

# Economic Evaluation of HERA 2

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# Economic evaluation: cost-effectiveness analysis

- Definition :

*“The comparative analysis of alternative courses of action in terms of both their costs and their consequences”*

- Requires:

- Comparison of two or more alternatives
- Examination of both costs and consequences

- It is *not* all about choosing the cheapest option!

# Measuring cost-effectiveness: incremental approach

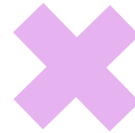
*“What is the difference in costs and the difference in consequences of NEW compared with OLD approach to DVA?”*

# Summarising trade-offs: incremental cost-effectiveness ratio (ICER)

$$\text{ICER} = \frac{\text{Cost}_{NEW} - \text{Cost}_{OLD}}{\text{Outcome}_{NEW} - \text{Outcome}_{OLD}}$$

# Measuring health outcome: QALYs

QUALITY of LIFE



DURATION of HEALTH STATE



# What is a QALY?

**1 QALY = one year of healthy life for one person**

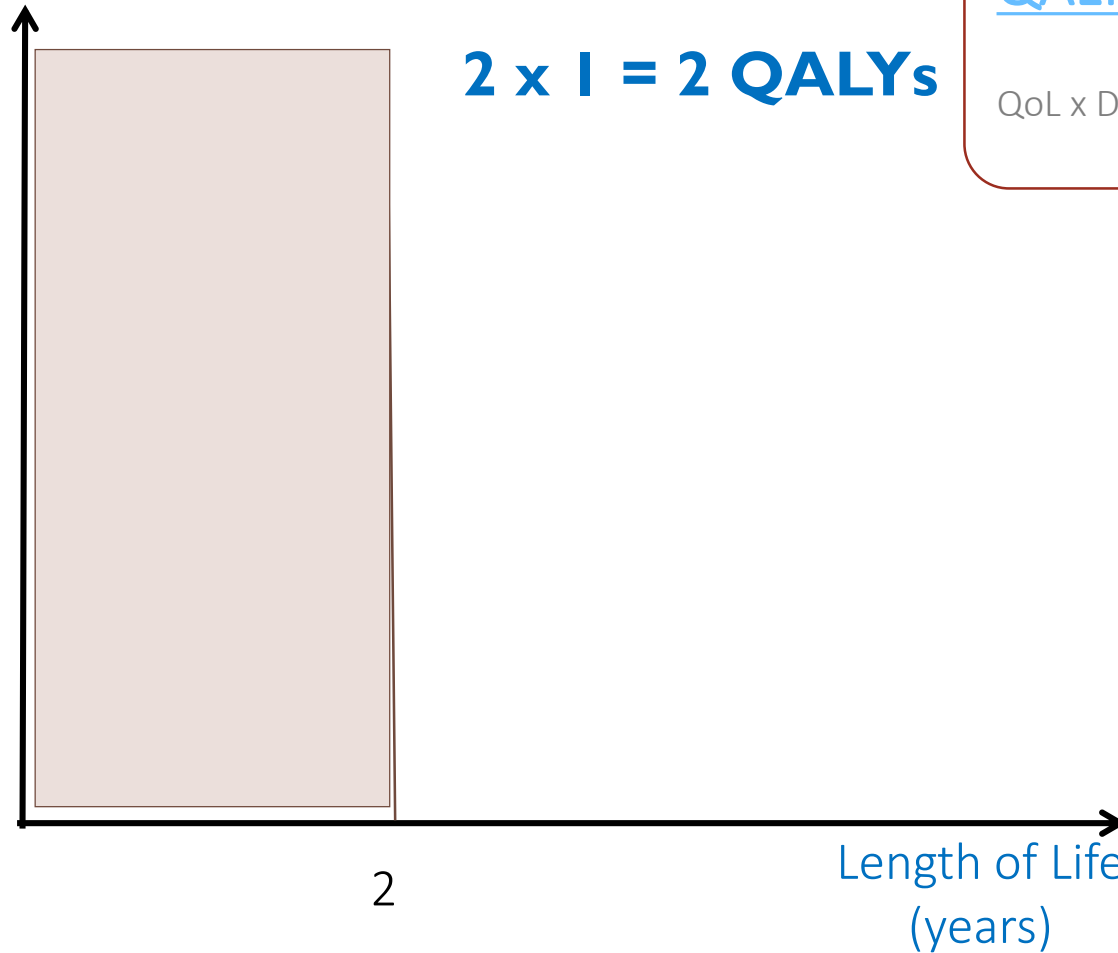
## Assumptions

- Length of life vs. quality of life can be traded-off
- Each year of healthy life is of equal value for all

# QALYs



Quality  
of Life



QALY:

QoL x Duration of Life

# QALYs



QALY:

QoL x Duration of Life

Quality  
of Life

0.5

$$4 \times 0.5 = 2 \text{ QALYs}$$



4

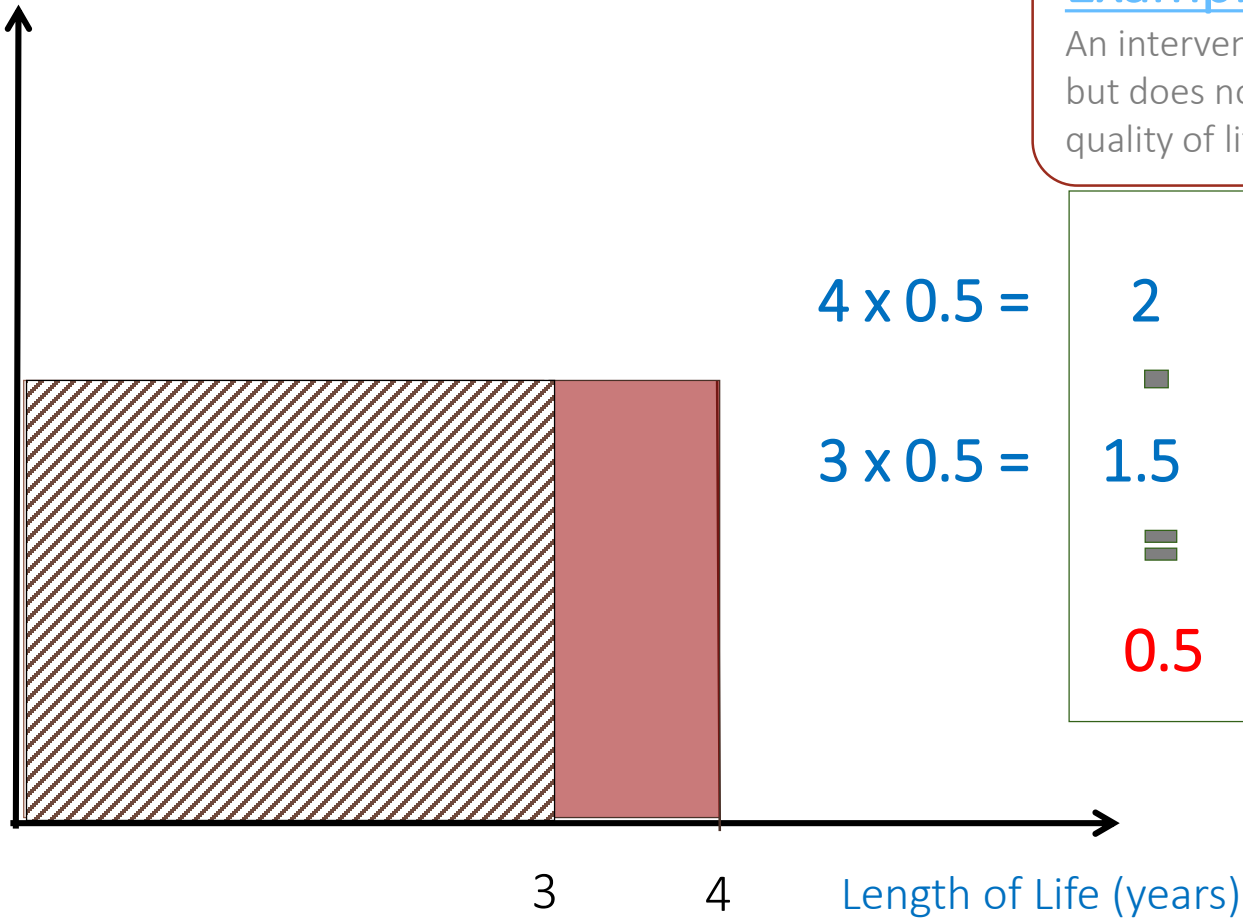
Length of Life  
(years)



# QALYs



0.5  
Quality  
of Life



## Example:

An intervention extends life, but does not impact on quality of life

$$4 \times 0.5 =$$

2

$$3 \times 0.5 =$$

1.5

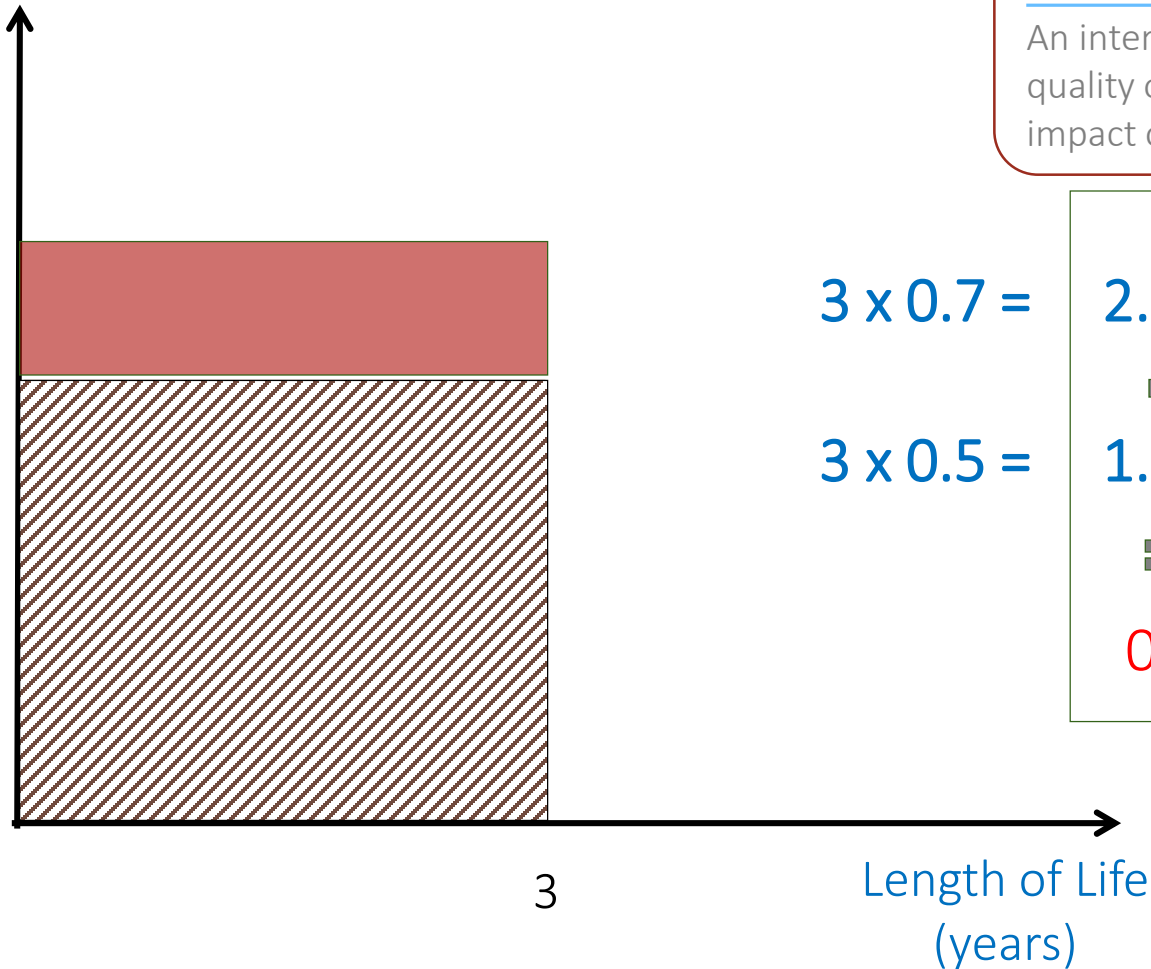
0.5

QALYs

# QALYs



Quality  
of Life



## Example:

An intervention improves quality of life, but does not impact on length of life

$$3 \times 0.7 = 2.1$$

$$3 \times 0.5 = 1.5$$

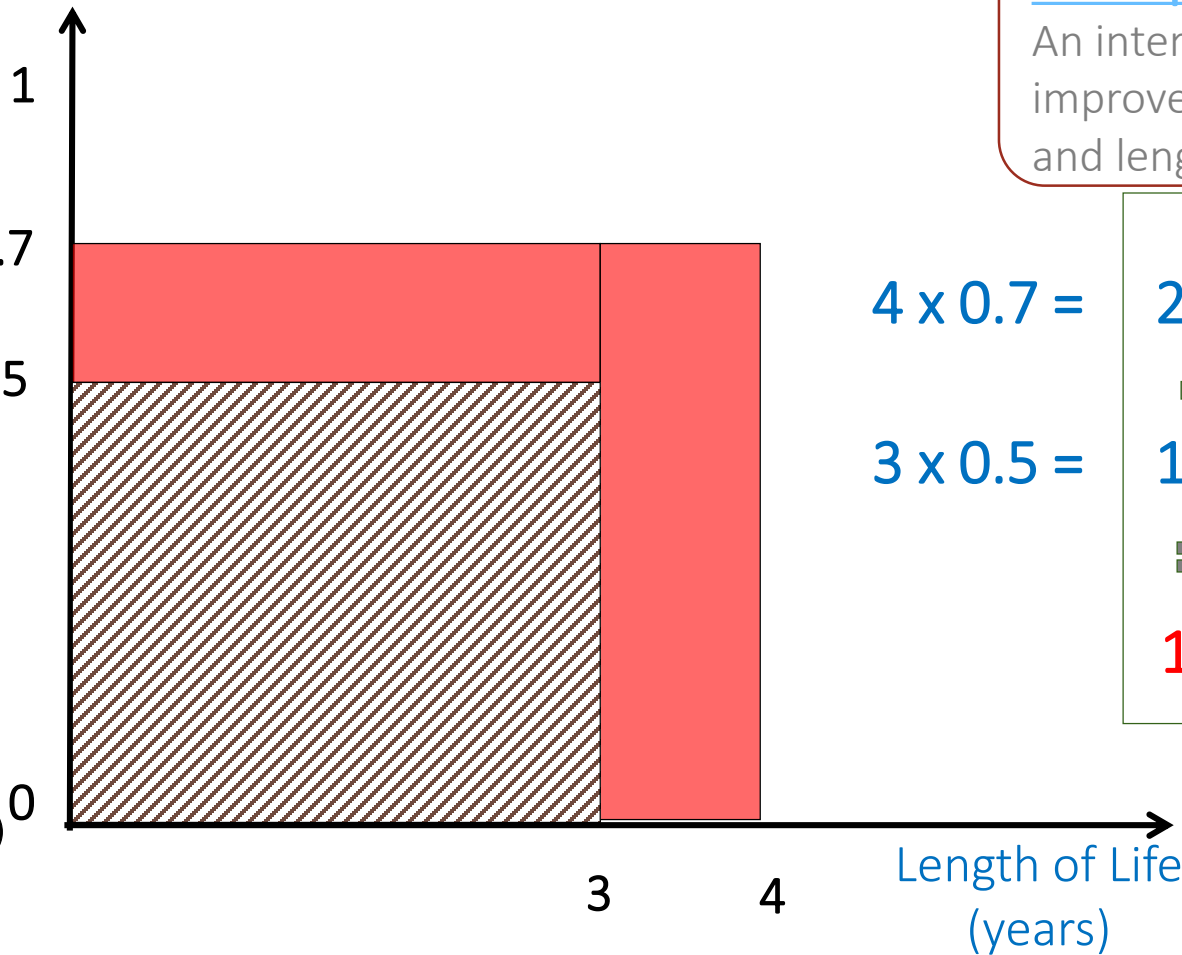
0.6

QALYs

# QALYs



(perfect health)



## Example:

An intervention improves quality of life and length of life

$$4 \times 0.7 = 2.8$$

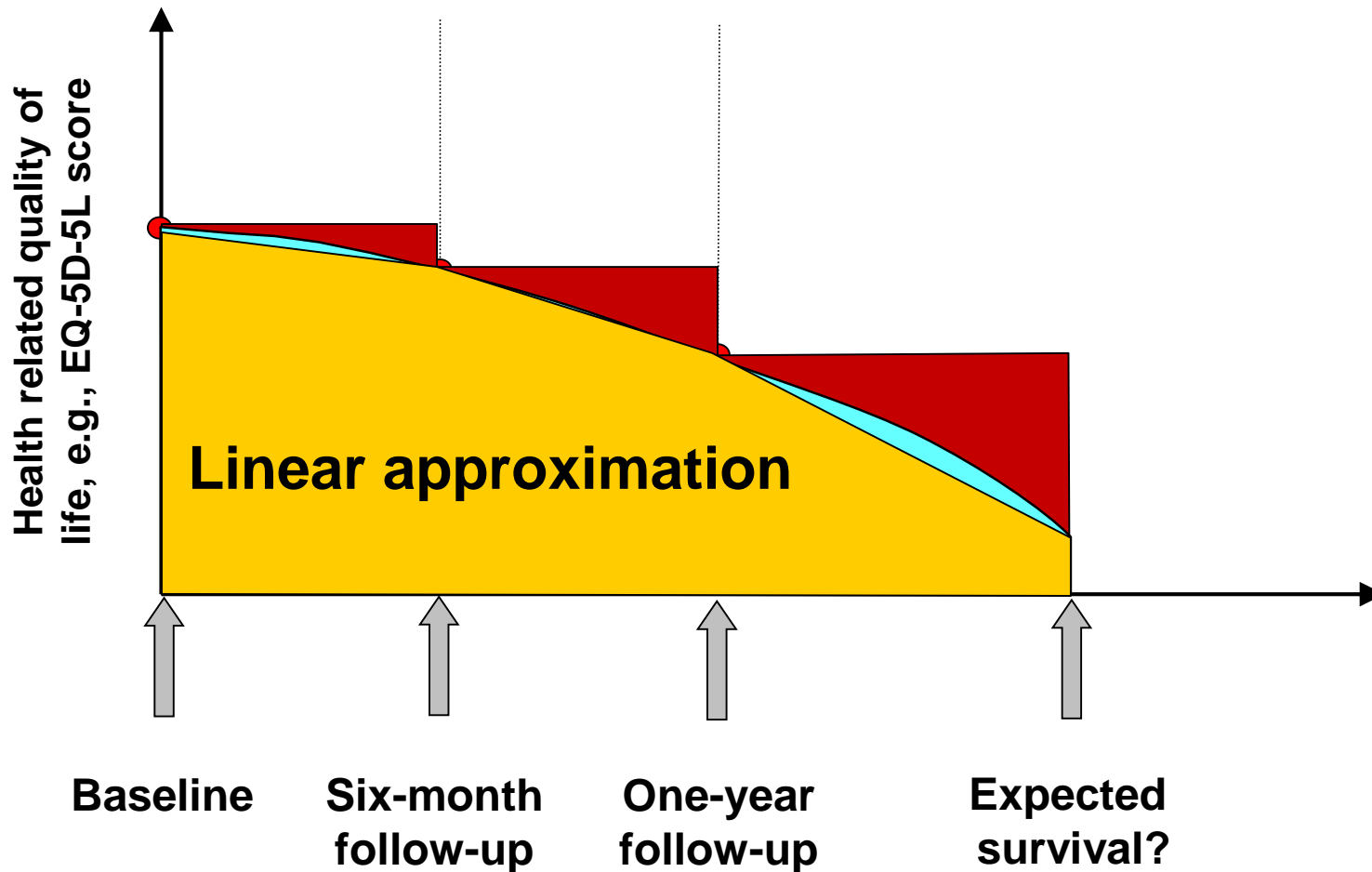
$$3 \times 0.5 = 1.5$$

$$= 1.3 \text{ QALYs}$$



(death)

# Estimating QALYs from data



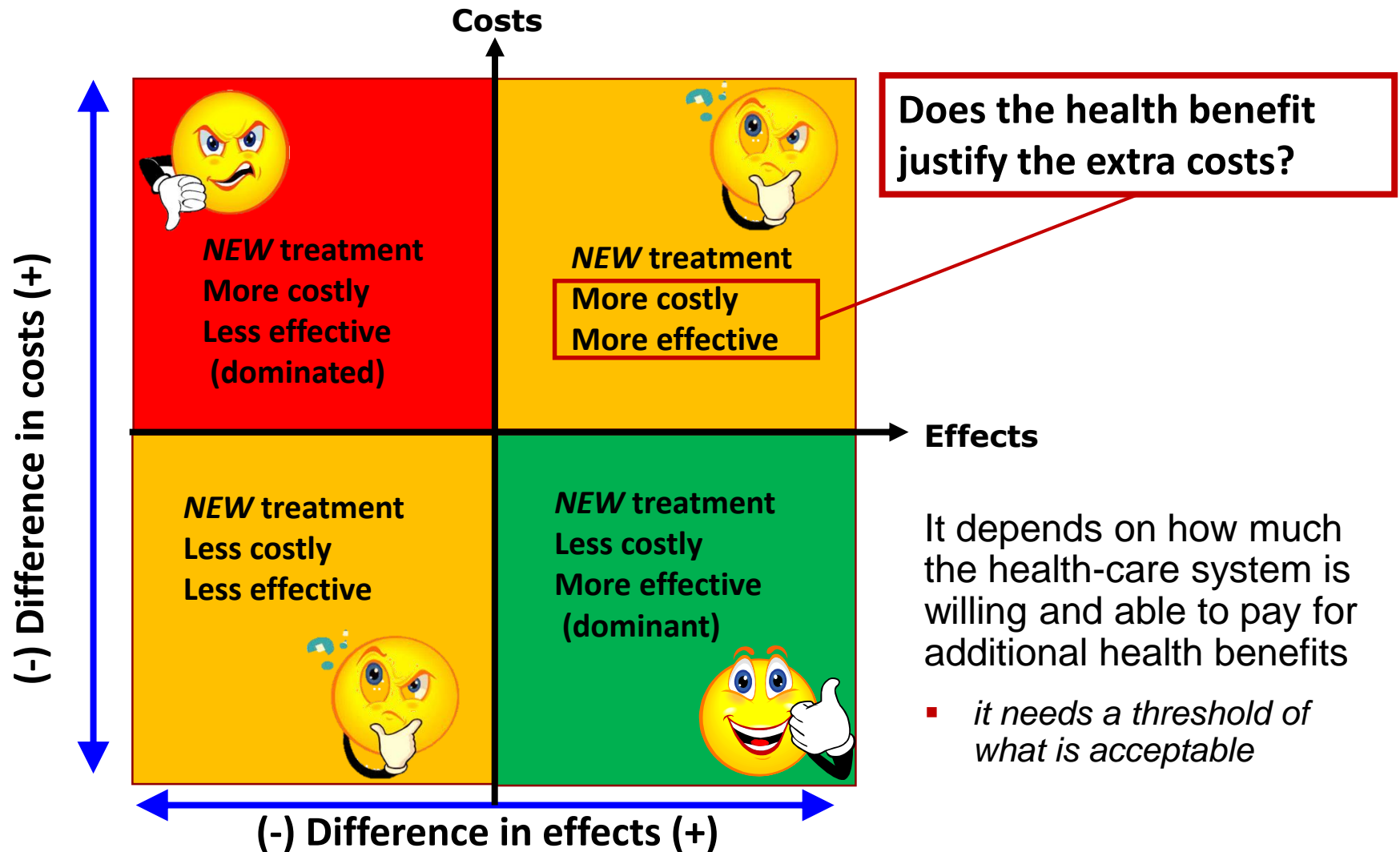
# Incremental cost-effectiveness ratio (ICER)

$$\text{ICER} = \frac{\text{Cost}_{NEW} - \text{Cost}_{OLD}}{\text{Outcome}_{NEW} - \text{Outcome}_{OLD}}$$

Simple evaluation matrix:  
*NEW* compared with *OLD* treatment

		<b><i>EFFECTS</i></b>	
		<b>WORSE</b>	<b>BETTER</b>
<b><i>COSTS</i></b>	<b>HIGHER</b>	<b>Reject <i>NEW</i></b>	<b>Trade-off</b>
	<b>LOWER</b>	<b>Trade-off</b>	<b>Adopt <i>NEW</i></b>

# How cost-effective does it need to be?



# Cost-effectiveness thresholds

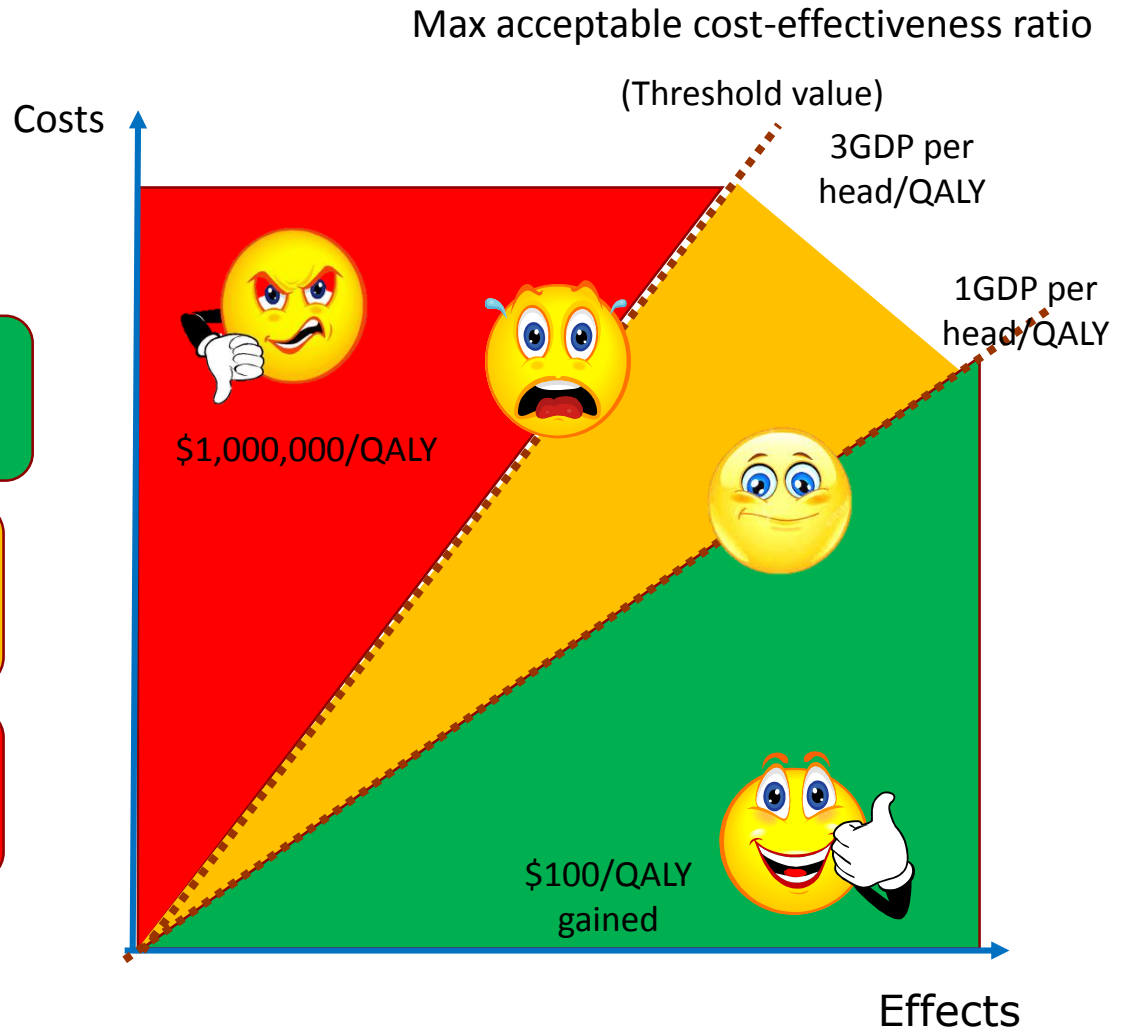


## WHO threshold

Cost/QALY < 1 GDP per capita:  
likely to be accepted

Cost/QALY 1-3 GDP per  
capita: needs additional  
factors to justify

Cost/QALY > 3 GDP per capita:  
these factors have to be  
increasingly strong





# Euro-QoI EQ-5D™

Covers five domains of health: mobility, self-care, usual activities, pain and discomfort, anxiety and depression.

Measured on five or three levels (EQ-5D-5L or EQ-5D-3L)

## Health state description

▶ **EQ-5D-5L**: profile of patient self-reported health

## Health state valuation

▶ **EQ-VAS**: patient's rating of their own health from 0-100

▶ **VALUE SETS** derived from general public to summarise the profile into an index

# Euro-QoL EQ-5D-3L/5L™

By placing a tick in one box in each group below, please indicate which statements best describe your own health state today

## Mobility

- I have no problems in walking about
- I have some problems in walking about
- I am confined to bed

## Self-Care

- I have no problems with self-care
- I have some problems washing or dressing myself
- I am unable to wash or dress myself

## Usual Activities *(e.g. work, study, housework, family or leisure activities)*

- I have no problems with performing my usual activities
- I have some problems with performing my usual activities
- I am unable to perform my usual activities

## Pain/Discomfort

- I have no pain or discomfort
- I have moderate pain or discomfort
- I have extreme pain or discomfort

## Anxiety/Depression

- I am not anxious or depressed
- I am moderately anxious or depressed
- I am extremely anxious or depressed

## MOBILITY

- I have no problems in walking about
- I have slight problems in walking about
- I have moderate problems in walking about
- I have severe problems in walking about
- I am unable to walk about

## SELF-CARE

- I have no problems washing or dressing myself
- I have slight problems washing or dressing myself
- I have moderate problems washing or dressing myself
- I have severe problems washing or dressing myself
- I am unable to wash or dress myself

## USUAL ACTIVITIES *(e.g. work, study, housework, family or leisure activities)*

- I have no problems doing my usual activities
- I have slight problems doing my usual activities
- I have moderate problems doing my usual activities
- I have severe problems doing my usual activities
- I am unable to do my usual activities

## PAIN / DISCOMFORT

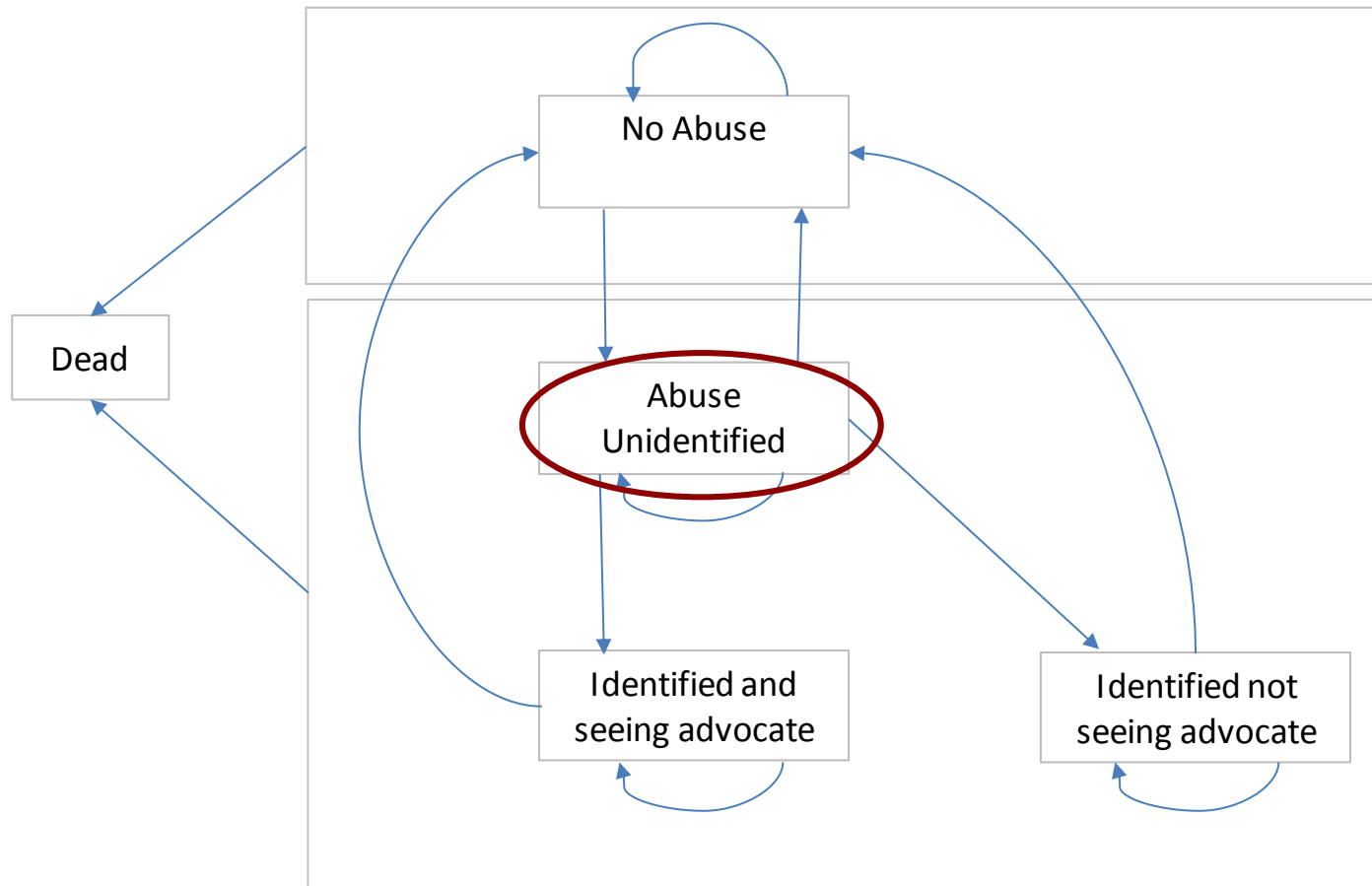
- I have no pain or discomfort
- I have slight pain or discomfort
- I have moderate pain or discomfort
- I have severe pain or discomfort
- I have extreme pain or discomfort

## ANXIETY / DEPRESSION

- I am not anxious or depressed
- I am slightly anxious or depressed
- I am moderately anxious or depressed
- I am severely anxious or depressed
- I am extremely anxious or depressed

Source: adapted from the EuroQoL Group: [www.euroqol.org](http://www.euroqol.org)

# Markov Model



# What data do we need?

1. Local prevalence of DVA
2. Number of women eligible to the intervention, i.e. number of women registered to intervention practices AFTER intervention
3. Number of women identified by intervention, i.e. after period
4. Number of women referred by intervention, i.e. after period
5. Number of women registered to intervention clinics BEFORE intervention (control)
6. Number of women identified by practices BEFORE the intervention
7. Number of women referred by practices BEFORE the intervention
8. Death rate (life tables) (control)
9. Death rate from abuse (intervention)\*\*

# What data do we need?

8. Intervention budget, including:
  - a. Salaries
  - b. Travel
  - c. Recruitment
  - d. Laptop
  - e. Telephone
  - f. Publicity
  - g. Clinician consultancy
  - h. Evaluation
  - i. Central management costs
  
9. Cost of onward referral, based on contact time (opportunity cost)

# What data do we need?

10. Cost of domestic violence and abuse, including:
  - a. Lost economic output
  - b. *Health services*
  - c. Criminal justice system
  - d. Civil justice system
  - e. Social Welfare
  - f. Personal costs\*
  - g. *Specialised services*

# What data do we need?

## 11. Health-related quality of life

- a. Utility No abuse\*\*
- b. Utility Abuse unidentified (EQ-5D @6 weeks and 3months)
- c. Utility Identified and seeing advocate (EQ-5D @6 weeks and 3months)
- d. Utility Identified not seeing advocate (EQ-5D @6 weeks and 3months)

