



**EUROQOL**

# The new EQ-5D-5L value set for the United Kingdom



**Webinar**

**Donna Rowen & Sophie Cooper**

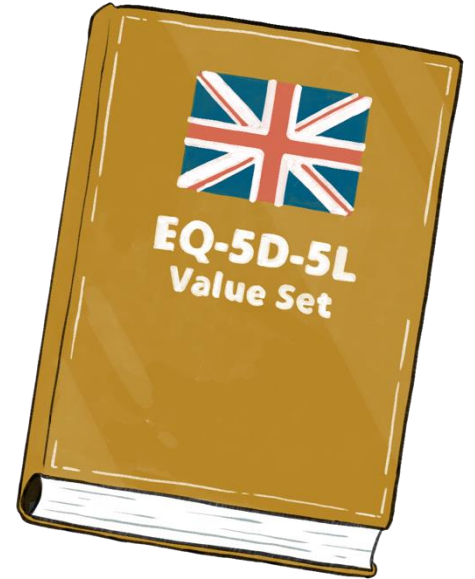
02 June 2026

EuroQol Research Foundation

# Agenda

- Introduction
- Presentations by Donna Rowen & Sophie Cooper
- Discussion

Please use the Zoom Chat function to submit questions



The recording and the slide deck will be made available here:  
<https://euroqol.org/information-and-support/resources/new-uk-5l-value-set/>

# UK valuation of EQ-5D-5L

Donna Rowen

Coauthors: Clara Mukuria, Nathan Bray, Jill Carlton,  
Louise Longworth, David Meads, Ciaran O'Neill,  
Yemi Oluboyede, Yaling Yang



# Acknowledgements

---

- **Steering Group** (Jan Busschbach, Sophie Cooper, Bilal Evans, Rosie Lovett, Charles Manski, Danny Palnoch, Mark Sculpher, Kristina Secnik Boye, Bernhard Slaap (Chair), Anne Spencer)
- **Project Quality Control team** Michał Jakubczyk, John Mullahy, Mark Oppe (Chair), Juan Manuel Ramos-Goñi)
- **EuroQol EQ-VT support team** (for this study this involved Aureliano Finch, Fanny Rencz, Bram Roudijk, Elly Stolk)
- **EuroQol Valuation Working Group** (Michał Jakubczyk (Chair), Marcel Jonker, David Mott, Richard Norman, Mark Oppe, Eleanor Pullenayegum, Juan Manuel Ramos-Goñi, Bram Roudijk)
- **Public involvement representatives** from the NICE Public and Patient Involvement Programme
- **Interviewers** (Amala Anyika, Marek Atter, Anisa Hajizadeh, Genevieve Hopkins, Jiyeon Kang, Will King, Moscho Michalopoulou, Jessica McCreery, Emily McDool, Aileen Neilson, Aliah Sagar, Aziza Salam, Alaw Thomas-Davies)
- Juan Manuel Ramos-Goñi and Bram Roudijk for sharing analysis code
- Nancy Devlin, Brendan Mulhern and Koonal Shah for their advice both on the protocol and during the project

# Background

- NICE (National Institute of Health and Care Excellence) have a recommended measure used to capture health benefits, the EQ-5D
- The first version of EQ-5D, EQ-5D-3L is scored using a value set based on preferences of the UK public elicited in 1995, published in 1997
- The most recent version is the EQ-5D-5L. A previous value set for England was not recommended for use by NICE due to criticisms regarding data quality and modelling
- **Project aim:** To generate a new UK value set for the EQ-5D-5L reflecting the preferences of the UK general public



  **ScienceDirect**  
Contents lists available at [sciencedirect.com](http://sciencedirect.com)  
Journal homepage: [www.elsevier.com/locate/jval](http://www.elsevier.com/locate/jval)

**Preference-Based Assessments**

**A United Kingdom Value Set for the EQ-5D-5L**  
Donna Rowen, PhD, Clara Mukuria, PhD, Nathan Bray, PhD, Jill Carlton, PhD, Louise Longworth, PhD, David Meads, PhD, Yemi Oluboyede, PhD, Ciaran O'Neill, PhD, Yaling Yang, PhD

Reference: Rowen D, Mukuria C, Bray N, Carlton J, Longworth L, Meads D, Oluboyede Y, O'Neill C, Yang Y. A UK value set for the EQ-5D-5L. Value in Health. 2026; 29(5):858-869.

# EQ-5D-5L

## 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

- 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

# Methods



# Study methods

---

- Participants were able to choose whether they preferred to be interviewed online via Zoom or in-person at central venues
- Preferences elicited using time trade-off (TTO) administered using EQ-VT v2.7
- 1200 participants, representative sample of members of the UK public (for age, sex, ethnicity, IMD (index of multiple deprivation), proportionally representative for nation (England, Scotland, Wales, Northern Ireland) recruited using a blended approach (no use of panels)
- Interviewers received rigorous training, pilot interviews (excluded from the main dataset), retraining where required, and data quality was monitored weekly throughout data collection by study team and EQ-VT-support team
- Data quality was assessed by an independent Quality Control Group and reported to the Steering Group after the pilot, and after 20%, 40%, 60% data collection, and the final sample

Reference: Rowen D, Mukuria C, Bray N, Carlton J, Cooper S, Longworth L, Meads D, O'Neill C, Yang Y. UK Valuation of EQ-5D-5L, a Generic Measure of Health-Related Quality of Life: A Study Protocol. Value Health. 2023 Nov;26(11):1625-1635.

# Preference elicitation method: Time trade-off

What do you prefer, Life A, Life B, or are they about the same?

**A**

A & B are about the same

**B**

Reset

Full health

4 years

10 years

- Moderate problems walking
- Unable to wash or dress myself
- Unable to do my usual activities
- Extreme pain or discomfort
- Severely anxious or depressed

# Time trade-off for states worse than being dead

What do you prefer, Life A, Life B, or are they about the same?

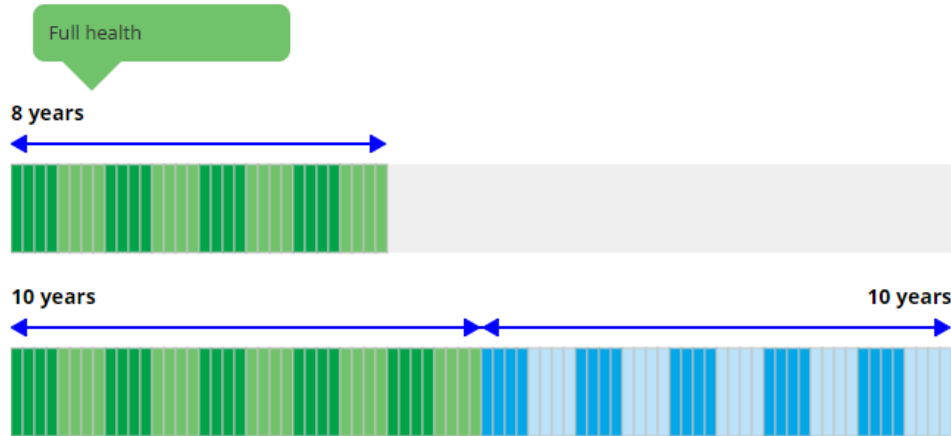


A

A & B are about the same

B

Reset



- Moderate problems walking
- Unable to wash or dress myself
- Unable to do my usual activities
- Extreme pain or discomfort
- Severely anxious or depressed

# Feedback module

Best health states at top

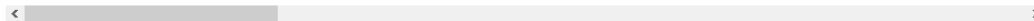
- No problems in walking about
- No problems washing or dressing myself
- Slight problems doing my usual activities
- Slight pain or discomfort
- Not anxious or depressed

- No problems in walking about
- No problems washing or dressing myself
- Slight problems doing my usual activities
- Moderate pain or discomfort
- Extremely anxious or depressed

- No problems in walking about
- Slight problems washing or dressing myself
- No problems doing my usual activities
- No pain or discomfort
- Not anxious or depressed

- Unable to walk about
- No problems washing or dressing myself
- Severe problems doing my usual activities
- Extreme pain or discomfort
- Not anxious or depressed

- Severe problems in walking about
- Unable to wash or dress myself
- No problems doing my usual activities
- Severe pain or discomfort
- Severely anxious or depressed



Worst health states at bottom

Next

# Modelling

---

- 102 health states were valued, models enable us to generate utility values for all 3,125 EQ-5D-5L health states
- We explored: Tobit model with censoring at  $-1$ ; generalised least squares (GLS) random intercept model; heteroscedastic Tobit model with censoring at  $-1$ ; random effects Tobit model with censoring at  $-1$
- Additive model estimating utility decrements for each severity level for each dimension
  - Explored with/without constant
  - Explored interaction terms (analogous to UK EQ-5D-3L “N3” term)
- Only exclusions are the states flagged by participants themselves in the feedback module (and for any “red flagged” interviewers, but this didn’t happen)

# Criteria for selection of value set

---

- Select best performing model overall. Model performance was assessed using:
  - logical consistency of coefficients
  - number and proportion of significant coefficients;
  - AIC (Akaike Information Criterion) and BIC (Schwarz (Bayesian) Information Criterion)
  - Mean absolute error (MAE)
- Robustness was assessed for subsamples of 86 states in international protocol, all TTO values, respondents either not understanding or not engaging with the TTO tasks

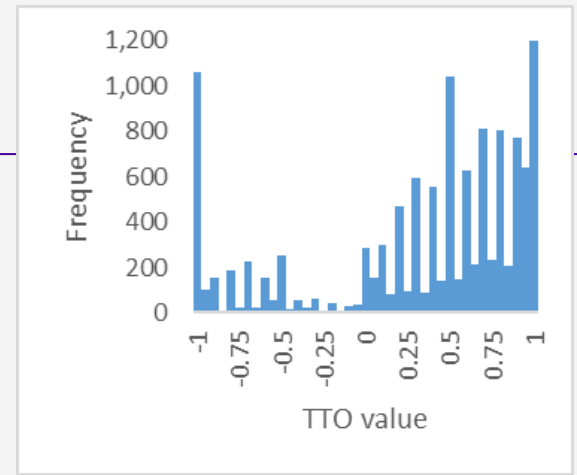
The value set should have face validity in terms of the coefficients being theoretically sensible and appropriate with logical consistency, should account for data characteristics, should fit the data, and be fit for purpose for discriminating between different health states

# Results

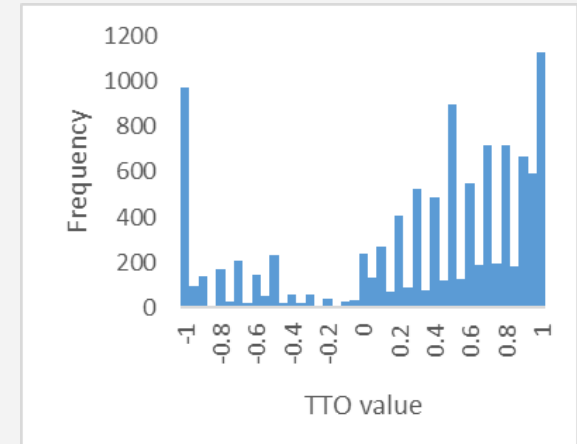
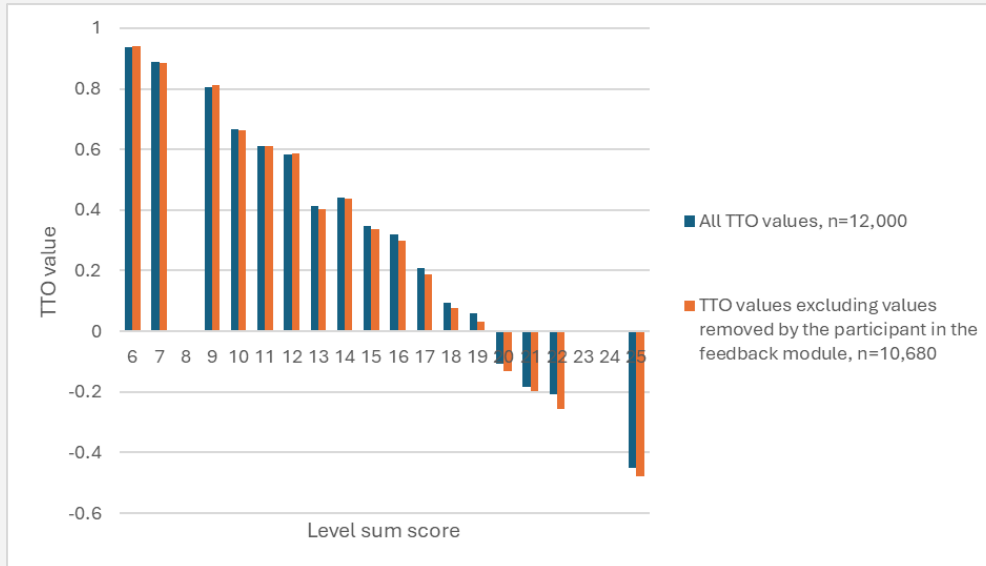


# TTO data

- 1200 interviews undertaken by 13 interviewers, representative sample
- 12,000 TTO observations, 10,680 after the feedback module
- For the majority of participants understanding was confirmed both using self-report and interviewer report questions



All TTO values



TTO values after feedback module

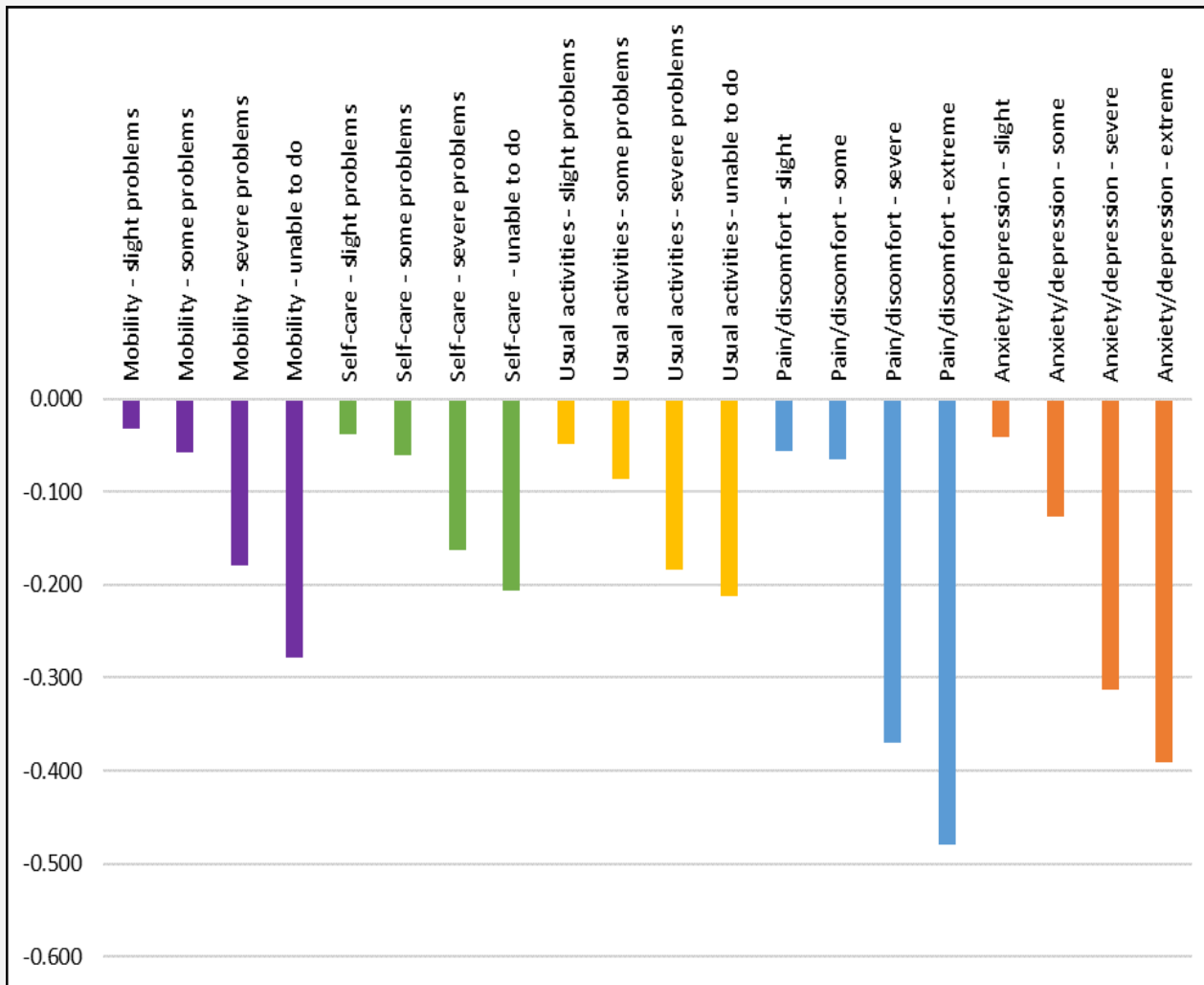
# TTO data – acceptable quality

---

- No mild states are valued lower than the value for the worst state
- Majority of participants did not value a better state below the worst state (98.8%)
- The proportion of participants giving a value at easy to reach values (-1, -0.5, 0, 0.5 or 1) for all 10 health states is low, at 1.8%
- The proportion of participants valuing any state as worse than dead is high (69.8% after the feedback module)

# The UK value set

Random effects Tobit  
no constant



## Value set results

Total number of interviews	1200
% Female	51.5%
Number of observations <b>before</b> feedback module	12 000
Number of observations <b>after</b> feedback module	10 680 (excl 1320)
Minimum value (worst health state: 55555)	-0.567
Percentage of values < 0	14.75%

# The UK value set

Mobility	
1	0
2	0.032
3	0.058
4	0.179
5	0.279

Self-care	
1	0
2	0.038
3	0.060
4	0.162
5	0.206

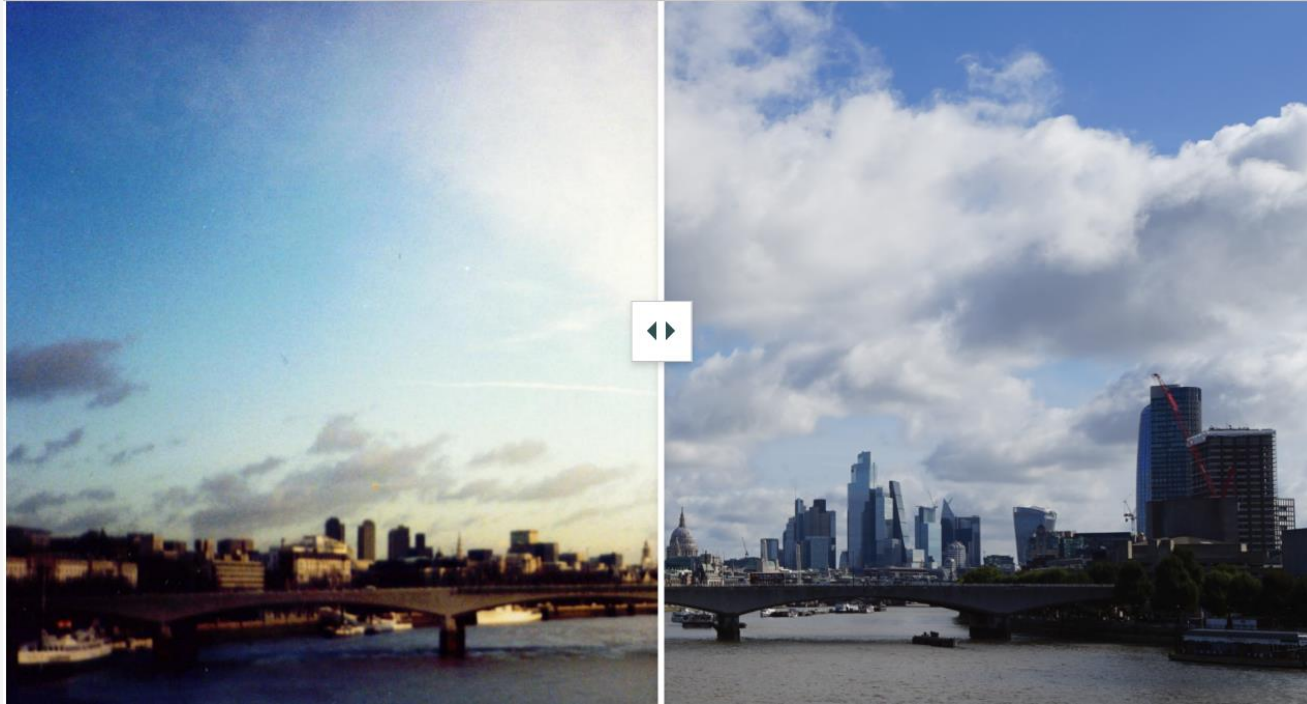
Usual activities	
1	0
2	0.049
3	0.086
4	0.184
5	0.212

Pain/discomfort	
1	0
2	0.056
3	0.066
4	0.371
5	0.479

Anxiety/depression	
1	0
2	0.041
3	0.126
4	0.313
5	0.391

# Blackfriars Bridge, London - 1995 and now

---



# Technology - 1995 and now

---



# What differences are there in UK 3L and 5L studies?


---

- UK EQ-5D-3L value set published in 1997
- Differences in studies reflect that the UK population demographics have changed, and reflect scientific progress in preference elicitation and preference data modelling
  - Different sample sizes and composition
  - Different modes of administration of interviews
  - Different preference elicitation protocols particularly for how states worse than dead were valued
  - Different regression models

Reference: Dolan, P. Modeling valuations for EuroQol health states. *Medical Care*. 1997;35:1095-1108.

# Are the results different to the EQ-5D-3L UK value set?

- More health states were valued as being worse than dead in 1997 3L study (34.6% 3L vs 14.8% 5L)
- Worst state value very similar (-0.594 3L vs -0.567 5L)
- Difference for mild states (mildest 3L state has a value of 0.883 vs 0.968 5L)

Impact on utilities	Current study	Impact in 1997 study
	Pain/discomfort	Pain/discomfort
	Anxiety/depression	Mobility
	Mobility	Anxiety/depression
	Usual activities	Self-care
	Least impact on utility	Self-care

# Discussion



# Modelling

---

- Balance between the purpose of a model for generating a value set, what is accepted in the relevant literature, and what is a fully appropriate model given the data
- We aimed for an overall modelling approach that is interpretable and defensible, recognising that there is also a need for transparency, reproducibility and simplicity for users of the value set
- Whilst alternative methods to Tobit offer promise, there is insufficient evidence available to confidently recommend these
- Further research exploring alternative models would be worthwhile to inform future value set studies

# Summary

---

- Choice to offer both in-person and videoconference interviews to enable greater inclusivity
- Study strength was the study governance and input from a wide range of people to ensure good quality data and appropriate methods
- Strength of data quality assessment outside of the study team

Achieved good quality data ✓

Modelled transparently and appropriately ✓

Overall representative sample of the UK general public ✓

To produce a UK EQ-5D-5L value set suitable for informing policy

# Impact so far

---

- The work has advanced international best practice, informing the development of EQ-5D-5L value sets in other countries
- Stimulating debate and further research on valuation techniques and health state preferences
- Attention online (recorded on 15<sup>th</sup> May after appearing online on 25<sup>th</sup> March):
  - 4827 views/downloads (next most downloaded paper from 2026 was viewed 1655 times); 44 posts on LinkedIn, with hundreds of reactions and dozens of reposts; 1 news story; 1 citation; 4 Mendeley readers



University of  
**Sheffield**

**Get in touch:** [d.rowen@sheffield.ac.uk](mailto:d.rowen@sheffield.ac.uk)

[www.sheffield.ac.uk](http://www.sheffield.ac.uk)

# NICE's perspective on adopting the EQ-5D-5L value set

Sophie Cooper

Senior scientific adviser, science policy

NICE

2 June 2026

**NICE** National Institute for  
Health and Care Excellence®



# About NICE

NICE helps practitioners and commissioners get the best care to people, fast, while ensuring value for the taxpayer.

We do this by:



Producing useful and usable guidance for health and care practitioners.



Focusing on what matters most by prioritising topics that are most important to the health and care system or address an unmet need.



Providing rigorous, independent assessment of complex evidence for new health technologies.



Encouraging the uptake of best practice to improve outcomes for everyone.

# What my presentation will cover

- Why NICE intends to adopt the new UK EQ-5D-5L value set
- How the EQ-5D-5L value set could affect NICE guidance
- Equality and health inequality impact assessment
- Implementation plans



## Quality review of a proposed EQ-5D-5L value set for England

October 2018

Authors: Mónica Hernández-Alava<sup>1</sup>, Stephen Pudney<sup>1</sup> & Allan Wailoo<sup>1</sup>

<sup>1</sup>SchHARR, University of Sheffield

## Position statement on use of the EQ-5D-5L value set for England (updated October 2019)

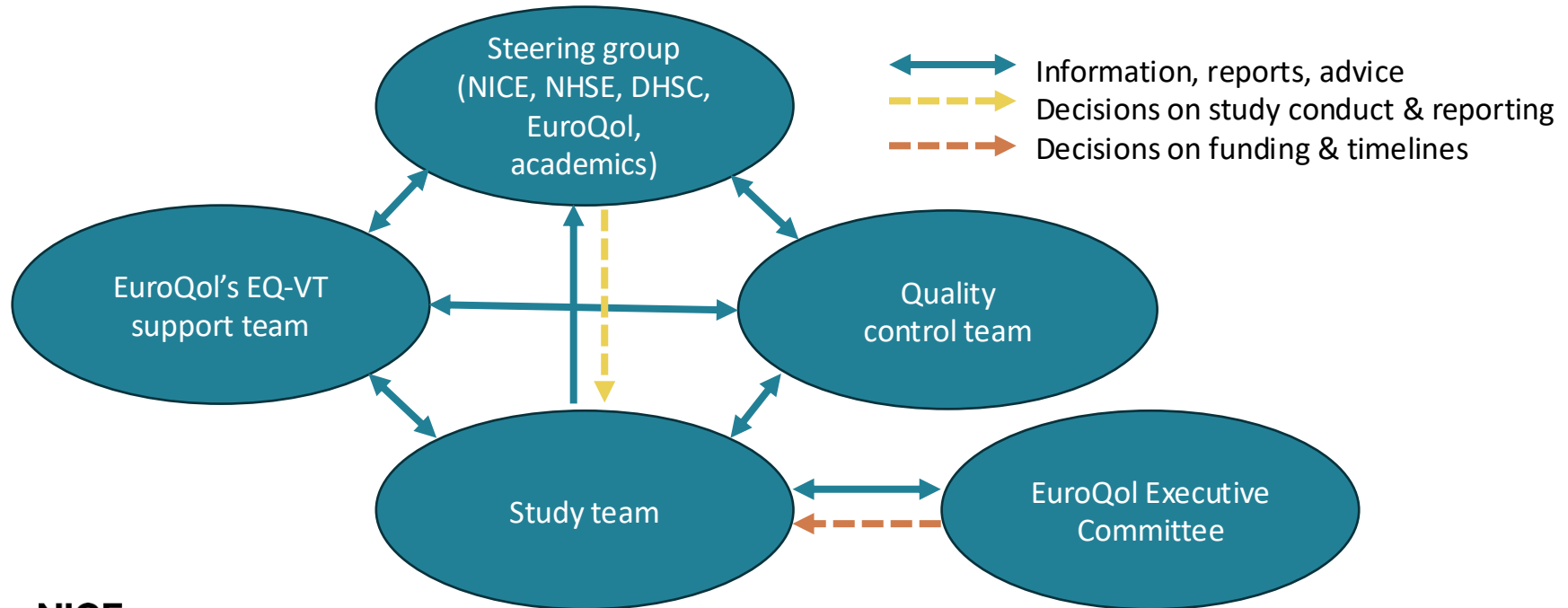
1. Since 2008, our preferred measure of health-related quality of life in adults has been EQ-5D. For most of that time, there has been only 1 version of the descriptive system, EQ-5D-3L. In this version, respondents rate their degree of impairment in different health domains using 3 response levels (no problems, some problems and extreme problems). The EuroQol Group has created a new descriptive system, EQ-5D-5L, with 5 response levels (no problems, slight problems, moderate problems, severe problems and extreme problems). EQ-5D-5L was designed to be more sensitive than EQ-5D-3L.
2. Our current [guide to the methods of technology appraisal 2013](#) states that data collected using the EQ-5D-5L descriptive system may be used for reference-case analyses. When the guide was written, there was no value set for EQ-5D-5L from which to derive utilities. Our methods guide (section 5.3.12) states that: 'Until an acceptable valuation set for the EQ-5D-5L is available, the validated mapping function to derive utility values for the EQ-5D-5L from the existing EQ-5D-3L may be used (available from [http://www.euroqol.org/](#)).
3. An EQ-5D-5L value set for England has been published (Devlin et al. 2018). Independent quality assurance (Hernández Alava et al. 2018) and reports from 4 independent experts raised concerns about the quality and reliability of the data collected in the valuation study, and the methods used to model these data. Accordingly, we've chosen not to use the EQ-5D-5L value set for England published by Devlin et al (2018). The English valuation study was one of the first to be carried out anywhere in the world. Since then the international standard valuation study protocol has been improved and additional quality control methods introduced.
4. The following statement applies to all guidance-producing programmes at NICE that use cost-utility analyses.

### Position statement

1. We do not recommend using the EQ-5D-5L value set for England published by Devlin et al (2018). Companies, academic groups and others preparing evidence submissions for NICE should use the 3L value set for reference-case analyses.
2. If data were gathered using the EQ-5D-5L descriptive system, utility values in reference-case analyses should be calculated by mapping the 5L descriptive system data onto the 3L value set. If analyses use data gathered using both EQ-5D-3L and EQ-5D-5L descriptive systems, the 3L value set should be used to derive all utility values, with 5L mapped onto 3L where needed.

# Study governance

## Independent quality control built in throughout



**NICE**

# What NICE does now

- We use a UK value set for the EQ-5D-3L.
- It's based on a study conducted in the 1990s.
- The study has some clear limitations:
  - reflects preferences from over 30 years ago
  - doesn't reflect current demographics or societal preferences
  - developed using older methods
  - anomalous results: high proportion of health states valued worse than dead.
- Data collected on 5L questionnaire needs to be mapped onto old 3L value set.

**NICE**



# Impact on cost effectiveness

- Impact assessment based on 39 recommendations from 37 NICE technology appraisals (Navega Biz et al. 2026).
- Case studies selected to broadly reflect the range of disease areas considered by NICE.
- Effect of 5L value set depended, among other things, on balance between impact on:
  - length of life
  - health-related quality of life.



# Impact on cost effectiveness

More cost  
effective  
(ICERS  
decreased)

All cancer  
medicines  
(17 case studies)

Most medicines  
that extended life  
in non-cancer  
conditions  
(7 of the 10 case  
studies)

Less cost  
effective  
(ICERS  
increased)

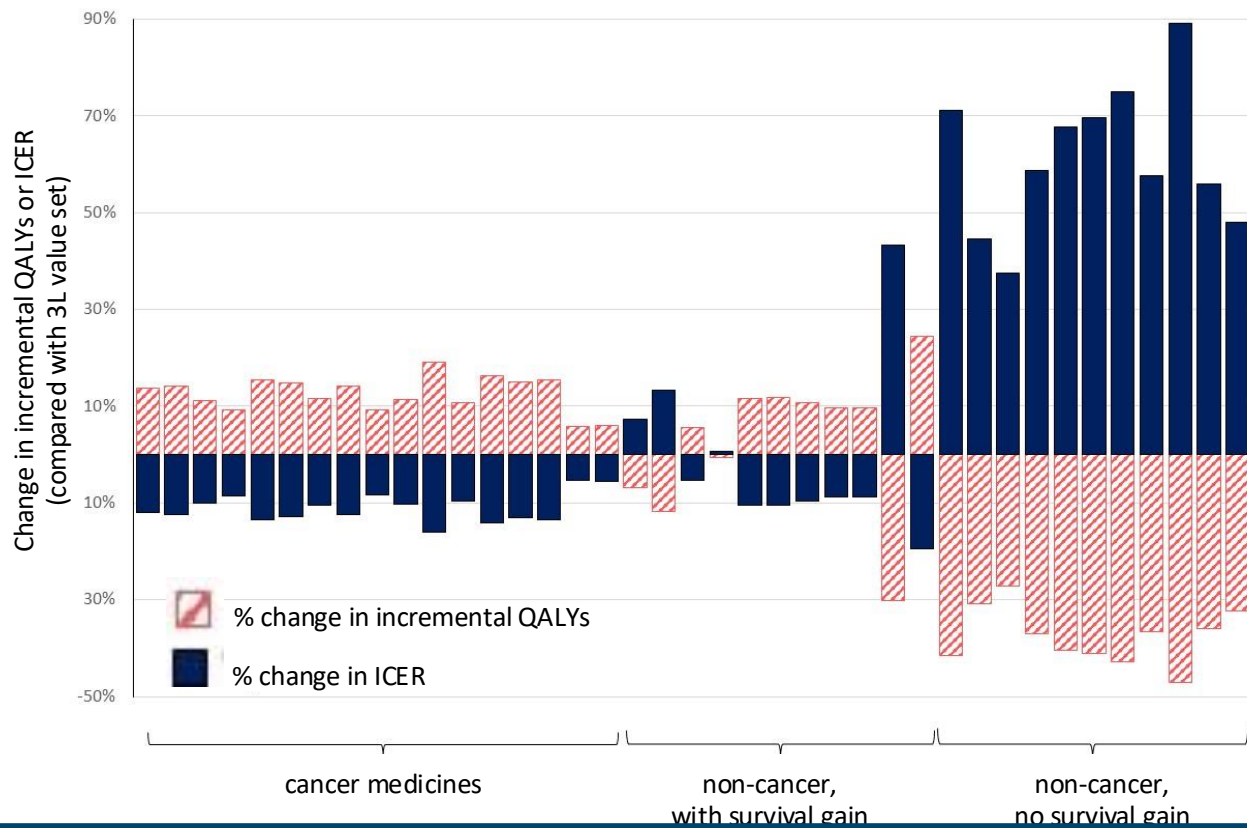
Medicines that  
did not affect how  
long people with  
non-cancer  
conditions live  
(10 case studies)

# Impact on cost effectiveness

- When compared with the 3L value set, the 5L value set shows that the public:
  - value length of life more than they did before
  - value health-related quality of life less than they did before.
- This reflects more than just updated societal preferences, also:
  - more sensitive measure (5 level version of EQ-5D)
  - improved valuation methods.



# Impact on cost effectiveness



ICER change, median

-12%

-9%

+59%

Proportional change (%) in incremental quality-adjusted life years (QALYs) and incremental cost-effectiveness ratios (ICERs) when using the EQ-5D-5L value set compared with the EQ-5D-3L value set

Reproduced with permission from [Navega Biz et al. \(2026\)](#)

# What is the NICE severity modifier?

- Extra weight is given to the health benefits (QALYs) of treatments for severe conditions.
- Severity is defined using absolute and proportional QALY shortfall.

Weight applied to QALY	Absolute QALY shortfall (total amount of health lost)	Proportional QALY shortfall (fraction of health lost)
1	Less than 12	Less than 0.85
x1.2	12 to 18	0.85 to 0.95
x1.7	At least 18	At least 0.95

- Makes it more likely that the ICER is within the thresholds usually considered cost effective.

# Why does the 5L value set affect the severity modifier?

- Calculating QALY shortfalls requires estimates of the general population's expected health (utility values) by age and sex.
- These estimates are based on:
  - how long people are expected to live (life expectancy)
  - how good their health is expected to be during those years.
- A weight is applied to each year of expected life to reflect the general population's health-related quality of life. These weights:
  - are derived using the EQ-5D value set
  - have been updated to reflect the new EQ-5D-5L value set.



# Impact on applying the severity modifier

- Impact assessment based on 57 recommendations:
  - same 39 recommendations from impact assessment on ICERs
  - plus 18 additional recommendations reflecting more severe conditions.
- Conclusion: moving from the EQ-5D-3L to the EQ-5D-5L value set is unlikely to change the severity weighting in most technology appraisal decisions (Wailoo et al. 2026).



# Equality and health inequality impact assessment

- Public Sector Equality Duty (PSED): must have due regard to the need to eliminate discrimination and improve equality of opportunity for people with characteristics protected under the Equality Act 2010
- 5L value set could have a negative impact for people with certain chronic and disabling conditions, if treatments become less cost effective.
- Confidential commercial data held by NICE indicates there will not be a significant negative impact on our recommendations or patient access.
- Negative impact mitigated by existing flexibilities in our methods:
  - NICE can accept data from other health-related quality of life measures.
  - NICE can accept higher ICERs for interventions that reduce inequality.



# Submitting utility data from other quality of life measures

- NICE recognises that EQ-5D is not always the most appropriate measure.
- To make a case that the EQ-5D is inappropriate, provide evidence that it:
  - misses aspects of quality of life that matter to people with the condition (lack of ‘content validity’)
  - is not sensitive enough to capture poor health (poor ‘construct validity’)
  - does not detect changes over time (low ‘responsiveness’).
- For more information, see 4.3.10 and 4.3.11 of NICE technology appraisal and highly specialised technologies guidance: the manual (PMG36).



# Why using the 5L value set is better

- Keeps NICE's methods up to date, robust, and reflective of what matters most to society today.
  - Better reflection of current societal preferences.
  - Based on more sensitive health descriptions (5-level version of EQ-5D).
  - Allows more accurate estimation of health benefits (QALYs).
- More accurate measurements mean better and fairer decisions.
- Patients get access to the treatments that truly matter.



# Implementation plans

- Timelines:
  - Consultation closed: Wednesday 27 May
  - Updated manuals published: summer 2026 (depending on consultation feedback)
  - Dissemination and training: ongoing.
- Applying new methods:
  - New methods will be prospectively applied to NICE guidance – to topics for which the evaluation started after the publication of the updated manuals.
  - Applies to all guidance (not just medicines).
  - Existing NICE recommendations using the EQ-5D-3L value set will not be reviewed solely to incorporate the EQ-5D-5L value set.



# References

- Cooper S, Spencer A, Boye Kristina et al. (2026) UK EQ-5D-5L Value Set: Insights into Process and Governance. Value Health (forthcoming)
- Devlin N, Shah K, Feng Y et al. (2018) [Valuing health-related quality of life: an EQ-5D-5L value set for England](#). Health Economics 27(1): 7–22
- Hernández Alava M, Wailoo A, Pudney S (2017) [Methods for mapping between the EQ-5D-5L and the 3L for technology appraisal](#). NICE DSU report [online, accessed 29 May 2026]
- Hernández Alava M, Pudney S, Wailoo A (2020) [The EQ-5D-5L value set for England: Findings of a quality assurance program](#). Value Health 23: 642–48.
- Navega Biz A, Hernández Alava M, Wailoo A (2026) [Switching from EQ-5D-3L to EQ-5D-5L in England: the impact in NICE technology appraisals](#). [Value Health](#) 29: 794–801
- Wailoo A, Navega Biz A, Hernández Alava M (2026) [What is the impact of EQ-5D-5L vs 3L on NICE severity weights?](#) NICE DSU report [online; accessed 29 May 2026]

Stay up to date



- Sign up to our newsletters - scan the QR code or visit [nice.org.uk/newsletters](https://nice.org.uk/newsletters)
- Follow us on social media - visit [link.tr.ee/nicecomms](https://link.tr.ee/nicecomms)