Hypothetical versus experience-based EQ-5D valuations: What are the implications for health economic evaluations?

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Whose preferences?

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Topics

- Universal versus national (local) tariff
  - Does it matter?
  - If so, for who?
- Population versus patient preferences
  - Does it matter?
  - If so, for who?
- Examples
  - Some examples from the literature
  - *Illustration using a dataset with 16000 patients*

Universal versus national tariffs

- For over a decade, everybody used the Dolan tariff
  - Pros:
    - Developed into a “general” dataset of values
    - A system rather than actual preferences
  - Cons:
    - Valuing health differs in different populations
    - “not home-grown”
- Currently, a large number of different value sets
  - Feng et al (2014) identified 31 studies
    - Studies differed widely in both design and resulting algorithms
- Does it matter?
A System rather than preferences

**Utilities related to disease severity in MS: A survey in 10 countries**

- Austria
- Belgium
- France
- Germany
- Italy
- Netherlands
- Spain
- Sweden
- Switzerland
- UK

Source: Kobelt et al., JNNP 2006; Kobelt et al. MS 2009

Not grown here...

**Comparison of utilities by disease severity in a French MS patient sample (N=1202)**

Using the UK and US EQ-5D tariffs

- UK tariff, negative values used
- US tariff, negative values used
Oppong et al (2013) : Acute cough/lower respiratory tract infection, 4-week treatment in 7 countries
- Local, UK, (European) value sets
- Change similar with local tariffs, improvement larger with UK values
- No impact on decision (threshold) based on cost-utility

Karlsson et al (2011) : Rheumatoid Arthritis, 1-year treatment with biologics or methotrexate in South-Swedish RA registry
- UK, Danish, US value sets
- Change larger with UK (0.09) than with Danish/US (0.06) values
- Assuming an incremental cost of €4000 (Kobelt et al 2005), biologic treatment would be acceptable using the UK tariff (ICER 45,000€) but not using the Danish/US tariff (ICER 67,000€)

It matters...dose it?

Population versus Patient Preferences

Use of the QALY for collective priority setting in health care
Two “schools”
- Population preferences Collective decisions concerning public money
  - Priority-setting across diseases
  - Priority is about health not health care
    - i.e. health states that are not desirable
    - adjustment to disease (coping) is not relevant
- Patient preferences Patients experience the disease in practical, not in theoretical terms
- EQ-5D a compromise?

The decision is not a scientific, but a political one (A Williams 1985)
The Swedish Exception

Comparison of utilities by disease severity in a French MS patient sample (N=1202) using the UK, French and Swedish EQ-5D tariffs

Impact?

- Published cost-effectiveness model (Kobelt et al 2008)
  - Treatment versus no treatment, modeling registry data, 10 years, societal perspective

<table>
<thead>
<tr>
<th></th>
<th>Incremental cost</th>
<th>Incremental utility</th>
<th>ICER</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK value set</td>
<td>5,200</td>
<td>0.170</td>
<td>31,000</td>
</tr>
<tr>
<td>French value set</td>
<td>5,200</td>
<td>0.230</td>
<td>23,000</td>
</tr>
<tr>
<td>Swedish value set</td>
<td>5,200</td>
<td>0.086</td>
<td>61,000</td>
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</tbody>
</table>

Source: Kobelt, in Culyer and Kobelt eds, Lund 2014
Conclusions

- The decision is not a scientific, but a political one (Alan Williams 1985)
- Using national versus internationally agreed tariffs can change decisions, but not necessarily so
- Using patient versus population preferences will change decisions,
  - Coping aspects measured
  - Disease rather than health
- Methodological aspects of determining value sets are important

Hypothetical vs. Experience-based EQ-5D valuations

Implications for health economic evaluations

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There is a difference between experience-based and hypothetical values...

...but why?

Premiss:
Experience-based and Hypothetical values represents two different perspectives on HR-QoL, resulting in differences in:

- Information
- Adaptation

- Additionally: Differences in methodology between Dolan and Burström et. al. valuation studies
### Study name
Modelling Valuations for EuroQol Health States

### Author
Dolan, P. Burström, K. et al.

### Publication year
1997 (CHE discussion paper 138 in 1995) 2013

### Setting
UK Sweden

### Health survey

### Response Rate
56% 59% (2004) and 61% (2006)

### Study sample size
(2,997) 45,477

### Sample generation
Representative, drawn from UK Social and Community Planning Research (SCPR) Representative, drawn from Swedish population registry

### Choice of respondent
Hypothetical Experience

### Elicitation method
TTO TTO

### Number of health states valued (per respondent)
13 1 (own)

### Use of Props
Yes, TTO board No, single question format

### Time Horizon
10 years 10 years

### Estimation method
GLS on a set of dummy variables assuming ‘individual-specific’ error terms (random effects model) OLS on a set of dummy variables

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### Perspective on the value of a health state

**Decision Utility**

Health State

Before

Experience Utility

After

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Information

- Information about what it means to experience a health state
- Object of valuation
- Focusing illusion
- Poor hedonic forecasting

Adaptation

- Activity adjustment, skill development
- Cognitive adaptation
- Status quo bias
Voices on the role of information and adaptation

“To represent the effect of different health states on people’s well-being more accurately, we propose that economists in health and elsewhere shift their attention from the measurement of decision utility towards the measurement of experienced utility.”

Dolan and Kahneman 2008

“We have to imagine ourselves outside the society of which we are members, and then choose that set of rules for collective priority-setting which would be most likely to achieve the distribution of health benefits that we think best for our society”

“ In principle, since every treatment decision entails benefits to some and disbenefits to others, in a democratic society the views of all affected parties should count.”

Alan Williams 1996
References


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Experience-based QALY-weights -policy implications

Lars-Åke Levin, PhD
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The Swedish context of reimbursement decisions

- The Dental and Pharmaceutical Benefits Agency (TLV)
  - Agency responsible for the national reimbursement scheme for prescription pharmaceuticals and disposables
  - The value based decisions are based on basically two principles:
    - The Need and Solidarity Principle
      - account by the acceptance of higher costs per QALY when the drug is directed to more severe conditions
    - The Cost-Effectiveness Principle
      - By international standards TLV has been seen to have relatively high thresholds for severe conditions, with accepted costs per QALY close to 110 000 euro.
The Swedish point of departure

- The Dental and Pharmaceutical Benefits Agency (TLV) states that QALY weightings can be based either on direct or indirect measurements (such as EQ-5D).
- QALY weightings based on appraisals of persons in the health condition in question, are preferred before weightings calculated from an average of populations estimating a condition depicted for it (e.g., the ‘social tariff’ from EQ-5D).
- Thus, TLV prefers experience-based rather than hypothetical values.
- This approach could be explained by the Swedish tradition of linking health economics into welfare economics.


The relationship between experience-based and hypothetical value set. The figure shows the valuation of all 243 different EQ-5D states ranked from highest-to-lowest by the hypothetical value set.

Aronsson et al., ISPOR Amsterdam November 2014
All possible health improvements valued by the experience-based value set in comparison with the hypothetical valuation.

TLV has recently made its first decision based on the Swedish experience-based value set

Fampyra (fampridin)
indicated for the improvement of walking in adult patients with multiple sclerosis with walking disability (EDSS 4-7).

From the decision text 1548/2014 30 September 2014:

- “TLV estimates that the cost/QALY is below 1,2 million SEK when hypothetical valuation of EQ-5D data is used, and below 1,8 million SEK when an experience-based value set is used.”
- “TLV estimates the severity of the disease to be high”
- “TLV refuses the reimbursement application”

Do we know enough to implement the Swedish experience-based value set in decision making?

- What are the consequences for the priority setting decisions?
  - When experience-based QALY-weights are used, life-prolonging interventions will show lower ICERs and will be prioritized higher than quality of life-enhancing interventions.
    - Do we need to discuss that? Is that what we as society want?
- What are the consequences for the society’s willingness to pay for a QALY?
- Could it be seen as just a new yardstick?
  - As it all of a sudden became harder to gain a QALY, we will have to accept higher QALY threshold, if we agree to spend as much resources on health care as before.
- Until today the experience based value set has not been discussed at all in Sweden
The negative QALY-weights

- The Swedish experience-based value set lacks negative values due to methodological constraints in the surveys.
- The most used hypothetical valued value set (UK) includes negative values which magnitude to a great extent are determined by the elicitation methods.

Hypothetical versus Experience-based value sets - a “qualitative” approach

- I met a representative from The Swedish Association for Survivors of Accident and Injury (RTP)
  - She sat in a wheelchair without legs and one arm, and suffered from chronic severe pain.
  - She told me after listening to a presentation about the UK-value set used for analyzing the Swedish pain registry:

  “-It is funny that my health state is valued worse that dead. 
  -If you ask me I would value my health state to something between 0.6 and 0.7. 
  -Am I wrong? 
  -Or have I missed something?”

- Is it possible to exclude coping from the valuation of health states?
Hypothetical versus Experience-based value sets

- The are strong normative advantages of using experience-based value sets:
  - They are based on preferences from the best informed
  - Adaptation to the health states will be reflected in the valuations

- But the consequences of changing value sets need to be carefully discussed and analyzed before an implementation.
  - The trade-off between life-length and quality of life
  - How it should affect the ICER threshold in priority setting decisions

Thanks!

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Comments and questions