QORU | quality and outcomes of person-centred care research unit

Measuring outcomes for people with long-term conditions: the role of EQ5D and other quality indicators

QORU seminar
11 January 2013

University of Kent

LSE The London School of Economics and Political Science

University of Oxford

Structure

- Background
- Conceptual issues with measuring outcomes for people with long-term conditions
- Preliminary analysis of outcomes data (work in progress, subject to change)

Background

- Policy position
  - White Paper *Liberating the NHS*
    - A focus on outcomes
    - And on interventions that help people to better cope with their LTC
  - Operationalised in NHS Outcomes Framework
    - Domain 2: Enhancing quality of life for people with long-term conditions
  - Mandate to NCB
    - 'Progress' expected re domain 2:
    - Overarching indicator: Health related quality of life (for people with long-term conditions)
- Assessing 'progress':
  - **Measurement issue**: measuring HRQOL
  - **Attribution issue**: determining whether change in HRQOL indicator is due to the activity of the NHS (as opposed to other causes)

Health related quality of life for people with long-term conditions

- Measurement:
  - EQ-5D the stated measure
  - Collected in the HSE and GP patients survey
  - Well-established and validated tool focused on measuring the benefits of a wide range of health care interventions.
- Attribution:
  - Statistical modelling to assess what factors are associated with change in EQ-5D score

Measurement issue

- Is EQ-5D a good measure for this purpose i.e. for people with LTCs?
- Many studies have shown that EQ-5D is sensitive to capturing the HRQoL implications of having a LTC
- But, EQ-5D has a focus on *personal* impairment limiting quality of life

Potential limitations

- (1) EQ-5D (or other similar measures of personal functioning) might under-assess the beneficial effects of interventions that help people *cope* with their condition
  - e.g. services that help with personal care tasks, or technology that allows people to overcome physical or psychological impairment.
- (2) a too limited focus on 'higher order' aspects of QoL such as (a) dignity, control and self-esteem and (b) social relationships

(1) Personal functioning

- Arguably the focus should be whether people can (potentially/have capability) to achieve QoL related activities, not (only) whether they can personally achieve them.
- Examples:
  - a wheelchair for someone who is paraplegic
  - occupational therapy interventions for people with spinal cord injuries
    - (OT allowing people to learn new skills and adapt previous ones to maximize independence)

(2) 'Well-being' outcomes

- Mandate: "Ensuring people feel supported to manage their condition"
  - QoL domains: dignity, control and self-esteem
- Also quality of social relationships
- … indirectly measured in the Anxiety/Depression and usual activities domains of EQ-5D
  - … but sufficiently sensitive?

Hypothesis

- There are many domains of EQ-5D which would be relevant
  - e.g. management of pain for arthritis sufferers; managing diabetes symptoms etc…
- Main hypothesis: that EQ-5D alone could under-measure the impact of a range of interventions and support services used by people with LTCs

Analysis: aim

- See whether ASCOT used in conjunction with EQ-5D is more sensitive in measuring the impact of services than using EQ-5D alone
- Use personal health budget data
- What is ASCOT?

Adult Social Care Outcome Tool (ASCOT)

- Care-related quality of life measure
- Preference weighted and 'anchored' (to death state) in the same way as EQ-5D
- Attributes (each with 4 levels)
  - Personal cleanliness and comfort
  - Food and drink
  - Safety
  - Clean and comfortable accommodation
  - Social participation and involvement
  - Control over daily living
  - Occupation
  - Dignity

Overlap between EQ-5D and ASCOT

- Correlation (raw) in baseline QoL scores
  - Control group patients in PHBE sample

	ASCOT	EQ-5D	ADL functioning
ASCOT	1		
EQ-5D	**0.42**	1	
ADL functioning	0.18	0.71	1

n = 1063

Note differences in correlation with ADL need

- ASCOT = base component + common component with EQ-5D
- $y^A = y^{0A} + Y$ and $Y = \theta y^E$

Method

- Use PHBE data, comparing patients in the control group:
- **Step 1a** Estimate the impact of (expenditure on) health care on (a) EQ-5D and (b) ASCOT
- **Step 1b** 'remove' the correlation between EQ-5D and ASCOT to leave *residual ASCOT score* (y^{0A})
- **Step 2** Estimate the impact of (expenditure on) health care on *residual ASCOT score*
- Test of hypothesis: is there a statistically significant relationship between health care use and *residual ASCOT score*?

Personal health budget data

- Patients in control group at follow-up
  - LTCs: stroke, diabetes, mental health, COPD, neurological
- Missing data addressed using multiple imputation
- Measured full range of health and care services:
  - Hospital
  - GP
  - Community health e.g. therapy (Physio, OTs, stroke)
  - Nursing, including specialist nursing
  - LTC, including home care, respite etc.
- Health care utilisation variable: All less hospital and GP costs

	N	Mean	SD	Min	Max
Hospital and GP	1063	£3,770	£7,230	£0	£80,160
All other health and care	1063	£14,330	£20,570	£0	£158,840

Step 1: Residual ASCOT score

- Adjusted correlation between EQ-5D and ASCOT
  - Controlling for common component effect (endogeneity)
  - ASCOT = 0.29 x EQ5D + 0.46

	Mean	SD	Min	Max
EQ-5D	0.55	0.26	-0.33	0.92
ASCOT	0.63	0.23	-0.09	0.97
Residual ASCOT	0.46	0.21	-0.22	0.99
Diff	0.16			
n	1063			

Step 2. Estimate service effects

$$y^{0A} = \beta_1 x + \beta_2 z + \beta_0 + e(\beta_3 m)$$

Current QoL: Residual ASCOT score

Effect of services

QoL without services:

- Severity/type of LTC or impairment
- Personal characteristics (age, sex…)
- Household circumstances
- Economic position
- And also,
- A range of other 'unobservable' characteristics

Regression Results

	Residual ASCOT		ASCOT		EQ-5D	
	Coeff	**t-stat**	**Coeff**	**t-stat**	**Coeff**	**t-stat**
Health & care costs (pred, root, £000s)	0.025**	2.15	0.033***	2.69	0.027**	2.28
ADL functioning	0.009***	3.56	0.017***	6.65	0.03***	11.13
Mental health condition	-0.098***	-3.78	-0.098***	-3.64	-0.001	-0.03
Help with questions	-0.001	-0.07	0.001	0.03	0.006	0.28
Claims benefits	-0.055***	-2.85	-0.067***	-2.93	-0.038	-1.76
Age	-0.004	-1.27	-0.006*	-1.95	-0.008***	-3.20
Age sqrd (1000s)	0.044	1.65	0.065**	2.30	0.072***	3.36
Male	0.02	1.20	0.023	1.21	0.009	0.64
Married	0.018	1.04	0.026	1.36	0.029	1.69
University education	-0.04*	-1.99	-0.038*	-1.75	0.007	0.40
Intermediate educ.	-0.025	-1.21	-0.02	-0.94	0.018	0.94
Area: Town/Fringe	0.053*	1.96	0.054*	1.91	0.002	0.08
Area: Rural	0.039	1.13	0.046	1.30	0.023	0.61
Constant	0.312***	2.72	0.365***	2.95	0.181	1.52
PCT dummies	Yes		Yes		Yes	
F	3.76***		6.31***		19.62***	
Over-identification	4.368		4.019		2.296	
Weak instruments	41.08***		41.08***		41.08***	
RESET specification	-0.269		0.446		0.189	

N = 1063, m = 5, IV estimations: instruments: 1-year lag other health service expt (linear and squared), 1-year lag other prim care expt (sqrd)

Implications

- EQ-5D sensitive to health/care service use for people with LTCs…
- Services might have a valued impact beyond that measured by EQ-5D alone
- Limitations
  - Work in progress
  - IV estimations are sensitive to assumptions
  - Results based on survey (self-report) data