

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 over-complicated. Ratings recorded on a selected number of the items in an early version were found to be unreliable.⁴ A further study⁵ 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

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

Mean	Age Standard Deviation	Range	Sex	
			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 dis-

agreement; '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 piloting, 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

TABLE III
The Bethlem Royal and Maudsley Hospital Item Sheets

THE BETHLEM ROYAL HOSPITAL AND THE MAUDSLEY HOSPITAL		PART I ITEM SHEET		PART I SUMMARY IS PREPARED	
Name of Doctor completing Item Sheet Please complete in Capital		Patient's N.S. No. (if known)		CARD 1	
THIS SECTION TO BE COMPLETED BY MEDICAL RECORDS DEPARTMENT		CARD NUMBER		CARD 2	
HOSPITAL NUMBER		RECORD TYPE		RECORD NUMBER	
DATE OF ADMISSION		HOSPITAL NUMBER (adult register)		HOSPITAL NUMBER (adult register)	
Age		DURATION OF SYMPTOMS (please tick which) **		THIS SECTION TO BE COMPLETED BY DOCTOR	
Date of Birth		Less than 2 weeks		1	
Sex		Over 2 weeks but under 6 months		2	
Country of Birth		6 months or over		3	
Concurrent Address		SOMATIC SYMPTOMS		4	
Referred by		SLEEP		5	
Occupation		Decreased		6	
Social Class		Increased		7	
Marital Status		APPETITE		8	
No. of Sibling's Children (Born alive)		Decreased		9	
Patient's Birth Order		Increased		10	
No. of Patient's Children (Born alive)		SLEW		11	
No. of Patient's Children (Born alive)		Decreased		12	
Twin		Increased		13	
Sex of Twin		FAMILY HISTORY		14	
Diagnosis		Father dead		15	
Previous Psychiatric Consultation elsewhere		Mother dead		16	
Work Status		Sibling ever had psychiatric disorder		17	
Any Previous Admissions to Bethlem Hospital		Patient ever had psychiatric disorder		18	
Any Previous Admissions to Bethlem Hospital		Sibling ever had psychiatric disorder		19	
Any Previous Admissions to Bethlem Hospital		Psychiatric disorder in other relative:		20	
Any Previous Admissions to Bethlem Hospital		Children		21	
Any Previous Admissions to Bethlem Hospital		Siblings		22	
Any Previous Admissions to Bethlem Hospital		23 of 27 relatives (specify, under/over, alive, deceased)		23	
ROBBERIC HISTORY		Ever convicted of non-violent crime		24	
ALCOHOL/DRUGS		Alcohol dependence or alcohol related problems		25	
Blat drug use:		of cannabis		26	
of other non-hipnotic drugs		of hypnotic drugs		27	
PREVIOUS MEDICAL/PSYCHIATRIC HISTORY		Any previous psychiatric contact		28	
If no, has there been:		Good social recovery between episodes/admissions		29	
Good symptomatic recovery between episodes/admissions		Any previous episodes of self harm or self poisoning		30	
Any advice or clinically debilitating physical illness		If YES, is there primary disease which is neurological		31	
other		Multiple previous hospital admissions or admissions involving symptoms in more than one system		32	
Patient adopted, raised by foster parents or brought up mainly in institutional care		Any relatives committed suicide?		33	
Any relatives had a history of probable diagnosis as patient?		Any advice or clinically debilitating physical illness		34	
PERSONAL HISTORY		Premature or low birth weight		35	
Obstetric difficulties or birth injury		Childhood or adolescent psychiatric disorder requiring treatment		36	
Serious learning difficulties (i.e. required remedial teaching or special school)		Serious conduct problems in childhood (i.e. requiring specialist referral or entering police involvement)		37	
Enuresis after 5 years		Encopresis		38	
EDUCATIONAL LEVEL (Please tick which)		Lacks basic numeracy/literacy		39	
Literate/numerate but no maths or equivalent		Passed GSE 'C' level or equivalent		40	
Passed 'A' level or equivalent		SEXUAL HISTORY		41	
Ever had S 1		Ever had homosexual experience		42	
Ever married or lived as married		If YES, any history of treated psychiatric disorder in cohabitee/spouse		43	
Sexual dysfunction		Sexual deviation		44	
Sexual deviancy, however necessary under				45	

THE BETHLEM ROYAL HOSPITAL AND THE MAUDSLEY HOSPITAL
Name of Doctor completing Item Sheet
Please complete in Capital

PART II ITEM SHEET
(To be completed on discharge of patient from hospital)

CARD NUMBER Code
1
2

RECORD TYPE Code
1
2

DATE OF DISCHARGE FROM HOSPITAL Code
1
2

HOSPITAL NUMBER Code
1
2

THIS SECTION TO BE COMPLETED BY MEDICAL RECORDS DEPARTMENT

THIS SECTION TO BE COMPLETED BY DOCTOR
= no, 1 = yes, 0 = not known or not applicable

<p>PHYSICAL TREATMENT</p> <p>Antidepressants ** 16 <input type="checkbox"/></p> <p>Major tranquillisers ** 17 <input type="checkbox"/></p> <p>Minor tranquillisers (including night sedation) * 18 <input type="checkbox"/></p> <p>Lithium ** 19 <input type="checkbox"/></p> <p>Anti convulsants ** 20 <input type="checkbox"/></p> <p>E.C.T. * 21 <input type="checkbox"/></p> <p>Other * 22 <input type="checkbox"/></p> <p>SPECIFIC PSYCHOLOGICAL TREATMENTS</p> <p>Insight orientated psychotherapy ** 23 <input type="checkbox"/></p> <p>Family or marital therapy ** 24 <input type="checkbox"/></p> <p>Structured behavioural programme ** 25 <input type="checkbox"/></p> <p>Other ** 26 <input type="checkbox"/></p> <p>OUTCOME (please tick which)</p> <p>Much improved <input type="checkbox"/> 27</p> <p>Improved <input type="checkbox"/> 28</p> <p>No change <input type="checkbox"/> 29</p> <p>Deteriorated <input type="checkbox"/> 30</p> <p>CONTINUED TREATMENT AFTER DISCHARGE</p> <p>Continued antidepressants ** 31 <input type="checkbox"/></p> <p>Maintenance and/or major tranquillisers * 32 <input type="checkbox"/></p> <p>Depot major tranquillisers ** 33 <input type="checkbox"/></p> <p>Lithium ** 34 <input type="checkbox"/></p> <p>Anticonvulsants ** 35 <input type="checkbox"/></p> <p>COURSE WHILE IN-PATIENT # = no, 1 = yes, 0 = not known or not applicable</p> <p>Marked mood swings ** 36 <input type="checkbox"/></p>	<p>Conversion of dissociative symptoms ** 37 <input type="checkbox"/></p> <p>ABNORMAL BELIEFS OR IDEAS</p> <p>Delusions of grandiosity ** 38 <input type="checkbox"/></p> <p>Delusions of persecution ** 39 <input type="checkbox"/></p> <p>Delusions of poverty ** 40 <input type="checkbox"/></p> <p>Delusions of guilt ** 41 <input type="checkbox"/></p> <p>Hallucinations ** 42 <input type="checkbox"/></p> <p>Blurred or fantastic delusions * 43 <input type="checkbox"/></p> <p>Delusions of passivity ** 44 <input type="checkbox"/></p> <p>Thought interference (include insertion/withdrawal and broadcast)</p> <p>Delusional perception ** 45 <input type="checkbox"/></p> <p>Other primary delusion ** 46 <input type="checkbox"/></p> <p>ABNORMAL PERCEPTION</p> <p>Auditory hallucinations of "big voice" (usually accompanied by other persons voices and "thought echo")</p> <p>Other auditory hallucinations ** 47 <input type="checkbox"/></p> <p>Somatic hallucinations ** 48 <input type="checkbox"/></p> <p>Visual hallucinations ** 49 <input type="checkbox"/></p> <p>Olfactory/gustatory hallucinations ** 50 <input type="checkbox"/></p> <p>COGNITIVE FUNCTIONS</p> <p>Clouding of consciousness or personality ** 51 <input type="checkbox"/></p> <p>Confusion or disorientation ** 52 <input type="checkbox"/></p> <p>Memory impairment ** 53 <input type="checkbox"/></p> <p>Evidence of intellectual deterioration ** 54 <input type="checkbox"/></p> <p>Focal cognitive deficit ** 55 <input type="checkbox"/></p> <p>PHYSICAL EXAMINATION</p> <p>Significant abnormality detected ** 56 <input type="checkbox"/></p> <p>If yes, in which systems?</p> <p>C.N.S. * 57 <input type="checkbox"/></p> <p>Endocrine * 58 <input type="checkbox"/></p> <p>Cardiovascular or respiratory ** 59 <input type="checkbox"/></p> <p>Gastrointestinal (including hepatic) ** 60 <input type="checkbox"/></p> <p>Other ** 61 <input type="checkbox"/></p>
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THIS SECTION TO BE COMPLETED BY DOCTOR
= no, 1 = yes, 0 = not known or not applicable

<p>MENTAL STATE # = no, 1 = present, 0 = not known or not applicable</p> <p>Aggressive or hostile * 62 <input type="checkbox"/></p> <p>Overtive * 63 <input type="checkbox"/></p> <p>Apathetic * 64 <input type="checkbox"/></p> <p>Retarded * 65 <input type="checkbox"/></p> <p>Stupor * 66 <input type="checkbox"/></p> <p>Mixed or atypical * 67 <input type="checkbox"/></p> <p>Blurred or non-understandable * 68 <input type="checkbox"/></p> <p>SPEECH</p> <p>Muffled * 69 <input type="checkbox"/></p> <p>Pressure * 70 <input type="checkbox"/></p> <p>Disordered form * 71 <input type="checkbox"/></p> <p>Dysphasic * 72 <input type="checkbox"/></p> <p>Dysverbal * 73 <input type="checkbox"/></p> <p>AFFECTIVE AND OTHER FEATURES</p> <p>Depression * 74 <input type="checkbox"/></p> <p>Anxiety - psychological symptoms ** 75 <input type="checkbox"/></p> <p> - with autonomic symptoms ** 76 <input type="checkbox"/></p> <p>Phobia * 77 <input type="checkbox"/></p> <p>Blotter * 78 <input type="checkbox"/></p> <p>Inhibitory * 79 <input type="checkbox"/></p> <p>Affective incongruity * 80 <input type="checkbox"/></p> <p>Affective lability * 81 <input type="checkbox"/></p> <p>Subtle thoughts, plans, actions * 82 <input type="checkbox"/></p> <p>Depersonalisation/derealisation * 83 <input type="checkbox"/></p> <p>Chemical thoughts, rituals or compulsions * 84 <input type="checkbox"/></p> <p>Hypochondriacal pre-occupation * 85 <input type="checkbox"/></p>	<p>Diagnoses of aggressive * 86 <input type="checkbox"/></p> <p>Self-harm * 87 <input type="checkbox"/></p> <p>SPECIAL INVESTIGATIONS # = none, 1 = abnormal, 0 = not done</p> <p>CT Brain scan * 88 <input type="checkbox"/></p> <p>EEG * 89 <input type="checkbox"/></p> <p>Full blood count, ESR * 90 <input type="checkbox"/></p> <p>Biochemistry * 91 <input type="checkbox"/></p> <p>Endocrine tests * 92 <input type="checkbox"/></p> <p>Psychometric tests of cognitive/memory impairment * 93 <input type="checkbox"/></p> <p>Other (include tests carried out specifically for research purposes) * 94 <input type="checkbox"/></p> <p>I.G. MEASUREMENT (please tick which)</p> <p>Method: Progressive method/AMH Verbal * 95 <input type="checkbox"/></p> <p>WAAS * 96 <input type="checkbox"/></p> <p>Other * 97 <input type="checkbox"/></p> <p>Not done * 98 <input type="checkbox"/></p> <p>ICD Codes</p> <p>Psychiatric disorder <input type="checkbox"/> 99 <input type="checkbox"/></p> <p>Personality disorder (if none code 000) <input type="checkbox"/> 00 <input type="checkbox"/></p> <p>Associated medical condition (none to present, 1, not known) <input type="checkbox"/> 01 <input type="checkbox"/></p> <p>Was patient compulsorily detained under a section of the Mental Health Act 1983? * 02 <input type="checkbox"/></p> <p># = no, 1 = yes, 0 = not known</p>
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* $P < 0.05$ 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.

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 cases¹ and systematic study² 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 penicillamine³ 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