive Health Program, SFGH; Clinical Core Director, UCSF Options Project

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Burden of HIV in San Francisco: Distribution amongst Minority Populations

Distribution of HIV cases in San Francisco, 2010

<table>
<thead>
<tr>
<th>Population</th>
<th>Incidence (/100,000)</th>
<th>Survival (5 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Americans</td>
<td>160</td>
<td>74%</td>
</tr>
<tr>
<td>Whites</td>
<td>124</td>
<td>82%</td>
</tr>
<tr>
<td>Latinos</td>
<td>148</td>
<td>84%</td>
</tr>
<tr>
<td>Other</td>
<td>45</td>
<td>86%</td>
</tr>
</tbody>
</table>

Percentage of HIV/AIDS cases among non-whites, 1985-2008

San Francisco Department of Public Health, HIV Epidemiology Section. HIV/AIDS Epidemiology Annual Report 2010
Health Disparity: Delays in Diagnosis

- ~30% of Hispanics and African Americans DO NOT have a routine source of healthcare
  - Language barriers
  - Poverty
  - Immigration status
  - Unemployment
  - Lack of insurance

- CDC estimates ~25% of HIV+ Americans are unaware of their infection
  - Data suggests that being aware of one’s HIV infection reduces HIV transmission risks by about 68%
  - Latinos and African Americans are more likely to be “late testers” and report of AIDS within 12 months of HIV diagnosis

- Point of Entry for Healthcare
  - Opportunities for HIV screening
    - Urgent Care Centers
    - Emergency Department
    - STD clinics

Betancourt, JR. et al., 2003.
J. Prejean et al., 2011.
The Role of Diagnosing Acute HIV in Preventing HIV Transmission

- **Increased transmission risk during acute phase.**
  - A study in Montreal indicated that over 50% of HIV transmissions take place during the acute phase (Brenner, et al. 2007).
  - A study in Uganda found a 10-23 fold higher transmission rate per coital act for an acutely infected individual vs. a chronically infected individual (Wawer, et al. 2005).

- **Acutely infected HIV access care at high rates.**
  - A study in Kenya estimates that 75% of people in Kenya acutely infected with HIV seek care (Saunders, 2011)

- **1% of all “viral syndromes” in US ambulatory care settings may be acute HIV**
  - 49-89% have nonspecific symptoms during acute HIV infection (Zetola and Pilcher, 2007)
  - Unwell patients may request HIV testing at an HIV testing site but more often report to ambulatory care (Pincus JM, et al. 2003)
Transmission of HIV: Acute HIV Infections

14-22 days

Highly transmissible

Symptoms:
Fever, sweats, body aches

HIV RNA positive

HIV Ag/Ab positive

HIV RNA level

CD4 count

HIV antibody level
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