Future Development of Health Economics Research in Malaysia

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Outline of presentation

- Criteria for HE development
- Why research?
- What do we have at the moment: strengths and weaknesses
- What is next for Malaysia: looking ahead
- Summary

Criteria for HE development

Basic driving factors for HE data utilization in health care decision making

- Resource scarcity and hence a need for rational allocation
- Presence of a universal healthcare insurance system
- A policy that is government-led
- Availability of expertise

Secondary requirements

- Opportunities for training/education
- Availability of sources of information: patient databases/registries
- A set of HE guidelines in place

Presence of a universal healthcare insurance system

Asian countries where universal insurance for health care is in place:

1. Korea
2. Taiwan
3. Japan
4. Thailand
5. Indonesia
6. Singapore

The policy on HE utilization has to be government-led

Different approaches for implementation of a HE-based healthcare system:

Central top-down vs private bottom-up

Central top-down approach

- e.g. some European countries (e.g. UK) and some Asian countries (S Korea, Taiwan, China)

- Evaluation directly administered by government thereby setting off regulatory framework and provide financial resources

- National guidance for purchasers and providers, coordinated and consistent dissemination of data

- "Science" and "politics" are incorporated within a common structure

- BUT
  - Only reflects politically driven social judgments of decision makers, thus distorting scientific research and denying individual freedom of choice
  - Societal costs ignored
  - Saving money in the short term but may overlook costs for the future

Private bottom-up approach

- More common in some developing countries in Asia e.g. India, Pakistan; as well as some European countries - France, Sweden; and US

- Involving manufacturers, healthcare workers, clinicians, patient groups, academics

- Lack of political support and resources, hence usually more time-consuming

- Integrity and credibility often challenged

BUT

- Can be more innovative in design and not restricted by government funding

- Can take on a closer societal perspective in study design and hence address more properly on the freedom of choice of patients

- Longer time for implementation

Converging approach

- e.g. Australia, NZ, Thailand
- Combination of top-down and bottom up
- Mutual benefit from government and researchers
- Could be a more efficient approach than the other 2 approaches

Professional capacities required

Background & experiences required:

- Background in clinical research
- Experience in HEOR studies
- Expertise in biostatistics
- Experience in clinical data management
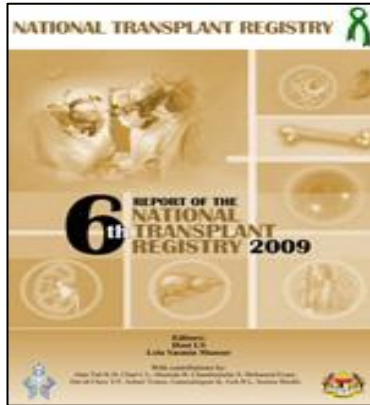- Experience and interest in medical writing

Availability of local data

- Important because of local relevance
- Patient-level data is essential to establish the cost of management of various diseases in Malaysia, eventually used in projections using models
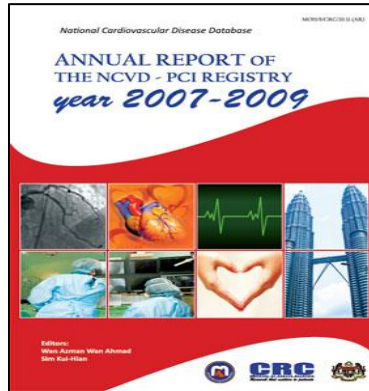
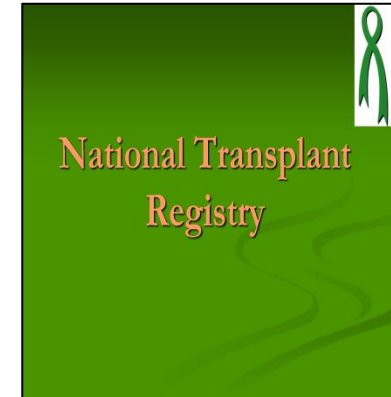# Opportunities for training/education
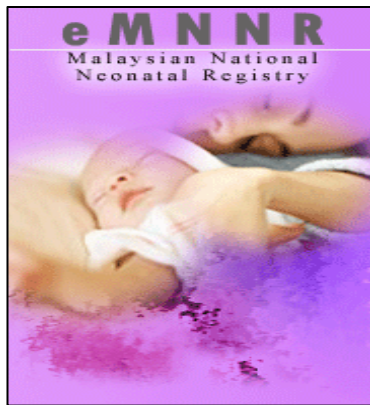
Disease Registries : sources of local data

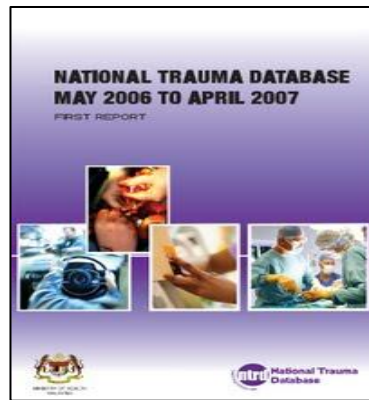National Renal Registry – Malaysian Dialysis and Transplant Registry (1992)

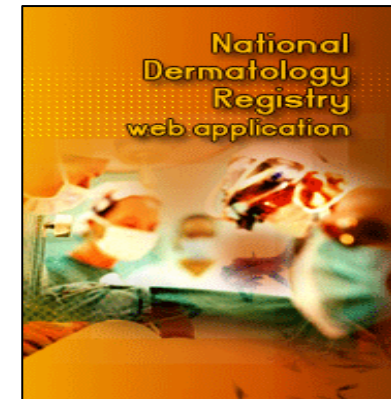National Cardiovascular Disease Database (NCVD)(2006)

National Transplant Registry (2003)

Malaysian National Neonatal Registry (2003)

National Trauma Database (2006)

Malaysian Dermatology Registry

HE Guidelines

Country /key features	英国 UK	中国 China	台湾 Taiwan	南韩 South Korea	泰国 Thailand	马来西亚 Malaysia
Type of guideline	Submission guidelines	Published PE Rec.	PE Guidelines	PE Guidelines	Submission guidelines	PE Guidelines
Year	2008	2011	2006	2006	2008	2012
Purpose of the document	Methods of HTA & appraisal	Economic analysis for pricing & RMBRS	Guide to conduct, evaluate & report PE study	Not stated	For economic evaluation of health technology	Guidelines for PE analysis
ICER	Yes	Yes	Yes	Not stated	Yes	Yes
Total C/E	Yes	Yes	Yes	Not stated	Yes	Yes
Financial impact analysis	Yes	Yes	Yes	Not stated	Yes	Yes

Why research?

- Empirical decision replaced by evidence-based decision since early 1990's

- Maximum transparency in decision making is now a norm in healthcare delivery

- Health technology assessment (HTA) has been used by most advanced countries to inform decision making

- To be more answerable to public queries, hence properly generated and reliable data required through HTA

Background of HTA

Increased rate of diffusion of new technologies

- Need credible/scientific information about costs and consequences of health technologies
- Evidence-based decision making i.e. rationing of decisions

Increased demand for health care

- Demographic changes (e.g. increased life expectancy)
- information overload - increase in level of health knowledge

Soaring health care costs

- Limited amount of resources

What is Health Technology Assessment?

"A <u>multidisciplinary</u> field of <u>policy analysis</u> to study the medical, social, ethical, and economic implications of development, diffusion, and use of health technology"

(INAHTA, 2008)

Multidisciplinary: clinicians, health economists, epidemiologists, organizational researchers, social scientists, and other healthcare professionals

Policy analysis: analyzing different ways of implementing alternatives to review the consequences of different options. It addresses medical, societal, patient, and economic implications

The Horizon of New Health Technologies

- Diagnostics: Virtual colonoscopy

- Devices: Computerized knee

- Procedures: Breast MRI

- Drugs: Biologics

- Services: Counseling
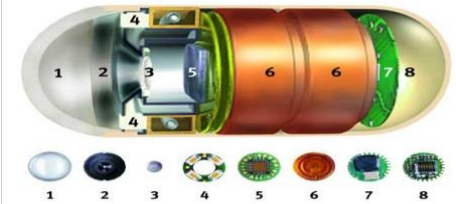

INSIDE THE M2A™ CAPSULE

1. Optical dome
2. Lens holder
3. Lens
4. Illuminating LEDs (Light Emitting Diode)
5. CMOS (Complementary Metal Oxide Semiconductor) imager
6. Battery
7. ASIC (Application Specific Integrated Circuit) transmitter
8. Antenna
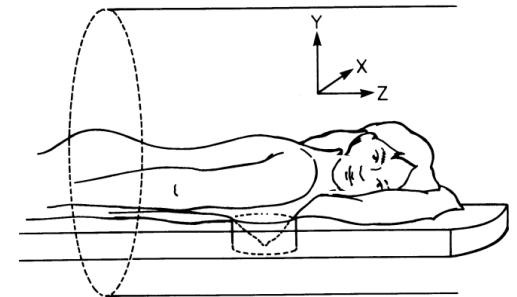
Objectives of HTA

- To support evidence-based policy making through research for the following:

  - Identifying health technologies that bring the greatest benefit to patients

  - Ensuring early access, allowing choice among health technologies of value

  - Ensuring efficient healthcare through objective high-quality assessments.
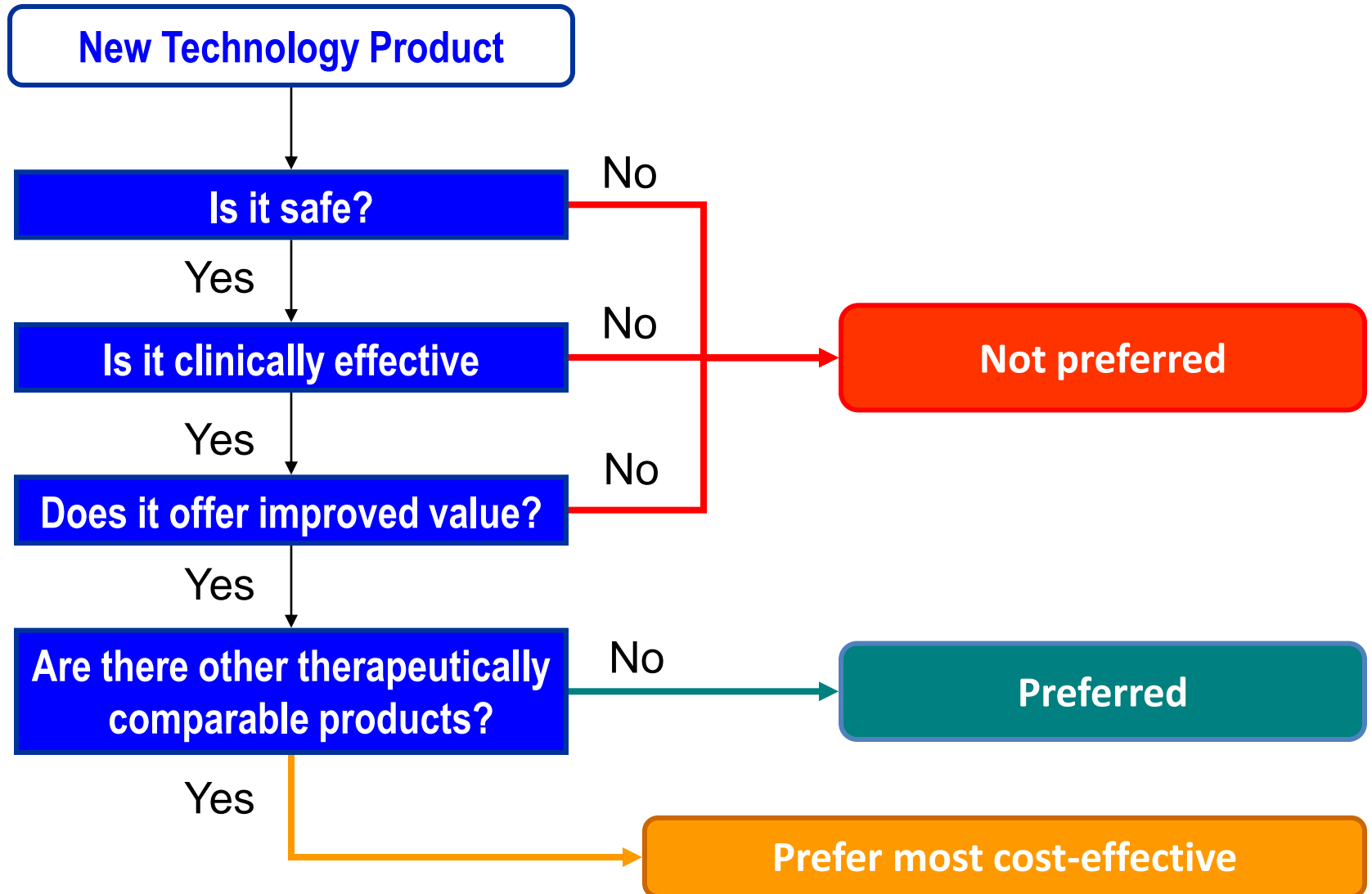
Role of research in overall HTA process
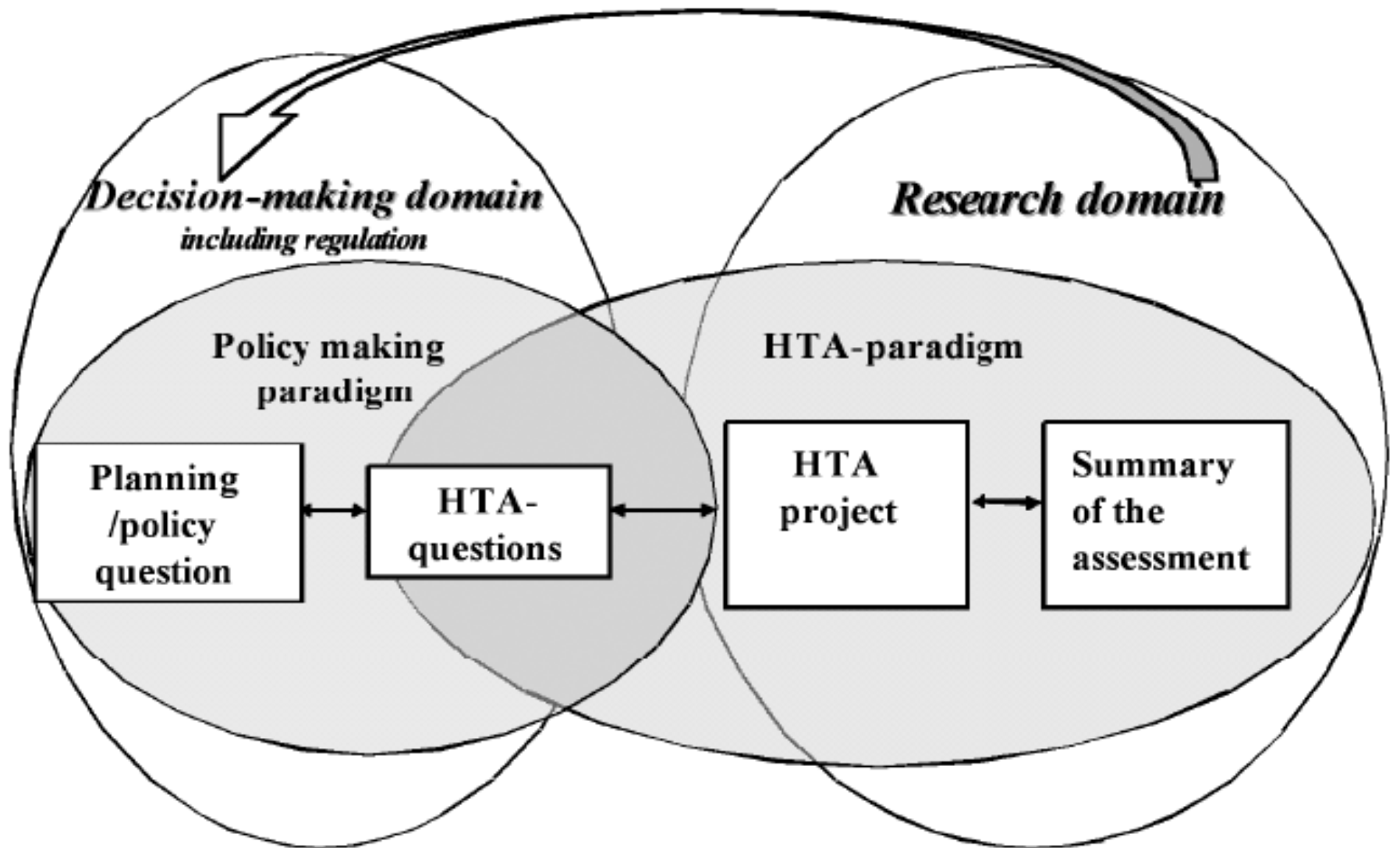
Based on Kristensen FB et al.   Seminars in Colon and Rectal Surgery , 2002; 13: 96   – 103

What is assessed in an HTA?

Technical properties	• Performance characteristics maintenance, ease of use, etc.
Safety	• Adverse events in a given situation
Efficacy	• Can it work?
Effectiveness	• Does it work?
Economic impact	• Economic evaluations, budget impact analysis
Organizational /professional	• Diffusion, utilization, skills, education
Social/ethical/legal	• Challenge certain legal standards and/or societal norms e.g. stem cells

HTA Appraisal Process in Health Plans

```
New Technology Product
        │
        ▼
    Is it safe? ──── No ──┐
        │                 │
       Yes                │
        ▼                 │
Is it clinically ── No ──┼──► Not preferred
   effective             │
        │                 │
       Yes                │
        ▼                 │
Does it offer ──── No ───┘
improved value?
        │
       Yes
        ▼
Are there other ── No ──► Preferred
therapeutically
comparable products?
        │
       Yes
        ▼
        └──────────► Prefer most cost-effective
```

Take home message: Only good unbiased research data can provide answers to HTA questions so that decision makers can make the best informed decisions for the society

HE research in Malaysia - Strengths and weaknesses

Who Conducts HE research in Malaysia?

- Ministry of Health
  - Department of HTA
  - National Pharmaceutical Control Bureau (BPFK)
  - National Institute of Health (NIH)
- Private industry e.g. CROs
- Academic institutions e.g. USK, UKM, UM and Monash
- Pharmaceutical industry
- NGOs
  - Malaysia Chapter of International Society for Pharmacoeconomics and Outcomes Research (ISPOR) (MySPOR)

Number of HE Publications from Malaysia (2005 to 2014)
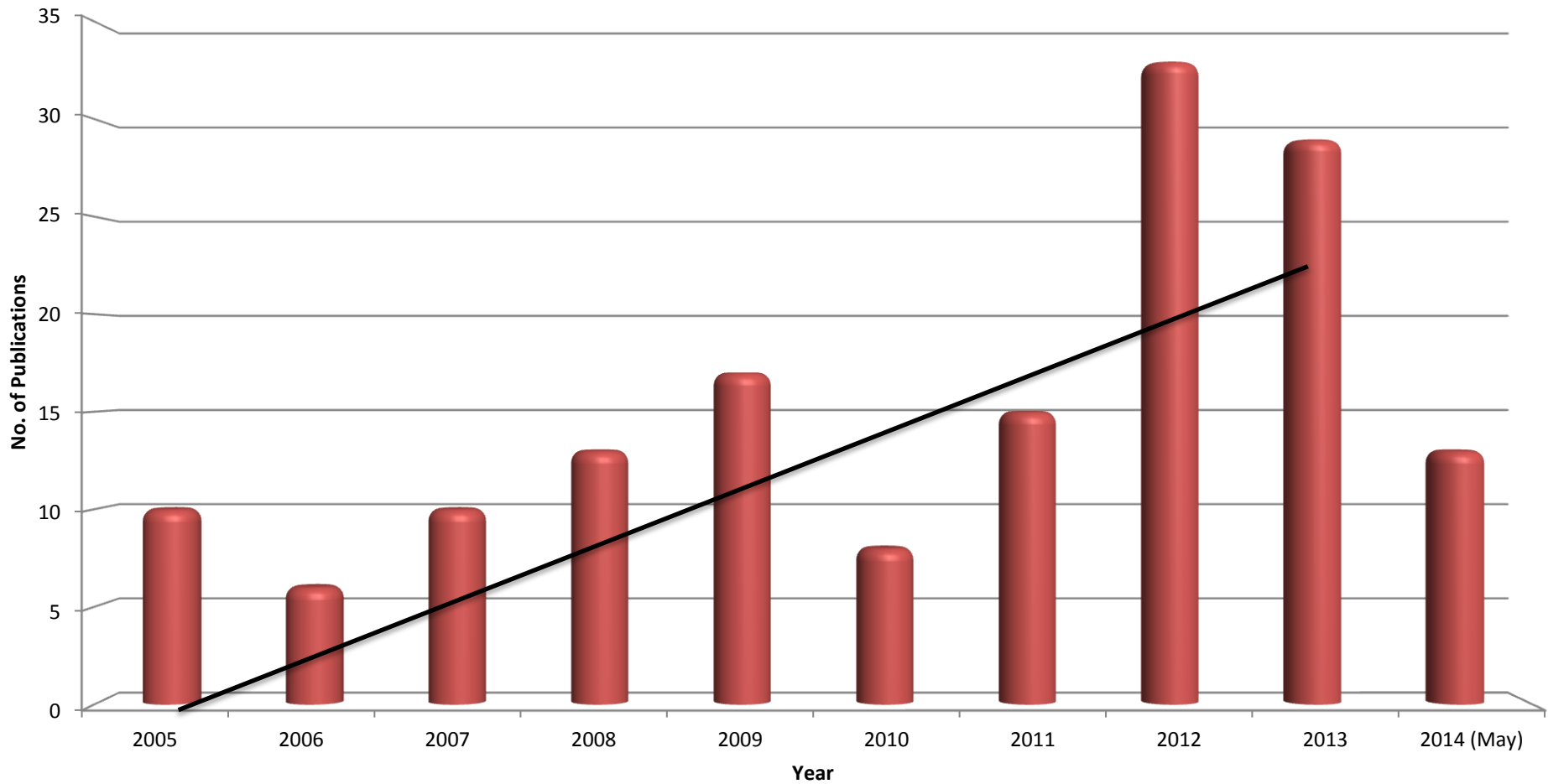
Key search words: Economics analysis, economics evaluation, cost minimisation, cost effectiveness, cost utility, cost benefit, technology assessments/appraisals, outcome analysis, quality adjusted life year, cost savings, cost of illness

Basic driving factors for HE data utilization in health care decision making

- Resource scarcity and hence a need for rational allocation √
- Presence of a universal healthcare insurance system √
- A policy that is government-led √
- Availability of expertise √
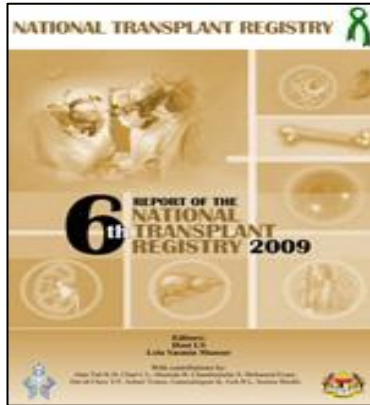
Secondary requirements

- Opportunities for training/education √
- Availability of sources of information: patient databases /registries √
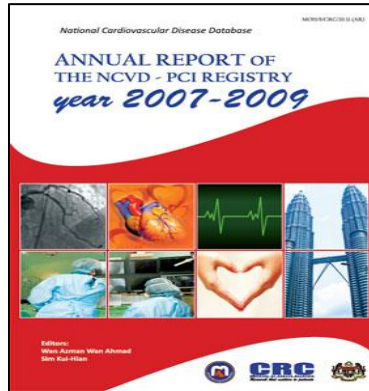- A set of HE guidelines in place √

Looking ahead

Areas requiring urgent attention

- Improvement in availability of local data
- Threshold for cost-effectiveness
- Improvement of guidelines
- Building of capacity
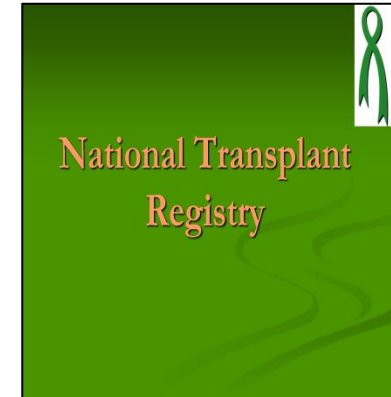- Potential conflict of interest in sponsored studies
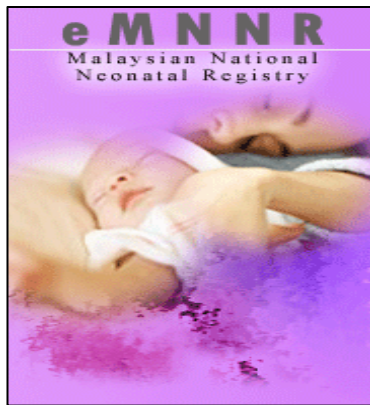
Local Data from 28 Disease Registries

National Renal Registry – Malaysian Dialysis and Transplant Registry (1992)
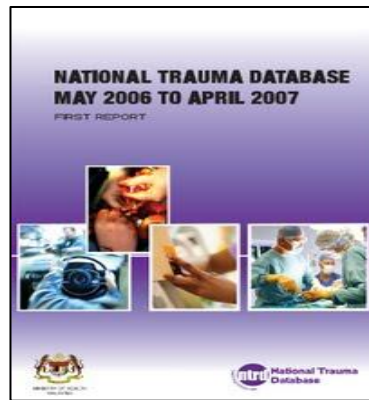

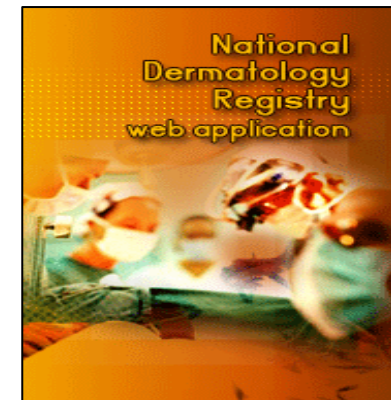National Cardiovascular Disease Database (NCVD)(2006)

National Transplant Registry (2003)

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Interpretation of results: thresholds of Incremental Cost-effectiveness Ratios (ICERs)

1. Based on QALY or LYG

- USA: US$50,000-100,000/QALY

- Australia: A$42,000/LYG

- NICE: £20,000-30,000/QALY

- Canada: US$87,800/QALY

2. Based on GDP per capita

- **WHO, 2002:**

  < GDP   : very cost-effective
  > GDP but < 3 x GDP   : cost-effective
  > 3 x GDP   : Not cost-effective

Value in Health 2004;7:518. Use of Cost-Effectiveness Analysis in Health-Care Resource Allocation Decision-Making: How are cost-effectiveness thresholds expected to emerge?

# Thresholds for cost-effectiveness

Approaches

- 3 x GDP (WHO recommendation) vs national threshold

- Fixed vs floating thresholds (to accommodate new innovative products such as biologics, orphan disease drugs, anti-cancer agents) or a combination of both

Malaysia Pharmacoeconomic Guidelines 2012

Purpose:
To provide guidance for conducting pharmacoeconomic analysis in the Malaysian context

- Developed by the MOH Pharmaceutical Services Division (BPF)

- Recommending CEA, CUA & Budget Impact Analysis

- Intended to be used in conjunction with modified BPF requirements (under development) for MOH formulary listing

MINISTRY OF HEALTH MALAYSIA
PHARMACEUTICAL SERVICES DIVISION

PHARMACOECONOMIC GUIDELINE FOR MALAYSIA
(MARCH 2012)
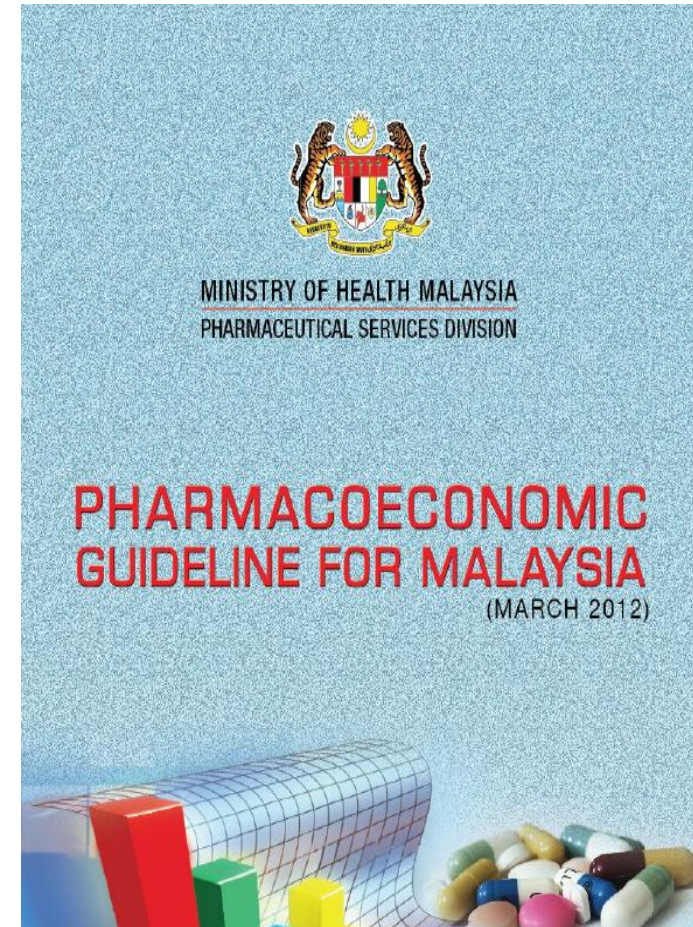
Guidelines

- Guidelines for submission of dossier for pricing and reimbursement √

- Guidelines for methodological standards of economic evaluation √

- Guidelines for systematic reviews and meta-analysis

- Guidelines for preparation of economic evaluation report

- Guidelines for evaluation of pharmacoeconomic reports

- Guidelines for evaluation of pharmacoeconomic literatures

Building of capacity

Background & experiences required:

- Background in clinical research
- Experience in HEOR Studies
- Expertise in biostatistics
- Experience in clinical data management
- Experience and interest in medical writing

Potential conflict of interest in sponsored studies

Background

- Review of 1988-1994: 92% studies favourable, 83% sponsored studies in *PharmacoEconomics* (Sacristan et al 1997)

Potential concerns

- Potential bias towards sponsors
- Economic analyses are generally less standardized compared to RCT due to subjective opinion and hence interpretation of results
- Tendency to report only positive findings in order to enhance future funding

Possible explanation

- Positive findings are usually easier to publish and to attract readers' attention (publication bias)
- Only positive results were selected for retrospective economic analysis

Recommendations

- More public funding for research
- Development of methodological guidelines e.g. "Consolidated Health Economic Evaluation Reporting Standards" (CHEERS) guidelines 2013, ISPOR guidelines for modeling studies
- Improved scientific rigor to studies to assure credibility

Summary

- HE research is overall progressing in Malaysia but not at a pace that is expected of a developed healthcare system

- Health care reform will further reveal the significance and potential contribution of HE data

- Stumbling blocks are present but should not be the excuse for abolishment

- Requiring: clear commitment from government, building of capacity asap, local data be collected and made available to researchers

Acknowledgements

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- Mr Fun Weng Hong for technical assistance