


## Routine measurement of health outcomes in hospitals in the United Kingdom How? Why?

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## OVERVIEW

**Main focus**

- Routine assessment of health care using multiattribute utility measures

**Presentation outline**

- Why assess health care?
- Eliciting utilities and multiattribute utility measures
- Learning from history and the work of others (Vancouver/Richmond, UK)
- The challenge ahead and a possible road map

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## IMAGINE, FOR A MOMENT...

Starting the health care system from scratch

- What would we use as the criteria for judging how successful of health services delivery? in hospital?

Need to start with measuring

- extent to which people lead longer and healthier lives

Effect on length of life straightforward

- Using routinely collected death certificates
- Linking with hospital discharge abstracts done routinely
- Challenges are not technical, but:
  - Attribution of causes of death
  - Death is a relatively uncommon outcome

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## FOR THOSE LEAVING HOSPITAL (ALIVE)...

We know nothing about whether their health status has changed at all!

- No data are collected on quality of life

Based on this premise, hospitals in the UK are doing something about it

- By routinely collecting data pre and post operatively

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## Guidance on the Routine Collection of Patient Reported Outcome Measures (PROMs)

- 1 The new Standard NHS Contract for Acute Services, introduced in April 2008, includes a requirement in Schedule 5 to report from April 2009 on patient-reported outcome measures (PROMs).
- 2 This guidance sets out national standards for PROMs instruments for elective NHS patients undergoing Primary Unilateral Hip or Knee replacements, Groin Hernia surgery or Varicose Vein procedures and their administration. Adherence to the national standards will ensure comparability of data across the country. They are based on the results of comprehensive research and piloting of PROMs in the NHS.

**Why PROMs?**

- 3 We know little of the clinical outcomes of NHS services from the patients' perspective. PROMs fill this gap. Their use is strongly supported by clinical opinion and they are already used by non-NHS healthcare organisations.

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## HOW TO MEASURE UTILITIES

Direct elicitation – **Time Trade Off**, Standard Gamble

Indirect elicitation – **EQ-5D**, SF6D, HUI, QWB

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### Patient reported outcome measures (PROMs)

Measures of health status or health-related quality of life completed by patients, commonly as a short questionnaire

Used to assess a person's health status at a particular point in time, or on a number of occasions

Large number of PROMs been developed over 'recent' years

- Condition-specific measures (e.g. cataract removal, varicose vein surgery, hip/knee replacement)
- Generic measures, facilitating comparison between conditions (e.g. EuroQol EQ-5D, Health Utilities Index, SF-36)

### Multi-Attribute or Indirect Approaches for Obtaining Utility Scores for Health States

Indirectly assess health status, typically based on community preferences

Existing multi-attribute measures:

- Quality of Well Being Scale (QWB)
- Health Utilities Index (HUI)
- Short-Form 6D (SF-6D)
- EuroQol, EQ-5D

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### QUALITY OF WELL-BEING - SA

4 Attributes

| Attribute                   | Levels |
|-----------------------------|--------|
| Mobility                    | 3      |
| Physical Activity           | 3      |
| Social Activity             | 5      |
| Symptoms/Problem Complexity | 27     |

Number of Health States: 1,215

Scoring Function: Based on VAS Scores; Linear Additive; Scores: 0.00 to 1.00

Kaplan and Anderson 1996

### HEALTH UTILITIES INDEX (HUI)

8 Attributes

| Attribute               | Levels |
|-------------------------|--------|
| Vision                  | 6      |
| Hearing                 | 6      |
| Speech                  | 5      |
| Ambulation              | 6      |
| Dexterity               | 6      |
| Emotion                 | 5      |
| Cognition               | 6      |
| Pain                    | 5      |
| Number of health states | 18,000 |

Full structural independence; 972,000 health states  
 -0.36 for all-worst HUI3 state; 0.00 for Dead; 1.00 for Perfect Health  
 Multiplicative multi-attribute utility function based on VAS and SG  
 Sources: Horsman et al. 2003; Furlong et al. 2001.

### Short Form 6D

(Based on SF-36 and SF-12)

6 Attributes

| Attribute          | Levels |
|--------------------|--------|
| Physical Function  | 6      |
| Role Limitation    | 4      |
| Social Functioning | 5      |
| Pain               | 6      |
| Mental Health      | 5      |
| Vitality           | 5      |

Number of Health States: 18,000

Scoring Function: Based on SG; *Ad Hoc* Modified Linear Additive; (Brazier, Roberts, and Deverill 2002) Scores: 0.00 = Dead; 0.30 = all-worst 6D state; 1.00 = perfect health. The version based on SF-12 describes 7,500 health states; see Brazier and Roberts 2004.

### EuroQol, EQ-5D

5 Attributes

| Attribute          | Levels |
|--------------------|--------|
| Mobility           | 3      |
| Self-Care          | 3      |
| Usual Activities   | 3      |
| Pain/Discomfort    | 3      |
| Anxiety/Depression | 3      |

Number of Health States: 243

Scoring Function: Based on TTO; *Ad Hoc* Modified Linear Additive; UK Scores: -0.59 to 1.00; US Scores: -0.11 to 1.00 (Essink-Bot et al., 1993; Dolan 1997; Shaw et al. 2005)

### EQ-5D

• Please SCORP how good or bad your own health is today

• The best health state you can imagine is called 100 and the worst health state you can imagine is called 0

Overall, how would you score your own health today between 0 and 100?

SCORE:

Tick one box for each group of statements.

**Mobility**

Have no problem walking about

Have some problem walking about

Can't walk at all

Please tick one box

**Self Care**

Have no problem with self care

Have some problem walking or dressing myself

Can't walk or wash or dress myself

Please tick one box

**Usual Activities**

Have no problem with performing my usual activities (eg work, study, housework, sports or leisure pursuit)

Have some problem with performing my usual activities

Can't walk to perform my usual activities

Please tick one box

**Pain/Discomfort**

Have no pain or discomfort

Have moderate pain or discomfort

Have severe pain or discomfort

Please tick one box

**Anxiety/Depression**

Feel not anxious or depressed

Feel moderately anxious or depressed

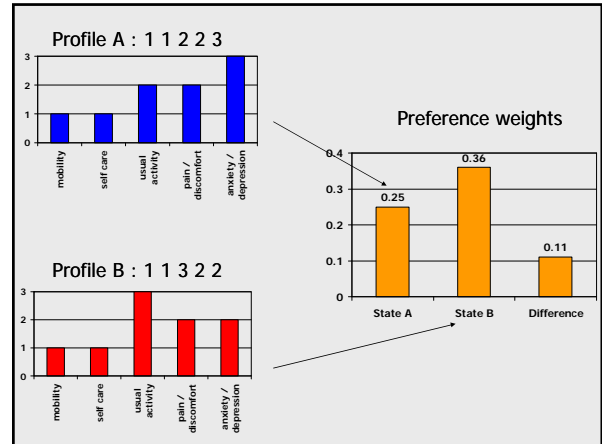
Feel extremely anxious or depressed

Please tick one box

Best imaginable health state

Worst imaginable health state

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### Some PROM benefits for ...

**Patients:**

- Better able to monitor their health profile over time and compare themselves with their peers

**Clinicians:**

- Better able to identify which patients are (and which are not) experiencing health gains over time

**Managers:**

- Better able to identify 'outlier' practitioners/centres from an outcomes perspective

**Policy makers:**

- Better able to assess overall health sector productivity

**Researchers:**

- Better able to explore variation in outcomes and to identify associated factors

### Learning from the work of others

Wright C, Chambers GK, Robens-Paradise Y, 2002 (Vancouver/Richmond)

- Sought to determine the feasibility of routine evaluation of indications for and outcomes of elective surgery

Browne J et al, 2007 (UK)

- Sought to determine the feasibility of collecting PROMs from patients undergoing elective surgery

### Wright C et al (2002) - Vancouver/Richmond

**Participants**

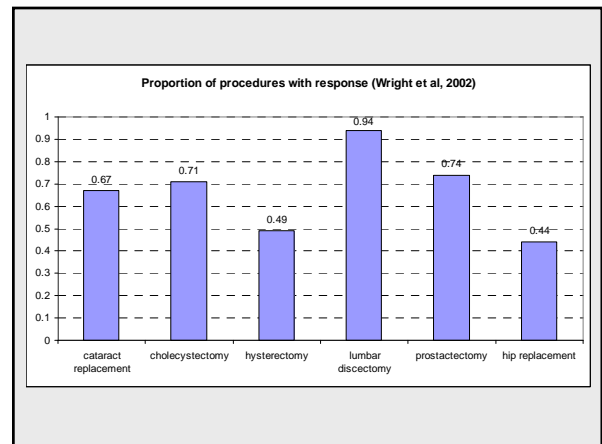
- 138 surgeons and 5313 patients who underwent one of the following: cataract replacement, cholecystectomy, hysterectomy, lumbar discectomy, prostatectomy, hip replacement

Self-reported health-related QoL before and after (3 months or 12 months)

**Measures:**

- Generic measure: SF-36
- Disease-specific instruments: e.g. VF-14 (visual function), Menorrhagia Outcomes Questionnaire, WOMAC (hip replacement)

Feedback of information to surgeons



Some results

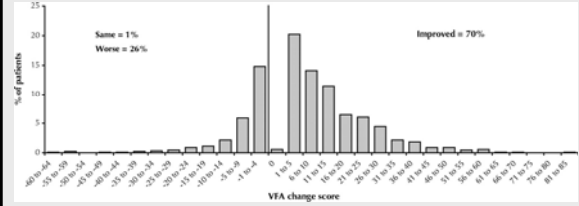
Cataracts:

- 31% of patients booked for cataract surgery had a visual function score of at least 91 (100 = no visual impairment)
- Overall results positive (see figure) but 27% of patients showed either no change or deterioration.

Cost of the program: \$12/patient

47% of surgeons said the exercise was of little value and did not wish to continue receiving such information

Change in VFA score ('after' minus 'before')



Wright et al, 2002

Wright's conclusions

“Evaluation of indications for and outcomes of elective surgery could be implemented systematically at reasonable cost and could be included in an accountability framework for health services.”

“Most surgeons were not enthusiastic about this kind of evaluation.”!!

Browne J et al, 2007 (UK)

Quantitative component

- 5 prospective cohort studies (hip replacement, knee replacement, hernia repair, varicose vein surgery, cataract surgery)
- Patients assessed before surgery and at 3 or 6 months post surgery
- Measures included EQ-5D and condition-specific instrument
- Consecutive patients recruited

Qualitative component

- Interviews with patients and local data collectors (feasibility issues)
- Focus groups to explore stakeholders' views (presentation issues)

Recruitment

Eligible patients recruited: 60.3%

- hip replacement 49.1%
- knee replacement 55.4%
- hernia repair 59.6%
- cataract surgery 66.3%
- vein surgery 68.5%

Recruitment rate varied by centre/procedure from 18.8% to 100%

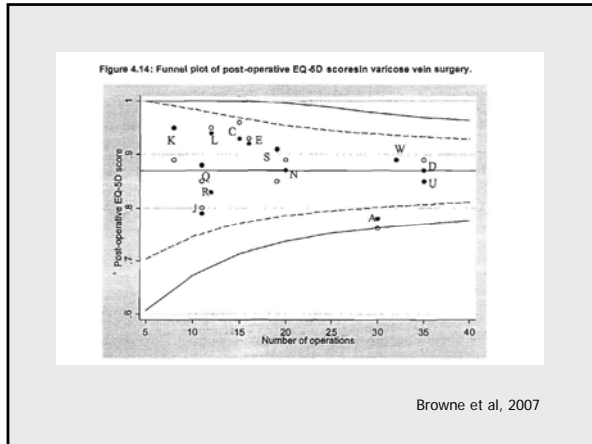
Some recommendations

Feasibility

- Importance of training and demonstration of value to staff
- Keep the questionnaire short!
- Post-operative questionnaires be dispatched and returned to a central facility
- (Cost per patient: approx. £6.50)

Best way of presenting data to compare centres

- use of funnel plots, both adjusted and unadjusted data



### Browne *et al's* conclusions

"We are confident that any future programme of routine PROMs administration is feasible".

"The most important of these [challenges] are the time pressures on staff and patients, and the need to develop administration methods and questionnaires that ensure high consent rates".

"The routine use of PROMs will quickly lead to a large database that could be used to address clinical and cost-effectiveness questions."

### Developments in the UK

New Standard NHS Contract for Acute Services, April 2008

- Requires reporting on PROMs, for selected elective procedures, from April 2009

Stated benefits:

- "Supporting patients and GPs to make choices over treatment,
- Supporting clinicians and managers to benchmark their own performance,
- Supporting commissioners to judge the quality of care offered by their providers ...
- Supporting reduction of inequalities, and
- Strengthening audit and research."

### UK Recommended instruments

| Procedure                           | Condition-specific                   | Generic |
|-------------------------------------|--------------------------------------|---------|
| Primary unilateral hip replacement  | Oxford Hip Score                     | EQ-5D   |
| Primary unilateral knee replacement | Oxford Knee Score                    | EQ-5D   |
| Groin hernia repair                 | None                                 | EQ-5D   |
| Varicose veins procedures           | Aberdeen Varicose Vein Questionnaire | EQ-5D   |

### Some PROM challenges (in no particular order)

- Cost
- Burden on staff and patients
- Getting agreement on measures to use
- Implementing and running the process
- Data integrity
- Data ownership, use and access
- Confidentiality

### A road-map?

- Map current activity and initiatives
  - Which clinical teams are already doing this, and how?
- Build on, and support, existing good practice locally
- Engage the 'clinical community'
  - Buy-in from clinical leaders is essential
  - Support and leadership from College of Physicians & Surgeons of BC?
- Run pilot projects to explore potential and demonstrate value

### Conclusions

The collection and use of patient-reported outcome measures in the health sector is both practical and essential if the highest quality health care is to be delivered.

The challenges should not be underestimated but nor should they be an excuse for inaction!