

Pharmacoeconomics

Pharmacoeconomics: The description and analysis of the cost of drug therapy to the health care systems and society.

OR

Pharmacoeconomics may be defined as balancing the cost with the consequences (outcomes) of pharmaceutical therapies and services.

Cost: The total resources consumed in providing a good or service

Price: The amount of money required to purchase an item.

Drug Effectiveness: The effects of a drug when used in real life situation.

Drug Efficacy: The effects of drug under clinical trial condition

Application of pharmacoeconomics

- The value of one treatment over another in terms of the cost for each unit of health gained.
- Avoidance of costs associated with the failure to use an appropriate medicine, for example antimicrobial surgical prophylaxis.
- Avoidance of the costs of the side effects or adverse effects of a medicine.
- Financial planning and horizon scanning for new medicines.
- Prioritization of health care resources. Health gain, quality of life issues and patient preferences.
- Duration of care and balance between inpatient, day care and outpatient care.
- Changes in legislative controls, for example reclassification of medicines from prescription only to pharmacy status.
- Costs of concordance and non-concordance.
- Economics of health service delivery.

Pharmacoeconomics provides a set of analytical tools that can help identify which of several alternatives offers the greatest benefits compared with its cost.

Cost minimization analysis – Calculating the cost of two or more alternatives that have the same outcome to identify the lowest cost option.

Cost minimization analysis: The benefits have to be measured in the same units and all the alternatives considered need to produce the same quantity of benefits – Identify the lowest cost alternative, - needs only calculation of costs. (If two drugs have the same therapeutic benefit, have the same safety profile and are of equivalent quality, the drug with lower cost would be selected).

Cost - effectiveness analysis - measuring both costs and benefits of alternatives to find the strategy with the best ratio of benefits, measured in therapeutic or programme effects, per money unit.

Cost Effective Analysis: Unit of output of the alternatives is the same, but the quantities of output or effectiveness of the strategy, can differ. - Identify the option with the lowest cost of benefit. Ex: Different vaccination strategies: - (Fixed Point, Outreach, Campaign) may reach different numbers of children and have different levels of effectiveness. The cost effective analysis will help identify the one that has the lowest cost per fully immunized child. Output/benefits can be measured as intermediate outputs (cost per child vaccinated, cost per course of therapy).

Cost – Utility analysis - same as cost effectiveness analysis except that benefits are measured in utility units (which are often controversial).

Cost Utility Analysis: Simple cost effective analysis conducted with programme outcome measured in utility units. The common utility measure is the quality adjusted life year (QALY). The years are weighed by the 'quality' of those years where they are lived in less than perfect health. Not much useful because quality of life scales are not perfect measures.

4. Cost benefit analysis – Comparison of cost and benefits of any intervention by translating the health benefits into a money value, so that both costs and benefits are measured in same units

Cost benefit analysis is rarely under taken in health section because of difficulty of assigning a monetary value to live years saved. However, it allows the comparisons of programs with different outcomes. Ex: Investment in Health Vs Investment in Education