Introduction: community treatment in context

In providing clinical treatment for drug misuse we play one part in addressing a problem which is among the most serious facing modern society. The use of illicit drugs has escalated hugely in recent years in many countries across the world, with wider causes which are beyond our control as, indeed, are any overall solutions. Most of the trends which have led to such high rates of drug misuse show no signs of abating, and political arguments rage as to the relative merits of differing social policies and approaches to drug legislation. Within this, as clinicians we have a specific prime responsibility to treat individuals who present with identifiable drug problems, plus an additional implicit role in helping those affected by such use, and we must be able to fulfil these as successfully as possible as part of the much bigger picture. This requires an informed knowledge of all the approaches which can best help individuals to stop taking drugs or to reduce their usage in their various personal situations, and can limit the associated problems in homes, families and communities.

This book aims to help in that task by reviewing from a practical standpoint the treatments which are indicated across a broad range of clinical situations. In recent times the treatment scene internationally has been dominated by methadone, the so-called 'heroin substitute' which can enable users to avoid the various consequences of taking illicit drugs. The substitution approach is inherently controversial, in that it necessarily replaces one drug of addiction with another and has no real equivalent in the way we manage other dependencies, but it is undoubtedly here to stay, with strong evidence for general effectiveness in severely dependent individuals. With ever-broader usage, however, including in the attempts to stem the HIV epidemic, the problems and limitations of methadone have become increasingly apparent, and the alternatives which may be safer or less addictive, or offer other clinical advantages, are reviewed here. There is also a more general concern among workers in services that the emphasis on opioid maintenance treatment completely skews presentation rates so that, unless positive steps are taken, little attention is paid to users of non-opiate drugs such as cocaine, or to less dependent individuals. I have included a review of treatments for misuse of the wider range of drugs, while at the heart of the book is an account of the methods of helping users achieve detoxification from heroin and other opiates. Candidates for possible detoxification rather than methadone maintenance can only increase as heroin becomes widely available and more and more young people begin using it; services need to target such individuals, to offer treatment before addiction becomes established. The deployment of community services is described, and there are discussions of the important aspects of practical provision for various clinical groups. Our own services have a strong community psychiatric orientation, which includes the principle of working with primary care physicians wherever possible, and many of the treatments which are described in the book are also applicable in that setting.

The number one priority in writing the chapters which follow has been to examine *realistically* the treatments we use in day-to-day practice, with reference to many of the problems which can occur in managing this often difficult population. In terms of an additional theoretical perspective, undoubtedly the social aspects of drug misuse are those which are particularly emphasized. As a clinician in this field it is impossible not to be struck by the social considerations at virtually every turn – in the associated problems of individuals, characteristic subcultural aspects in different types of usage, social origins of drug use, social consequences, and in the nature of many of the benefits of treatment. This dimension of the drug misuse phenomenon will be a recurring theme throughout the book, so that, for instance, the next chapter recognizes that the social effects of methadone treatment are as striking as any other kind, raising fundamental issues about the nature and purposes of this treatment approach.

This introductory chapter takes one step back from the treatment situation, to examine the social background against which drug misuse is often set, some of the aetiological factors, and the place which clinical treatment occupies in the wider scheme of things. It is by way of a fairly subjective and partly historical overview, before the treatment approaches are examined in greater detail, in various international contexts. In our own services we use inpatient or residential options only very rarely, and so they are summarized at the end of the chapter, with some additional consideration where relevant in later chapters.

Drug misuse as a social problem

The use of various substances has very different meanings in different cultures and countries (Westermeyer 1995). In addition, attitudes to drugs do not remain static, but change over time, as recently witnessed in relation to cannabis. In general, however, in blunt behavioural terms, it may be said that the taking of any drug which is currently illegal, whatever we may think of the legislature, represents a more 'deviant' behaviour than taking a drug which is legal, however harmful that drug may in fact be. In many countries, clinically significant illicit drug use often arises in the context of other broadly antisocial and marginalized activities, being associated in the same geographical areas and, to varying degrees, in the same individuals. Concentrations of drug misuse occur in environments with high levels of school truancy, gang activities and various types of crime, and a history of these may be found in those presenting for drug treatment. In such situations, even when a genetic theory of substance misuse is tempting, for instance if a parent has been a heavy drinker, lifestyle factors can seem just as important, with each generation using the available substances as part of a general behavioural and social pattern. Reviews of actual familial transmission in substance misuse are referred to below, while we can speculate that the social influences may be even stronger in those outside treatment, for whom drug use may be effectively a recreational activity.

In cities and towns particularly, the rates of drug use and other antisocial problems appear to increase steadily, with ever-younger individuals involved. The social causes are no doubt similar to those in the condition of personality disorder which have been carefully examined by Paris (1996a): these include family breakdown, parental psychopathology, weakening of the effect of authority systems and social disintegration in communities, in which there are reduced constraints on antisocial behaviour. With the demonstrations of increased prevalence of drug use, including school surveys, the activity can be said to have become more normative over the past few decades. In such circumstances the levels of

associated problems and psychopathology among those who use drugs may be expected to be less, but this has not been convincingly demonstrated, and it can equally be claimed that in countries where there is widespread drug misuse, this is partly an indicator of generally extensive social problems (Kraus et al. 2003).

There is clearly a big difference between the occasional use of cannabis and dependence on 'hard' drugs in the various social aspects, including the context of usage and, especially, the social consequences. Much of the widespread recreational drug use may produce no discernible social problems, with the exception of the consequences of legal sanctions if caught. However, as usage progresses, and in a kind of gradient across the range of drugs, social consequences may include family and relationship problems, isolation from those except other drug users, reduced job prospects, debt, crime and adverse effects on child care (Jaudes et al. 1995, McMahon & Rounsaville 2002). The relationship with crime is not a straightforward one, and even acquisitive crime by drug users cannot simply be explained by funding expensive drug habits. Increasingly those involved in crime and antisocial behaviours will tend to use illicit drugs as a lifestyle feature, just as they tend to smoke. Whatever the connections, the criminal justice system can be a good place to engage drug users to offer advice and treatment, and arrest referral schemes have become commonplace.

With such strong social factors operating, many clinicians outside drug misuse treatment take some persuading that the condition significantly represents a clinical one at all, as opposed to a problem requiring social solutions. However, the general syndrome of dependence has strong psychological elements and, as we shall see, can be effectively addressed in drug counselling, provided an assertive enough clinical approach is adopted. Psychiatrists have a definite role because of the predominance of associated psychiatric problems, albeit usually the partly socially defined ones of conduct and personality disorders, and there is the whole area of medical management of complications. Most basically, drugs are substances with complex actions on the central nervous system, and the more that drug dependence progresses, the more clinical its treatment becomes. Within this, there is no doubt that social benefits are necessarily part of the aim of treatment, and the exploration of the unusual position of providing pharmacological treatments directly to achieve such outcomes begins in the next chapter.

Risk factors for drug misuse

As well as the very extensive work on aspects of neurobiology (Lingford-Hughes & Nutt 2003, Volkow & Li 2004) and genetics (Fowler et al. 2007, Ball 2008), social and psychiatric research have both made substantial contributions on the subject of the aetiology of substance misuse. An unfortunate aspect of the literature is that there is little connection between these disciplines, so that subjects such as unemployment or social disadvantage on the one hand, and personality or psychopathology on the other, tend to be discussed without much acknowledgement of areas of overlap. Table 1 indicates some of the risk factors for drug misuse, and the main contention here is that the personal and social factors are importantly interlinked.

Within the personal factors, clearly family disruption, trauma and physical or sexual abuse can all predispose to conduct disorder in adolescence and personality disorder in adulthood (Paris 1996b, Spataro et al. 2004). Links between such factors and subsequent substance misuse have been consistently found (Bartholomew & Rowan-Szal 2002, Poikolainen 2002), while the associations between established personality disorder and drug

Table 1 Related risk factors for drug misuse

Personal	Social
Disrupted family of origin	Deprivation
Childhood trauma	Poor environment
Abuse	Frequent adverse life events
Adolescent conduct disorder	Relationship problems
Educational difficulties	Unemployment
Antisocial personality disorder	Lack of social opportunities

misuse are among the strongest in the clinical literature (Seivewright & Daly 1997, Grant et al. 2004). In terms of interconnections, the range of background problems can produce difficulties in forming and sustaining relationships, and personality disorder is associated with high rates of ongoing adverse life events, which are usually seen as social factors (Heikkinen et al. 1997). Personal factors may also lead to unemployment, as may educational difficulties, which predispose to drug use partly through disengagement from the school system. Lone or unstable parenthood is associated with substance misuse in adolescent children (Ledoux et al. 2002), but such parents are at increased risk of both psychopathology and disadvantage in housing.

A short review of the demonstrated relationships between social deprivation and drug use was provided by Pearson (1996). He notes not only the correlations with unemployment, but also the 'local informal economies of crime and hustling which thrive in areas lacking opportunities for involvement in the formal economy'. As if the risk factors for drug misuse were not related enough, he also describes the melting pot effect of problem housing estates. 'Tenants largely comprise those who cannot obtain anywhere preferable, including the previously homeless, teenagers in their first accommodation, women escaping domestic violence, and the elderly poor. If drug misusers are also added, or arrive through squatting, drug use can spread rapidly in fertile ground.' This scenario, compounded by a lack of other social opportunities, is very familiar to those of us providing services in large cities.

The role of treatment

Given the complex nature of the phenomenon which comprises the various forms of drug misuse, what is the role of treatment, and who should receive it? Drug services certainly need to concentrate their efforts on providing treatments which are effective, and the later chapters are aimed at shedding light on that aspect. Even the concept of effectiveness is not straightforward, however, and in our multi-faceted subject we must avoid being trapped into too narrow a concept of 'evidence-based practice'. Giving methadone is a fundamentally different type of treatment to many others offered in drug misuse and, not surprisingly, has the strongest supporting evidence by far, but it is wrong to provide that to the virtual exclusion of other approaches which may be entirely suitable in many cases. Substitution therapy is hardly used at all in non-opiate misuse, including the very major current problem of cocaine misuse, but it would be completely wrong to avoid seeing such cases and attempting to use the techniques we do have.

The two simplest answers to the question of who to treat are: those who want to be treated, and/or those who have an established problem of definite dependence. (The management of medical and psychiatric complications can be seen as a separate issue, although there is much overlap in practice, as will be discussed.) Such selection has become somewhat diluted in recent years, following the involvement of drug users in the HIV epidemic, and then the increased emphasis on crime reduction, with consequent initiatives of injecting equipment provision, harm reduction advice for those who continue to use drugs, and generally more accessible treatment. Also, in terms of motivating factors, there are many probation-linked schemes for those who may not otherwise have sought treatment, but who comply as an alternative to custody. While the need for approaches like these is undeniable, the broadening of acceptance criteria poses a number of problems which should be acknowledged, and which with a colleague I examined in more detail in another practical review of treatments (Seivewright & Iqbal 2002).

First, the number of referrals can rapidly become unmanageable. Although it is impossible to know the true prevalence of drug misuse for any area, in a city of 600000 people such as our own, Sheffield, the number using opiates, cocaine or large amounts of amphetamines is probably more than 10000. Even the best-established treatment service would have problems coping with one-fifth of that number, and resources are simply never going to be available to cater for the full demand. Second, there may be a distinct lack of impact if treatment is offered uncritically to those in whom drug use is basically a symptom of multiple social problems, as discussed above. Although the presence of other problems is absolutely no bar to treatment, and indeed looking at drug use can be a 'way in' to offering consistent professional help with various general benefits, the role of drug treatment in such circumstances must not be overplayed. Third, with a wide variety of types of drug misuser presenting from different referral sources, prioritization can be extremely problematic, especially if some emphasis on what may be broadly termed motivation is to be retained.

In many ways it is useful to have drug services operating on two different levels. Basic facilities such as injecting equipment provision, information, advice on a drop-in basis and supportive counselling must be made widely available. There is then a need for *clinical* treatment services, to provide the range of specific behavioural interventions and pharmacological treatments for individuals with problems, with access maximized but some limitation inevitable. In community-based treatment services it is usually a guiding principle to offer some treatment to as many users as possible, and the operation in this way of our own services and of community drug teams in general is discussed further in Chapter 5.

The overall response to drug problems includes prevention, education, treatment and enforcement. To debate the appropriate relative contribution of these elements is beyond the scope of this brief discussion, but it is clear that all organizations involved with drug misuse largely fail to keep pace with the extensive rates of the problem, or to make significant impressions on the drugs scene in general (Adrian 2001, Reuter & Pollack 2006). Non-enforcement prevention initiatives have tended to drift towards 'secondary' prevention, basically a form of harm reduction, in effect accepting ongoing drug use. The effects of drugs education are largely unproven, but at the same time those who know at first hand the difficulty of managing established cases of drug misuse should accept that, if possible, prevention is better than attempted cure. Meanwhile the criminal justice systems in many countries simply do not have the capacity to deal with all the drug offenders, and sentencing is often light across the range of drugs. The changing role of enforcement was discussed by Hellawell (1995), who became the UK's first antidrugs coordinator ('drug czar'), while an

important point which affects the balance between the various systems is that not all forms of drug misuse are equally amenable to treatment. As we shall see, nearly all the established specific clinical interventions are for opiate misuse, including the option of substitution, which has no real parallel in other drug problems. The more challenging nature of managing non-opiate misuse is often not appreciated by other agencies, and drug services need to advise others realistically about the potency of clinical approaches, in situations such as diversion from court.

Inpatient and residential treatment

Inpatient treatment

This may be used for detoxification from one or more drugs, management of medical and psychiatric complications, initiating substitution treatments in particularly problematic cases, or various forms of respite. Some services use admission for dose titration in all patients starting on methadone or buprenorphine, but this is rare. For detoxification it seems fairly clear that a specialist unit for drug misusers is usually a preferable setting to a general ward. Apart from the difficulties which drug misusers and general psychiatric patients may have in getting on with each other, staff need to be well versed in matters such as obtaining urine samples and restricting visitors and time off the unit, and in various complications which are characteristic in such admissions. There need to be treatment contracts of some kind, and on a specialized unit there can be a therapy programme designed for drug users, rather than attempts to fit in with more general options. At worst, some nonspecialized staff have little sympathy for the condition of drug misuse and withdrawal discomfort, which can produce an angry response from users. In the UK, inpatient drug programmes are usually pragmatically based, with keyworker sessions and some group work focusing on areas such as coping with withdrawal, anxiety management, relapse prevention and drug-free lifestyles. There may be input from Narcotics Anonymous, while some units, particularly in the private sector, are based exclusively on the 12-step approach (Lile 2003). This has the advantage of being a very assertive and unequivocal method but, in our populations, drug misusers tend to accept it less well than alcohol misusers; indeed, combining both groups can itself sometimes be problematic.

The question of whether detoxification treatment in a specialist unit is more successful than on a general psychiatric ward was tested in a randomized trial by Strang et al. (1997). The specialist unit appeared more acceptable, with almost a quarter of those who were randomized to the general ward failing to accept that allocation, and fewer subsequently presenting for admission there than at the unit. Completion rates were also higher in the specialist setting although, importantly, that group received methadone whereas patients on the general ward had clonidine only. During seven-month follow-up, significantly more patients from the specialist unit had remained drug-free than from the general ward. A separate and very large study interestingly found better outcomes in opiate addicts who had been admitted from methadone maintenance treatment rather than directly from heroin use, suggesting that some of the behavioural changes already made in going onto a programme had been beneficial (Backmund et al. 2001).

Some of the more interesting options in opiate withdrawal are those that achieve detoxification more quickly than a standard methadone reduction. These can include the precipitation of withdrawal by opiate antagonists and even detoxification under general

anaesthesia, and the various methods of inpatient opiate detoxification are referred to in Chapter 3. The clonidine analogue lofexidine is commonly used in the UK, which we prescribe, combined with other medications, as one method of quick community detoxification from heroin (see Chapter 3). Buprenorphine is also increasingly used in both inpatient and community settings as the most direct alternative to methadone, and this newer treatment is closely examined in Chapter 2.

Residential rehabilitation

This is a lengthy treatment, with rehabilitation centres often taking clients for 6–12 months or more for residential treatment. Some use 12-step methods (Gossop et al. 2008), while some are run by religious organizations or according to a strong 'concept' theme. In Sheffield we have one of the Phoenix House centres which are established internationally, and local colleagues have studied characteristics of their cases (Keen et al. 2001). Often, residential centres are away from main centres of population and, indeed, addicts are usually advised to go to one in another area, to consolidate their break from their drug-using scene.

Some centres provide a short detoxification, or this may be done just before going in. Often this is requested as an inpatient, to facilitate the transfer, and many inpatient services therefore prioritize individuals who have a rehabilitation place waiting. The group and individual therapy in rehabilitation centres typically concentrates not only on personal issues, but on making fundamental lifestyle changes. Very assertive tactics may be brought to bear to counter the behaviours that are seen as characteristic, including deception and exploitation. The treatment is demanding, but is intended to be somewhat more curative than clinical approaches are generally considered to be. Selection is very important, as many users are unable to truly make a commitment to a long-term residential treatment of this nature. Phoenix House in Sheffield operates a family unit, where drug misusers who are parents can have their children staying with them, with parenting assessments undertaken.

Topic in brief – 1. Community or inpatient treatment?

- In large-scale services inevitably most patients will need to be treated in the community
- Reasons for inpatient stays include full detoxification, stabilization, and management of complications
- Often more severe cases are admitted for detoxification, but premature discharge very common
- Specialist addiction units appear preferable to inclusion in general psychiatric wards

General observations

Inpatient hospital treatment and residential rehabilitation are very different in character, and in average length of stay. It is very useful to have both available as options for selected cases, but clearly they cannot be used at all routinely, because of the sheer numbers of drug users presenting, and the strong preference which most have for being treated from home.

Some general observations may be made, which to varying extents apply to the two settings. The assessment of cases for possible admission to an inpatient or residential unit should preferably involve a member of staff from the unit, to enable the most accurate

briefing about treatment conditions, expectations and rules. This is especially important since, as with alcohol cases, there is something of a received wisdom that inpatient detoxification is indicated for those individuals who have too many adverse prognostic features to be successful at detoxification as an outpatient, such as heavy usage, long history, multiple drugs, personality disorder and poor social situation. In practice, not only are such individuals also perhaps the least likely to complete detoxification successfully as an inpatient, but they are often especially unable to tolerate the constraints of a hospital setting. Discharges for self-medication or behavioural disturbances are common, and in general a high degree of proficiency is required in these settings, and in assessment procedures, to avoid what may be termed a 'severity paradox', in which success is positively unlikely in those who are particularly considered to require the approach.

Exactly what constitutes 'success' is contentious in any drug misuse treatment, but one point is brought into particularly sharp focus in relation to the inpatient and residential options. This is the question of success at detoxification – do we mean just that, or are we by implication taking into account whether an individual actually stays off drugs afterwards? The purist view is well stated by Wodak (1994):

> [Detoxification] should be considered successful if safe and comfortable withdrawal has been achieved, whether or not this is followed by a permanent state of abstinence. The ultimate achievement of abstinence, if that should happen, should be regarded as a bonus… detoxification should therefore be regarded as very different from other forms of treatment, and possibly should not even be considered to be a form of treatment.

In a review of the effectiveness of detoxification, Mattick and Hall (1996) say something similar:

> Many countries adopt services that seem to be based on the belief that detoxification can bring about lasting changes in drug use, despite evidence to the contrary. Detoxification is more appropriately regarded as a process that aims to achieve a safe and humane withdrawal from a drug of dependence. This is a worthwhile aim in itself.

While the clear separation of the elements of detoxification and subsequent relapse prevention is indeed an important clinical principle, the sheer imbalance between outcomes in maintenance and detoxifications can be striking, with O'Brien (2005) for instance bemoaning 'the effort that must be expended to achieve an opiate-free state, no matter how transient'. Undoubtedly many observers, including those who fund treatments, would expect that the labour- and cost-intensive residential options should have a more lasting impact, to be justified. To take extremes, the situation of someone relapsing into heroin use one week after a short course of medication as an outpatient is less unfortunate than someone relapsing one week after 18 months of intensive residential therapy and, in fairness, the long-term rehabilitation centres generally accept that higher 'obligation'. As clinicians we must use the treatment methods that appear appropriate in each case, but in our own services, as in many others, we acknowledge that we strongly favour community treatment, mainly on the grounds of patient preference, but also to maximize the number of individuals who can receive treatment from limited resources.

The strongest traditions of inpatient detoxification relate mainly to alcohol misuse, in which the withdrawal syndrome is inherently more dangerous than that from opiates, and the avoidance of withdrawal complications in standard treatment may be the prime consideration in selecting admission. (In drug misuse, as we shall see in subsequent chapters, indications for admission increasingly relate to new developments, such as rapid

detoxification techniques, or severe clinical states produced by crack cocaine.) The drug misuse treatment scene is very different from that in alcohol in many ways, but most notably because of the acceptance of a substitution treatment approach in the form of methadone, buprenorphine or alternatives, and this produces another problem regarding inpatient and residential treatment. Again as will be discussed in detail, methadone maintenance in particular has been strongly encouraged on harm reduction grounds since the threat of HIV among drug misusers, and clinicians have become nervous of opiate users being in difficulties without such medication. When a methadone or buprenorphine patient is admitted for detoxification, it is therefore difficult to strike the right balance as to how readily the substitution drug should be made available to them again if they run into problems. If it is virtually guaranteed that they can have their medication back should they prove unable to cope with the detoxification, that can have a major demotivating effect, while if that safety net is not there, users who might be able to detoxify will be deterred, and so the integration of approaches merits attention (Broekaert & Vanderplasschen 2003). Of course, this difficulty also applies to community detoxifications from opioids, but in the case of costly inpatient treatment the implications of aborting a detoxification to re-establish maintenance are magnified.

The particular problems of inpatient care and long-term residential rehabilitation for drug misusers are best addressed by those with a substantial commitment to such treatment, including services with specialist inpatient units for this group (e.g. Buntwal et al. 2000). Such units can offer a range of detoxification techniques and variable periods in which rehabilitation needs are examined, with appropriate assessment procedures, inpatient programmes and aftercare. In recognizing that such treatment is for a small minority, the rest of the book will describe the components of a community-based approach to drug misuse treatment.

Section 1 Chapter 1

Treatments

Methadone: the main treatment for the main presenting drug problem

Introduction

Opiate dependence is the type of drug problem presenting most frequently to clinical drug services, for two very strong reasons: first, the individuals are overall the most ill, with their undoubted physical withdrawal symptoms and other complications, and secondly, there are medical treatments which are routinely applied. These are not just any medical treatments, but the potent force of a direct 'substitution' method is frequently used, with agonist medications prescribed which in theory can immediately relieve individuals of the need to use their drug such as heroin. Even if the opiate addicts were not severely unwell the availability of a substitute medication would no doubt skew relative presentation to services, and indeed this is given as the reason for concern that groups such as stimulant users have 'nothing to go to drug clinics for'. In many countries methadone has been the standard choice for substitution treatment, and in particular is reached for when it is thought that 'maintenance' will be required, i.e. that because of length of history and general problems there would seem little prospect of short-term detoxification being successful. It is again completely unsurprising that, as discussed throughout this chapter, the success rates for maintenance treatment in enabling individuals to stop or drastically reduce illicit drug use over substantial time periods are far superior to those for short-term withdrawal courses, and it is a matter of routine for methadone to produce reductions in other drug use, and in physical and psychological problems, injecting, social complications and crime (Hall et al. 1998, Marsch 1998, Appel et al. 2001, Luty 2003). It has been said that methadone maintenance is one of the most effective treatments for any kind of clinical condition, and the easy avoidance of acute social problems such as debt and acquisitive crime greatly contributes to such effectiveness measures when they are included.

The particular properties which have made methadone attractive for substitution treatment since the days of the early trials (Dole & Nyswander 1965) are indicated in Table 1.1.

In terms of bioavailability methadone is as satisfactory taken by mouth as by injection, and so the addict should be enabled to switch from the most hazardous form of heroin use, injecting, to taking a medication in oral mixture form. Methadone has an elimination half-life of around 24 hours, and so once-a-day dosing is generally advised, although as will be noted later there is great inter-individual variation in pharmacokinetics and sometimes twice-a-day is truly necessary. The subjective effects of methadone are stabilizing rather than euphoriant, and so in relative terms there is less temptation to over-use the medication than there probably is with morphine, diamorphine, etc. Finally it is very notable that after initial titration to an adequate dosage, the dose reached can remain satisfactory over very long periods, even if the mechanisms for this lack of increasing tolerance – which appears

Table 1.1 Desirable properties of methadone as a substitution (agonist) treatment in opiate dependence

As effective orally as parenterally
Long acting
Relatively non-euphoriant
Little need to increase dose over time

in addiction patients but less so in pain management – are poorly understood. Of course none of these matters is absolutely straightforward, so that for instance some patients seem to fare better on injectable than oral methadone, other individuals do appear to gain euphoria from excessive methadone and will take as much as they can at one time, and in actual clinical progress the effectiveness of methadone maintenance in stopping other drug use is often found to wane over time, and so such matters will be discussed. However, methadone mixture has become the 'gold standard' treatment across many parts of the world, and the general effectiveness has been uncontested since the early times when after several trials against placebo treatment these were considered no longer ethical to do (Newman & Whitehill 1979, Gunne & Gronbladh 1981).

Various studies have shown other medications to be broadly as satisfactory as methadone in improving physical and psychological wellbeing and reducing social problems in opiate addicts, but the extent of evidence is nowhere near as great. At one end of the spectrum of both euphoriant property and similarity to the drug of actual misuse there is pharmaceutical diamorphine, usually given in trials by injection, and, as will be discussed in Chapter 2, the advocates of that point out that only a minority of individuals can *fully* make the adjustment from street heroin to oral methadone and therefore stay off all drugs completely. Prescribing diamorphine definitely does not involve the behaviour changes that methadone treatment does, but seemingly a significant part of the effectiveness of maintenance with a substitution agent does not absolutely depend on the medication itself, with improvements also shown in studies of morphine (Eder et al. 2005), dihydrocodeine (Robertson et al. 2006) and even codeine (Krausz et al. 1998). The availability of the different medications varies across countries, but it has become very apparent in the last decade that the most similar approach to giving methadone, producing virtually equivalent results in many large-scale studies, is to prescribe sublingual buprenorphine (Mattick et al. 2004). This last will be the subject of a detailed examination in the next chapter, and has become the main alternative to methadone in the clinical situation of heroin or other opiate addiction. As a final initial observation, it has been very interesting to see the situation in France, where methadone had previously been very little used before buprenorphine was introduced as the first widely available substitution option (Guichard et al. 2003). The picture of greatly increased presentation of addicts to services and routinely achieved benefits in the kinds of indicators mentioned above was virtually a parallel of the introduction of methadone to other countries, again suggesting that it is basically the provision of a substitute that readily enables the broad benefits to occur. Of course chemically buprenorphine is a partial rather than a full opioid agonist, which leads to pros and cons in theory and practice as will be seen.

Having therefore acknowledged that the effectiveness of methadone probably relates partly rather than exclusively to the specific aspects of the medication itself, the large body of evidence will now be summarized as it pertains to this clinical treatment. The scale of the

literature is vast, and while this book has its own emphasis in looking at practical aspects across a wide range of treatments in opiate and non-opiate misuse, readers are also directed to highly authoritative volumes on methadone (e.g. Ward et al. 1998a). In writing the first edition of this book I was keen to mention the main matters to do with methadone provision which seemed important in daily clinical practice and which allowed some consideration of the nature of this particular treatment, and I have kept to that principle.

The term 'methadone maintenance'

This term is used increasingly casually to refer to ongoing prescribing of methadone over any reasonably lengthy period. Usually a constant dose is implied, but sometimes slowly reducing courses are also described in this way. Strictly speaking, however, the term – especially methadone maintenance therapy or 'MMT' – refers to the highly structured programme approach which was originally devised for the delivery of methadone treatment in the USA, and is described next. This is not just a matter of semantics since, as will be seen, much of the systematic evidence for methadone's effectiveness relates to treatment as carried out in structured programmes, and the inference that any long-term prescribing amounts to approximately the same thing can lead to false assumptions about the process and the range of benefits.

Formal methadone maintenance programmes

It is well known that the concept of formalized methadone maintenance originates from the work of Dole and Nyswander (1965). The treatment was devised for established opiate addicts, and was based on the principle that, following the physiological changes which occurred through prolonged taking of opiates, the state of dependence represented a metabolic disorder which required corrective treatment indefinitely. The fundamental aspect of methadone treatment was seen to be not simply the relief of withdrawal symptoms and craving, but a 'narcotic blockade', whereby an individual on methadone would fail to experience the euphoriant effects of heroin if that were taken (Dole et al. 1966). This effect was considered to be due to cross-tolerance, and it was observed that methadone doses of at least 80 mg per day were necessary to achieve it. This relatively high dose was therefore prescribed on a long-term basis, with no intention that patients should attempt to reduce. The first clinical programmes were for recidivist addicts, with the related aims of reducing heroin use and crime.

A structured programme approach to the delivery of methadone treatment was considered essential. Addicts were stabilized on high-dose methadone in a hospital ward, following which they returned on a daily basis for supervised consumption of medication and urine testing. There was an initial comprehensive assessment of medical, psychiatric and social problems, with facilities to address these on an ongoing basis. Along with the provision of methadone, the addicts entered not only counselling, but also placements in education or employment. Relaxation of the daily attendance for methadone or urine screening was only for individuals deemed to be making excellent progress, although take-home doses for part of the day were also necessary for those who had difficulty spanning a 24-hour period with one dose. Programmes along these lines developed across the USA, with inevitably some differences in provision emerging over the years. Ball and Ross (1991) undertook a clinical outcome study across six methadone programmes in the mid 1980s, and found a wide variation in programme elements and effectiveness. This research was considered to strongly support