



Designing Economic Evaluation Alongside Clinical Studies

Health Economics Short Course

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<http://mdhs-study.unimelb.edu.au/short-courses/mspqh-short-courses/designing-economic-evaluation-alongside-clinical-studies/overview>

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COMMONWEALTH OF AUSTRALIA

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Module 2 – Measuring health-related quality of life and use of clinical outcomes

Centre for Health Policy
Melbourne School of Population and Global Health

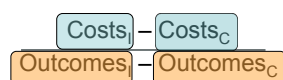


Overview

- **Identifying Outcomes for an Economic Evaluation**
- Cost-Effectiveness Analysis alongside a Study
- Cost-Utility Analysis and the Quality-Adjusted Life Year (QALY)
- Measuring and Valuing Health States
- Practical Recommendations
- Exercises



Cost-effectiveness: where do outcomes fit in?



Examples of incremental cost-effectiveness ratios:

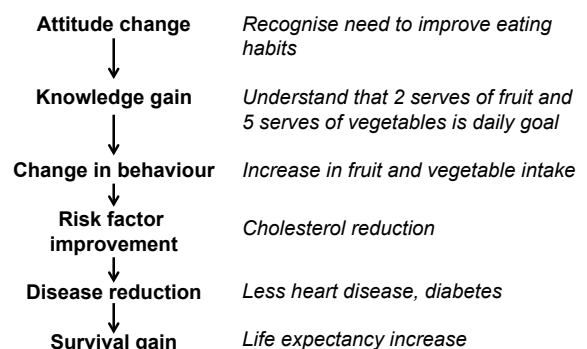
\$1,200/case of hospitalisation averted

\$50/case of malaria averted

\$4,500/QALY gained



Relationship between health outcome measurements





Examples of health outcome for an economic evaluation

- **Surrogate/Intermediate Outcome**
 - Viral load (HIV)
 - Glucose control (HbA1c)
 - Diastolic blood pressure
 - Vaccine uptake, attack rate
 - Schizophrenia relapse
 - Adverse event averted
 - Disease/cases averted or detected
 - Symptom-free days
 - Episode-free days
- **Final Outcome (mortality and morbidity)**
 - Survival (change in life expectancy) expressed as life years (LYs) gained
 - Disability days avoided
 - Disability adjusted life years (DALYs) avoided
 - Quality adjusted life years (QALY) gained



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Cost-Effectiveness Analysis alongside a study – example 1

- Cost-effectiveness of a long-term internet-delivered worksite health promotion programme on physical activity and nutrition: a cluster randomised controlled trial (Robroek et al., Health Education Research, 2012, 27(3):399-410)

Abstract

This study aims to evaluate the cost-effectiveness of a long-term workplace health promotion programme on physical activity (PA) and nutrition. In total, 924 participants enrolled in a 2-year cluster randomised controlled trial, with departments ($n = 74$) within companies ($n = 6$) as the unit of randomization. The intervention was compared with a standard programme consisting of a physical health check with face-to-face advice and personal feedback on a website. The intervention consisted of several additional website functionalities: action-oriented feedback, self-monitoring, possibility to ask questions and monthly e-mail messages. Primary outcomes were meeting the guidelines for PA and fruit and vegetable intake. Secondary outcomes were self-perceived health, obesity, elevated blood pressure, elevated cholesterol level and maximum oxygen uptake. Direct and indirect costs were calculated from a societal perspective, and a process evaluation was performed. Of the 924 participants, 72% participated in the first and 66% in the second follow-up. No statistically significant differences were found on primary and secondary outcomes, nor on costs. Average direct costs per participant over the 2-year period were €376, and average indirect costs were €9478. In conclusion, no additional benefits were found in effects or cost savings. Therefore, the programme in its current form cannot be recommended for implementation.

Introduction

Insufficient physical activity (PA) and poor nutrition are important determinants of the burden of disease in most western countries [1]. Therefore, a whole range of health promotion programmes is offered. There are indications that Internet-derived interventions may be effective in improving PA, healthy nutrition and weight reduction [2–6]. However, low participation and high levels of attrition are often observed in Internet-derived programmes [6–8]. Therefore, different settings and methods to provide Internet-derived programmes should be considered. The workplace might be a promising setting for health promotion with the ability to reach large numbers of people in a natural social environment [10, 11].

Systematic reviews have reported null to modest effects of workplace health promotion programmes (WHPPs) on PA, healthy diet and measures of overweight [12–17]. Effect sizes were often low, e.g. less than 0.5 kg m² decrease in body mass index (BMI) [17, 18], and the quality of the underlying studies is often limited, e.g. lacking a control group. In the literature, several risks for ineffective health promotion programmes have been identified: a low selective participation, lack of adherence to the



Cost-Effectiveness Analysis alongside a study – example 2

- Specialized rheumatology nurse substitutes for rheumatologists in the diagnostic process of fibromyalgia: a cost-consequence analysis and a randomized controlled trial (Kroese et al., Rheumatology, 2011, 38(7):1413-1421)

ABSTRACT. Objective. To perform a cost-consequence analysis of the substitution of specialized rheumatology nurses (SRN) for rheumatologists (RMT) in the diagnostic process of fibromyalgia (FM), using both a healthcare and societal perspective and a 9-month period.

Methods. Alongside a randomized controlled trial, we measured costs and consequences of a nurse-led diagnostic consult (SRN group, $n = 97$) versus a rheumatologist-led diagnostic consult (usual care (UC) group, $n = 96$). Patients were followed for 9 months. Every second month a questionnaire on medical consumption and social participation was filled out. Satisfaction was measured 1 week after the first consultation. During followup, health status was measured by health-related quality of life (EQ-5D), functional status (Fibromyalgia Impact Questionnaire), fatigue (Checklist Individual Strength), and self-efficacy (Generalized Self-Efficacy Scale).

Results. Patients in the SRN group were significantly more satisfied. Improvements in health status were similar in both groups after 9 months of followup. Total costs for healthcare consumption and patient and family costs were significantly lower in the SRN group (€1298 vs €1644; difference €346; 95% CI –€746 to –€2). Total societal costs were €3853 per patient for the SRN group and €5293 for the UC group after 9 months of followup (difference €1440; 95% CI –€3721 to €577).

Conclusion. From both a healthcare and societal perspective, the nurse-led diagnostic process can be recommended. Patients in the SRN group were significantly more satisfied, improvements in health status were similar in both groups, and total societal costs were lower for the SRN group compared to the RMT group after 9 months' followup. Registered with Current Controlled Trials, no. ISRCTN77212411. (First Release April 1 2011; J Rheumatol 2011;38:1413–22; doi:10.3899/jrheum.100753)



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Cost Utility Analysis (CUA)

- CUA uses a **preference-adjusted** unit of consequence (e.g. QALY or DALY) as the outcome measure
- Preferences for disparate outcomes are captured via utility weights (quality of life weights)
- It combines more than one attribute of health (e.g. include both physical health and mental health)
- CUA can involve a comparison of health care for different disease types (e.g. a comparison of care for cancer vs care for diabetes)

What is a QALY?

- An economic outcome that combines preferences for **length of survival** and **quality during survival** into a single measure
- The QALY is a measure of preference-adjusted (QoL) survival time
- QALYs have an explicit time dimension:
 - $\text{QALY} = \text{QoL weight} \times \text{duration}$

Health utility (or health-related QoL) weights

- Values (generally) range between 0 (death) and 1 (perfect health)
 - Ex: A value of 0.8 indicates that a year lived in that state is worth 0.8 of a year in perfect health
 - NB: It is possible to have states perceived as worse than death (<0)
- Utility weights have equal intervals properties
 - A given change in absolute value means the same regardless of where you are on the scale
 - Ex: 0.2 to 0.3 same as 0.7 to 0.8
- There is a difference in how we use QoL weights in economic evaluation compared to psychology

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Health State Measurement and Valuation

- **Measuring health status: Non-preference based measures**
 - Disease specific measures (e.g. Minnesota living with heart failure questionnaire)
 - Generic measures (e.g. Short Form 36 (SF-36); Peds QL)
 - www.qolid.org
- Measuring & valuing health status: Preference based measures
 - Direct elicitation (e.g. Time-trade-off, Standard Gamble, Visual Analogue Scale)
 - Multi-Attribute Utility Instruments (MAUIs) (e.g. EuroQoL-5D (EQ-5D), Health Utilities Index (HUI), AQoL)

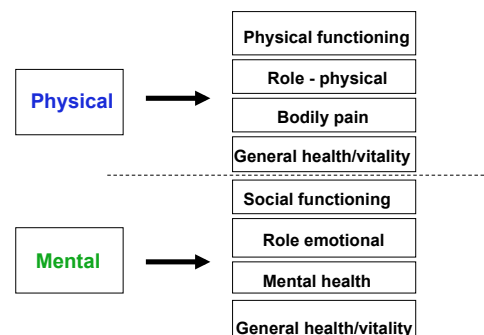
Disease specific measures

- Example of the **Minnesota living with heart failure questionnaire**
- 21 Questions representative of the ways **heart failure and treatments** can affect quality of life dimensions:
 - Physical
 - Emotional
 - Social
 - Mental

Ex: "Did your heart failure prevent you from living as you wanted during the past month by [making your walking about or climbing stairs difficult]?"

Generic measures

- Example of the **Short Form 36 (SF-36)** domains



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Your Health and Well-Being

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities. *Thank you for completing this survey!*

For each of the following questions, please mark an ☒ in the one box that best describes your answer.

1. In general, would you say your health is:

Excellent	Very good	Good	Fair	Poor
☐	☐	☐	☐	☐

2. Compared to one year ago, how would you rate your health in general now?

Much better now than one year ago	Somewhat better now than one year ago	About the same as one year ago	Somewhat worse now than one year ago	Much worse now than one year ago
☐	☐	☐	☐	☐

4. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health?

Yes	No
☐	☐
Yes	No
☐	☐
Yes	No
☐	☐
Yes	No
☐	☐

5. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

Yes	No
☐	☐
Yes	No
☐	☐
Yes	No
☐	☐

THE UNIVERSITY OF MELBOURNE | **Health State Measurement and Valuation**

- Measuring health status: Non-preference based measures
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THE UNIVERSITY OF MELBOURNE | **Multi-Attribute Utility Instruments**

Examples of Multi-Attribute Utility Instruments (MAUIs):

- EQ-5D (Europe/UK)
- HUI II/III (Canada)
- AQoL (Australia)
- 15-D (Finland)
- Rosser-Kind Index (UK)
- Quality of Wellbeing scale (US)
- Others: CHU-9D-child instrument

<http://www.sheffield.ac.uk/scharr/sections/heds/mvh>

THE UNIVERSITY OF MELBOURNE | **Comparing instruments**

	Number of Questions	Answer level (Sensitivity)	Dimensions Captured	Children/Youth?	Costs
EQ-5D	5	3-level (5-level exists, valuations under development)	Physical: Diverse Psycho-social: Limited	Available* (Youth) EQ-5D-Y *(no valuations)	Varies
AQoL	35 (AQoL-8D) Fewer for other versions	4- to 7- level for Adolescents version	Physical & Psycho-social: Diverse (incl senses)	Available (Adolescent)	Free
PedsQL	28	5- level	Physical & Psycho-social: Diverse	Available (Age 8-12)	Varies
HUI II / HUI III	8 (HUI III)	Varies: 3- to 6-	Physical: Diverse (incl senses) Psycho-social: Relatively limited	Available (HUI II)	Free/ fees for proprietary materials
SF-12 / SF-36	12 (SF-12) 36 (SF-36)	Varies: 3- to 6-	Physical & Psycho-social: Diverse	Not available	Varies
CHU 9D	9	5-level	Physical & Psycho-social: Diverse	Only for Children	Free for non-commercial / Fees otherwise

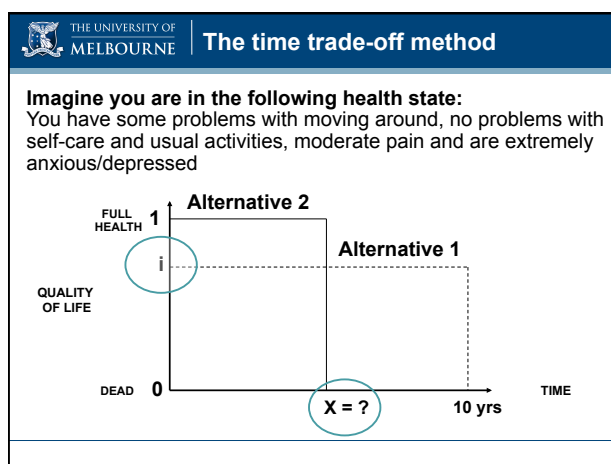
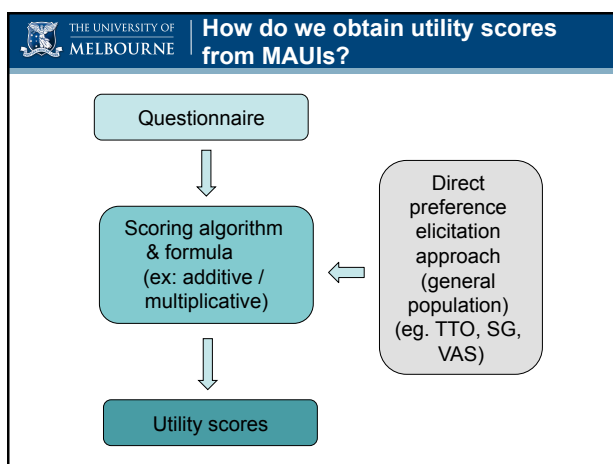
THE UNIVERSITY OF MELBOURNE | **EuroQol EQ-5D**

- Self-description** of current health-related QoL
 - 5 domains (dimensions):
 - Mobility; Self care; Usual activities; Pain/discomfort; Anxiety/depression
 - Three levels in each domain:
 - No problem; Some/moderate problems; Unable to/extreme problems
 - 3⁵ = 243 different possible health states
- Easy to use but "lumpy"
- EQ-5D-5L newly available with 5 levels, value sets being collected & published now

THE UNIVERSITY OF MELBOURNE | **How do we obtain utility scores from MAUIs? Example of the EQ-5D**

A person has some problems with moving around, no problems with self-care and usual activities, has moderate pain and is extremely anxious/depressed

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 with self-care ☐ I am unable to wash or dress myself Usual activities ☒ I have no problems with performing my usual ☐ 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	EQ-5D health state = 21123
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Developing scoring algorithm for MAUIs

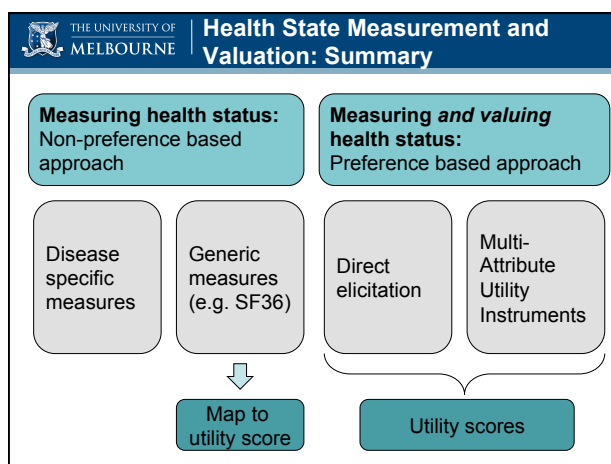
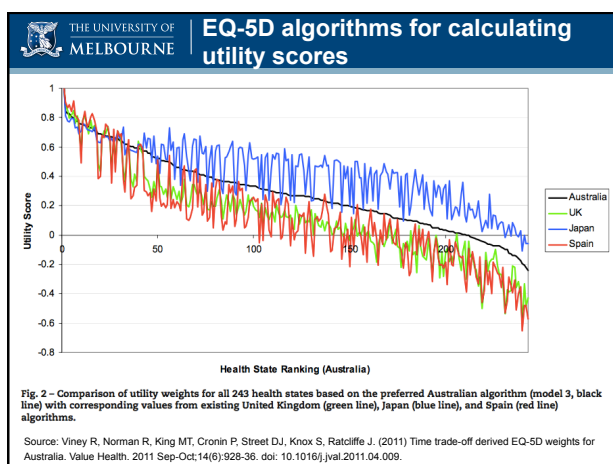
Example of the EQ-5D:
A sample of the 243 EQ-5D health states valued using TTO from 3,337 British adults (similar in Australia, $n = 417$)

- From this, obtain a scoring algorithm (tariff) for all the health states
- Using an (additive) formula, produce an overall single value for health status (utility)

References:
Development of UK tariff: Dolan P, Gudex C, Kind P, Williams A. (1995) A Social Tariff for EuroQoL: Results from a UK General Population Survey. Discussion Paper 138, Centre for Health Economics. University of York.
Development of Australian tariff: Viney R, Norman R, King MT, Cronin P, Street DJ, Knox S, Ratcliffe J. (2011) Time trade-off derived EQ-5D weights for Australia. Value Health. 2011 Sep-Oct;14(6):928-36. doi: 10.1016/j.jval.2011.04.009.

EQ-5D algorithms for calculating utility scores

Dimension	Level	Coefficient	
		UK	Australia
Constant	any downward move	-0.081	-0.105
Mobility	2: some problems	-0.069	-0.068
	3: confined to bed	-0.314	-0.374
Self care	2: some problems	-0.104	-0.087
	3: unable to	-0.214	-0.267
Usual activities	2: some problems	-0.036	-0.053
	3: unable to	-0.094	-0.139
Pain/discomfort	2: moderate	-0.123	-0.068
	3: extreme	-0.386	-0.449
Anxiety/depression	2: moderate	-0.071	-0.097
	3: extreme	-0.236	-0.397
Other coefficients/terms		Level 3 constant	Interaction terms



THE UNIVERSITY OF MELBOURNE | Mapping algorithms

JOURNAL OF HEALTH ECONOMICS
ELSEVIER

Journal of Health Economics 21 (2002) 271–292
www.elsevier.com/locate/econbase

The estimation of a preference-based measure of health from the SF-36

John Brazier*, Jennifer Roberts, Mark Deverill
Sheffield Health Economics Group, School of Health and Related Research, University of Sheffield,
Regent Court, 30 Regent Street, Sheffield S1 4DA, UK
Received 9 November 2000; received in revised form 25 June 2001; accepted 6 November 2001

Abstract
This paper reports on the findings of a study to derive a preference-based measure of health from the SF-36 for use in economic evaluation. The SF-36 was revised into a six-dimensional health state classification called the SF-6D. A sample of 249 states defined by the SF-6D have been valued by a representative sample of 611 members of the UK general population, using standard gamble. Models are estimated for predicting health state valuations for all 18,000 states defined by the SF-6D. The econometric modelling had to cope with the hierarchical nature of the data and its skewed distribution. The recommended models have produced significant coefficients for levels of the SF-6D, which are robust across model specification. However, there are concerns with some inconsistent estimates and over prediction of the value of the poorest health states. These problems must be weighed against the rich descriptive ability of the SF-6D, and the potential application of these models to existing and future SF-36 data sets. © 2002 Elsevier Science B.V. All rights reserved.

JEL classification: I10

THE UNIVERSITY OF MELBOURNE | Mapping algorithms

Pharmacoeconomics (2014) 32:693–706
DOI: 10.1007/s40273-014-0153-y

ORIGINAL RESEARCH ARTICLE

Mapping EQ-5D Utility Scores from the PedsQL™ Generic Core Scales

Kamran A. Khan · Stavros Petrou ·
Oliver Rivera-Arias · Stephen J. Walters ·
Spencer E. Boyle

Published online: 9 April 2014
© Springer International Publishing Switzerland 2014

Abstract
Purpose The Pediatric Quality of Life Inventory™ (PedsQL™) General Core Scales (GCS) were designed to provide a modular approach to measuring health-related quality of life in healthy children, as well as those with acute and chronic health conditions, across the broadest, empirically feasible, age groups (2–18 years). Currently, it is not possible to estimate health utilities based on the PedsQL™ GCS, either directly or indirectly. This paper assesses different mapping methods for estimating EQ-5D health utilities from PedsQL™ GCS responses.

Methods This study is based on data from a cross-sectional survey conducted in four secondary schools in England amongst children aged 11–15 years. We estimate models using both direct and response mapping approaches to predict EQ-5D health utilities and responses. The mean squared error (MSE) and mean absolute error (MAE) were used to assess the predictive accuracy of the models. The models were internally validated on an estimation dataset that included complete PedsQL™ GCS and EQ-5D scores for 559 respondents. Validation was also performed making use of separate data for 337 respondents.

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THE UNIVERSITY OF MELBOURNE | Choice of instrument or scale

- Choosing between instruments should be based upon their **suitability** for and **sensitivity (responsiveness)** to the characteristics of the particular population and intervention
→ Domains / levels
- Special population group (e.g. children)
- Length and mode of questionnaire (time costs, drop-outs, incomplete questionnaires)
- Some have costs and require registering

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- Considerable regional variation when responding to quality of life questions
- Asian populations consistently report less problems
- Cannot be explained by demographic or clinical differences

Regional variation in responses to EQ-5D

EQ-5D Domain	Asia (%)	Eastern Europe (%)	Established market economies (%)
Mobility	~85	~65	~75
Self-care	~95	~85	~90
Usual activities	~90	~75	~85
Pain	~65	~45	~55
Anxiety	~75	~55	~70

Salomon, et al. (2011) "Comparability of patient-reported health status: multi-country analysis of EQ-5D responses in patients with type 2 diabetes", Medical Care, Oct;49(10): 962-70.

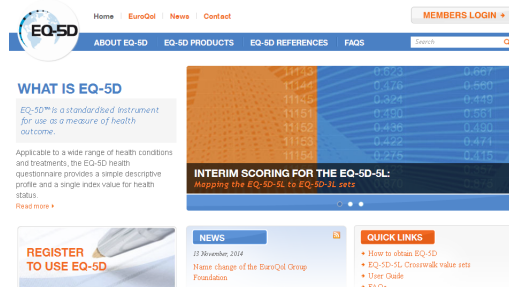
THE UNIVERSITY OF MELBOURNE | Outcomes for CEA/CUA: Conclusions

- Selecting appropriate (intermediate and final) outcomes
- CEA or CUA?
- To collect (or not to collect) quality of life data
 - NB: In many cases it will be necessary to attach utility weights to health states that are not observed within a study, perhaps because they are due to events that occur outside the study timeframe
- Economic evaluation typically tries to align to the policy/real world decision context

Extra Slides – Further Information on Generic Health Status Instruments and MAUIs

EQ-5D Further Information

- Website: <http://www.euroqol.org/>



EQ-5D

- EQ-5D available, officially, in more than 100 languages
- Several country-specific valuation sets (tariffs) are also available
 - 10 EU countries: Belgium, Finland, Germany, Greece, Hungary, Netherlands, Slovenia, Spain, Sweden, UK
 - Others: Armenia, Canada, Japan, NZ, Australia and Zimbabwe
- If planning to use in your study, need to register first
- Licensing fees depend on type of study, funding source, sample size and number of requested languages.

EQ-5D

- Questionnaires
 - Sample Questionnaire
http://www.euroqol.org/fileadmin/user_upload/Documenten/PDF/Products/Sample_UK_English_EQ-5D-3L_Paper_Self_complete_v1.0_ID_23963.pdf
 - Youth Questionnaire (EQ-5D-Y) available but no valuations yet
 - EQ-5D-Y User guide
http://www.euroqol.org/fileadmin/user_upload/Documenten/PDF/Folders_Flyers/EQ-5D-Y_User_Guide_v1.0_2014.pdf
 - Sample Questionnaire
http://www.euroqol.org/fileadmin/user_upload/Documenten/PDF/Products/Sample_UK_English_EQ-5D-Y_Paper_Self_complete_v1.0_ID_24749.pdf

EQ-5D

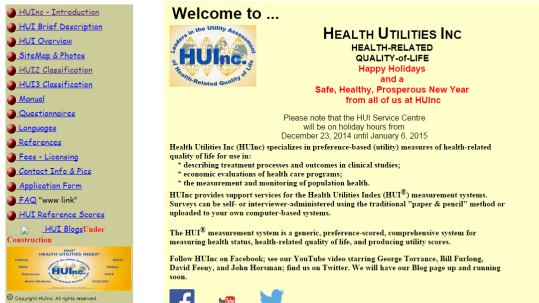
Demo – Web version demo available:
<http://eq-5d-demo.euroqol.org/>

EQ-5D-5L (5 Levels)

- Launched in 2009
- Identifies new levels previously omitted by EQ-5D which were found to be important to patients (5 levels of response- no problem, slight, moderate, severe, extreme)
- Wording has changed
- Currently 43 official language versions
- A valuation set (tariff) is being developed for a number of countries including the UK
- Cross walk values are available (relationship between EQ-5D-3 and EQ-5D-5 scores)

THE UNIVERSITY OF MELBOURNE | **Health Utilities Index (HUI)**

- Website: <http://www.healthutilities.com/>



THE UNIVERSITY OF MELBOURNE | **Health Utilities Index (HUI)**

- HUI II / III independent and complementary
- Domains:
 - HUI2**
 - Sensation: 4-level
 - Mobility: 5- level
 - Emotion: 5- level
 - Cognition: 4- level
 - Self-care: 4- level
 - Pain: 5-level
 - Fertility: 3- level
 - HUI3**
 - Vision: 6- level
 - Hearing: 6- level
 - Speech: 5- level
 - Ambulation: 6- level
 - Dexterity: 6- level
 - Emotion: 5- level
 - Cognition: 6- level
 - Pain: 5- level
- Licensing fees apply

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- Website: <http://aqol.com.au/>



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- Choice of AQoL Instrument:

Instrument	Items	Completion time	Dimensions included
AQoL-8D	35	~ 5 min	Independent Living, Happiness, Mental Health, Coping, Relationships, Self Worth, Pain, Senses
AQoL-7D	26	3-4 min	Independent Living, Mental Health, Coping, Relationships, Pain, Senses, Visual Impairment
AQoL-6D	20	2-3 min	Independent Living, Mental Health, Coping, Relationships, Pain, Senses
AQoL-4D	12	1-2 min	Independent Living, Mental Health, Relationships, Senses

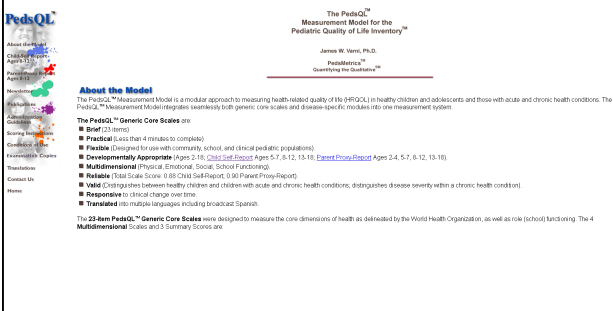
- AQoL-6D Adolescent Instrument**
 - Scoring algorithms available for Australia, New Zealand, Fiji, Tonga

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- Questionnaires
 - AQoL-8D: <http://aqol.com.au/documents/AQoL-8D/Double Column 8D Data Collection Copy.pdf>
 - AQoL-6D for Adolescents: <http://www.aqol.com.au/documents/AQoL-6D/AQoL-6D adolescent version 250211.pdf>
- Licensing fee
 - No fees associated with registration or use of the AQoL

THE UNIVERSITY OF MELBOURNE | **Pediatric Quality of Life Inventory (PedsQL)**

- Website: <http://www.pedsqol.org/>



THE UNIVERSITY OF MELBOURNE | **PedsQL**

- Target group
 - Children and adolescents (age 2-18)
- Two surveys available
 - 1) Child-Self Report
 - 2) Parent-Proxy Report
- Multidimensional domains
 - 8 Q's on Health and Activities
 - 5 Q's on Feelings
 - 5 Q's on Relationships with others
 - 5 Q's on School Life

THE UNIVERSITY OF MELBOURNE | **PedsQL**

- Questionnaire samples
 - Child-Self Report
<http://www.pedsq.org/PedsQL4-0Ch.doc>
 - Parent-Proxy Report
<http://www.pedsq.org/PedsQL4-0PC.doc>
- Licensing fee
<http://www.pedsq.org/PedsQL-CostStructure.pdf>

The licence fee for using the PedsQL™ scales, modules and translations, varies according to the study type and financing, as follows:

Not funded academic research	Free
Funded academic research	Cost per study (click for detailed cost structure)
Large non-commercial organization research and evaluation (e.g. States, Nations, Hospitals, Healthcare Systems)	Annual license fee (click for detailed cost structure)
Commercial studies	
Unlimited research, evaluation and clinical use on a yearly contract	

THE UNIVERSITY OF MELBOURNE | **SF Health Surveys**

- Website : <http://www.sf-36.org/tools/>

ANNOUNCEMENTS

QualityMetric Forms Office of Grants and Scholarly Research to Support Use of Patient-reported Health Outcomes Surveys for the Academic/Research Community

QualityMetric Scientists Presented with the International Society for Quality of Life Research (ISPOR) 2009 Outstanding Article of the Year Award

QualityMetric Launches Fall Suite of Asthma Control and Asthma Impact Surveys for Adults and Children at www.qualitymetric.com/asthma

The Health Assessment Lab, under the leadership of John E. Ware, Jr., Ph.D., has announced the appointment of Martha Rungtongkiet as its Executive Director

The following is a chapter from "The Use of Psychological Testing for Treatment Planning and Outcomes Management, 3rd Edition," edited by Mark E. Maruish.

Article Series Authored by QualityMetric Scientists on the P/NHw Headache Impact Test™ and the Headache Impact Survey™ Published in "Quality of Life Research"

Ware Conducts AcademyHealth Cyber Seminar Series on Outcomes

Dr. Ware selected to receive President's Award of the International Society for Quality of Life Research (ISPOR)

Dr. Ware presents at 9th Annual Health Outcomes Conference (AHOC)

SF SURVEYS Click here for details and demos

SF-36 SF-36v2 SF-12 SF-12v2 SF-8

THE UNIVERSITY OF MELBOURNE | **SF Health Surveys**

- Domains for SF-36, SF-12, SF-8
 - All measure the same eight health domains
 - Physical Functioning (PF)
 - Role-Physical (RP)
 - Bodily Pain (BP)
 - General Health (GH)
 - Vitality (VT)
 - Social Functioning (SF)
 - Role-Emotional (RE)
 - Mental Health (MH)
- Each survey provides psychometrically-based physical component summary (PCS) and mental component summary (MCS) scores.

THE UNIVERSITY OF MELBOURNE | **SF Health Surveys**

- Target group
 - Adults of 18 years and older
 - Not recommended for children/adolescents
- Licensing fee
 - Information available upon request
<http://www.sf-36.org/wantsf.aspx?id=1>
 - Need to complete and submit the License Application Form online
<https://www.optum.com/optum-outcomes/survey-request-form.html>

THE UNIVERSITY OF MELBOURNE | **The Child Health Utility 9D (CHU 9D)**

- Website:
<https://www.shef.ac.uk/scharr/sections/heds/mvh/paediatriac/about-chu9d>

Health Economics and Decision Science

A brief overview of the Child Health Utility 9D (CHU9D)

What is the CHU9D?

The CHU9D is a paediatric generic preference based measure of health-related quality of life. It consists of a descriptive system and a set of preference weights, giving only values for each health state described by the descriptive system, allowing the calculation of quality-adjusted life years (QALYs) for use in cost-utility analysis. The descriptive system and the preference weights are now available for use.

How was the CHU9D developed?

The CHU9D has been developed exclusively with children. The dimensions are based on interviews with over 70 children with a wide range of health problems, further testing work with children was undertaken to develop values for the dimensions and a child interview system was produced. This was tested on 100 school children and 80 children in hospital (including medical, surgical and other non-pediatric) and subsequently refined to produce the final descriptive system. Further details can be found under the publications page.

The Descriptive System (Questionnaire)

- Application generic
- Number of dimensions (questions): 9
- Number of health response options per dimension: 3
- Age range: 7-17 years
- Mode of completion: self-completion (proxy completion also available for younger children)
- Recall period: today (not right)

You can view the descriptive system in the download box above, however please note that this is to view only, so that you can discuss if you are interested in using the CHU9D.

Preference weights

Preference weights for the CHU9D were obtained from a sample of the UK general population using the recognised valuation technique of standard gamble. Members of the general population were asked to value a selection of health states from which a model was estimated to predict all of the health states described by the CHU9D.

Applications

Since the measure was originally developed with children aged 7-17 years, since then it has been validated in an adolescent

- Paediatric generic preference based measure of health related quality of life
- **Number of dimensions (questions): 9**
- **Number of levels per dimension: 5**
- **Age range: 7-17 years**
- **Mode of completion:** self completion (proxy completion also available for younger children)
- **Recall period:** today/last night

- Sample questionnaire
https://www.shef.ac.uk/polopoly_fs/1.441111/file/Health-Questionnaire-final-watermarked.pdf

Instructions

These questions ask about how you are **today**. For each question, read all the choices and decide which one is most like you **today**. Then put a tick in the box next to it like this ☐. Only tick **one** box for each question.

Example:

Today I feel quite upset so I will tick this box:

Upset

- ☐ I don't feel upset today
- ☐ I feel a little bit upset today
- ☐ I feel a bit upset today
- ☐ I feel quite upset today
- ☐ I feel very upset today

Now think about and answer the rest of the questions below:

Worried

- ☐ I don't feel worried today
- ☐ I feel a little bit worried today
- ☐ I feel a bit worried today
- ☐ I feel quite worried today
- ☐ I feel very worried today

- **Questions cover the following dimensions (areas/feelings):**
 - Worried
 - Sad
 - Pain
 - Tired
 - Annoyed
 - School Work/Homework
 - Sleep
 - Daily routine (getting dressed, etc)
 - Ability to join in activities (sports, etc)

- Licensing fee
 - Non-commercial applications: free of charge
 - E.g. work funded by research councils, Government agencies and charities
 - Commercial applications: charges apply
 - Prices to be negotiated upon application