Rationing & economic evaluation

Balancing efficiency and equity

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Rationing

- *"Rationing takes place when an individual is deprived of care which is of benefit (in terms of improving health status, or the length and quality of life) and which is desired by the patient."* (Maynard, 1999)
- Given the special nature of health and health care, this is an inherently difficult and sensitive subject
- Some (politicians) even may wish to strive for a situation in which rationing is not necessary or deny the existence of rationing
- However, … rationing is unavoidable.
- May take different forms (implicit, explicit, demand side, supply side)
- The reason for it is as simple as it is controversial: care is scarce since the resources allocated to care are inherently limited and needs / wishes ultimately unlimited
- Scarcity implies the need for deciding what best to do with the available resources – the perfect environment for economists!

Economics

- *Economics is extremely useful as a form of employment for economists.*
- Economist '*knows the price of everything but the value of nothing*'.
- More interested in saving money than saving lives?
- However, *'… the welfare economist wishes to determine the desirability of a particular policy – not in terms of his or her own values, but in terms of some explicitly stated ethical criteria*' (Boadway & Bruce, 1984)
- The central objective in welfare economics is to provide an explicit ethical framework for making meaningful statements about whether events improve welfare.
- Welfare is not GDP or income, but a broad measure of wellbeing or happiness (Bentham, Mill), commonly labelled utility
- Economics is therefore about allocating resources in such a way that welfare is optimised, considering both efficiency and equity
- An ideal help in the context of rationing

Economic evaluation

- Especially used in the context of specifying a basic benefits package or entitlements, one specific (explicit) form of rationing
- Based on the simple notion that total welfare improves if a change induces more welfare gain than welfare losses
- Expressed in money this simply requires the benefits to exceed the costs
- Benefits > Costs or $v_i \Delta Q_i > \Delta c$ (where v_i represents the consumption value of the gains ΔQ_i and Δc are the costs) or $\Delta c / \Delta Q_i < v_i$
- Rationing: there are benefits related to some intervention, but given the costs they are not realised – difference between medical and economic optimum!
- While this framework is certainly useful and increasingly used in rationing care, the art of applied economic evaluation in health care may have developed faster than the debate on the underlying ethical criteria
- Direct discussion on the ethical framework and underlying value judgements important

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Economic evaluation in practice

- CBA or CEA , but …
- … often take the form of a so-called CUA (cost-utility analysis)
- There, benefits are expressed in quality-adjusted life-years (QALYs)
- This measure comprises both length and quality of life
- Can measure health gains in a comparable way
- But avoids (direct) monetization
- This means that economic evaluations typically yield Δc / ΔQ_i, where ΔQ_i are the QALY gains
- v_i is normally not alluded to (left up to decision maker)
- First idea was to maximise the number of QALYs with the available budget – rationing based on that notion
- Moving from the greatest happiness to the greatest health…

Perfect health

X

Worst imaginable health

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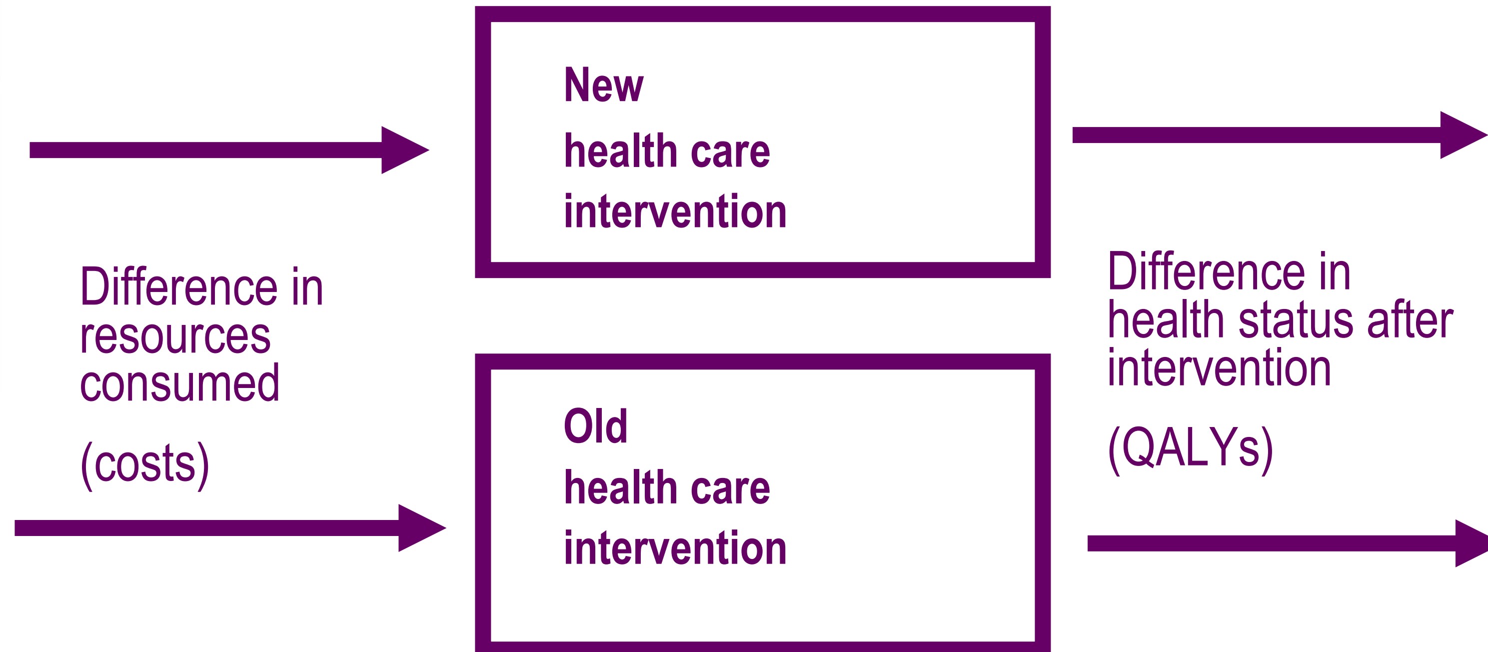
Economic Evaluation in Health



Do the benefits, here defined as QALY gains, justify the costs?

Commonly recommended: consider all societal costs, all relevant effects but not always put into practice!

CUA: value required!

- CUA still requires monetary value of health to decide whether some cost per QALY is worthwhile (i.e. the v) or to set an appropriate budget
- Two possible approaches (all a bit simplified) are common:

(1) take a fixed budget and implement programs with lowest cost per QALY – this results in maximizing QALYs with budget

(2) add programs that have a cost per QALY below some threshold value (threshold in theory should equal social value of a QALY): $\Delta C / \Delta Q_i < v_i$

- Opportunity costs either occur within the health care sector (fixed budget: price of health is health forgone!) or outside the health care sector (flexible budget: price of health is wealth forgone!)
- Rationing takes place to save health or wellbeing elsewhere!

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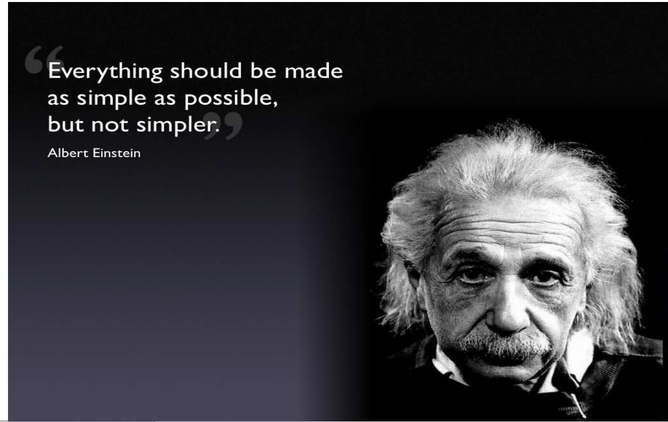
Some results to ponder



Intervention	$ / QALY
GM-CSF elderly with leukemia	$235.958
EPO in dialysis patients	$139.623
Lung transplantation	$100.957
End stage renal disease	$53.513
Heart transplantation	$46.775
Didronel in osteoporosis	$32.047
Statins in high cholesterol	*$18.151*
PTA with Stent	*$17.889*
terbinafine in onychomycosis	*$16.843*
Breast cancer screening	*$5.147*
Viagra	*$5.097*
Congenital anorectal malformation	*$2.778*

V

What's the problem?

- Value of a QALY varies with context (need / necessity / worst off leading)
- QALY *maximization* as a goal seems imprecise and attaching equal value to all QALY gains nor the resulting rationing may be considered '*equitable*'
- A varying threshold seems required to address equity issues!
- Many factors may influence value (e.g. Dolan et al, 2005): normative vs. positive…
- Equity weights can be seen simply as relative social values ($v_1/v_2 = \alpha$), where α is the relative weight of type 1 compared to 2
- Normative choices regarding with what the threshold should vary!
- Different philosophical notions (fair innings, prospective health, …)
- In the Netherlands: severity of illness (measured as proportion of health foregone)
- In UK: NICE uses range and allows 'equity' weights for end of life drugs
- Note: the price of equity is health forgone!

Flexible threshold – the Dutch case

Costs per QALY

Severity of illness	Threshold
0	0
20%	
40%	
60%	
80%	40000
100%	80000

Severity of illness

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Rationing and economic evaluation

- New framework improvement relative to old, but important questions remain (e.g. height of threshold, proportional shortfall best option, equity implications of considering productivity gains, etc.)
- The ethical framework for determining whether social welfare improves from some intervention is not fully developed yet in practice
- It seems that three things are at least required to further improve the usefulness of economic evaluations in rationing health care efficiently and equitably:

1. Count (and weight) all relevant costs and effects adequately
2. Get more information on the (relative) value of relevant gains
3. Combine the quantitative assessment phase with a transparent qualitative appraisal phase

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Counting all costs and effects

- Efficient and fair decisions require consideration of relevant consequences
- Some countries ignore costs outside health care sector (e.g. costs falling on patients, employers or caregivers)
- Most countries ignore effects in ‘significant others’ (e.g. family members and informal caregivers)
- The QALY measure is relatively adequate in curative care but does not capture all of value in the (long term) care sector or for instance palliative care
- Broader (well-being) measures appear required there but few exist
- Weighting certain costs (e.g. productivity costs) for equity impact?
- Weighting future costs and benefits adequately (efficiency and intergenerational equity)

V? What v?

- Threshold value is crucial but little is known about its height *and nature*
- Most countries firmly reject the idea that values of health gains should be different (c.p.) for richer and poorer people although private valuations may be different
- But what should v_i represent? An *average* of individual private values? Even if average in cases is always 'wrong'? The maximum, minimum, median, …?
- To complicate matters: people normally do not pay for themselves directly, but rather contribute to 'a system' that provides them and others care (risk & income solidarity) – different normative foundations and v_i's?
- "*To do as one would be done by, and to love one's neighbour as oneself, constitute the ideal perfection of utilitarian morality.*" (Mill, Utilitarianism, 1863)
- In terms of flexible v_i: literature on relative values (equity weights) separate from that on monetary values and both relatively scarce…
- Attempts to directly obtain relevant social valuations of health changes needed to better inform rationing process!

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Appraisal

"NOT EVERYTHING THAT COUNTS CAN BE COUNTED, AND NOT EVERYTHING THAT CAN BE COUNTED COUNTS."
-ALBERT EINSTEIN

- Economic evaluations useful but quantitative framework that results in full, prescriptive and optimal decisions in all situations will not be found
- Unlikely that values and weights are stable across situations
- A transparent and accountable appraisal phase needs to be part of a full decision process in the context of explicitly rationing care through limiting entitlements
- Legitimisation of decisions (also requires balanced appraisal committees)
- Moreover, attention needs to be given to (fair) implementation as well
- For instance, typically, interventions are necessary, effective and efficient for certain groups of patients (and not others)
- This means that rationing needs to be tailor-made (e.g. through guidelines)
- When required instruments are lacking, rationing will be inherently blunt

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- *'… the welfare economist wishes to determine the desirability of a particular policy – not in terms of his or her own values, but in terms of some explicitly stated ethical criteria*'

- Especially now the tool of economic evaluation is used more often in rationing, it is important to consider the underlying ethical criteria and improve the framework and decision making process.
- Open discussions on value judgments, assumptions regarding restrictions and goals – between *all* involved – are required
- Explicit rationing not easy (politically), yet preferable to implicit rationing
- The need to ration will only increase, improving the methods and processes to do so will result in more efficient and more equitable decisions
- A worthwhile goal!

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