# Better the Devil You Know? QALYs and their Alternatives in Drug Reimbursement Decision Making

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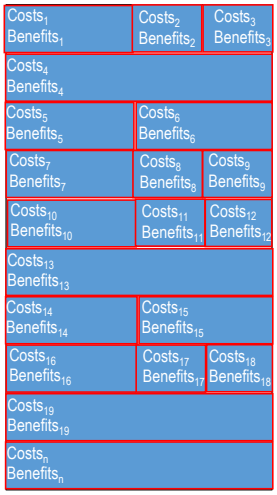
## Questions to address

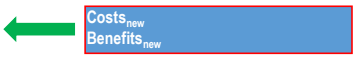
- What's the resource allocation challenge?
- What measure of benefit?
- What measure of change in health?
- What's available?
- What's best practice?

# The resource allocation challenge

Fixed health care budget




New intervention

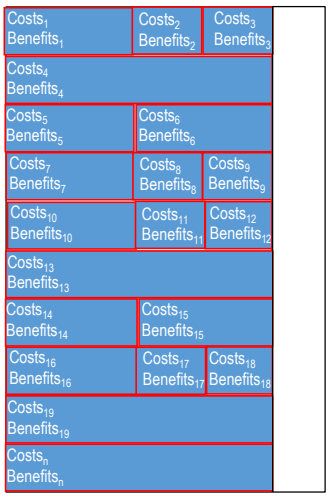



Displaced intervention(s)

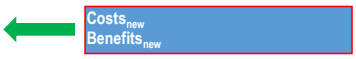

**To the benefits gained outweigh the opportunity costs?**

# The resource allocation challenge

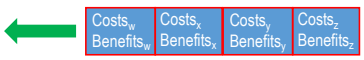
Flexible health care budget




New intervention




Alternative unfunded intervention(s)




**To the benefits gained outweigh the opportunity costs?**

# Benefit measurement: centrality of health

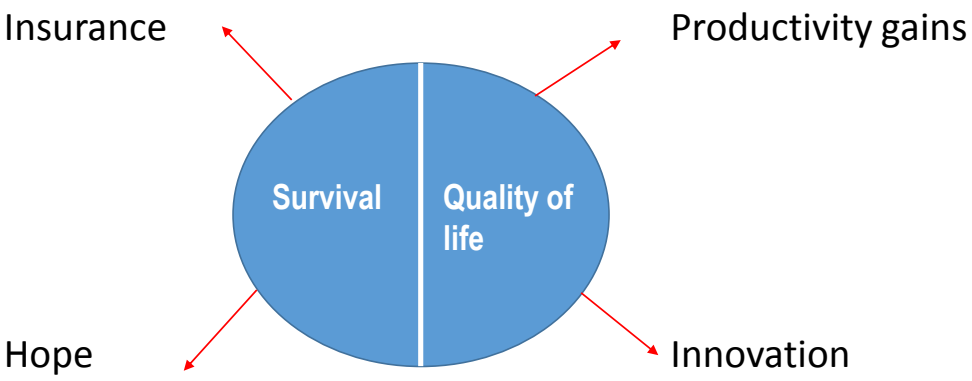

# Benefit measurement: weighting health by recipient

Those with rare disease


Those with severe disease


Those with short life-expectancy

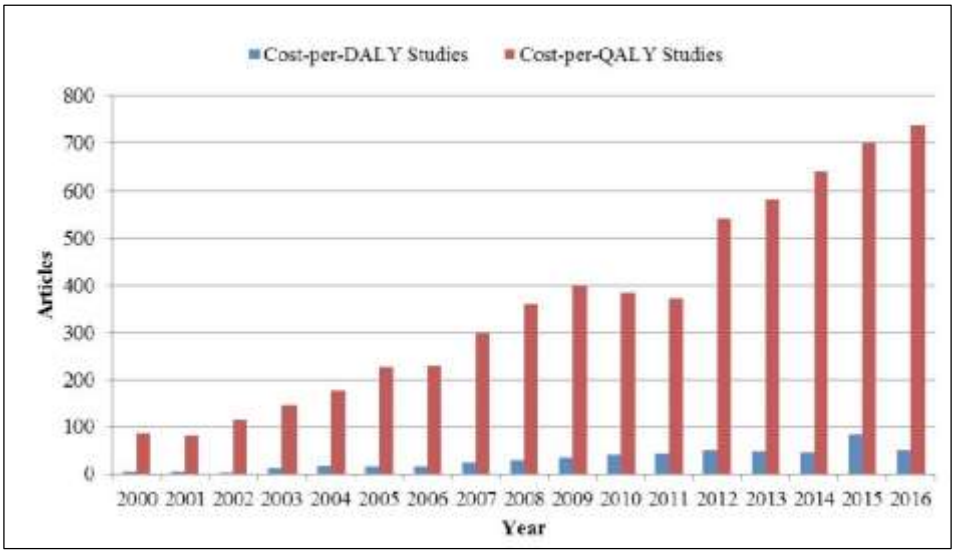
# Benefit measurement: adding health impacts




# Selecting a measure of health

| Criterion for decision-making | Implication for measure |
|---|---|
| Reflect change in survival and/or QoL | A measure incorporating both effects |
| Comparable between clinical areas & patient groups | Generic measure of QoL |
| Quantifies trade-offs | Use of 'appropriate' preferences |
| Reflect key dimensions QoL & sensitive to change | Validated descriptive measure of QoL |

# The QALY




Neumann *et al. Gates Open Research* 2018, 2:5

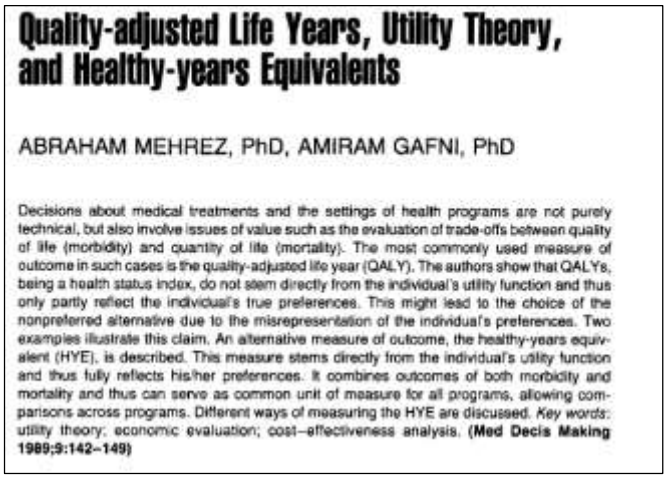
## QALY ≠ QALY ≠ QALY

1960s 2018

- Better descriptive measures of HRQoL
  - Psychometric validation
- Improved valuation methods
  - Preference elicitation
- Better methods to estimate gains in survival

## Assumptions and alternatives?

- Constant proportional trade-off
- Risk neutrality
- Irrelevance of order



**Quality-adjusted Life Years, Utility Theory, and Healthy-years Equivalents**

ABRAHAM MEHREZ, PhD, AMIRAM GAFNI, PhD

Decisions about medical treatments and the settings of health programs are not purely technical, but also involve issues of value such as the evaluation of trade-offs between quality of life (morbidity) and quantity of life (mortality). The most commonly used measure of outcome in such cases is the quality-adjusted life year (QALY). The authors show that QALYs, being a health status index, do not stem directly from the individual's utility function and thus only partly reflect the individual's true preferences. This might lead to the choice of the nonpreferred alternative due to the misrepresentation of the individual's preferences. Two examples illustrate this claim. An alternative measure of outcome, the healthy-years equivalent (HYE), is described. This measure stems directly from the individual's utility function and thus fully reflects his/her preferences. It combines outcomes of both morbidity and mortality and thus can serve as common unit of measure for all programs, allowing comparisons across programs. Different ways of measuring the HYE are discussed. *Key words:* utility theory; economic evaluation; cost–effectiveness analysis. **(Med Decis Making 1989;9:142–149)**

## Conclusions

- A health measure central to quantitative support for decisions
- QALY satisfies key criteria
- No other 'fit for purpose' alternatives
- Widely used and extensive data
- Incremental improvement over time
- QALY is a model: guides decisions rather than dictates them

**Thank you!**

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