The Thai Pharmacoeconomics guidelines & its application in Thailand

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6 September 2016
Thai Health Technology Assessment guidelines

- There have been two editions of the HTA guidelines used as the methodological references when conducting Health Technology Assessment (HTA) studies in Thailand.

The 1st issue (2008)

The 2nd issue (2013)
First edition of the Thai HTA guidelines

- The 1st issue was made practical suggestions for:
  - Improving the quality of health economic evaluation research
  - Giving recommendations on a set of key methodological issues from an economic standpoint

Greater transparency by improving the consistency and quality of research and improving research assessment
Systematic review & Meta-analysis

Handling time in economic evaluation studies

Sensitivity analysis for handling uncertainty

Measurement of costs

Measurement of health outcomes

Clinical effects

Utility

Life expectancy & Transitional probability

Systematic review & Meta-analysis

Presenting economic evaluation results

Health system & HTA

Policy making & roles of HTA

Defining the scope of HTA & selecting comparator(s)

Determining types of economic evaluation

1st Edition Thai HTA guidelines
The Thai HTA guidelines – a dynamic tool

The 1st issue (2008)

Refinement (2012)

HTA application rather than theory

The 2nd issue (2013)

- Theoretical basis
- Widely used as a manual for performing research

But there were some limitations:
- No consideration to other issues for HTA
- Complicated & hard to understand
- Some out-of-date elements identified
The 2\textsuperscript{nd} Thai HTA guidelines development process

1. Systematic review of health economic evaluation studies
2. Expert & stakeholder consultation
3. Meeting of the working group for the development of the guidelines
   - Develop the draft of the 2\textsuperscript{nd} guidelines
4. Working group for the development of the guidelines provide feedback on the draft
5. Expert & stakeholder consultation
6. Dissemination of the 2\textsuperscript{nd} Thai HTA guidelines to the public

Coordinator: Health Intervention and Technology Assessment Program (HITAP), Thailand
Second edition of the Thai HTA guidelines

- Improving the quality & standard of HTA in Thailand by increasing the availability of high quality HTA data
- Looking at HTA from a budgetary, social & ethical standpoint, as well as an economic standpoint
- Giving guidance on how the guidelines should be applied

Concise, Consisting of an introduction, outline of concepts and principles, & a summary of recommendations
Defining the scope of HTA & types of health economic evaluation

- Measurement of costs
- Handling time
- Sensitivity analysis for handling uncertainty
- Presenting economic evaluation results

Budget impact analysis
Quality assessment of economic evaluation

Health economic evaluations

- Measurement of health outcomes
- Clinical effects
- Utility
- Systematic review & network meta-analysis

Health economic evaluations (special cases)

- Economic evaluation of health technologies for infective diseases
- Economic evaluation of disease screening interventions
- Economic evaluation of medical devices
- Economic evaluation of cancer treatments

Social & ethical analysis in HTA

Application of HTA research to policy decision-making

2nd Edition Thai HTA guidelines
Application of HTA guidelines in Thailand
Thai Health Technology Assessment guidelines

- Both editions of the Thai HTA guidelines were approved by the Subcommittee for Development of the National List of Essential Drugs and the Subcommittee for Development of the Health Benefit Package and Service Delivery of the NHSO.

- Used as the compulsory guidelines when preparing the economic evaluation information for the benefit package coverage decisions.

The 1st issue (2008)

The 2nd issue (2013)
NLEM development process

20 Specialist Groups for the NLEM selection
listing new medicines to be considered for the NLEM

Subcommittee for the development of the NLEM
Identifying medicines needed economic evaluation studies

Health Economic Working Group
Prioritizing medicines into high and low priority lists

High priority list of medicines
Low priority list of medicines

6 weeks

Non-profit organization
Conducting study based on the guidelines

Any volunteer research team
Conducting study based on the guidelines

24 weeks

Health Economic Working Group
Assessing quality of the studies

6 weeks

The Subcommittee for the development of the NLEM
Making final decision whether to include medicine in the NLEM

Criteria for decision making

Safety
Efficacy

High cost
High budget impact

Disease burden
Life threatening

Cost-effective
Budget impact

System capacity
Equity issue
Ethical issue
Thailand HTA process guidelines

**Step 1**
*Stakeholders’ meeting on scope of the study

**Step 2**
Researchers present proposal to the Health Economic Working Group

**Step 3**
Researchers conduct studies

**Step 4**
*Stakeholders’ meeting on the preliminary results of the study

**Step 5**
Research quality inspection: internal and external reviewers

**Step 6**
Researchers present the results to the Health Economic Working Group

**Step 7**
Writing up the study report that include executive summary and policy recommendation

*Stakeholders include medicine nominators, practitioners and all clinical experts in the field, and pharmaceutical representatives
Example: Cost-effectiveness on the national drug reimbursement list development
*Thailand: ICER threshold around 160,000 THB per QALY gained (1.2 GNI per capita) (2013)*

<table>
<thead>
<tr>
<th>Medicines</th>
<th>Indications</th>
<th>Baht/QALY</th>
<th>Decision</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peg-interferon alpha 2b</td>
<td>chronic hepatitis C subtype 2, 3</td>
<td>cost-saving</td>
<td>Yes</td>
<td>2011</td>
</tr>
<tr>
<td>Peg-interferon alpha 2a</td>
<td>chronic hepatitis C subtype 2, 3</td>
<td>cost-saving</td>
<td>Yes</td>
<td>2011</td>
</tr>
<tr>
<td>Lamivudine or tenofovir</td>
<td>chronic hepatitis B</td>
<td>cost-saving</td>
<td>Yes</td>
<td>2011</td>
</tr>
<tr>
<td>Bevacizumab</td>
<td>Age-related macular degeneration, diabetic macular edema</td>
<td>cost-saving</td>
<td>Yes</td>
<td>2012</td>
</tr>
<tr>
<td>Intravenous immunoglobulin</td>
<td>Dermatomyositis</td>
<td>cost-saving</td>
<td>Yes</td>
<td>2013</td>
</tr>
<tr>
<td>Intravenous immunoglobulin</td>
<td>chronic inflammatory demyelinating polyneuropathy (CIDP)</td>
<td>57,000</td>
<td>Yes</td>
<td>2013</td>
</tr>
<tr>
<td>Intravenous immunoglobulin</td>
<td>idiopathic thrombocytopenic purpura (ITP)</td>
<td>87,000</td>
<td>Yes</td>
<td>2013</td>
</tr>
<tr>
<td>Oxaliplatin (FOLFOX)</td>
<td>advance colorectal cancer</td>
<td>126,000</td>
<td>Yes*</td>
<td>2012</td>
</tr>
<tr>
<td>Sildenafil</td>
<td>pulmonary arterial hypertension</td>
<td>168,000</td>
<td>Yes</td>
<td>2013</td>
</tr>
<tr>
<td>Galantamine, donepezil or</td>
<td>mild-to-moderate Alzheimer’s disease</td>
<td>157,000-240,000</td>
<td>No</td>
<td>2010</td>
</tr>
<tr>
<td>rivastigmine</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alendronate, risedronate,</td>
<td>osteoporosis</td>
<td>300,000-800,000</td>
<td>No</td>
<td>2008</td>
</tr>
<tr>
<td>Raloxifene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rituximab + CHOP regimen</td>
<td>diffused large B-cell lymphoma</td>
<td>600,000</td>
<td>No</td>
<td>2013</td>
</tr>
<tr>
<td>Bosentan or iloprost</td>
<td>pulmonary arterial hypertension after failing sildenafil</td>
<td>1,023,000-4,462,000</td>
<td>No</td>
<td>2013</td>
</tr>
<tr>
<td>Sunitinib</td>
<td>metastasis renal cell carcinoma</td>
<td>2,400,000</td>
<td>No</td>
<td>2013</td>
</tr>
<tr>
<td>Rituximab</td>
<td>rheumatoid arthritis</td>
<td>1,100,000</td>
<td>No</td>
<td>2013</td>
</tr>
<tr>
<td>Gefitinib or erlotinib</td>
<td>Second-line treatment for non-small cell lung cancer</td>
<td>1,500,000-2,000,000</td>
<td>No</td>
<td>2013</td>
</tr>
<tr>
<td>Ustekinumab</td>
<td>chronic plaque psoriasis</td>
<td>3,500,000</td>
<td>No</td>
<td>2013</td>
</tr>
<tr>
<td>Imiglucerase</td>
<td>Gaucher disease type 1</td>
<td>6,300,000</td>
<td>Yes*</td>
<td>2012</td>
</tr>
</tbody>
</table>
Examples of using health economics information in price negotiations

**Threshold analysis for price of oxaliplatin**

Threshold price that makes oxaliplatin cost-effective in the Thai health care setting

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Original price (THB)</th>
<th>Reduced price (THB)</th>
<th>Potential saving (THB per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenofovir</td>
<td>43</td>
<td>12</td>
<td>375 million</td>
</tr>
<tr>
<td>Pegylate interferon alpha-2a (180 mcg)</td>
<td>9,241</td>
<td>3,150</td>
<td>600 million</td>
</tr>
<tr>
<td>Oxaliplatin (injection 50 mg/25 ml)</td>
<td>8,000</td>
<td>2,500</td>
<td>152 million</td>
</tr>
</tbody>
</table>
Challenge

- Measuring the impact (health or economic outcomes) of the HTA research, conducted following the HTA guidelines, used to inform policy decision makings