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# Health Economic Principles for Tackling Financial Crisis

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## 1. Introduction

The financial crisis that hits developed countries from time to time might lead to a budget cuts in state provided services such as healthcare, education, transport and in other sectors. This involves responses to the challenges associated with funds being cut over the financial crisis. Optimal approaches to redistributing scarce and diminishing resources can differ from one department to another; different strategies may be required to overcome the tensions arising in certain settings. Even under conditions of dwindling resources, it is mandatory that patients continue to receive the most efficient, effective and equitable services available. In this paper,the focus is on presenting the appropriate health economic principles for tackling such challenges. Understanding these principles might help in minimising the costs and maximising the benefits.

## 2. Principles of Health Economics

### 1) Demand and Resources

Whether there is currently an increase or a decrease in healthcare funding, the demand for healthcare services may be considered either as relatively constant or as infinite (Robinson 1993). However, the 'supply' side – the resources (such as labour, land and capital) expended by any healthcare system – is characterised by scarcity; health services cannot meet infinite demand. They will never be possible to offer *all* of the latest / most expensive treatments and technologies to everyone (Haycox 2009).

### 2) Choices

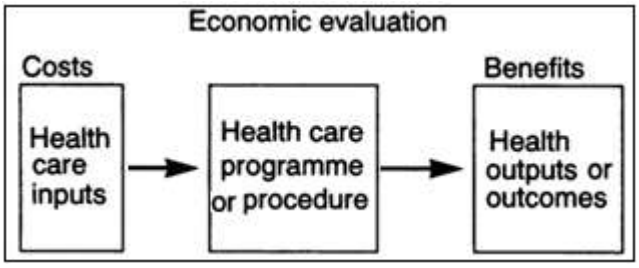
As a result of this scarcity, there is a need for choices to be taken in healthcare provision. This recognition leads us to an important concept in health economics: opportunity cost. In opportunity cost, benefits may be considered as being sacrificed by not consuming certain health resources in treating certain patients through the next best alternative (Haycox 2009). Choices should be made regarding what resources to produce; how to produce them; how to allocate them. Furthermore, prioritisation needs to take place, assessing the competing expenditures and interventions in healthcare services by analysing costs and benefits (Haycox 2009). In this way – employing the principles of health economics - it may be possible to maximize aggregate health benefits from any available budget.

### 3) Efficiency

Efficiency is an important concept in health economics. It helps establish that all inputs are allocated so as to derive the maximum output (Haycox 2009). In allocative efficiency, resources are allocated among health services in order to achieve the greatest benefit to the greatest number. By contrast, in technical efficiency, limited health care resources are used in a specific way to gain the great benefit (Haycox 2009). Using techniques of health economic evaluation can thus help in striking the most efficient balance between the relevant costs and benefits.

### 4) Economic Evaluation Techniques

Economic evaluation is a broad term applied to a broad range of economic methods which help in making the best choices between competing interventions (Robinson 1993). In these economic evaluation methods, the relationship between costs and benefits need to be measured and evaluated in order for the scarce resources to be allocated most efficiently (Robinson 1993). Cost minimisation analysis, cost effectiveness analysis, cost utility analysis and cost benefit analysis are all methods of economic evaluation useful to us in planning our post budget-cut strategies.




Source: (Robinson 1993)

### 5) Cost minimisation analysis

This is the best technique to use when the assumed benefits or outcomes of certain competing therapies are the same or similar (Robinson 1993). To clarify, when there is evidence that the output of competing interventions is equivalent, the cheapest intervention is consideredfavourable. For example, 'generic' medication suppliers may be contracted rather than 'brand' suppliers. However, a word of caution: cost minimisation analysis cannot be relied upon if pertinent evidence is not available. Making cost-based decisions while ignoring the outcomes of treatment will result in misleading conclusions being reached (Robinson 1993).

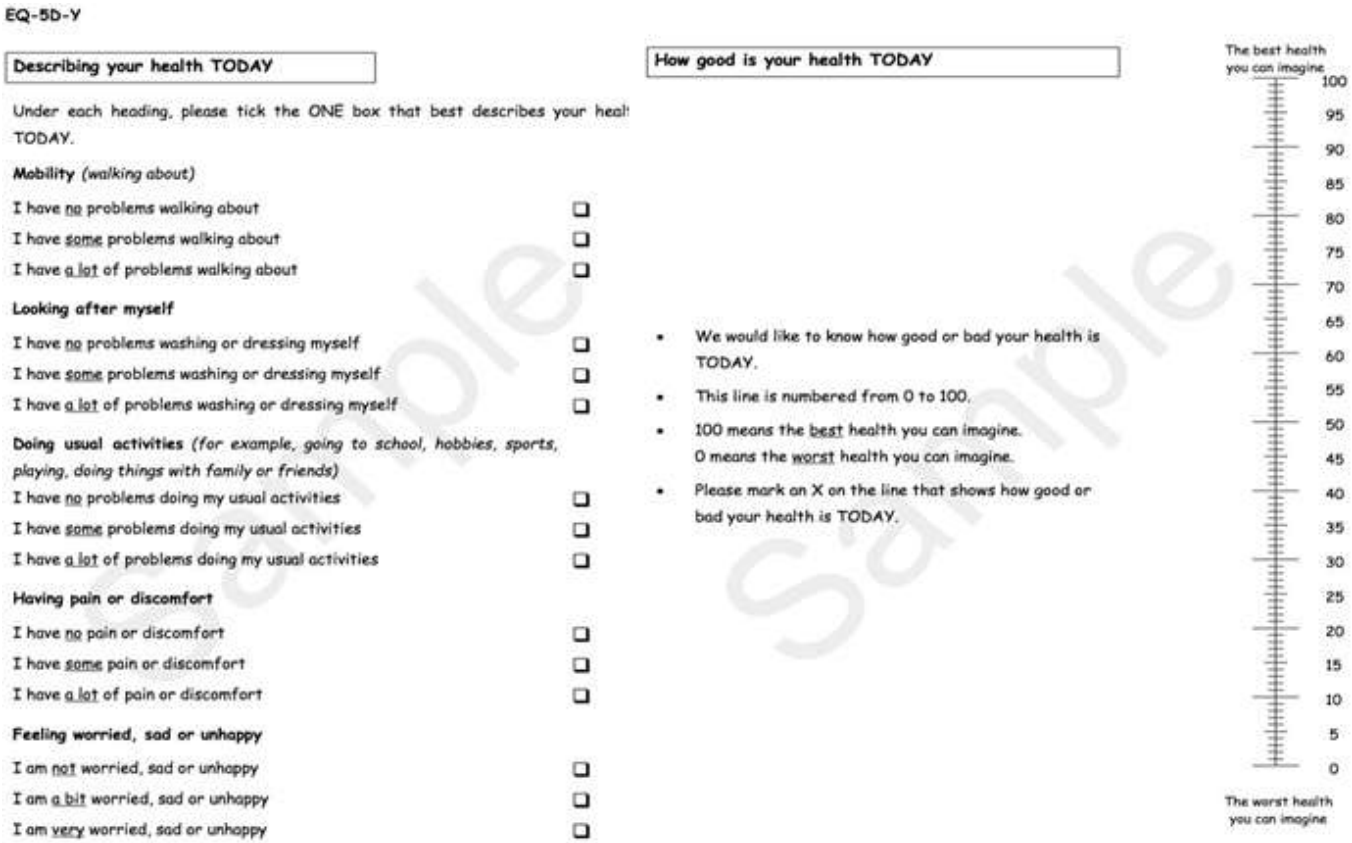
### 6) Cost effectiveness analysis

This is the best technique where there is a common interventional goal for which different interventions exist (Robinson 1993). For example, many treatments exist for reducing hypertension/ high blood pressure. Calculations in this case are related to the concept of technical efficiency - where a given resource is chosen to give the maximum health outcomes. The outcomes are here measured in natural units. The incremental cost effectiveness ratio (ICEA) is commonly used to measure the cost per unit of

the outcome when changing from one intervention to another (Folland et al. 2007). However, cost effectiveness analysis is not useful when the interventional goal is different.

**7) Cost utility analysis**

In recognition of the limitations of cost effectiveness analysis outlined above, cost utility analysis may be favoured as the appropriate measure for real 'cost effectiveness' (Robinson 1993). Cost utility analysis is the best technique when comparing different interventions for different outcomes - for example, when comparing colon cancer intervention with hip replacement intervention (Robinson 1993). In this situation, outputs are measured with the effectiveness unit "utility" through the perceived effect of the intervention on quality of life (morbidity) and quantity of life (mortality). Quality adjusted life years (QALYs) is the most common index used to measure the utility. The QALY is calculated according to this equation: "QALY = additional life years x quality of life" (Robinson 1993). Also, QALY can be measured using EuroQol (EQ-5D) - the most common system used in the UK and other European countries (Johnson et al. 1998).


EQ-5D-Y

Describing your health TODAY

Under each heading, please tick the ONE box that best describes your heal TODAY.

**Mobility** *(walking about)*

I have no problems walking about
I have some problems walking about
I have a lot of problems walking about

**Looking after myself**

I have no problems washing or dressing myself
I have some problems washing or dressing myself
I have a lot of problems washing or dressing myself

**Doing usual activities** *(for example, going to school, hobbies, sports, playing, doing things with family or friends)*

I have no problems doing my usual activities
I have some problems doing my usual activities
I have a lot of problems doing my usual activities

**Having pain or discomfort**

I have no pain or discomfort
I have some pain or discomfort
I have a lot of pain or discomfort

**Feeling worried, sad or unhappy**

I am not worried, sad or unhappy
I am a bit worried, sad or unhappy
I am very worried, sad or unhappy

How good is your health TODAY

- We would like to know how good or bad your health is TODAY.
- This line is numbered from 0 to 100.
- 100 means the best health you can imagine. 0 means the worst health you can imagine.
- Please mark on X on the line that shows how good or bad your health is TODAY.

The best health you can imagine
100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0
The worst health you can imagine

Source: (EuroQol 2008)

**8) Cost benefit analysis**

This is a technique useful when comparing the financial value of both costs and outcomes (Robinson 1993). In such calculations, the outcomes and the costs are measured using the same unit: money. According to this analysis, interventions may be performed if the benefit value is higher than the cost value. This is an important consideration when quantifying allocative efficiency - whereby scarce resources are allocated optimally across healthcare spending to obtain maximal benefits (Haycox 2009).

**9) QALY league tables**

These are the preferred tools for allocating scarce resources (Wilson and Neumann 2012). In these tables, various procedures are presented and classified according to the criterion of cost per QALY. These tables help decision makers in choosing low cost/QALY procedures and avoiding high cost/QALY procedures.

| Intervention | Cost-effectiveness ($US/QALY)* |
|---|---|
| Treatment of multiple sclerosis with interferon β-1b | $500,00–$1,800,000 |
| Methotrexate with infliximab in treating rheumatoid arthritis | $12,000 |
| Survival with epoetin-alfa in women with stage IV breast cancer | $17,000 |
| Ranibizumab for the treatment of subfoveal neovascular macular degeneration | $54,000–$130,000 |
| First line bevacizumab in combination with irrotecan and 5-FU/LV in treating metastatic colorectal cancer | $130,000–$180,000 |
| Omalizumab in patients with severe persistent allergic asthma | $43,000 |
| Abatacept plus oral disease modifying antirheumatic drugs in patients with moderate to severely active rheumatoid arthritis | $46,000–$51,000 |

Source: (Wilson and Neumann 2012)

**10) Prioritisation and Rational Disinvestment**

Disinvestment in any healthcare service necessitates the application of great care if equity in allocating the remaining resources is to be maintained (Donaldson et al. 2010). Healthcare resources should be allocated and reallocated till the maximum benefits are achieved. For this reason, allocative efficiency is a priority. Finding this efficiency, we can be guided by opportunity cost and marginal analysis (Donaldson et al. 2010).

Program budgeting and marginal analysis (PBMA) is another important process, which helps in making rational disinvestment decisions (Edwards et al. 2014). In the program budgeting process, past resource allocation solutions are appraised, with the aim of providing better resource allocation programs in the future. In marginal analysis, the added health benefits and the added costs of a proposed investment are appraised (Edwards et al. 2014). PBMA helps calculate these allocative efficiency and technical efficiency figures, so that the choices of investment in healthcare services may be based on cost-effectiveness interventions and evidence-based medicine.

## References

[1] Donaldson, C., Bate, A., Mitton, C., Dionne, F. and Ruta, D. 2010. Rational disinvestment. *QJM* 103(10), pp. 801-807.
[2] Edwards, R., Charles, J., Thomas, S., Bishop, J., Cohen, D., Groves, S. and Humphreys, C. et al. 2014. A national Programme Budgeting and
[3] Marginal Analysis (PBMA) of health improvement spending across Wales: disinvestment and reinvestment across the life course. *BMC Public Health* 14(1), p. 837.
[4] EuroQol, 2008. EQ-5D-Y. Health Questionnaire [Online]. Available at: http://www.euroqol.org/fileadmin/user_upload/Documenten/PDF/Products/Sample_UK__English__EQ-5D-Y_Paper_Self_complete_v1.0__ID_24749_.pdf [Accessed: 20 March 2015].
[5] Folland, S., Goodman, A. and Stano, M. 2007. *The economics of health and health care*. Upper Saddle River, NJ: Pearson Prentice Hall.
[6] Haycox, A. 2009. What is health economics? [Online]. Available at: http://www.medicine.ox.ac.uk/bandolier/painres/download/whatis/what_is _health_econ.pdf [Accessed: 20 March 2015].
[7] Johnson, J., Coons, S., Ergo, A. and Szava-Kovats, G. 1998. Valuation of EuroQOL (EQ-5D) Health States in an Adult US Sample. *PharmacoEconomics* 13(4), pp. 421-433.
[8] Roberts, A., Sabatier, P. and Jenkins-Smith, H. 1994. Policy Change and Learning: An Advocacy Coalition Approach. *Canadian Public Policy / Analyse de Politiques* 20(3), p. 334.
[9] Robinson, R. 1993. Economic evaluation and health care. What does it mean?.*BMJ : British Medical Journal* 307(6905), p. 670. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1678982/ [Accessed: 20 March 2015].
[10] WALT, G. and GILSON, L. 1994. Reforming the health sector in developing countries: the central role of policy analysis. *Health Policy and Planning* 9(4), pp. 353-370.
[11] WHO, 2015. WHO | Health policy [Online]. Available at: http://www.who.int/topics/health_policy/en/ [Accessed: 20 March 2015].
[12] Wilson, A. and Neumann, P. 2012. The cost-effectiveness of biopharmaceuticals. *mAbs* 4(2), pp. 281-288.

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