Quality Improvement in PMTCT and Pediatric HIV Care: Thailand Experiences

Thailand Ministry of Public Health
Siriraj hospital
Bamrasnaradura hospital
Chiang Rai regional hospital
Sappasitthipasong hospital, Ubolratchathani
Queen Sirikit National Institute of Child Health

Thailand Institute for Quality Improvement and Hospital Accreditation

New York State Dept of Health AIDS Institute
Health Resources and Services Administration, HHS

Thailand MOPH – U.S. CDC Collaboration
Centers for Disease Control and Prevention, HHS
# HIV/AIDS Epidemic in Thailand

- Adults living with HIV/AIDS*: 540,822 cases
- Children living with HIV/AIDS*: 16,000 cases
- HIV prevalence in pregnant women**: 1.0%
- Infants born to HIV-positive mother***: 6,700 cases
- Estimated new HIV-infected children (2005)
  (Transmission rate 4-5%): 268-335 cases

Source:
* UNAIDS, 2006
** Division of Epidemiology, Thai MOPH 2005
*** Thai national perinatal HIV monitoring reports 2005
National HIV and PMTCT Policy in Thailand

- **National PMTCT plus program**
- **National PMTCT policy**
- **PMTCT pilot program**

Major concern
How can quality of HIV/AIDS care services be monitored?
What is HIVQUAL-T?

• An HIV/AIDS care and treatment quality improvement initiative designed to build capacity for performance measurement and quality improvement (QI) in Thai ambulatory care clinics.

Philosophy of HIVQUAL
Goals

- Develop a sustainable QI program structure that supports ongoing improvement in the quality of HIV care
- Promote reporting of HIV care performance data by hospitals
- Improve the quality of care for PLHAs

HIVQUAL U.S. Model (1995)
- Adult module (2003)
- Pediatric module (2005)
- Day care center module (2005)
- Voluntary counseling and testing module (2005)
Performance Measurement (PM)

PM data can highlight areas of care at baseline where improvement is needed. There are many ways to collect PM data.

<table>
<thead>
<tr>
<th>Requirements for good data collection system</th>
<th>PMTCT monitoring reports</th>
<th>HIVQUAL-T reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most current data available</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Systematic data collection</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Patient confidentiality</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Accurate data</td>
<td>Yes, report all cases</td>
<td>90% CI with 10% random error</td>
</tr>
<tr>
<td>Simple and quick process</td>
<td>No, report all cases monthly</td>
<td>Yes, utilize data sampling, review data annually</td>
</tr>
<tr>
<td>Immediate reporting after data entry</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
% of (ANC and no ANC) women receiving HIV test

% of HIV-infected pregnant women receiving ARV (AZT, NVP) at -ANC - Labor

% of infants born to HIV-positive women receiving
- ARV (AZT, NVP)
- Infant formula

% of HIV-exposed infants receiving HIV diagnostic test
- PCR
- Anti-HIV test

MTCT rate

Example of monthly PMTCT monitoring report in Thailand (real-time analysis) produced by the system at all levels:
- Hospital
- Province
- Region
- Country
Steps of HIVQUAL-T Operation

1. Generate case list of HIV patients for hospital
2. Select Random Sample

Precision: 90% CI with ± 10 % random errors
3. Review medical record and record data in paper abstract forms

4. Enter data into HIVQUAL-T software
5. Generate Reports

1. HIV Status Monitoring - CD4

- Total number of HIV patients sampled: 96
- Number receiving a CD4 test at least once during the review period: 93 (95.8%)

6. Hospital committee reviews data and plans QI activities
Infrastructure: QI Committee

HA Committee
Hospital Leaders Team
Quality Control Center Team
Internal Surveyors
Facilitators
Function Team
Patient Care Team
Supportive Team

Hospital AIDS Committee

HIVQUAL – T data
Perinatal HIV monitoring data

Self - Report
Quality Improvement: System

- Hospital HIV QI committee
  - Planning, implementation, evaluation
- System integration
  - Linkage to Thai Hospital Accreditation Program

Elements of the PDSA Cycle:

- **Act**
  - What changes are to be made?
  - What will be the next cycle?
- **Plan**
  - State objective of the cycle.
  - Make predictions.
  - Develop plan to carry out cycle (who, what, where, when).
- **Do**
  - Carry out the test.
  - Document problems and unexpected observations.
  - Begin analysis of the data.
- **Study**
  - Complete the analysis of the data.
  - Compare data to predictions.
  - Summarize what was learned.
Thailand PMTCT Program Coverage 2001-2005

**HIV Testing**

- **ANC**
  - 2001: 94%
  - 2002: 96%
  - 2003: 98%
  - 2004: 99%
  - 2005: 100%
- **No ANC**
  - 2001: 75%
  - 2002: 83%
  - 2003: 86%
  - 2004: 91%
  - 2005: 95%

**ARV and Formula**

- **Mother**
  - 2001: 71%
  - 2002: 89%
  - 2003: 90%
  - 2004: 99%
  - 2005: 81%
- **Newborn**
  - 2001: 71%
  - 2002: 90%
  - 2003: 99%
  - 2004: 81%
  - 2005: 92%

PHIMS: Department of Health 2005
Results: Adult HIVQUAL-T Indicators 2003-2005

Median % of eligible patients who received services

- CD4 testing
- ARV treatment
- TB screening
- Syphilis screening
- Pap smear screening
- Cryptococcosis
- PCP

2003: 42 hospitals
2004: 63 hospitals
2005: 63 hospitals

Ministry of Public Health

Hospital Accreditation agency

National Health Security Office

Thailand MOPH-US.CDC collaboration

Annual target (hospitals)

Year  2007  2008  2009  2010  2011

144  294  594  894  961

Goals (2011): All hospitals under National Health Security Office and Bangkok Metropolitan Administration
Core indicator areas
- HIV status monitoring
  - Clinical and CD4 monitoring
- OI prophylaxis (PCP)
- Antiretroviral therapy
- TB screening

Optional indicator areas
- HIV status monitoring
  - Viral load monitoring
- OI prophylaxis
  - MAC prophylaxis
  - CMV retinitis screening
- Immunization
- Growth and development
- Dental health
- Psychosocial issues

Eligibility: HIV-infected children who received care in the hospital at least 3 months during the review period
Results: Pediatric HIVQUAL-T Indicators 2005 (5 hospitals)

Median % of eligible patients who received services

- Clinical status monitoring annually: 97.9%
- CD4 monitoring annually: 97.2%
- Viral load monitoring annually: 58.1%
- ARV treatment: 98.4%
- Adherence monitoring in last 3 visits: 97.1%
Results: Pediatric HIVQUAL-T Indicators 2005 (5 hospitals)

Median % of eligible patients who received service

<table>
<thead>
<tr>
<th>Service</th>
<th>Median %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary PCP prophylaxis</td>
<td>86.4</td>
</tr>
<tr>
<td>Clinical TB screening</td>
<td>77.7</td>
</tr>
<tr>
<td>Primary MAC prophylaxis</td>
<td>0</td>
</tr>
<tr>
<td>CMV retinitis screening</td>
<td>0</td>
</tr>
<tr>
<td>Immunization history assessment</td>
<td>8.3</td>
</tr>
<tr>
<td>Oral health assessment</td>
<td>73.3</td>
</tr>
</tbody>
</table>
### Results: Pediatric HIVQUAL-T Indicators 2005 (5 hospitals)

<table>
<thead>
<tr>
<th>Service</th>
<th>Median % of eligible patients who received service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight for age assessment</td>
<td>100.0</td>
</tr>
<tr>
<td>Height for age assessment</td>
<td>97.9</td>
</tr>
<tr>
<td>Developmental assessment (2-5 yrs)</td>
<td>35.7</td>
</tr>
<tr>
<td>Go to school (≥ 7 yrs)</td>
<td>90.0</td>
</tr>
<tr>
<td>Secondary sexual characteristic assessment (≥ 10 yrs)</td>
<td>28.6</td>
</tr>
<tr>
<td>Know their own HIV status (≥ 10 yrs)</td>
<td>60.5</td>
</tr>
</tbody>
</table>
Example of QI activities: Improve Immunization Assessment

- Integrate HIV QI work into pediatric HIV weekly meeting
  - Report pediatric HIVQUAL-T data and QI plans to other staff
- Provide pediatric HIV vaccine guidelines to all health providers in the clinic
- Ask HIV-infected patients to bring vaccination book to clinic every visit. Nurses and doctors review vaccination book, if not complete refer for vaccination
- Add immunization variable in medical record form
Next Steps

• Emphasize concept of using performance measurement data to improve quality of services
• QI group learning workshop among hospitals
• Pediatric HIVQUAL-T manual and tool kit development
• Site expansion (regional and provincial hospitals) by integrating pediatric module into national HIVQUAL-T
Summary

• Magnitude of HIV epidemic and complexity of treatment make quality assessment of HIV care essential.

• HIVQUAL-T model provides a simple, systematic way to monitor HIV care using a sampling strategy.

• Local analysis of data can be used effectively for quality improvement.

• Data can be aggregated for monitoring and evaluation at provincial and national levels to inform policy and planning.

• HIVQUAL can be adapted from one country to another, adjusting for differences in guidelines, resources, and health care models.
Thank you for your attention

For more information, please contact

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