HIV Behavioral Surveillance in the Baltimore-Towson Metropolitan Area

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To improve the health of Marylanders by reducing the transmission of infectious diseases, helping impacted persons live longer, healthier lives, and protecting individuals and communities from environmental health hazards.

We work in partnership with local health departments, providers, community based organizations, and public and private sector agencies to provide public health leadership in the prevention, control, monitoring, and treatment of infectious diseases and environmental health hazards.
Agenda

● Overview of Behavioral Surveillance
  – Target Populations
  – Recruitment Methods
  – Data Collection
● Data Presentations
● Discussion
● Next Steps
● Lunch
● Central RAC Meeting
Behavioral surveillance, for public health purposes, is the systematic and ongoing collection of data about risk and health-related behaviors with the purpose of correlating trends in behaviors with changes in disease over time.

National HIV Behavioral Surveillance (NHBS)

- CDC funded project
- Data collection began in 2004
- In up to 25 metropolitan areas (has varied over time)
- Major divisions of metropolitan areas with the greatest numbers of AIDS cases in the U.S.
National HIV Behavioral Surveillance (NHBS)

- Based on methods developed in the Young Men’s Survey (YMS)
- Funded under a cooperative agreement between the CDC and DHMH
- 2012 – Year 2 of the current 5 year cooperative agreement
FIGURE 1. Participating metropolitan statistical areas in the National Human Immunodeficiency Virus Behavioral Surveillance System — United States
NHBS – Baltimore

- DHMH contract with Johns Hopkins Bloomberg School of Public Health for field operations
  - Dept. of Epidemiology: Frank Sifakis, David Celentano
  - Dept. of Health, Behavior and Society: Danielle German, David Holtgrave

- Collaborative project of CDC, DHMH, and JHU
NHBS – Baltimore BESURE

The BEnavioral SURveillance REsearch Study
NHBS Objectives

- To assess prevalence of and trends in
  - HIV risk behaviors
  - HIV testing behaviors
  - Exposure to and use of prevention services among persons at high risk for infection
  - HIV prevalence and incidence
HIV Disease Spectrum and Surveillance

Behavioral Surveillance

Exposure ➔ Infection ➔ HIV Diagnosis ➔ Illness ➔ AIDS Diagnosis ➔ Death

Case Surveillance
Case vs. Behavioral Surveillance

Case Surveillance
- Infected population
- HIV positives
- Mandated reporting
- Data abstracted from medical records
- All diagnosed cases (N≥30,000 in Maryland)
- Dozens of demographic and clinical variables

Behavioral Surveillance
- Population at risk
- HIV negatives and positives
- Research study
- Data from participant interviews and blood tests
- 500 sampled participants per population per year
- Hundreds of behavioral variables
NHBS Target Populations

- Men who have sex with men (MSM)
- Injection drug users (IDU)
- Heterosexuals at risk for HIV (HET)
Living Adult/Adolescent HIV Cases by Risk, Baltimore-Towson MSA, 12/31/10

N (with Risk) = 13,979 (79% of Total)

- MSM: 25%
- MSM/IDU: 4%
- HetSex: 28%
- IDU: 42%
- Other: 1%

Using data as reported through 12/31/2011
NHBS Recruitment Methods

- Venue-based sampling (VBS)
- Respondent-driven sampling (RDS)
Respondent-Driven Sampling (RDS)

- Type of chain referral sampling to reach hidden populations
- Begin with a set of non-randomly selected seeds
- Seeds recruit peers, who recruit peers, etc.
- Each seed is given a set number of recruitment coupons
- Recruits are linked by coupons with unique identifying numbers
- Incentives provided for participation and for each successful recruit

Heckathorn 1997; Heckathorn & Salganik, 2004; Broadhead et al. 1998
Venue-Based Sampling (VBS)

- **Formative research** identifies public/private venues and days/times of attendance
- **Venue-Day-Times (VDT)** enumerated for eligibility and viability
- **Sampling frame** consists of VDTs
- Random selection of VDTs to construct sampling **event calendar**
- Individuals systematically recruited at sampling events
Venue Identification

- An area, location, or building, within the target geographic area, where men can be approached and recruited to participate in the survey.

- Public or private locations attended by men for any purpose EXCEPT: receiving medical/mental health care, HIV/STD testing/prevention services or social services to HIV+ men
Venue Examples

- Bars, dance clubs, retail businesses, cafes and restaurants, health clubs, social and religious organizations, sports teams, adult bookstores and bathhouses, high-traffic street locations, parks, beaches, and special events such as gay pride festivals, raves, and circuit parties.
Venue Identification - Steps

- Identify venues within the target geographic area
- Collaborate with venue owners
- Observe the venue and conduct enumerations of venues to assess eligibility of venue attendees
  - Type 1: count number of men at the venue (e.g., in a known gay-identified venue)
  - Type 2: count men and screen for eligibility (e.g., in a non-gay identified venue)
Venue Identification - Steps

- Determine the suitability of venues from recruitment:
  - More than 8 eligible men and more than 75% men counted within 4-hour period eligible
  - Staff safety, operational feasibility, venue owner approval

- Categorize and code suitable venues
## VBS – Sampling Frame

<table>
<thead>
<tr>
<th>Venues</th>
<th>VDTs</th>
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<tbody>
<tr>
<td><strong>Venue ID</strong></td>
<td><strong>Monday</strong></td>
</tr>
<tr>
<td>S033</td>
<td>8p–12a</td>
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<tr>
<td>D052</td>
<td>8p–12a</td>
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<tr>
<td>O004</td>
<td>8p–9p</td>
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</table>

*VDTs are venue-specific, day-time periods expected to yield a minimum of eight eligible MSM.

*B = bar; C = café or restaurant; D = dance club; F = fitness club or gymnasium; G = Gay Pride or similar event; H = house party; O = social organization; P = park or beach (not public sex environment); R = retail business; S = street location (e.g., corner); V = rave, circuit party, or similar event; X = sex establishment or environment; Z = other

MSM = men who have sex with men
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<td>PR: Z001 8p–12a</td>
<td>PR: F001 6p–10p</td>
<td>PR: D052 8p–12a</td>
<td>PR: C001 10p–12a</td>
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MSM = men who have sex with men  
PR = primary sampling event  
A1 = first alternate venue  
A2 = second alternate venue
NHBS-MSM Recruitment

- Participant Recruitment
  - Men counted at venues and systematically intercepted
  - Eligibility data gathered and enrollment offered to eligible men
  - Escorted to the nearby, modified van for consent, questionnaire administration, HIV counseling, and blood drawing
  - Option to make appointments to participate later at our fixed location
  - HIV results appointment within 2 wks
VBS – Challenges

- Implementation
  - Support from target community
  - Ongoing Formative Research
  - Staff fatigue and burn out
  - Duplicates

- Analytical
  - Possibility for unequal probability of selection
  - Weights may be needed for adjustment
  - Clustering of risk factors and outcomes within venues
## NHBS Cycles

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<tr>
<th></th>
<th>MSM</th>
<th>IDU</th>
<th>HET</th>
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<tbody>
<tr>
<td>Wave 2</td>
<td>VBS 2008</td>
<td>RDS 2009</td>
<td>RDS 2010</td>
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<td>Wave 3</td>
<td>VBS 2011</td>
<td>RDS 2012</td>
<td>RDS 2013</td>
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VBS = venue-based sampling  
RDS = respondent-driven sampling
NHBS Data Collection

- Formative Research
- Interview Instrument
  - Demographics
  - Health care utilization
  - Sexual orientation
  - Sex behaviors
  - Drug use
  - HIV testing
  - Health conditions
  - HIV prevention awareness/use
NHBS Data Collection

- Recruitment Data (venue characteristics or referral networks)
- HIV Testing
- Supplemental Testing
- Local Questions
NHBS Data Reports

- MMWR articles
- Journal articles
- Conference presentations
- CPG presentations
- MSM Response Team presentations
- IDEHA website
- Later this morning – data presentations on each target population
Recent MMWR Articles

- 2011 Characteristics associated with HIV infection among heterosexuals
- 2011 HIV testing among MSM
- 2011 HIV risk, prevention, and testing behaviors among MSM
- 2012 HIV infection and HIV-associated behaviors among IDU
Recent Journal Articles

- **2011 Maulsby et al. AIDS and Behavior**
  - Partner characteristics and undiagnosed HIV seropositivity among MSMO and MSMW

- **2011 Villanti et al. AIDS Education and Prevention**
  - Smoking, self-reported HIV, and HIV risk behaviors in IDU
Forthcoming Journal Articles

  – Differences and similarities in HIV testing among MSMW and MSMO

● Maulsby et al. Journal of Homosexuality (in press)
  – HIV risk among MSMO and MSMW in Baltimore
Questions?
Data Presentations
Maryland Infectious Disease and Environmental Health Administration

http://ideha.dhmh.maryland.gov/OIDEOR/CHSE