HIV/AIDS Epidemic in North Carolina

RTI International Policy Forum: Successes, Challenges, and Next Steps in Community-Based HIV Interventions

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Outline

- Overview of HIV Disease in North Carolina
- Troubling Questions
- The View Ahead
- Q&A
What are the key issues in North Carolina?

- Where N.C. fits into the national HIV/AIDS Epidemic?
- What is the impact of HIV Disease?
- Who is most affected by HIV Disease?
- What are the most common transmission routes?
- What areas are most affected by HIV Disease?
Factors Associated with HIV/AIDS Epidemic in NC

- NC ranks as the 10th most populous state and 3rd for one year growth in 2007-2008
- 22% of NC population are black, 7% Hispanic, 2% Asian/PI, 1% Native American/AN
- 17% of the 19-64 yr old population at or below the federal poverty level (2006-2007)
- 22% of the 19-64 yr old population uninsured
- Hispanic/Latino population increased 42% from 2002 to 2007
Estimated rates (per 100,000 population) for adults and adolescents living with HIV Infection (not AIDS), 2007 -- 34 states and 5 U.S. dependent areas

HIV Disease as the Leading Cause of Death among North Carolina Residents, 2007

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Race/Ethnicity</th>
<th>Deaths</th>
<th>Leading Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-44 years</td>
<td>American Indian*</td>
<td>3</td>
<td>7th</td>
</tr>
<tr>
<td></td>
<td>White*</td>
<td>33</td>
<td>9th</td>
</tr>
<tr>
<td></td>
<td>Black*</td>
<td>126</td>
<td>5th</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>4</td>
<td>7th</td>
</tr>
<tr>
<td></td>
<td>All Races</td>
<td>166</td>
<td>7th</td>
</tr>
<tr>
<td>45-64 years</td>
<td>Black*</td>
<td>158</td>
<td>5th</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>3</td>
<td>10th</td>
</tr>
</tbody>
</table>

* non Hispanic

Source: N.C. State Center for Health Statistics
AIDS Rates 1987-2006:
U.S. and N.C.
People Living with HIV/AIDS in North Carolina, 2004-2008

- HIV (non AIDS)
- AIDS

2004: 9,318
2005: 12,345
2006: 14,045
2007: 15,845
2008: 17,645
Number of New HIV Disease Cases in N.C. 2004-2008, Year of Diagnosis

Number of Cases

- 2004: 1584
- 2005: 1639
- 2006: 1689
- 2007: 2031
- 2008: 1964
Gender Distribution of Adults/Adolescents Diagnosed with HIV Disease in N.C., 2008

- Female: 25%
- Male: 75%
Age Distribution of HIV Disease in N.C., 2008

Number of cases

Years of Age

Years of Age | Number of cases
--- | ---
0-12 | 0
13-19 | 1
20-24 | 50
25-29 | 200
30-34 | 250
35-39 | 300
40-44 | 350
45-49 | 300
50-54 | 250
55-59 | 200
60-64 | 150
65+ | 100
Rate of Adult/Adolescent HIV Disease by Race/Ethnicity and Gender, 2004-2008

- Black* men
- White* men
- Hispanic men
- Black* women
- White* women
- Hispanic women

*non Hispanic
Mode of HIV Transmission in N.C., 2008

- Heterosexual: 39%
- MSM/IDU: 53%
- IDU: 5%
- Pediatric: 1%
- Others: 0%

n=1,964
Mode of HIV Transmission among Adults/Adolescents by Gender, 2008

Female: 492
- Heterosexual: 90%
- IDU: 10%

Male: 1,460
- Heterosexual: 73%
- MSM: 3%
- MSM/IDU: 22%
- IDU: 2%
Mode of HIV Transmission by Race, 2008

- **White* n=500**
  - 68% Heterosexual
  - 22% MSM
  - 4% IDU
  - 4% Other

- **Black* = 1,249**
  - 47% Heterosexual
  - 48% MSM
  - 4% IDU
  - 1% MSM/IDU

- **Hispanic n=158**
  - 42% Heterosexual
  - 47% MSM
  - 7% IDU
  - 3% Other
  - 1% MSM/IDU

*non-Hispanic

Pediatric cases have been excluded
Mode of HIV Transmission among Males by Race, 2008

Black* = 869

- MSM: 27%
- IDU: 1%
- MSM/IDU: 3%
- Other: 10%
- Heterosexual: 80%

White* n=418

- MSM: 10%
- IDU: 3%
- MSM/IDU: 5%
- Other: 5%
- Heterosexual: 80%

Hispanic n=136

- MSM: 35%
- IDU: 54%
- MSM/IDU: 4%
- Other: 6%
- Heterosexual: 6%

*non-Hispanic

Pediatric cases have been excluded
Mode of HIV Transmission among Females by Race, 2008

- **Black**
  - Heterosexual: 92%
  - IDU: 8%
  - Others: 8%
  - Total: 380

- **White**
  - Heterosexual: 83%
  - Non-Hispanic: 17%
  - Total: 82

- **Hispanic**
  - Heterosexual: 86%
  - Non-Hispanic: 14%
  - Total: 22

*Pediatric cases have been excluded*
## Top 10 Counties
**Persons Living* with HIV/AIDS**

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>PLWH</th>
<th>PLWA</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECKLENBURG</td>
<td>2,709</td>
<td>1,355</td>
<td>4,064</td>
</tr>
<tr>
<td>WAKE</td>
<td>1,263</td>
<td>1,170</td>
<td>2,433</td>
</tr>
<tr>
<td>GUILFORD</td>
<td>1,140</td>
<td>563</td>
<td>1,703</td>
</tr>
<tr>
<td>DURHAM</td>
<td>875</td>
<td>469</td>
<td>1,344</td>
</tr>
<tr>
<td>PRISON</td>
<td>789</td>
<td>436</td>
<td>1,225</td>
</tr>
<tr>
<td>FORSYTH</td>
<td>751</td>
<td>383</td>
<td>1,134</td>
</tr>
<tr>
<td>CUMBERLAND</td>
<td>742</td>
<td>381</td>
<td>1,123</td>
</tr>
<tr>
<td>NEW HANOVER</td>
<td>354</td>
<td>255</td>
<td>609</td>
</tr>
<tr>
<td>PITT</td>
<td>241</td>
<td>235</td>
<td>476</td>
</tr>
<tr>
<td>BUNCOMBE</td>
<td>251</td>
<td>193</td>
<td>444</td>
</tr>
</tbody>
</table>

*Living as of 12/31/2008*
## Top 10 Counties

### HIV Disease Cases Diagnosed in 2008

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>2008 Cases</th>
<th>2008 Rate</th>
<th>AVG Rate 2006-08</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECKLENBURG</td>
<td>426</td>
<td>49.1</td>
<td>46.2</td>
<td>1</td>
</tr>
<tr>
<td>WAKE</td>
<td>219</td>
<td>26.3</td>
<td>25.8</td>
<td>10</td>
</tr>
<tr>
<td>GUILFORD</td>
<td>161</td>
<td>34.6</td>
<td>34.1</td>
<td>4</td>
</tr>
<tr>
<td>DURHAM</td>
<td>102</td>
<td>39.8</td>
<td>35.8</td>
<td>3</td>
</tr>
<tr>
<td>CUMBERLAND</td>
<td>92</td>
<td>30.0</td>
<td>34.1</td>
<td>4</td>
</tr>
<tr>
<td>FORSYTH</td>
<td>75</td>
<td>22.1</td>
<td>23.9</td>
<td>14</td>
</tr>
<tr>
<td>NEW HANOVER</td>
<td>34</td>
<td>17.9</td>
<td>22.0</td>
<td>16</td>
</tr>
<tr>
<td>PITT</td>
<td>34</td>
<td>22.4</td>
<td>20.7</td>
<td>21</td>
</tr>
<tr>
<td>BUNCOMBE</td>
<td>34</td>
<td>15.0</td>
<td>14.9</td>
<td>31</td>
</tr>
<tr>
<td>ALAMANCE</td>
<td>33</td>
<td>22.7</td>
<td>15.9</td>
<td>29</td>
</tr>
</tbody>
</table>
North Carolina HIV Disease Rates, 2008
By Year Of Diagnosis

Number of Cases
- 0.0
- 0.1 - 10.0
- 10.1 - 20.0
- 20.1 - 30.0
- >30
HIV Disease among Foreign-born Population in N.C., 2002-2008
Race/Ethnicity of HIV Disease among Foreign-born Residents, 2002-2008

- White, non-Hispanic: 59%
- Black, non-Hispanic: 29%
- Asian/Pacific Islander: 4%
- Hispanic: 7%
- Others: 1%
Epi Summary

- The NC ranks moderate to high in national HIV disease reports.
- There are more than twice as many males than females infected with HIV/AIDS.
- The most common HIV transmission route is unprotected anal sex among men, followed by heterosexual transmission and injecting drug use.
- Black males are the most affected sub population, followed by black females and white males.
- The counties with most HIV/AIDS cases coincide with the counties with most syphilis cases.
Troubling Question

Why do HIV disease rates differ among demographic groups?
<table>
<thead>
<tr>
<th>GENDER, RACE, MODE</th>
<th>CASES</th>
<th>PCT</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black MSM</td>
<td>601</td>
<td>31%</td>
<td>1</td>
</tr>
<tr>
<td>Black female heterosexual</td>
<td>349</td>
<td>18%</td>
<td>2</td>
</tr>
<tr>
<td>White MSM</td>
<td>339</td>
<td>17%</td>
<td>3</td>
</tr>
<tr>
<td>Black male heterosexual</td>
<td>234</td>
<td>12%</td>
<td>4</td>
</tr>
<tr>
<td>Hispanic MSM</td>
<td>74</td>
<td>4%</td>
<td>5</td>
</tr>
<tr>
<td>White female heterosexual</td>
<td>68</td>
<td>3%</td>
<td>6</td>
</tr>
<tr>
<td>Hispanic male heterosexual</td>
<td>48</td>
<td>2%</td>
<td>7</td>
</tr>
<tr>
<td>White male heterosexual</td>
<td>39</td>
<td>2%</td>
<td>8</td>
</tr>
<tr>
<td>White male IDU</td>
<td>38</td>
<td>2%</td>
<td>9</td>
</tr>
<tr>
<td>Black male IDU</td>
<td>33</td>
<td>2%</td>
<td>10</td>
</tr>
</tbody>
</table>
Why do HIV disease rates differ among groups?

- **Socioeconomic issues**
  - Poverty
  - Access to health care

- **Dynamics of social networks**
  - Sexual partners
    - Internet
    - Prisons
    - Drug use
    - Disease prevalence
Why do HIV disease rates differ among groups?

- Access to prevention messages
- Testing patterns
  - Knowing status key to preventing the spread of disease
- Prevalence of other STDs
- Psychosocial problems
  - Depression
  - Childhood sexual abuse
  - Partner violence
### Table 2. Prevalence of symptoms of mental illness and substance abuse in the infectious disease clinics (n = 1,357)

<table>
<thead>
<tr>
<th></th>
<th>Clinic A n = 1,092</th>
<th>Clinic B n = 265</th>
<th>Total n = 1,357</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance abuse</td>
<td>33</td>
<td>30</td>
<td>32</td>
</tr>
<tr>
<td>Symptoms of mental illness</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Both symptoms of mental illness and substance abuse</td>
<td>24</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>Neither symptoms of mental illness nor substance abuse</td>
<td>31</td>
<td>30</td>
<td>31</td>
</tr>
</tbody>
</table>

### TABLE 2. Lifetime and Past-Year Prevalence of Substance Use, Mood, and Anxiety Disorder Diagnoses on the SCID (n = 148)

<table>
<thead>
<tr>
<th>Diagnosis Active Within:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
</tr>
<tr>
<td>Any substance use disorder</td>
</tr>
<tr>
<td>Any mood or anxiety disorder</td>
</tr>
<tr>
<td>Either substance use or mood/anxiety disorder</td>
</tr>
<tr>
<td>Both substance use and mood/anxiety disorders</td>
</tr>
<tr>
<td>Substance abuse or dependence</td>
</tr>
<tr>
<td>Alcohol</td>
</tr>
<tr>
<td>“Crack”/cocaine</td>
</tr>
<tr>
<td>Opioid</td>
</tr>
<tr>
<td>Other substance‡</td>
</tr>
<tr>
<td>Mood disorders</td>
</tr>
<tr>
<td>Major depressive disorder</td>
</tr>
<tr>
<td>Depressive disorder not otherwise specified</td>
</tr>
<tr>
<td>Substance-induced mood disorder</td>
</tr>
<tr>
<td>Other mood disorder‡</td>
</tr>
<tr>
<td>Anxiety disorders</td>
</tr>
<tr>
<td>PTSD</td>
</tr>
<tr>
<td>Panic disorder</td>
</tr>
<tr>
<td>Anxiety disorder not otherwise specified</td>
</tr>
<tr>
<td>Other anxiety disorder‡</td>
</tr>
</tbody>
</table>

Whetten et al. Southern Medical Journal 2005
Pence et al. JAIDS 2005
Troubling Question

- Why can’t we stomp out syphilis and eliminate comorbidity with HIV?
  - Syphilis
  - Gonorrhea
  - Chlamydia
Early Syphilis in NC

- 5.6 cases per 100,000 in 2008
- 18.3 cases per 100,000 for blacks or African Americans
- 4.1 cases per 100,000 for Hispanics
- 1.9 cases per 100,000 for whites
- 1.1 cases per 100,000 for Asian and PI

- NC ranked 15th in rate of P&S syphilis among states (2007)
The next wave is here:

NC PSEL Syphilis Rates 1999-2009*

* Projected rate
Comorbidity (syphilis and HIV)
NC ED in Syphilis HMA

Missed opportunities

142,470 visits to the ED during the study period
420 (0.3%) patients had an HIV test  6% positive (25/420)
554 (0.4%) patients had an RPR test  5.8% positive (32/554)

Agreement between RPR and HIV test orders was low (kappa = 0.35, 95% CI: 0.30, 0.40).

Only 31% (173/554) of patients receiving an RPR test also had an HIV test performed. Of these, 8 (4.6%) tested positive for HIV and 15 (8.7%) tested positive for syphilis; 4 (2.3%) were co-infected with both HIV and syphilis.
Gonorrhea in NC

- 164.1 cases per 100,000 in 2008
  - 481.2 cases per 100,000 for blacks or African Americans
  - 256.2 cases per 100,000 for American Indians
  - 58.7 cases per 100,000 for Hispanics
  - 30.3 cases per 100,000 for whites

- NC ranked 6th in rate of gonorrhea among states (2007)
Chlamydia in NC

- 414.5 cases per 100,000 in 2008
  - 944.0 cases per 100,000 for blacks or African Americans
  - 469.9 cases per 100,000 for American Indians
  - 378.3 cases per 100,000 for Hispanics
  - 121.1 cases per 100,000 for whites

- NC ranked 25th in rate of chlamydia among states (2007)
NC HIV Comorbidity

Mental Illness:
- mood disorders (32% past year/21% past month)
- anxiety (21%/17%)

Substance use:
22%/11%

50% with past-year disorders and 40% with past-month disorders met the criteria for multiple diagnoses.

Comorbidity was associated with younger age, White non-Hispanic race/ethnicity, and greater HIV symptomatology.
Why are we not getting to folks

- Stigma of risk
- Stigma of HIV Infection
- Lack of access to health care or no primary care
- Co-morbidities
- HIV not perceived as lethal disease
- Testing as “risk reduction”
- Delay in linkage to care
We Can Not Test and Treat our way out of this Epidemic

- Address Contextual/Structural issues
- Health Care/ Public Health reform
- Continue to expand HIV testing but must strengthen linkage to care
- Sexual Health and not Sexual Disease
- Comprehensive sexual health education
- Rights-based (Support same gender unions, etc)
- Use social network for prevention education and testing
The View Ahead

- Economy
- Social Networking
- Health Reform
- HOPE