HIV Update: Changing Trends

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Overview

• Background of HIV Epidemic
  – Global / US / TN

• Tools for HIV Prevention

• National HIV/AIDS Strategy
UNAIDS: Adults & Children
Living with HIV (2009)

33.3 million total

Regional HIV Stats Women: 2009

<table>
<thead>
<tr>
<th>Region</th>
<th># Women (15-49) Living with HIV</th>
<th>% HIV-Infected Adults (15-49) Who are Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (worldwide)</td>
<td>15,900,000</td>
<td>51%</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>13,500,000</td>
<td>60%</td>
</tr>
<tr>
<td>Eastern Europe &amp; Central Asia</td>
<td>600,000</td>
<td>44%</td>
</tr>
<tr>
<td>Latin America</td>
<td>500,000</td>
<td>36%</td>
</tr>
<tr>
<td>South and SE Asia</td>
<td>1,400,000</td>
<td>35%</td>
</tr>
<tr>
<td>North America, West &amp; Central Europe</td>
<td>630,000</td>
<td>27%</td>
</tr>
</tbody>
</table>

Source: UNAIDS / WHO AIDS Epidemic Update: December 2009
HIV in the US

HIV Incidence & Prevalence, US
(1977 – 2006)

HIV in the United States (2006)

- 1.1 million PLWHA
  - 21% unaware that they’re HIV infected
    (CDC, MMWR 2009)

- 56,300 new HIV infections
  - >50% new infections associated with PLWHA who are unaware of their status
    (Hall HI et al, JAMA 2009)

Rates of Diagnoses of New HIV Infection by Gender (US, 2009 – 40 states & 5 territories)
Rates of Diagnoses of New HIV Infection by Exposure Category
(US, 2009 – 40 states & 5 territories)

Rates of Diagnoses of New HIV Infection by Race / Ethnicity
(US, 2009 – 40 states & 5 territories)
## New HIV Infections: Populations Disproportionately Affected (US, 2009)

<table>
<thead>
<tr>
<th>Population</th>
<th>% of New Infections</th>
<th>% of U.S. Population</th>
<th>Cases / 100,000 Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>60%</td>
<td>2%</td>
<td>n/a (W = 11,400; B = 10,800; H = 6,000)</td>
</tr>
<tr>
<td>Black</td>
<td>44%</td>
<td>14%</td>
<td>69.9 (8x↑) (M = 7x↑, F = 15x↑)</td>
</tr>
<tr>
<td>White</td>
<td>28%</td>
<td>68%</td>
<td>9.1</td>
</tr>
<tr>
<td>Hispanic</td>
<td>20%</td>
<td>16%</td>
<td>26.4 (3x↑) (M = 3x↑, F = 5x↑)</td>
</tr>
</tbody>
</table>

Note: The same trends for disproportionate burden of disease exist among Blacks for rates of PLWHAs, AIDS Diagnoses, and HIV-Related Deaths.

(Prejean et al, PLoS One 2011)


![Chart showing racial and ethnic disparities in HIV incidence rates (2006-2009)]

HIV in the Tennessee
Rates HIV Diagnoses (Adults & Adolescents)
(US, 2009 – 40 states & 5 territories)

Tennessee Prevalent HIV/AIDS Cases
(2004 – 2008)

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

N=42,793

Number of Cases

Year  | Case Rate (per 100,000 population)
--- | ---
2004  | 16.8
2005  | 16.6
2006  | 16.2
2007  | 16.3
2008  | 17.2


MALES (N=786, 74%)
- 59% White, Non-Hispanic
- 34% Hispanic
- 6% Black, Non-Hispanic
- 1% Other/Unknown

FEMALES (N=285, 26%)
- 75% White, Non-Hispanic
- 21% Hispanic
- 4% Black, Non-Hispanic
- 0% Other/Unknown

* Other/Unknown Race/Ethnicity includes Asian/Pacific Islander, American Indian/Alaskan Native, and Unknown/Multiple Races. Gender is at time of birth.
Tennessee HIV/AIDS Cases by Gender & Exposure Category (2008)

**MALES (N=786, 74%)**
- Male-to-Male Sex: 1%
- Male-to-Male Sex & IDU: 11%
- Injection Drug Use (IDU): 32%
- Heterosexual Contact: 42%
- Mother with/at Risk for HIV: 55%
- Other/Unk: 0%

**FEMALES (N=285, 26%)**
- Injection Drug Use (IDU): 6%
- Heterosexual Contact: 51%
- Mother with/at Risk for HIV: 11%
- Male-to-Male Sex: 1%
- Male-to-Male Sex & IDU: 1%
- Other/Unk: 0%

* Gender is at time of birth. Exposure Categories are in a hierarchical order and is described once per case. Sufficient proof must be documented in order to classify someone as having heterosexual contact. Other/Unknown exposure category includes hemophilia, blood transfusion, perinatal, and risk not reported or identified.

Reported TN HIV/AIDS Cases & Case Rates by Consortia Regions (2008)

**Number of Cases**
- Southwest: 448
- West: 352
- Middle: 83
- SouthEast: 133

**Case Rate**
- Southwest: 46
- West: 83
- Middle: 133
- SouthEast: 50
- East: 35

Groups at Highest Risk for New HIV Infection

- MSM (black >> white > hispanic)
- IDUs
- Black (men & women)
- Hispanic (men & women)

(CDC, JAMA 2008)

Tools for HIV Prevention
Scientifically Proven Biomedical & Behavioral Prevention Tools

• Education
• HIV Testing
• Condom Use
• Partner Reduction
• STI Treatment
• Syringe Services Program
• Microbicides
• Circumcision
• Antiretroviral medications


• HIV screening is recommended for patients in all health care settings (with HIV prevalence >0.1%) after the patient is notified that testing will be performed unless the patient declines (opt-out screening).

• **Persons at high risk** for HIV infection should be **screened** for HIV at least **annually**.

• Separate **written consent** for HIV testing should **not** be **required**; general consent for medical care should be considered sufficient to encompass consent for HIV testing.

• Prevention counseling required only for individuals testing positive
Recent Tools to Prevent HIV Infection

**PrEP**
- Antiretroviral drugs taken daily can cut risk by more than half in uninfected heterosexual men and women
- Antiretroviral drugs can protect uninfected men who have sex with men.

**Microbicides**
- Antiretroviral drugs in a vaginal gel can protect uninfected women from infection.

**ART**
- Antiretroviral drug use among discordant heterosexual couples can reduce transmission risk

The Spectrum of Engagement in HIV Care and its Relevance to Test-and-Treat Strategies for Prevention of HIV Infection

(Gardner et al, CID March 2011)
“The United States will become a place where new HIV infections are rare and when they do occur, every person, regardless of age, gender, race/ethnicity, sexual orientation, gender identity or socio-economic circumstance, will have unfettered access to high quality, life-extending care, free from stigma and discrimination”

• Reduce New Infections
  – Lower the annual number of new infections by 25%
  – Reduce the HIV transmission rate by 30%
  – Increase % of PLWH who know their status from 79% to 90%

• Increase Access to Care & Improve Outcomes PLWH
  – Increase proportion of newly diagnosed patients linked to clinical care ≤ 3 mos of HIV diagnosis from 65% to 85%
  – Increase proportion of Ryan White clients in continuous care from 73% to 80%
  – Increase the percentage of Ryan White clients with permanent housing from 82% to 86%

• Reducing HIV-Related Disparities & Health Inequities
  – Increase proportion of HIV diagnosed MSM with undetect VL by 20%
  – Increase proportion of HIV diagnosed Blacks with undetect VL by 20%
  – Increase proportion of HIV diagnosed Latinos with undetect VL by 20%

Moving HIV Surveillance

• From
  – Simple monitoring burden of disease

• To
  – Monitoring access to care, outcomes of care, and resultant impact on burden of disease
HIV Surveillance

Measures of HIV morbidity and mortality

HIV Infection

HIV diagnosis
(1st positive confirmatory test)

Linkage to Care
1st CD4 Count
1st Viral Load Test
1st Drug Resistance test

AIDS
1st CD4 Count <200 or AIDS-OI

Retention / Response to Care
CD4 or VL

Death

Entry to care
Retention in care and viral suppression

CDC / HRSA Reporting Requirements

CDC (Confirmed HIV Positives): 01Jan12
• Attend medical care <90 d of HIV test
• Interviewed partner services <30 d of HIV test
• Referred to prevention services
• If female, pregnant (if yes, in antenatal care)

HRSA (Ryan White Clients): 01Apr12
• Each Reporting Period
  • Most recent CD4 (date / value)
  • Most recent VL (date / value)
Reports to be Run
(CDC, HRSA, NHAS)

- **New HIV Diagnoses**
  - Number and case rate
  - Transmission rates (new / prevalent infections)
  - Proportion concurrent HIV/AIDS Dx
  - Proportion initiating care ≤ 3 mos of diagnosis
  - Median CD4 count at diagnosis

- **Prevalent / New Cases**
  - Proportion of clients in care
    - Proportion on ART
    - Proportion with viral suppression
    - Proportion with continuous care
    - Community Viral Load

Good News / Bad News

- **Progress**
  - We have the tools to significantly reduce this epidemic

- **Challenges**
  - Need to support and strengthen every step along the continuum to care
Thank You!

Resources

• HIV/AIDS Surveillance Statistics
  http://www.cdc.gov/hiv/topics/surveillance/

• AIDS Info
  www.aidsinfo.nih.gov
  – Clinical guidelines for ARV treatment (Perinatal, Pediatric, Adults & Adolescents, PEP)

• National HIV/AIDS Clinician’s Consultation Center
  1-888-448-8765; www.nccc.ucsf.edu
  • Around-the-clock advice on testing and care of HIV-infected pregnant women and their infants
  • Provides referral to HIV specialists and regional resources