HEALTH ECONOMICS.

What is it about?

The explicit measurement and valuation of resource consumption or cost and outcomes (often referred to as consequences or benefits).

Benefits are related to the costs of alternative treatment or management strategies.

What is it about? - 2

It's about getting the optimum benefit for a given set of resources

or

using least resources to achieve a given benefit.

NOT about the cheapest option!

Perspective.

The viewpoint of the economic evaluation.

- Health service.
- Patient.
- Society.

The broadest perspective is that of society.

Perspective taken determines which costs and benefits will be included.

Costs.

From the NHS perspective:

Fixed costs - incurred, no matter what the level of activity.

Variable costs - vary according to the level of activity.

Types of economic evaluation.

- Cost-minimisation analysis (CMA).
- Cost-effectiveness analysis (CEA).
- Cost-utility analysis (CUA).
- Cost-benefit analysis (CBA).

Cost-minimisation analysis (CMA).

Used when the effect (outcome) of both interventions is identical (or assumed to be identical).

No outcome measurement.

Only costs are accounted for.

Example of CMA.

Comparison of day surgery with traditional in-patient treatment for hernias and haemorrhoids.

The outcome of interest - success operations - was the same in both cases.

Therefore, only interested in the different costs associated with each programme.

Russell et al.
Lancet 1977; i : 844-847.

Cost-effectiveness analysis (CEA).

Used when the effect (outcome) of the two interventions is expected to vary.

The outcome is measured in natural units e.g. BP, cholesterol level, mortality, live years saved.

The outcome is one dimensional - addresses quantity or quality, not both.

Example of CEA.

Comparison of the cost effectiveness of metallic stents with plastic endoprostheses in palliation of oesophageal cancer.

Metallic stents may lead to increased survival - based CEA on that.

O'Donnell et al, 2000.

Cost-utility analysis (CUA).

Used when the effect (outcome) of the interventions on health status has two or more dimensions.

Measures outcome in terms of quantity and quality.

Combines these into a single measure eg the QALY.

Can be used to compare interventions with a disease or condition or across different diseases or treatment options.

QALY.

Quality adjusted life year.

A measure which tries to combine a quantitative measure (months gained, years gained) with a qualitative measure of the quality of that measure.

Example of CUA.

Treatment options facing patients with angina.

Eg. For patients with severe angina, what was the expected quality and length of life for those receiving CABG vs. those managed medically.

Williams.
BMJ 1985; 291: 326-329.

QALY league tables.

Rank interventions on the basis of the cost per QALY.

	Cost per QALY (£)
Cholesterol testing & treatment by diet (40-69y)	220
Hip replacement	1180
Breast cancer screening	5780
CABG (one vessel disease, mod. angina)	18830
Neurosurg. Ix. for malignant intracranial tumours	107780

Mason et al.
BMJ 1993; 306: 570-572.

Cost-benefit analysis (CBA).

CBA place a monetary value on benefits or outcomes.

Generally based on individuals' observed or stated preferences and values for something.

Most common approach is "willingness to pay".

Marginal costs.

The change in total costs resulting from a marginal change in activity.

The cost of producing one extra unit of activity, e.g. one more test; treating on more patient.

Can vary markedly from the average cost.

Average vs. marginal costs.

No. patients	Total cost (£)	Average cost (£)	Marginal cost (£)
10	4000	400	0
20	5000	250	100
30	6000	200	100
40	6800	170	80
50	7400	148	60

Robinson.
BMJ 1993; 307: 726-728.

Incremental analysis.

The additional costs that one service or intervention imposes over another, compared with the additional benefits it delivers.

Example of incremental analysis.

Economic evaluation of two drug treatments (20 patients in each group).

Drug	Total costs	No. of "cures"	Ratio of cost:cure
A (£100 ea.)	£2000	10	£200
B (£125 ea.)	£2500	12	£208
Increment (Drug B over drug A)	£500	2	£250

Greenhalgh, 2000.