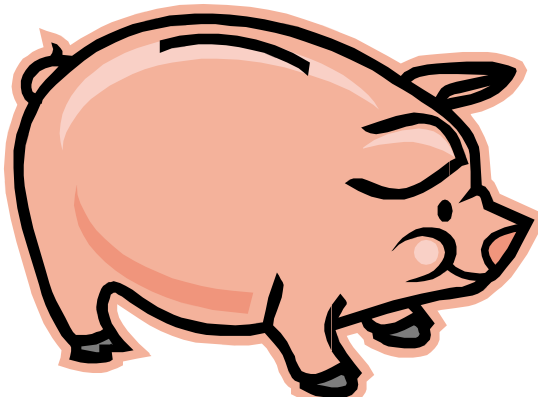


Presentation 2

How to estimate costs



Which costs to include?

- **Perspective**

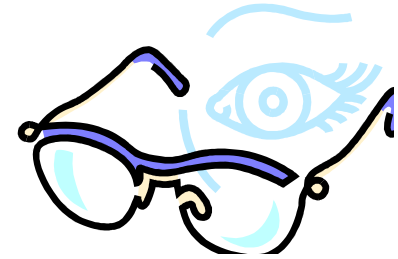
- Defines the categories of cost to be included in an economic evaluation
- Most organisations undertaking ‘health technology assessments’ take a restricted perspective, e.g. focusing solely on costs falling on the health care system
- A vexed issue – some argue that such narrow perspectives distort priorities, especially where the costs fall on one budget and the benefits/savings accrue in another budget excluded in the decision-making process

Which costs to include?

- **Time horizon**

- Future costs related to the index disease / treatment (both in years of life lived anyway and in years of life gained as a result of a treatment)
- Future costs unrelated to the disease (both in years of life lived anyway and in years of life gained as a result of a treatment)
- Defining whether or not a treatment is ‘related’ or ‘unrelated’ is difficult
- Exclude unrelated costs that occur during years of life-lived anyway since they are identical across treatment strategies (Gold, 1996)
- Less agreement over whether to include unrelated costs in years of life gained
 - Consistency with respect to the measure of benefit

Which costs to include? – NICE Appraisals and Guidelines



- **Perspective?**

- NHS & Personal Social Services for NICE evaluations
- Costs to other public bodies may be considered as additional factor (**but** not costs by patients and carers that are not reimbursed by the NHS or PSS) – “non reference case analyses”
- Costs of time off work not counted in £ terms: can be inequitable and danger of double counting



- **Time horizon?**

- A lifetime horizon should normally be adopted if a treatment affects survival at a differential rate when compared with the relevant comparators
- Include immediate costs of treatment + cost of treating complications - savings from reduced risks of related illness
- Sometimes a shorter time horizon may be reasonable

Issues

- “The Institute works in a specific context; in particular, it does not set the budget for the NHS. The appropriate objective of the Institute’s technology appraisal programme [**and guidelines programme**] is to offer guidance that represents an efficient use of available NHS and PSS resources. For these reasons, the reference-case perspective on costs is that of the NHS and PSS.”
- Non-reference-case analyses → benefits and costs (or cost savings) to other government bodies should be presented separately from the reference-case analysis.

Issues (contd)

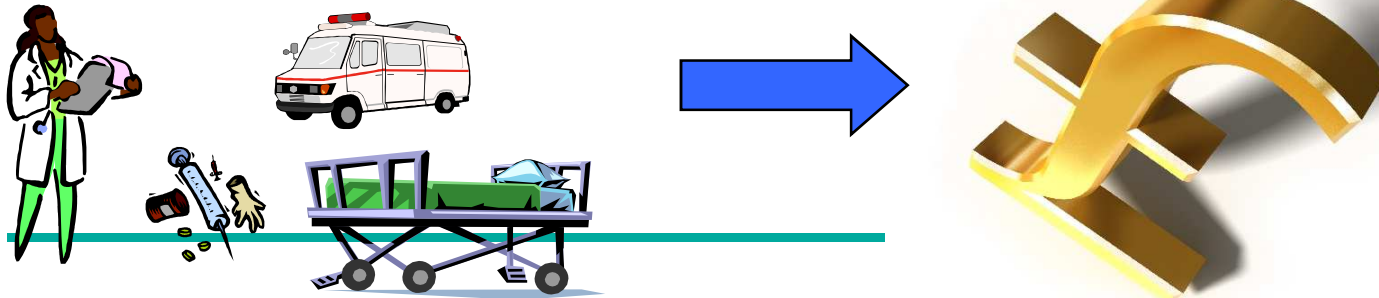
- Examination of the costs falling on patients and families may give an indication of likely adherence to a treatment regimen and/or acceptance by payers of increased premiums if coverage can also be widened.

But...

- Inclusion of unreimbursed costs to patients and their families may lead to the problem of 'double counting' if adjustment has been made to the benefit (QALY) side of the equation.

How to estimate costs?

- Estimate resource use per patient for each intervention
 - E.g. numbers of physician visits, outpatient visits, tests, drug use...
 - Sometimes reported in clinical trials or other studies
 - May need assumptions from guideline developers or other experts
- Multiply by unit costs for each resource
 - Some standard national sources... Colombia?
 - Sometimes available from clinical studies
 - May sometimes have to use local estimates



Some sources of unit costs - UK

Drugs	BNF 'net prices' http://www.bnf.org
Staff time	PSSRU 'unit costs of health and social care' http://www.pssru.ac.uk/
Hospital procedures, outpatient visits, tests and some community events	DH tariff and reference costs http://www.dh.gov.uk

Reference Costs - overview

- Reference Costs are the average cost to the NHS of providing a defined service in a given financial year.
- They have been collected annually since 1998 (financial year 1997-98)
- The annual Reference Cost collection is mandatory. It is also mandatory for commissioning of services for NHS patients whose care is provided by non-NHS providers

Uses of Reference Costs

- Used by the NHS to performance manage and benchmark their services
- Increasingly used by other government departments
- Can also be used to determine NHS providers' relative efficiency by assigning a Reference Cost Index (RCI) to each provider.
- Reference costs data is used to inform the national tariff under Payment by Results (PbR)

Reference Costs – what they include

Costs published for:

- Elective, Non-elective and Daycase inpatients
- Outpatients – First, Follow-up, face to face etc
- Critical care
- “Unbundled” services
- Direct Access tests (pathology etc)

- Since HRG based unit cost data are an average across what are considered clinically related interventions, it is perhaps known (or suspected) that the unit cost of a particular intervention differs markedly from average.

Reference Costs

[Index](#) National Schedule of Reference Costs 2006-07 -
NHS Trusts and PCTs Combined
Direct Access : Pathology Services

Code	Test Label	No. of Tests	National Average Unit Cost £	Interquartile Range of Unit Costs ²		No. of Data Submissions
				Lower Quartile £	Upper Quartile £	
DAP823	Haematology [Excluding Anti-Coagulant Services]	42,160,434	3	3	5	151
DAP824	Histology / Histopathology	1,504,213	26	19	49	141
DAP830	Immunology	1,404,032	9	6	11	75
DAP831	Microbiology / Virology	18,232,509	7	5	10	148
DAP832	Neuropathology	48	138	138	138	1
DAP838	Cytology [not including Cervical Screening Programmes]	627,992	20	12	26	66
DAP839	Phlebotomy	2,716,987	2	2	4	40
DAP841	Biochemistry	164,839,824	1	1	2	145
DAP842	Other	4,741,183	2	3	22	41

DAP841	Biochemistry	164,839,824	1	1	2	145
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Unit costs of Health and Social Care

- Basic methods for costing health and social care professionals:
 - Estimate cost per hour → take the total annual salary costs of the professional + appropriate employer costs (e.g. pension contributions) and overheads, then divide it by the number of hours worked per year.
 - Adjust the cost per hour to take into account time spent in face to face contact with patients and time spent on other activities e.g. preparation, administration, supervision and training.
- Can be challenging to apply in certain situations, e.g. group based psychological interventions (Barrett and Byford, 2008)

Study-based cost information

- Analysis of patient level cost / resource use data collected in a study
 - Needs to be analysed differently from standard clinical data because:
 - Cost / resource use data often skewed, bounded by a lower value of zero; use non-parametric bootstrapping to obtain mean costs
 - Missing cost data – restrict or fill in the gaps?
 - Censored data, e.g. because of inadequate follow-up; different patients can accumulate different costs at different times
- Legitimacy of resource use/cost estimates based on trials