OVERCOMING CHALLENGES IN HIV WITH SCIENCE, INNOVATION AND COLLABORATIONS IN SOUTHEAST ASIA

IAS 2019 POST-CONFERENCE WORKSHOP

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DRug use and Infections in ViEtnam: ending the HIV epidemic among people who inject drugs in Hai Phong, Vietnam

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Combined Prevention + Large Community Surveys = End of the HIV Epidemic among PWID in Hai Phong, Vietnam

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SUCCESSFUL COMBINED HIV PREVENTION AND RESEARCH IN HIGH-INCOME SETTINGS

• Combined Prevention: including syringe exchange programs, methadone maintenance programs, and antiretroviral treatment for HIV positive persons who inject drugs (PWID)

• New York City (model for DRIVE) has implemented combined prevention, reducing new HIV infections from 4/100 person-years to 0.04/100 person years among PWID. 99% reduction
SPECIAL CONCERNS IN LOW/MIDDLE INCOME SETTINGS

• Limited financial resources

• Limited trained personnel

• Often limited research capacity

• Severe stigmatization of HIV and Injecting Drug Use—difficulties in reaching PWID for services and for research

• Counterproductive practices: Incarceration of PWID in prisons and in detention centers
CRITERIA FOR ENDING THE HIV EPIDEMIC AMONG PWID IN HAI PHONG

• Reduce HIV incidence to 0.5/100 person years at risk or less

• Reduce percentage of HIV seropositive PWID not at viral suppression to 7.5% or less of PWID in Hai Phong

• Reduce percentage of HIV seropositive PWID not at viral suppression and engaging in distributive sharing of needles/syringes to 2% or less

• Public commitment to criteria (clinicaltrials.gov, Des Jarlais and Duong, Lancet 2019)
NEED FOR VERY LARGE SURVEYS OF PWID

• To identify large numbers of PWID in need of services (syringe access, methadone, and ART) and to assist them PWID in obtaining services

• To follow large numbers of HIV seronegative PWID to measure HIV incidence with precision
RESPONDENT DRIVEN SAMPLING (RDS) AND “SUPER-RECRUITERS” (SR) UTILIZED IN HAI PHONG TO RECRUIT PWID

• “Seeds” selected based on having large PWID networks
• Seeds participated in the survey and were then given numbered coupons to recruit additional PWID
• Participants paid for own time and effort and paid for recruiting new participants
• Collaboration with multiple community based organizations (CBOs) to assist in seed identification and RDS recruitment and survey administration
RESPONDENT DRIVEN SAMPLING (RDS) AND “SUPER-RECRUITERS” UTILIZED IN HAI PHONG TO RECRUIT PWID

- Fingerprint obtained to prevent multiple participation in each RDS survey and to identify individuals participating in multiple surveys

- Use of 3 coupons per participant—standard RDS procedure—effective up to approximately 800 participants

- Then use of “super-recruiters” to recruit up to 20 additional participants
REASONS WHY RDS WAS LIMITED IN RECRUITING PARTICIPANTS

1. Police suppression of hotspots limiting contacts among PWID
2. Transportation problems to research sites
3. PWID concerns about maintaining confidentiality of drug use
4. Other competing interests of PWID

Surveys treated as convenience samples not RDS samples, RDS weighting not used
## RDS DIAGNOSTICS

<table>
<thead>
<tr>
<th>Homophily</th>
<th>Equilibrium</th>
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<tr>
<td><strong>RDS1</strong></td>
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</tr>
<tr>
<td>HIV Negative</td>
<td>0.121</td>
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<tr>
<td>HIV Positive</td>
<td>0.152</td>
</tr>
<tr>
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<td>-0.001</td>
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<tr>
<td>HCV Positive</td>
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<td><strong>RDS 2</strong></td>
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<tr>
<td>HIV Negative</td>
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<tr>
<td>HCV Positive</td>
<td>0.118</td>
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<tr>
<td><strong>RDS 3</strong></td>
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<tr>
<td>HCV Positive</td>
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ENROLLMENT OF SURVEY PARTICIPANTS INTO HIV SERONEGATIVE COHORT STUDIES

Total of 896 HIV seronegative PWID enrolled in cohort studies, from the 3 RDS/SR surveys. Visits every 6 months. 766 had at least one follow up visit.
HIV INCIDENCE IN REPEATER SURVEY PARTICIPANTS

281 PWID participated in one or more RDS surveys, generating 377 person-years at risk.

There were 0 HIV seroconversions among the repeater survey participants.
HIV INCIDENCE IN HIV- COHORT STUDY PARTICIPANTS

There was 1 HIV seroconversion among 766 participants with 1120 person-years at-risk.

HIV incidence = 0.1/100 PY
END OF THE HIV EPIDEMIC AMONG PWID IN HAI PHONG

- Reduce HIV incidence to 0.5/100 person years at risk or less: 0.1/100 person-years

- Reduce percentage of HIV seropositive PWID not at viral suppression to 7.5% or less of PWID in Hai Phong: 3.1%, 90-90-90 reached

- Reduce percentage of HIV seropositive PWID not at viral suppression and engaging in distributive sharing of needles/syringes to 2% or less: < 1%
NEXT STEP I: COMPLETION OF THE DRIVE PROTOCOL

• Completion of final cohort studies visits
• RDS4 beginning Oct 2019
• Analysis of change to in-country funding for MMT and ART
• Changes in patterns of drug use—increased methamphetamine use
  • Increased aggressiveness
  • Reduced viral suppression
• Policy impact of potential new outbreak of HIV among PWID in Hai Phong
NEXT STEP II: TRANSFERRING DRIVE METHODS TO NEW AREAS

- Rapid Assessment—analyses of available data and qualitative interviews with key informants, including PWID
- Large scale RDS or RDS/SR (population size estimate, HIV recency testing, assessment of potential biases using RDS analytics, and comparison of RDS vs. SR components
- If ”End of Epidemic” criteria met, monitoring and maintenance of efforts
- If criteria not met, increase combined prevention and care efforts, CBO support for PWID reduce barriers to PWID accessing services
LESSONS OF DRIVE

• Possible to end HIV epidemic among PWID in a middle income setting

• Need for maintenance of efforts

• Need to transfer DRIVE methods to other areas in Viet Nam and elsewhere
DRIVE PUBLICATIONS


• National Clinical Trials Registry: NCT03526939