NEXT GENERATION PARTNER SERVICES: IMPROVING EFFICIENCY OVER 80 YEARS OF VENEREAL DISEASE PREVENTION?

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University of Chicago
HIV Diagnoses Among Persons Aged 13 Years or Older by Transmission Category and Year of Diagnosis, United States

- Male-to-male sexual contact: 0% change, 2002-2011
- Heterosexual contact: -35%
- IDU: -70%
- MTM+IDU: -58%

Source: A. Johnson, JAMA 312:432, 2014

AS Fauci/NIAID
LIFETIME RISK OF HIV DIAGNOSIS BY RACE

- Whites
  - 1 in 104 for men
  - 1 in 588 for women

- Hispanics
  - 1 in 35 for men
  - 1 in 114 for women

- Blacks
  - 1 in 16 for men
  - 1 in 30 for women
Chicagoland

New York

<table>
<thead>
<tr>
<th>Region</th>
<th>Population of Majority African American Census Tracts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cook County South-side, IL</td>
<td>761,134</td>
</tr>
<tr>
<td>Cook County West-side, IL</td>
<td>179,531</td>
</tr>
<tr>
<td>Will County, IL</td>
<td>7,048</td>
</tr>
<tr>
<td>Lake County, IN</td>
<td>85,777</td>
</tr>
<tr>
<td>Total</td>
<td>1,033,490</td>
</tr>
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</table>

Map from [http://www.socialeplorer.com/e8350b9e0d](http://www.socialeplorer.com/e8350b9e0d)

Census data taken from Census 2010 Summary File Tables R3 and R6
CONTACT TRACING HISTORY:

- 1930s: Syphilis & “VD” prevention
- Contact tracing interview:
  - “Privacy, persuasiveness, persistence, and visual aids were of utmost importance in gaining useful information.”
“The first five patients were white, the next two were black. The sixth patient was a Haitian man. The 7th patient was a gay African-American man, here in Los Angeles.” Gottlieb, MMWR 1981

Patient 0 (Figure 1). In Patient 0, lymphadenopathy developed in December 1979, and Kaposi’s sarcoma was diagnosed in May 1980. He estimated that he had had approximately 250 different male sexual partners each year from 1979 through 1981 and was able to name 72 of his 750 partners for this three-year period. Eight of these 72 named partners were AIDS patients: four from southern California and four from New York City.
What is ‘Next-Generation’ Partner Services?

- Bridges traditional public health interventions (“contact tracing”) & latest public health innovations
  - Working within concentrated epidemics
  - Network & Venue-based – including digital venues
  - Enhanced Matching Algorithms

- Integrated Model of Care & Prevention
  - Less invasive, person-centered
  - Linkage to Biomedical Prevention Interventions
  - Community-based & Collaborative
NETWORKS & VENUES-BASED:

- Network Testing
- Tracking Venues
- Accessing Digital Networks & Venues using Internet Partner Services
Non-invasive, Person-centered, Culturally Competent Approach:

- Alternative to traditional “DIS” Model
- Cross-trained providers to integrate biomedical, behavioral & social support
- Training in Motivational Interviewing, CBT & other therapeutic modalities
- Providers reflective of communities served
- Informed by qualitative CBPR research
INTEGRATED MODEL

- Partners Services integrated into comprehensive model: testing, care & prevention
- Clinic-based
- Continuum of Care:
  - Pre-test Counseling > Results > Post-Test Counseling > Partner Services > Linkage to Comprehensive Medical Care for HIV+ & HIV- individuals (ART, PrEP, PEP, anal care, STI Rx, etc.)
COMMUNITY BASED & COLLABORATIVE ENGAGING DIVERSITY OF KNOWLEDGE, EXPERIENCE & EXPERTISE

- Public Health
  - CDC, CDPH
- Medical Service Providers
- Community Members
  - Community-Based Organizations
  - Qualitative & Community-Based Participatory Research (CBPR) on barriers to PrEP & partner notification services
  - The Village, CCHE CAB
LINKAGE TO LATEST BIOMEDICAL PREVENTION INTERVENTIONS

Pre-Exposure Prophylaxis (PrEP)

- “High Impact” Prevention
- Sex Without Fear:
  “the new pill that could revolutionize gay life”
PreP Chicago

www.Facebook.com/groups/prepchicago
RECENT NEXT GENERATION PARTNER SERVICES RESEARCH

- Secunderabad Men’s Study (SMS)
- Facebook Change Agent Study
- Transmission Reduction Intervention Project (TRIP)
- Partner Services PrEP (PS-PrEP)
CELL PHONE CONTACT LIST EXTRACTION IN HYDERABAD, INDIA

Figure 1. SIM card reader
CONTACT TRACING RELIES ON ACCURATE MATCHING

*Not real data:

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<tr>
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- “Match” = any two entries in data set that are considered the same person based on the algorithm used

- Example Test Algorithm = name and age
- Compare Test Algorithm to Gold Standard

Schneider, INSNA 2013
## CONTACT TRACING

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- “Match” = any two entries in data set that are considered the same person based on the algorithm used
- Gold Standard = phone number
- Example Test Algorithm = name and age
- Compare Test Algorithm to Gold Standard
Attributes that predict a correct match
FACEBOOK NETWORK CHARACTERIZATION

- Developed custom Facebook application
- Allows respondents to grant our application access to their Facebook network data (via embedded pop-up)
- App collects data on respondent and their Facebook friends
TRIP

- Does recruiting networks of recently infected persons have a higher proportion of “recents” among those testing HIV+ than other methods (ie. RDS, HIV VCT)?

- Three sites
  - Odessa
  - Athens
  - Chicago

- Sedia’s LAg assay; HIV RNA

- Three groups
  - Recent chains
  - Long-term positive chains
  - HIV negative chains
Process of the Intervention

Community education about acute and recent infection and reasons not to stigmatize those with early infection

- Locate People with Acute or Recent Infection
- Identify High-Risk Venues
- Recruit Network Contacts

**Network Intervention**
1. Early warning system “Emergency alert”
2. HIV phase testing

**Venue Intervention**
1. Early warning system “Emergency alert”
2. HIV phase testing

- Reduce transmissions even by those we never meet
- We will very ACTIVELY link people with acute or recent infection into care
- Reduce viral loads and thus transmissions

Friedman, *ABE* 2013
PRELIMINARY RESULTS

- Chicago – Largely a younger BMSM epidemic
  - Positives among network members: 26 (26/52 or 50%)
  - 7 (27%) highly infectious (VL >60K)
  - 5 (19%) acute/recently infected

- Athens – Largely a PWID epidemic
  - Positives among network/venue members: 59 (59/149 or 40%)
  - 14 (9.4%) acute/recently infected
## Detecting People with Recent HIV Infection: Risk Network vs. Social Network?

<table>
<thead>
<tr>
<th></th>
<th># HIV+</th>
<th># recently infected</th>
<th>Yield proportion</th>
<th>Yield ratio (Risk ratio CI)</th>
</tr>
</thead>
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<tr>
<td>Athens Social Network</td>
<td>421</td>
<td>46</td>
<td>10.9%</td>
<td></td>
</tr>
<tr>
<td>Athens Risk Network</td>
<td>37</td>
<td>8</td>
<td>21.6%</td>
<td>1.98 (1.01-3.87)</td>
</tr>
<tr>
<td>Odessa VCT</td>
<td>46</td>
<td>2</td>
<td>4.3%</td>
<td></td>
</tr>
<tr>
<td>Odessa Risk Network</td>
<td>19</td>
<td>1</td>
<td>10.5%</td>
<td>2.42 (0.37-15.96)</td>
</tr>
<tr>
<td>Chicago Social Network</td>
<td>45</td>
<td>10</td>
<td>22.2%</td>
<td></td>
</tr>
<tr>
<td>Chicago Risk Network</td>
<td>13</td>
<td>3</td>
<td>23.1%</td>
<td>1.04 (0.33-3.22)</td>
</tr>
</tbody>
</table>
PS-PrEP Research Design:

Control (n=60)
- Treatment as Usual
- Passive PrEP referral with pamphlet, info on PrEP providers

Intervention (n=60)
- Brief PrEP education, linkage & adherence counseling session
- In-person linkage to initial PrEP appt
- Weekly mini-boosters
- 2-week, 3-month, 6-month and 12-month follow-ups
Ps-PrEP: Intervention:

- Conceptual & Practical Frameworks:
  - Information Motivation Behavioral (IMB) Model
  - Cognitive-Behavioral Therapy (CBT)
  - Motivational Interviewing (MI)
- Adapting best practices from treatment adherence interventions for HIV & other chronic illnesses (Safren, Gonzalez, & Soroudi, 2007)
- Envisioning a PrEP Care Continuum:
  - Initial counseling session
  - In-person linkage
  - Mini-boosters & follow-ups
  - Re-engaging in PrEP care
THANK-YOU

CCHE Students and Staff
Slide/Presentation assistance – Katie Berringer

Collaborators
- Ed Laumann
- David Pitrak
- Kenneth Mayer
- Lalit Dandona
- Thomas Valente
- Sam Friedman
- Ron Burt
- Phil Schumm
- Stuart Michaels
- Patrick van Kessel

Funders
- NIDA, NICHD, NIAID, NIMH, NHLBI, NIGMS, CDC, AHRQ
- Robert Wood Johnson
- University of Chicago

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