



Economic Analysis and Clinical Guidelines

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Why Economic Analyses should be incorporated in Clinical Guide lines?

- ▶ In an era of increasingly finite financial resources, **allocation of scarce** medical resources has become an **important factor in health policy decision making**.
- ▶ **EBM** and **Economic Analyses** address the values of **effectiveness** and **efficiency** to allocation decision making.
- ▶ **Economic analyses** are an important type of evidence that could **inform the practice of evidence-based medicine**.

Why Economic Analyses should be incorporated in Clinical Guidelines? (con...)

- ▶ 80% or more healthcare costs may be directly related to clinical decisions.
- ▶ For policy/decision making aims, guidelines should be informed by the highest quality economic evaluations available in the published literature.
- Although focusing on effectiveness and efficacy is necessary to define the effect of a drug or surgical intervention, it is not sufficient to provide the breadth of evidence that guideline groups need to derive recommendations for clinical care.

Clinical Practice
Guidelines



Economic Analyses

Why not a Match Made in Heaven



Problems confronting guideline developers

- ▶ The **guide lines** and the **economic analysis** have worked largely in **isolation** and
- ▶ ignore each other when they compile and report their findings.
- ▶ **Why is this so?**
 1. different view of **what is the “Best Practice”?**
 2. **Clinicians** are not familiar with principals of Health Economics.
 3. High **quality** economic data are rarely available.
 4. Clinicians(specially in RCTs) **focus on immediate** health effects.
 5. **Utility concepts** are very subjective, time and resource consuming.

Economic Analysis and CPGs : International View

- ▶ In the **US**, the **Committee on Clinical Practice Guidelines** recommends that **every set of clinical practice guidelines** includes information on the **cost implications** of alternative preventive, diagnostic and management strategies for the clinical situation in question.
- ▶ In the **UK** , the **National Institute for Clinical Excellence (NICE)** has used results of **cost-effectiveness studies** in the development of their technology assessment reports and also **in the development of clinical guidelines**.
- ▶ In the **Netherlands**, the **Ministry of Health** initiated a program **to include economic information** in the formulation of national clinical guidelines through professional bodies on a pilot basis.
- ▶ Similar developments are taking place in **Australia, New Zealand, Canada and Sweden**.

Guideline Development Abroad(Cont)

The Limited Incorporation of Economic Analyses in Clinical Practice Guidelines

Joel F. Wallace, PharmD, MPH, MBA, Scott R. Weingarten, MD, MPH, Chiun-Fang Chiou, PhD, James M. Henning, MS, Andriana A. Hohlbauch, MPH, Margaret S. Richards, PhD, Nicole S. Herzog, MD, Lior S. Lewensztain, Joshua J. Ofman, MD, MSHS

- Guidelines as the unit of analysis:
 - 9 of 35(26%) : incorporated in the text
 - 11 of 35(31%) : incorporated at least 1 in the references.

- Economic Analyses as the unit of analysis
 - 63 EA had opportunities for incorporation across the 35 guidelines.

Guideline Development Abroad(Cont...)

Economic analysis for clinical practice – the case of 31 national consensus guidelines in the Netherlands

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Some examples of modern clinical guidelines

- ▶ Five evidence-based guidelines have been produced, explicitly incorporating an approach to economic thinking:
- ▶ **Ace-inhibitors** in the management of adults with symptomatic heart failure.
- ▶ **Aspirin for the secondary** prophylaxis of vascular disease.
- ▶ **Non-steroidal anti-inflammatory** drugs(NSAIDs) versus basic analgesia in the treatment of osteoarthritis.
- ▶ **The management of dementia**, the choice of antidepressants for depression.

How Economic Analyses should incorporated in Clinical Guide lines?

- ▶ Williams argues **that guidelines based on effectiveness issues and then costed** may differ substantially and be less efficient than **guidelines based on cost-effectiveness issues.**
- ▶ Williams A. How should information of cost-effectiveness influence practice? In: Delamothe T, editor. Outcomes in Clinical Practice. London: BMJ, 1995.

How Economic Analyses should be incorporated in Clinical Guidelines?(cont...)

- ✓ Guideline development groups
 - Should have appropriate multidisciplinary membership.
 - Should be trained in health economics as well as in meta-analysis to widen the scope of guideline development.
- ✓ Cost impact of interventions should be considered.
- ✓ Economic Evaluation and HTA methods is necessary.
- ✓ Adopting an appropriate perspective.
- ✓ For generalizability aim, sensitivity analysis should be considered.
- ▶ to understand the long term overall health impact of treatment alternatives upon a disease process, analysts use “modeling techniques”.

To summarize

- ▶ Most evidence based clinical guidelines focus predominantly on clinical effectiveness.
- ▶ Evidence on effectiveness alone is not enough for guideline groups to make recommendations for clinical care.
- ▶ Cost of interventions should be included in guidelines because recommendations may be influenced by the effect on resources.
- ▶ Members of guideline development groups are not familiar with health economics.
- ▶ Guideline development group members should be trained in health economics as well as in meta-analysis to widen the scope of guideline development.
- ▶ we can find some cost effectiveness guidelines for a series of focused areas.(5)

Appendix 1

Checklist for the assessment of the economic evaluation of practice guidelines

1. Are health outcomes adequately identified, measured and valued?

Health-outcome measures (more than one answer is possible)

1. Intermediate end points (like blood pressure reduction)
2. Disease-specific end points (like reduction of cardiac events, event-free survival, complication-free survival)
3. Life years gained
4. Quality-adjusted life years or disability-adjusted life years
5. Not mentioned

Description of quality-of-life measurement

1. Assessment through a generic quality-of-life questionnaire
2. Assessment through a disease-specific quality-of-life questionnaire
3. Combination of 1 and 2
4. None assessed
5. Not mentioned

Valuing health effects; utility weighting

1. Weighting based on a generic quality-of-life questionnaire (EuroQol)
2. Conversion of disease-specific outcomes to utilities through a direct weighting method
3. Utility weights have been established during guideline formulation
4. Utility weights have been established by an expert panel
5. Not valued, only described
6. Not mentioned

2. What is the proof of clinical effectiveness of the interventions?

Levels of proof of clinical effectiveness

1. A1: meta-analyses, based on two or more randomized studies of the A2-level and with consistent results
2. A2: one clinical study of high-quality, i.e. randomized, double-blind controlled trials, of sufficient size and consistency
3. B1: one randomised clinical trial of lesser quality or insufficient size
 - B2: naturalistic study
 - B3: cohort studies, patient-control study
4. C: non-comparative study
1. D: expert opinion

From efficacy to effectiveness

1. There has been a (successful) attempt to convert efficacy data to effectiveness data
2. There has been no attempt to convert efficacy data to effectiveness data

3. What costs are measured and how?

Levels of cost measurement or consumption of medical resources

1. Prospective measurements based on registries, questionnaires, diaries etc.
2. Retrospective measurements based on existing registries
3. Retrospective measurements base on literature data
4. Retrospective assessment based on expert opinion
5. Not mentioned

Valuing productivity costs (in case of lost working days)

1. Employment
2. Human-capital-method
3. Friction cost method
4. Unemployed labour
5. Opportunity cost method
6. Shadow price method (market alternatives)

Valuing time cost (like a visit to the outpatient department)

1. Opportunity costs method
2. Shadow price method (market alternative)

Discounting

1. Discounting at 4% annually within explicit time frame
2. No discounting within explicit time frame
3. Other discount percentages
4. Not mentioned

4. What are the sources of cost estimates and for what cost parameter?

Number and kind of health facilities where health volumes were measured

1. Academic hospitals
2. General hospitals
3. Specific institutions

Appendix 1 *Continued*

4. Nursing homes
5. Home care
6. Other
7. Not mentioned

Costing of medical resources (more than one answer can be correct)

1. Standard prices
2. National recommended prices
3. Adapted standard prices
4. Costing study carried out
5. Not mentioned

Source of cost estimates of parameters

Costs

1. Estimates from in-country data
2. Expert opinion

Effects

1. Estimates from in-country surveys
2. Estimates from international surveys
3. Expert opinion

Source of costs and effects

1. Costs and effects in a population are measured simultaneously in a relevant in-country setting
2. Costs and effects in a population are not measured simultaneously. Effect data were known and cost estimates are added,
3. based on in-country data
4. Costs and effects in a population are not measured simultaneously. Effect data were known and cost estimates are added, based on data from other countries
5. Not clear/not mentioned

Duration of follow-up

1. Sufficient duration of follow-up in relation to the intervention to establish long-term effects and costs
2. Sufficient duration of follow-up combined with appropriate modelling
3. Short-term clinical end points without valid information on the relation between these end points and effectiveness in generic health-outcome measures (disability or death)
4. Not clear/not mentioned

Breakdown of costs and effects

1. Absolute costs and effects are reported of various alternatives
2. Only changes in costs and effects are reported of various alternatives
3. Only cost-effectiveness ratios (CER) are reported for various alternatives

5. How is modelling done? What uncertainty and sensitivity analysis took place?

Use of models

1. An existing model is used
2. A new model is used
3. No model is used
4. Not mentioned

Type of model

1. Decision-tree
2. Markov-model
3. Micro-simulation model
4. Other

Purpose of the model

1. To prepare and develop a cost-effectiveness analysis
2. To replace (parts) of a randomized study
3. To extrapolate study results for a longer period, or a different country or population
4. To support implementation of guideline recommendations
5. Not clear/not mentioned

Type of sensitivity analysis

1. There has been a multivariate analysis
2. There has been a univariate analysis for important parameters
3. The distribution of parameters is given and their contribution in the total costs and effects
4. There has been no analysis
5. Not mentioned

Use of confidence intervals

1. A confidence interval for CERs is given
2. No confidence interval for CERs is given

Appendix 2

References of the individual guidelines including economic evaluations

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A Message

“Health interventions are not free, people are not infinitely rich, and the budgets of [health care] programs are limited. For every dollar’s worth of health care that is consumed, a dollar will be paid.”

*Best
Wishes*

Wishes

Best