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Screening for illicit drug use in psychiatric hospitals: whose job is it?

Ilana B. Crome, Roger Bloor & Betsy Thom

Abstract This review focuses on screening and assessment in general psychiatric settings, where drug use is unlikely to be known to service providers. It builds on the recurrent finding that psychiatric patients are at high risk of substance misuse. The application of self-report questionnaires and rating scales and more in-depth assessment instruments is outlined, as are biological screening techniques. The use of brief self-completion questionnaires probably offers the most practical approach to routine screening by non-specialist staff in general hospital settings. The importance of implementing such tools lies in reaching an accurate diagnosis, choosing treatments more appropriately and monitoring the management of patients' psychiatric disorders.

There are three reasons to screen for drug misuse in hospital settings: the accumulating evidence of increasing prevalence of drug misuse in the general population and on hospital wards; the need to detect drug misuse in order to reach an accurate diagnosis; and the availability of effective interventions to help in-patients who are misusing substances and to treat presenting complications.

Prevalence of illicit drug use

A wide range of population-based and clinical studies in the literature consistently demonstrate that substance use/dependence is one of the most common mental health-related disorders (Cohen *et al*, 1999; Coulthard *et al*, 2002; Crawford *et al*, 2003). A national study of psychiatric comorbidity in the UK found that the prevalence of dependence on any drug was 4% and dependence on cannabis was reported most often at 3% (Coulthard *et al*, 2002). Drug-dependent individuals were more likely to be receiving current treatment and to have spoken to a general practitioner (GP) about mental health problems or to have used community services.

A variety of studies have consistently confirmed the clear association between mental ill health and substance misuse (Table 1). Affective disorders, personality difficulties, eating problems and attention-deficit hyperactivity disorder are all related to substance misuse. Substance misuse is also a powerful predictor of suicide. Childhood psychiatric disorders are very likely to continue into adulthood and they are often exacerbated by substance misuse, which is increasingly prevalent in young people. These studies argue powerfully for the need to include screening for substance misuse as part of any comprehensive psychiatric treatment plan. Skilled assessment and effective treatment of substance misuse may be important in the prevention and alleviation of disabling and life-threatening comorbid psychiatric conditions.

Despite these reported prevalence rates, substance use disorders are not being identified by hospital doctors: of 2347 in-patients referred consecutively to the consultation liaison psychiatry services of four general teaching hospitals in Australia, over half were diagnosed by psychiatrists as having a substance use disorder that had been missed by the referring doctor (Smith *et al*, 1995; Wolford *et*

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Table 1 Prevalence of illicit drug misuse in psychiatric patients

Source	*Condition*	*Population*	*Country*	*Prevalence*
Appleby *et al*, 1997	Any psychiatric disorder	Adult in-patients	UK	25%
McCann *et al*, 2000	Attention-deficit hyperactivity disorder	Adults	USA	33.8%
Carey & Correia, 1998	Schizophrenia	Adults	USA	47%
	Bipolar disorder	Adults	USA	56%
Martino *et al*, 2000	Any psychiatric disorder	Adolescent in-patients	USA	Up to 50%

al, 1999). Above all, diagnoses are missed because screening does not routinely occur (Carey & Correia, 1998).

Older people are a major target group that has been largely omitted from drug screening in hospitals. Part of the reason for this neglect may stem from the apparently low prevalence of illicit drug use among older people: a major study in the USA found that the lifetime prevalence of dependence on illicit drugs among people over 60 years of age was 1% (Crome & Crome, 2005; Crome & Bloor, 2006*a*,*b*,*c*). However, this figure is probably an underestimate, and may increase as currently young and middle-aged addicts grow older.

It is questionable whether the routine screening of all hospital in-patients is productive: it might be best to target accident and emergency, trauma or general psychiatric patients. A wider debate surrounds the emphasis on identification and treatment of people in 'high-risk' groups through more universal prevention and screening initiatives aimed at the larger percentage of drug users, in whom behavioural change at an early stage may be more effective (Rose, 1981; Kreitman, 1986; Stockwell, 1999).

There remains a need for longitudinal, multidisciplinary shared assessment tools as an approach to enhance the understanding of the patterns and severity of coexisting substance misuse and psychiatric disorder and provide pointers for novel treatment interventions.

Enhancing accuracy of diagnosis and effective management

More detailed assessment, leading to a diagnosis if appropriate, is important to the development of a treatment plan (Carey & Correia, 1998). If substance misuse is undiagnosed, management of an individual's psychiatric disorder is likely to prove more difficult, less effective and more costly. The issues that need to be thought through in the process of screening include whether the level of drug use is likely to be harmful to the patient and family; whether screening can reveal opportunities for advice, counselling, other intervention and referral; how this might affect the patient and family; whether there are resources available to meet this need; and finally whether the screening process and/or detection of illicit substance use may affect the patient–doctor relationship.

If it is to be effective, routine screening must be integrated into everyday clinical practice and, as questionnaires or other methods must be acceptable to hospital staff and patients, it must be quick. Although the fact that illicit substance use is illegal seemingly poses additional ethical dilemmas, it is the duty of the medical profession 'to maintain a good standard of practice and care' while respecting the patient's rights (General Medical Council, 2001). The extension of the role of hospital staff to include routine screening may encounter both structural and attitudinal barriers, as described later, although this may be related to low confidence owing to lack of competence and a concern regarding poor channels of communication and the limited resources of drug services (Herring & Thom, 1999; Royal College of Physicians, 2001).

What is screening?

The process of assessing a person for possible drug use can be divided into a series of phases of increasing complexity (Box 1). One such classification

Box 1 Screening and assessment

- *Screening (initial assessment)* Of individuals who are not necessarily experiencing problems from drug use, misuse or dependence
- *Subsequent, more complex assessment (perhaps leading to specialist assessment)* Rating on a continuum to assess degree of dependence
- *Measurement of change* Monitoring use, misuse or dependence and associated problems over a period of time

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views the process as having three stages (Effective Interventions Unit, 2003):

1 simple assessment (or screening);
2 comprehensive assessment;
3 specialist (or in-depth) assessment.

Assessment is usually differentiated from screening by the fact that an assessment will lead to the formulation of a treatment plan, whereas screening only identifies the existence of a problem.

The value of using screening and assessment in general psychiatry was illustrated in a review of the effects of introducing such a system into an in-patient psychiatric setting (Prochaska *et al*, 2005). The increased emphasis on the recognition of substance misuse problems led to a doubling of referrals to specialist services and a 100% increase in the inclusion of substance misuse issues in care plans.

Screening techniques

A number of screening methods for illicit drug use are available (Box 2). The method chosen depends on the purpose, the setting, the nature of the target group and the technology and resources available for the screening programme. No one method is intrinsically better than another: there are advantages and disadvantages to each (Box 3).

Although several of the instruments described below have been tested in more than one country and with more than one sample of patients, the validity, appropriateness and acceptability of an instrument may still require further exploration to meet the particular screening needs and situation. Just as one screening approach is not necessarily better than another, so too it is not possible to state categorically that one screening instrument is more appropriate than another.

As already mentioned, screening and assessment are not the same thing: screening is an initial, relatively simple assessment, which generally provides a basic indication of health status, and can be conceptualised as the prelude or preliminary part of an ongoing, and sometimes protracted, process.

Box 2 Screening methods

- Self-report questionnaire
- Psychiatric history-taking assessment
- Semi-structured interview
- Structured interview
- Biological markers
  - Urine
  - Blood
  - Scalp hair
  - Fingernail clippings
  - Saliva

Box 3 Procedural difficulties with screening techniques

- The short half-life of drugs of misuse
- Missing information in collateral reports
- Poor concentration may affect the individual's capacity in self-reporting
- Poor literacy may require interviewer-administered rather than self-administered instruments
- Measures may not be appropriate for a particular population
- False identification (false positives)

Self-completion questionnaires and rating scales

The advantages of using a screening or assessment tool are that recording is standardised, the instrument is 'tried and tested', a checklist of domains ensures that important issues are covered, and multidisciplinary professionals have a common shared understanding of what has been assessed (Box 4). This can prove useful in the organisation of the management plan. Furthermore, if tools are repeatedly used over time, results can be utilised to demonstrate progress to the patient and to measure outcome.

Instruments do need to cover a range of substances and take account of the emergence of new drugs. They must also address the heterogeneity of the drug-using population (e.g. by age-group, gender, and the presence of mental illness or particular medical conditions) and take account of a range of associated problems (in particular comorbidity). These requirements have influenced the development of different instruments (Boxes 5 and 6).

Simple assessments

Adults

The Drug Use Disorders Identification Test (DUDIT) is an 11-item self-report instrument, which has recently been developed and tested (Berman *et al*, 2005). It is intended for use with the Alcohol Use Disorders Identification Test (AUDIT), and both scales can be used in psychiatric settings. It yields scores on a continuous interval scale.

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Box 4 Criteria for the evaluation of rating scales (Gunthner & Stetter, 1996)

Reliability	Test results should be consistent across raters and across time
Validity	The scale should measure what it is supposed to measure
Sensitivity	The scale should detect a target behaviour or problem when it is present: the lower the sensitivity, the higher is the number of false negatives (individuals with the behaviour who are not identified)
Specificity	The scale should accurately identify people who do not display the target behaviour or problem: the lower the specificity, the higher is the number of false positives (individuals who do not have the behaviour who are erroneously identified as having it)
Effectiveness	According to the dimensions listed above
Efficiency	It should be cost-effective to administer the scale
Acceptability	The scale should be accepted by the target population as well as by those who administer it
Appropriateness of design and construction	In the development of the scale: on what basis (theoretical or empirical) were the items selected; was the sample population well-defined; and was the sample size sufficient to ensure at least a preliminary standardisation?

The CAGE–AID is based on the CAGE (for alcohol screening), 'adapted to include drugs'. To test the validity of the questionnaire, Brown *et al* (1998) compared responses on the CAGE–AID with a validated diagnostic interview (based on DSM–III–R criteria). They found that the CAGE–AID was 70.9% sensitive and 75.7% specific for substance use disorders.

The Severity of Dependence Scale (SDS; Gossop *et al*, 1995) screens for the use of different types of drug, including those that do not have a clearly defined withdrawal syndrome. It is primarily a measure of compulsive use, not a complete measure of dependence. It consists of five items, all psychological, scored on a four-point scale. It takes less than 1 min to complete. Although Gossop *et al* did not recommend it as a clinical screening instrument, it has been used to detect amphetamine and benzodiazepine dependence (De Las Cuevas *et al*, 2000).

The Dartmouth Assessment of Lifestyle Instrument (DALI; Rosenberg *et al*, 1998) detects substance use disorders in people with severe mental illness. Logistic regression was used to select the best items from 10 existing screening instruments, resulting in an 18-item interviewer-administered scale. The scale was shown to have high classification accuracy for alcohol, cannabis and cocaine use.

The DSM–III–R was used as the gold standard in the development of the Chemical Use Abuse and Dependence (CUAD) scale for measuring substance misuse in psychiatric patients (McGovern & Morrison, 1992).

Adolescents

The CRAAFT (Knight *et al*, 1999) is a six-item brief screening instrument for adolescents, which is derived from existing questionnaires and screens for drug and alcohol misuse. The letters used in the acronym correspond to the initial letters of key words in each of the six items. The CRAAFT was developed using 99 individuals aged 14–18 years attending a hospital-based adolescent clinic (Boston, MA, USA), who had a history of alcohol or other drug use. Knight *et al* found that 92% of those who needed intensive treatment for alcohol or drug use were identified by the CRAAFT with a cut-off score of 2 or more. They concluded that the test seems promising and deserves further refinement and validation.

Comprehensive assessments

The Drug Abuse Screening Test (DAST), a 20-item scale developed for clinical screening and treatment evaluation research, measures drug misuse (Skinner, 1982). It provides a one-dimensional scale based on a quantitative index of problems related to drug misuse. Overall, findings support the use of the DAST for quantifying the extent of drug involvement within a help-seeking population (Carey & Correia, 1998; McCann *et al*, 2000). The instrument has also been evaluated outside clinical settings (e.g. with female prisoners by Saltstone *et al*, 1994).

A modified version of the DAST, the DAST–A, has been developed for use with adolescents (Martino

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et al, 2000). Scores greater than six yielded high accuracy in differentiating adolescent psychiatric in-patients with and without drug-related disorders. However, with the DAST–A it was more difficult to distinguish adolescent drug users from problem alcohol users and the scale is likely to underestimate use.

The Maudsley Addiction Profile (MAP; Marsden *et al*, 1998) is a brief multidimensional tool designed for assessing treatment outcome. It covers four main areas: substance use, health risk behaviour, physical and psychological health, and personal and social functioning. It takes 12 min to complete and can be used for clinical and research purposes.

The Leeds Dependence Questionnaire (LDQ; Raistrick *et al*, 1994) was designed as part of a treatment package to screen for mild to severe psychological dependence on a variety of substances, including alcohol, opiates and other drugs. It is sensitive to change over time and is intended to encourage a perception of dependence as a continuum rather than using a cut-off point to dichotomise respondents. Lennings (1999) notes that the questionnaire has the advantage of allowing the client or patient to nominate their main drug of concern. Lennings administered the LDQ to two samples of juveniles, and found it to be a good brief evaluation tool for this group.

Box 5 Factors to consider in choosing a screening tool

The following criteria can be used to find the best match between available questionnaires and the proposed screening exercise

- The purpose for which the instrument was developed: ensure that it meets your requirements
- The cultural context in which the instrument was developed and applied
- The characteristics of the sample(s) used in developing the instrument (e.g. the target client group and the type of client group included)
- Reliability and validity
- Specificity and sensitivity (the number of false positives and false negatives that it identifies)
- The extent to which the scale has been tested with different populations (e.g. clinical and non-clinical groups, help-seeking and non-help-seeking groups, where drug use is known and not known) and in different cultural or geographical locations
- The perceived relevance of the instrument for a particular group or in a particular setting
- The acceptability of the instrument to patients and those administering it
- Time taken to complete
- Training requirements for those administering the instrument

Box 6 Factors that affect the generalisability of a screening questionnaire

- Whether clinical or non-clinical samples were used in development and testing of the scale
- If clinical samples were used, whether they were from secondary or primary care
- Whether a particular subgroup was used (e.g. pregnant women)
- Sample characteristics such as age, gender, educational level, employment status, marital status and other socio-demographic variables
- Type of drugs used by the sample group
- The dimensions measured
- Cultural and ethnic differences

Specialist assessments

Freyberger & Stieglitz (1996) list the following standardised and structured interviews developed specifically to screen for and measure alcohol and drug-related disorders:

- the Addiction Severity Index (ASI; McLellan *et al*, 1980) and the European Addiction Severity Index (EUROPASI; Kokkevi, & Hartgers, 1995)
- the Opiate Treatment Index (OTI; Darke *et al*, 1992)
- the Composite International Diagnostic Interview (CIDI; World Health Organization, 1997)
- the European Adolescent Assessment Dialogue (EuroADAD; Friedman *et al*, 2002)
- the Psychiatric Research Interview for Substance and Mental Disorders (PRISM; Hasin *et al*, 1996).

Typically, these instruments take considerable time to administer (e.g. the CIDI takes 1–3 h, the ASI 1 h), require staff to be trained in their use, and most are designed to be administered by psychologists or psychiatrists and are unlikely to be suitable for routine implementation and initial screening.

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Box 7 Detection times for urine screening

Cocaine	12–72 h
Amphetamine	2–4 days
Heroin	2–4 days
Codeine	2–4 days
Cannabis	up to 30 days
Diazepam	30 days

Biological markers

To corroborate both the verbal history provided by the patient, carers and professionals, and clinical findings, biochemical tests on blood, saliva, sweat, urine and hair can be undertaken (Drummond & Ghodse, 1999; Wolff *et al*, 1999*a*,*b*). In clinical practice, urinalysis (Box 7) and, more recently, saliva analysis are most commonly used to test for drugs.

Drug users are rarely required to give urine samples under the direct supervision of clinical staff, but the temperature of the specimen can be judged when it is handed over. A simple pH test strip can confirm that the sample is compatible with urine. If in doubt, it is usually possible to ask for another sample soon after the first. Cannabis, methadone and long-acting benzodiazepines may remain in the urine for a week or longer, but other drugs may not be found after 48–72 h. Thus, if drugs are not detected, it does not necessarily indicate that the individual has not been using. If a patient is assessed as being dependent, the clinical picture may be that of a withdrawal syndrome; every drug has a specific set of criteria by which withdrawal can be diagnosed.

There are technical and practical difficulties in the use of biological markers and in the interpretation of results. These include ensuring a secure 'chain of custody' from initial collection to final disposition in order to guarantee the accurate attribution of a sample to a specified individual, the occurrence of false-negative and false-positive identification, the variability between substances in duration of detectability from a few hours to 10 days or more, the problem of passive contamination (e.g. of scalp hair), the need to ensure appropriate, rigorously applied laboratory testing procedures, and the existence of different thresholds and cut-off points in establishing positive identification (Wolff *et al*, *1999a*,*b*).

Issues and concerns

Generalisability to the young and old

Since these criteria were established on the basis of an adult population, some may not apply to adolescents or elderly people. For instance, older people may have substance-related problems without the development of tolerance or dependence, cognitive impairment may prevent them from noticing whether they need to take larger amounts over a longer period, negative effects may take a shorter time to develop, they may have fewer activities to give up, or they may not appreciate that their problems are related to substance use.

Self-report screening instruments

Reliability and validity

Doubts are frequently expressed about the extent to which self-report screening instruments can provide an accurate picture of substance use, for example because of the accuracy of recall, respondents' denial of drug use or selection of information provided on the questionnaire, the complexity of measures of dependence and the need to establish appropriate definitions of terms (e.g. misuse, hazardous use) and meaningful cut-off points to identify what constitutes a case (Gunthner & Stetter, 1996). Despite these reservations, self-report approaches have been found to provide a relatively good picture of substance use (Levy *et al*, 2004; Williams & Nowatzki, 2005).

Impact of false identification

All of the self-report instruments reviewed gave a proportion of false positives (i.e. some people were wrongly identified as drug users, drug dependent or having a substance misuse disorder) and false negatives (i.e. they failed to identify some drug users). False negatives are more of a problem than false positives because even small amounts of a drug may pose problems for people with mental illness. It is therefore important to increase the specificity of screening instruments (Wolford *et al*, 1999).

Implementation of screening

What happens to the patient after screening is especially pertinent, particularly with regard to the provision of appropriate facilities for individuals who are identified as drug dependent or at risk of becoming so. Both professionals and patients may regard placement in a general psychiatric ward as unsuitable, and exposure to judgemental attitudes among staff is a continuing concern. Appleby et al (1997) have commented on the importance of aftercare, reporting 'a general inattention to the post discharge needs of these individuals'. Screening for substance use seemed to increase staff awareness of substance use disorders, but did not enhance psychiatric patients' access to community services.

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Attitudinal and structural constraints

It is clear that, even where appropriate screening instruments and procedures are in place, the implementation of screening – especially as a part of routine care – is difficult to introduce and even more difficult to sustain (Box 8). Staff attitudes regarding their role as providers of medical care and towards the group to be screened, perceptions about revealing unmet care needs, and the lack of resource-appropriate support to respond effectively can mitigate against the implementation of screening (Herring & Thom, 1999; Royal College of Physicians, 2001).

If enquiring about or screening for drug use is discretionary, a wide range of factors, including negative perceptions and stereotypes about who is 'at risk' or dependent, influence who is asked and who is not (Rosenberg, 1995). Stein *et al* (1996), for example, found that the patients most likely to be asked about their drug use were smokers, single and without a regular doctor.

Appleby *et al* (1997) reported negative attitudes towards screening in a psychiatric facility and a tendency to concentrate on psychiatric problems to the neglect of patients' substance use. A similar diagnostic bias is evident in the case of screening for alcohol in accident and emergency departments, where the emphasis is on treating the presenting condition (Herring & Thom, 1999). Furthermore, Appleby *et al* noted a failure to treat substance use disorders even when they were recorded in patient notes. They speculated that staff might view patients with a dual diagnosis, a 'multi-problem group', as non-receptive to after-care referral. In a report on another study of substance use among psychiatric patients, Smith *et al* (1995) argued that educational efforts are required to improve skills and attitudes towards screening and to develop positive attitudes towards intervention.

Rosenberg (1995) has stressed the need for trained personnel to carry out assessment in a safe environment where the patient will feel comfortable discussing drug use. This requires time, knowledge, skill and space – all of which might be in short supply. Rosenberg also discussed the costs of screening, drawing attention to the economic implications of routine and occasional screening in relation to the expected benefits.

Box 8 Structural and attitudinal constraints

- Lack of training
- Lack of time
- Lack of knowledge and information
- Inadequate technical skills
- Inadequate social skills
- Low confidence in competence
- Lack of space
- Attitudes to professional role and purpose
- Attitudes to the 'target group'

Conclusions

The problem

There can be no doubt that illicit drug use by hospital patients is directly associated with physical and psychiatric illness and complications. Specific hospital departments, in particular psychiatric units, have a high prevalence of patients presenting with problems of substance use and misuse.

The tools

Various types of screening instrument have been developed for very different purposes with distinct target groups. Much depends on the reason for screening, be it for monitoring trends in prevalence of drug use and complications, for improved management of the patient's illness, or for evidence of better outcome or cost-effectiveness.

If routine screening is to be undertaken by hospital staff then short, simple instruments are needed that can be used without specialist training. Use of lengthier questionnaires is likely to be restricted to shorter-term research projects or 'snapshot' screening undertaken to establish prevalence and patterns of drug use.

The people who use the tools

Both patients and hospital staff may be reluctant to talk about illicit drug use, resulting in poor administration of screening and an underestimation of the problem. Disruption of the therapeutic relationship that causes the patient to avoid services is one of several barriers such as lack of training, the need to respond to presenting conditions and illnesses as a priority, and difficulty in initiating discussion of issues seen as private or sensitive (Herring & Thom, 1999).

However, the ethics of *not* screening when drug use is known to be a complicating, treatable factor in a considerable number of psychiatric illnesses must also be considered (Rosenberg, 1995).

Declaration of interest

None.

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MCQs

1 It is important to screen for drug problems in a general hospital because:
a drug use has reached a plateau in the UK
b drug use is more likely to be the consequence of the presenting problems than the cause
c drug use is over-investigated in hospital
d drug use is overreported
e drug use is underreported.

2 Drug dependence is likely to be associated with:
a fewer presentations in primary care
b a missed diagnosis by general hospital physicians
c effective treatment if identified
d fewer consultations with GPs about mental health issues
e suicide.

3 Older people with drug problems:
a access treatment for substance use problems regularly
b may develop dependence as readily as younger adults
c use multiple prescription drugs
d are likely to increase in number
e are overestimated in general population surveys.

4 The following groups of patients should be targeted for screening:
a trauma
b accident and emergency
c general psychiatric
d older people
e young people.

5 Screening:
a usually involves only one instrument, which screens for a particular substance
b and assessment are the same thing
c usually involves the use of a structured questionnaire
d usually involves the testing of hair
e may identify drug-related problems in patients who present with problems other than drug dependence.

MCQ answers

1	2	3	4	5
a F	a F	a F	a T	a F
b F	b T	b F	b T	b F
c F	c T	c T	c T	c F
d F	d F	d T	d T	d F
e T	e T	e F	e T	e T

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