The Bethlem and Maudsley Hospital item sheets (B-MIS)

The development and reliability of an instrument for routine collection of summary clinical data

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The Bethlem and Maudsley Hospital item sheets (B-MIS) are summaries in coded form which are completed for every patient admitted or readmitted to the joint hospitals. The Part 1 item sheet contains information which is included in the Part 1 case summary, as described in *Notes on Eliciting and Recording Clinical Information,*[1] and is completed at the same time as the summary is prepared; that is, usually within a fortnight of the patient entering hospital. Similarly, the Part 2 item sheet contains information normally found in the discharge summary, and is completed at the same time that this summary is prepared; shortly after the patient has left hospital. The item sheets are restricted to pieces of information which can be readily coded by the registrar. Thus, of necessity, they concentrate on relatively 'hard' data.

The primary aim of the item sheets is to provide a comprehensive data base for research and for monitoring the work of the hospitals, which can be stored easily on computer, and rapidly accessed when needed. Coded data on in-patients of the joint hospitals have been collected in itemised form since the early 1950's, and have been used in a number of published studies.[2,3]

Earlier versions of the item sheets suffered from psychometric weaknesses. Some terms were felt to be ambiguous and the format was felt to be overcomplicated. Ratings recorded on a selected number of the items in an early version were found to be unreliable.[4] A further study[5] showed marked variability in rater agreement. The author attributed this finding to registrars tending to view the task of completing item sheets as an unnecessary burden, and hence often completing them in batches long after the patients had departed. Test-retest and inter-rater reliabilities for the individual items were never established. Also, it was not explicitly designed for computer assimilation. Hence, a full revision was undertaken, the goal being to produce them in a format that allowed coded data to be presented in readily storable and accessible form.

Background to the present study

A working party drafted lists of items with the aim of covering in easily codable format most of the 'hard' data contained in the admission and discharge clinical summaries. For ease of completion and coding it was aimed, where possible, to use a simple binary form i.e. present or absent. Thus, much 'soft' historical data had to be excluded.

A small-scale preliminary inter-rater reliability study on a series of 20 consecutive admissions to a ward of the Bethlem Royal hospital was undertaken by two of the authors (JK, PMcG). As a result, certain low reliability items were excluded. A glossary was prepared giving definitions, and directions, for each of the remaining items. Where possible, this drew heavily on authoritative sources, for example definitions found within the glossary of the Present State Examination.[6] Following this it was decided that a more detailed reliability study should be undertaken.

The study

The medical records with accompanying admission and discharge summaries were obtained for two groups of consecutive admissions to acute adult psychiatric units. Table I shows the mean, standard deviation, and range for the patients' ages, and the sex distribution of the patients studied. Table II lists the

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TABLE I
Age mean, standard deviation, and range, and sex ratio, for patients studied

Age			Sex	
Mean	*Standard Deviation*	*Range*	*Male*	*Female*
43.3	16.2	19–74	11	19

TABLE II
ICD–9 diagnoses of patients involved in study

Diagnosis	*Number of patients*
Schizophrenia	11
Manic depressive psychosis, depressed type	7
Manic depressive psychosis, manic type	5
Neurotic depression	5
Organic psychotic condition	1
Explosive personality	1
Total	30

ICD-9 diagnoses for these individuals at discharge from hospital.

As the groups did not differ significantly on any of these variables the data were combined in the analysis of reliability.

Two of the authors (JT, NL) rated item sheets blind to each other. The resulting data were computer coded in binary form. Individuals were identified by code number only, thereby ensuring anonymity and maintaining confidentiality.

The accumulated data were analysed on the University of London Computer Centre AMDAHL computer, using a pre-existing programme.[7] In most cases straightforward levels of agreement were assessed. For certain items, where one or other rater had given identical responses for all subjects, inter-rater agreement was calculated as a simple percentage, for statistical reasons.

The initial computer analysis yielded six items whose levels of inter-rater agreement were not significantly better than chance. The definitions of these items, as contained in the guide and glossary to the item sheets were scrutinised, and reasons for disagreements considered. Following mutually agreed revision of the definitions, these items were rerated for the 30 patients by JT and NL, again blind to each others ratings. This second analysis (Table III) left two items with persisting significant levels of disagreement; 'agitation' and 'anxiety-with autonomic symptoms'. These items are considered further in the discussion section of this paper.

Comment

The results of this study confirm the usefulness of the Bethlem Royal and Maudsley Hospital item sheets (B-MIS) in providing a reliable data collection system which can be completed in approximately five minutes per patient, by the junior psychiatrist responsible for that person.

The project emphasises the need for objective controlled evaluation of such tools designed for data storage. Despite extensive committee work and pilotting, there remained items (some of which represent extremely common psychiatric terms) for which reliability proved difficult to achieve. A project such as this allows for the refinement of such definitions, thereby improving their future usefulness, enhancing diagnostic precision, and allowing reliable operationalisation for research purposes.

The unreliability of the item 'agitated' was felt to have related to its particularly relaxed usage in the English language. The psychiatric term refers to observed overt behaviour, not merely a subjective feeling of tension or anxiety. The glossary has been amended to reflect this. It now emphasises that the term refers to a specific set of behaviours which reflect underlying anxiety.

The presence or absence of 'anxiety' was rarely disputed. Controversy centred around whether there were indeed accompanying autonomic symptoms, or whether they were subjective perceptions without physiological basis. In view of the good agreement as to which patients were anxious, and which were not, it was decided to create a unitary 'anxiety' term, thereby resolving the above dilemma.

A shortcoming of this study was the limited range of subjects, concentrating on patients with acute psychiatric disorders requiring in-patient management. There is a need to confirm the findings on larger samples of patients suffering from a variety of disorders, and covering the extremes of age. Indeed, the children's department of the Bethlem Royal and Maudsley hospitals has its own age-appropriate item sheets.[8] It would seem logical and likely that item sheet rating systems would require tailoring in order to make them applicable to the population that is to be rated.

Concluding remarks

The Bethlem Royal and Maudsley hospital item sheets (B-MIS) appear to be a reliable means of rapidly and readily coding information pertaining to adult psychiatric in-patients, which can be easily

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TABLE III
The Bethlem Royal and Maudsley Hospital Item Sheets

THE BETHLEM ROYAL HOSPITAL AND THE MAUDSLEY HOSPITAL

Name Of Doctor completing Item Sheet ....
(Please complete in Capitals)

PART I ITEM SHEET
(To be completed at about the same time as Part I Summary is prepared)

Patients N.H.S. No. .... (if known)

CARD 1
THIS SECTION TO BE COMPLETED BY MEDICAL RECORDS DEPARTMENT

Item		Cols
CARD NUMBER	[1]	1
RECORD TYPE	[1]	2
HOSPITAL NUMBER (adult register)		3-8
DATE OF ADMISSION		9-14
(For the following items insert code numbers as for front sheet of case notes)		
Age		15-16
Date Of Birth		17-22
Sex		23
Country Of Birth		24
Camberwell Address		25
Referred By		26
Occupation		27-29
Social Class		30
Marital Status		31
No. of Mother's Children (born alive)		32-33
Patient's Birth Order		34-35
No. of Patient's Children (born alive)		36-37
Twin		38
Sex of Twin		39
Diagnosis		40-43
Previous Psychiatric Consultation Elsewhere		44
Joint Hospital		45
Work Status		46
Any Previous Admission to Joint Hospital since January 1968 (0 = no, 1 = yes, 9 = not known)		47

CARD 2

Item		Cols
CARD NUMBER	[2]	1
RECORD TYPE	[1]	2
HOSPITAL NUMBER (adult register)		3-8

THIS SECTION TO BE COMPLETED BY DOCTOR

Item		Cols
DURATION OF SYMPTOMS (please tick which)	**	
Less than 2 weeks		9
Over 2 weeks but under 6 months		10
6 months or over		11
SOMATIC SYMPTOMS (0 = no, 1 = yes, 9 = not known/not applicable)		
SLEEP		
Decreased	*	12
Increased	*	13
APPETITE		
Decreased	**	14
Increased	**	15
Bulimic episodes	**	16
Self starvation	**	17
BODY WEIGHT		
Decreased	**	18
Increased	**	19
FAMILY HISTORY (0 = no, 1 = yes, 9 = not known)		
Father dead	**	20
Father ever had psychiatric disorder	**	21
Mother dead	**	22
Mother ever had psychiatric disorder	**	23
Psychiatric disorder in other relatives:		
Siblings	**	24
Children	*	25
2° or 3° relatives (grandparents, uncles/aunts, nieces, nephews, cousins)	**	26

CARD 2

Item		Cols
Patient adopted, reared by foster parents or brought up mainly in institutional care	**	27
Any relatives committed suicide?	**	28
Any relatives had a history of psychiatry disorder with same probable diagnosis as patient?	*	29
Any relative had a history of psychiatric disorder with different probable diagnosis from patient?	**	30
PERSONAL HISTORY (0 = no, 1 = yes, 9 = not known)		
Premature or low birth weight	**	31
Obstetric difficulties or birth injury	**	32
Childhood or adolescent psychiatric disorder requiring treatment	*	33
Serious learning difficulties (ie. required remedial teaching or specialist referral)	**	34
Serious conduct problems in childhood (ie. requiring specialist referral or incurring police involvement)	**	35
Enuresis after 5 years	*	36
Encopresis	**	37
EDUCATIONAL LEVEL (Please tick which)	**	
Lacks basic numeracy/literacy		38
Literate/numerate but no exams		39
Passed CSE, GCE 'O' level or equivalent		40
Passed 'A' level or equivalent		41
SEXUAL HISTORY (0 = no, 1 = yes, 9 = not known/not applicable)		
Ever had S I	**	42
Ever had homosexual experience	**	43
Ever married or lived as married	**	44
If YES, any history of treated psychiatric disorder in cohabitee/spouse	**	45
Sexual dysfunction	**	46
Sexual deviation (excludes homosexuality between consenting adults)	**	47

Item		Cols
FORENSIC HISTORY (0 = no, 1 = yes, 9 = not known/not applicable)		
Ever convicted of non-violent crime	**	48
Ever convicted of violent crime	**	49
ALCOHOL/DRUGS (0 = no, 1 = yes, 9 = not known/not applicable)		
Alcohol dependence or alcohol related problems	**	50
Illicit drug use:		
of cannabis:	**	51
of other non-injectable drugs	**	52
of injectable drugs	**	53
PREVIOUS MEDICAL/PSYCHIATRIC HISTORY (0 = no, 1 = yes, 9 = not known)		
Any previous psychiatric contact	*	54
If so, has there been:		
Good social recovery between episodes/admissions	*	55
Good symptomatic recovery between episodes/admissions	*	56
Any previous episodes of self harm or self poisoning	*	57
Any serious or chronically debilitating physical illness	*	58
If YES, is there primary disease which is neurological	**	59
endocrinological	**	60
other	*	61
Multiple previous hospital admissions or attendances involving various physical symptoms or symptoms in more than one system	**	62

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CARD 3

TO BE FILLED IN BY MEDICAL RECORDS DEPARTMENT

Item	Entry	Cols
CARD NUMBER	3	1
RECORD TYPE	1	2
HOSPITAL NUMBER (adult register)	☐☐☐☐☐☐	3-8

THIS SECTION TO BE COMPLETED BY DOCTOR

Item	Reliability	Col
MENTAL STATE (0 = absent, 1 = present, 9 = not known or not applicable)		
Aggressive or hostile	*	9
Overactive	*	10
Agitated	‡	11
Retarded	**	12
Stupor	**	13
Mannerisms or stereotypes	**	14
Bizarre or non-understandable actions	** ‡	15
SPEECH		
Mutism	**	16
Pressure	**	17
Disordered form	**	18
Dysphasia	**	19
Dysarthria	**	20
AFFECTIVE AND OTHER FEATURES		
Depression	*	21
Anxiety - psychological symptoms	**	22
- with autonomic symptoms	‡	23
Phobias	**	24
Elation	**	25
Irritability	**	26
Affective incongruity	** ‡	27
Affective flattening	**	28
Suicidal thoughts, plans, actions	*	29
Depersonalisation/derealisation	**	30
Obsessional thoughts, rituals or compulsions	**	31
Hypochondrial pre-occupation	**	32
Conversion of dissociative symptoms	**	33
ABNORMAL BELIEFS OR IDEAS		
Delusions of grandiosity	**	34
Delusions of persecution	**	35
Delusions of poverty	**	36
Delusions of guilt	**	37
Nihilistic delusions	**	38
Bizarre or fantastic delusions	*	39
Delusions of passivity	**	40
Thought interference (include insertion/withdrawal and broadcast)	*	41
Delusional perception	**	42
Other primary delusion	**	43
ABNORMAL PERCEPTION		
Auditory hallucinations of 'first rank' (running commentaries, 3rd person voices and 'thought echo')	*	44
Other auditory hallucinations	** ‡	45
Somatic hallucinations	**	46
Visual hallucinations	*	47
Olfactory/gustatory hallucinations	**	48
COGNITIVE FUNCTIONS		
Clouding of consciousness or perplexity	**	49
Confusion or disorientation	** ‡	50
Memory impairment	**	51
Evidence of intellectual deterioration	**	52
Focal cognitive deficit	**	53
PHYSICAL EXAMINATION		
Significant abnormality detected	*	54
If yes, in which system(s)		
C N S	*	55
Endocrine	**	56
Cardiovascular or respiratory	**	57
Gastrointestinal (including hepatic)	**	58
Other	**	59

THE BETHLEM ROYAL HOSPITAL AND THE MAUDSLEY HOSPITAL

Name Of Doctor completing Item Sheet ....

(Please complete in Capitals)

PART II ITEM SHEET

(To be completed on discharge of patient from hospital)

Item	Entry	Cols
CARD NUMBER	1	1
RECORD TYPE	2	2

THIS SECTION TO BE COMPLETED BY MEDICAL RECORDS DEPARTMENT

Item	Entry	Cols
DATE OF DISCHARGE FROM HOSPITAL	☐☐☐☐☐☐	3-8
HOSPITAL NUMBER (adult register)	☐☐☐☐☐☐	9-14

THIS SECTION TO BE COMPLETED BY DOCTOR

(0 = no, 1 = yes, 9 = not known/not applicable unless otherwise directed)

Item	Reliability	Col
PHYSICAL TREATMENT		
Antidepressants	**	15
Major tranquillisers	**	16
Minor tranquillisers (including night sedation)	*	17
Lithium	**	18
Anti convulsants	**	19
E C T	**	20
Other	*	21
SPECIFIC PSYCHOLOGICAL TREATMENTS		
Insight orientated psychotherapy (supervised)	**	22
Family or marital therapy	**	23
Structured behavioural programme	**	24
Other	**	25
OUTCOME (please tick which)	**	
Much improved		26
Improved		27
No change		28
Deteriorated		29
CONTINUED TREATMENT AFTER DISCHARGE (please tick which)		
Continued antidepressants	**	30
Maintenance oral major tranquillisers	*	31
Depot major tranquillisers	**	32
Lithium	**	33
Anticonvulsants	**	34
COURSE WHILE IN-PATIENT (0 = no, 1 = yes, 9 = not known/not applicable)		
Marked mood swings	**	35
Disruptive or aggressive	*	37
Self-harm	**	38
SPECIAL INVESTIGATIONS (0 = normal, 1 = abnormal, 9 = not done)		
CT Brain scan	**	39
EEG	**	40
Full blood count, ESR	*	41
Biochemistry	**	42
Endocrine tests	**	43
Psychometric tests of cognitive/memory impairment	*	44
Other (include tests carried out specifically for research purposes)	**	45
I.Q. MEASUREMENT (please tick which)		
Method: Progressive matrices/ Mill Hill Verbal	**	46
WAIS	**	47
Other	**	48
Not done	*	49
Score: (if more than one method used, order of preference for score = WAIS, matrices, Mill Hill, other)	☐☐☐	50-52
Gresham Ward questionnaire score (if applicable) (not done/not applicable = 99)	☐☐	53-54
FINAL ICD DIAGNOSIS	ICD Codes	
Psychiatric disorder	☐☐☐☐	55-58
Personality disorder (if none code 0000)	☐☐☐☐	59-62
Associated medical condition (absent 0, present 1, not known 9)	*	63
Was patient compulsorily detained under a section of the Mental Health Act (0 = no, 1 = yes, 9 = not known)	**	64

* $P<0.05$ for inter-rater reliabilities for each item.
** $P<0.001$ for inter-rater reliabilities for each item.
‡Item with level of agreement not significantly better than chance on initial rating.

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computerised, stored, and retrieved as required for research and administrative purposes. The need for objective scientific evaluation of such systems, and their constituent items, is emphasised by our findings. Such practice allows identification of poor-reliability items, and subsequent revision of their definitions. The appropriateness of item sheets for the particular patient group under study always requires evaluation. Ultimately, the reliability and usefulness of any data collected remains dependent on the skill and conscientiousness of the individual who completes the ratings.

This small-scale assessment study suggests that this approach to rapid coding of standardised information not only provides reliable data but also introduces a useful aide-memoire and an instructive intellectual training exercise for the aspiring psychiatrist in his everyday ward work.

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A service for patients with Wilson's disease

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Wilson's disease (WD) is an autosomal recessive disorder of copper metabolism with an incidence of about 30 per million (i.e. fewer than 2,000 in the UK). Nevertheless, it is important for two main reasons: its manifestations are protean and may lead it to present to a range of specialists; and its otherwise lethal course can be halted by treatment with chelating agents such as penicillamine and trientine. Published cases[1] and systematic study[2] have shown that neuropsychiatric symptomatology is important in a high proportion. In fact, about one-fifth either present psychiatrically or are at least seen by a psychiatrist before WD is diagnosed.

Addenbrooke's Hospital, Cambridge has been the centre for the largest series of WD in the UK (over 200 cases) due to the presence of Dr John Walshe, who was responsible for the initial introduction of penicillamine[3] and other agents, as well as many clinical and laboratory studies of WD and copper metabolism. In September 1987 JMW retired, and the responsibility for WD passed to CAS. The aim of this paper is to describe the workings of the service until Autumn 1987, with particular respect to psychiatric aspects, and then to discuss future developments.

The service as operated by JMW, Reader in Metabolic Diseases and Consultant Physician, included clinical and laboratory components. All copper biochemistry was performed in a laboratory in the Department of Medicine. Junior medical staff were shared with the rest of the academic unit, but only involved with in-patients. All referrals, including

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