Quality Control for HIV testing in Cambodia
July 2006

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Outline

• Background of VCCT in Cambodia
• Review algorithms and tests use in VCCT and Reference Laboratory
• Objectives
• Methods
• Results
• Conclusion
I. Background of VCCT services in Cambodia

- First VCCT established in 1995 in Phnom Penh—until 2000, there were only 6 VCCT centers.
- At the end of 2005, there were 109 VCCTs in 24 province and towns.
- On 30 August of 2006, there are 134 VCCTs.
- Policy and Strategy for HIV counseling and testing approved by MoH in 1995, 2002 (updated)
- HIV counseling curriculum developed
- HIV testing curriculum developed 2004
- Guidelines for Implementation VCCT developed 2004
- Guideline for Establishment of VCCT 2004
- SOP for Quality Improvement (QI) for HIV Counselling and Quality Control (QC) for HIV Testing in 2005
Review algorithms and tests use in VCCT and Reference Laboratory

- Serum that is non-reactive on the first test is considered HIV antibody negative.
- Serum found reactive on the first assay is re-tested with another rapid assay or ELISA.
- Serum that is reactive on both tests is considered HIV antibody positive.
- Serum that is reactive on the first test, but non-reactive on the second test, must be re-tested with the two assays, on the same serum sample.
- Concordant results after repeat testing will indicate a positive and negative result.
- If the results remain discordant the serum is considered intermediate, and a new sample can be taken and testing procedure repeated.
HIV testing procedures

NCHADS:

• 1\textsuperscript{st} option: Determine (1\textsuperscript{st}) + Uni-Gold or Stat-Pak (conf)

• 2\textsuperscript{nd} option: ELISA (1\textsuperscript{st}) + Determine (conf)

• 3\textsuperscript{rd} Option: Serodia (1\textsuperscript{st}) + Determine (conf)
HIV testing procedures

Institute Pasteur of Cambodia:

<table>
<thead>
<tr>
<th></th>
<th>V.S (^{(1)})</th>
<th>DO (^{(2)})</th>
<th>DO/VS</th>
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<tbody>
<tr>
<td>06-A-1</td>
<td></td>
<td></td>
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<tr>
<td>Abbott HIV 1/go</td>
<td>1,00</td>
<td>22,56</td>
<td>22,56</td>
</tr>
<tr>
<td>Genscreen HIV 1-2 V₂</td>
<td>0,137</td>
<td>Over</td>
<td>Over</td>
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<tr>
<td>06-A-2</td>
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<td></td>
</tr>
<tr>
<td>Abbott HIV 1/go</td>
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<td>25,72</td>
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<td>Over</td>
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<td>06-A-4</td>
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<tr>
<td>Abbott HIV 1/go</td>
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<td>0,56</td>
<td>0,56</td>
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<tr>
<td>Genscreen HIV 1-2 V₂</td>
<td>0,137</td>
<td>Over</td>
<td>Over</td>
</tr>
</tbody>
</table>

\(^{(1)}\) V.S : Valeur Seuil, \(^{(2)}\) DO : Densité optique
II. Objectives

- To evaluate the quality of VCCT services
- To provide knowledge on HIV testing
- To improve quality of HIV testing services
- To maintain high quality of HIV testing.
III. Methods

- 104 VCCT centers have been selected
- 104 Lab technicians have been invited
- 4 sample tubes have been prepared as a panel

<table>
<thead>
<tr>
<th>Sample and code Numbers</th>
<th>Result recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>06-A-1</td>
<td>Positive</td>
</tr>
<tr>
<td>06-A-2</td>
<td>Positive</td>
</tr>
<tr>
<td>06-A-3</td>
<td>Negative</td>
</tr>
<tr>
<td>06-A-4</td>
<td>Negative</td>
</tr>
</tbody>
</table>
III. Methods (continue)

**Step 1:** A panel of serum or blood sample pools is prepared at the reference laboratory (IPC), tested for HIV and the test results recorded. There have been 4 tubes of preparing samples as a pool (with different status) prepared for each VCCT site. The serum samples are then taken by lab technicians to all VCCT centers; carefully stored in an icebox temperature between 2ºC – 28ºC.
III. Methods (continue)

**Step 2:** At the VCCT centers, the laboratory technicians responsible for HIV testing perform tests on the serum samples brought from the reference laboratories at the national level (IPC) and complete the test on the result sheet and send back to the reference laboratory.

**Step 3:** At the Reference Laboratory, the test results from VCCT centers are analyzed and compared to the reference laboratory’s results from Step 1.
III. Methods (continues)

- **Step 4:** The results will be analyzed and translated as below:
  - If the result of 1 among 4 tubes is correct, it means 25% is correct.
  - If the result of 2 among 4 tubes is correct, it means 50% is correct.
  - If the result of 3 among 4 tubes is correct, it means 75% is correct.
  - If the result of 4 tubes is correct, it means 100% is correct.

- **Step 5:** If the test results from VCCT vary from the results recorded at reference Laboratory, NCHADS staff with a reference lab technician visit the VCCT to check and observe the testing performance, test storage, date of reagents etc. and provide technical support accordingly.
### IV. Results

<table>
<thead>
<tr>
<th></th>
<th>Code</th>
<th>No of Sample</th>
<th>correct results</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Sample</td>
<td>06-A-1</td>
<td>104</td>
<td>104</td>
<td>100%</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Sample</td>
<td>06-A-2</td>
<td>104</td>
<td>104</td>
<td>100%</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Sample</td>
<td>06-A-3</td>
<td>104</td>
<td>103</td>
<td>99.04</td>
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<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; Sample</td>
<td>06-A-4</td>
<td>104</td>
<td>103</td>
<td>99.04</td>
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<tr>
<td><strong>Total samples</strong></td>
<td></td>
<td><strong>416</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Bar chart showing the results of the samples](image)
V. Conclusion

- VCCT services in Cambodia:
  - Quality
  - Reliable
Thank You For Your Attention