

16 Severity of illness

16.1 Background

With an ageing population and increasing pressure on health service resources, there is a need to measure outcomes of health care delivery (Commonwealth Department of Human Services and Health 1994). This requires attention to aspects of morbidity not usually considered in classic epidemiology, such as the measurement of severity of illness.

The Duke University Severity of Illness Checklist (DUSOI) (Parkerson et al. 1995) is an instrument designed to measure a patient's severity of illness based on the application of clinical judgment. The parameters for judging severity include symptom status, complications, prognosis without treatment, and treatability. An international study by Parkerson et al. in 1996 found DUSOI to be a feasible tool for rating severity of illness for health problems in general practice. However, the authors suggested that further research was needed in the primary care setting in order to improve reliability and validity of the instrument.

The DUSOI is a measure of severity of illness that can be used directly by the provider at the time of the patient encounter and also indirectly by medical record audit at a later date.

The direct method has the advantage of access to the clinical judgment of the provider, but the disadvantage of adding time to the encounter. This study sought to further investigate the usefulness of carrying out a DUSOI rating within the confines of the general practice consultation and the acceptability of the DUSOI to clinicians.

16.2 Research question

1. What is the severity of problems managed in patients attending general practitioners in Australia?

16.3 SAND questions

Box 16.1: Severity of illness scoring key

The Duke University Severity of Illness (DUSOI) scale was used to assess the severity of the problem under management. It is comprised of four components: symptoms, complications, prognosis and treatability as per the scoring key below:

	None	Questionable	Mild	Moderate	Major	
1. Symptoms (past week)	0	1	2	3	4	
2. Complications (past week)	0	1	2	3	4	
	Disability			Threat to life		
3. Prognosis (next 6 months if untreated)	None	Mild	Moderate	Major		
	0	1	2	3	4	
4. Treatability	Need for treatment			Expected response to treatment		
	No	Questionable	If 'yes'	Good	Questionable	Poor
	0	1		2	3	4

Symptoms: based on the GP's judgement as to the presence or absence of symptoms and their level of severity on the day of the visit and during the preceding week

Complications: defined as the presence of health problems which are secondary to the problem being managed

Prognosis: assessed in terms of either the level of disability or threat to life which a health problem holds for the patient during the next six months, if untreated. Disability refers to any limitation of a person's ability to function in everyday life

Treatability: based upon the need for treatment and the expected response to treatment.

Note: GPs were required to rate (code 0–4) for each component. The total DUSOI score is determined by addition of the four components, division of this total by 16 then multiplication by 100 to generate a value between 0 and 100. A high DUSOI indicates high severity of illness.

16.4 Results

Sample size was 4,125 patient encounters from 103 GPs.

The 4,125 patients had a total of 5,924 problems managed (143.6 per 100 encounters). DUSOI scores were completed for 92.5% of problems managed. A high DUSOI indicated high severity of illness. Almost half (42.5%) of the problems managed were rated as having a DUSOI score in the range of 26–50. Just over three-quarters (80.4%) of problems were rated as having a DUSOI score of 0–50, (i.e. the less severe end of the rating scale).

Table 16.1: DUSOI score top 10 problems

Problem managed	No. of cases	Mean	95% LCI	95% UCI	Median	Minimum	Maximum
Uncomplicated hypertension	342	27.7	25.7	29.6	25.0	0.0	75.0
URTI	188	27.7	23.1	32.2	25.0	0.0	75.0
Depressive disorder	145	49.6	44.6	54.6	50.0	6.3	87.5
Lipid disorder	101	24.3	21.8	26.9	25.0	0.0	43.8
Diabetes, non-insulin dependent	96	37.8	33.2	42.5	37.5	0.0	75.0
Asthma	91	45.3	41.3	49.4	43.8	6.3	100.0
Acute bronchitis/bronchiolitis	90	43.1	37.9	48.4	43.8	0.0	87.5
Sleep disturbance	81	32.6	25.3	39.8	25.0	0.0	93.8
Contact/allergic dermatitis	76	35.8	32.6	39.0	31.3	6.3	75.0
Osteoarthritis	73	47.9	43.7	52.2	43.8	0.0	93.8

Note: Abbreviations: LCI = Lower confidence interval, UCI = Upper confidence interval

The mean and 95% CIs, the median, and the range of DUSOI scores for the most frequently managed problems at these encounters are provided in Table 16.1. Chronic conditions such as osteoarthritis (47.9, 95% CI: 43.7–52.1) and asthma (45.3, 95% CI: 41.3–49.4) scored significantly higher than acute problems such as upper respiratory tract infection (27.7, 95% CI: 23.1–32.2) and gastroenteritis (31.7, 95% CI 27.3–36.2).

The problem with the highest mean DUSOI score (not shown in Table 16.1) was chronic obstructive pulmonary disease (67.9, 95% CI: 61.2–74.6) and the problem with the lowest mean score (not shown in Table 16.1) was medical examination/health evaluation (0.3, 95% CI: 0.0–1.0).

There were no statistically significant differences in mean DUSOI scores for problems in male patients and those managed in females. DUSOI scores were calculated for three age categories: under 15 years, 15–64 years and 65+ years. The severity of illness score did not necessarily increase with age. This is exemplified by asthma where the score for those aged less than 15 years was 34.7 (95% CI: 28.9–40.5), while those aged 15–64 years were rated as 49.7(95% CI: 45.1–54.2) and 65+ year olds were rated as 44.1 (95% CI: 33.1–55.2). Comparison between age groups was limited by differing patterns of morbidity in different age strata.

16.5 Discussion

The current investigation is the first large collection of DUSOI in Australian general practice. The data will be useful for comparison with those of other studies in general practice and with particular populations (e.g. veterans). It will also be possible to examine particular problem management for differential severity and the association of severity to different management practices. For example, those with more severe depression may be more likely to receive medication than those with mild depression.

The DUSOI could be said to be an acceptable tool for use in general practice because of the large proportion of problems managed for which the DUSOI ratings were completed. The usefulness of the tool in the measurement of illness severity in general practice needs further investigation, but already there appears to be a differentiation between problem types, with the more chronic conditions receiving a higher rating of severity than the acute conditions.