

Psychiatric Disorder in the General Hospital

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There have been many reports of psychiatric disorder in medical populations, but few have used standard methods on representative patient groups. Even so, there is consistent evidence for considerable psychiatric morbidity in in-patient, out-patient and casualty department populations, much of which is unrecognised by hospital doctors. We require a better classification of psychiatric disorder in the general hospital, improved research measures, and more evidence about the nature and course of the many different types of problem so that we can provide precise advice for their management of routine clinical practice.

Psychiatric problems in general hospital patients are important, both because they are often easily treated and because they can also affect the course of medical conditions. However, it is uncertain which disorders benefit from extra treatment and how common these are in the various types of medical population. Most psychiatric research in the general hospital has been concerned with specific types of physical disorder, but we also need to know the overall prevalence of psychological problems in general hospital units as a basis for planning services, including liaison psychiatry, to meet clinical needs. In this review we examine the various forms of psychiatric disorder seen in the general hospital, and discuss their prevalence, clinical significance and the implications for management. We do not cover findings from hospital-based primary care, both because there is a large separate literature (see Goldberg & Huxley, 1980; Cavanaugh & Wettstein, 1984) and because the issues involved are somewhat different.

Research methodology in general hospital surveys

To obtain a full picture of psychiatric disorders in the general hospital, we need to know: the extent and nature of psychiatric morbidity; its relationship to the different types of physical illness; the degree to which it reflects a long-term history of psychiatric disorder or current social problems, or is more specifically related to the physical illness or hospital admission; and the medical, psychological and social outcomes. Unfortunately, there have been relatively few studies comparable to the extensive research examining these same issues in primary care (Goldberg & Huxley, 1980). Research in the general hospital has largely been of poor quality, failing

to describe adequately the medical populations surveyed or to use an adequate nomenclature or standard measures (Cavanaugh & Wettstein, 1984).

The characteristics of the medical population

Geographical, social and medical factors mean that there are considerable differences between hospitals in the nature of referrals and admissions. Few reports have adequately described the populations studied, in terms of age, sex, social class, types of medical problem and source of referrals. Some studies provide point or period prevalence, while others are surveys of admissions or new attenders. Not only are there differences between hospitals, but the pattern of medical care within hospitals is changing rapidly. For example, between 1972 and 1983 the proportions of emergency and elderly patients admitted to a medical unit in Oxford have greatly increased and the length of stay decreased (Maguire *et al.*, 1974; Feldman *et al.*, 1986).

In most studies it is not clear what efforts have been made to obtain information on patients who refused or were too ill to be interviewed, or whether they have been included in the analyses. Exclusion of such patients causes an under-estimate of psychiatric morbidity, since they are likely to have a relatively high prevalence of disorder—especially organic mental states (Feldman *et al.*, 1986).

Nomenclature and case definition

A fundamental problem is that psychiatric classification and concepts are almost entirely based on research with psychiatric in-patients, and there has been little attempt to adapt them for use in general populations, primary care or the general hospital

(Williams *et al.*, 1980; Goldberg, 1981; WHO, 1983). It is particularly difficult to distinguish between 'appropriate distress' and affective disorder, especially in the presence of medical symptoms. There are no generally accepted criteria for organic disorders and substance abuse. It is also common to see other patients who are not psychiatrically ill but who require extra help because their personality or behaviour is thought to be maladaptive—non-compliance, for instance, and some cases of deliberate self-harm. New methods of clinical classification are required if we are to define and sub-classify problems that need extra help.

Further difficulties arise because it is uncertain whether measures developed in specialist psychiatric populations can be used in the same way with patients who are physically ill. Even if simple screening instruments can be successfully adapted for epidemiological research, they may be less useful in clinical 'prescriptive' screening, which should be accurate enough to identify all those who may require further intervention (Skuse & Williams, 1984).

Affective disorder

Standardised measures

Most surveys have relied on simple screening methods, but a minority used two-stage procedures in which all screened 'cases' were interviewed. Earlier studies used unstandardised interviews or scales (see Cavanaugh & Wettstein, 1984), whereas most recent reports are based on established psychiatric procedures. Unfortunately, none have been adequately validated for use with the physically ill (Williams *et al.*, 1980) and research in general practice has shown that there are considerable difficulties in identifying affective disorder in the presence of physical symptoms or illness (Goldberg & Huxley, 1980). On the one hand, standard procedures fail to detect 'masked' depression and anxiety in patients who 'deny' their emotional distress; on the other hand, they over-estimate disorder, because many patients have physical causes for fatigue and other somatic symptoms which are prominent items in all instruments used to detect emotional disorder. The recently described Hospital Anxiety and Depression scale (HAD) is the first to be designed specifically to avoid these problems (Zigmond & Snaith, 1983).

Subclassification into the specific diagnostic categories is often inappropriate, and it would be more useful to use a clinical classification similar to that proposed for primary care by Goldberg (1981):

- (a) major psychiatric illness—a small group which broadly corresponds to psychotic illness, and responds to physical treatments

- (b) psychological distress syndromes not requiring intensive intervention; some of these are transient reactions to events such as physical illness. For these, simple exploration, discussion and advice may be helpful
- (c) psychological distress syndromes which may require some form of more active intervention, such as drug treatment or social or psychological help.

These same groups are also apparent among patients with psychiatric morbidity in the general hospital, although there has so far been little attempt to distinguish between transient and persistent distress. It is to be hoped that eventually these difficulties of case definition will be resolved by the introduction of a multiaxial classification which will enable psychological syndromes, physical illness, social problems, and perhaps personality, to be coded on separate axes (Goldberg, 1981; Williams *et al.*, 1980; WHO, 1983).

We consider below examples of three types of standard measure—self-report screening questionnaires, standardised clinical interviews, and symptom rating scales.

General Health Questionnaire (GHQ). This is by far the most popular screening instrument, in its full 60 item, or abbreviated 30 and 28 item versions (Goldberg, 1972; Goldberg, 1978). The 30 item version (GHQ-30) has often been preferred as being the least dependent on somatic symptoms. Since the GHQ is based on recent change in an individual's psychological state, it does not identify all patients with chronic disorders, and Goldberg (1983) now recommends two extra questions about use of psychotropic medication and history of nervous problems. A practical problem is that many elderly, confused and seriously ill patients find it difficult to complete the questionnaire, although this can often be overcome by reading out the questions.

Goldberg has always emphasised that calculated specificity and sensitivity depend on the nature of the screened population and that optimal discrimination depends on the correct choice of threshold (Goldberg, 1985). It is apparent that in medical populations both sensitivity and specificity are low, especially in the most severely physically ill groups (Table I). The high proportions of false positive cases are usually attributed to a number of items which are commonly answered by those who have physical symptoms or disabilities. It is possible to improve specificity by raising the cut-off threshold, but this reduces sensitivity. In most studies, GHQ negative subjects were not further assessed; the

TABLE I
 Characteristics of GHQ when used on general hospital patients

Form of GHQ	Reference	Population	No. of cases screened	Criterion	No. of interviews	Threshold	Sensitivity: %	Specificity: %
GHQ-60	Goldberg (1970)	Gastrointestinal out-patients	91	CIS	91	11/12	80	93
	Maguire <i>et al</i> (1974)	Medical admissions	230	CIS	77	11/12	90	58
	Kirk & Saunders (1979)	New neurology out-patients	342	CA ¹	342	11/12	66	59
	Byrne (1984)	New gynaecology out-patients	211	PSE	35	26/27 4/5	40 67	85 86
GHQ-28	Rabins & Brooks (1981)	Multiple sclerosis out-patients	150	PSE	25	4/5	92	92
	Bridges & Goldberg (1984)	Neurology admissions	100	CIS	70	4/5	100	57
	Vazquez-Barquero <i>et al</i> (1985a)	Cardiology out-patients	194	CIS	194	11/12	80	80
	Mann (1977)	Hypertension screening	222	CIS	222	11/12 16/17 4/5	81 96 73	78 64 89
	Nott & Cutts (1982)	8-14/52 post-partum in community	200	CIS	200	4/5	92	66
GHQ-30	Feldman <i>et al</i> (1985)	Medical admissions	382	PSE	200	6/7 4/5	89 93	80 63
	Tyrer (1986)	Pain clinic	97	PSE	97	4/5	87	27

1. Clinical assessment

figures for false negatives depend only on review of medical notes and must be under-estimates.

We conclude that although the GHQ is the best available screening instrument for affective disorder, it is of limited value in the general hospital because it cannot by itself provide an estimate of prevalence until it has been validated for the particular medical population. Furthermore, it must be accepted that when used in a two-stage procedure there will be many false positives. In 'prescriptive screening' there is the additional problem that the sensitivity is too low to detect all those in need of further care (Skuse & Williams, 1984).

Other general screening tests. Goldberg (1985) has reviewed several other tests, some providing general scores and some subscores for specific symptoms. Only the Hospital Anxiety and Depression (HAD) scale has been derived from clinical experience to detect significant psychiatric disorder among medical patients (Zigmond & Snaith, 1983). Further research is required to determine the applicability of these tests.

Clinical Interview Schedule (CIS). This interview, developed for general practice research (Goldberg *et al.*, 1970), is sensitive to the psychiatric symptoms seen in general hospitals and acceptable to patients. Unfortunately there is no single accepted procedure for case definition, which can be based on an arbitrary total score, or on psychiatric judgement, or on a combination of both methods. It lacks the standardisation, computer program and comparability of the Present State Examination, but is more sensitive to less severe symptoms.

Present State Examination (PSE). World-wide use and standardisation are the major advantages of this instrument (Wing *et al.*, 1974), allowing comparison with general populations (Bebbington *et al.*, 1981; Henderson *et al.*, 1979) and with other psychiatric and medical groups. There are detailed rules for rating neurotic and psychotic symptoms, but no more than token questions for cognitive impairment and substance abuse. It can be a lengthy interview, requires skilled experienced interviewers, and does not allow rating of lesser degrees of emotional distress, since symptoms are only rated if 'clinically fairly severe'.

Some of the questions are awkwardly worded for use with the physically ill. Particular problems arise when rating 'understandable' distress apparently related to the physical disorder, since the instructions

state that 'appropriate' distress should not be rated. For general hospital use it is probably best to make explicit amendments to the PSE instructions. The CATEGO programme enables classification into diagnostic categories, and case definition is based on the total symptom score or, more satisfactorily, on the computed Index of Definitions grading of severity. The PSE case definition is more stringent than many other procedures. For example, in an Edinburgh community samples, Dean *et al.* (1983) found 8.7% of the sample were psychiatric cases with the PSE and 13.7% when Research Diagnostic Criteria (Spitzer, 1978) were used.

DSM-III. Although DSM-III was not designed to be an epidemiological instrument, it has been used in a number of general hospital surveys. However, the diagnostic rules are insufficiently precise for acceptable reliability. Furthermore, despite the general advantages of multiaxial classification, DSM-III categories have not proved entirely satisfactory for clinical use in the general hospital (Mackenzie *et al.*, 1983; Leigh *et al.*, 1982).

Screening tests for depression. Few of these procedures have been validated for use with the physically ill. The Beck Depression Inventory (BDI) has been the most widely used scale, and has proved acceptable in general hospitals but has not been standardised for this use (Beck *et al.*, 1961). It contains some somatic items, and this means that with the normal cut-off it identifies a rather high proportion of subjects as being mildly depressed (Moffic & Paykel, 1975; Clark *et al.*, 1983). The non-somatic items appear to discriminate well between depressed and non-depressed medical patients (Clark *et al.*, 1983). However, there are disadvantages in using the Beck and other mood scales to rate a single dimension of affect in populations in which undifferentiated emotional syndromes are more common than more specific forms of anxiety or depression.

There is no simple screening procedure suitable for routine clinical use by general hospital staff. However, there are several symptoms included in routine history taking which suggest possible affective disorder (e.g. lack of energy, insomnia, poor appetite, weight loss, memory disturbances, poor concentration, non-specific aches and pains, and bowel disturbances). Careful observation to detect emotional withdrawal and retardation or agitation, together with a few additional questions about mood, attitude to the future, interest in social and domestic life, libido, previous history of treatment

TABLE II
Studies of affective disorder in general hospital in-patients

<i>Reference</i>	<i>Population</i>	<i>No. of patients</i>	<i>Case definition</i>	<i>Cases: %</i>
Maguire <i>et al</i> (1974)	Medical admissions	230	GHQ-60, CIS, and casenote review	23
Bergman & Eastham (1974)	Admissions aged 65 or over to acute medical ward	100	Clinical assessment: functional psychosyndrome	19
Moffic & Paykel (1975)	Medical in-patients	150	BDI (13/14)	24
Knights & Folstein (1977)	Medical admissions	57	GHQ-30 (4/5)	46
De Paulo <i>et al</i> (1980)	Neurology admissions	126	GHQ-30 (4/5)	50
Cavanaugh (1983)	Medical in-patients	335	GHQ-30 (4/5) BDI (13/14)	61 32
Bridges & Goldberg (1984)	Neurology admissions	121	GHQ-28 and CIS	38.9
Johnston <i>et al</i> (1985)	Patients aged 65 or over	204	GHQ-28 and psychiatric assessment	13
Feldman <i>et al</i> (1986)	Medical admissions	453	GHQ-30 and PSE	14.6

TABLE III
Studies of affective disorder in referrals to general hospital out-patient clinics

<i>Reference</i>	<i>Population</i>	<i>No. of patients</i>	<i>Case definition</i>	<i>Cases: %</i>
Culpan & Davies (1960)	Medicine	100	Psychiatric interview and	51
	Surgery	100	Cornell Medical Index	51
Kenyon (1962)	Dermatology	100	Maudsley Personality Inventory and interview	14
			CIS	20
Mayou (1975)	Venereal disease	100	CIS	20
Ballinger (1977)	Gynaecology (aged 40-45)	217	GHQ-60 (11/12)	52
Worsley <i>et al</i> (1977)	Gynaecology	97	GHQ-60 (11/12)	49
Kirk & Saunders (1979)	Neurology	342	GHQ-60 and interview	27
MacDonald & Bouchier (1980)	Gastroenterology and general medicine	100	GHQ-60 (9/10) and CIS	26
Hughes <i>et al</i> (1983)	Dermatology	196	GHQ-30 (4/5) and Wakefield (13/14)	15
			GHQ-60 (11/12) and PSE on sample	29
Byrne (1984)	Gynaecology	230	CIS	45
Vazquez-Barquero <i>et al</i> (1985b)	Cardiology	234	CIS	45
Tyrer <i>et al</i> (1986)	Pain clinic	97	PSE	32

TABLE IV
Factors associated with affective disorder in general hospital patients

<i>Factor</i>	<i>Association and references</i>
Age	More common in younger patients ^{1,3}
Sex	More common in women. ^{1,4} No relationship ^{2,3}
Social class	Associated with lower social class in women ¹
Marital status	Associated with dissatisfaction with living alone ¹
Severity of physical illness	Associated with severe illness. ² Trend for association with severe, acute or chronic ¹
Absence of physical diagnosis	No clear relationship to physical diagnosis ^{1,2} Associated in out-patient series ⁵⁻⁸
History of psychological problems	Associated with previous psychiatric history, ^{1,2} psychotropic drugs and admission ^{1,8}
Social problems	Associated with social problems reported both by patients and by their general practitioner ¹ Associated with unemployment in men, problems in housing, finance, social life ¹

1. Feldman *et al* (1986); 2. Mofic & Paykel (1975); 3. Cavanaugh (1983); 4. Bridges & Goldberg (1984); 5. Mayou (1973); 6. Vazquez-Barquero *et al* (1985b); 7. Kirk & Saunders (1979); 8. MacDonald & Bouchier (1980).

for emotional problems and any major social difficulties, will allow detection of the majority of patients with significant mood disorders. Information from relatives, general practitioners and other informants and nursing observations is helpful.

Prevalence of affective disorder

Cavanaugh & Wettstein (1984) have reviewed the earlier literature and Table II and III summarise more recent reports. Surveys which used the GHQ alone report high figures, whereas those based on two-stage procedures report lower prevalences. Emotional disorder is mainly of moderate severity (Mofic & Paykel, 1975; Cavanaugh, 1983; Feldman *et al*, 1986), but both psychiatric disorder and sub-clinical distress are considerably more common than in the general population (Feldman *et al*, 1986). Some reports have considered anxiety and depression separately (see Cavanaugh, 1983) but we believe that, as in primary care (Goldberg & Huxley, 1980; WHO, 1983), the commonest pattern of affective disorder is an undifferentiated neurotic syndrome, which would be classified as adjustment disorder in DSM-III (Derogatis *et al*, 1983), and that only a small, but important, minority suffer from more specific psychiatric disorders. Mofic & Paykel (1975) compared the depressive symptoms of medical patients with those in psychiatric populations and found more pessimism and hopelessness but less

suicidal ideation. The limited evidence on associations with demographic, type of medical illness or other variables (Table IV) suggests that these are similar to the associations described for general populations.

Little is known of the prognosis of psychiatric disorder identified in the general hospital. Hawton (1981) found that psychiatric disturbance often persisted, especially in patients with a previous history of psychiatric disorder. The only study in which patients with psychiatric disorders were interviewed again after discharge found that most patients were improved at four month follow-up, but that a chronic course was associated with evidence of a previous history (Feldman *et al*, 1986). There is some evidence that psychiatric disorder is associated with poor prognosis for the medical condition (Querido, 1959; Mofic & Paykel, 1975; Hawton, 1981), although it is unclear whether this is because the psychiatric condition hinders recovery or because psychiatric disorder is associated with more severe conditions. The findings of Mofic & Paykel suggest the latter interpretation.

We conclude that although the methods used have often over-estimated the prevalence of affective disorder in the general hospital, disorders of moderate severity are considerably more common than in the general population, especially in younger women. They are often associated with evidence of long-standing psychological or social difficulties, but are

usually of good prognosis. These conclusions are supported by studies of patients with particular problems, e.g. myocardial infarction (Lloyd & Cawley, 1983), chronic intestinal disorders (Goldberg, 1970), admission for hysterectomy (Gath *et al*, 1982), chest pain (Bass & Wade, 1984) and cancer (Greer, 1985).

What are the clinical implications of these disorders? Some are distressing yet undiagnosed major psychiatric conditions, likely to respond to appropriate treatment. Some will severely complicate the management of physical illness. However, others (perhaps the majority) are transient states secondary to hospital admission or the physical condition, and may be expected to resolve soon after discharge. It remains uncertain which types of affective disorder benefit from recognition and treatment. When the condition appears severe, or where there are diagnostic or management difficulties, a psychiatric opinion can be helpful. The majority of patients probably require no more than support and simple help, although it is also sensible to inform the general practitioner so that he can reassess the psychological state.

Organic disorders

Standardised measures

There are no precise criteria for acute and chronic organic conditions, and it is difficult to distinguish mild impairment from normal functioning, especially in the elderly, the educationally and socially disadvantaged, and the distressed physically ill (WHO, 1983; Cooper & Bickel, 1984; Henderson & Huppert, 1984). There are three main approaches to screening for organic disorders: psychometric scales, brief clinical rating scales, and behavioural rating scales for use by nursing staff (see Cooper & Bickel, 1984; Henderson and Huppert, 1984).

Psychometric assessments, by means of tests such as the Wechsler Adult Intelligence Scale (WAIS) (Wechsler, 1955) or specific measures of memory, are useful in individual cases when close scrutiny is required in order to make a specific diagnosis. However, they are not suitable in general hospital surveys as they are time-consuming, require special skills to administer, and may prove unacceptable, especially to some cognitively intact subjects (Cooper & Bickel, 1984).

Mini-Mental State (MMS). This is the best known brief rating scale, consisting of thirty items which

assess orientation, registration, attention and calculation, recall, and language, and is based on answers to standard questions and performance of simple tasks (Folstein *et al*, 1975). It is brief, easy to use, and acceptable to most patients. Validity assessed against the WAIS appears to be good, but the ability of the MMS to detect mild dementia is unclear (Folstein *et al*, 1975). Using a psychiatrist's standardised clinical assessment, Anthony *et al* (1982) found reasonable sensitivity (87%) and specificity (82%) in the detection of cognitive impairment. False positives were more likely among poorly educated individuals and older subjects, so that while the specificity below the age of 60 was 92%, above 60 it was only 65%.

The MMS is a clinically useful instrument for the detection of poor cognitive function, but does not enable distinction between dementia, delirium, low intelligence and poor education. It is too lengthy for use with every patient.

Cognitive Assessment Schedule (CAS). This scale, a sub-scale of the Clifton Assessment Procedures for the Elderly (Pattie & Gilleard, 1979; McPherson *et al*, 1985), is similar to the MMS in that it includes specific orientation and information questions and performance items. It is brief, consisting of only 12 items, appears to have been satisfactory in general hospital surveys (Johnston *et al*, 1986; Feldman *et al*, 1986) and could easily be used in everyday clinical practice. When both the MMS and CAS were evaluated against psychiatrists judgements, the CAS was found to yield far fewer false positives (Johnston *et al*, 1986).

Standardised interviews. A number of standardised interviews have been developed to provide a more accurate and detailed psychiatric assessment, the best known being the Geriatric Mental State (Copeland *et al*, 1976) and the Comprehensive Assessment and Referral Evaluation (CARE) developed by Gurland *et al* (1977). Both are lengthy procedures and neither has yet been adequately assessed for reliability and validity in medical or other populations. The Geriatric Mental State is a standardised, semi-structured interview based on items from the PSE and the Psychiatric Status Schedule (Spitzer *et al*, 1970). There is a computerised diagnostic system (AGECAT).

In conclusion, several standardised measures are now available for the detection and assessment of organic disorders (Nelson *et al*, 1986). For large-scale surveys of general hospital patients either the MMS or the CAS can be recommended, although neither provides specific diagnostic information.

TABLE V
Studies of cognitive disorder in the general hospital

<i>Reference</i>	<i>Population</i>	<i>No. of patients</i>	<i>Case definition</i>	<i>Cases: %</i>
Bergman & Eastham (1974)	Admissions aged 65 or over to acute medical ward	100	Clinical assessment and memory tests	Dementia 7
Knights & Folstein (1977)	Medical ward admissions (mean age 55)	57	MMS (<23)	Delirium 10 33
De Paulo <i>et al</i> (1980)	Neurology admissions (mean age 50)	126	MMS (24)	30
Anthony <i>et al</i> (1982)	Medical ward admissions (29% aged >60)	97	MMS (<24) Clinical interview	33 Dementia 13 Delirium 9 Delirium + dementia 1
Cavanaugh (1983)	Medical in-patients survey (37% aged >65)	335	MMS (<23)	28
Bridges & Goldberg (1984)	Neurology admissions (mean age 45)	121	Clinical assessment and cognitive tests	2
Roca <i>et al</i> (1984)	Medical admissions (46% aged over 65)	380	MMS and psychiatric assessment	Dementia 15
Feldman <i>et al</i> (1986)	Medical admissions	453	CAS and review of notes	<70 years 2 >70 years 27

They require a second-stage method of assessment, preferably using an objective observer-rated method, or clinical assessment, in order to establish specific diagnoses and severity. In clinical practice, screening for organic disorders can be restricted to patients in the older age groups. Unless the routine history suggests difficulties, the CAS scale appears to provide a reasonably reliable method of screening, and can be recommended for this purpose. The MMS is valuable for more detailed assessment.

Prevalence of organic disorders

Table V summarises recent reports on the prevalence of organic disorders in general hospital in-patients, the majority of which have used a single screening instrument rather than a two-stage procedure. Unfortunately, most published reports have excluded a number of patients who were too ill for interview, many of whom were probably cognitively impaired (Feldman *et al*, 1986). Surveys using the MMS of patients of all ages admitted to general medical wards have yielded surprisingly consistent findings, with between a quarter and a third showing intellectual impairment. Few surveys have

examined the association of prevalence with age, but not surprisingly, organic mental disorders are especially common among older subjects (Bergman & Eastham, 1974; Feldman *et al*, 1986; Johnston *et al*, 1986). In neurology patients, abnormal MMS results are usually found in those with cerebral rather than peripheral disorders (De Paulo & Folstein, 1978).

In a study of 100 referrals to a consultation service, Cutting (1980) found it difficult to establish the specific cause of cerebral dysfunction in the majority of the 74 patients with acute organic psychiatric disorder. However, Hodkinson (1973), in a large multi-centre study of elderly patients, concluded that factors predisposing to delirium were dementia, defective hearing and vision, parkinsonism, and advanced age; precipitating factors were pneumonias, cardiac failure, urinary infection, carcinomatosis, and hypocalcaemia in particular, and severe illness in general.

There is little evidence concerning the prevalence in the general hospital of the various organic syndromes: delirium, dementia and delerium plus dementia. The importance of such distinctions was emphasised by Rabins & Folstein (1982), who found significantly higher death rates for delirious patients

compared with those with dementia, during hospital admission and at one year follow-up. Several accounts of referral to consultation-liaison services have also described the high mortality of those with delirium (Ruskin, 1985; Rabins *et al*, 1983; Popkin *et al*, 1984).

Recognition of organic mental disorders has major practical implications. Mistakes in the differential diagnosis of organic and affective disorder (Hoffman, 1982; Dubin *et al*, 1983) and misdiagnosis of dementia in the unimpaired elderly and the poorly educated (Roca *et al*, 1984) may result in inappropriate treatment and referral. The early identification of delirium is extremely important, because it may be life-threatening and require immediate treatment of the underlying physical disorder. Furthermore, delirious patients are often distressed and can be difficult to manage, yet appropriate psychiatric treatment is usually rapidly effective (Lipowski, 1983). Dementia has implications for continuing care. Johnston *et al* (1986) found that cognitively impaired patients stayed significantly longer in hospital than the unimpaired, an important reason being lack of suitable accommodation. Cognitive impairment limits compliance with medication, because of failure to remember dose schedules, especially when more than one drug is prescribed.

Alcohol

Screening procedures

The lack of any satisfactory classification of problem drinking and its complications (WHO, 1983, 1981) has limited study of epidemiology in the general hospital (McIntosh, 1982). Apart from detailed questioning about consumption (Midanik, 1982), there are two principal approaches: screening interviews and laboratory tests (Mayfield & Johnston, 1980; Holt *et al*, 1981; Bernadt *et al*, 1982). The first, and probably still the best known screening interview, is the Michigan Alcoholism Screening Test (MAST), which is available in 13 and 25 item versions (Selzer, 1971; Pokorny *et al*, 1972). A simple and attractive alternative is the four question CAGE (Ewing, 1984). These procedures have been shown to identify the majority of known alcoholics in a variety of psychiatric and other settings. However, specificity of screening is relatively low (Lancet, 1980; Bernadt *et al*, 1982; Holt *et al*, 1981), and none of the methods have been adequately validated in general hospital populations. There is no doubt that many patients who are known by physicians to have major alcohol problems are not detected, and also that screening questionnaires are not sensitive to early, and perhaps more treatable, alcohol problems.

Laboratory tests include blood alcohol, liver enzymes (aspartate aminotransferase; alanine aminotransferase, gamma glutamyl transpeptidase) and haematology (macrocytosis without anaemia). Individual tests and combinations can be helpful in identifying many patients who abuse alcohol (Lancet, 1980; Bernadt *et al*, 1982; Holt *et al*, 1981), although they are sometimes difficult to interpret and are insensitive to early drinking problems (Lloyd *et al*, 1982).

There are considerable advantages in using a procedure which combines screening interviews such as the CAGE and MAST with laboratory tests (Holt *et al*, 1981; Mayfield & Johnston, 1980). A promising research alternative is a detailed structured interview procedure covering the psychological, social and medical aspects of alcoholism, administered by a specially trained research worker (Lloyd *et al*, 1982; Chick *et al*, 1985).

Prevalence of alcohol problems

It is generally accepted that alcohol dependence and its complications are particularly common in medical populations. However, the evidence is confusing and unsatisfactory (McIntosh, 1982). There are considerable problems in interpreting published findings: the use of many different criteria for alcohol dependence; difficulties in defining alcohol-related disease, since all forms also occur in non-drinkers; failure to distinguish between active problems and those in remission; it is frequently unclear as to whether findings refer to alcoholism as the primary cause of the admission or as an entirely incidental finding; and few accounts state to what extent the findings in the hospital reflect particular characteristics of the local population.

Most surveys refer to general medical patients, and only a small proportion deal with surgical, orthopaedic, gynaecological or other medical groups (see McIntosh, 1982 and Table VI). In his very thorough review, McIntosh pessimistically concludes that: "It is still not possible to say, either precisely or even within what limits, what proportion of general hospital patients have alcohol-related disorders which are either causal or incidental to admission". It is probable that drinking problems are particularly common in emergency departments (Holt *et al*, 1980), accident and orthopaedic wards, and general medical units (Barrison *et al*, 1982), especially those specialising in gastroenterology.

Recognition of problem drinking is important both in immediate management and because of the greatly increased risk of future physical and mental ill-health, as well as social and domestic problems,

TABLE VI
Studies of alcohol problems in general hospital patients

<i>Reference</i>	<i>Population</i>	<i>No. of cases screened</i>	<i>Case identification</i>	<i>Problems: %</i>
Barrison <i>et al</i> (1982)	Consecutive hospital admissions aged 18–65	520	Consumption and CAGE	16
Beresford <i>et al</i> (1982)	Consecutive acute injury admission to orthopaedic ward	219	CAGE and interview	23
Jariwalla <i>et al</i> (1979)	Admission to medical ward	87	Consumption and medical assessment	14
Holt <i>et al</i> (1980)	Evening attenders at an emergency department	545	Clinical assessment and blood alcohol	(alcohol related illness) 27
Lloyd <i>et al</i> (1982)	General medical admissions aged 18–65	702	Standard interview for current problems or previous treatment	32 (blood alcohol > 80 mg/100 ml)
Martin <i>et al</i> (1983)	Medical admissions	275	MAST, blood alcohol, medical assessment	Women 11 Men 27
Feldman <i>et al</i> (1986)	Medical admissions	648	Consumption, CAGE	20
		453		Women 4 Men 18

in those who continue to abuse alcohol. While the results of treatment for alcoholism continue to be modest, sufficient numbers of individuals can be helped to make detection worthwhile. Intervention may be particularly effective in those whose alcohol consumption is excessive but not yet out of control (Skinner *et al*, 1981; Chick *et al*, 1985). In clinical care, there are no entirely satisfactory and simple means for detecting patients with problems in the use of alcohol. However, the four questions in the CAGE questionnaire, supplemented by simple questions about levels of alcohol consumption, awareness of the physical conditions commonly related to alcohol abuse (e.g. peptic ulcer, oesophagitis, head injury) and the blood test findings likely in alcoholics, will help in the detection of the majority of patients with serious drinking problems. It is sensible to concentrate on more intensive screening of high risk groups such as those attending emergency departments and liver clinics and those with predisposing occupations.

Other psychiatric problems

Several other types of psychiatric problems are more common among general hospital patients than in the general population.

Drug abuse

Although medical and psychological complications

of drug abuse are encountered in all parts of larger hospitals, studies in North America and Great Britain have concentrated on the prevalence of drug-related problems in accident and emergency departments. In a survey of seven London casualty departments (Ghodse, 1981) the rate of drug-related attendances in the casualty population was estimated to be 18.3/1000. They were predominantly young women, and at least 32% of individuals were dependent on drugs; 95% of attendances were for overdoses and 5% for reasons such as the complications of self-injection. Similar findings have been reported from the United States and Canada (Russe & Wells, 1980; Sellers *et al*, 1981; Maslansky, 1974). Drug dependence has been less well described in other medical populations, but narcotic and other drug dependence is particularly common in pain clinic attenders (Evans, 1981; Maruta *et al*, 1979).

Sleep disorders

There appears to have been no studies of sleep disorders in general hospital patients, but use of hypnotic drugs has received much attention. Reported rates of prescribing of hypnotics have varied from between less than a quarter of patients (Magni *et al*, 1984) to the majority (Perry & Wu, 1984). Prescriptions are usually on an 'as required' basis, with far fewer patients actually receiving them. Hypnotics are prescribed more often for the elderly

(Salzman & Van der Kolk, 1980; Malling & Moon, 1983), for women, and for patients with relatively long admissions (Magni *et al.*, 1984). Malling & Moon reported greater use of hypnotics in medical than surgical patients, while Perry & Wu reported very much the reverse. Hypnotics are used particularly often in patients with malignant disease, those undergoing cardio-thoracic surgery (Malling & Moon), and those recovering from surgery (Perry & Wu). Sleep disorders are likely to be associated with pain, and with anxiety and depression (Feldman *et al.*, 1986), but noise and other environmental factors may have an important role (Berlin, 1984). Medication and drug withdrawal (especially alcohol) are also relevant.

A disturbing report from the USA by Perry & Wu (1984) suggested that the extent of hypnotic use provides little indication of sleep disorders in general hospital patients. None of the case-notes recorded the indications for hypnotics, and there was no correlation between nurses' notes of sleep patterns and prescription. They concluded that the "rationale for hypnotic agents in the general hospital is not clear".

The prevalence and causes of sleep disorders in general hospital patients, and the best means of managing them, is obviously an area for further investigation.

Sexual problems

The very common associations between sexual problems and medical and surgical disorders have been extensively reviewed elsewhere (Hawton, 1982; Bancroft, 1983). However, few systematic studies of specific conditions have been carried out, the main exception being diabetes. Approximately half of all men with diabetes will suffer erectile failure, due to either neuropathy of autonomic nerves or vascular disease, the proportion increasing rapidly with age (McCulloch *et al.*, 1980; Goldstein *et al.*, 1983). Sexual problems are also commonly associated with heart disease, renal failure, and peripheral neurological disorders. Numerous drugs used to treat medical conditions can have sexual side-effects, with anti-hypertensives being the worst culprits (Lancet, 1981). In contrast to the considerable information about the effects of physical illness and drug treatments on male sexuality, far less is known about their effects in women.

Although medical disorders and surgical procedures may cause sexual problems because of direct interference with anatomical or physiological mechanisms, psychological responses to illness are also important. Unfortunately, the latter have

undergone little systematic investigation, although numerous reports point to them as major factors.

Eating disorders

Similarly, there is virtually no information about the prevalence of eating disorders in general hospital patients. Although there have been some investigations of obesity and malnutrition, there is little indication of any associations with psychiatric morbidity. Obesity is common in medical patients, whether measured objectively (Abiin *et al.*, 1982) or identified retrospectively from scrutiny of case-notes (Berger *et al.*, 1977). Recent figures for the incidence have varied between 9% (Abiin *et al.*) and 24% (Berger *et al.*), although such variation is likely to be related to cultural factors, as well as methods of assessment. Malnutrition has been identified in at least one in five patients (Bistran *et al.*, 1976; Abiin *et al.*, 1982), being particularly common in the elderly.

We are not aware of any studies of the prevalence of either anorexia nervosa or bulimia nervosa in general hospital patients, although they are described as reasons for referral to psychiatric consultation services. Case reports and surveys (Rodin *et al.*, 1985) suggest that eating disorders may be especially common in diabetic clinics. Apart from severe weight loss and consequent malnutrition, anorexia nervosa may cause electrolyte disturbance, especially if associated with laxative abuse or vomiting. Similarly, there are important medical complications of bulimia nervosa, including acute gastric dilatation, oesophagitis, pancreatitis, and electrolyte disturbances (Harris, 1983).

Attempted suicide

Attempted suicide, especially deliberate self-poisoning, is the most common reason for acute medical admission in women, and in men it is second only to ischaemic heart disease (Hawton & Catalan, 1982). Following a rapid rise in such admissions during the late 1960s and early 1970s (Weissman, 1974; Wexler *et al.*, 1978), the rates have recently levelled off and possibly declined, especially in women, although deliberate self-poisoning continues to be a major problem among young people (Hawton & Goldacre, 1982).

Widely varying prevalence figures of psychiatric disorders among attempted suicide patients have been reported, reflecting differences in diagnostic criteria. Two studies in which the PSE was used have helped to clarify the picture. Although psychiatric symptoms during the month preceding attempts are found in the majority of patients, Newson-Smith &

TABLE VII
Absence of physical diagnosis in new referrals to out-patient clinics

	Setting	No. of patients	% without physical diagnosis
Culpan & Davies (1960)	Medicine	100	38
	Surgery	100	5
Mayou (1975)	Venereal disease	100	34
Kirk & Sanders (1979)	Neurology	342	27
MacDonald & Bouchier (1980)	Gastroenterology	100	45
Hughes <i>et al</i> (1983)	Dermatology	100	1
Pearson (1985)	Allergy clinic	250	13

Hirsch (1979) identified 'definite' psychiatric disorder in only 31% using the PSE, with a further 29% being in the borderline or 'threshold' category. Almost all were suffering from depression. Similar findings were reported by Urwin & Gibbons (1979), although they also identified patients with alcoholism, anxiety states and schizophrenia. Other studies have found alcoholism to be particularly common in male attempters (Morgan *et al*, 1975; Holding *et al*, 1977).

There is a rapid decline in the prevalence of psychiatric disorder during the first few months after attempts (Newson-Smith & Hirsch, 1979), although it is unlikely that there is a significant change in alcohol problems.

Psychiatric disorder presenting with physical symptoms

Somatic symptoms without significant physical cause are regularly seen in general hospital wards, and are especially common in many out-patient clinics (Table VII) and in emergency departments. Psychiatric accounts of hypochondriasis are based on highly selected clinical experience, and there is no adequate classification (Barsky & Klerman, 1983; Lloyd, 1983). Atypical abdominal pain (Gomez & Dally, 1977; Drossman, 1982), chest pain (Mayou, 1973; Bass & Wade, 1984) and pain clinic attenders (Tyrer *et al*, 1986) have been well described.

Most patients are easily reassured, but a minority suffer persistent symptoms with psychiatric and social disability. Descriptions of referrals to psychiatric services (Katon *et al*, 1984; Slavney & Teitelbaum, 1985) show that most are suffering from primary affective disorder, although it is not uncommon for the more characteristic psychological symptoms to be 'masked'. Others suffer from what are classified in DSM-III (American Psychiatric Association, 1980) as somatoform, dissociative and

factitious disorders, and in a further small group there is no convincing psychological or social explanation. It is important to be aware that a proportion of such patients are eventually diagnosed as suffering from major medical illness.

Hysteria

Hysterical symptoms are undoubtedly common, though usually referred to as 'functional overlay'. The main evidence for the prevalence of syndromes of hysteria (conversion, dissociative states and Briquet's syndrome) comes from surveys of psychiatric consultations (see Ziegler *et al*, 1960; McKegey, 1967; Cavanaugh & Wettstein, 1984; Folks *et al*, 1984) in which up to 13% of patients referred to consultation services were diagnosed as having hysteria. Trimble (1981) reported that 1% of admissions to a specialist neurological hospital are given the diagnosis of hysteria.

Factitious disorder

The dramatic clinical picture of the Munchausen syndrome is uncommon. Blackwell (1968) identified ten cases in a London teaching hospital in one year. Patients with other forms of artefactual or factitious disorder are more common, and are more willing to accept psychiatric assessment and treatment (Carney & Brown, 1983; Reich & Gottfried, 1983; Bayliss, 1984). Reich and Gottfried described 41 cases, of whom 39 were women. Most had experience of occupations related to medicine, and there were four main clinical groups: self-induced infections, simulated specific illnesses with no actual disorder, chronic wounds, and self-medication. Reports of other patients with specific artefactual symptoms, such as dermatitis artefacta (Sneddon, 1983), pyrexia of unknown origin (Aduan *et al*, 1979), bruising

disorders (Ratnoff, 1980) and diabetes (Schade *et al*, 1985) suggest that factitious disorder is much more common than is normally recognised (see Bayliss, 1984).

Recognition of psychiatric disorder by medical staff

It has frequently been observed that hospital doctors and nurses seriously underestimate and misdiagnose all forms of psychiatric disorder (Table VIII). Although we do not doubt the general conclusion, there are serious flaws in some of the evidence. Most reports assume that the other screening instruments provide a satisfactory criterion for the 'true' prevalence of psychiatric disorder, but we have already seen that the GHQ has a low specificity in the general hospital and substantially over-estimates the prevalence. On the other hand, it is unreasonable to assume that case notes are a reliable guide to physicians' assessment.

The diagnosis of affective disorder is often difficult in the presence of physical illness. Goldberg & Blackwell (1970) found this was the main cause of 'hidden psychiatric morbidity' in a general practice study in which the general practitioner was an

experienced and qualified psychiatrist. Hospital doctors are no more likely to diagnose severe problems than mild ones, and when they do recognise psychiatric disorder they are unlikely to code it in case summaries (Feldman *et al*, 1985). It is expected that systematic enquiries about the non-somatic features of anxiety and depression would enable much higher rates of detection.

Cognitive disorder is often obvious but may be misdiagnosed as affective disorder (Hoffman *et al*, 1982; Dubin *et al*, 1983) or missed altogether. Roca *et al* (1984) compared the judgements of medical interns with psychiatrists' standardised diagnosis of dementia and found a sensitivity of 79% and specificity of 80%. The interns were just as likely to mis-diagnose dementia in unimpaired subjects as to fail to make a correct diagnosis. Use of systematic screening tests (Goldberg, 1985) and proper attention to age, educational status and evidence of previous function could be expected to improve recognition.

Surveys of alcohol problems have commented that doctors often fail to record the clinical history (Barrison *et al*, 1980) and that they underestimate both problems and consumption (Barrison *et al*, 1980; Lloyd *et al*, 1982). Westermeyer *et al* (1978) also

TABLE VIII
Recognition of psychiatric disorder by medical and nursing staff

<i>Reference</i>	<i>Case definition</i>	<i>Hospital staff assessment</i>	<i>Undetected: %</i>
<i>Affective disorders</i>			
Maguire <i>et al</i> (1974)	GHQ-30 + SPI	Medical notes	49
Knights & Folstein	GHQ-30 (4/5)	Interview with doctors and nurses	Doctors 35 Nurses 70
Brody (1980)	GHQ-30 (4/5)	General medical clinic, regular attenders	34
Lucas & Folstein (1980)	GHQ-30 (4/5)	Nursing assessment	41
Cavanaugh (1983)	GHQ-30 (C/5)	Interview with residents	47
Bridges & Goldberg (1983)	GHQ-28 and SPI	Neurology casenotes	72
Feldman <i>et al</i> (1985)	GHQ-30 and PSE	6-point rating scale	56
<i>Cognitive disorders</i>			
Knights & Folstein (1977)	MMS (< 23)	Interview with doctors and nurses	Doctors 37 Nurses 55
De Paulo & Folstein (1978)	MMS (< 24)	Rating by doctors	30
Lucas & Folstein (1980)	MMS (< 25)	Nursing assessment	43
Cavanaugh (1983)	MMS (< 24)	Interview with residents	63
Roca <i>et al</i> (1984)	MMS (< 24) and psychiatric assessment for dementia	Rating by doctors	20

noted that physicians who were aware of problem drinking did not regard this as a medical concern, and did not see themselves as having responsibility for initiating treatment. Effective detection of alcohol problems requires a high degree of suspicion of high risk groups and the use of a combination of screening measures (Skinner *et al*, 1981).

Psychiatric disorder and medical settings

There are, undoubtedly, wide differences in the prevalence of psychiatric disorder in the many types of in-patient and out-patient units within the general hospital, but there have been few systematic studies and most epidemiological evidence derives from acute medical units. It is important that areas with a particularly high prevalence of psychiatric disorder be detected, since these must be the priorities for the provision of liaison psychiatry and other psychiatric and social services.

In-patients

Acute and chronic organic disorders are especially common in patients aged over 65 years (Bergman & Eastham, 1974; Lipowski, 1983), although they are much less commonly referred for psychiatric opinions than younger medical patients (Rabins *et al*, 1983; Popkin *et al*, 1984). Emotional disorder is more frequent in younger patients (Feldman *et al*, 1986) and is usually either of long standing or a reaction to acute illness and hospital admission. A small proportion of in-patients present with somatic symptoms due to primary psychiatric disorder.

Little is known of prevalence in other than medical and neurology wards. Psychiatric morbidity is probably particularly high in accident wards and in those specialising in the care of severe illnesses, often involving distressing treatment, for example cancer units (Derogatis *et al*, 1983; Bukberg *et al*, 1984), intensive care, radiotherapy (Forester & Kornfeld, 1978) and spinal injury wards.

Out-patients

This review does not cover hospital-based primary care as practised in North America and elsewhere (see Cavanaugh & Wettstein, 1984) and refers only to secondary care as is usual in Britain (Table II). In an early study, Culpan & Davis (1960) found considerable morbidity in patients attending general medical clinics and rather less in surgical out-patients. Short-term prognosis was relatively good, but 18% of medical patients and 5% of surgical patients were thought to require more psychiatric care than was

possible in a general out-patient clinic. Particularly high prevalence of psychological and social problems has been described in some specialist out-patient clinics, including cardiac out-patients (Vazquez-Barquero *et al*, 1985a,b), pain clinics (Tyrer *et al*, 1985; Merskey & Spear, 1967), and clinics caring for severe chronic disorders such as renal failure (Czackes & De Nour, 1978), rheumatoid arthritis (Rogers *et al*, 1982) and diabetes (Tattersall, 1981).

We have already seen that patients without a significant physical cause of somatic symptoms are common in many out-patient clinics and that some of these patients may suffer from primary psychiatric disorder. These disorders are often easily treated, and it is unfortunate that they are frequently unrecognised and cause chronic disability. Research on specific patient groups suggest that current and previous psychiatric state are good predictors of psychosocial and possibly medical outcome in these patients.

Emergency departments

Affective and organic psychiatric disorder, substance abuse and other psychiatric problems are common in emergency departments, both as presenting problems and as incidental findings in those with physical diagnoses. Almost all detailed surveys have been restricted to the small minority of attenders seen by psychiatrists, or recorded by the consulting doctor as having psychiatric disorder.

In Britain, casualty doctors see all attenders and refer a proportion of those to duty psychiatrists (about 2% of all attenders). Bassuk *et al* (1983) reported that casualty doctors at the Bristol Royal Infirmary made a principal diagnosis of overt psychiatric disorder in 0.98% of attenders, of self-injury in 2.5%, and of physical symptoms with no specific physical cause in 2.5%. They made no comment on psychiatric disorder in those who had physical problems. In North America, preliminary assessment by nursing staff results in 3–5% of attenders being seen by the psychiatric emergency clinic. American reviewers have noted that over the past 10–20 years emergency departments have taken on increasing responsibilities for the management of chronic mental illness (Gerson & Bassuk, 1980; Bristol *et al*, 1981; Jones & Yoda, 1982). The nature of the psychiatric morbidity depends greatly on the area served (Jacobsen & Howell, 1978).

The only survey of consecutive emergency department attenders is that of Summers *et al* (1979), who assessed samples of 100 daytime attenders and 100 night-time attenders in an Ohio general hospital. Psychiatric disorder was identified in 26% of the

former and 65% of the latter. The most frequent diagnoses were alcohol problems and anti-social personality (29% and 17% respectively at night), with Briquet's syndrome, drug and alcohol dependence all being common. Salkovskis *et al* (1986) surveyed 149 accident and emergency department attenders in Leeds, having excluded deliberate self-harm, overt psychiatric disorder and the severely ill, and found that 36% scored above threshold on the GHQ or HAD scales.

Concluding comments

There is ample evidence that psychiatric morbidity is common in the general hospital. There are also hospital patients who do not have major psychological symptoms but who present management difficulties or are distressed by social problems, and who may benefit from psychological or social

intervention. There is a clear need to develop both a better classification of psychiatric disorder in the general hospital and appropriate research measures so that prevalence, nature and outcome of the various forms of disorder can be accurately described. Such basic epidemiological research should be accompanied by the evaluation of treatments leading to provision of better care for those who need it.

Sophisticated research measures are unlikely to be useful to busy general hospital staff. We have made suggestions about how they can detect the majority of patients who have significant psychiatric disorder. In particular, there is a need for greater awareness of the disorders that we have reviewed, together with systematic history-taking which has both psychiatric as well as physical diagnoses in mind. We believe that general hospital staff can detect their patients' more serious psychiatric problems and provide simple care without excessive extra demands on their time.

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