



Introduction to Pharmacoeconomics

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Jakarta, 15 November 2017

Background

- **Cost of medicine and health services tend to rise. Estimated cost of medicine is about 10% to 15% of total cost of health service.**
- **Financing of health service :**
 - ✓ **Individuals 56%**
 - ✓ **Government 25%**
 - ✓ **Employer 14%**
 - ✓ **Insurance 5%**
- **It is considered necessary to identify means and ways or strategies to lower the cost of health service without jeopardizing clinical factors.**

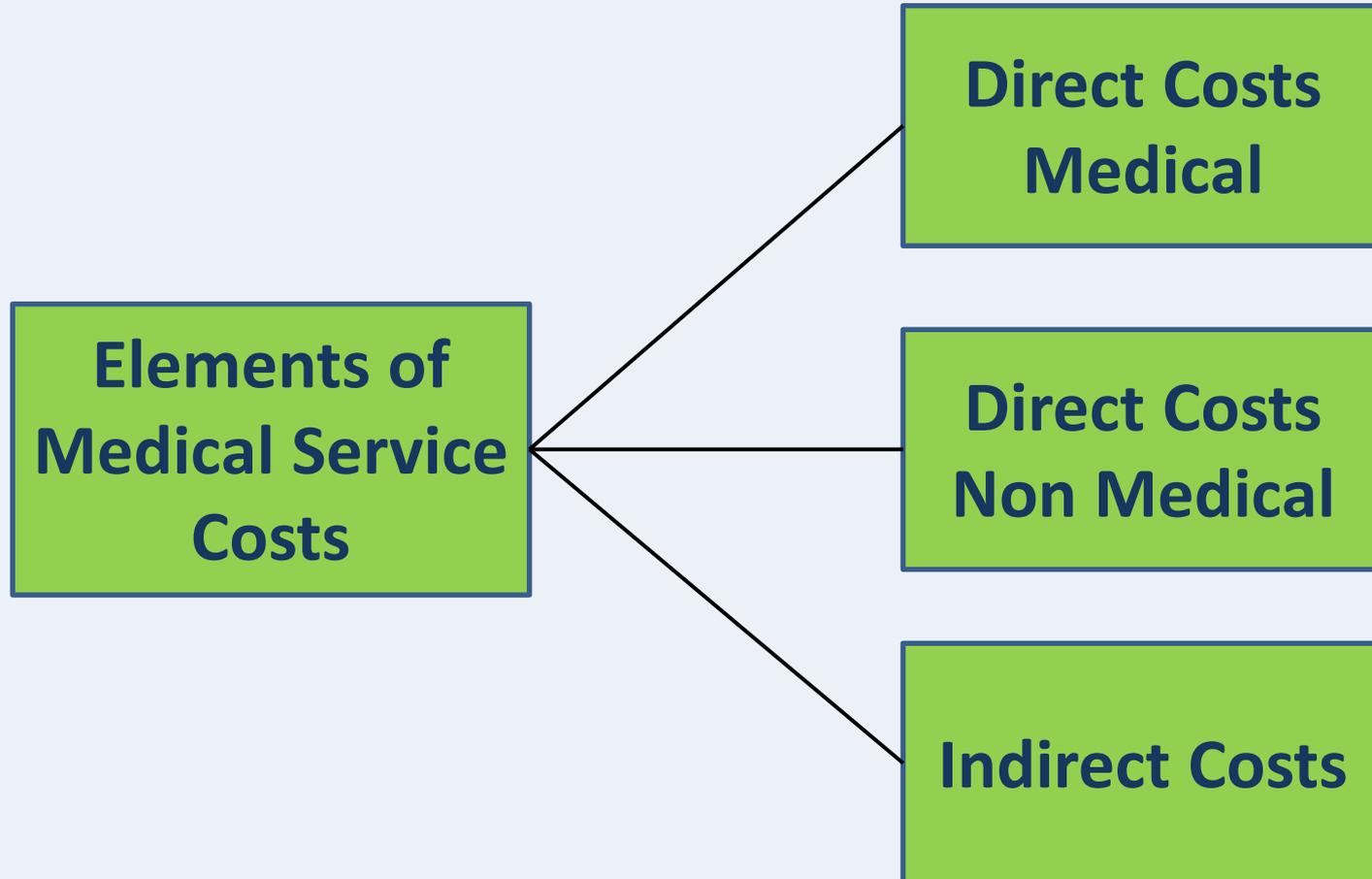
Pharmacoeconomics

- has been defined as “the description and analysis of the costs of drug therapy to health care systems and society.”
- Pharmacoeconomic research identifies, measures, and compares the costs (ie, clinical, economic, humanistic) of pharmaceutical products and services.

Pharmacoeconomics Research

- **Pharmacoeconomic studies address issues regarding two conflicting factors of medical treatments :**
 - **The cost of a medical treatment, and**
 - **The outcome of a medical treatment.**
- **Cost should always be an important element in medical treatment, due to limitation in the availability of resources, particularly financial resources. A budget constrained situation is typical.**

Cost of Health Services



Cost of Health Services

- **Direct Cost Medical** is the amount of money spent by the patient for the medical service, prevention or detection of health problem, and medical consultation as well as prescribed medicine (MOH-RI, 2013).
- **Direct Cost Non Medical** is the amount of money spent by the patient for product or services that are not directly related to the medical service, ie costs of transport (to medical facilities), food, and other services (Bootman, 2005).
- **Indirect Cost** is the (opportunity) cost of productivity loss, due to patient illness or absence from work for medical treatment (Bootman, 2005).

Perspectives of Health Service Costs

- **Size, and type or components of health service costs may differ depending upon perspective of the study. It is essential to clearly define the perspective in a pharmacoeconomic studies.**
- **4 possible perspectives :**
 - 1. Societal Perspective,**
 - 2. Institutional Perspective,**
 - 3. Individual Perspective,**
 - 4. Payer Perspective.**

Cost of Health Service - Perspective

1. **Societal Perspective** : A broad view from the perspective of the society's interest concerning the cost of health service, program, or health intervention to prevent the wide spread of epidemic disease. It may include studies to evaluate alternative solutions or strategies to address societal health issues.
2. **Institutional Perspective** (Health Service Provider's Perspective) : Cost of health service from the point of view of health service provider.

Cost of Health Service - Perspective

3. **Patient Perspective** : A view from the perspective patient's interest concerning the cost of health service in order to achieve a certain level of quality of life.
4. **Payer Perspective** (Health Service Provider's Perspective) : Cost of health service from the point of view of employer (of the patient), including the cost of health insurance for its employees.

Types of Health Service Costs by Perspective

Cost Component	Perspective			
	Societal	Patient	HS Provider	Payer
Direct Cost Medical				
Health Service Cost	+	+	+	+
Other Health Service Cost	+	+ / --	--	+ / --
Cost Sharing Patient	--	+	--	--
Direct Cost Non Medical				
Transportation Cost	+	+ / --	--	+ / --
Other services Costs	+	--	--	--
Indirect Cost				
Cost of Productivity Loss	+	+	--	--

Note : + included; +/- included (if available); - not included
 Adapted from Rascati et al, 2009, and Shafie, 2011.

Characteristics of Health Service Evaluation

		To cover both cost (input) and result (output) of an alternative ?		
		NO		YES
		Only on Outcome	Only on Cost	
Comparison of 2 or more alternatives ?	NO	<p>1A PARTIAL EVALUATION</p> <p><i>Description of Outcome</i></p>	<p>1B PARTIAL EVALUATION</p> <p><i>Description of Costs</i></p>	<p>2 PARTIAL EVALUATION</p> <p><i>Description of Outcome and Costs</i></p>
	YES	<p>3A PARTIAL EVALUATION</p> <p><i>Evaluation of effectiveness</i></p>	<p>3B PARTIAL EVALUATION</p> <p><i>Cost Analysis</i></p>	<p>4 ECONOMIC EVALUATION</p> <p><i>Cost Analysis</i> <i>Analysis of Effectiveness</i> <i>Utility Analysis</i> <i>Benefit Analysis</i></p>

Categories of Pharmacoeconomic Techniques

Technique	Distinguishing features
Cost-of-illness	Identifies and measures the costs of the illness itself, but <i>not</i> treatment outcomes
Cost-benefit	Measures the costs of treating an illness, along with monetary equivalents for the treatment's outcomes
Cost-effectiveness	Measures the costs of treating an illness, but using <i>clinical</i> measurements for the treatment's outcomes
Cost-utility	Measures the costs of treating an illness, but using <i>preference</i> equivalents for the treatment's outcomes
Cost-minimization	Directly compares the costs of treatment options for an illness, assuming <i>equivalence</i> of their outcomes

Conclusion

- **Pharmacoeconomics uses cost-of-illness, cost-minimization, cost-benefit, cost-effectiveness, and cost-utility analyses to compare pharmaceutical products and/or treatment strategies.**
- **Pharmacoeconomics is an aid to better decision making (Arenas Guzman R, et al, 2005)**

THANK YOU