HIV Disparities in Eastern North Carolina

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Yvonne Carter, MD, MPH

December 7, 2010
Objectives

- Review HIV prevalence in
  - United States, South, North Carolina, Eastern North Carolina

- Discuss the disparities in HIV among ENC communities

- Review of Current Projects

- SISTER TALK - Investigation
  - Community-based Participatory Approach to provide HIV education to Black women disproportionately at risk for HIV Infection and
  - Collect information of social determinates associated with HIV transmission in Black women in ENC
HIV is a striking epidemic in the African American community
Percentages of AIDS Cases among Adults and Adolescents, by Race/Ethnicity and Year of Diagnosis 1985–2007—United States and Dependent Areas

Note. Data have been adjusted for reporting delays.
*Hispanics/Latinos can be of any race.
†Includes Asian and Pacific Islander legacy cases.
Percentages of AIDS Cases and Population by Race/Ethnicity, Reported in 2007—50 States and DC

AIDS cases
N = 37,281*

- 1% American Indian/Alaska Native
- 19% Asian†
- 48% Black/African American
- <1% Native Hawaiian/Other Pacific Islander
- <1% Hispanic/Latino†

U.S. population
N = 301,621,157

- 66% White
- 15% Hispanic/Latino†
- 12% Native Hawaiian/Other Pacific Islander
- <1% Black/African American
- <1% American Indian/Alaska Native

*Includes 411 persons of unknown race or multiple races.
†Hispanics/Latinos can be of any race.
‡Includes Asian and Pacific Islander legacy cases.
Percentages of AIDS Cases among Male Adults and Adolescents, by Transmission Category and Race/Ethnicity 2003–2007—United States and Dependent Areas

Note. Data have been adjusted for reporting delays and missing risk-factor information. IDU, injection drug use.

*Heterosexual contact with a person known to have, or to be at high risk for, HIV infection.
†Includes hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified.
‡Includes Asian and Pacific Islander legacy cases.
§Hispanics/Latinos can be of any race.
HIV in the Southern United States is a unique epidemic.
The South had the largest percentage of cases reported from smaller metropolitan (50,000–500,000) and nonmetropolitan areas.
Reported Cases of HIV Infection (not AIDS) among Adults and Adolescents in Nonmetropolitan Areas 2007—47 States and DC

Note. Data from 47 states with confidential name-based HIV infection reporting as of December 2007. According to the U.S. Office of Management and Budget, the District of Columbia and New Jersey do not have any nonmetropolitan areas.
In North Carolina, the rate of new infections surpassed the national rate by greater than 40% and Blacks accounted for 67% of all new HIV infections in 2006.

Women and African Americans have incident rates of HIV/AIDS higher than the national average.

In 2008, 26% of HIV diagnoses in North Carolina were considered LATE.
Eastern North Carolina

http://core.ecu.edu/umc/enc/index.htm
Sexually Transmitted Disease Rates, 1997 – 2001

Figure 7. Sexually Transmitted Disease Rates

STD* Disease Cases per 10,000 Population, 1997 - 2001

- ≥ 85.0
- 60.0 - 84.9
- 35.0 - 59.9
- 20.0 - 34.9
- ≤ 19.9

* Sexually transmitted diseases include syphilis, gonorrhea, AIDS, and chlamydia.

Note: N.C. Average = 52.6.

Source: N.C. Dept. of Health and Human Resources, State Center for Health Statistics and U.S. Census.
Death Rates from HIV in North Carolina, 1999 – 2001

Figure 8. Death Rates from HIV

Number of Deaths from HIV per 100,000 Population 1999 - 2001

- ≥ 42.0
- 40.0 - 41.99
- 38.0 - 39.99
- 36.0 - 37.99
- 34.0 - 35.99

Note: N.C. average = 5.7 HIV deaths per 100,000 population.
Source: N.C. Dept. of Health and Human Resources, State Center for Health Statistics and U.S. Census.
Eastern North Carolina

- Between 1997 – 2007, the fitted HIV mortality rates for ENC have been decreasing, but are still 39% greater than RNC in 2007.

- Racial disparity increased slightly over the 1997 – 2007 period.

Center for Health Services Research and Development, ECU
HIV Disease: Measuring disparity in age–adjusted mortality rates by race for ENC41, 1997–2004 with projections to 2010

Disparity

R2 = 0.02

\[ y = -15.21x + 1,123.80 \]

Percentage difference: non–White to White

Center for Health Services Research and Development, ECU
Factors Associated with Late Testing Among African Americans with Heterosexually Transmitted HIV Infection in Rural North Carolina
Late Testing

- Increases personal morbidity and mortality
- Increases likelihood of transmission
  - 21% unaware of HIV status responsible for 54-70% of new infections annually
  - Knowledge of HIV infection promotes condom use and adoption of safer sexual behaviors
- Significant economic impact in the US
  - Estimated that direct care costs are 200% higher in those who are diagnosed later
- Missed opportunities for testing
  - 73% of late testers had visited HCF prior to dx
  - 80% of these visits not related to HIV

## Literature Review

<table>
<thead>
<tr>
<th>Study</th>
<th>Setting</th>
<th>% of Late Testing</th>
<th>Factors Associated with Late Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDC</td>
<td>14 states (NC excluded), 2000-2003</td>
<td>45%</td>
<td>Ages 18-29 yrs, minority racial groups, heterosexual transmission, &lt; high school education, and history of negative HIV test</td>
</tr>
<tr>
<td>CDC</td>
<td>34 states (NC included), 1996-2005</td>
<td>38%</td>
<td>Male gender, ages 50-59 yrs, minority racial groups</td>
</tr>
<tr>
<td>CDC</td>
<td>South Carolina, 2001-2005</td>
<td>41%</td>
<td>Male gender</td>
</tr>
<tr>
<td>Duffus, et al.</td>
<td>South Carolina, 2001-2005</td>
<td>54%</td>
<td>Male gender, ages &gt;50 yrs</td>
</tr>
<tr>
<td>Adler, et al.</td>
<td>United Kingdom (literature review), 1997-2007</td>
<td>13-47%</td>
<td>Male gender, heterosexual, migrant status, older age, and low HIV prevalence residence</td>
</tr>
</tbody>
</table>
The Rural Health Project

- Case-Control study of risk behaviors in high- and low-risk African Americans
- Examined factors associated with HIV infection

Epidemiology and Social Science

Heterosexually Transmitted HIV Infection Among African Americans in North Carolina

Adaora A. Adimora, MD, MPH,*† Victor J. Schoenbach, PhD,†
Methods

493 Black men and women, aged 18-60 years, with heterosexually transmitted HIV infection, reported to the North Carolina State Health Department from selected counties in NC from 1997-2000

206 HIV+ (78 men, 128 women) respondents were eligible and enrolled

- Early Testers (CD4 ≥200) N=142
- Late Testers (CD4 <200) N=64

Exclusion Criteria:
- Diagnosis >6 months
- IVDA
- MSM

Standardized Questionnaire included:
- Demographic Information
- HIV Risk Behaviors
- History of STDs
- Sexual Partnerships
<table>
<thead>
<tr>
<th></th>
<th>Cases (%) n = 206</th>
<th>Controls (%) n = 226</th>
<th>OR (95% CI)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men (n)</td>
<td>78</td>
<td>78</td>
<td>N/A†</td>
</tr>
<tr>
<td>Women (n)</td>
<td>128</td>
<td>148</td>
<td>N/A</td>
</tr>
<tr>
<td>Median age in years (range)</td>
<td>33 (18–60)</td>
<td>37 (19–61)</td>
<td>N/A</td>
</tr>
<tr>
<td>Unmarried</td>
<td>72</td>
<td>56</td>
<td>2.1 (1.4, 3.1)</td>
</tr>
<tr>
<td>&lt;High school education</td>
<td>41</td>
<td>17</td>
<td>3.4 (2.2, 5.3)</td>
</tr>
<tr>
<td>Annual household income &lt;$16,000‡</td>
<td>67</td>
<td>30</td>
<td>4.8 (3.0, 7.7)</td>
</tr>
<tr>
<td>No health insurance</td>
<td>34</td>
<td>20</td>
<td>1.9 (1.2, 3.0)</td>
</tr>
<tr>
<td>Homeless in past 10 years</td>
<td>18</td>
<td>5</td>
<td>3.9 (1.9, 7.7)</td>
</tr>
<tr>
<td>Concerned about having enough food past 30 days</td>
<td>26</td>
<td>14</td>
<td>2.2 (1.4, 3.6)</td>
</tr>
<tr>
<td>Respondent spent at least 24 hours in jail or prison</td>
<td>40</td>
<td>12</td>
<td>5.7 (3.3, 9.7)</td>
</tr>
</tbody>
</table>

*Adjusted for gender.
†Not applicable.
‡Only 330 respondents provided information on income (147 cases, 183 controls).
Odds Ratios for CD4+ counts <200 at diagnosis given patient characteristics. (UNC Rural Health Project, North Carolina, 1997-2000)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Unadjusted OR (95% CI)</th>
<th>Adjusted OR (95% CI)</th>
<th>Adjusted OR w/ Insurance Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male gender</td>
<td>1.90 (1.04, 3.47)</td>
<td>2.08 (0.99, 4.39)</td>
<td>1.90 (0.88, 4.10)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-30 yrs</td>
<td>0.68 (0.33, 1.39)</td>
<td>0.85 (0.39, 1.86)</td>
<td>0.86 (0.39, 1.89)</td>
</tr>
<tr>
<td>31-40 yrs</td>
<td>1.0 (ref)</td>
<td>1.0 (ref)</td>
<td>1.0 (ref)</td>
</tr>
<tr>
<td>41-50 yrs</td>
<td>1.17 (0.54, 2.54)</td>
<td>1.18 (0.50, 2.79)</td>
<td>1.08 (0.45, 2.59)</td>
</tr>
<tr>
<td>&gt;50 years</td>
<td>0.89 (0.25, 3.18)</td>
<td>0.58 (0.14, 2.33)</td>
<td>0.57 (0.14, 2.27)</td>
</tr>
<tr>
<td>Completed 12th grade or less</td>
<td>1.35 (0.63, 2.88)</td>
<td>1.15 (0.50, 2.64)</td>
<td>1.21 (0.52, 2.81)</td>
</tr>
<tr>
<td>Lived in shelter†</td>
<td>0.54 (0.23, 1.26)</td>
<td>0.50 (0.20, 1.29)</td>
<td>0.51 (0.20, 1.31)</td>
</tr>
<tr>
<td>Concerned about having enough food</td>
<td>0.81 (0.41, 1.61)</td>
<td>0.81 (0.38, 1.70)</td>
<td>0.82 (0.39, 1.74)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>1.66 (0.87, 2.85)</td>
<td>2.12 (1.03, 4.35)</td>
<td>2.45 (1.14, 5.29)</td>
</tr>
<tr>
<td>Use of food stamps</td>
<td>0.64 (0.35, 1.15)</td>
<td>0.67 (0.33, 1.37)</td>
<td>0.78 (0.37, 1.64)</td>
</tr>
<tr>
<td>Has Health Insurance</td>
<td>1.21 (0.64, 2.27)</td>
<td>1.48 (0.73, 3.02)</td>
<td>--</td>
</tr>
<tr>
<td>Type of Insurance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private/HMO</td>
<td>1.0 (ref)</td>
<td>--</td>
<td>1.0 (ref)</td>
</tr>
<tr>
<td>Medicaid</td>
<td>0.51 (0.24, 1.06)</td>
<td></td>
<td>0.56 (0.21, 1.49)</td>
</tr>
<tr>
<td>None</td>
<td>0.56 (0.27, 1.20)</td>
<td></td>
<td>0.50 (0.21, 1.20)</td>
</tr>
<tr>
<td>History of Incarceration†</td>
<td>1.04 (0.56, 1.91)</td>
<td>0.82 (0.39, 1.74)</td>
<td>0.81 (0.38, 1.71)</td>
</tr>
<tr>
<td>Low-risk‡</td>
<td>1.14 (0.56, 2.31)</td>
<td>1.02 (0.45, 2.31)</td>
<td>0.98 (0.43, 2.24)</td>
</tr>
</tbody>
</table>
Summary of Results

- A third of our population tested late

- Men had two times greater the odds of late testing when compared to women

- Employment status was a confounder of the gender-late testing relationship
Future Studies

- The lack of identifiable risk factors may suggest that risk-based testing is no longer sufficient in effectively identifying patients with HIV infection.

- Further revision of the CDC’s testing guidelines could potentially include:
  - The elimination of risk-based testing → testing both ‘high’ and ‘low’ risk groups (Routinized Screening)
  - Testing in both healthcare AND non-healthcare settings
  - Special considerations to encourage testing of men
Next Steps:

- Identify the barriers to HIV testing among this cohort of patients in ENC: heterosexual African Americans, men and women
  - Goal: Increase testing among this group
    - “KNOW YOUR STATUS”
  - Goal: Decrease Late Testing/Diagnosis rates
    - Decreases in morbidity/mortality, transmission
  - Goal: Influence public health policy
    - Testing Guidelines among special populations
Current Projects

- CDC Women’s Health Project
  - Cross-sectional ACASI survey
  - 500 women across 3 sites
    - (Miami, Chapel Hill, Birmingham)

- My proposal:
  - What are the barriers to HIV testing among women at risk for HIV infection in the South?
Current Projects

• What are barriers and facilitators to HIV testing among heterosexual AA men in rural NC?

• Funding Agency: NC TraCS Institute
  ◦ Pilot Award to Conduct Focus Groups

• Focus groups → Survey → Interventions
Barriers to Testing: Focus Groups

- **Population:** Heterosexual AA Men, aged 18-45
- **Sites:** Lenoir, Beaufort, Wayne Counties
  - Predominantly rural communities
  - 30-40% AA population
  - High rates of HIV and STDs
  - Higher rates of uninsured, poverty than state and national averages
  - Region 10 of NC PMM HIV’s Care Regions
Current Projects

HIV Prevention Trials Network, Study 064

- Women’s HIV SeroIncidence Study
- Multi-site, prospective observational cohort
- **Primary Objective:** To estimate incidence rate in women at risk for HIV in the US & evaluate feasibility of enrolling and following a cohort
- >2,100 women from defined geographic areas with high HIV prevalence and poverty

My project:

- Describe ‘foregone health care’ within this cohort and determine what factors are associated with it
Foregone Health Care

- Foregone health care is related to testing because it reflects healthcare utilization among at-risk groups.
- Using the “Behavioral Model for Vulnerable Populations” to investigate relationships between foregone health care and predisposing, enabling, and need factors.
SISTER TALK PROJECT

ADDRESSING HIV/AIDS HEALTH DISPARITY IN BLACK WOMEN OF EASTERN NORTH CAROLINA

Diane Campbell, MD, MPH, RN
Assistant Professor of Gynecology & Medicine
Director, HIV/AIDS Community REACH Out Program
Brody School of Medicine, East Carolina University
HIV in Women

Women - 31% of HIV disease in 2009:

- Tripled over the past 25 years (In the US):
  - Up from 7% in 1985; 22% in 1997, and 31% in 2009

- Heterosexual Transmission - primary mode for women

- Leading cause of death for Black women ages 25-34 in the US.

HIV in Women of Color Living in NC (2009)

Non-Hispanic Black Women
- 23% of female population
- 64% of HIV Disease
- 79.5 rate (per 100,000 adult/adolescent population)
  - 7 fold increase over non-Hispanic whites

Hispanics/Latina Women
- 6% of US female population
- 8% of HIV disease
- 35.8 rate (per 100,000 adult/adolescent population)
  - 4 fold increase over non-Hispanic whites
Literature Review

- **Black Women - Disproportionately Infected with HIV**
  - 16 time more likely to be infected than white women
  - 2 times more likely to participate in MSPB and
  - 5 time more likely to choose a mate who participates in MSPB

- **CDC & NC-DHHS**
  - Identified a need to disseminate HIV education into the social-community settings, schools, and increase condom use


Research Questions

1. Can a community-based educational workshop (CEW) reach Black women in their community setting?

2. Can a CEW increase HIV knowledge and promote HIV testing and prevention?

3. Do Black women relate common sexual network behaviors and social factors to high HIV transmission in their communities?
SISTA TALK Workshop: 
Sister Informing Sister on Topic of AIDS to Take Action to Live with Knowledge

- **Community-Based Educational Workshop (CEW)**
  - **Group Presentation**
    - Relate HIV transmission in Black women to sexual behavior and social factors
  - **Open Group Discussion:**
    - Scripted scenarios that relate HIV risk with MSPB and lack of condom use
    - Brainstorm ways to promote HIV screening, HIV prevention programs and comprehensive sex education, for youth
  - **Investigate:** Survey (demographic, pre- and post test, program evaluation) and Group Discussion
    - HIV Knowledge and Beliefs
    - Perceived HIV risk
    - Exposure to MSPB
Methods

- **Target Population** - Black women, Living in ENC, 18 years and older (women of other ethnic groups and under the age of 18 [with parent permission] were not excluded).

- Regional HIV task force and community contacts identified: CEW sponsors and groups of Black women from local churches, Black sororities, and CBOs who would self-select themselves to participate in CEW
  - Research indicates that women thought to be low risk are just as likely to be infected with HIV as women traditionally thought to be high-risk (defined as injection drug users, sex workers, and exchanging drugs for sex).
  - Most individual/group level educational intervention studies in Black women have targeted urban, low income adult /adolescents women.

CEW Instruments

- **Demographic**
  - Age, gender, income, education, insurance

- **Pre- and Post-test Surveys**
  - Completed at the beginning and end of the workshop
  - HIV knowledge, sexual behavior, opinions on condoms use, HIV screening, practice, perceived HIV risk, and exposure to MSPB

- **HIV Risk Score** – Point value given to 6 questions
  1. Age of first intercourse
  2. Number of sexual partners in the past three months
  3. Number of sexual partners in the past three years
  4. History of STI
  5. Participation in multiple sexual partnership behavior (MSPB)
  6. Suspect partners of participating in MSPB

- **Program evaluation**
  - Use of CEW to disseminating HIV information and promote HIV screening and prevention
CEW – Groups Discussion

• Scripted scenarios
  ◦ A married women has reoccurring STI
  ◦ Sister’s husband is having an affair; What will you do?
  ◦ Adolescent daughter (sister) is having pre-marital sex
  ◦ A women find out that her husband/significant other is having sex with men

• Brainstorm
  ◦ Why do you think women underestimate their HIV risk?
  ◦ What are barriers to HIV screening and prevention?
  ◦ What would make women in your social groups get HIV tested?
  ◦ Do you think most women know how to put on a condoms? Should condoms skills training be offered to all women?
  ◦ Where should comprehensive sex education for youth be offered? Who should provided the education?
  ◦ Can you recommend organizations in your community that would sponsor SISTER TALK (HIV/AIDS education or screening program)?
CEW Study Finding

- **75 women participated (74 Black)**
  - Response rate:
    - Demographic survey 79% - 100% (all question)
    - Pre- and post test – 96%
    - Program evaluation – 95%

- **Table 1**
## Table 2. Risk Factors and Points Assigned for HIV Risk Score, SISTA TALK Workshop, North Carolina, February 2007

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>No. (%)</th>
<th>Points&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age at first sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virgin</td>
<td>2 (3)</td>
<td>0</td>
</tr>
<tr>
<td>≥ 30 years</td>
<td>1 (1)</td>
<td>1</td>
</tr>
<tr>
<td>20 – 29 years</td>
<td>13 (22)</td>
<td>2</td>
</tr>
<tr>
<td>12 – 19 years</td>
<td>40 (68)</td>
<td>3</td>
</tr>
<tr>
<td>≤ 11 years</td>
<td>3 (5)</td>
<td>4</td>
</tr>
<tr>
<td><strong>Number of sex partners in past 3 months</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>52 (95)</td>
<td>1</td>
</tr>
<tr>
<td>2-5</td>
<td>3 (5)</td>
<td>2</td>
</tr>
<tr>
<td>≥ 6</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td><strong>Numbers of sex partners in past 3 years</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>44 (78)</td>
<td>1</td>
</tr>
<tr>
<td>2-5</td>
<td>10 (18)</td>
<td>2</td>
</tr>
<tr>
<td>≥ 6</td>
<td>2 (4)</td>
<td>4</td>
</tr>
<tr>
<td><strong>History of a STI</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>38 (70)</td>
<td>0</td>
</tr>
<tr>
<td>yes</td>
<td>14 (26)</td>
<td>2</td>
</tr>
<tr>
<td>unknown</td>
<td>2 (4)</td>
<td></td>
</tr>
<tr>
<td><strong>Suspect partner of concurrency</strong></td>
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<td></td>
</tr>
<tr>
<td>no</td>
<td>20 (28)</td>
<td>1</td>
</tr>
<tr>
<td>yes</td>
<td>52 (72)</td>
<td>2</td>
</tr>
<tr>
<td><strong>Participate in concurrency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>52 (73)</td>
<td>0</td>
</tr>
<tr>
<td>yes</td>
<td>19 (27)</td>
<td>4</td>
</tr>
</tbody>
</table>

<sup>a</sup> Points assigned based on target population.
Table 1. Demographic Factors of Women, HIV Community Education Workshop, North Carolina, February 2007: *Numbers do not add to total participants due to missing values.*

<table>
<thead>
<tr>
<th>Demographic Factors</th>
<th>No.=75 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>Mean 42 <a href="range">SD</a></td>
<td>42[14] (13-77)</td>
</tr>
<tr>
<td>≤29 years</td>
<td>15 (20)</td>
</tr>
<tr>
<td>30 to 49 years</td>
<td>33 (45)</td>
</tr>
<tr>
<td>≥ 50 years</td>
<td>26 (35)</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>56 (92)</td>
</tr>
<tr>
<td>White</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Bi-racial</td>
<td>4 (7)</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
</tr>
<tr>
<td>Single/Never married</td>
<td>16 (25)</td>
</tr>
<tr>
<td>Married</td>
<td>38 (60)</td>
</tr>
<tr>
<td>Divorced/Widowed</td>
<td>9 (14)</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>≤ High School</td>
<td>6 (10)</td>
</tr>
<tr>
<td>&lt; 2 years College</td>
<td>20 (34)</td>
</tr>
<tr>
<td>≥ 2 years College</td>
<td>33 (56)</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
</tr>
<tr>
<td>&lt; $29,999</td>
<td>12 (20)</td>
</tr>
<tr>
<td>≥$30,000</td>
<td>49 (80)</td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td></td>
</tr>
<tr>
<td>Full time</td>
<td>37 (59)</td>
</tr>
<tr>
<td>Part Time</td>
<td>9 (14)</td>
</tr>
<tr>
<td>Not working</td>
<td>17 (27)</td>
</tr>
<tr>
<td><strong>Insurance</strong></td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>43 (74)</td>
</tr>
<tr>
<td>Public</td>
<td>8 (14)</td>
</tr>
<tr>
<td>None</td>
<td>7 (12)</td>
</tr>
<tr>
<td><strong>Recruitment Organization Type</strong></td>
<td></td>
</tr>
<tr>
<td>Church</td>
<td>37 (49)</td>
</tr>
<tr>
<td>Sorority</td>
<td>23 (31)</td>
</tr>
<tr>
<td>CBO</td>
<td>15 (20)</td>
</tr>
</tbody>
</table>
Table 2. Baseline Risk Factors, HIV Community Education Workshop, North Carolina, February 2007a; Numbers do not add to total participants due to missing values.

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age at first sex</strong></td>
<td></td>
</tr>
<tr>
<td>Virgin</td>
<td>2 (3)</td>
</tr>
<tr>
<td>≥ 30 years</td>
<td>1 (1)</td>
</tr>
<tr>
<td>20 – 29 years</td>
<td>13 (22)</td>
</tr>
<tr>
<td>12 – 19 years</td>
<td>40 (68)</td>
</tr>
<tr>
<td>≤ 11 years</td>
<td>3 (5)</td>
</tr>
<tr>
<td><strong>Number of sex partners in past 3 months</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>52 (95)</td>
</tr>
<tr>
<td>2-5</td>
<td>3 (5)</td>
</tr>
<tr>
<td>≥ 6</td>
<td>0</td>
</tr>
<tr>
<td><strong>Numbers of sex partners in past 3 years</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>44 (78)</td>
</tr>
<tr>
<td>2-5</td>
<td>10 (18)</td>
</tr>
<tr>
<td>≥ 6</td>
<td>2 (4)</td>
</tr>
<tr>
<td><strong>History of a STI</strong></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>38 (70)</td>
</tr>
<tr>
<td>yes</td>
<td>14 (26)</td>
</tr>
<tr>
<td>unknown</td>
<td>2 (4)</td>
</tr>
<tr>
<td><strong>Ever tested for HIV</strong></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>22 (35)</td>
</tr>
<tr>
<td>yes</td>
<td>37 (60)</td>
</tr>
<tr>
<td>unknown</td>
<td>3 (5)</td>
</tr>
<tr>
<td><strong>Ever suspect partner of concurrency</strong></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>20 (28)</td>
</tr>
<tr>
<td>yes</td>
<td>52 (72)</td>
</tr>
<tr>
<td><strong>Ever participate in concurrency</strong></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>52 (73)</td>
</tr>
<tr>
<td>yes</td>
<td>19 (27)</td>
</tr>
</tbody>
</table>
Table 3. Percent Change in Knowledge and Opinions, HIV Community Education Workshop, North Carolina, February 2007:

<table>
<thead>
<tr>
<th>Knowledge and Opinions</th>
<th>Pre-test N (%)</th>
<th>Post-test N (%)</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV by (% yes)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal</td>
<td>72 (97)</td>
<td>70 (100)</td>
<td>+3</td>
</tr>
<tr>
<td>Anal</td>
<td>64 (89)</td>
<td>71 (100)</td>
<td>+11*</td>
</tr>
<tr>
<td>Oral</td>
<td>61 (85)</td>
<td>69 (99)</td>
<td>+14*</td>
</tr>
<tr>
<td>Mother</td>
<td>57 (79)</td>
<td>60 (86)</td>
<td>+7</td>
</tr>
<tr>
<td>Breast</td>
<td>36 (50)</td>
<td>65 (93)</td>
<td>+43*</td>
</tr>
<tr>
<td>Hugging</td>
<td>18 (25)</td>
<td>9 (13)</td>
<td>-12</td>
</tr>
<tr>
<td>Sharing</td>
<td>23 (31)</td>
<td>7 (9)</td>
<td>-22*</td>
</tr>
<tr>
<td>Touching</td>
<td>9 (12)</td>
<td>7 (9)</td>
<td>-3</td>
</tr>
<tr>
<td>Have suspected partner concurrency (% yes)</td>
<td>52 (72)</td>
<td>47 (67)</td>
<td>-5</td>
</tr>
<tr>
<td>Participated in concurrency (%yes)</td>
<td>19 (27)</td>
<td>22 (31)</td>
<td>+4</td>
</tr>
<tr>
<td>Condoms (% agree)</td>
<td>23 (31)</td>
<td>47 (63)</td>
<td>+32*</td>
</tr>
<tr>
<td>Had HIV screening (%yes)</td>
<td>43 (60)</td>
<td>41 (59)</td>
<td>-1</td>
</tr>
<tr>
<td>Would HIV screening (% yes)</td>
<td>60 (84)</td>
<td>62 (88)</td>
<td>+4</td>
</tr>
<tr>
<td>Would participate in a HIV (% yes)</td>
<td>59 (83)</td>
<td>63 (88)</td>
<td>+5</td>
</tr>
<tr>
<td>Self-Assessed HIV (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No/low Risk</td>
<td>62 (82)</td>
<td>50 (71)</td>
<td>+11*</td>
</tr>
<tr>
<td>Moderate/High Risk</td>
<td>13 (17)</td>
<td>20 (28)</td>
<td></td>
</tr>
</tbody>
</table>

*P < .05, chi-sq test
Group Discussion Findings

**MSPB was common in their social networks:** Reasons cited:
- **Most frequent** - a shortage of Black men and a desire for companionship
- **Other reasons** - poverty, peer pressure, poor communication with spouse and a desire to maintain one’s life style

Many participants admitted they **did not know how to apply a condom** and would participate in condom skills training.

**Barriers to participating in community-based HIV/AIDS programs included:** stigma, fear, and lack of self perceived HIV risk
Study Findings – Knowledge and MSPB

- There was an increase in HIV knowledge after the CEW

- MSPB was common in women’s social sexual networks
  - 67% of women suspected MSPB in their partners at any time and 31% had ever participated in MSPB
  - Among 35 married women, 10 (17%) reported ever participating in MSPB and of 15 single, dating women, 6 (10%) reported MSPB
  - Report of two or more sex partners in the past three years
    - 21% (7/34) of married women and 30% (4/13) of single women
  - Reported two or more sexual partners in the past three months
    - one married woman and two single women
Study Findings – Perceived HIV Risk

- **Perceived HIV risk was greater after the workshop**
  - 12 (16% of the group) women converted from self-assessed no/low risk to moderate/high risk (17% vs 28%) \( (P < .05) \)
  - May be due to increase in reported MSPB of partner

- **Subgroup Characteristics**
  - All were married,
  - Had less than two years of college,
  - Earned over $30,000 annually,
  - Over age 50
  - None participated in MSPB (Low risk by personal sexual history)
  - 70% suspected partners of MSPB
Study Findings - Use of CEW to Provide HIV education, testing and prevention

Most participant’s

- Felt the workshop was an effective method to disseminate HIV information (85%, n = 63),

- Would participate in condoms skill training (85%, n = 63)

- Would recommend a HIV prevention program to other women in their community (73%, n = 55)

- Wanted CEW format expanded into schools, churches, men groups and mixed gender groups (95%, n= 71)
CEW Strength and Limitation

• Limitations
  ◦ Small size and convenience sample
  ◦ Self-reporting and recall of sexual history introduces bias
  ◦ Measurement error may be present for suspected concurrency since the profile survey question implied concurrency, but did not specifically state such.
    • Dates of marriage, divorce, or widowed in relation to reported concurrency was not ascertained.
  ◦ Skipping questions resulted in low response rates for some questions
CEW Strength and Limitation

• **Strengths**

  ◦ Use of a community-based participatory approach to **disseminate** relevant HIV/AIDS information to rural, Black women in ENC disproportionately infected with HIV.

  ◦ Use of a combination of approaches to **deliver and capture** information from HIV at risk populations (Structured group lectures, group discussion, and data collection).

  ◦ Qualitative data collected from the groups discussion can add to quantitative survey responses.
    • Group discussion provided unstructured verbal context and personal reflection on sexual network behaviors that put women at HIV risk.
Translation to Health Education Practice

1. Participatory Approach - Collaborating with community leaders/members to provide community-based HIV education was effective to identify subpopulation of Black women who may be at risk for HIV transmission.

2. A series of community-based group discussions can be a tool to reinforce HIV information for rural, Black women who perceive their HIV risk as low.

3. The small group setting is conducive to discussing sensitive behaviors and raising HIV/AIDS/STI awareness in social settings that are non-threatening.

4. Program participants are able to identify other groups of Black women to participate in community-based CEW.
5. There may be a need for HIV education and prevention programs to target married, Black women who may have high exposure to concurrency (MSPB) during marriage. This needs further investigation.

6. Our study suggests that women would participate in condom skills training which should be offered.

7. Black female, not identified as high HIV risk for HIV transmission (sex workers, drug users) may be at high HIV risk associated with residentially segregated rural communities, high HIV sero-prevalence in rural areas, and prevalent concurrency (MSPB).
Next Steps - SISTER TALK PROJECT

- $55,000 grant to expand the SISTER TALK project from NC Community AIDS Fund: January 2011 to June 2012

- CEW – Expanded to a 4 hour Modular program (two or four hour program)
  - Session 1: HIV/AIDS Information
  - Session 2: Group Discussion and Brainstorming
  - Session 3: Assertive Communication Skill Training
  - Session 4: Behavioral Self-Management Skill Training (condom skills)

- Objectives/Outcomes
  - Reach 500 Black women with HIV risk reduction information
  - Provide HIV testing in non-traditional community setting
  - Collect information on participants’ HIV knowledge, opinions and beliefs, and perceived HIV risk
North Carolina Patient Management Model
HIV Care Regions

Region 1
Region 2
Region 3
Region 4
Region 5
Region 6
Region 7
Region 8
Region 9
Region 10
Methods

- Program Coordinator - Identify 20 - 30 SISTER TALK Program Sponsors
  - Program Sponsor will identify groups of Black women (10-20 women/group) in their community to participate in the SISTER TALK program.
  - Program Sponsors and participants will be solicited from local Black churches, sororities and other CBOs through referral, flyers, letters and personal contact.
How Does SISTER TALK Project Address the HIV Health Disparity in Black Communities in ENC

- **To address HIV Health Disparity in NC**
  - Center Disease Control (CDC) and NC DHHS (Department Health and Human Services) identified a need to disseminate HIV information into local community activities and to increase condom availability (CDC 2005).

- **SISTER TALK project incorporate these recommendations and address four community needs:**
  1. Access to HIV information
  2. Participatory approach to provide community-based HIV educational programs for the general population of Black women in ENC
  3. A forum where women can discuss sexual network behavior that contributes to increase HIV risk
  4. Provide women with skills (communication negotiation and condom application) to can help prevent HIV exposure
Brody School of Medicine
HIV/AIDS REACH Out Program
Response through Education, Awareness, Counseling/Testing, and Health care