Normalising HIV Testing: CDC’s Revised Recommendations for HIV Screening in Health Care Settings

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The findings and conclusions in this presentation are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention
<table>
<thead>
<tr>
<th>Category</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number HIV infected</td>
<td>1,039,000 – 1,185,000</td>
</tr>
<tr>
<td>Number unaware of their HIV infection</td>
<td>252,000 - 312,000 (24%-27%)</td>
</tr>
<tr>
<td>Estimated new infections annually</td>
<td>40,000</td>
</tr>
</tbody>
</table>

_Glynn M, Rhodes P._  2005 HIV Prevention Conference
HIV Prevalence, NHANES 1999-2002

Prevalence of HIV Antibody

- McQuillan et al, NCHS: JAIDS April 2006
### HIV Prevalence and Proportion of Unrecognized HIV Infection

Among 1,767 MSM, by Age Group and Race/Ethnicity

NHBS, Baltimore, LA, Miami, NYC, San Francisco

<table>
<thead>
<tr>
<th>Age Group (yrs)</th>
<th>Total Tested</th>
<th>HIV Prevalence No.</th>
<th>HIV Prevalence %</th>
<th>Unrecognized HIV Infection No.</th>
<th>Unrecognized HIV Infection %</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>410</td>
<td>57</td>
<td>(14)</td>
<td>45</td>
<td>(79)</td>
</tr>
<tr>
<td>25-29</td>
<td>303</td>
<td>53</td>
<td>(17)</td>
<td>37</td>
<td>(70)</td>
</tr>
<tr>
<td>30-39</td>
<td>585</td>
<td>171</td>
<td>(29)</td>
<td>83</td>
<td>(49)</td>
</tr>
<tr>
<td>40-49</td>
<td>367</td>
<td>137</td>
<td>(37)</td>
<td>41</td>
<td>(30)</td>
</tr>
<tr>
<td>≥ 50</td>
<td>102</td>
<td>32</td>
<td>(31)</td>
<td>11</td>
<td>(34)</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>616</td>
<td>127</td>
<td>(21)</td>
<td>23</td>
<td>(18)</td>
</tr>
<tr>
<td>Black</td>
<td>444</td>
<td>206</td>
<td>(46)</td>
<td>139</td>
<td>(67)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>466</td>
<td>80</td>
<td>(17)</td>
<td>38</td>
<td>(48)</td>
</tr>
<tr>
<td>Multiracial</td>
<td>86</td>
<td>16</td>
<td>(19)</td>
<td>8</td>
<td>(50)</td>
</tr>
<tr>
<td>Other</td>
<td>139</td>
<td>18</td>
<td>(13)</td>
<td>9</td>
<td>(50)</td>
</tr>
<tr>
<td>Total</td>
<td><strong>1,767</strong></td>
<td><strong>450</strong></td>
<td><strong>(25)</strong></td>
<td><strong>217</strong></td>
<td><strong>(48)</strong></td>
</tr>
</tbody>
</table>

*MMWR June 24, 2005*
Terminology

- **Diagnostic testing**: HIV testing based on clinical signs or symptoms
- **Screening**: HIV testing for all persons in a defined population
- **Targeted testing**: offering testing to subgroups at higher risk based on behavioral, clinical or demographic characteristics
- **Opt-out testing**: HIV testing after notifying the patient that the test will be done; consent is inferred unless the patient declines
Current Testing
**Source of HIV Tests and Positive Tests**

- 38% - 44% of adults age 18-64 have been tested
- 16-22 million persons age 18-64 tested annually in U.S.

<table>
<thead>
<tr>
<th>Source</th>
<th>HIV tests*</th>
<th>HIV+ tests**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private doctor/HMO</td>
<td>44%</td>
<td>17%</td>
</tr>
<tr>
<td>Hospital, ED, Outpatient</td>
<td>22%</td>
<td>27%</td>
</tr>
<tr>
<td>Community clinic (public)</td>
<td>9%</td>
<td>21%</td>
</tr>
<tr>
<td>HIV counseling/testing</td>
<td>5%</td>
<td>9%</td>
</tr>
<tr>
<td>Correctional facility</td>
<td>0.6%</td>
<td>5%</td>
</tr>
<tr>
<td>STD clinic</td>
<td>0.1%</td>
<td>6%</td>
</tr>
<tr>
<td>Drug treatment clinic</td>
<td>0.7%</td>
<td>2%</td>
</tr>
</tbody>
</table>

*National Health Interview Survey, 2002
**Suppl. to HIV/AIDS surveillance, 2000-2003*
Among 4,127 persons with AIDS*, 45% were first diagnosed HIV-positive within 12 months of AIDS diagnosis (“late testers”)

Late testers, compared to those tested early (>5 yrs before AIDS diagnosis) were more likely to be:
- Younger (18-29 yrs)
- Heterosexual
- Less educated
- African American or Hispanic

*16 states
Reasons for testing: late versus early testers
Supplement to HIV/AIDS Surveillance, 2000-2003

- Late (Tested < 1 yr before AIDS dx)
- Early (Tested > 5 yrs before AIDS dx)

% of late testers vs. early testers for different reasons:
- Illness: Late 60%, Early 20%
- Self/partner at risk: Late 10%, Early 10%
- Wanted to know: Late 10%, Early 10%
- Routine check up: Late 10%, Early 10%
- Required: Late 0%, Early 0%
- Other: Late 0%, Early 0%
Current Recommendations and their Effects
Recommendations for Testing Pregnant Women

- Routine, voluntary HIV testing as a part of prenatal care, as early as possible, for all pregnant women
- Simplified pretest counseling
- Flexible consent process
Estimated Number of Perinatally Acquired AIDS Cases, by Year of Diagnosis, 1985-2004 – United States

- CDC HIV screening Recs
- PACTG 076 & USPHS ZDV Recs

~95% reduction
Existing CDC Recommendations
Adults and Adolescents

- Routinely recommend HIV counseling and testing in settings with HIV prevalence >1%
Recommendations Are Not Having Their Intended Effect in Acute Care Settings

- Emergency Departments (EDs) account for 10% of all ambulatory care visits

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED visits</td>
<td>108 million</td>
<td>107 million</td>
<td>110 million</td>
</tr>
<tr>
<td>Age 15-64</td>
<td>68.3 million</td>
<td>69.4 million</td>
<td>69.6 million</td>
</tr>
<tr>
<td>HIV serology</td>
<td>215,000</td>
<td>201,000</td>
<td>163,000</td>
</tr>
</tbody>
</table>

National Hospital Ambulatory Medical Care Survey
U.S. National Center for Health Statistics
<table>
<thead>
<tr>
<th>Study site</th>
<th>New HIV+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cook County ED, Chicago</td>
<td>2.3%</td>
</tr>
<tr>
<td>Grady ED, Atlanta</td>
<td>2.7%</td>
</tr>
<tr>
<td>Johns Hopkins ED, Baltimore</td>
<td>3.2%</td>
</tr>
<tr>
<td>King-Drew Med Center ED, Los Angeles</td>
<td>1.3%</td>
</tr>
<tr>
<td>Inpatients, Boston Medical Center</td>
<td>3.8%</td>
</tr>
</tbody>
</table>
Existing CDC Recommendations
Adults and Adolescents

- Routinely recommend HIV counseling and testing in settings with HIV prevalence ≥1%
- Targeted counseling and testing based on risk assessment
## Characteristics, HIV-Positive Patients Identified in ED Screening

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No previous test</td>
<td>47 (57%)</td>
</tr>
<tr>
<td>Risk factors</td>
<td></td>
</tr>
<tr>
<td>MSM</td>
<td>30 (34%)</td>
</tr>
<tr>
<td>IDU</td>
<td>8 (10%)</td>
</tr>
<tr>
<td>High risk hetero partner</td>
<td>3 (4%)</td>
</tr>
<tr>
<td>No identified risk</td>
<td>42 (51%)</td>
</tr>
</tbody>
</table>

N = 83

- Cook County Bureau of Health Services, 2003
Existing CDC Recommendations
Adults and Adolescents

- Routinely recommend HIV counseling and testing in settings with HIV prevalence ≥1%
- Targeted counseling and testing based on risk assessment
- Routinely recommend HIV counseling and testing for patients seeking treatment for STDs
HIV Testing Practices in Emergency Departments

- Survey of 95 Academic EDs
- For patients with suspected STDs:
  - 93% screen for gonorrhea
  - 88% screen for chlamydia
  - 58% screen for syphilis
  - 3% screen for HIV

The Case for HIV Screening
Criteria that Justify Routine Screening

1. Serious health disorder that can be detected before symptoms develop
2. Reliable, inexpensive, acceptable screening test
3. Treatment is more beneficial when begun before symptoms develop
4. Facilities for diagnosis and treatment should be available
5. Costs of screening are reasonable in relation to anticipated benefits

Principles and Practice of Screening for Disease
-WHO Public Health Paper, 1968
Making HIV Screening a Routine Part of Medical Care

- Cook County Hospital ED, Chicago, Illinois
- Rapid testing since Oct 02
  - 62% accept HIV testing
  - 98% receive test results
  - 3,802 patients screened
  - 93 (2.4%) new HIV positive
  - 80% entered HIV care (median 18 days)
### Rapid HIV Screening in Medical Settings

<table>
<thead>
<tr>
<th>Demonstration Project</th>
<th>No. tested</th>
<th>No. (%) HIV+</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York City</td>
<td>3,039</td>
<td>61 (2%)</td>
</tr>
<tr>
<td>Bronx- Lebanon: 2 clinics, 1 ED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Los Angeles</td>
<td>6,909</td>
<td>75 (1.1%)</td>
</tr>
<tr>
<td>2 clinics, 1 ED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alameda County (Oakland)</td>
<td>6,283</td>
<td>84 (1.3%)</td>
</tr>
<tr>
<td>1 ED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts</td>
<td>5,994</td>
<td>45 (0.75%)</td>
</tr>
<tr>
<td>1 outpatient, 1 inpatient, 1 clinic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wisconsin</td>
<td>1,763</td>
<td>6 (0.34%)</td>
</tr>
<tr>
<td>3 clinics</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*CDC, preliminary data - Dec 2005*
Lessons Learned

• Difficult to obtain separate written consent and provide counseling, yet still screen the large numbers of patients in health care settings.

• Sustainability will depend on streamlined systems, additional staff, or both.
Rationale for Revising Recommendations

- Many HIV-infected persons access health care but are not tested for HIV until symptomatic
- Effective treatment available
- Awareness of HIV infection leads to substantial reductions in high-risk sexual behavior
- Great deal of experience with HIV testing, including rapid tests
Mortality and HAART Use Over Time
HIV Outpatient Study, CDC, 1994-2003

Deaths per 100 PY

Patients on HAART

Patients on HAART

Deaths per 100 PY

Year
After people become aware they are HIV-positive, the prevalence of high-risk sexual behavior is reduced substantially.

Reduction in Unprotected Anal or Vaginal Intercourse with HIV-neg partners: HIV-pos Aware vs. HIV-pos Unaware

68%

Meta-analysis of high-risk sexual behavior in persons aware and unaware they are infected with HIV in the U.S.  
Cost-Effectiveness


“The cost-effectiveness of routine HIV screening in health care settings, even in relatively low-prevalence populations, is similar to that of commonly accepted interventions, and such programs should be expanded.”
Proposed Recommendations
Adults and Adolescents - I

- Routine, voluntary HIV screening for all persons 13-64 in health care settings, not based on risk or prevalence
- Opt-out HIV testing with the opportunity to ask questions and the option to decline
- Include HIV consent with general consent for care; separate signed informed consent is not required
- Prevention counseling in conjunction with HIV screening in health care settings is not required
Proposed Recommendations
Adults and Adolescents - II

- Communicate test results in same manner as other diagnostic/screening tests
- Provide clinical HIV care or establish reliable referral to qualified providers
- Repeat HIV screening of persons with known risk at least annually
Proposed Revisions
Adults and Adolescents - III

- Intended for all health care settings, including inpatient services, EDs, urgent care clinics, STD clinics, TB clinics, public health clinics, community clinics, substance abuse treatment centers, correctional health facilities, primary care settings

- Low prevalence settings:
  - Initiate screening
  - If HIV prevalence shown to be <0.1%, screening is no longer be warranted
There is an urgent need to increase the proportion of persons who are aware of their HIV-infection status.

- Expanded, routine, voluntary, opt-out screening in health care settings is needed.
- Such screening is cost-effective.