

# What Evidence Should be Used to Quantify Cost-Effectiveness Thresholds for Decision Making in the Asia-Pacific Region?

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## Terminology

What measure of benefit?

- Health outcome
- Additional factors (e.g. productivity)
- Weighting health differently for different recipients
- Example: NICE end of life criteria

Threshold

What should the system pay?

- For a given measure of benefit
- E.g. QALY, equity-weighted QALY

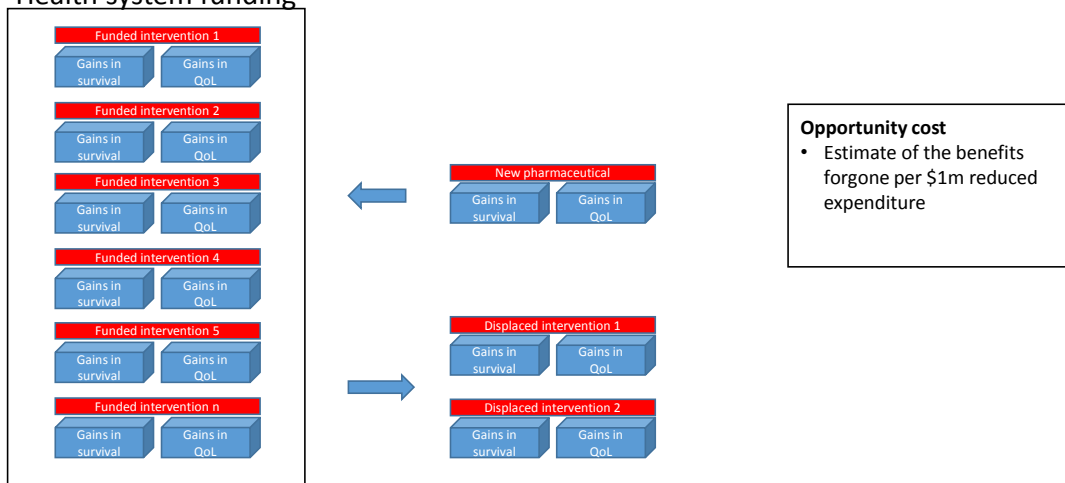
## What should a system pay?

- Evidence on the benefits the system could have generated
- How a system translates a change in financial resource into benefits
- Benchmark for value
  - Why accept a new technology when the system can generate more benefit using the resources elsewhere?
- Terminology
  - Supply side threshold
  - Marginal productivity
  - Opportunity cost

**Evidential rather than a value judgement**

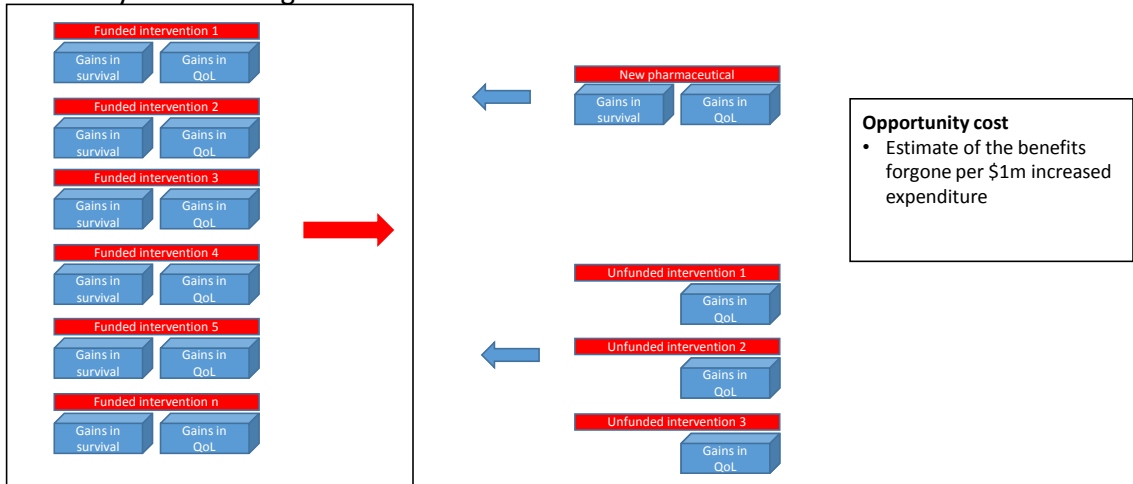
## How much should a health system pay?

Health system funding

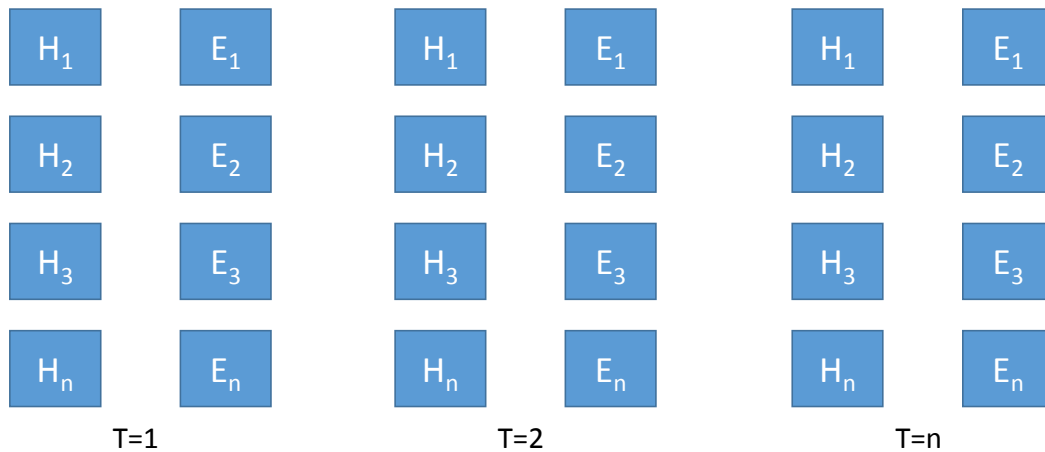


# How much should a health system pay?

## Health system funding



## Estimation



% change in health given a percentage change in expenditure

## Challenges for estimation

Challenge	Possible response
Individual-level data not available	Variation between distinct parts of the system
Time series not available	Cross-sectional alone; onus on adjusting for observed heterogeneity
Endogeneity	Use of instrumental variables
Health only partially measured	Need to extrapolation and generalisation
No relevant data in jurisdiction	Rely on variation on health/spend internationally

## Empirical basis for health opportunity costs

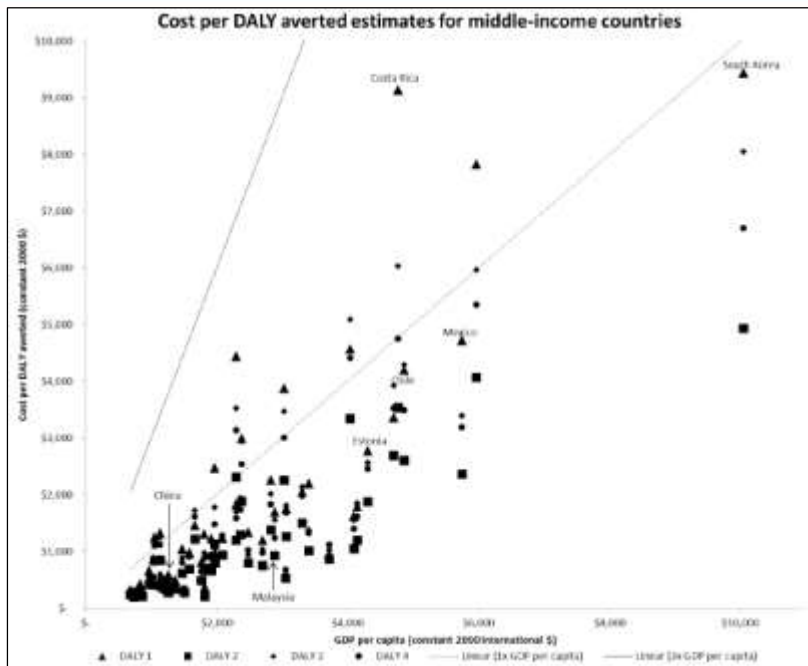


- Estimate of marginal productivity of English NHS
- Based on linking expenditure to mortality
  - Variation between local commissioners
  - Across clinical areas
- Extrapolation to QALYs
- Central estimate £12,936
  - 2008 expenditure
  - 2008-10 mortality
- Updated 2017-18
  - Further waves of data
  - Time series
  - Testing assumptions with experts

Claxton *et al.* *Health Technol Assessment*, 2015. 19(14): p. 503.

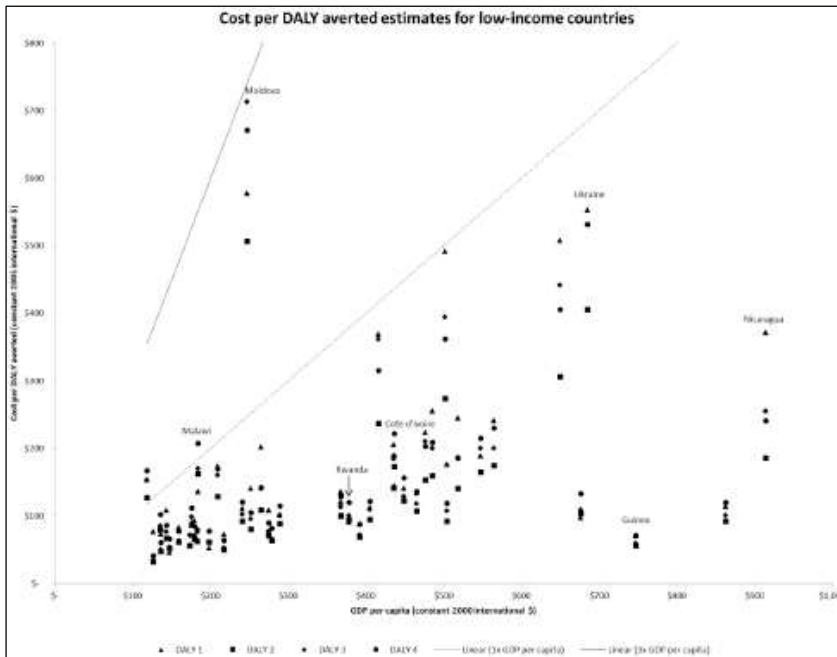


## International variation



## Estimates: middle-income countries

Oshalek et al. CHE Research Report 122, 2015  
[www.york.ac.uk/che](http://www.york.ac.uk/che)



## Estimates: low-income countries

Oshalek et al. CHE Research Report 122, 2015  
[www.york.ac.uk/che](http://www.york.ac.uk/che)

## Conclusions

- Estimates of health opportunity costs provide a key input into resource allocation decisions
- Why fund a new technology that delivers less benefit that can be achieved elsewhere?
- Empirical rather than value judgement
- Major international research initiative to provide estimates by jurisdiction

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**Thank you!**

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