P12: HOW TO MEASURE AND VALUE HEALTH BENEFITS TO FACILITATE PRIORITY SETTING FOR PEDIATRIC POPULATION? DEVELOPMENT AND APPLICATION ISSUES

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EQ-5D-Y, comparison of instruments, and suggestions

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EQ-5D

Conflict of interest & disclaimer

- Nan Luo is a member of the EuroQol Group, a not-for-profit international research organization

- The views of Nan Luo do not necessarily reflect the views of the EuroQol Group

EQ-5D

EQ-5D family of instruments

- Three preference-based instruments
  – EQ-5D-3L (for adults since 1990)
  – EQ-5D-5L (for adults since 2009)
  – EQ-5D-Y (for children and adolescents since 2009)

- Descriptive system – to describe an individual's health
  – EQ-5D-3L (available in 187 languages)
  – EQ-5D-5L (available in 169 languages)
  – EQ-5D-Y (available in 73 languages)

- Country-specific value set – to assign a utility score to a health state
  – EQ-5D-3L (available for 25 countries)
  – EQ-5D-5L (available for 12 countries)
  – EQ-5D-Y (forthcoming)

Age range for EQ-5D-Y

Age (year)	Version
0-3	None
4-7	EQ-5D-Y (proxy version)
8-11	EQ-5D-Y
12-15	EQ-5D-Y or EQ-5D-3L
16+	EQ-5D-3L

EQ-5D-Y modes of administration

- Self-complete version on paper
- Self-complete version on PDAs/ Smartphones
- Self-complete version on Tablets
- Proxy version
  - Version 1: caregivers (the proxy) to rate the child in their opinion
  - Version 2: caregivers (the proxy) to rate how the child would rate his/her own health-related quality of life

EQ-5D-Y (page 1)　　　　　　　EQ-5D-3L (page 1)

Study #1: does valuation perspective matter?

- Kind et al (2015) measured the value of hypothetical EQ-5D-Y health states to the general public using a visual analogue scale (VAS).
- The value of the health states is contingent on who experiencing the states. The value of the states is lower if those are experienced by a 10-year-old child compared to an adult.
- This study suggests that it could be inappropriate to apply EQ-5D-3L values for adults to EQ-5D-Y health states observed among children and adolescents.

Study #2: does valuation perspective matter?

- Kreimeier et al (2015) studied the effects of version (EQ-5D-3L vs EQ-5D-Y) and perspective (adult vs child) on time trade-off (TTO) valuation of the general public.

- Main findings:
  - Values are higher for health states experienced by a 10-year-old child compared to health states experienced by an adult.
  - Values are higher for EQ-5D-Y states than those for EQ-5D-3L states.
  - EQ-5D-3L value sets are not suitable for EQ-5D-Y.

Study #3: are preferences of adults and adolescents different?

- A Spanish study (2016) measured the value of EQ-5D-Y states from both adults and adolescents (11-17 years old) using a best-worst scaling (BWS) method.

- Main findings:
  - BWS is feasible for both adults and adolescents to value EQ-5D-Y health states.
  - Adolescents and adults valued EQ-5D-Y health dimensions differently.

Study #4: are preferences of adults and adolescents different?

- A UK study (2017) measured the values of EQ-5D-Y states from the general population and adolescents (11-17 years old) using a discrete choice experiment (DCE).

- Main findings:
  - It is feasible to measure relative utility of EQ-5D-Y states using the DCE method.
  - Adolescents are capable of completing a DCE but appear to be less confident than adults in their choices
  - Adolescents and adults valued EQ-5D-Y states as experienced by children differently.

EQ-5D-Y valuation study design

- Two valuation methods
  - Use DCE to obtain latent scale values for EQ-5D-Y
    - sample of n=1000
    - online survey
  - Use composite-TTO to anchor the latent scale values
    - sample of n=150 (minimum requirement)
    - inclusion of a higher sample size is encouraged
    - face-to-face interviews
- Target population: the general adult population
  - Inclusion of adolescents is optional

Comparison of preference-based paediatric instruments

	CHU9D	EQ-5D-Y	HUI	AQOL-6D
Age range	6+	4+	5+	12+
Dimensions	Worried, sad, pain, tired, annoyed, schoolwork, sleep, daily routine, ability to join in activities	Mobility, self-care, usual activities, pain/discomfort, anxiety/depression	Sensation (vision, hearing, speech), mobility, emotion, cognition, dexterity self-care, pain, fertility	Independent living, mental health, coping, relationships, pain, senses (seeing, hearing, communication)
No. of health states defined	1.95 million	243	HUI2: 24,000 HUI3: 972,000	15,625
Source of preferences (perspective)	Adolescents, adults (adult)	Adults (adolescent)	Adults (adult)	Adolescents
Valuation technique	BWS+TTO, SG	DCE+TTO	VAS, SG	TTO
Available value sets	Australia, UK, The Netherlands, China, Japan (work in process)	*Coming soon*	Canada, UK	Australia/New Zealand, Fiji, Tonga

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Suggestions for valuation of HRQoL in paediatric HTA

- Is 'reference case' necessary? ***Yes!***
  - <u>Reasons</u>: variations in methods used in practice; systematic difference in values derived from different methods

- Whose value to use, adults or adolescents? ***Adults***
  - <u>Reasons</u>: adolescents lacking experience, abilities, and maturity

- What valuation technique to use? ***Not clear***
  - <u>Reasons</u>: TTO, DCE and SG are all feasible for adult respondents and there is no the best valuation method.

- What instrument to use? ***Not clear***
  - <u>Reasons</u>: very little is known about the relative merits of different instruments.

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Discussion points

- Whose value? Children or adults?

- Designate one particular instrument, e.g. EQ-5D by NICE?

- Age-specific instruments, e.g. 16D and 17D?

- Which health-state valuation method?

- Country-specific value set?