Pharmacoeconomics and Outcome Research in Malaysia
2nd Asia Pacific ISPOR Conference, 6th March 2005

Shanghai, China

Syed Mohamed Aljunid
MD, MSc, PhD, FAMM
Professor of Health Economics
Dept. of Community Health
Faculty of Medicine
UKM

Outline

- Basic Information on Malaysia
- Malaysian Health Care System
- Healthcare Expenditure
- Pharmacoeconomics and Outcome Research in Malaysian
- Future Challenges

Malaysia

Population: 25 Millions
Two main areas: West Malaysia (Peninsular Malaysia)
East Malaysia (Sabah & Sarawak)
Size: 330,000 sq. km
GNP per capita: US 4,700 in 2005
(Upper-middle-income)
Urban population: 56%
Literacy rate: 86%
Elderly population: 4.5% (>= 65 years)
Access to safe water: 89%

VITAL STATISTICS

<table>
<thead>
<tr>
<th>Year</th>
<th>Infant Mortality (1,000 live births)</th>
<th>Maternal Mortality Rate (100,000 live births)</th>
<th>Life Expectancy (M/F)</th>
<th>Crude Death Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1957</td>
<td>75</td>
<td>320</td>
<td>56</td>
<td>12.4</td>
</tr>
<tr>
<td>1970</td>
<td>41</td>
<td>150</td>
<td>68</td>
<td>7.0</td>
</tr>
<tr>
<td>1980</td>
<td>24</td>
<td>60</td>
<td>68</td>
<td>5.5</td>
</tr>
<tr>
<td>2002</td>
<td>8</td>
<td>41</td>
<td>70</td>
<td>4.6</td>
</tr>
</tbody>
</table>

Leading Cause of Deaths

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart and Cardiovascular</td>
<td>20.3</td>
</tr>
<tr>
<td>Causes</td>
<td>10.3</td>
</tr>
<tr>
<td>Cerebrovascular Diseases</td>
<td>8.1</td>
</tr>
<tr>
<td>Birth Injuries and Other perinatal mortality</td>
<td>6.2</td>
</tr>
<tr>
<td>Septicemia</td>
<td>5.8</td>
</tr>
<tr>
<td>Motor Vehicle Accidents</td>
<td>5.5</td>
</tr>
<tr>
<td>Pacurome</td>
<td>3.6</td>
</tr>
<tr>
<td>Nephritis, Nephrosis and Nephrotic Syndrome</td>
<td>2.4</td>
</tr>
<tr>
<td>Congenital Anomalies</td>
<td>2.3</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Malaysian Healthcare System

- Public Sector
  - Ministry of Health
  - Ministry of Education
    - University Hospitals
      - UMMC (University of Malaysia)
      - HUKM (Universiti Kebangsaan Malaysia)
      - HUSM (Universiti Sains Malaysia)
- Ministry of Internal Affairs
- Hospital for the Aborigines
- Ministry of Defence
- Military Hospitals
- Ministry of Unity and Social Welfare
- Nursing Homes
- Local Authorities
- Big Cities: Kuala Lumpur, Ipoh, Malacca and Penang
Primary Care Services

- **Public Sector**
  - Ministry of Health
    - Two-tier System
    - Upgraded from Three-tier System in 1985
  - Facilities
    - Urban Polyclinics
    - Health Clinics
    - Community Clinics

- **Private Sector**
  - Private General Practitioners
    - Main provider of primary care
    - 60% of Primary care contacts made with Private GPs
    - Type of Private Clinics
      - Solo-practitioners
      - Group-practitioners

Public-Private Hospital Beds in Malaysia

Doctors: Public-Private Sector Distribution


Healthcare Expenditure

- Total Health Expenditure
  - 4.5% of GDP
    - 2.0% public
    - 2.5% private
- Drug spending
  - Percapita USD 27
  - 12% of public health expenditure
- National Drug Budget
  - RM 751 million in 2003
  - RM 808 million in 2004

Controlling of Drug Cost in Malaysia

- National Formulary
  - List A: Specialist
  - List B: Medical Officers
  - List C: Paramedics
- Bulk Purchasing by government
- Use of Clinical Guidelines
- Quality Assurance Programme
- Health Technology Assessment
- Case-Mix System
Pharmacoeconomics and Outcome Research

- Funding for research
  - IRPA
  - Fundamental Research Grants
  - Short Term Research Grant
  - Drug companies
  - Non-governmental Agencies

- Research Projects
  - Drug Clinical Trials
    - Industry Initiated
  - Prescribing Practice
    - Primary Care Doctors
    - Specialists
  - Drug Costing Studies
  - Cost-effective Analysis
  - Cost-benefit Analysis
  - Use of CPGs by Clinicians

Challenges in Pharmacoeconomics Research

- Lack of funding
- Lack of trained personnel
- Lack of protected research time
- Limited Access to data & information
- Dissemination of research outcome
  - Skill in publication
  - Publication bias
  - Control in publication
- Uptake of research output by policy makers
  - Putting research result into practice

R&D Expenditure: Malaysia

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total R&amp;D Expenditure (RM million)</td>
<td>390.7</td>
<td>353.2</td>
<td>344.1</td>
<td>329.2</td>
<td>337.2</td>
<td>306.8</td>
</tr>
<tr>
<td>R&amp;D expenditure as a percentage of GDP</td>
<td>0.5%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Researchers (headcount)</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
<td>2.7</td>
</tr>
<tr>
<td>Researchers (headcount)</td>
<td>12.6</td>
<td>12.6</td>
<td>12.6</td>
<td>12.6</td>
<td>12.6</td>
<td>12.6</td>
</tr>
<tr>
<td>Total R&amp;D expenditure (£ millions)</td>
<td>4,562.9</td>
<td>4,875.6</td>
<td>4,427.5</td>
<td>4,004.4</td>
<td>3,989.7</td>
<td>3,910.0</td>
</tr>
<tr>
<td>Researchers (£ millions)</td>
<td>1,003.1</td>
<td>1,003.1</td>
<td>1,003.1</td>
<td>1,003.1</td>
<td>1,003.1</td>
<td>1,003.1</td>
</tr>
<tr>
<td>Researchers (£ millions)</td>
<td>12.9</td>
<td>12.9</td>
<td>12.9</td>
<td>12.9</td>
<td>12.9</td>
<td>12.9</td>
</tr>
</tbody>
</table>

THANK YOU