

16 Drug Misuse*

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1 Summary

This chapter reviews the treatment needs of people with drug misuse problems in the UK, with a focus on England and Wales. The chapter is intended primarily for treatment commissioners from primary care trusts (PCTs) and for Drug Action Team members who wish to employ population needs assessment methods to guide their strategies for tackling drug misuse. Our specific objectives are:

- to estimate the size and nature of the drug-misusing population
- to conceptualise treatment need by describing particular groups
- to describe the array of treatment services that should be provided or made accessible in a region or locality
- to consider the access routes, coverage, capacity, strengths and weaknesses of current services for the treatment of drug misuse
- to outline methods for assessing needs and to identify information priorities.

A central principle of our review is that no single commissioning agency or provider can meet the health and social care needs of the drug-misusing population. An effective response requires the combined efforts of all Government departments to greater or lesser degrees. The key ingredients for a successful national response are balanced joint service commissioning, appropriate joint purchasing between the health, social welfare and criminal justice agencies, and shared working between specialist and generic providers.

Statement of the problem

In England and Wales, around half of the population aged 16–29 years have used an illicit drug, the majority using cannabis. Approximately 1.2 million people aged 16–24 report that they have consumed an illicit psychoactive drug in the previous month. The ten-year Government strategy to tackle drug misuse covers all illicit drugs but gives priority to the reduction of use of and harm by opioids, cocaine, amphetamine and amphetamine-type stimulants, sedative/hypnotics, hallucinogens and volatile substances (solvents and inhalants).

* Several changes to the national drugs strategy have occurred since the preparation of this chapter. The interested reader should consult the following for information: www.drugs.gov.uk and www.nta.nhs.uk

Most people who present to primary care and specialist treatment facilities have problems with opiates, mainly illicit heroin. The use of multiple substances (polydrug use) is the norm rather than the exception, and many people with health care needs have multiple problems relating to the use of several types of drugs, spanning the opiates, psychostimulants, benzodiazepines and alcohol.

There is a well-established range of treatment services (with primary and secondary prevention aims) across statutory and non-statutory sectors to help affected individuals and to provide support to family members and others. Primary prevention in the form of drug education in schools is less developed, and there is currently a general lack of reliable research evidence for its effectiveness. Since 1998, a national drug misuse control strategy has been established. This emphasises the central importance of primary, secondary and tertiary prevention and seeks to integrate efforts across central Government departments.

A thorough appraisal of the risks and harmful consequences of drug use and drug dependence involves consideration of a range of personal, health, social, economic and legal risks and harm, which can be experienced at the individual, familial and community levels. For most people, initiation into illicit drug use does not lead to regular and problematic use, and use substantially declines with age. Vulnerability to drug use is highest amongst young people, with most problem drug users initiating use before the age of 20. For a sizable minority of people (notably for heroin users), problem drug use is a chronic, relapsing condition during which an individual develops a 'career' of both drug use and treatment.

Subgroups

Drug misusers form a highly heterogeneous population. Their treatment needs are influenced to varying degrees by personal demographic characteristics, types of drugs used, the extent of impairment and complications, and the nature of their living situation and social environmental supports and stressors. At the population level, seven non-independent subgroups can be identified:

- drug misuser (non-dependent)
- injecting drug misuser
- dependent user
- acutely intoxicated drug misuser
- drug misuser with comorbidity
- drug misuser in withdrawal
- drug misuser in recovery.

Complex cases for treatment will usually (but not always) be characterised by drug-related impairment, dependence, regular injecting, high tolerance levels and comorbid problems across physical, psychological, and personal and social functioning domains. In addition to complex priority cases, there are three groups that have specific treatment needs: young people under 25 years (particularly the under-18s), people with comorbid substance misuse and psychiatric problems, and people who are homeless or not in regular accommodation.

Prevalence and incidence

Prevalence estimates suggest that there are around 1 220 000 (95% CI: 1 045 000–1 400 000) current users of illicit drugs (mainly cannabis) among the 16–24-year-old population in England and Wales. Cocaine has been used on at least one occasion by around 6% of the 16–29 age group and by 9% of the 20–24 subgroup, and is most prevalent in London and the South, and Merseyside. The 1998 British Crime Survey (BCS), conducted with 10 000 participants aged 16–59 in England and Wales,⁷ reported the following

previous 12-month prevalence rates: cannabis, 9%; amphetamines, 3%; cocaine, 1%. Corresponding rates for 20–24-year-olds were 26%, 10% and 5%, respectively.

The main available measure of the incidence of drug misuse comes from the reports of those drug misusers (almost all of whom are dependent on a psychoactive substance) who have commenced a treatment episode. During the six-month period up to 30 September 1999, the Department of Health Drug Misuse Database recorded some 30 545 people in England who commenced a treatment episode for drug misuse. This corresponds to about 62 cases per 100 000 population (derived from population estimates for mid-1998 based on the 1991 Census). Most drug users presenting for treatment reported opiate problems, with 59% citing heroin as their main problem drug. The overall ratio of males to females was 3:1, and half (52%) of those in treatment were in their twenties.

Services available

Activities aimed at reducing the demand for drugs and drug misuse span primary, secondary and tertiary levels. Drug education in UK schools varies in approach, content and duration, but collectively aims to delay the onset of drug use, reduce the frequency and intensity of use, and reduce risk factors and minimise harm. The seven subgroups described earlier in the chapter may come into contact (through self- or family-referral or referral by a professional agency) with a wide range of agencies and service providers who are either predominantly drug misuse specialists or generic. Four tiers of services can be identified:

- Tier I: open-access services
- Tier II: community treatment, counselling and support services
- Tier III: specialist community treatment services
- Tier IV: specialist residential and rehabilitative services.

Table 1 summarises the general function of the services provided across these four tiers.

Table 1: Services provided in the four tiers of services for drug misusers.

Tier	Core function	Severity of client problem at contact
I (open access)	Advice, information; syringe exchange/distribution; education; primary medical services	Mild to severe
II (community treatment, counselling and support)	Assessment, education, advice, counselling; GP-led substitute prescribing; counselling, prescribing and assistance for psychiatric comorbidity; aftercare and support	Mostly moderate
III (specialist community treatment)	Specialist (supervised) prescribing; structured counselling/day programmes; treatment of complex cases; pregnancy; comorbidity; community detoxification; counselling; referral; training and development	Mostly moderate to severe
IV (specialist residential and rehabilitative)	Specialist detoxification in controlled environments with counselling to prevent relapse; rehabilitation	Mostly severe

There is well-established international research evidence for the beneficial impact of the main modalities of treatment for drug misuse problems. The body of evidence for UK services is growing, with most outcome evaluation studies based on work in England. Table 2 summarises the specialist structured treatment services and their effectiveness.

Table 2: Specialist structured treatment services and their effectiveness.

Treatment service	Approx. no. of services	Effectiveness rating	Comment
Syringe-exchange schemes	300	II-2 (B)*	Evidence is positive in UK, but somewhat mixed in USA
Specialist community prescribing ^a	163	I-1 (B)**	
Shared-care prescribing	40 per district	II-1 (B)***	
Counselling	112+	I-1 (B)****	CBT from international studies ^b
Hospital inpatient units	16	II-1 (B)	
Residential programmes	70	II-1 (B)	

^a Using oral methadone with dependent opiate misusers.

^b Cognitive-behavioural therapy (international research evidence).

* Evidence obtained from well-designed cohort or case-control analytical studies (service has a measurable beneficial effect).

** Evidence obtained from several consistent randomised controlled trials (service has a moderate beneficial effect).

*** Evidence obtained from well-designed cohort or case-control analytical studies (service has a moderate beneficial effect).

**** Evidence from at least one properly designed randomised controlled trial (service has a moderate beneficial effect).

Models of care – towards integrated services

Given the broad range of health, social and economic harm associated with drug misuse, an integrated approach based on partnership is needed to underpin the commissioning and delivery of support services. Partnership arrangements are vital between agencies spanning specialist drug treatment services, general medical services and general practice, and across primary care trusts, social services, non-statutory agencies and criminal justice services. A fully integrated treatment system contains an array of mainly generic, predominantly drugs-specialist providers, together with referring agencies and services whose personnel come into contact with drug users during the course of their work. These staff can be a valuable source of brief advice and referral into the treatment system as appropriate – for instance, to voluntary agencies and telephone helplines.

Based on the four tiers outlined above, Figure 1 summarises the shape of a fully integrated treatment system for substance misuse.

In this tier system, each agency has a role to play as part of a co-ordinated response. A person in need of treatment for drug misuse may present to any one of the predominantly identification and referral services shown in the bottom row of Figure 1. The processes for referral and assessment decision making are complex. The assessment and appropriate placement of a client are crucial and will be influenced not only by needs at presentation but also by those evolving over the course of a treatment episode and aftercare. We see the Substance Misuse Team (SMT) as occupying a critical role at the hub of the treatment system. The

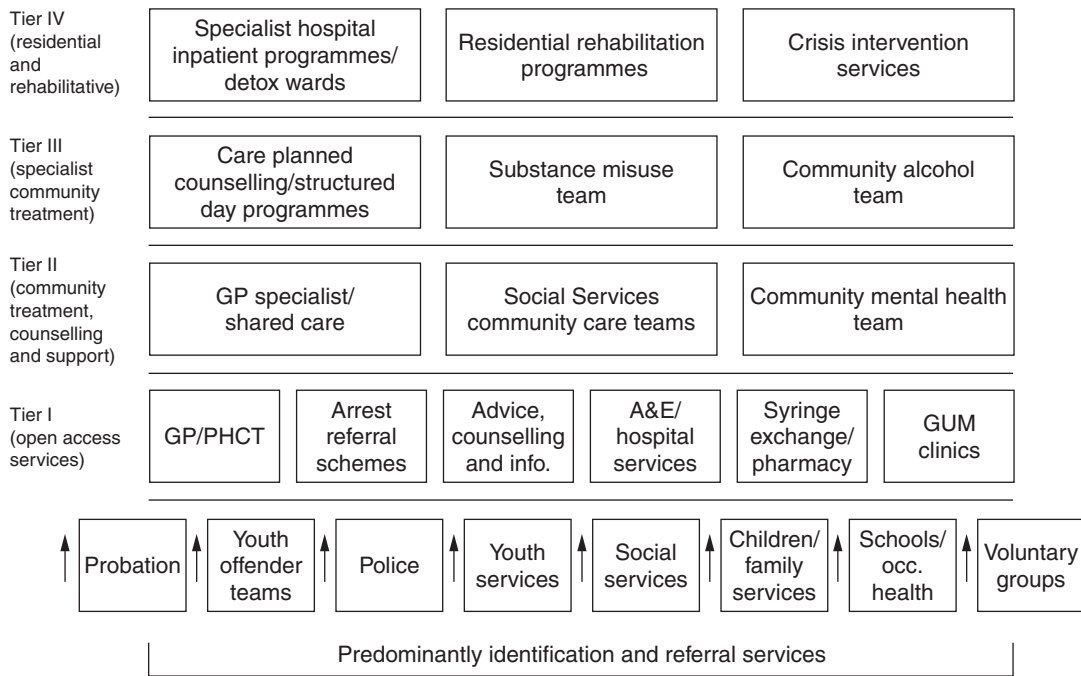


Figure 1: A fully integrated treatment system for substance misuse.

SMT should serve important functions across client assessment, direct treatment provision, onward referral and community liaison, and should promote users’ groups, professional and volunteer training and service development areas.

Information and research requirements

The field of drug misuse treatment is undergoing rapid change, especially because of new funds coming into the criminal justice system and because of the development of new interventions in this sector. Periodic monitoring of existing services and new treatment programmes is required to inform commissioners of their capacity. Waiting lists and times, staff recruitment issues and organisational responses to changes in demands will all be critical indicators of the health of the treatment system for drug misuse over the next five years. In several places we have stressed the importance of staff training to ensure that services can adapt to meet the needs of priority care groups. There remains an urgent need for more research into the prevalence of hepatitis C (HCV) and its course amongst intravenous drug users (IDUs) and other drug users who are infected.

Regional Drug Misuse Databases (DMDs) have made good progress towards meeting national and regional information needs, but little is known about how such data are used in practice by commissioners and treatment providers. Greater use also needs to be made of the DMDs to inform the commissioning process and in particular to develop purchasing intentions, service agreements and specifications. There has also been some progress in the development of treatment outcome measures for drug misusers. The principle behind existing measures is to gauge treatment benefit in terms of a reduction of important problems. As a complement to these core measures, two areas need to be developed, namely improved and

more sensitive measures of progress in treatment, and protocols and measures for assessing the needs of priority groups.

Finally, few systematic quantitative and qualitative studies of the assessment of drug treatment needs have been conducted within the UK. To date, synthetic estimation and other more sophisticated methods have not been used widely. At the time of writing, population needs assessment in this field remains underdeveloped in the UK. This should be tackled as a research and development priority. Health authorities (now primary care trusts) are now required to undertake comprehensive needs assessments in the area of drug misuse with the specific target of assessment for young people. Intensive surveys of the resident population in the majority of Drug Action Team (DAT) areas will be time-consuming and expensive. It is likely that most DATs will wish to employ alternative (and less precise) estimation methods with which to inform the direction and success of commissioning strategies. A qualitative approach to needs assessment can also be undertaken relatively quickly to understand what it is that commissioners, purchasers, providers and users want from services for treatment and support.

Overall, there is mounting evidence for the effectiveness of those standard forms of treatment currently available, but less is known about the effective means of helping particular priority client groups. An effective treatment system, tailored to the needs of the local population, is based on principles of strategic alliance and partnership. There is a need to extend and improve information systems and the monitoring of performance and outcome, and to guide strategic and service development by using more sophisticated methodologies for assessing need.

2 Introduction and statement of the problem

This chapter presents an epidemiologically based review of the treatment needs of people with harmful or dependent use of psychoactive substances* in the UK, with a focus on England and Wales. The target audiences for the chapter are Drug Action Teams (DATs)†, their associated Drug Reference Groups (DRGs) and the commissioners, purchasers and providers of treatment and care services across the health and social care arenas and in the criminal justice system.

There are three broad sections to the chapter. We first introduce the main features of drug misuse in the UK, the prevalence of drug use and the characteristics of several specific population and priority subgroups. We then describe the main types of treatments and treatment programmes in the UK, summarising the current national and international research evidence for their impact. Next, we describe the access and referral routes into UK treatment services and the elements of the current treatment system. In this section, we promote an integrated approach to organising services and providing treatment. Finally, we describe the direction of the treatment system for tackling drug misuse and discuss several important issues, including methods for assessing needs and the monitoring of performance and outcome from treatment programmes. In focusing on the need for health and social care, we emphasise treatments and treatment services that are aimed at the secondary and tertiary prevention of drug misuse. Although primary prevention is at the root of any effective strategic response to tackling the problem, a detailed consideration of primary prevention activities falls outside the scope of the present discussion.

* The World Health Organization uses the term 'Psychoactive Substance Use Disorder (PSUD)' to denote harmful drug use or dependence. For convenience, we use the terms 'problematic drug use' and 'drug misuse' as shorthand terminology.

† For convenience, we further use the acronym 'DAT' to refer to a combined Drug and Alcohol Team (D[A]AT).

A central principle of our review is that one single commissioning agency or provider cannot meet the entire range of health and social care needs of the drug-misusing population. An effective response requires the combined efforts of all Government departments to greater or lesser degrees. Balanced, joint service commissioning, appropriate joint purchasing between the health, social welfare and criminal justice agencies together with shared working between specialist and generic providers are all essential ingredients for a successful national response.

The chapter should be read in conjunction with the review of needs assessment for alcohol in this volume.¹ This is especially important, since the division between alcohol misuse and the misuse of other psychoactive substances is generally more apparent than real. As we shall describe, it is the norm for people with illicit drug misuse to use several different kinds of mood-altering substance including alcohol, either independently, in combination or as substitutes. There are also perennial debates about the wisdom of providing separate treatment services for the alcohol- and drug-misusing populations. We do not attempt to resolve these issues here, but note that around 50% of DATs in England include alcohol misuse as part of their strategies and that this proportion may well increase in coming years. Thus it is quite common in practice to undertake a common strategic plan for both drugs and alcohol, and not uncommon for drug users to have concurrent alcohol-related problems and treatment needs.

The objectives of the review are:

- to estimate the size and nature of the drug-misusing population
- to conceptualise the need for treatment by describing particular groups
- to describe the array of treatment services that should be provided or made accessible in a region or locality
- to consider the access routes, coverage, capacity, strengths and weaknesses of current services for the treatment of drug misuse
- to outline methods for assessing needs and to identify information priorities.

The material presented is explicitly intended to be a resource document for commissioners to consult when they are planning prevention and treatment services to meet the objectives of the national drugs strategy. This strategy, published as the Government White Paper *Tackling Drugs to Build a Better Britain*, is designed to link Government departments together through shared working, and is overseen at Cabinet Office level by the UK Anti-Drugs Co-ordinator and Deputy.² The chapter is designed to serve as a companion document to the discussion of commissioning standards developed by the Substance Misuse Advisory Service³ and the Quality in Alcohol and Drugs Services (QuADS) initiative developed by Alcohol Concern and DrugScope (formerly the Standing Conference on Drug Abuse).⁴

It is important to note the limitations of a review of this kind. In particular, the chapter is a framework document and is not a practical guide on how to undertake a needs assessment.

The problem

There is considerable concern about the misuse of illicit psychoactive substances worldwide and an international commitment to reduce demand and supply. The global annual population prevalence rate for illicit drug use is estimated at 3–4%. Global population totals for the use of heroin and cocaine alone are estimated at 8 and 13.3 million adults, respectively.^{5,6} In England and Wales, population survey data suggest that around 50% of people aged 16–29 have used an illicit drug on at least one occasion (with the majority having used cannabis) and approximately 1.2 million people aged 16–24 have consumed an illicit drug in the past month.⁷

Strategic context

Recent policy and consultation documents aimed at improving health and social services have had an important influence on the national response. In the NHS, policies published in the late 1990s have encouraged treatment services to strive to deliver higher-quality and more effective services that are closely informed by research evidence and guided by performance monitoring.^{8,9} The ten-year national strategy on drug misuse, launched in 1998, is now well under way. Cross-Government commitment to tackling drug misuse is based on a recognition of the value of well-implemented treatment and a stated desire to invest in the further development of treatment and prevention services. The strategy clearly identifies treatment services as the main means of helping people who misuse drugs to ‘reduce and overcome their problems and live healthy and crime-free lives’.² New investment funds have been provided to develop resources for treatment. The extent to which these investments prove to be a balanced, efficient and effective allocation of funds to tackle drug misuse remains to be assessed.

The national drugs strategy sets a timetable for the attainment of key performance targets, with important achievement milestones during 2005 and 2008. As well as attempting to plan for the health and social care needs of drug users, the strategy emphasises a primary prevention aim ‘to help young people resist drug misuse in order to achieve their full potential in society’. The Home Office Drugs Prevention Initiative and its successor, the Drug Prevention Advisory Service (DPAS), function to develop expertise on primary prevention research and development and to disseminate this evidence across the country.* DPAS has also recently expanded its remit to provide support and guidance on treatment service provision.

Local co-ordination

The national drugs misuse strategy is implemented at three population levels through the following planning structures:

- local authority and probation service (approximately 0.5 million people)
- DAT area (usually 0.5 million)†
- primary care trust (PCT) (usually 0.1–0.2 million).

The health, social services and criminal justice system commissioners are expected to be the driving force behind both the assessment of need at the DAT level and the co-ordination of a strategic response to meet it within the DAT boundary. Currently it is unclear how the newly formed primary care trusts will operate in relation to drug misuse within the overall DAT structure. Until recently, health authorities (HAs) have had primary responsibility for the funding of treatment services for people with drug misuse. Local authorities (LAs) are primarily responsible for the physical and social care of their resident populations and are currently the key funding agencies for residential care. Unsurprisingly, the range of health and social care problems that can be caused by drug misuse means that an effective treatment system is one in which

* The interested reader is encouraged to obtain publications from the Home Office Drugs Prevention Initiative (DPI) and to understand the work of the Drug Prevention Advisory Service (DPAS) in this regard (www.homeoffice.gov.uk/dpas).

† Population needs assessment planning is complicated by the geographical boundaries of the statutory authorities, which may not be coterminous. A DAT may contain several PCTs.

health care commissioners and LAs work closely together and have shared as well as unique responsibilities for care management. Joint commissioning brings senior officers from the health setting, the LAs and the police and probation services to the DAT to co-ordinate efforts across the three commissioning sectors. Many DATs also have a representative from the Prison Service. This is particularly but not exclusively the case when the DAT contains a prison within its boundaries.

The organisation and financial investment in the DAT structure by its membership varies quite widely across the country. Many DATs have commissioned focused assessments for needs, particularly relating to young people. In many areas, however, DAT strategies have not been guided explicitly by the systematic gathering of data on the prevalence and incidence of drug misuse problems and a systematic assessment of need in the target population. We hope that the material presented in this chapter will encourage more DATs to commission needs assessments.

Drugs of misuse

The UK drugs misuse strategy covers all illicit drugs, but gives priority to the reduction of use and harm across the following classes: opioids, cocaine, amphetamines and amphetamine-type stimulants, sedative/hypnotics, hallucinogens and volatile substances (solvents and inhalants). Alcohol is implicitly included in the strategy, and a dedicated national Government alcohol harm reduction strategy was published in March 2004.

Although a range of drug types are tackled across the country, the majority of treatment services are oriented towards the health and social care needs of people with primary opioid dependence, usually on illicit heroin. However, many such people have histories that include problematic use of cocaine, sedative/hypnotics (mainly the benzodiazepines) and alcohol. In the past decade, the treatment needs of some users of cocaine have received increased attention.^{10,11} The use of volatile solvents (including glues and gases) to achieve psychoactive effects is mainly restricted to a small segment of young people of school age whose use is usually intermittent and brief.¹² Available data suggest a lifetime prevalence rate of volatile solvent use of 3% across people aged 16–59 (and 6% across ages 16–24).⁷ Two per cent of young people aged 16–19 report using solvents in the previous year and 1% in the previous month. Cannabis, the synthetic hallucinogenic amphetamines and alcohol require special consideration.

Cannabis

In spite of the relatively high prevalence of cannabis use in the UK, studies of the health effects of chronic cannabis use are only beginning to emerge. International studies have shown that prolonged cannabis use can lead to respiratory, psychological and interpersonal problems.^{13,14} Research shows that a cluster of affective and behavioural symptoms may follow the cessation of chronic cannabis use.^{15,16} The majority of participants sampled by chronic cannabis use studies appear to meet the standard clinical criteria for dependence (*see p. 381*). Individuals seeking help with treatment for cannabis problems appear to be quite likely to experience withdrawal symptoms at intake and to report a history of withdrawal symptoms during previous periods of abstinence.¹⁷ There is a need for further epidemiological and longitudinal studies on the health problems associated with long-term cannabis use and on the development of specific treatment interventions.^{18,19}

Hallucinogenic amphetamines

Little specific attention has been given to the health care and treatment needs of users of synthetic hallucinogenic amphetamines. In the UK, the most prevalent substance in this broad group at present is

3,4-methylamphetamine (MDMA, 'Ecstasy'). Although there is widespread 'recreational' use of Ecstasy, few people present to specialist drug misuse treatment services with Ecstasy-related problems. For example, treatment incidence data for 1 April to 30 September 1999 indicate that just 238 people began treatment and reported Ecstasy to be their main drug (1% of the total).²⁰ It is likely that they had quite sustained histories of Ecstasy use and had problems with the use of other substances at treatment admission. This is not to overlook the substantial public health concerns about Ecstasy use. Public attention has focused largely, but not exclusively, on problems associated with acute toxicity effects on users who consume the drug in recreational settings. The rare but problematic toxic reactions to Ecstasy pose aetiological and medical management challenges for hospital Accident and Emergency services. Although Ecstasy use itself can produce dehydration, unlimited consumption of water during prolonged dancing in club/dance events that have high ambient temperatures can lead to acute cerebral oedema due to inappropriate levels of antidiuretic hormone secretion.²¹

On rare occasions, use of amphetamines and cocaine can lead to intracerebral and subarachnoid haemorrhage. This has also been reported for Ecstasy users.^{22,23} McEvoy and colleagues reported treatment of 13 patients (with an average age of 31) who had sustained intracerebral haemorrhage after using Ecstasy, cocaine or amphetamines. In nine of these cases the haemorrhage appeared to be related to an underlying vascular malformation. Several studies have also reported that long-term neurodegeneration may result from Ecstasy administration both in animals and in humans.^{24,25} Other studies have suggested that regular use of Ecstasy can lead to the user experiencing withdrawal problems, with short-term mood and concentration difficulties.²⁶

Turning to psychosocial needs, the Stimulant Needs Assessment Project, commissioned by the Department of Health, interviewed 541 cocaine and amphetamine users (90% not in contact with treatment services) of whom 33% had used Ecstasy in the previous month.²⁷ Polydrug use was the norm amongst the sample (with cannabis, LSD and heroin use also reported in the previous month). Twenty per cent of the sample considered that they needed help in managing and controlling their stimulant use, and wanted help with other stimulant-related problems. Perceived treatment needs were greatest amongst users of crack cocaine (the alkaloid, base form of the drug). The study team also compared the needs of 50 amphetamine, cocaine and Ecstasy users currently in treatment vs. those of a non-treatment group. The in-treatment group were older, reported higher levels of stimulant consumption and had higher levels of problems with drug misuse. There was no difference in the length of time that they had been using stimulants, suggesting that the development of problems is more associated with patterns of use than with length of use *per se*. The treatment group presented to drug misuse services with difficulties in controlling the amount they used, with emotional and relationship problems, and in some cases with severe physical health problems. Respondents considered that counselling and information services providing harm-reduction advice would be appropriate to meet their needs. Residential services and support and advice from family members were also considered important.

Alcohol

Up to 50% of people with illicit drug misuse problems in specialist treatment programmes are heavy alcohol users and have alcohol-related problems.^{28–32} Excessive alcohol use and tobacco smoking are also established aspects of the lifestyles of some clients in methadone maintenance treatment (MMT).³³ Underscoring the profile of multiple-drug use in this population, research has also shown that MMT clients who meet alcohol dependence criteria are more likely to have psychological problems and family and relationship difficulties at intake to treatment.³⁴ Studies in the USA suggest that alcohol-dependent clients in drug misuse treatment stay in treatment longer but may be concurrently dependent on cocaine.³⁵ Lehman and colleagues followed up 298 ex-heroin users 12 years after they entered methadone treatment in the USA and found that approximately a quarter were classified as heavy drinkers, and that half reported

using alcohol as a substitute for heroin.³⁶ There is also evidence that to engage and treat American outpatient MMT clients who present with combined opiate, cocaine and alcohol problems is more challenging than to work with clients who have lower opiate polydrug use.³⁷

In terms of the impact of treatment on heavy alcohol use, intake and one-year follow-up data have been reported for 753 drug users enrolled in the National Treatment Outcome Research Study (NTORS) in the UK.^{*,38} At intake, 70% of clients entering residential services and 65% of clients entering methadone services reported drinking during the 90 days before intake, and across both groups one-third were consuming alcohol over the recommended limits. The amount of alcohol drunk on a typical drinking day was 17.8 units (1 unit = 8 g ethanol) for the residential clients and 10.6 units for the methadone clients. At one-year follow-up, the percentage of clients in the residential setting drinking over the recommended limits reduced from 33% to 19%, and reductions were observed in the frequency and intensity of consumption amongst those who were drinking at intake. For the community treatments, there was no overall change in the percentage of clients drinking over the recommended limits, and a modest reduction in consumption amongst those drinking at intake. Overall, there continued to be heavy drinking by many of the NTORS cohort who were heavy drinkers at intake. These results suggest that drug misuse treatment programmes should make a more concerted effort to assess and respond to heavy drinking and alcohol-related problems amongst their clients.

Drug-related risks and harm

This section builds on issues discussed above and further considers the health risks, social risks and harm related to drug use. It is important to recognise that the population of drug misusers is heterogeneous and that the profile of risks and harm experienced by individuals can vary substantially from mild to severe, and across the different drugs used and over time. Understanding the risks and harmful consequences of drug misuse requires consideration of personal, health, social, economic and legal aspects of the problem, and harmful consequences can be experienced at the individual, familial and community levels. Specific harm experienced by users ranges from minor adverse physical or psychological morbidities induced by an illicit substance, through acute problems such as overdose to chronic health disorders. The following paragraphs consider mortality, physical and psychiatric comorbidity, health risk behaviour, personal and social functioning and criminal behaviour.

Mortality

Public health considerations of drug-related mortality centre on opiate use. Compared with users of other drugs and with the general population, heroin users have an elevated risk of mortality and drug-related death. For example, one long-term follow-up study of dependent heroin users estimated that this population has a 12-fold increased risk of mortality compared with the general population.³⁹ Across the past two decades in England and Wales there has been a ninefold increase in mortality recorded as 'self-poisoning with opiates'.⁴⁰ Accidental deaths recorded as due to drug poisoning for young people aged 15–19 years also showed a marked increase between 1985 and 1995.⁴¹

* NTORS is the first major prospective observational study of treatment outcome for drug misusers to be conducted in the UK. Methodological descriptions of the study and summaries of research products can be found at www.ntors.org.uk.

Physical and psychiatric comorbidity

Comorbidity refers to the co-occurrence of any additional health functioning disorder in an individual with a particular primary or index health condition (such as psychoactive substance use disorder). It is important to note that drug misuse populations may be multiply comorbid. Individuals may experience physical health symptoms and medical complications that relate to the action of the drug(s) taken, to the route(s) of their administration and to general issues of poor nutrition and health care.^{42,43}

The likelihood of substance use disorders covarying with other psychiatric disorders (sometimes labelled somewhat misleadingly as 'dual diagnosis') has received a lot of attention. Improvement in psychological well-being and functioning is an important treatment goal for people with substance dependence, but the nature and course of their psychiatric symptoms and disorders remain under-researched. It is worth noting that it may be difficult to determine the nature of the relationship between the comorbid psychiatric disorders, and particularly to determine which disorder preceded the other and which is the more severe. For people with primary substance-use problems, particularly those who are dependent on one or more drug types, a history of concurrent problems with mood disorders (anxiety and affective conditions) is common.^{44–46} Clinical studies suggest that half of opioid- or cocaine-dependent individuals have a lifetime depressive episode, while a third have depressed mood at intake to addiction treatment.⁴⁷ Amongst the 1075 clients recruited to the NTORS, some 29% reported having had suicidal thoughts during the three months before intake to treatment, and female clients had more severe symptoms than did males for all psychological symptoms measured.^{48,49}

In the UK, psychotic disorders and drug-induced psychosis are currently rarely encountered by specialist drug treatment services attending individuals with primary substance-use disorders. In contrast, community mental health services and other psychiatric service providers typically encounter clients with severe mental illness, with bipolar and psychotic disorders being relatively prevalent. Amongst this severely mentally ill population, use of certain types of drugs – particularly alcohol and cannabis – appears to be quite common. Worrying findings from the University of Manchester survey of 10 040 suicide cases in England and Wales (April 1996–March 1998) indicated that the sample had substantial social problems and health care needs before their deaths.⁵⁰ The most frequently reported psychiatric disorders recorded were depression, schizophrenia, personality disorder and alcohol-related problems. Combined alcohol and drug misuse was reported in 17% of cases. The assessment of substance-related problems amongst populations with primary severe mental health disabilities is now a priority research area.

Health risk behaviour

Injecting drug users (IDUs) may be exposed to bloodborne infections through the sharing of infected needles/syringes, and through the sharing of other injecting paraphernalia. Since many substance users are sexually active, several sexual behaviours including penetration without condom use also increase the risk of viral exposure.^{51,52} Injecting drug use is a major risk factor for the acquisition and transmission of human immunodeficiency virus (HIV), hepatitis B (HBV) and hepatitis C (HCV). HCV represents a major global clinical and public health challenge. It is estimated that 3% of the world population is infected with the virus, amounting to 170 million chronic carriers.⁶ Infection with HCV and HBV is highly prevalent for IDUs.^{53–56} A recent study has reported an HCV prevalence rate for IDUs in East Anglia of 59%, with 22% of IDUs being HBV-positive. A study in a London NHS clinic found that 86% of IDUs were HCV-seropositive, with 55% being HBV-positive.^{56,57} In many places, the high prevalence and incidence rates of HCV infection amongst IDUs are in sharp contrast to trends in HIV infection in the last decade.^{58,59} A test for the antibody to HCV became available in the early 1990s, but many who have been exposed to risk of HCV infection have yet to be tested.

Social functioning

Drug misuse is linked with social functioning problems of varying intensity and duration. Many drug users report conflict in their personal relationships with family and friends and this has been shown to be a negative predictor of treatment outcome.⁶⁰ Many users also have enduring problems with obtaining and keeping paid employment. Involvement in work has been found to be a predictor of retention in treatment and of good outcome.⁶¹ Although the ability of a treatment programme to secure a job for a client may be limited, community services will usually seek to support a client in order to improve his or her employment opportunities, and securing or maintaining a job is recognised as being an important goal.⁶²

Criminal behaviour

Concern about drug use and criminal behaviour has been a major factor in the orientation of the national drugs strategy, the resources secured to implement it and the action priorities established. Police surveillance estimates suggest that half of all recorded crimes are drug related, with associated costs to the criminal justice system reaching some £1 billion per annum.² There is a longstanding awareness of links between drug use and social and economic deprivation and the fact that some individuals (particularly those dependent on opiates) become involved in crime to support their dependence.^{63,64} The link between crime and drug use may also be related to lifestyle. People who engage in criminal behaviour are perhaps more likely to come into contact with others who use and/or sell/distribute drugs, and this exposure may be a risk factor for using drugs.⁶⁵ Drug use and criminal involvement may be a cultural fact of life in areas of economic and social deprivation.⁶⁶ It is also important to acknowledge that the involvement of individuals in drug distribution can pose serious risks to personal and community safety.

Course of drug misuse problems

For most people, initiation into illicit drug use does not lead inexorably to regular and problematic use.⁶⁷ Although approximately one-third of the population have used an illicit drug, the proportion of people reporting use in the previous year is much lower (at around 1 in 10), and drug use declines substantially with age.⁶⁸ Vulnerability to drug use is highest among young people, with most problem drug users initiating use before the age of 20. Epidemiological studies conducted in the USA since 1971⁶⁹ suggest that very few people begin using any illegal drug after the age of 29 and that the major risk periods for initiation into alcohol, tobacco and cannabis peak by age 20. However, in a significant segment of the drug-using population (and notably for users of heroin), problem drug use represents a chronic, relapsing condition. For example, in one long-term outcome study that conducted a 24-year follow-up of 581 male opioid users, some 29% were currently abstinent, but 28% had died, 23% had positive urine tests for opiates and 18% were in prison.⁷⁰

For many people, the relapsing nature of drug misuse means that they will also have extensive treatment histories. In fact, treatment for people with established substance-use problems is rarely a discrete, single event. Rather, several episodes of treatment may be provided over several years. Certain groups such as ethnic minorities are under-represented in treatment populations, and some members of these groups may develop a long-term drug-using career with minimal or no treatment contact. Nevertheless, some users of dependent substances can make dramatic changes in their drug use without recourse to formal treatment. Studies of the natural history of drug use have increased our understanding of how drug problems develop, are maintained and eventually end. In addition to those who require substantial treatment input, some individuals stop using drugs because of a perceived need to change their lifestyles or because of external pressures and responsibilities.⁷⁰

Diagnostic definitions of psychoactive substance use disorder

Official international diagnostic classifications of drug misuse are based on the consideration of drug use (intoxication), harmful use and dependence. Dependence is an important and central concept in diagnosis. In pioneering work on alcohol, Edwards and colleagues suggested that alcohol dependence is not absolute, but exists in degrees with an intensity that may be measured across a range of behaviours and experiences.⁷¹ The two most prominent international systems are the World Health Organization's *International Classification of Diseases* (ICD-10) and the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV).^{72,73} Although there is substantial overlap between the two, they represent distinct diagnostic frameworks, with DSM being the more detailed and specific. ICD-10 distinguishes between harmful use of a psychoactive substance, which is damaging to health, and a dependence syndrome. ICD broadly defines 'harmful use' as discernible psychological and/or physical health damage to an individual. ICD-10 provides diagnostic guidelines designed to help distinguish a range of disorders varying along the dimensions of severity of intoxication, harmful use and dependence. These are denoted for specific substances, together with the likely extent of withdrawal symptoms encountered following abrupt cessation of use. DSM defines the characteristic and essential features of substance dependence as:

*A cluster of cognitive, behavioural, and physiological symptoms indicating that the individual continues use of the substance despite significant substance-related problems . . . there is a pattern of repeated self-administration that usually results in tolerance, withdrawal, and compulsive drug-taking behaviour.*⁷³ [p. 176].

The ICD-10 and DSM-IV diagnostic criteria and relevant codes are set out in Appendices I and II.

Table 3 shows the format of a short screening questionnaire that we have adapted from DSM and ICD, and which can establish diagnoses of hazardous use/abuse and dependence for psychoactive drugs, together with a rating of the severity of dependence. Items a–d are the criteria for substance abuse and items e–k are those for substance dependence.

If an individual endorses one or more of items a–d, they are considered to have harmful use or substance abuse, and to be drug dependent if they score at least 1 on three or more of items i–l. The use of a severity scaling for items j–l reflects the conceptualisation of dependence as having degrees of severity, and may be a useful clinical research measure. The precise wording of each question may be altered for each substance (e.g. providing examples of substance-specific withdrawal phenomena, such as sweating, shakes/tremor or anxiety). There are several other standardised instruments that assess various aspects of dependence and which may usefully be applied.^{74,75}

Diagnostic specifiers

Under the DSM classification, a 'specifier' (in this case, evidence of tolerance or withdrawal) is also used for each substance to indicate whether physiological dependence is present. In the absence of this specifier, dependence is characterised by compulsive use. In addition, six course-specifiers describe the treatment and recovery course of the disorder for an individual. These are:

- early full remission (no signs of dependence or misuse for a period of between a month and a year)
- early partial remission (one or more criteria of dependence or abuse not seen for a period of between a month and a year)
- sustained full remission (no criteria seen for a year or more)
- sustained partial remission (full criteria for dependence not met for a year or more, but one or more criteria are seen)
- on agonist therapy (e.g. MMT)
- in a controlled environment (e.g. a residential rehabilitation facility or a hospital unit).

Table 3: Screening questions for drug abuse and dependence, compatible with DSM-IV/ICD-10.

In the past 12 months:

- a Have you found that using [named drug, e.g. heroin] has led you to neglect things OR cause problems socially or at home, or at work?
- b Have you used heroin in a risky or dangerous situation (e.g. driving a car when under the effects)?
- c Have you had problems with the law resulting from your heroin use?
- d Have you continued to use heroin despite having problems with it in your social life or with relationships?
- e Have you found that you needed to use more heroin to get the desired effect OR that the same amount had less of an effect?
- f Have you reduced or given up work, recreational or social activities as a result of your heroin use?
- g Have you had problems cutting down, controlling how often OR how much heroin you have used?
- h Have you continued to use heroin despite having physical or psychological problems with it?
- i How often have you felt sick or unwell when the effects of heroin have worn off OR have you taken more heroin or a similar drug to relieve or avoid feeling unwell?
- j How often would you say that you have had a persistent or strong desire to take heroin?
- k How often have you used heroin in larger amounts OR for a longer period of time than you intended?
- l How often have you taken large amounts of time obtaining OR using OR recovering from the effects of heroin?

Responses to items a–h are scored as No = 0; Yes = 1.

Responses to items i–l are scored as No = 0; once or twice = 1; 3–5 times = 2; once every 2 months = 3; monthly = 4; 2–3 times a month = 5; once a week = 6; 2–3 times a week = 7; 4–6 times a week = 8; every day or almost every day = 9.

The four remission-specifiers can be applied only after none of the criteria for dependence or misuse has been seen for at least a month. A summary of the clinical features of all drugs of misuse is beyond the scope of the present chapter. As examples, the clinical features of opioid and cocaine intoxication, dependence and withdrawal are listed in Appendix III.

3 Sub-categories of drug misuse

The heterogeneous population of drug users in the UK can be divided into different groups for the purposes of needs assessment planning. At the highest level, the population may be grouped by gender and age, and in this review we describe gender-specific issues for needs assessment in several areas. In terms of the individual drug misuser, the following general factors are important in considering the nature of each case encountered:

- age, gender, race and culture
- pregnancy
- familial pattern
- type of drug(s) used, including quantity and frequency of administration

- acute intoxication (overdose liability)
- extent of impairment and complications
- route of administration (oral, inhalation, intramuscular, intravenous)
- nature of living situation and social environmental supports and stressors.

Complex cases will usually, but not always, be characterised by drug-related impairment, dependence, regular injecting, high tolerance levels and comorbid problems across physical, psychological and personal/social functioning domains.

Population subgroups

Putting aside complexities from the number of different drugs that may be used and their combinations, for the purposes of needs assessment we can identify six non-independent (overlapping) population subgroups (see Table 4). These all have specific ramifications for the assessment of health care needs and for the commissioning and purchasing of treatment services.

Table 4: Population subgroups for drug misuse.

Subgroup	Nature
A	Non-dependent drug user
B	Injecting drug user (IDU)
C	Dependent drug user
D	Acutely intoxicated drug user
E	Drug user with comorbidity
F	Drug user in withdrawal
G	Drug user in recovery

Subgroup A

This group comprises people experiencing drug-related problems who do not meet the criteria for dependence. It may include many younger users who have begun to use drugs relatively recently. Because members of this group (particularly young people) are at risk of advancing their drug involvement to more serious levels, they may be ideal clients for early intervention services.

Subgroup B

This group comprises people injecting drugs who may be at risk of acquiring and transmitting blood-borne diseases. People who inject drugs are much more likely to be dependent and to experience drug-related harm. They constitute a priority group to be attracted to appropriate programmes for harm reduction and structured treatment, and to be retained in treatment as appropriate.

Subgroup C

This group comprises people with drug-related problems who meet ICD/DSM dependence criteria. The majority of people presenting to specialist drug misuse services are in this group. They may require

intensive community and residential treatment and aftercare support, together with social inclusion services to help resolve problems with housing, employment and training.

Subgroup D

We highlight the specific needs of this subgroup because of the morbidity and mortality risks to health from adverse reactions and drug overdose. This subgroup may overlap with subgroup B (IDUs). There is evidence that some two-thirds of heroin users have experienced an overdose.^{76,77} The risk of overdose is increased for users of opiates who have also consumed other central nervous system depressants – commonly other opiates, alcohol and benzodiazepines.^{78–81}

Preventing drug overdose and overdose mortality is a specific priority area. A review of drug-related deaths and prevention options has recently been published by the Advisory Council on the Misuse of Drugs (ACMD).⁸² Acute intoxication is a discrete event, although a person's needs may increase to those associated with dependence, comorbidity and withdrawal management and support. Most services provided to the intoxicated drug user will be found outside specialist drug or mental health services (e.g. in Accident and Emergency departments or in police custody). All services that have contact with opiate users should have prompt access to naloxone, an injectable opiate antagonist which may be administered intravenously, intramuscularly or subcutaneously and can be life-saving in the event of an opiate overdose.^{83,84} Further guidance on needs assessment for this subgroup will be provided through the ACMD.

Subgroup E

This group consists of people who have concurrent substance-related problems and other psychiatric disorders. Substance use disorders covary with other psychiatric problems, particularly affective and anti-social and other personality disorders. This group is discussed further in the 'Priority groups' section below.

Subgroup F

This group comprises people who are undergoing neuro-adaptive reversal (withdrawal) following cessation of use of one or more classes of drug. For example, cessation of opiate use produces a withdrawal syndrome characterised by observable physiological and subjective effects, including somatic flu-like symptoms of varying severity, together with sleep disturbance and anxiety. For heroin, the onset of withdrawal symptoms is typically within 8–12 hours from the last dose, reaching peak intensity between 48–72 hours and then diminishing over a period from 5–7 days. This group overlaps with subgroup D. Clinical management and treatment approaches to assist this group are discussed in Section 6.

Subgroup G

This subgroup consists of people who have achieved a state of abstinence from their main problem drug (or from all drugs), usually through successful completion of a health care treatment episode. This group may require residential rehabilitation services or community-based aftercare programmes and other support.

Ramifications

Within each of the seven subgroups, people are not all the same and must be considered on the basis of the individual severity of their problems and the extent of any complications. It is important to note that these subgroups are not mutually exclusive. Indeed, it is likely that an individual patient will occupy more than one category at any particular time (e.g. the injecting dependent heroin user with comorbidity of HBV infection). A person may also belong to different categories at different times. In addition to these seven primary subgroups, there is a further category, which can be labelled 'at risk'. There is particular concern about segments of the younger population (*see below*) thought to be at risk, and prevention initiatives and general educational programmes are required.

We should also stress that the subgroups are not meant to convey a hierarchy of problem severity *per se*. Appropriate interventions should be based on a comprehensive assessment of need, a functional analysis of the level of drug involvement and a programme of brief counselling and support. These may then trigger the identification of other health and social care needs.

Priority groups

In addition to prioritising complex cases, special consideration should be given to three priority groups with specific treatment needs. The current Drug Misuse Special Allocation within the NHS Modernisation Fund is intended to provide impetus for the development of new treatment services for drug misusers based on primary care, a substantial widening of the HBV immunisation programme for high-risk individuals (subgroup B) and the development of appropriate services for young people.

Young people

The national drugs strategy places special emphasis on preventing drug misuse among young people and on providing appropriate services for those who have drug-related problems or are at risk of developing them.² The national strategy defines three groups: children (aged 12 or less), young people (aged 13–17 years) and young adults (aged 18–24 years). At the general population level the following groups have been identified:

- those who have been excluded from school or who are poor attenders
- young people who are socially excluded
- young people who are looked after by local authorities
- the young homeless
- young people living in environments with high levels of drug misuse
- young people involved in prostitution
- young people who have a parent with a drug misuse problem
- young people with a psychiatric disorder
- young offenders.

Guidance material published by DrugScope gives further information on the characteristics of these groups.⁸⁵ The expansion of appropriate treatment and prevention services for young people – particularly for the under-18s – is now a key priority. In taking this work forward, one must recognise that there are substantial challenges for the appropriate assessment of multiple risks and problems that may be experienced by young people.^{86–88} Further work is required to develop assessment instruments and procedures for young substance users that build confidence and the motivation to engage with treatment and support services.^{89,90} There are also real challenges in designing appropriately matched treatments and

support for young people, and little experience of service delivery. Unsurprisingly, there is scant literature on the outcome of services for young people. In one short-term follow-up study of 48 young heroin users who were prescribed methadone, 38% had reduced or had been withdrawn from methadone and were judged to have made specific and wide-ranging improvements in their personal and social functioning.⁹¹ However, a fifth of the sample was considered to have had a poor outcome (they had not engaged in treatment or had dropped out). A typical member of this poor-outcome group was characterised by a disturbed childhood, a psychiatric history, involvement with crime and poor school attendance and performance.

Pregnancy and childcare issues

Pregnant drug users should be specially targeted by services at an early stage. Levels of support for pregnant users vary quite widely between specialist services. This situation, coupled with a reluctance to disclose drug misuse, may deter many pregnant users from presenting to maternity and treatment services at an early stage, and this may increase the risk of obstetric and neonatal complications.⁹² Since some pregnant users present to treatment services precisely because of their pregnancy, this should be seen as an important opportunity to offer treatment and support.⁹³ The importance of meeting the needs of young people also extends to issues of childcare. For example, crèche and nursery scheme facilities for drug users attending treatment services may not be commonly available.⁹⁴

People with comorbidity

There is widespread concern about improving services and outcomes for people who have comorbid psychiatric and substance-use disorders.⁹⁵ There is currently no base of research or clinical evidence for the effective management and care of patients in psychiatric inpatient units with psychoactive substance misuse comorbidity, and this is an important development area. There is some evidence that people with substance-use problems and comorbid psychiatric disorders appear to have a relatively high contact with medical services and may require more intensive treatment.^{96,97} However, it would appear that substance-use disorders among people admitted for psychiatric treatment are of a less severe nature than those for people entering treatment primarily for problems of substance use.⁹⁷ It is also important to consider and plan for the possibility that people who are misusing drugs and have severe mental illness will not respond well or comply with traditional care plans and arrangements.

Homeless people

There is also widespread concern about drug and mental health problems among homeless populations. Further, there is some evidence that drug misuse is a risk factor for accommodation instability.⁹⁸ Homeless people encompass those who use night shelters, temporary hostels and the accommodation of friends and acquaintances, as well as those sleeping rough on the streets. The most common health-related problems cited by people who sleep rough concern psychological issues, alcohol consumption and illicit drug use.^{99,100}

Although there are signs that fewer people are sleeping rough, there is widespread recognition by local authority homelessness outreach teams and specialist service providers that there is still a substantial segment of this population whose needs for drug-misuse treatment and related support have not been met.¹⁰¹ It is important to recognise that some homeless people also have psychiatric and substance-use disorder comorbidity and may have complex treatment and support needs.

Minority ethnic groups

Overall, the UK population is ethnically very mixed, particularly in London and the major cities. Variations in attitudes and beliefs concerning psychoactive drugs across ethnic minority populations are important influences on drug consumption.

Commissioners and service providers must be sensitive to issues of race, culture and religion, and ensure that service agreements/contracts and specifications reflect the particular needs of ethnic groups. Survey data suggest that drug use is distributed across different ethnic groups, with white respondents reporting the highest levels of cannabis and amphetamine use, followed by African–Caribbean respondents, Indian respondents and people from the Bangladeshi and Pakistani ethnic groups.¹⁰² Results from several studies have consistently shown that people from Asian communities are less likely to report drug use than are white people or people of African–Caribbean descent.¹⁰³ There is a perception that many drug users from ethnic minority populations are reluctant to approach substance-misuse treatment services and that they are harder to reach than other priority groups.¹⁰⁴ It is vital that treatment commissioners, purchasers and providers do not regard non-white drug misusers as a homogenous cultural group.¹⁰⁵ Equally, it is important to recognise that risk and protective factors may be quite different across cultural and minority groups.¹⁰⁶

4 Prevalence and incidence of drug misuse

Epidemiological measures focus on estimating the frequency of drug misuse in a given population at a set point or period (prevalence), and the rate of new cases in a population during a specific period (incidence). There are major challenges for the reliable estimation of the prevalence and incidence of drug use and drug-related problems. This section describes procedures and results using direct and indirect methods to estimate prevalence. A combination of direct and indirect prevalence estimation is probably the only viable strategy for estimating the prevalence of drug use and related problems.

Prevalence data

Direct prevalence estimation is mainly undertaken through population surveys. However, directly estimating the number of illicit users – particularly users of heroin – is notoriously difficult, given the stigmatised nature of drug use and the marginalised position in society that many drug users occupy. Problem drug users are often described as a hidden population, meaning that a large proportion of the target population are not in contact with services or included in routine sources of data on drug users. This makes contact and accurate reporting problematic if only household survey methods are used. Nevertheless, several major surveys have provided valuable data, and information concerning some of the priority groups is becoming more widely available for use when constructing assessment strategies.

Direct estimation of prevalence

Direct population surveys reveal a high prevalence of some types of drug use in the UK. For example, a classroom survey of 7700 children aged 15–16, conducted by Miller and Plant, found that over 40% had used an illicit drug.¹⁰⁷ The 1998 British Crime Survey (BCS), conducted with 10 000 participants aged 16–59 in England and Wales,⁷ suggests that around one-third of the population have used an illicit drug at

some point in their lives. Table 5 shows the prevalence rates for users of any drug, by lifetime, during the previous 12 months, during the previous 30 days and by age group.

Table 5: Users of any drug by age group in England and Wales ($n = 9988$).

Age group (years)	Lifetime	Previous 12 months	Previous 30 days
16–19 ($n = 502$)	246 (49%)	155 (31%)	110 (22%)
20–24 ($n = 794$)	437 (55%)	222 (28%)	135 (17%)
25–29 ($n = 1,244$)	597 (45%)	236 (19%)	137 (11%)
30 and over ($n = 7,448$)	1,862 (25%)	372 (5%)	223 (3%)
All ages ($n = 9,988$)	3,142 (32%)	985 (10%)	605 (6%)

Source: Ramsay and Partridge.⁷

Turning to drug use in the previous 12 months, Table 6 shows that cannabis is the most widely used drug (used by over a quarter of people aged 20–24). Cocaine was used on at least one occasion by 6% of the 16–29 age group and by 9% of the 20–24 subgroup. Use of cocaine was most prevalent in London and the South of England and Merseyside.

Table 6: Users of various drugs in the previous 12 months ($n = 9988$).

Substance*	All ages ($n = 9,988$)	Under 20 ($n = 502$)	20–24 ($n = 794$)	25–29 ($n = 1,244$)	30 and over ($n = 7,448$)
Cannabis	899 (9%)	140 (28%)	206 (26%)	199 (16%)	372 (5%)
Amphetamines	299 (3%)	45 (9%)	79 (10%)	62 (5%)	74 (1%)
Cocaine	100 (1%)	5 (1%)	40 (5%)	37 (3%)	37 (0.5%)

* Heroin usage is less than 0.5% for all ages.

Source: Ramsay and Partridge.⁷

Overall, the prevalence of recent use is highest for people in their teens to mid-twenties, and around half of all users who enter treatment are in their mid- to late twenties. Only one in seven people in treatment are under 20 years of age. Using mid-year population estimates for 1997 from the Office for National Statistics, the BCS researchers focused on the 16–24-year-old group ($n = 6\,430\,000$) and estimated the total number of recent drug users, together with numbers of recent cannabis users, cocaine users and a broad category comprising users of opiates and other ‘hard drugs’ (see Table 7 overleaf).

These estimates suggest that some 29% of people aged 16–24 are recent users of an illicit drug, with cannabis accounting for 93% of this figure. Population estimates for heroin in the BCS are available only for lifetime-prevalence use, because of the small figures involved. The best estimate for the number of heroin users in the 16–29 age range is 105 000 (CI: 55 000–155 000). Valuable data have also been gathered for the UK Psychiatric Morbidity Survey, conducted in 1998 by the Office for National Statistics (ONS).¹⁰⁸ Table 8 (see overleaf) summarises the prevalence of drug use found by the household survey of the main general population (aged 16–64 years) and the aggregate rates of use for people surveyed in psychiatric treatment and homeless-service settings.

Data on the prevalence of drug use amongst homeless people are a particularly useful feature of the Psychiatric Morbidity Survey. Estimates indicate that approximately one-quarter of homeless respondents have used cannabis recently, and one in ten have used stimulants. The ONS data suggest that around one in

Table 7: Estimated prevalence of drug use for people aged 16–24 (years) ($n = 6\,430\,000$), 1998.

Substance use	Population estimate	95% Confidence interval (CI)
Any drug		
Using in the previous year	1,865,000 (29%)	1,660,000 (26%)–2,070,000 (32%)
Using in the previous month	1,220,000 (19%)	1,045,000 (16%)–1,400,000 (21%)
Cannabis		
Using in the previous year	1,735,000 (27%)	1,535,000 (24%)–1,935,000 (30%)
Using in the previous month	1,095,000 (17%)	925,000 (14%)–1,265,000 (20%)
Cocaine		
Using in the previous year	195,000 (3%)	120,000 (2%)–270,000 (4%)
Using in the previous month	65,000 (1%)	25,000 (0.4%)–105,000 (2%)
Heroin, methadone, cocaine and crack		
Using in the previous year	195,000 (3%)	120,000 (2%)–265,000 (4%)
Using in the previous month	65,000 (1%)	25,000 (0.4%)–105,000 (2%)

$n = 9988$ (weighted data).

The number of people aged 16–24 years in England and Wales is 6 430 000.

Source: Ramsay and Partridge.⁷

Table 8: Users of drugs from surveys of households, treatment services and homelessness services, 1998.

Sample	Cannabis	Stimulants	Hallucinogens (inc. Ecstasy)	Hypnotics	Opiates	Any drug
Household survey ($n = 9,741$)	487 (5%)	97 (1%)	97 (1%)	97 (1%)	–	487 (5%)
Institutions survey* ($n = 755$)	45 (6%)	6 (1%)	6 (1%)	30 (4%)	–	76 (10%)
Homelessness survey† ($n = 1,061$)	265 (25%)	106 (10%)	95 (9%)	64 (6%)	64 (6%)	297 (28%)

* Sample composed of residents with schizophrenia or delusional disorders ($n = 588$), those with affective psychoses ($n = 68$) and those with neurotic disorders ($n = 99$).

† Sample composed of homeless people in contact with hostels ($n = 470$), night shelters ($n = 176$) and private-sector accommodation ($n = 234$), and those sleeping rough but using day centres ($n = 181$).

Figures less than 1% have been omitted.

Source: Farrell *et al.*¹⁰⁸

20 people being treated for a psychiatric disorder have used cannabis recently. Estimates for drug dependence have also been calculated from the 1998 Psychiatric Morbidity Survey and are shown in Table 9.

In the general population sample, neurotic disorders were twice as common among adults who used drugs (31%) as among those who did not (15%). Having a neurotic disorder was also found to be independently associated with increased odds of using drugs (odds ratio [OR]: 2.66) and in addition greatly increased the likelihood of being drug dependent (OR: 3.41). Local studies have also shed some light on the prevalence of drug use amongst psychiatric patients. In one study conducted in South London, 16% of a sample of 121 psychotic patients had experienced drug misuse problems within the previous 12 months. Patients with substance misuse problems reported spending twice as many days in hospital in the previous two years as those with no drug misuse issues.¹⁰⁹

Table 9: Number of people with drug dependence*, from the Psychiatric Morbidity Survey, 1998.

Sample	Any drug including cannabis	Any drug excluding cannabis
General population survey ($n=9,741$)	195 (2%)	–
Homeless using shelters ($n=176$)	19 (11%)	5 (3%)
Homeless using private-sector accommodation ($n=234$)	16 (7%)	2 (1%)
Homeless using night shelters ($n=176$)	51 (29%)	19 (11%)
Homeless sleeping rough, but using day centres ($n=181$)	43 (24%)	11 (6%)

*The criterion for dependence was a positive response to one of five questions reflecting dependence criteria, which may have produced a marginally elevated estimate.

Source: Farrell *et al.*¹⁰⁸

Research has further shown that primary drug misusers are also users of psychiatric treatment services. Of the 1075 clients recruited to the NTORS, 215 (20%) had received treatment for a psychiatric disorder (other than drug or alcohol dependence) in the two years before intake to the current treatment episode.⁴⁸ Ten per cent ($n=112$) had received inpatient psychiatric hospital treatment within this period, and 14% ($n=151$) had received outpatient hospital treatment for a mental health problem from a community mental health team or general practitioner. The 1997 ONS survey on psychiatric morbidity amongst prisoners in England and Wales estimated the prevalence of drug use for people receiving custodial sentences. Around 1704 prisoners participated in the survey, and Table 10 summarises the prevalence of drug use during the 12 months before admission to prison.

Table 10: Drug use among prisoners during the year prior to admissions, 1999.

Drug type	Number using drug during the year prior to prison
Cannabis	835 (49.0%)
Heroin	400 (23.5%)
Non-prescribed methadone	196 (11.5%)
Amphetamines	366 (21.5%)
Crack	324 (19.0%)
Cocaine (powder)	264 (15.5%)

$n=1704$.

Source: Singleton *et al.*¹⁰⁹

A Home Office study of people under arrest, using interviews and voluntary drug testing, has also suggested that the prevalence of recent use is remarkably high.¹¹⁰ In a sample of 622 subjects, the rate of drug-positive urine tests was 61%. Cannabis was the most commonly identified drug (46%), followed by opiates (18%), benzodiazepines (12%), amphetamines (11%), cocaine (10%) and methadone (8%). Almost half of those arrested under suspicion of shoplifting tested positive for opiates, and one-third tested positive for cocaine. One in five reported that they had received some kind of treatment for drug dependence in the past, and about the same proportion said that they would like to receive treatment at the time of interview.

Indirect estimation of prevalence

Indirect methods for estimating the number of drug users are based on ratios. The most common are multiplier and nomination methods. An example of the use of a multiplier is taking the annual number of people dying in a locality, applying a multiplier for drug-related mortality and assuming that these deaths represent a fraction of the drug-using population.¹¹¹ In the most basic form of the nomination method, a benchmark (e.g. the total number of drug users recorded in treatment in a particular year) is combined with a multiplier (e.g. a survey estimate of the proportion of the drug-using population who were in treatment in the same year) to produce a total estimate of the size of the population.¹¹²

Synthetic estimation methods

Synthetic estimation methods are valuable in the UK context, given the general absence of direct prevalence or incidence measures. They involve employing calibration data from existing prevalence data for a specified segment of the population (e.g. prevalence data on drug use in a metropolitan area) and using them for estimation in a target area where these prevalence data are lacking but information is available about general population characteristics.¹¹³ Essentially, the number of individuals in the population who are estimated from the large-scale population study to be at risk of drug misuse is then multiplied by the number of people in the target area. The reliability of these estimates hinges on the accuracy of the large-scale population data sets and the comparability of the calibration and target areas. There may also be opportunities to perform synthetic estimations using social indicator data (e.g. deprivation indices) that may be assumed to correlate with drug use.¹¹⁴

Capture–recapture studies

Because some of the population is hidden or not in contact with services at any one point or period of time, the capture–recapture method (CRM) is becoming one of the most accepted methods of estimation in drug-use epidemiology.¹¹⁵ CRM uses the overlap between two or more (ideally independent) samples to estimate the number of the target population *not* in either of the samples, and hence to derive an estimate of the total population.¹¹⁶ It operates on the assumption that there is an equivalence between the probability of the observed subjects being in two (or more) samples and the probability of the unknown target population being captured by the study samples. However, CRM cannot be employed to estimate national prevalence and is more appropriate for use in cities or regions.¹¹⁷ Equally, rural areas and small populations are unlikely to generate sufficient numbers of cases to allow CRM to be used.

For drug-use populations, estimate studies have been conducted in Glasgow, Dundee, Liverpool, London, Cheshire and Wales. Table 11 summarises the estimates made by studies conducted between 1990 and 1995.

Conclusions from capture–recapture studies should be drawn cautiously in the light of a number of general methodological and study-specific problems that cannot be addressed in detail in the present discussion.¹²⁵ Essentially, CRM is used to estimate the number of problem drug users who might enter or have been in treatment and/or might be engaged in drug-related crime, and not just the number of unreported cases. This means that a complete list or sampling frame of problem drug users would not exist even if record keeping and reporting from multiple sources were complete. Because of this, there may be a greater risk of obtaining biased and unreliable estimates than if other prevalence methods such as ratio estimation or nomination were used. Overall, since no one method of gauging prevalence is capable of generating reliable estimates, it is better to use several methods for triangulation.

Table 11: Summary of UK capture–recapture prevalence estimation studies, 1990–95.

Study	Year	Subjects	Age range	Population	Study sample	Total estimate	95% CI
South London ¹¹⁸	1992	Problem drug users	15–49	458,000	1,832	14,300	11,500–18,000
North London ¹¹⁹	1993–94	Problem drug users	15–49	232,000	1,321	8,400	6,300–11,300
East London ¹¹⁹	1995	Problem drug users	15–49	135,000	543	4,400	2,600–7,700
Wales ¹²⁰	1994	Serious drug users	15–55	1,565,000	2,610	8,360	5,300–11,400
Glasgow ¹²¹	1991	Drug injectors	15–55	628,000	2,866	8,500	8,000–9,700
Cheshire ¹²²	1993	Problem opiate users	Total	440,000	518	1,094	682–4,153
Liverpool ¹²³	1991	Problem drug users	Total	453,000	1,427	2,344	1,972–2,716
Dundee ¹²⁴	1990–94	Opiates and benzodiazepines	15–55	888,000	855	2,557	1,974–3,458

Incidence data

Information on the incidence of drug misuse is available from several sources, including national and regional surveys, criminal justice agencies and specialist drug services. Following the demise of the Home Office's Addicts Index of individuals presenting to general or specialist medical practitioners, the Department of Health's (DoH) Regional Drug Misuse Databases (DMDs) are now a key data source. The DMDs provide information, including data on age, gender and drugs misused, that can be used for the monitoring of the Key Performance Indicator on treatment in the national drug misuse strategy. (This indicator is aimed at increasing the participation of problem drug misusers, including prisoners in drug treatment programmes.) DMDs have grown in importance in the light of an increasing body of evidence showing that a range of secondary and tertiary prevention services are effective in reducing the harm associated with drug use. Trends in reports to DMDs cannot simply be taken as a measure of incidence in the population. However, new work that estimates and adjusts for the lag between the onset of drug use and presentation for treatment may transform the utility of DMD data, at least for estimating the incidence of heroin use.¹²⁶

DMDs do not collect relevant data about the consequences of problem drug use, though they began to use process measures from April 2001. There is interest in developing outcome-monitoring initiatives alongside DMDs, which will be able to report on treatment outcomes by administering a core instrument at fixed intervals during treatment (*see* the section on outcome measures). Returns to the DMDs enable the profile of treatment to be summarised for England. Table 12 (*see* overleaf) shows the main drug by age group for users starting a new treatment, as reported by the DMDs for the six-month period ending 30 September 1999.

Most drug users presenting for treatment report opiate problems, with 59% citing heroin as their main problem drug. The overall ratio of males to females is 3:1, and half (52%) of those in treatment are in their twenties. For the six-month period ending September 1999, 11 510 people who had injected in the previous

Table 12: Number of users starting agency episodes, by age (years) and category of main drug of misuse, 1 April 1999 to 30 September 1999.

Main drug	All ages	16–19	20–24	25–29	30 and over
Heroin	17,936 (59.7%)	2,481 (53.5%)	5,384 (65.9%)	4,779 (63.1%)	5,292 (52.0%)
Methadone	2,893 (9.5%)	118 (2.5%)	541 (6.6%)	760 (10.0%)	1,474 (14.5%)
Other opiates	591 (1.9%)	36 (0.8%)	92 (1.1%)	144 (1.9%)	319 (3.1%)
Benzodiazepines	618 (2.0%)	42 (0.9%)	113 (1.4%)	132 (1.7%)	331 (3.3%)
Amphetamines	2,334 (7.6%)	328 (7.1%)	551 (6.7%)	573 (7.6%)	882 (8.7%)
Cocaine	2,075 (6.8%)	207 (4.5%)	431 (5.3%)	510 (6.7%)	927 (9.1%)
Cannabis	3,342 (10.9%)	1,202 (25.9%)	888 (10.9%)	532 (7.0%)	720 (7.1%)
Ecstasy	238 (0.8%)	79 (1.7%)	84 (1.0%)	50 (0.7%)	25 (0.2%)
Other drugs	518 (1.7%)	141 (3.0%)	83 (1.0%)	91 (1.2%)	203 (2.0%)
Total	30,545 (100%)	4,634 (100%)	8,167 (100%)	7,571 (100%)	10,173 (100%)

Source: Department of Health.²⁰

four weeks began a treatment episode. This amounted to 39% of the total number of cases recorded during that period where injecting status was recorded. For the same period, the overall estimated number of cases entering treatment in England was 62 per 100 000 population (estimated on 1991 Census-based population estimates for mid-year 1998). The rates by age band were as follows: under 20 years, 37 per 100 000; 20–24 years, 280 per 100 000; 25–29 years, 205 per 100 000; 30 years and over, 33 per 100 000. In interpreting and reporting the DMD data, it is important to note that they are not an accurate indicator of treatment utilisation. The current system records only those people who are undertaking new treatment episodes (or who have not entered treatment for six months or more) and does not include people retained in ongoing treatments such as opioid substitution. Under-reporting to the databases is associated with agencies that do not record a client's full date of birth or initials (attributers). For many years, a minority of community-based programmes services have voiced concerns about the confidentiality of the database information and do not participate, or do so rather sporadically. In consequence, if there are fewer reports to DMDs, it is not immediately possible to distinguish between poorer reporting rates, an increase in the proportion of clients retained in ongoing treatment and a decrease in the number of drug users in treatment. This has serious implications for the commissioning of drug services, given that DMDs are often the only source of data for strategic planning. Adjustment factors can be derived for under-reporting and differences in retention, but it is less satisfactory to adjust for two biases, which may operate in different directions. Future developments in the operation of DMDs will tackle these issues, once annual follow-up of reports has been introduced in order to monitor new attendances as well as the prevalence of continuing contact with treatment agencies.

The example of DMD returns for London can be used to explore the issue of under-reporting to the databases. During the year October 1998–September 1999, just over 10 000 new episodes of drug treatment were reported to the database. This corresponded to data from just under 10 000 individuals, 5677 of whom were classified as 'new users'. These figures do not take into account the number of people who are continuously in treatment (and do not therefore generate a second episode), nor can it be assumed that all agencies reported all their client contacts to the DMD. To estimate the total number of people in treatment, DMD figures should be increased by 15% to reflect the number of cases where there is no information about postcode, and then multiplied by 1.67 to reflect the number of people who are continuously in treatment across two reporting periods and for the number of agencies who do not send database returns.¹²² Given these weights, it can be estimated that there are over 19 000 individuals in treatment for drug misuse in London over the course of a year.

Normative models

In addition to having a basic monitoring function for reporting the demand for treatment, treatment utilisation data can be used for forecasting. Normative models provide forecasts of treatment demand for populations in a defined geographical area. Using this method, a composite risk index of treatment need is calculated from (usually national) prevalence data (e.g. homelessness, arrest data, mortality estimates, etc.) and applied to the target area to obtain an estimate of the relative size of risk for that population. Data are then obtained on the number of people treated and the capacity of treatment services provided or purchased across standard categories (e.g. structured counselling, methadone prescribing, inpatient detoxification and residential rehabilitation). These data are then combined according to the size of the population and its estimated risk for treatment. The critical indicator is the size of the discrepancy between the expected treatment capacity (as estimated from the model) and the current actual treatment capacity of the area.

Other characteristics of drug misusers seeking treatment

Additional information about treatment-seeking drug users has been gathered by the client-intake assessments used by the NTORS. The cohort of 1075 dependent-substance users recruited to the study provided a representative profile of people entering community methadone prescribing and residential programmes in 1995.⁴⁸ Whilst 90% ($n = 966$) of the cohort had used heroin or had illicitly obtained methadone in the three months prior to intake, polydrug use was the norm within the cohort. The mean duration of heroin use was 9 years, with 25% of the cohort having used heroin for 13 years or more. Regular use (defined as weekly or more frequent use) of other drugs was as follows: illicit methadone, 29%; benzodiazepines, 38%; stimulants, 31%. Regular use of specific stimulants included cocaine powder (6%), crack cocaine (17%) and amphetamines (11%). Fifty-five per cent were regular users of two or more drugs and 62% had injected a drug in the three months before treatment entry. Almost a quarter of the IDUs reported sharing needles and syringes. It is crucially important for treatment commissioners to recognise that the NTORS data reveal that drug misusers seeking treatment constitute a polydrug-using population. The assessment and management of multiple drug use pose challenges to treatment providers. Patterns of change across different substance types, including alcohol, may be complex, and ongoing assessment of polydrug use is important.

5 Services available

This section reviews the primary, secondary and tertiary prevention interventions for drug misuse that are currently available in the UK. Primary prevention in the form of drug education is outlined first, followed by a more detailed description of treatment services.

Drug education

Drug education in schools varies considerably in approach, content and duration. Six approaches have been identified:¹²⁷

- resistance education (aiming to help pupils resist pressure from peers and others to use drugs)
- affective approaches (using fear arousal and scare tactics to discourage experimentation with drugs)

- information dissemination (providing accurate information about drugs and their effects and consequences)
- harm minimisation (aiming to raise awareness and knowledge of drug misuse to reduce risks)
- cultural approach (a teaching approach that acknowledges cultural values and fosters effective information processing, decision making and self-esteem)
- life skills (an integrated approach that combines information giving, health decision making, conflict resolution and interpersonal skills).

Collectively, these approaches have a variety of aims, including a delay of onset of drug use, reduction in frequency and intensity of use, reduction of risk factors and the minimisation of harm. Drug education can be defined as planned educational provision within a curriculum, which has clear aims and objectives and learning outcomes. From September 2000 in England and Wales, the National Curriculum Order for Science required the following.

- At key stage 1 (age 4–7)
 - pupils should be taught about the role of drugs as medicines.
- At key stage 2 (age 7–11)
 - pupils should be taught about the effects of tobacco, alcohol and other drugs, and how these relate to their personal health.
- At key stage 3 (age 11–14)
 - pupils should be taught that the abuse of alcohol, solvents and other drugs affects health, how the growth and reproduction of bacteria and viruses can affect health, and how the body's natural defences may be enhanced by immunisation and medicines.
- At key stage 4 (age 14–17):
 - pupils should be taught about the effects of solvents, alcohol, tobacco and other drugs on body functions.

Contact points for the treatment system

Before we describe treatment services, it is important to restate the fact that treatment for drug misuse may be discrete or can involve a process of several stages, with provision by different providers and in community/outpatient or residential settings. The seven population needs subgroups described earlier may come into contact (through self- or family referral or referral by a professional agency) with a wide range of agencies and service providers who are either predominantly drug specialists or predominantly generic.¹²⁸ This matrix of predominantly generic services and contact routes is shown in Table 13.

Table 13: Contact by drug misusers with predominantly generic services

Contact usually by self-referral	Contact usually by referral
General practice	Hospital services
Retail pharmacies	Community mental health teams
Social Service departments	Maternity services
Children and family services	Genito-urinary medicine clinics
Housing department	Social Services residential care (child care)
Counselling and advice agencies	Probation service (including youth offender teams)
Accident and Emergency	Prisons
Police	

The probation service is an important point of referral into community treatment, and provision of treatment within prisons is growing. There may be additional contact and screening points that can be identified, including schools/colleges and employment settings. Effective co-ordination and joint working between primary health care, specialist treatment agencies and social support agencies are considered essential to manage the needs of most people with established drug misuse problems. As with other health problems, services are summarised in terms of the different agencies concerned, but it is stressed that many individuals require treatment and support from several different types of provider, and over a protracted period. The local authority Social Services department has an essential role in the assessment of the community care needs of drug users. The assessment teams occupy an important position for assessing the need for residential rehabilitation treatment, and can assess need for complex cases, namely those with drug-using parents, pregnant drug users, and children and young people.

Treatment services for drug misuse

Succinct categorisations of treatments for substance misuse are surprisingly difficult to develop. Treatment of drug misusers ranges from brief interventions delivered by primary health care teams (PHCTs) through to intensive services delivered in a controlled residential environment. Consideration of the range of treatments requires the following elements: the method or modality of treatment, the setting in which the treatment is delivered (i.e. community/outpatient or inpatient/residential) and the nature of the provider delivering it (i.e. public sector [statutory or voluntary] or independent/private). It is important to note that a 'treatment agency' or 'treatment programme' may contain several different types of treatment modality and setting. In general, services and treatment interventions for drug misuse can be categorised as follows.

- 'Open access':
 - advice, information and referral services
 - needle/syringe exchange/distribution services.
- 'Structured treatments':
 - prescribing interventions (inpatient and outpatient/community settings) delivering agonist/antagonist/symptomatic treatments
 - care-planned counselling and day programmes
 - residential rehabilitation.

Many individuals may require the provision of several different types of treatment service over time (i.e. a continuum of care). It is quite common for an individual receiving treatment from one provider to receive additional welfare support and other social inclusion services from other agencies (e.g. housing support or legal advice). Such support is an important part of an effective package of care services that can evolve over the course of an individual's treatment. In order to describe how referral to treatment services operates, and to structure this discussion efficiently, we identify four tiers of services for the treatment of drug misuse:

- Tier I: open-access services
- Tier II: community counselling
- Tier III: specialist prescribing and counselling services (community)
- Tier IV: specialist prescribing (hospital inpatient) and residential rehabilitation.

Table 14 (*see overleaf*) shows these tiers, to help service commissioners, purchasers and providers to plan the required range of services and access routes to them. The table briefly summarises the function of each

tier and indicates the overall severity of drug misuse problems that it tackles. The four tiers of care are intended to be comparable to those levels of service described for adolescent services by the Health Advisory Service¹²⁹ in the Patient Placement Criteria developed by the American Society of Addiction Medicine, which readers are encouraged to consult.¹³⁰

Table 14: Tier-based structure of specialist treatment and open-access services.

Tier	Core function	Severity of client problem at contact
I (open access)	Primary health care medical services; advice, information; syringe exchange/distribution; education; social and welfare services; specialist housing support	Mild to severe
II (community treatments)	Assessment, education, advice, general counselling; GP-led substitute prescribing; assistance for comorbidity; aftercare	Mild to moderate
III (community specialist treatments)	Specialist (supervised) prescribing; structured counselling/day programmes; treatment of complex cases (e.g. pregnancy or comorbidity); community detoxification; counselling; referral; training and development	Mostly moderate to severe
IV (specialist residential)	Specialist detoxification in controlled environments; relapse-prevention counselling; onward referral to rehabilitation programmes and aftercare	Mostly severe

Tier I

Tier I contains the broad array of generic services that may come into contact with large numbers of people with drug misuse problems and with a full range of problem severity. Self-help groups (e.g. Narcotics Anonymous) are also part of this first tier of service provision.

Tier II

The second tier contains specialist agencies (often provided by the voluntary sector) that target drug misusers and that have traditionally been labelled as ‘low-threshold’ services.

Tier III

This tier contains specialist (usually multi-disciplinary) services that are resourced to offer specialist treatment and referral. Many agencies in this tier are called Community Drug Teams, but this is by no means the only term used. Our impression is that there is now a diversity of team structures and labels used to describe them. Here we use the term Substance Misuse Teams (SMTs) as a generic label to denote these multi-disciplinary teams.

Tier IV

Tier IV comprises specialist services offering intensive and structured programmes delivered in residential, hospital inpatient or other controlled environments. Some crisis intervention services in this tier may have open access, while others require formal referral via a health or social care agency.

Together, these four tiers are meant to imply a continuum of care. Generic service providers and State agencies can refer an individual both up and down the tiers to access appropriate treatment or support services. Specialist providers may adopt a stepped-care approach to co-ordinate a programme of different treatments over time for any given patient. A thorough assessment of a drug-use disorder spans personal demographic features, health status, health symptoms and social functioning, together with an appraisal of the specific psychological and social functions that drug use is perceived to supply for the user.

An important principle is that services in Tier IV, which have higher unit costs than treatments in Tiers I to III, should be reserved for cases of significant treatment need that cannot be managed safely or effectively in a day-care setting. Other health and social care services that provide services to drug misusers will span sexual health and allied services, maternity and dentistry. Table 15 (*see overleaf*) summarises the treatment providers and services available.

The field of treatment for drug misuse is characterised by considerable diversity in the structure and operation of treatment services, their interventions and the nature of priority needs groups that they serve. We next describe the various specific interventions currently funded by the public health and social care system.

Syringe-exchange and distribution services

Access to sterile injection equipment is a central component of bloodborne virus prevention amongst the IDU population. In 1996 it was reported that there were over 300 dedicated syringe-exchange schemes in England.¹²⁸ Since the mid-1980s there has been sustained concern about the health problems experienced by the IDU subgroup and the risk of bloodborne viral infection. There is long-standing recognition of the importance of encouraging IDUs (including those not motivated to alter their current drug-taking behaviour) to inject more safely and to use clean injecting equipment. Harm-minimisation policies have been instituted to help users reduce the risk of acquiring and transmitting bloodborne viruses (HIV, HBV, HCV and sexually transmitted diseases). Specialist agencies and community pharmacists constitute important services, which aim to reduce the extent of harm accrued from injecting by promoting improved hygiene during intravenous drug use and encouraging the use of new needles and syringes and the safe disposal of used equipment. These services exist in two basic forms: providers of needles and syringes (who give out or sell new equipment, but do not provide facilities for the return of used equipment) and needle and syringe exchange schemes (offering facilities for the regular return of needles and syringes and their safe disposal). Some services also provide additional sterile injection equipment for users, including swabs, filters and water ampoules.

General practitioners

Nationally, GPs have a substantial overall level of treatment involvement with drug misusers. GPs issue 40% of methadone prescriptions to the dependent heroin use subgroup, and these are dispensed by retail pharmacists.¹³² Between September 1997 and September 1998, a total of 3052 patient episodes were reported to the DMDs by general practice workers (some 5.7% of the total number recorded by returning

Table 15: Drug misuse services and treatment providers.

Provider	Potential service functions
PHCT/general medical and social care services (Tier I)*	Open access: advice, information and education; brief counselling and other interventions; illness screening; vaccination; health care information; pharmacy needle exchange; Accident and Emergency services; referral to specialist services, stand-alone or shared-care providers
Specialist and community syringe-exchange schemes (Tier II)	Open access: syringe and injecting equipment distribution; harm minimisation information; health checks (where feasible); referral advice and information
Community-based advice and information (Tier II)	Open access: drop-in facilities, assessment, education, referral, advocacy, outreach, advice and counselling, relapse prevention counselling and support; telephone helplines; individual support; specialist counselling; shared-care prescribing with local GPs
Structured individual/group counselling/programmes (Tier II)	Usually referral: comprehensive needs assessment, individualised counselling and/or psychotherapy; referral to other specialist providers; aftercare support; active work with relapsing clients; job skills and work experience
Non-statutory community-based drugs services (Tier II)	Usually open access: assessment and referral; shared-care prescribing with local GPs; counselling and support
Substance misuse teams (SMT) (Tier III)†	Usually open access: specialist assessment; vaccination; health care information; agonist prescribing (maintenance and reduction/detoxification regimes); management of complex cases; prescribing for psychological and physical comorbidity; education; general support; onward referral
Specialist day-care providers (Tier III)	Often referral based: structured individual and/or group counselling services
Specialist hospital inpatient units (Tier IV)†	Referral based: medically supervised drug withdrawal management; screening for illnesses; vaccination and provision of health care information; education; general health care; relapse prevention counselling; onward referral
Crisis intervention and detoxification units (Tier IV)†	Usually open access: rapid access for users in crisis; medically supervised withdrawal via agonist prescribing; primary health care; onward referral
Residential rehabilitation programmes (Tier IV)	Referral based: comprehensive assessment; medically supervised withdrawal management (in some units); group and individual counselling and support; training; aftercare

* Medical practitioners in Tier I correspond to general practitioners in drug misuse treatment teams (Level I: generalist) and specialised general practitioners (Level 2: specialist generalist) who have a special interest in treating drug misusers (*see Drug Misuse and Dependence: guidelines on clinical management*¹³¹).

† Specialist medical practitioners in this tier are usually those who provide expertise, training and competence in drug misuse treatment as their main clinical activity. Most specialists (Level 3: specialist) are consultant psychiatrists.

agencies).^{*} PCTs are expected to continue to develop so-called shared-care arrangements for the treatment of drug misusers at the primary care level. Shared care is defined as follows:

The joint participation of GPs and specialists (and other agencies as appropriate) in the planned delivery of care for patients with a drug misuse problem, informed by an enhanced information exchange beyond routine discharge and referral letters. It may involve the day-to-day management by the general practitioner of a patient's medical needs in relation to his or her drug misuse. Such arrangements would make explicit which clinician was responsible for different aspects of the patient's treatment and care. They may include prescribing substitute drugs in appropriate circumstances. (DH; EL (95)114).

In the case of methadone prescribing to a dependent heroin user, a specialist agency and GP usually agree who has overall clinical responsibility for the client. In some instances the agency will undertake the initial client assessment, and institute methadone induction and stabilisation. After this phase of treatment is completed, the client may then be transferred to the GP at an appropriate point.¹³³ In 1996, some 53% of all HAs reported specified arrangements for shared care, of which one-third met the criteria set out by the DH. Returns in 1996 from 24 HAs indicated that an average of 40 GPs per district were participating in shared-care arrangements. However, the level of participation varied widely from 1% to over 50% of all GPs in an area.¹³⁴

Local studies have suggested that some GPs are not enthusiastic about overseeing long-term MMT with heroin users.¹³⁵ In a study in London, Groves and colleagues found that although many GPs reported having had recent contact with a drug-misusing patient, the majority of clients were seen by a small number of doctors.¹³⁶ Other studies have concluded that most GPs are only minimally involved with drug users and generally do not wish to develop this aspect of their practice.¹³⁷ Overall, current involvement of GPs in the treatment of drug misusers could be described as patchy. Nevertheless, there are signs that the GP specialists provide treatment that is not dissimilar to that provided by the specialist community teams and that the outcomes are similar.¹³⁸

The guidelines on clinical management of drug users have promoted three levels of expertise to represent the types of treatment undertaken with drug users and the competencies required.

- Level 1: the generalist – a medical practitioner who engages in assessment and substitute prescribing (as appropriate) for a number of drug users, usually on a shared-care basis.
- Level 2: the specialist generalist – a medical practitioner with a special interest and skills in treating drug users, even though this does not constitute the practitioner's main work. The specialist generalist is equipped to assess and treat drug users with complex health care needs.
- Level 3: the specialist – a medical practitioner who 'provides expertise, training and competence in drug misuse treatment as their main clinical activity'.¹³¹ The guidelines recommend that most specialists would normally be consultant psychiatrists holding a Certificate of Completion of Specialist Training in Psychiatry.

Specialist community prescribing services

A 1994 census of treatment programmes identified a total of 163 specialist community drug teams and other specialist prescribing services.¹³⁹ To date, new treatment episodes reported by SMTs account for just under 50% of the total reported cases for each reporting period. These services aim to reach drug users who are usually dependent on heroin and are usually current users of several other illicit substances. Specialist prescribing services provide opioid substitution treatment, usually with oral methadone hydrochloride in

^{*} This figure is likely to be an underestimate because of confusion about the reporting arrangements of drug misusers following the demise of the Addicts' Index.

either a reducing or a maintenance regimen.^{140,141} Two broad types of substitution programme are delivered, each with distinct goals and with more than 25 000 people receiving methadone at any one time.¹⁴² In abstinence-oriented methadone reduction treatment, community-treated clients are first stabilised on methadone and then gradually withdrawn over a period ranging from several weeks to many months. There is also limited use of other pharmacological agents to manage withdrawal, notably the α_2 -adrenergic agonist lofexidine (prescribed either singly or in combination with methadone).

In opioid maintenance treatment, where the retention of the client in treatment is a priority, the substitute (usually oral methadone) is administered at a stable level for a period of several months or sometimes years. There is also interest in using buprenorphine (Temgesic), a partial opioid agonist, for substitution treatment.¹⁴³ Despite substantial international interest in heroin prescribing, it is rarely prescribed to UK addicts (currently to an estimated 300 patients) and there are only a few reports of its effectiveness.^{144–147} In contrast, ampoules of injectable methadone accounted for approximately 10% of the 30 000 methadone prescriptions dispensed at the time of a 1995 national survey, with this proportion ranging from 4% in some regions to a maximum of 23% in one health region.^{148,149} Studies of staff supervision of injectable diamorphine maintenance treatment in Switzerland have recently been described.¹⁵⁰ Adoption of supervised injectable treatment has been recommended as a substantially safer means of delivering this treatment in the UK.¹³⁴ There are currently no plans to expand diamorphine prescribing in the UK.

In addition to dealing with heroin use, specialist community prescribing services must also deal with dependent use of other drugs by their clients. An increase in cocaine distribution and prevalence in the UK since the late 1980s has been accompanied by a growing concern to ensure that services can respond to the treatment needs of dependent cocaine users. A survey of 318 treatment services in England in 1995 revealed that 53% had received referrals from primary cocaine hydrochloride or crack users in the previous six months and that the majority had provided some form of planned treatment for these clients.¹⁵¹ Consumption of another common illicit stimulant, amphetamine, is also rising in the UK and internationally. There is evidence that the prescribing of dexamphetamine sulphate may be quite widely undertaken by physicians providing treatment for dependent users.¹⁵² Contemporary treatment approaches combine counselling, health care for physical and psychological symptoms and substitution prescribing. There is currently only a limited base of research evidence for treatments for dependent amphetamine users.¹⁵³ In one preliminary study, 63 injecting amphetamine users were prescribed dexamphetamine and compared with 25 clients who had attended the service before dexamphetamine prescribing began. The prescribed group reported statistically significant reductions in the frequency of illicit amphetamine use, benzodiazepine use, money spent on drugs and injecting needle sharing.¹⁵⁴ Further evaluation studies are now warranted.

Psychosocial counselling programmes

The provision of psychosocial treatments (counselling and support) for drug misusers, dependent users and users in recovery is quite widespread but remains under-researched in the UK. Almost all treatment programmes contain some form of counselling, which tends to be aimed at enhancing personal motivation for change and to be orientated towards problem solving and providing ongoing support to clients. These services aim to serve non-dependent drug misusers (especially younger users) and those at risk of drug use problems (e.g. children of drug-using parents, young people excluded from school and those in care), as well as dependent drug users and users in recovery. In the 1994 agency survey, 112 drug misuse advice and counselling centres were recorded.¹³⁹

The importance of the therapist–client relationship appears to be a critical determinant of success in counselling. Relapse prevention is another important cognitive-behavioural treatment approach that employs skills-training techniques to teach drug users how to identify, anticipate and cope with the

pressures and problems that may lead to a return to problematic drug use.¹⁵⁵ Specific prevention techniques include self-monitoring of high-risk situations, structured problem solving and rehearsal/role-play.

Since the 1994 agency survey, there has been growing interest in commissioning high-quality individual structured day programmes.¹⁵⁶ These services are designed to provide an intensive programme of counselling, tailored to the needs of the individual. Counselling is of a finite duration and is intended to be subject to high-quality monitoring of progress against objectives. To date, there has been no national audit of the number and operation of these services and there is no published study of their effectiveness.

Hospital inpatient programmes

Specialist inpatient units constitute a numerically small but important element of treatment provision in the UK. These programmes serve the user in withdrawal, and offer a medically supervised detoxification service in a controlled environment and a programme of counselling and education oriented towards preventing relapse. For some people, detoxification can be a gateway into drug-free counselling. Achieving a drug-free state is necessary for entry into many residential rehabilitation programmes or (for opiate users) to receive relapse-prevention treatments using the opiate antagonist naltrexone.

Withdrawal-management issues are most clearly required for dependent users of opiates and benzodiazepines (and potentially cocaine), where cessation of use may be followed by a distinct withdrawal syndrome. The nature of the withdrawal syndrome will be determined by the substance class, while the time-course of the syndrome will be determined by the specific drug used. Several drugs and detoxification techniques may be used singly or in combination in these inpatient units to manage withdrawal symptoms. For opiate management, the most commonly used method is to transfer the client to oral methadone and then gradually reduce the dose. This is by no means the only withdrawal management strategy, and partial-agonist medications such as buprenorphine¹⁵⁷ may also be available, as may rapid detoxification procedures based on administration of antagonist medications.^{158,159}

There has been no significant increase in the number of specialist inpatient detoxification beds in the UK since the 1960s, although several crisis intervention programmes have been developed in inner-city areas. In England in 1994 there were some 16 specialist units providing about 100 beds.¹³⁹ There are also a small number of crisis intervention facilities in several cities across the UK which can be rapidly accessed and which provide a withdrawal management and support service. Following a strategy for UK prisons, which endorsed the provision of maintenance treatment where appropriate, there is now limited availability of this treatment in the prison system.¹⁶⁰ Typically, inpatient programmes provide the following services:

- stabilisation of illicit drug use with suitable agonist medication and subsequent pharmacotherapy to manage withdrawal
- medical care for concurrent and consequential physical and psychological symptoms and conditions
- screening for illnesses, vaccination, and provision of health care information
- crisis support, harm-reduction information about patterns of drug and alcohol consumption, and education and short-term psychosocial support
- intensive programmes to prevent relapse
- planned discharge arrangements to facilitate continuing community support services or drug-free residential rehabilitation.

It is important to stress that detoxification should not be considered in itself a treatment for drug dependence, and in isolation it is seldom effective in leading to long-term abstinence. There has been some concern expressed about the need for improved links between the units and rehabilitation and continuing care.¹³⁴

Residential rehabilitation programmes

Residential rehabilitation programmes focus on the health and social care needs of the user in recovery (subgroup G). These are largely services funded by community care that the voluntary sector has pioneered and sustained. Most residential rehabilitation programmes require their clients to be drug-free on entry, although some have dedicated detoxification facilities. There are about 70 programmes operating in England, with some 1200 beds available.¹⁶¹ Residential rehabilitation programmes provide a structured programme of treatment that has the following basic features:

- maintenance of abstinence from illicit drugs in a controlled or semi-controlled therapeutic environment
- communal living with other drug users in recovery
- emphasis on shared responsibility by peers and group counselling
- counselling and support oriented towards preventing relapse
- individual support and promotion of education, training and vocational experience
- improved skills for the activities of daily living
- housing advocacy and resettlement work
- aftercare and support.

The treatment philosophy and structure of residential rehabilitation services vary quite widely in the UK. There are three broad types of rehabilitation provision:

- therapeutic communities
- 12-step programmes based on the US Minnesota model of addiction-recovery treatment
- general and Christian houses promoting a less structured programme, which favour a more individually tailored package of care for each client.

About half of all residential rehabilitation programmes provide medically supervised withdrawal to facilitate abstinence (*see* section on inpatient units). Many are based in rural or semi-rural locations and receive clients from a wide catchment area, particularly those from urban locations who need to receive treatment away from their usual drug-oriented environment.

People entering rehabilitation units often have fairly lengthy histories of treatment for drug misuse, and many have quite severe drug misuse problems at referral. Although opioid dependence is the most common problem, such clients may have higher rates of drug injecting and of sharing injecting equipment than clients attending specialist community prescribing services. Residential rehabilitation clients are also more likely to use stimulants (amphetamine and cocaine), to be drinking alcohol at risky levels and to be involved in criminal behaviour.⁴⁸ A somewhat patchy network of aftercare houses also exists in the UK. These provide a bridging rehabilitation programme for the drug user in recovery. Programmes usually start immediately after the completion of detoxification and last for a period of 3–15 months (the average length is 6 months). The care is often phased in intensity, so the resident may be in a minimum-supervision halfway house during the later stages of this care.

Levels of specialist treatment provision and staffing

The provision of specialist treatment for drug misuse is usually undertaken by multi-disciplinary teams encompassing psychiatry, nursing, psychology and social work. Numerically, community psychiatric nurses are the predominant workers in specialist treatment services. To date there has been no specific national audit of staffing levels in programmes for treating drug misuse. Staff levels vary widely both within

treatment modalities (e.g. specialist community prescribing) and across geographic regions. Funding shortfalls mean that a proportion of treatment providers have unfilled posts on their staff establishment.

There is no nationally agreed schedule or framework for required staffing levels for levels of service provision for treatment in local areas. Based on our experience, Table 16 offers a crude estimate of the typical levels of provision for three types of treatment, namely specialist community prescribing services, hospital inpatient units and residential rehabilitation programmes. The table should not be used for planning and commissioning purposes and is offered for illustrative purposes only.

Table 16: Estimated resource levels for specialist treatment services per 0.5 million population.

Resource	Substance misuse team	Hospital inpatient unit	Residential rehabilitation programme
Consultant psychiatrist*	1 wte	0.5 wte	Sessional
Specialist registrar/other medical	0.5 wte	0.5 wte	2–5 sessions
Staff grade/GP	0.5 wte	0.5 wte	2 sessions
Co-ordinator/manager	1 wte	1 wte	1 wte
Community psychiatric nurse	4–6 wte	6–12 wte	0–0.5 wte
State-registered nurse/other nurse	1–5 wte	2–4 wte	1–3 wte
Clinical psychologist/counsellor	0–1 wte	0–0.25 wte	0–3 wte
Social worker	1–2 wte	0.25–0.5 wte	2–4 wte
Drug worker/care worker	1–3 wte	Usually 0	2–4 wte
Administrator/secretary	1–2 wte	1–2 wte	1–2 wte
Coverage	Around 150–200 places/500,000 pop. for maintenance and reduction	10–20 beds/500,000 pop.+	12–40 beds/500,000 pop.+

wte = whole-time equivalent.

* Reflecting the Royal College of Psychiatrists guidelines on the number of consultants needed at a local level in 1992.

Essentially, staffing levels for these services are based around an eight-person clinical team in a ‘standard’ SMT inpatient programme and medium-sized residential rehabilitation programme (say, 15 beds). The extent of medical staffing in the residential programmes is largely determined by the provision of medically supervised withdrawal. Abstinence houses do not usually have formalised medical staff.

Given the expansion in funding resources flowing into the probation service and the prison system, there are concerns that drug treatment services may be understaffed and may not have sufficient capacity to manage the increased demand envisaged. This shift in resource allocation comes at a time when the lower levels of new funding investment to the HAs (now PCTs) and LAs are being prioritised towards primary care (NHS Modernisation Fund), the much-needed HBV vaccination programme and services for young people.

Social costs of drug misuse and specialist drug treatment

Many drug misusers are frequent consumers of health and social care services. Data on the total burden on the general health and social care systems and specialist treatment providers are scarce. Around 48%

($n=519$) of the NTORS cohort ($n=1075$) had received medical treatment from an Accident and Emergency department in the two years before intake to their index treatment, a quarter had had a general hospital admission,⁴⁸ and 70% of clients ($n=748$) reported visiting a GP at least once during this period. Costs to the health and social care system for the cohort during the year before admission to treatment were estimated at £744 000 and were composed of the elements listed in Table 17.

Table 17: Estimated health care costs* over the year before admission to treatment for the cohort of patients recruited to the National Treatment Outcome Study ($n=1075$).

Service type	Total (£)	Mean (median) cost per patient	Standard deviation	Percentage of total
General medical inpatient	352,000	327 (0)	1,432	47
Psychiatric inpatient	161,000	150 (0)	748	22
Accident and Emergency	44,000	50 (27)	125	6
General practitioner visits	63,000	59 (16)	132	9
Community mental health/outpatient	124,000	115 (0)	605	17
Total	744,000	701 (93)	1,948	100

* Costs are in 1995–96 prices after inflation, using the Department of Health's index for hospital and community health services.

Source: Healey *et al.*¹⁶²

As can be seen, some 69% of the total estimated health care costs arose through admissions to general medical and psychiatric inpatient services. Contact by the sample with community mental health and outpatient teams (where treatment was primarily for non-substance-related psychiatric disorder) accounted for 17% of the total estimated costs. During the two years before treatment entry, 80% of the cohort had received at least one episode of specialist treatment for drug misuse. Three-quarters had been prescribed an opiate substitute drug and more than a quarter had been in residential treatment during this time. Nineteen per cent had also been treated at inpatient agencies. Table 18 shows the estimated costs of this treatment for the year before admission.

Table 18: Estimated costs* of drug misuse treatment over the year before admission, for the cohort of patients recruited to the National Treatment Outcome Study ($n=1075$).

Service type (during or before admission)	Total (£)	Mean (median) cost per patient	Standard deviation	Percentage of total
Drug dependency inpatient treatment	378,000	351 (0)	1,177	19
Residential rehabilitation	538,000	500 (0)	1,891	27
Methadone treatment (hospital based)	249,000	232 (27)	655	13
Methadone treatment (specialist community teams)	383,000	356 (16)	793	19
Methadone treatment (general practitioners)	209,000	195 (0)	353	11
Alcoholics Anonymous and Narcotics Anonymous	32,000	30 (0)	153	2
Street agency (advice, counselling and information)	184,000	172 (7.7)	566	9
Total	1,973,000	1,836	2,725	100

* Costs are at 1995–96 prices.

Source: Healey *et al.*¹⁶³

It is important to note that the costs of service provision (staffing and building costs) vary across the country and are, for example, around 22% higher in inner London than elsewhere.¹⁶⁴

6 Effectiveness of primary, secondary and tertiary prevention services

This section presents a review of the research evidence for the effectiveness of primary, secondary and tertiary interventions for drug misuse.* The material presented draws largely on available evidence from the UK and Europe and from the substantial literature from the USA. There are relatively few statistical reviews of treatment effects in the drug misuse field and reviews are generally thematic†. It should be noted that a focused section of this kind cannot hope to review the research evidence for all types of treatment, and the reader is encouraged to consult the 1994 Task Force report, which assessed the available research evidence for the impact of treatment services. The present section focuses on information published later than the Task Force review. Before the NTORS was implemented in England, there was somewhat scant evidence for the effectiveness of the main modalities of treatment as delivered in the UK. Nevertheless, substantial information gaps about the impact of treatment remain in several areas. The lack of current research evidence for a specific treatment is noted in each relevant section. There is also a need to gather information on the impact of contemporary services as they are delivered on a day-to-day basis. Most evaluation studies have focused on the main effects of treatment for a group or cohort of clients. Increasingly, treatment strategists and the research community are looking for answers to more specific questions concerning the outcomes for priority groups. These include the main groups identified in this chapter: young people, people with comorbidity, the homeless and people from ethnic communities. A matrix of clients, treatments and referral and treatment management issues now exists and guides the formation of research questions.

Drug education

Very few studies in the UK have examined the effectiveness of drug education in schools. In one study, Coggans and colleagues examined the impact of drug education in Scottish schools through a cross-sectional survey of 1197 pupils aged 13–16.¹⁶⁵ No links between education and pupil attitudes and behaviour were found and there was only a modest increase in drug-related knowledge. Project DARE (Drug Abuse Resistance Education) from the USA has been evaluated in the UK with poor results.¹⁶⁶

The general conclusion from international reviews is that outcomes from information-giving and affective approaches are either very weak or zero. In contrast, a number of studies from the USA have shown social-influence approaches to have positive effects on nicotine, alcohol and cannabis use. A meta-analysis of 91 drug prevention and education programmes by Tobler and Stratton¹⁶⁷ calculated that the average effect sizes (ES) on various outcome measures were as follows:

- knowledge (ES = 0.52)

* The literature search was performed using MEDLINE, PsychInfo and BIDS databases and by consulting *Addiction Abstracts* (1996–99).

† Statistical reviews (or meta-analyses) are undertaken by pooling the effect sizes reported by multiple studies of a particular treatment intervention. An effect size is usually the difference between two groups (e.g. the experimental and control groups) on a response measure, divided by the pooled standard deviation across the groups.

- behaviour (ES = 0.27)
- skills (ES = 0.26)
- drug use (ES = 0.24)
- attitudes (ES = 0.18).

When the programmes were analysed by type of approach, effect sizes were as follows:

- peer programmes (ES = 0.42)*
- knowledge only (ES = 0.07)
- affective only (ES = 0.05)
- knowledge plus affective (ES = 0.07).

In contrast to the information-dissemination and affective approaches, drug education based on a life-skills orientation is increasingly popular. This approach is most clearly expressed in the Life-Skills Training programmes developed by Botvin and colleagues in the USA, which have been subjected to quite rigorous experimental study with generally positive outcomes.^{168–171}

Drug misuse services and treatment programmes

Summarising the effectiveness of drug misuse interventions is complicated by the fact that most people in need of treatment have multiple personal and social problems. In general, positive outcomes from treatment include a reduction in drug-use involvement, health-risk behaviour and physical and psychological health symptoms, together with positive outcomes in the social functioning domains (e.g. employment, relationship problems, accommodation and criminal behaviour).¹⁷² Whilst the primary outcome measures from treatment tend to be related to substance involvement, a set of indicators for health, relationship functioning, employment and criminal behaviour are usually measured by comprehensive evaluation studies of outcomes.

In the following sections, we review the main services and treatment interventions across Tiers I to IV. The notation for indicating the quality and strength of the available evidence is that used in the *Health Care Needs Assessment* series.

Syringe-exchange schemes

Quality of evidence and size of effect: II-2 (B)

The main outcome measure for evaluating the impact of specialist and community syringe-exchange programmes is the frequency of needle- and syringe-sharing incidents during the month before interview. Research on the impact of the initial wave of syringe-exchange programmes in the UK was originally conducted by Stimson.¹⁷³ In the UK, there is evidence from observational studies that, on average, participation in exchanges is linked to a decrease in HIV-related risks for drug injectors and that contact with these services is associated with a reduction in injection-risk behaviour. In London, HIV prevalence amongst IDUs declined from 12.8% in 1990 to 9.8% in 1991, 7.0% in 1992 and 6.9% in 1993. The low and stable HIV prevalence rates across most UK cities have been attributed in part to the early introduction of harm-reduction interventions and syringe-exchange schemes.¹⁷⁴ Table 19 summarises the national surveillance data from the UK and the results of evaluation studies of syringe-exchange schemes in the USA.

* The peer programmes category included programmes focusing on refusal skills as well as programmes focusing on social and life skills.

Table 19: Summary of studies on syringe-exchange programmes, 1995–99.

First author	Publication year	Study	Sample (country)	Primary outcome measures	Key findings
Durante ¹⁷³	1995	National surveillance	1,876 IDUs in 1992 and 2,138 IDUs in 1993 (UK)	Sharing in previous month and proportion of sharers receiving previously used needles	Reduction of 1.3% in sharing rate (95% CI: –3.7, 1.1%); proportion of sharers receiving used needles fell by 18% (95% CI: 11%, 26%); syringe-exchange clients less likely to share than clients of other types of agencies (adjusted OR: 0.69; 95% CI: 0.51, 0.93)
Hahn ¹⁷⁵	1997	Syringe-exchange programme	1,093 IDUs recruited in MMT outpatient detoxification programmes in 1,988 (USA)	Risk behaviour and pre-needle exchange HIV-seroconversion rate	The number of sharing partners did not change among IDUs who attended, and seroconversion increased
Bluthenthal ¹⁷⁶	1998	Illegal syringe-exchange programme	1,304 IDUs interviewed; 684 (53%) returned for more than one interview (USA)	Participation in programme and sharing	Programme use increased, and syringe sharing declined from 1992 to 1995
Hagan ¹⁷⁷	1999	Syringe-exchange programme	Cohort study with 647 IDUs (USA)	Incidence of HBV and HCV	No protective effect found for HBV or HCV

Collectively, syringe-exchange and distribution services are also likely to have contributed to public health efforts to achieve a declining prevalence of markers of exposure to HBV. Current estimates for IDUs in London are around 20–30%.^{169–178} Studies in England show lower rates of HBV exposure for people with shorter injecting careers,^{179,180} with those starting to inject after the introduction of harm-reduction interventions having considerably lower rates of HBV exposure than those injecting before these initiatives were put in place. Overall, in spite of the mixed results from some recent US studies, the evidence base for these services is positive.

Specialist prescribing programmes

Quality of the evidence: I-1 (B)

Agonist prescribing with methadone is one of the most widely evaluated treatments for opioid dependence worldwide. Internationally, there is a well-established body of research and clinical evidence for substitution treatment with oral methadone.^{181,182} On average, MMT is associated with lower rates of heroin consumption, reduced levels of crime and improved social functioning. A lower risk of premature mortality for maintained clients has been reported, and substitution programmes have also helped to prevent the spread of HIV infection, by discouraging risk-taking practices during injection. In the UK, results from the NTORS suggest that, on average, post-treatment outcomes from opioid substitution programmes are positive across a broad range of measures, including substance use, injecting and needle/syringe-sharing behaviours, health symptoms and crime measures.¹⁸³ Changes in drug use are summarised in Table 20.

Table 20: Drug use at 1-year follow-up* (methadone clients in NTORS).

Drug use measure	Intake	One-year follow-up
Abstinence from illicit opioids	5%	22%
Abstinence from stimulants	47%	64%
Injecting illegal drugs	62%	45%
Sharing injecting equipment	13%	5%

* Data based on follow-up with 478 clients ($n = 667$).

Source: Gossop *et al.*¹⁸²

Marsch has reported the results of a statistical meta-analysis of 11 MMT outcome studies and 11 and 24 studies investigating the effect of MMT on HIV risk behaviours and criminal activities, respectively.¹⁸⁴ The results (*see* Table 21) showed a consistent, statistically significant relationship between maintenance treatment and the reduction of illicit opiate use, HIV risk behaviours and drug and property crimes.

Table 21: Unweighted effect sizes from meta-analysis of methadone maintenance studies.

Outcome domain	Effect size
Illicit opiate use	0.35
HIV-risk behaviours	0.22
Drug-related crime	0.70
Drug and property crime	0.23
Drug and non-property crime	0.17

Source: Marsch.¹⁸⁴

The effectiveness of maintenance treatment appears to be greatest in reducing drug-related criminal behaviour. This treatment has a moderate effect in reducing illicit opiate use and drug- and property-related criminal behaviour, and a small to moderate effect in reducing HIV-risk behaviour.

Injectable methadone maintenance treatment

Methadone maintenance can also be instituted in an injectable form, and in fact the prescribing of ampoules of injectable methadone accounted for approximately 10% of the 30 000 methadone prescriptions dispensed at the time of the 1995 national survey.¹³² The most obvious rationale for making injectable medication available to IDUs seeking treatment is to retain in treatment those people with entrenched injecting behaviours who have had previous unsuccessful treatment with oral substitution treatment or who would not be attracted to conventional oral methadone. An observational study of injectable heroin and methadone prescribing in the UK has been described,¹⁸⁵ together with encouraging reports from clinical audits of this practice.^{186,187} Results from a randomised clinical trial in London have shown positive, equivalent six-month outcomes for IDUs assigned to oral or injectable MMT.¹⁸⁸ However, there is currently little practical guidance available to clinicians and commissioners as to which patients should be considered suitable to receive injectable methadone and how progress in treatment should be monitored and evaluated. The current research evidence for injectable MMT treatment is therefore I-1 (B).

Psychosocial counselling

Quality of evidence: I-1 (B) [Structured Counselling only]

There is widespread belief in the importance and value of counselling for drug misusers in the UK and internationally. However, the research evidence for the effectiveness of counselling in the UK is sparse. Looking at the international literature, outpatient drug-free counselling provision in the USA has been evaluated as part of the national series of field evaluation studies. The results suggest that abstinence-oriented counselling is associated with reductions in drug use and crime involvement and improvements in health and well-being.¹⁸⁹ There are positive reports of the value of this treatment with heroin users in helping to prevent relapse.¹⁹⁰ Drug-use outcomes for outpatient drug-free programmes that contain a counselling element were reported by the Drug Abuse Treatment Outcome Study (DATOS) in 1997 and are summarised in Table 22.

Table 22: Drug-use outcomes for outpatient drug-free programmes in the Drug Abuse Treatment Outcome Study (DATOS), 1997.

Drug use	Outpatient drug-free	
	Pre-admission year (<i>n</i> = 2000) (%)	Follow-up year (<i>n</i> = 64) (%)
Heroin	5.9	3.3
Cocaine	41.7	18.3
Cannabis	25.4	8.5
Alcohol	31.0	15.1

Substance use is presented as 'weekly or frequent' during the 1-year period.
Source: Hubbard *et al.*¹⁹¹

A number of mediators of treatment outcome have been identified. Individual psychotherapy has been found to enhance treatment outcomes when integrated with standard addiction counselling, and has a particular impact on clients with higher levels of psychopathology.¹⁹² Client engagement in programme counselling has been reported to be a significant predictor of favourable outcome.^{193,194} Increasing

opportunities for participation by the client have been associated with greater treatment benefits.¹⁹⁵ Providing intensive, individually based counselling to targeted individuals with extensive treatment histories appears to be an effective clinical strategy for improving outcome in outpatient treatment for drug misuse.¹⁹⁶

Of all the psychosocial counselling approaches, cognitive-behavioural therapies (CBT) oriented towards preventing relapse have received the most frequent evaluation in other countries.¹⁹⁷ Cognitive-behavioural approaches to building coping skills have been used successfully with heroin users to help prevent relapse.¹⁹⁸ Several psychological treatments that incorporate behavioural elements have also produced encouraging results, notably contingency reinforcement therapy.¹⁹⁹ Some 24 randomised controlled trials of CBT have been conducted with adult users of tobacco, alcohol, cocaine, marijuana, opiates and other substances.²⁰⁰ In her review, Carroll concludes that there is good evidence for the effectiveness of CBT compared with no-treatment controls.

The most rigorous tests of CBT therapies are contrasts with existing treatments. Here findings have been more varied. These comparisons have led to somewhat mixed results in studies conducted in the USA. CBT has shown encouraging results in the treatment of cocaine misusers. In one study, 42 clients who met DSM criteria for cocaine dependence were randomised to receive a 12-week programme of individual CBT sessions or interpersonal psychotherapy.²⁰¹ The trial results showed that the CBT subjects were more likely to complete treatment (67% vs. 38%), achieve three or more continuous weeks of abstinence (57% vs. 33%) and be continuously abstinent for four or more weeks when they left treatment (43% vs. 19%). Treatment gains were most evident in a group of heavy cocaine users, who were more likely to achieve abstinence if assigned to receive CBT. Other studies have shown that CBT is effective in retaining depressed clients.²⁰²

Residential programmes

Quality of evidence: I-1 (B)

A relatively small number of studies have evaluated the impact of hospital inpatient units and residential rehabilitation programmes. One early English follow-up study of patients treated by a specialist inpatient unit found that 51% were drug-free at a six-month follow-up.²⁰³ The only controlled study of inpatient and outpatient treatment of opiate withdrawal in the UK found inpatient withdrawal to be four times more effective in terms of the proportion of patients who completed the withdrawal regime.²⁰⁴

For residential rehabilitation programmes, US and UK studies have shown positive psychosocial benefits after treatment.^{205–208} In the USA, outcome from longer-term residential rehabilitation programmes is related to total time spent in treatment, with episodes of at least three months associated with positive outcome. The majority of evaluations have been of therapeutic community (TC) programmes. Programme length varies from short-term with aftercare to long-term programmes of more than a year. The evidence points to the considerable success of these services for the recovering user subgroup. US studies show that, on average, clients receiving TC treatment show enduring post-discharge reductions in illicit drug use.^{209–211}

In 1989, the Treatment Outcome Prospective Study (TOPS) found that regular use of illicit drugs (weekly or more frequent consumption) was reported by 31% of clients in the year before admission to residential programmes.³¹ For those clients who had received at least 23 months of treatment, this rate reduced to zero during the first 90 days of treatment. It then stabilised across three further intervals: the first 3 months after treatment (11%), the year after treatment (11%) and the period 3–5 years after treatment (12%). Drug-use outcomes for the long-term residential and short-term inpatient treatment modalities studied by the DATOS in 1997 are summarised in Table 23.

Table 23: Drug-use outcomes from the Drug Abuse Treatment Outcome Study (DATOS).

Drug use	Long-term residential treatment		Short-term inpatient treatment	
	Pre-admission year (<i>n</i> = 2293) (%)	Follow-up year (<i>n</i> = 676) (%)	Pre-admission year (<i>n</i> = 2613) (%)	Follow-up year (<i>n</i> = 799) (%)
Heroin	17.2	5.8	7.0	2.2
Cocaine	66.4	22.1	66.8	20.8
Cannabis	28.3	12.7	30.3	10.5
Alcohol	40.2	18.8	48.1	19.7

Substance use is presented as 'weekly or frequent' during the 1-year period.

Source: Hubbard *et al.*¹⁹¹

In the UK, NTORS has examined outcomes after discharge from 8 inpatient units and 16 residential rehabilitation programmes. Table 24 shows the one-year follow-up results.

Table 24: Outcomes at one-year follow-up (residential clients in NTORS).

Drug use measure	Intake	One-year follow-up
Heroin	74.5%	49.5%
Other opiates	78.2%	50.5%
Crack cocaine	36.7%	18.2%
Other stimulants	70.5%	32.4%
Benzodiazepines	56.7%	28.4%
Alcohol*	33.1%	18.9%
Injecting	60.7%	32.7%
Sharing injecting equipment	18.9%	6.9%

Data based on follow-up with 275 clients. Measures are rates in the 90 days before interview.

* Refers to drinking above the recommended weekly limits.

Source: Gossop *et al.*²¹⁰

Cost-effectiveness of treatment for drug misuse

Quality of evidence: II-2 (C)

Economic evaluations examine the resources required to provide treatment and assess the resulting benefits. A central question posed by many economic evaluations is whether the treatment or treatment system studied is an efficient use of resources.²¹² Outcomes relevant to health economics in the field of drug misuse are usually conceptualised as a change in desired, positive behaviour.²¹³ Several cost-effectiveness studies, mostly in the USA, have looked at the outcomes of treatment achieved for specific costs. It is important to differentiate two other kinds of economic study: cost-benefit and cost offset. The former yields measures of benefit in units of monetary return. The latter usually involves the estimation of whether the costs of a drug misuser's treatment are offset by reductions in expenditure in other health care services or in reduced victim costs because of lower involvement with crime.²¹⁴

Almost all studies that have examined changes in crime (largely acquisitive or property oriented) during and after an index treatment episode have shown a reduction in victim costs to individuals, retailers and insurers.²¹⁵ For example, the US TOPS study included two summary cost measures (costs to victims and cost to society) and found that in most instances the ratio of benefits to costs was quite substantial (*see* Table 25).

Table 25: Ratio of benefits to costs of treatment (TOPS).

Impact category	Outpatient methadone	Residential	Outpatient drug-free
Costs to victims*	4.04	3.84	1.28
Costs to society†	0.92	2.1	4.28

* Comprises a total estimate of costs to victims of crime and costs borne by the criminal justice system.

† Includes estimates of costs of crime career and productivity (legitimate earnings).

Source: Hubbard *et al.*³¹

Also as part of DATOS, Flynn and colleagues have reported on the costs and reduced crime-related benefits of long-term residential rehabilitation and outpatient drug-free treatments for cocaine dependence.²¹⁶ Follow-up interviews with 300 residential clients and 202 outpatient drug-free clients a year after departure indicated that the combined during-treatment and after-treatment benefit-to-cost ratios ranged from 1.68 to 2.73 for residential treatment, and from 1.33 to 3.26 for outpatient drug-free treatment (according to the degree of conservatism used for the benefit estimates employed).

In the UK, basic economic analyses from NTORS have focused on the overall costs of providing treatment in relation to the costs due to crime within the cohort. Around £1.4 million was spent in the year before intake on those clients who were followed up at one year. During this time the cost of providing drug treatments for these clients was approximately £3 million.¹³⁹ Reductions in criminal behaviour at one year represented cost savings of around £5.2 million to victims and the criminal justice system, leading to the conclusion that for every extra £1 spent on treatment there is a return of more than £3 in terms of costs savings to victims and the criminal justice system. It is worth considering that, for drug misusers who also have multiple social and mental health problems, comprehensive (and higher-cost) interventions are likely to be more effective than more basic lower-cost interventions.²¹⁷

Critical issues in treatment effectiveness

Research has identified several general mediating and moderating influences on the impact of treatment. An issue current in both the USA and the UK concerns the importance of retention in treatment and completion of programmes that have a predetermined duration. In TOPS and DATOS, clients who stay in outpatient drug-free treatment and residential programmes for at least six months have better post-departure outcomes than do those clients who stay below this threshold.^{218,219} Also, clients who stay for one year or more in outpatient methadone treatment have substantially better outcomes than clients who leave before this point. In NTORS, the planned duration of the residential services studied varied considerably, but three general categories of programmes were identified: hospital inpatient programmes (2–5 weeks), shorter-term rehabilitation programmes (6–12 weeks) and longer-term rehabilitation

programmes (13–52 weeks).²¹⁸ The median number of days spent in treatment in these programmes by the clients in the study was 15 (inpatient), 42 (short-term rehabilitation) and 70 (longer-term rehabilitation). Critical times in treatment, which were associated with the highest levels of abstinence for opiate use at one-year follow-up, were 28 days for inpatient and shorter-stay and 90 days for longer-term programmes. The percentages of clients staying for these critical times were as follows: 20% in inpatient programmes, 64% in shorter-term rehabilitation programmes and 40% in longer-term rehabilitation programmes.

Important advances have also been made in understanding what happens during a client's stay in a treatment programme for drug misuse. Assessing the extent to which clients are ready and motivated to make changes in their substance-use behaviours is another important issue. For example, analyses from the DATOS data sets have shown that treatment readiness is related to retention and early therapeutic engagement for clients entering long-term residential treatment or outpatient methadone and drug-free treatments.²¹⁸ Other work has combined several factors, including the client's degree of engagement in the programme and the extent of positive therapeutic working relationships established with programme staff.^{220,221} For example, Joe and colleagues have shown that therapeutic involvement (measured by rapport between client and counsellor, and clients' ratings of their commitment to treatment and its perceived effectiveness) together with counselling-session attributes (measured by the number of sessions attended and the number of health and other topics discussed) have a direct positive effect on retention in outpatient drug-free, long-term residential and outpatient methadone treatments.^{222,223} These findings are supported by several other valuable studies suggesting that those programme counsellors who possess strong interpersonal skills are also organised in their work, see their clients more frequently, refer clients to ancillary services as needed and generally establish a practical and therapeutic relationship with the client.^{224,225}

In terms of client attributes, the presence of psychiatric comorbidity in drug users entering treatment has been linked to poorer outcomes. Pretreatment psychiatric severity has been found to be predictive of outcome and this should be taken into account when selecting appropriate treatments.²²⁶ The importance of providing social inclusion and reintegration services, particularly in the first three months of treatment, has been advocated for community-based treatment services.²²⁰ However, the intensity or comprehensiveness of services *per se* is not consistently associated with improved outcome. The matrix of client attributes and treatment factors and processes has important implications for referral, assessment and client treatment–placement activities.

7 Quantified models of care

Following our discussion of the research evidence for effective treatment, we turn to quantifying the models of care for treating drug misuse. Given the broad range of health, social and economic harm associated with drug misuse, we advocate an integrated approach based on partnership with which to underpin the commissioning and delivery of services. We also see partnership arrangements as vital between agencies that span specialist drug-treatment services, general medical services, general practice, primary care trusts, social services, non-statutory agencies and criminal justice services. Most treatment services for drug misuse are funded through PCTs. The local authority Social Services departments make an important contribution through their funding of appropriate community care, residential treatment and aftercare support. However, there are generally few specialist professionals within the commissioning and purchasing authorities.

It is important for service planners to strive to ensure the availability of the full range of drug-related interventions, drug education, prevention and treatments (open-access services, counselling, prescribing,

detoxification, rehabilitation and aftercare). Meeting the needs of certain groups (e.g. young drug misusers or drug-misusing rough sleepers) may be undertaken efficiently through the sharing of existing resources across several local areas. Problems may arise if the four tiers are only partially covered in a local area – for example, if advice and information services are commissioned without access to specialist treatment services.

Contact and referral through the treatment tiers

In Figure 2 we present the elements of what we consider is a fully integrated treatment system. This system contains an array of mainly generic and predominantly specialist providers, together with agencies and services that may come into contact with drug users during the course of their work (e.g. voluntary agencies and telephone helplines). The latter services are important, since they can provide brief advice and referral for individuals into the treatment system as appropriate.

In the near future, the probation and police services are likely to make direct referrals and specific placements for drug misusers at an appropriate point in the tiered system. Generic and specialist providers are likely to make referrals to higher tiers as well as to lower ones according to the presenting or current needs of their case loads. To an extent, the unit costs of treatment services increase from Tier I up through Tier IV as access to each service moves from an open to a referral basis.

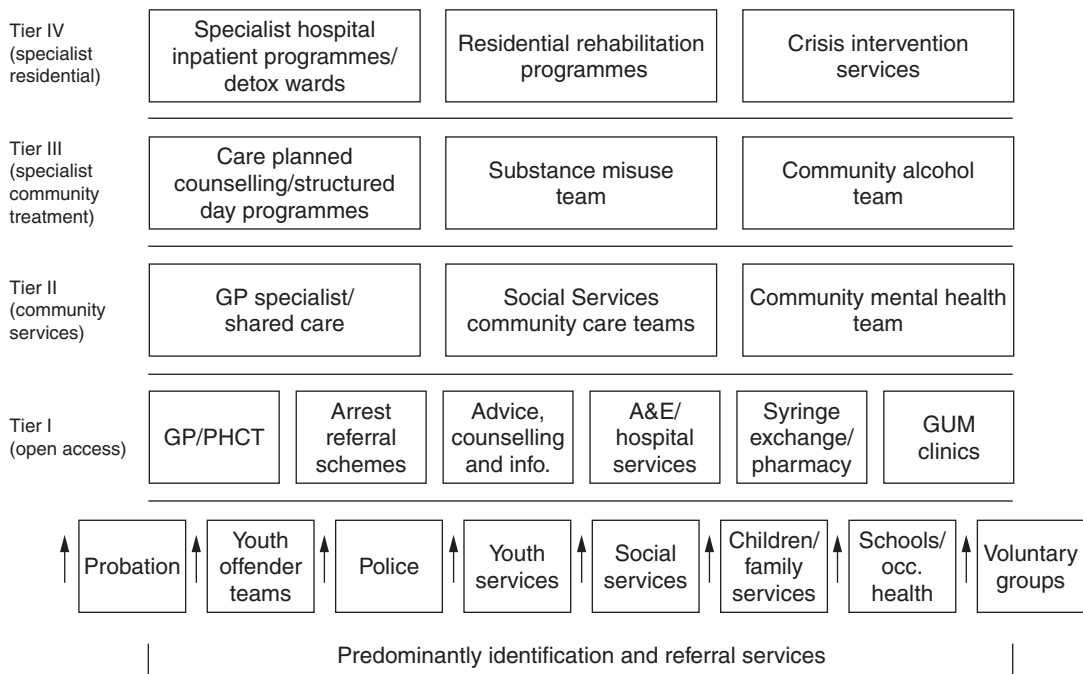


Figure 2: Tiered-care delivery system for treatment of drug misuse.

In this tiered system, all agencies have a role to play in staging a co-ordinated response. A person in need of treatment for drug misuse may present to any one of the predominantly identification and referral services shown at the bottom of the tiers. Assessment and appropriate placement of a client within the system are

crucial and will be influenced both by immediate need and by needs that emerge over time. We see the SMT as occupying a critical role at the hub of the treatment system. The SMT should serve important functions across client assessment, direct treatment provision, onward referral and community liaison, and should promote users' groups, professional and volunteer training and service development areas. The kinds of professional linkages for specific client needs initiated by an SMT in a locality are as follows:

- shared care management with the Community Alcohol Team in cases of significant alcohol-related problems
- referral to general hospitals in cases of significant physical illness
- liaison and referral to general psychiatric services in cases of drug misuse and psychiatric comorbidity
- liaison with other community service providers in the voluntary sector
- active participation in performance monitoring (in concert with the DAT)
- liaison with local criminal justice services (police, probation, courts and prisons).

The commissioning and organisation arrangements for services in the tiered system vary widely across and sometimes within the treatment systems in many countries. Additionally, special initiatives are required alongside targeted prevention and treatment interventions aimed at priority client groups. There is great variability in the scope and effectiveness of commissioning and purchasing arrangements for drug misuse services across the UK. There are no nationally agreed standards for single or joint commissioning and purchasing. Nor are there any universally agreed specifications for drug misuse treatment, although valuable work has been undertaken in recent years on guidelines from the DoH, together with clinical management, quality standards and audit guidelines.

Extent of contact for subgroups across treatment tiers

In this section, we apply the seven population-level subgroups identified earlier in the chapter to the four tiers of treatment. These can be combined into a matrix. Table 26 indicates the likely extent of required contact of each subgroup at each level of the tiered treatment system.

Table 26: Likely required level of contact with the treatment system by subgroups of drug misusers.

Subgroup	Treatment system tier			
	I	II	III	IV
A (drug misuser)	***	**	**	*
B (IDU)	***	***	***	**
C (dependent user)	*	**	***	***
D (intoxicated user)	***	*	**	*
E (user with comorbidity)	*	***	***	***
F (user in withdrawal)	*	*	***	***
G (user in recovery)	*	***	*	***

Likely extent of contact: * low; ** medium; *** high.

In this scheme, the non-dependent drug misuser (subgroup A) is likely to be helped effectively in the first instance by community treatment services within Tier I and as required by services in Tiers II and III. Residential treatment provision for this group should not be needed in most cases. The provision of risk and harm reduction services to the subgroup of injecting drug users is a priority for non-residential services across Tiers I to III. We have noted previously that most members of this group will also be drug dependent. The immediate health care needs of the intoxicated user are appropriately delivered by emergency services in Tier I, with expertise in overdose management likely to be available by agencies in Tier III. The subgroup of users with comorbidity is unlikely to be managed effectively by Tier I provision, at least initially. The user in withdrawal will require planned contact with specialists provided in Tiers III and IV who can support medically supervised withdrawal in either a community or a residential setting. Finally, support and treatment aftercare for the subgroup of users in recovery falls to residential providers in Tier IV and to community support and counselling services in Tier II.

Expansion of intervention models in the criminal justice system

The Government intends criminal justice referral and treatment systems to be developed as partnership arrangements, with the DAT serving a crucial role in co-ordinating the assessment of local need, the development of commissioning arrangements and the monitoring of treatment service delivery. To date, the specific subgroups of drug misusers who are eligible for treatment services via the criminal justice system have not been clearly described, but it is likely that in the first instance the primary subgroups will be adult dependent users and non-dependent misusers (particularly young offenders). There are multiple contact points in the system that are now intended to trigger both referral to assessment for drug misuse treatment and specific forms of intervention (*see* Table 27).

Table 27: Development of criminal justice referral systems and interventions.

Contact point/ stage	Intervention	Function
Arrest	Arrest Referral Schemes (ARS)	Police-commissioned proactive assessment and referral from arrest referral workers who are based at police-station custody suites or are on call to attend the station as required
Caution	Informal mechanism	Information based, concerning local services
Pre-sentence	Police, probation, court-initiated referrals (may be bail/probation conditions)	Designed to gather assessment information and prevent further offending prior to sentencing
Community sentence	Drug Treatment and Testing Orders (DTTOs) and other probation orders with a linked treatment condition	Designed to provide treatment according to need (prescribing, detoxification, counselling or support); degree of structure will vary
Custodial and post-sentence	Counselling Assessment Referral and Throughcare (CARAT)	The basic treatment framework to improve the assessment, advice, throughcare and support of drug-misusing prisoners; community aftercare via probation

The ARS have received £20 million in Challenge Fund support to assist their expansion, and are intended to target all arrested people regardless of offence. There is a major commitment by the police services in many areas to commission local ARS. Positive results have been obtained from local studies of ARS.²²⁷ These schemes are not uniform in their operation, ranging from information-only approaches to more contemporary, proactive models in which dedicated arrest referral workers act in close co-operation with the police, usually with direct access to detainees in custody suites.²²⁸ A major development in the structure of the treatment system is the Counselling Assessment Referral Advice and Throughcare (CARAT) initiatives within prison service areas. These have been funded by some £76 million of Government money and are intended to be a comprehensive approach to tackling the subgroups of users in withdrawal and users in recovery. Medically supervised detoxification is to be provided on an outpatient or inpatient basis within the prison setting, and there is a planned expansion of prison-based therapeutic communities for appropriate institutions and for suitable offenders.

The Government has also set about establishing Youth Offending Teams (YOTs) to work with young offenders throughout all stages of the youth justice process. The multi-disciplinary YOTs include representatives from education, social services, the police, probation service and health services. In addition to working with identified young offenders, these teams are designed to work with young people identified as being at risk of becoming involved in crime, including those who are regular truants. YOTs are tasked with reducing re-offending by young people aged 10–17 years and, through proactive primary prevention strategies, reducing the number of young people starting to offend. These objectives are to be fulfilled through the YOTs' direct work with young people and their co-ordination of the local crime reduction strategy. The multi-agency nature of YOTs is meant to ensure that a young offender gains access to the appropriate mix of welfare, educational and health services, and that strategic responses are fully co-ordinated.

The Crime and Disorder Act 1998 and the Youth Justice and Criminal Evidence Act 1999 introduced new powers to tackle social disorder and youth offending. In relation to substance use, the most relevant orders are the final warning scheme, the action plan order and the referral order. All these are designed to compel young offenders to take part in interventions designed by the YOT to address issues such as substance misuse. Offenders can be ordered to attend a substance misuse programme and their involvement in it will be monitored for compliance and completion. The new orders have been piloted in selected areas, with the final warning scheme and action plan orders expected to be fully implemented by 2001 and referral orders in 2002–03.

There is a YOT in every local authority in England and Wales. Some are still finalising staff recruitment, and have yet to establish protocols for working with clients and local support agencies. After much revision, the YOT assessment tool ASSET has been finalised and contains a section on substance use. Some YOTs recruit a dedicated drugs worker to the team, but the majority do not. In some cases, the health post on a YOT is split between a health specialist and a drugs worker. YOTs should become key agencies in screening for and responding to needs related to substance use amongst young offenders. However, a number of crucial factors could compromise the effectiveness of YOTs in reducing substance misuse in their clients.

- If a client reports illegal drug use, YOT workers may be required to report this to the police as they would any other criminal offence.
- While a YOT is required to have a health specialist, the person recruited does not necessarily have to have experience of working with young people in relation to substance use, or of assessing needs related to substance use.
- When a YOT does identify a need related to substance misuse, in many areas there will not be adequate and appropriate service provision available locally to respond to this.²²⁹

Meeting the needs of priority groups

In this section, we offer recommendations for strategies that aim to meet the needs for treatment of drug misuse in the three priority groups described earlier in the chapter: young people, people with comorbidity and homeless people. We also summarise guidance on the treatment needs of drug misusers from minority ethnic groups.

Young people

There has been no systematic national audit of the needs for treatment of drug misuse in young people. Nevertheless, substantial advances have been made in conceptualising the efficient and appropriate delivery of services for young people, and there are a small number of dedicated specialist services.²³⁰ Based on recommendations from the Substance Misuse Advisory Service (SMAS)³ and quality standards developed by Alcohol Concern and the Standing Conference on Drug Abuse (SCODA),⁴ and with additional guidance from SCODA and the Children's Legal Centre,²³¹ commissioners should, through the DAT, develop a child-centred commissioning strategy in consultation with relevant departments (e.g. education, children's services and housing). This should ensure that:

- there is a balance between education, prevention, care and treatment services for this group
- appropriate treatment services are integrated with other services rather than being provided opportunistically
- appropriate assessment procedures are developed and adhered to
- there are clear service agreements for child-centred services
- access can be provided to specialist services, including child-centred specialist addiction services, certain components of child and adolescent mental health services and other specialist youth services and youth offender teams
- access can be arranged for children and adolescents to specialised clinics, secure facilities and aftercare and rehabilitation services for young people who have serious difficulties.

The Health Advisory Service²³² has described a tier-based structure designed to clarify arrangements and services for young people, ranging from education through to intensive treatment for acute cases. This is shown in Appendix IV. The Health Advisory Service recommends that services for young people with drug and alcohol problems should be (i) comprehensive (in order to meet a wide range of needs), (ii) competent (requiring a multi-disciplinary team structure) and (iii) child-specific (involving provision that is separate from adult services).²³³

People with drug misuse and psychiatric comorbidity

There is a growing recognition of the importance of understanding the links between substance-use behaviours and psychiatric disorders, and the implications for treatment services.²³⁴ SMAS recommends that there should be:

- clear arrangements for giving specialist care to people with both drug misuse and psychiatric comorbidity
- specialist services to screen and provide brief interventions for anxiety and mood disorder in drug-misuse clients
- efficient referral arrangements in place to manage severe cases of comorbidity
- a comprehensive risk assessment, including a full and comprehensive history of drug and alcohol use and its relationship to episodes of violence

- provision for people with severe mental illness and drug misuse to be treated under the Care Programme Approach (CPA) with a named key worker. Those with complex needs should be managed under a high-intensity CPA regime, with regular meetings of involved professionals, patients and carers.

It may also be valuable to conduct as thorough a psychiatric assessment as is practicable in the context of routine clinical practice. Such an assessment should attempt to trace the histories of substance-use disorders and psychiatric disorders and gauge their interaction and dynamics.²³⁵ Overall, there is currently no accepted model of service provision for people with drug misuse and psychiatric comorbidity, but work is accelerating on its development. Informal linkages are being established in some areas between community mental health teams (CMHTs) and SMTs, but little is known about the extent to which these arrangements are efficient or sustainable. In terms of more formalised arrangements, at least three non-independent service models can be identified:

- the creation of a specialist dual-diagnosis community team
- specific training input on drug misuse to members of CMHTs
- the appointment of special link or liaison staff to work in both SMTs and CMHTs/PHCTs.

There are no concrete examples to indicate whether one model has clear advantages over the others, but information from DoH-funded pilot services and reviews in this area should provide guidance.

Homeless people

The Rough Sleepers Unit's strategy on rough sleeping advocates a social inclusion approach that targets work in areas with the highest concentration of the problem (e.g. central London). It calls for specific outreach work by Contact and Assessment Teams to assess the needs of people sleeping rough and then to facilitate referral to housing, support and specialist substance-misuse services as required.²³⁶ Specific work will include:

- support to accommodation providers by specialist agencies on care management
- development of specific needs assessment protocols for this group
- development of care management arrangements
- referral and shared-care arrangements between housing agencies and providers of community treatment
- training for homelessness outreach teams on the assessment of drug misuse
- referral of rough sleepers to stable accommodation, and the provision of treatment and support as required.

People from minority ethnic groups

A critical issue is that of attracting drug misusers from minority ethnic groups into culturally appropriate services. Mainstream services must be supported to ensure that provision is appropriate to clients' needs and is culturally and racially appropriate. Services should strive to avoid simplistic views of minority ethnic communities and should develop ways of addressing their needs. Commissioners are strongly encouraged to promote racial equality and to try to counter the perception of some minority ethnic drug misusers that existing drug misuse services largely serve white people.²³⁷ The importance of individual assessment for determining treatment needs remains a central concern. SMAS notes that commissioners should ensure that:

- all treatment and care takes into account the very real diversity of the general population

- minority ethnic drug misusers have equitable access to treatment and care
- there are race-specific services where appropriate.

In London, the City University's Race and Drugs Project offers the following recommendations to service providers:²³⁸

- develop anti-discriminatory policies, action plans and evaluation systems for anti-discriminatory monitoring
- increase the number of employees from minority ethnic groups
- improve community outreach, liaison and networking
- ensure that individual assessment processes are in accordance with an anti-discriminatory policy and are culturally sensitive.

8 Outcome measures

This section addresses important issues about measuring performance, outcome and quality across treatment systems and individual programmes. The establishment of a monitoring culture for service performance is an explicit goal of the national drug misuse strategy. The Government has set the following medium- and long-term targets for the nation:

To increase the participation of problem drug misusers, including prisoners in drug treatment programmes which have a positive impact on health and crime, by 100% by 2008, and by 66% by 2005.

There is now an increasing expectation, and a requirement from the Government, that commissioners, DATs and treatment services should be subject to monitoring against national objectives. The short-term targets for commissioners and DATs in the areas of criminal justice, young people, professional issues, treatment services and drug-related deaths are shown in Table 28.

Table 28: National performance targets for tackling drug misuse.

Area	Targets to be met by the end of 2002
Criminal justice	30 new prison-based treatment services (with a throughput of 5,000 cases per year) To ensure that the CARAT annual case load reaches 20,000
Young people	To strongly encourage all schools to adopt DoFEE guidance on drug education and to deliver integrated education programmes on drug issues
Professional issues	To have in place National Occupational Standards for specialist drug and alcohol workers
Treatment	To ensure that all treatment programmes accord with nationally accepted quality standards
Drug-related deaths	To establish a baseline of drug-related deaths (by the end of 2001) To have prepared a plan of action to reduce drug-related deaths from the baseline

Performance and outcome monitoring

Commissioners and purchasers are increasingly motivated to direct resources to treatment services that have research evidence for their effectiveness.^{239,240} There is a growing expectation that services will participate in data-collection initiatives to assess the impact of their services or will implement their own evaluations. In the USA, the value of monitoring treatment outcomes has been promoted and several major initiatives have been developed.^{241–243} Although there is recognition of the importance of assessing the progress of individual client outcomes in the UK, work in this area has been relatively modest. In its comprehensive review of the research evidence for drug misuse treatment, the DoH established a framework of key treatment outcomes (*see* Appendix V).

Assessing outcome

The most logical and practical means of assessing treatment outcome is to gather a set of measures from a client at intake to a programme (baseline) and then collect the same measures again at one or more points during and ideally following treatment. In this way, outcome monitoring is conceptualised as reassessment and can be incorporated into routine clinical practice. We regard it as essential that outcome assessments must involve an active appraisal of the client through a face-to-face or telephone interview or by the client completing a self-assessment questionnaire. Other methods, such as estimating outcome from case notes, are unlikely to be valid and are not recommended.

Most of the variables suitable for repeated assessment will be continuous or scale measures, which are sensitive to assessing change over time. A satisfactory assessment of outcome requires status measures to be recorded at intake, at treatment completion and at follow-up. Choice of a suitable outcome questionnaire should be guided by the following principles.

- It should be relevant to the target population and treatment programme.
- It should be relevant to the drugs strategy and capable of direct reporting against national targets and priorities.
- It should be suitable for face-to-face interviewing with a client or for self-completion by the client.
- The instrument must have established psychometric properties (validity and reliability).
- The measures must be sensitive to change over time.
- Ideally, the administration time should be brief.
- The client and other non-professional audiences should be able to understand scores and reports immediately.

Measures designed to assess a broad range of outcomes have been developed in the USA (e.g. the Addiction Severity Index or ASI²⁴⁴) and Australia (the Opiate Treatment Index or OTI²⁴⁵). A brief, validated research instrument for multi-dimensional treatment outcome, the Maudsley Addiction Profile (MAP), has been developed in the UK¹⁷² and validated in three countries in continental Europe.²⁴⁶ The MAP requires less than 15 minutes to complete. Its structure is summarised in Table 29.

The MAP has now been taken up and adapted for outcome-monitoring purposes in several DAT areas, following development work in East Sussex and Kent. Core MAP items have also been included in the CARAT assessment form and in Arrest Referral monitoring forms in London.

Table 29: Structure of the Maudsley Addiction Profile (MAP).

Domain	Outcome measure (previous 30 days)
Operational information	Programme setting; client demographics; case identifiers; referral information
Substance use	Number of days used opioids, cocaine, amphetamines, illicit benzodiazepines, alcohol Typical amount consumed on a using day Main route(s) of administration
Health-risk behaviour	Days injected Typical times injected per day Times sharing needles or syringes Number of partners (non-condom sex) Times had sex without using condoms
Health symptoms	Frequency of physical symptoms Frequency of psychological symptoms
Personal/social functioning	Days of contact/conflict with partner, relative, friends Days had paid job Days missed (sickness/unauthorised) Days unemployed Days committed illegal activities Times committed crime (on a typical crime day)

Commissioning standards and quality

The Substance Misuse Advisory Service³ recommends that commissioners ensure that:

- there is a clear definition of the characteristics of the client groups of drug misusers served across the region and that new groups are defined as encountered
- a set of output and outcome measures is used to monitor the service
- the service will complete and return the DMD forms
- output and outcome monitoring reports will be provided to the managing body and service commissioners as specified within the contract
- output and outcome monitoring information is used to inform strategic/business planning processes and the policies and practices of the region.

For service providers, the Quality in Alcohol and Drugs Services (QuADS) initiative supports these recommendations and also promotes the following service quality standards:⁴

- well-publicised service users' rights, confidentiality and complaints statements and procedures, which are subject to periodic monitoring and review
- a written policy on equal opportunities and anti-discrimination practices, spanning staff, volunteers and service users.

QuADS also encourages the routine gathering of information about clients' satisfaction with treatment services, as a valuable adjunct to the collection of primary outcome measures described above. Several instruments have been developed for measuring treatment satisfaction in the general mental health service arena. The most notable is the Client Satisfaction Questionnaire (CSQ), which has been developed in

several forms and is widely used in health services research.^{247,248} In contrast to the situation in the general mental health field, there is a rather sparse literature on client-treatment satisfaction issues within the arena of substance-use treatment. Outcome research from the USA, which has administered the CSQ and other instruments, has reported high levels of service satisfaction by clients in methadone maintenance, therapeutic community and outpatient drug-free programmes.²⁴⁹ However, the usefulness of traditional satisfaction ratings derived from drug-misuse treatment populations is not clear. For example, Chan and colleagues observed that pre-treatment problem severity and duration of the index treatment assessed were positively correlated with treatment satisfaction.²⁵⁰ Only modest associations were observed between satisfaction, length of treatment and favourable outcome in a methadone maintenance outcome study.²⁵¹ In the UK, many treatment providers have undertaken satisfaction surveys of their clients as part of audit and quality assurance initiatives. Table 30 summarises the structure of the Treatment Perceptions Questionnaire (TPQ), a treatment satisfaction instrument recently developed in the UK with the drug misuse treatment population in mind.²⁵²

Table 30: Structure of the Treatment Perceptions Questionnaire (TPQ).

Please indicate the extent to which you agree or disagree with the following statements*

The staff have not always understood the kind of help I want.
 The staff and I have had different ideas about my treatment objectives.
 There has always been a member of staff available when I have wanted to talk.
 The staff have helped to motivate me to sort out my problems.
 I think the staff have been good at their jobs.
 I have been well informed about decisions made about my treatment.
 I have received the help that I was looking for.
 I have not liked all of the counselling sessions I have attended.
 I have not had enough time to sort out my problems.
 I have not liked some of the treatment rules or regulations.

* Responses are invited using a five-point scale from strongly agree to strongly disagree.

Source: Marsden *et al.*²⁵³

The 1994 Task Force recommended a framework for monitoring treatment outputs and key outcomes for service contract monitoring by commissioners. This appears in Appendix VI.

9 Information and research requirements

In this section, we outline our perception of the current information needs and research and development priorities in the field of drug-misuse treatment. In spite of advances in knowledge about the effectiveness of existing services in the UK, there are gaps in knowledge in many important areas.

HBV and HCV

There is an urgent need for more research on the prevalence of HCV and its course amongst IDUs and other drug users who are infected. To date, many studies of HCV have recruited older cohorts of injectors

who began injecting before or during the introduction of harm-reduction measures in their respective countries. Studies of incidence have also been hampered by small sample sizes, or by large proportions of older injectors already being infected at baseline.

Capacity and human resource issues

The field of drug-misuse treatment is undergoing rapid change, particularly because of the size of new funding streams into criminal justice for the development of ARS, DTTOs and CARAT initiatives. Periodic monitoring of existing services and new treatment programmes is required to inform commissioners of their capacity. Waiting lists and times, staff recruitment issues and organisational responses to changes in demand will all be critical indicators of the health of the treatment system for drug misuse over the next five years. In several places in this chapter we have stressed the importance of staff training to ensure that services can adapt to meet the needs of priority care groups. Commissioners should ensure that all services are able to maintain reasonable training budgets within their contract specification, and shared training initiatives and resources should be developed and sustained.

Information systems

DMDs have made good progress towards meeting national and regional information needs, but there is little knowledge about how such data are used in practice by commissioners and treatment providers. Commissioners should be able to look at the nature of the clients referred to a particular agency, as well as at the number and characteristics of cases across the PCT and/or DAT area. It should also be possible for the PCT to compare the characteristics and numbers of drug takers in contact with services in their area with data available from adjacent PCTs or from the region as a whole. The current review of the system will see the DMDs incorporate an annual re-reporting component that will enable both the incidence and prevalence of clients treated for problem drug use to be known. It will then be possible to produce estimates of the number of people seeking or receiving treatment at any one time.

Greater use also needs to be made of the DMD databases to inform the commissioning process, and in particular to develop purchasing intentions, service agreements and specifications. The strategic review of the DMD by the Department of Health has recognised the importance of outcome monitoring and is committed to facilitate the expansion of efforts to monitor outcomes. The further development of the DMD and outcome monitoring must be done in complementary ways to ensure that the reporting requirements are not compromised and that the reporting burden on service providers and their clients is kept to a minimum.

Measures of effectiveness

There has been some progress in developing measures of treatment outcome for the population of drug misusers. The principle behind existing measures is to gauge treatment benefit in terms of a reduction of key problems. As a complement to these core measures, the following areas need to be developed:

- improved and more sensitive measures of progress in treatment
- protocols and measures to assess needs for priority groups.

Researchers into treatment outcome are increasingly encouraged to incorporate economic assessments into evaluations of drug misuse services. Standard measures of economic effectiveness (e.g. adjusted

life-years gained) have not been devised with the drug-misusing population in mind, and there is a pressing need for health economists and specialists in drug-misuse evaluation to develop suitable indicators.

New interventions

Some public health interventions (e.g. HBV vaccination) are relatively simple procedures that can be undertaken on a large scale. However, health commissioners require increasingly specialised and focused interventions for priority health resource groups. There is a real danger that political imperatives to reach new client groups (e.g. the homeless and young people) are not being followed up by research and development activities to define precisely the needs of these groups and the treatments from which they are likely to benefit. For young people, research has identified stimulant use as a key problem, and research and intervention studies are now required to assess ways of tackling this emerging need.²⁵⁴ Systematic individual-level research on treatment needs should be commissioned to inform the development of new interventions. These interventions should be developed as treatment manuals that describe the nature, intensity and duration of treatment for the priority group, the content of treatment sessions and their measurable goals.

Evaluation studies

Good-quality research on treatment and treatment outcomes is critical in order to inform the orientation and operation of treatment services. There is almost universal admiration in the NHS for the use of the randomised controlled trial (RCT) design for the evaluation of health care treatments. Particularly in the case of new treatments, where a controlled research design is usually feasible, and assuming the trial is well conducted, the results obtained have high internal reliability and great authority. However, an RCT may have poor external validity when used to evaluate existing treatments where there is no compelling evidence one way or the other that they are unsatisfactory. Nevertheless, the RCT should be considered as the design of first choice for new treatments or for treatments for specific groups. Where experimental studies of the standard vs. an enhanced or new treatment are conducted, the potential for subgroup responses (client, treatment interactions) must be considered thoroughly before the trial begins. We also consider it is essential that the implications for clinical practice be considered in advance. Further, observational studies are required to examine the operation of the treatment system itself. For example, we know very little about how rehabilitation and aftercare processes operate after a period of health care treatment has been completed. The evolving treatment and support needs of drug misusers should be studied systematically and this information needs to be used to cement inter-agency partnerships.

Developing methodologies for assessing needs

DATs and commissioners are actively encouraged to undertake comprehensive needs assessments in the area of drug misuse with a specific target of assessing the needs of young people. However, there have been few systematic quantitative and qualitative studies conducted in the drug misuse field in the UK. In fact, most studies in the mental health service field have been mainly or exclusively qualitative, relying on discussion material from focus groups.²⁵⁵ To date, synthetic estimation and normative models (and other more sophisticated methods) have not been widely used. There is great variability in the extent of the population needs assessment work that has been conducted to date, but it is fair to say that, in general, service commissioning has not followed detailed data-based needs assessment. Assessment in the drug

misuse field in the UK remains under-developed and should be tackled as a research and development priority. Concern has also been expressed that the provision of residential rehabilitation treatment has often been determined largely on the basis of available resources rather than of identified client needs.²⁵⁶

Service commissioners should follow a sequence of steps to inform the needs assessment for their population. The overarching goal is to produce a strategic commissioning framework that can be agreed across the five funding agencies: PCT, LA and the three criminal justice partners (police, probation and prison services). We must stress that this is an evolving area and that there are currently no examples of thorough needs assessment studies to guide current practice. For a focused review of the steps that can be followed when conducting a needs assessment for drug misuse, *see* Rawaf and Marshall.²⁵⁷

The usual steps when conducting a needs assessment are as follows:

- the allocation of resources and establishment of an agreed plan and set of methods
- a prevalence estimation of the target population, and identification and profiling of subgroups
- the mapping of treatment services provided in the locality, and an audit of treatment purchasing from services located outside the geographical boundary of the DAT (e.g. Social Services purchasing of residential rehabilitation) to determine the extent to which demand is being met elsewhere
- an audit of the demand profile of treatment services (capacity, number of episodes and estimated number in need)
- personal interviews with key informants across commissioning, provision and advocacy sectors
- focus group discussions with key stakeholders (commissioners, clinicians, DRG members, treatment providers and service users) to explore what they want from services
- a 'gaps' analysis of the current and desired profiles of service provision (often a qualitative exercise involving the estimation of the desired range of services to increase coverage for specific special groups)
- recommendations for increasing treatment coverage, purchasing efficiency and service effectiveness based on available evidence
- an assessment of reactions to recommendations from strategists, commissioners, purchasers, service providers and service users
- the development of an implementation plan based on the identification of activities, resources and timetables.

Appraisal of the health care needs of the target populations and commissioning of strategic service responses should be flexible and should adapt to changing circumstances in each locality. These may include:

- variations and new trends in drug use and consumption patterns
- the geographical distribution and concentration of drug use
- variations in demand for services
- the changing relationship between drug use and other conditions (notably HIV infection and blood-borne viral hepatitis)
- changing policy in response to drug strategy
- changes in organisation of health services
- monitoring the evidence base for current and new treatment services.

Needs-assessment activities are potentially costly. Intensive surveys of the resident population in most DAT areas will be time-consuming and expensive. It is quite likely that most DATs will wish to employ alternative (and less precise) estimation methods with which to inform the direction and success of commissioning strategies. A qualitative approach to needs assessment can be undertaken relatively quickly and can answer important questions about what commissioners, purchasers, service providers and service users want from treatment services and supports.

Service-user satisfaction surveys may be a useful means of gathering information about the extent to which a programme is perceived to have met an individual's treatment wants and needs. A range of issues has been examined, including the accessibility, adequacy, content and impact of services received. In addition to serving a simple monitoring function for treatment-service providers and their funders, treatment satisfaction is argued to be a valuable indicator of treatment experience. Treatment satisfaction can act as a moderator of treatment outcome, since it is reasonable to assume that less satisfied clients may leave treatment prematurely or have different responses to interventions.²⁵⁸ As a method of gaining rapid intelligence about a particular local problem, action research approaches called Rapid Assessment and Response (RAR) methods have also been promoted as an efficient and economic methodology for assessing need.²⁵⁹ In terms of quantitative methods for such assessment, two realistic methodologies are available (but *see* Dewitt and Rush²⁶⁰ for a general description and discussion of the strengths and weaknesses of various procedures).

10 Conclusions

This chapter has used an epidemiological framework to address the treatment needs of people with psychoactive substance use problems. Diverse material has been used to encourage and help DAT personnel and other relevant agencies to consider the coverage and effectiveness of local treatment strategies, to identify unmet needs for treatment and to develop more efficient and effective health and social care responses. The key point is that the population of drug misusers in the UK is heterogeneous with respect to the types of drugs used, the risks and harm experienced and the types of treatment services required. Drug misuse is associated with a wide range of personal, social and economic problems. A ten-year Government strategy has been established to co-ordinate and integrate the work of Government departments where this impinges on drugs issues. There continues to be a strong emphasis on local determination of the precise focus and structure of plans in different areas under the direction of Drug Action Teams. There is growing evidence for the effectiveness of standard forms of treatment currently available, but less is known about the effective means of helping particular priority client groups. An effective treatment system tailored to the needs of the local population is based on principles of strategic alliance and partnership. Further work is required to extend and improve information, performance and outcome monitoring systems, and to use more sophisticated methodologies for assessing needs in order to guide strategic and service development.

Appendix I: Classification of substance-related disorders

The *International Classification of Diseases*, Tenth Revision (ICD-10), (World Health Organization, 1992, 1993) provides the following classification of substance-related disorders.

Table A1: Classification of drug misuse in ICD-10.

F10	Alcohol
F11	Opioids
F12	Cannabinoids
F13	Sedatives or hypnotics
F14	Cocaine
F15	Other stimulants, including caffeine
F16	Hallucinogens
F17	Tobacco
F18	Volatile solvents
F19	Multiple drug use and use of other psychoactive substances

The following four- and five-character codes are used to specify specific clinical conditions:

F1x.0	Acute intoxication
	.00 Uncomplicated
	.01 With trauma or other bodily injury
	.02 With other medical complications
	.03 With delirium
	.04 With perceptual distortions
	.05 With coma
	.06 With convulsions
	.07 Pathological intoxication
F1x.1	Harmful use
F1x.2	Dependence syndrome
	.20 Currently abstinent
	.21 Currently abstinent, but in a protected environment
	.22 Currently on a clinically supervised maintenance or replacement regime [controlled dependence]
	.23 Currently abstinent, but receiving treatment with aversive or blocking drugs
	.24 Currently using the substance [active dependence]
	.25 Continuous use
	.26 Episodic use [dipsomania]
F1x.3	Withdrawal state
	.30 Uncomplicated
	.31 With convulsions
F1x.4	Withdrawal state with delirium
	.40 Without convulsions
	.41 With convulsions
F1x.5	Psychotic disorder
	.50 Schizophrenia-like
	.51 Predominantly delusional
	.52 Predominantly hallucinatory
	.53 Predominantly polymorphic
	.54 Predominantly depressive symptoms
	.55 Predominantly manic symptoms
	.56 Mixed

F1x.6	Amnesic syndrome
F1x.7	Residual and late-onset psychotic disorder
	.70 Flashbacks
	.71 Personality or behaviour disorder
	.72 Residual or affective disorder
	.73 Dementia
	.74 Other persisting cognitive impairment
	.75 Late-onset psychotic disorder
F1x.8	Other mental and behavioural disorders
F1x.9	Unspecified mental and behavioural disorder

Appendix II: ICD-10 and DSM-IV dependence criteria

Under ICD, dependence for a specific substance is diagnosed if three or more of the following criteria have been seen (e.g. in the previous 12 months):

Table A2: Psychoactive dependence criteria in ICD-10.

1	A strong desire or compulsion to use
2	Difficulty in controlling use
3	(a) Experience of a physiological withdrawal state; or (b) Use of same or similar substance to relieve or avoid withdrawal symptoms; or consumption of increased doses to achieve desired effects
5	(a) Progressive neglect of alternative pleasures or interests; or (b) Increased amounts of time taken to obtain, use or recover from substance effects
6	Continued use despite evidence of harmful consequences

Source: Adapted from World Health Organization.⁷²

DSM-IV uses the following criteria for diagnosing abuse and dependence for recent patterns of use (e.g. previous 12 months) for each screened substance:

Table A3: Psychoactive dependence criteria in DSM-IV.

Abuse (defined by scoring 1 or more on items 1–4)

- | | |
|---|--|
| 1 | Use leading to neglect of personal, social or occupational roles |
| 2 | Use in an unsafe or dangerous situation |
| 3 | Use leading to repeated problems with the law |
| 4 | Continued use despite relationship, domestic, occupation or educational problems |

Dependence (defined as scoring 3 or more on items 5–10)

- | | |
|----|---|
| 5 | (a) Need to use increased amount to achieve desired effect; or
(b) Experience of lowered effect from continued use |
| 6 | (a) Feeling sick or unwell when drug effects have worn off; or
(b) Use of substance or similar to relieve or avoid withdrawal symptoms |
| 7 | Use in larger amounts or for a longer time than intended |
| 8 | A persistent desire to use or problems trying to control or cut down use |
| 9 | Large amounts of time spent either getting or using or recovering from effects |
| 10 | Use leading to quitting, reducing or having problems in domestic, occupational, educational or social roles |
-

Source: Adapted from American Psychiatric Association.⁷³

Appendix III: Clinical features of opioid and cocaine disorders

Opioid disorders

The opioid substances include both natural products (e.g. morphine) derived from the poppy (*Papaver somniferum*), semi-synthetic substances (e.g. diamorphine) and synthetic products (e.g. methadone and dihydrocodeine). Illicit heroin is the most commonly used. Heroin is a powerful, relatively short-acting analgesic, and heroin powder is prepared for consumption either through inhalation or insufflation (sniffing into the nose), or by intravenous or intramuscular injection routes. The clinical features of opioid intoxication (which are largely determined by dose levels, route of administration and tolerance) may include:

- initial euphoria
- increased well-being and diminished anxiety
- drowsiness and dysphoric mood
- pupillary constriction
- in acute intoxication (overdose), pupillary dilation due to anoxia
- slurred speech and impairment in attention.

Opioid dependence (ICD-10 code, F11.2; DSM-IV code, 304.00) is defined under DSM in the following manner. Most individuals with opioid dependence have significant levels of tolerance and will experience withdrawal on abrupt discontinuation of opioid substances. Opioid dependence includes signs and symptoms that reflect compulsive, prolonged self-administration of opioid substances. Clinical features may include:

- a subjective awareness of compulsion to use
- a diminished capacity to control use
- salience of drug-seeking behaviour.

People who misuse opioids, but are not dependent, are likely to represent a small segment of the opioid-using population and will tend to use heroin infrequently. The usual clinical features of opioid withdrawal that follow abrupt cessation of use in someone who has used the drug on a heavy and prolonged basis (or are precipitated by the administration of an opioid antagonist such as naloxone) are as follows:

- dysphoric mood and distress
- yawning
- nausea and vomiting
- diarrhoea
- muscle aches
- insomnia.

The speed of onset of these symptoms is usually between 6–12 hours for heroin, reaching peak intensity between 48–72 hours and then diminishing over a period from 5–7 days. The time-course for methadone is considered to be more protracted, with a slower onset but longer duration of the withdrawal syndrome.

Cocaine disorders

Cocaine is a psychostimulant (benzoylmethylecgonine) extracted from the leaves of the plant *Erythroxylon coca*. In the UK, two illicit cocaine products are available: cocaine hydrochloride (a white crystalline salt usually containing other local anaesthetics and/or other bulk additives) and a whitish crystalline free-base form known as 'crack' or 'rock'. The effects of cocaine include elevated mood, increased alertness, and suppression of appetite and fatigue. It also has local anaesthetic and vasoconstrictive properties. The clinical features of cocaine intoxication (determined largely by dose, route of administration and tolerance) are quite complex and include:

- euphoria and increased confidence
- becoming talkative and mentally alert
- reduced appetite
- restlessness
- social withdrawal (with chronic administration).

The short-term physiological effects of cocaine include constricted blood vessels, dilated pupils, and increased temperature, heart rate and blood pressure. Large amounts (several hundred milligrams or more) may lead to bizarre, erratic and violent behaviour. Relatively short periods of problematic use may be encountered by non-dependent users (characterised by interpersonal conflicts, financial problems, tiredness and irritability) but usually ameliorate following cessation of cocaine use. On the other hand, cocaine dependence (ICD-10 code, F14.2; DSM-IV code, 304.20) is characterised by the following features:

- substantial impairment of the ability to control the amounts used
- high-dose, usually episodic consumption pattern
- increased anxiety and depression
- paranoid-type ideation (in some users)
- weight loss.

The existence of a defined withdrawal syndrome following termination of heavy and prolonged cocaine use has been somewhat controversial. No coherent syndrome is usually seen, and there are marked intra- and inter-individual variations in the type and severity of problems experienced. Some studies have reported no or few signs of cocaine withdrawal amongst clients receiving inpatient treatment, while other research has suggested a transient cluster of symptoms, including dysphoric mood, general depression and sleep disturbance. Diagnostic criteria for cocaine withdrawal include:

- dysphoric mood
- fatigue
- unpleasant dreams
- insomnia or hypersomnia
- increased appetite
- psychomotor retardation or agitation.

Appendix IV: Infrastructure of drug misuse services for young people

Table A4: Drug misuse services for young people.

Tier	Function	Relevant professionals/agencies
I	Education, information, screening/identification, referral	General youth workers, teachers, school nurses, social workers, health visitors and general practitioners
II	All Tier I functions, plus drug-related education, advice and counselling services	Youth workers, youth justice workers, educational psychologists, Accident and Emergency
III	Specialist drugs and health care services with complex need requiring multi-disciplinary team-based work	SMTs, local authority residential unit staff, child and adolescent health teams, youth offender teams
IV	Specialist and intensive treatment and support for young people with complex care needs	Specialist child and adolescent workers, forensic psychiatry and psychology services

Source: Health Advisory Service.¹²⁹

Appendix V: Domains and measures for treatment outcome

The original impetus toward establishing a minimal data set for outcomes was the framework used by the Department of Health's Task Force. This established a set of measures against which the outcomes of different services could be assessed across three key domains: drug use, physical and psychological health, and social context and life functioning.

Table A5: Domains and measures for treatment outcome.

Outcome domain	Measure
Drug use	1 Abstinence from drugs
	2 Near abstinence from drugs
	3 Reduction in the quantity of drugs consumed
	4 Abstinence from street drugs
	5 Reduced use of street drugs
	6 Change from injecting to oral route of administration
	7 Reduction in the frequency of injecting
Physical and psychological health	1 Improvement in physical health
	2 No deterioration in physical health
	3 Improvement in psychological health
	4 No deterioration in psychological health
	5 Reduction in sharing injecting equipment
	6 Reduction in sexual-risk behaviour
Social functioning and life context	1 Reduction in criminal activity
	2 Improvement in employment status
	3 Fewer working/school days missed
	4 Improved family relationships
	5 Improved personal relationships
	6 Domiciliary stability/improvement

Appendix VI: Performance indicators for drug misuse treatment

Guidance on a framework for determining performance measurement for drug misuse services has been suggested by the Department of Health's Task Force to Review Services for Drug Misusers (pp. 140–6). This framework is adapted below.

The performance indicators marked with an asterisk are considered by the Task Force to be the most appropriate measures for initial consideration.

Table A6: Performance indicators for drug misuse treatment.

-
- 1 Outreach services
 - (a) Number of new clients contacted in a 4-week period (i.e. not seen by any other service during the previous 3 months)
 - (b) Number of clients remaining in contact with a worker for longer than 3 months
 - (c) Number of clients referred per month to other services for help with drug misuse problems
 - (d) Cost per new client contacted*
 - 2 General practitioners
 - (a) Percentage of specialist service clientele registered with a GP
 - (b) Percentage of participating GPs with clear guidelines for shared care, including well-defined liaison arrangements
 - (c) Percentage of GPs prepared to take and/or undertaking a shared-care responsibility*
 - (d) Percentage of specialist drug service clients cared for in general practice*
 - (e) Costs per GP-managed client
 - 3 Community retail pharmacies
 - (a) Percentage of pharmacies participating in:
 - (i) needle exchange
 - (ii) supervised consumption
 - (iii) offering advice
 - (b) Number of exchange packs given out per month
 - (c) Number of needles/syringes sold per month
 - (d) Number of individuals using the service (by gender)
 - (e) Number of pharmacies prepared to provide facilities for the return of used injecting equipment*
 - (f) Return rates of used equipment*
 - (g) Cost per pack distributed*
 - 4 Arrest referral
 - (a) Number of clients who enter treatment following arrest
 - (b) Percentage of drug misusers cautioned for drug offences, and percentage arrested for drug offences following caution (for consideration by DATs)
 - 5 Hepatitis B
 - (a) Percentage of clients offered vaccination
 - (b) Percentage of clients reporting completed vaccination

Table A6: Continued.

-
- 6 Syringe-exchange schemes
 - (a) Percentage of clients reporting having shared injecting equipment in the previous 4 weeks*
 - (b) Number of new attenders (those not having used a scheme in the previous 3 months) per month
 - (c) Number of exchange packs given out per month per client
 - (d) Number of individuals using the service (by gender)
 - (e) Return rates of used equipment*
 - (f) Numbers moving on to engage in treatment
 - (g) Percentage of staff trained in giving basic health checks
 - (h) Cost per registered client-month*
 - 7 Counselling
 - (a) Percentage of people working in drug services with accredited counselling qualifications or equivalent professional qualifications
 - (b) Percentage of clients receiving counselling who report improvements in one of more of the three domains defined by the Task Force
 - (c) Cost per completed counselling course
 - 9 Methadone reduction
 - (a) Number of clients entering reduction programmes
 - (b) Percentage who become drug-free by:
 - (i) 3 months
 - (ii) 6 months
 - (iii) 1 year*
 - (c) Percentage of clients in treatment who report improvements in one or more of the other broader outcome domains
 - (d) Number using other support after treatment completion, e.g. Narcotics Anonymous or other self-help group
 - (e) Cost of methadone reduction per client completing*
 - 10 Methadone maintenance
 - (a)
 - (i) Number of clients in a maintenance programme
 - (ii) Number of clients retained at 1 year
 - (iii) Average duration of retention*
 - (b) Percentage of clients who report improvements in one or more of the other broader outcome domains
 - (c) Percentage of clients whose urine tests positive for other opiates
 - (d) Cost per client per year*
 - 11 Non-specialist detoxification services
 - (a) Number of clients entering detoxification programmes
 - (b) Percentage of clients (by main drug of use) who complete detoxification*
 - (c) Percentage of clients who attend follow-up treatment
 - (d) Costs of detoxification per client completing detoxification*
 - 12 Inpatient detoxification
 - (a) Number of clients entering for treatment
 - (b) Percentage successfully completing inpatient detoxification (per main drug of use)*
 - (c) Percentage successfully completing programme (by programme length)
 - (d) Percentage of clients who report improvements in one or more of the other broader outcome domains
 - (e) Percentage of completers who remain drug-free after:
 - (i) 3 months
 - (ii) 6 months
 - (iii) 1 year
 - (f) Cost of inpatient detoxification (per main drug of use)*

13 Residential rehabilitation

- (a) Percentage assessed within a defined period
 - (b) Percentage gaining admission within a defined period
 - (c) Percentage remaining in treatment after 4 weeks (by main drug of choice)*
 - (d) Percentage successfully completing programme (by type of programme and length)
 - (e) Percentage of clients who report improvements in one or more of the other broader outcome domains*
 - (f) Percentage of completers who remain drug-free after:
 - (i) 3 months
 - (ii) 6 months
 - (iii) 1 year
 - (g) Cost per completed programme*
-

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