Results from the 2006 Integrated Biological and Behavioral Survey (IBBS) in Vietnam

Presentation

- Objectives
- Methods
- HIV, STI, and risk behavior results by population group
- Evidence of Intervention coverage
- Conclusions and recommendations
- Caveats and limitations
- Dissemination plans
**Objectives**

- Measure estimates of the following among IDU, FSW, and MSM populations
  - HIV prevalence
  - Prevalence of classical STIs
  - Risk and preventative behaviors
  - Intervention exposure
- Provide key information for advocacy and policy making, including UNGASS indicators
- Use information for national estimates and projections

**Organizational involvement**

- National Institute of Hygiene and Epidemiology - AIDS Department
- Provincial Center for AIDS Control, Provincial AIDS Committee, Provincial Center for Preventive Medicine of Ha Noi, Quang Ninh, Hai Phong, Da Nang, Can Tho, HCMC, An Giang and CanTho
- Technical assistance by FHI, CDC, and USAID
- Funding by USAID/PEPFAR
Methods

- Study populations and inclusion criteria:
  - Men Who have Sex with Men (MSMs): Men aged 15 or older who reported having any kind of sex with other males in the past 12 months prior the survey
  - Male injecting drug users (IDUs): Men aged 18 or older who reported injecting drugs in the past month prior to the survey
  - Female Sex Workers (FSWs) – Women aged 18 or older who reported having sex for money in the past month based in establishments such as Karaoke (KSW) or on the street (SSW)

Methods: Sampling strategies

- Three major community-based sampling methods were used:
  - Cluster sampling: Mappings of community locations and size estimates were generated, with sampling conducted probability-proportionate-to-size (PPS) in the first stage (selection of clusters) and randomly sampled in the second stage (selection of individuals)
  - Respondent-driven sampling (RDS): Seeds in the target population were selected who then referred other community members into the survey
  - Take-all: Mappings of community locations were generated, with then all target population members present at a given time requested to participate in the survey
## Methods: Sampling strategies

<table>
<thead>
<tr>
<th>Cities/Provinces</th>
<th>IDUs</th>
<th>SSWs</th>
<th>KSWs</th>
<th>MSMs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha Noi</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hai Phong</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quang Ninh</td>
<td></td>
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<td>x</td>
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<tr>
<td>Da Nang</td>
<td></td>
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<td>x</td>
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<tr>
<td>HCMC</td>
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<td>x</td>
</tr>
<tr>
<td>Can Tho</td>
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<tr>
<td>An Giang</td>
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</tr>
</tbody>
</table>

- **Respondent Driven Sampling (RDS)**
- **Cluster sampling**
- **Take-all method**

## Methods: Sample sizes

<table>
<thead>
<tr>
<th>Cities/Provinces</th>
<th>IDUs</th>
<th>SSWs</th>
<th>KSWs</th>
<th>MSM</th>
</tr>
</thead>
<tbody>
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<td>Ha Noi</td>
<td>296</td>
<td>275</td>
<td>224</td>
<td>397</td>
</tr>
<tr>
<td>Hai Phong</td>
<td>301</td>
<td>279</td>
<td>274</td>
<td></td>
</tr>
<tr>
<td>Quang Ninh</td>
<td>266</td>
<td>161</td>
<td>185</td>
<td></td>
</tr>
<tr>
<td>Da Nang</td>
<td>274</td>
<td>175</td>
<td>313</td>
<td></td>
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<tr>
<td>HCMC</td>
<td>296</td>
<td>298</td>
<td>302</td>
<td>393</td>
</tr>
<tr>
<td>Can Tho</td>
<td>299</td>
<td>162</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>An Giang</td>
<td>300</td>
<td>238</td>
<td>361</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,032</td>
<td>1,588</td>
<td>1,959</td>
<td>790</td>
</tr>
</tbody>
</table>
Sampling strategies: specific sites

- **Ha Noi**: Dong Da, Hai Ba Trung, Thanh Xuan, Cau Giay
- **Hai Phong**: Le Chan, Hong Bang, Ngo Quyen, Hai An
- **Quang Ninh**: Bai Chay, Hon Gai, Cam Pha
- **Da Nang**: Hai Chau, Thanh Khe, Lien Chieu
- **HCMC**: District 1, 3, 8 and Binh Thanh
- **Can Tho**: Ninh Kieu, Cai Rang, Binh Thuy
- **An Giang**: Long Xuyen, Chau Doc

Methods: Biological Testing

- **HIV Testing**
  - Screened by: ELISA Genscreen HIV 1/2 V2 (Bio-Rad).
    - Confirmed by Determine HIV-1/2.
- **Syphilis Testing**
  - Screened by RPR (Rapid Plasma Reagin): Qualitative and Quantitative
  - Confirmed by TPHA
- **Gonorrhea And Chlamydia Testing**
  - Polymerase Chain Reaction (PCR)
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Method: Data analysis

- Data entry: Double-data entry was performed using Epi-info version 6.04
- Data analysis:
  - For cluster and take-all samples: STATA version 8.
  - For RDS:
    - Data prepared by STATA
    - Analyzed using RDSAT

Injection drug users
HIV prevalence among IDUs

| City          | HIV Prevalence (%)
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha Noi</td>
<td>24</td>
</tr>
<tr>
<td>Hai Phong</td>
<td>66</td>
</tr>
<tr>
<td>Quang Ninh</td>
<td>59</td>
</tr>
<tr>
<td>Da Nang</td>
<td>2</td>
</tr>
<tr>
<td>HCMC</td>
<td>34</td>
</tr>
<tr>
<td>Can Tho</td>
<td>37</td>
</tr>
<tr>
<td>An Giang</td>
<td>13</td>
</tr>
</tbody>
</table>

Syphilis prevalence among IDUs

<table>
<thead>
<tr>
<th>City</th>
<th>Syphilis Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha Noi</td>
<td>0</td>
</tr>
<tr>
<td>Hai Phong</td>
<td>1.7</td>
</tr>
<tr>
<td>Quang Ninh</td>
<td>0</td>
</tr>
<tr>
<td>Da Nang</td>
<td>5.4</td>
</tr>
<tr>
<td>HCMC</td>
<td>2.4</td>
</tr>
<tr>
<td>Can Tho</td>
<td>0.9</td>
</tr>
<tr>
<td>An Giang</td>
<td>2.7</td>
</tr>
</tbody>
</table>
Self-reported needle sharing is higher in the southern provinces

IDUs in HCM, An Giang and Can Tho are younger and have a shorter duration of drug injection than in other provinces
HIV prevalence is very high among young and new injectors, signaling that HIV travels fast after drug initiation.

New injectors in HCMC: high levels of needle sharing will lead to higher HIV prevalence.
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Percent of IDUs reporting sex with FSW in the past 12 months

<table>
<thead>
<tr>
<th>City</th>
<th>% IDUs reporting sex with FSWs in the past 12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha Noi</td>
<td>22</td>
</tr>
<tr>
<td>Hai Phong</td>
<td>14</td>
</tr>
<tr>
<td>Quang Ninh</td>
<td>17</td>
</tr>
<tr>
<td>Da Nang</td>
<td>35</td>
</tr>
<tr>
<td>HCMC</td>
<td>28</td>
</tr>
<tr>
<td>Can Tho</td>
<td>29</td>
</tr>
<tr>
<td>An Giang</td>
<td>43</td>
</tr>
</tbody>
</table>

Many HIV-positive IDUs, particularly in Ha Noi, HCMC and An Giang, reported unprotected* sex with their sexual partners in the previous 12 months

* Unprotected sex is defined as inconsistently using condom with female partners (in the last 12 months)
Summary of findings for IDUs

- HIV prevalence among IDUs is very high in all provinces except Da Nang, particularly in the north
  - This may be partially due to decreased mortality among IDU on ART but high HIV prevalence among younger and new users suggests that high levels of HIV transmission are still occurring
- Needle sharing remains high, particularly among IDUs in the Southern provinces
  - Reporting bias could be affecting self-reports in intervention areas
  - Without stronger interventions, HIV prevalence will likely increase in these populations

Summary of findings for IDUs (continued)

- New injectors are sharing needles and becoming HIV-infected at alarmingly high rates
  - Interventions need to be reviewed and strengthened for their coverage and quality
- Unprotected commercial sex among male IDU is high in many provinces, suggesting significant cross infection between IDU and FSW
- HIV prevalence among IDU in this community sample was not significantly different than the sentinel surveillance community-based sample
HIV prevalence among female sex workers: street-based tend to be higher than Karaoke-based.
Syphilis prevalence among FSWs: tend to be higher in the southern provinces

Gonorrhea and Chlamydia prevalence among FSWs in Ha Noi and HCMC
Reported condom use during last sex with clients: Over 90% in all provinces with both one-time and regular clients

Consistent condom use with clients is still relatively low across all provinces, except for Can Tho.
Percent of FSWs reporting ever drug injection: Very high among SSWs in Ha Noi and Can Tho

- Percent of SSWs who injects drugs
- Percent of KSWs who injects drugs

HIV prevalence among FSW: HIV prevalence is much higher among injecting FSW

- Injecting FSWs
- Non-injecting FSWs

<table>
<thead>
<tr>
<th>City</th>
<th>Injecting FSWs</th>
<th>Non-injecting FSWs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha Noi</td>
<td>43</td>
<td>18</td>
</tr>
<tr>
<td>Hai Phong</td>
<td>55</td>
<td>3</td>
</tr>
<tr>
<td>Hai Phong</td>
<td>55</td>
<td>3</td>
</tr>
<tr>
<td>Hai Phong</td>
<td>67</td>
<td>8</td>
</tr>
<tr>
<td>Can Tho</td>
<td>82</td>
<td>18</td>
</tr>
<tr>
<td>An Giang</td>
<td>18</td>
<td>15</td>
</tr>
</tbody>
</table>
Where drug use is high among sex workers, so is HIV

Sharing needles syringes in the past month: Injecting sex workers have higher risks than male IDUs in some locations
**Summary of findings for FSW**

- HIV prevalence in SSW is particularly high in Hanoi and Can Tho
  - Injection drug use appears to still be the driving force of HIV infection among sex workers
- STI prevalence is high in several settings, meriting selective intervention strategies
  - Syndromic management is not sufficient for STI control among FSW
  - Syphilis screening in VCT and drop-in center sites
  - Periodic presumptive treatment for CT/GC in selected settings may be warranted

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**Summary of findings for FSW**

- While reported last time condom use is high (and potentially biased), consistent condom use is much lower
  - Triangulation of existing qualitative, quantitative data and condom sales suggests that increases have occurred
  - Consistent condom use, particularly in commercial sex settings, needs to be strengthened
Men who have sex with men

HIV Prevalence among MSM: rates are similar in both Hanoi and HCMC.
**Syphilis, Gonorrhea and Chlamydia prevalence among MSMs in Hanoi and HCMC**

- **Syphilis**: Ha Noi - 0.1%, HCMC - 11.5%
- **Genital Gonorrhea**: Ha Noi - 3.1%, HCMC - 5.4%
- **Rectal Gonorrhea**: Ha Noi - 1.7%, HCMC - 6.7%
- **Genital Chlamydia**: Ha Noi - 15.9%, HCMC - 3.8%
- **Rectal Chlamydia**: Ha Noi - 5.7%, HCMC - 35.5%
- **Any STIs**: Ha Noi - 22%, HCMC - 15.9%

**Prevalence of anal sex is high among both commercial and non-commercial sex partners**

- **MSMs who sold sex**: Ha Noi - 21.8%, HCMC - 40.7%
- **MSMs who had anal sex when they sold sex**: Ha Noi - 35%
- **MSMs had sex with MSWs**: Ha Noi - 6.6%, HCMC - 4.2%
- **MSMs had sex with consensual male partners**: Ha Noi - 50.5%, HCMC - 6.6%
Many MSM also had sex with female partners in the last 12 months

- % MSMs had sex with FSWs: HN 15.6, HCMC 14.7
- % MSMs sold sex to female: HN 5.6, HCMC 3.5
- % MSMs had consensual sex with female: HN 27.9, HCMC 34.8

HIV prevalence among MSMs who sold sex to male partners in the past month

- Ha Noi: 6.4%
- HCMC: 6.6%
Condom use during last anal sex with male partners among MSM

- Percent of unprotected sex with MSWs in HCMC is unadjusted

<table>
<thead>
<tr>
<th></th>
<th>Male clients</th>
<th>MSWs</th>
<th>Consensual male partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha Noi</td>
<td>56</td>
<td>51</td>
<td>76</td>
</tr>
<tr>
<td>Ho Chi Minh City</td>
<td>72</td>
<td>49</td>
<td>54</td>
</tr>
</tbody>
</table>

Ever used drugs

Ever injected drugs

Drug use and drug injection among MSM

- Ever used drugs
- Ever injected drugs

<table>
<thead>
<tr>
<th></th>
<th>Ever used drugs</th>
<th>Ever injected drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>HN</td>
<td>22.8</td>
<td>9.2</td>
</tr>
<tr>
<td>HCMC</td>
<td>21.0</td>
<td>3.8</td>
</tr>
</tbody>
</table>
HIV prevalence among MSMs in Hanoi and HCMC is indicative of potentially fast rising epidemic; Observed prevalence in HCMC is similar to previous measurements.

Selective STIs are high:
- Relatively high rectal gonorrhea prevalence suggests that presumptive treatment may be warranted.

Reported condom use is low, particularly in male-male commercial sex encounters:
- Condom and lubricant promotion needs to be strengthened.

Injection drug use is not uncommon among MSM:
- MSM interventions need to include IDU components.
A low proportion of all groups in all locations have been HIV tested and know their HIV status.
A high proportion of HIV-positive individuals do not know their HIV status

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% HIV (+) FSWs who know HIV status
% HIV (+) IDUs who know HIV status
% HIV (+) MSMs who know HIV status

Over half of IDUs in all provinces have never received any free syringes in the past 6 months

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New injectors had very low access to syringes in several locations

- Hai Phong: 27%
- Quang Ninh: 17%
- Can Tho: 0%
- An Giang: 18%

Percent of SSW who received condoms and risk behavior reduction materials in the past 6 months

- Ha Noi: 45% received condom, 34% received information
- Hai Phong: 64% received condom, 68% received information
- Quang Ninh: 47% received condom, 61% received information
- Da Nang: 61% received condom, 68% received information
- HCMC: 71% received condom, 66% received information
- Can Tho: 82% received condom, 81% received information
- An Giang: 74% received condom, 72% received information
About 1/3 of injecting FSWs received needles in the past six months

![Bar chart showing percentages of injecting SWs who received needles/syringes in various cities.]

Caveats and limitations

- Sample representativeness
  - Individuals who had never been exposed to interventions likely refused survey participation at higher rates; This may have led to under-estimates of HIV and risks
  - Choice of seeds in RDS method may have led to unknown biased samples
- Self-reports of some risk and preventive behaviors are likely biased
  - On-going triangulation with other data sources is needed
Overall conclusions

- Injection drug use remains a significant risk factor for HIV infection, even among FSW and MSM
  - Interventions to FSW and MSM must strengthen their drug injection risk reduction components
  - Results reaffirm the importance of drug treatment (e.g., methadone) to reduce drug injection
- VCT must be strengthened to encourage high-risk populations to seek HIV testing
  - Risk behavior data shows significant interaction between high and low risk groups, suggesting cost-efficient focus on MARPs will break chain of infection to general population

Overall conclusions (continued)

- High selected STI merit presumptive treatment interventions among FSW and MSM
- IBBS with similar design should be repeated to obtain needed trends in HIV, STI, and risk behaviors
  - Vietnam lacks any trend data for evaluation, estimates, and projection