HIV Incidence Surveillance in China

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HIV Incidence Surveillance in China

- **Methods:** BED testing

- **HIV Sentinel Surveillance**——To estimate the incidence rate
  Since 2011, BED testing has been required to perform among HIV new diagnosed from national sentinel sites.

- **HIV/AIDS Case-Reporting System**——To estimate the number of recent infection
  - 2011: HIV new diagnosed in 2nd Quarter
  - 2012: HIV new diagnosed between July 2011 and June 2012
  - 2013: HIV new diagnosed between July 2012 and June 2013
HIV Sentinel Surveillance System

- HIV Sentinel Surveillance System is to **consecutively** collect information related to HIV epidemic situation in **constant** periods and sites among **key populations**. This system can provide the trend of HIV epidemic and guide the evaluation of the effectiveness of HIV/AIDS prevention and control strategy.

**Purposes**

- To estimate HIV prevalence among different populations;
- To describe epidemic pattern for different areas and populations;
- To compare HIV prevalence of different areas among populations;
- To evaluate risk factors related to epidemic patterns for different areas and populations.
### Distribution of National Sentinel Sites for HIV/HCV, 2013

<table>
<thead>
<tr>
<th>Population</th>
<th>No. of Sites</th>
<th>Coverage (Provinces)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8 populations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DU</td>
<td>301</td>
<td>30 (Except Tibet)</td>
</tr>
<tr>
<td>MSM</td>
<td>107</td>
<td>30 (Except Tibet)</td>
</tr>
<tr>
<td>FSW</td>
<td>520</td>
<td>31</td>
</tr>
<tr>
<td>Male STD</td>
<td>369</td>
<td>31</td>
</tr>
<tr>
<td>Truck driver</td>
<td>58</td>
<td>22</td>
</tr>
<tr>
<td>Male immigrant</td>
<td>87</td>
<td>31</td>
</tr>
<tr>
<td>ANC</td>
<td>376</td>
<td>31</td>
</tr>
<tr>
<td>Youth</td>
<td>66</td>
<td>31</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>1884</td>
<td></td>
</tr>
<tr>
<td><strong>5 populations</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood donation</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Health examination</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>Hospital invasive treatment</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Kidney dialysis</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Clinic of Family planning</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td>87</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1971</td>
<td></td>
</tr>
</tbody>
</table>
HIV prevalence among different populations from HIV sentinel surveillance sites, 2003-2012
Equation recommended by WHO

\[ I_r = \frac{R - \varepsilon P}{(1 - \varepsilon) \omega N} \]

where the survey counts \((N, P, R)\) are specified as follows:

- \(N\) is the number of HIV-negative people in the survey
- \(P\) is the number of HIV-positive people in the survey, and
- \(R\) is the number of people classified as RITA positive,

and the calibration parameters are specified as follows:

- \(\omega\) is the mean RITA duration specified in units of years, and
- \(\varepsilon\) is the FRR of the RITA.
HIV incidence among different populations from HIV sentinel surveillance, 2011-2012
Sentinel Surveillance System in 2011-2012
Estimated number of HIV recent infection

- Current approach:
  - Used Workbook software after calibrating estimation of death
  - Modeling: SPECTRUM, AEM
  - Laboratory & Epidemiology: BED
  - Others

- Final result is based on triangulation methods
HIV/AIDS Case-Reporting System——
web-based real time report
Report for the BED testing among HIV new diagnosed patients

Module of data input: (Built-in 2013)
HIV Prevention and Control System → HIV/AIDS Case-Reporting System → HIV Incidence Testing System
Estimate of HIV recent infections——Principles

- Target population – recent infections in one year (N)

- Sample size – diagnosed as recent infections (R)

- Proportion of diagnosed as recent infection (P)

- \( R = N \times P \) or \( N = \frac{R}{P} \)

- Classified as repeat or new testers to estimate P
Data needed for estimation of recent infections

- Testing history
  - Added into follow up form in 2013

- Only once per patient

Whether performed a HIV testing before this time: Yes  No (Next question)

Date of the last HIV negative: _____year____month

Date of the first HIV positive: _____year____month

How many times have you accepted HIV testing in 24 months before the first HIV positive: ________
The proportion of known testing results among the populations from sentinel surveillance last year.
The completion of BED testing among new diagnoses

- **2011.7-2012.6**
  - Totally, 21 provinces have reported BED results. **72.6% of completion** among 21 provinces.
  - Unreported: **11 provinces**

- **2012.7-2013.6  (As of Oct 31)**
  - 100% for 8 provinces, >80% for 25 provinces
  - Have not start input: **4 provinces**
Thank You