Drug misuse

Psychosocial management of drug misuse

National Clinical Practice Guideline Number X

National Collaborating Centre for Mental Health
Commissioned by the
National Institute for Health and Clinical Excellence

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Those who acted as advisers on specialist topics or have contributed to the process by meeting with the Guideline Development Group:

1 Executive summary

(Summary recommendations [NICE guideline] to be inserted after consultation.)

2 Introduction

This guideline has been developed to advise on the psychosocial management of drug misuse. The guideline recommendations have been developed by a multidisciplinary team of healthcare professionals, service users, a carer and guideline methodologists after careful consideration of the best available evidence. It is intended that the guideline will be useful to clinicians and service commissioners in providing and planning high-quality care for people who misuse drugs while also emphasising the importance of the experience of care for people who misuse drugs and their carers.

Although the evidence base is rapidly expanding, there are a number of major gaps, and future revisions of this guideline will incorporate new scientific evidence as it develops. The guideline makes a number of research recommendations specifically to address gaps in the evidence base. In the meantime, it is hoped that the guideline will assist clinicians, people who misuse drugs and their carers by identifying the merits of particular treatment approaches where the evidence from research and clinical experience exists.

2.1 National guidelines

2.1.1 What are clinical practice guidelines?

Clinical practice guidelines are 'systematically developed statements that assist clinicians and patients in making decisions about appropriate treatment for specific conditions' (Mann, 1996). They are derived from the best available research evidence, using predetermined and systematic methods to identify and evaluate the evidence relating to the specific condition in question. Where evidence is lacking, the guidelines incorporate statements and recommendations based upon the consensus statements developed by the Guideline Development Group (GDG).

Clinical guidelines are intended to improve the process and outcomes of healthcare in a number of different ways. They can:

- provide up-to-date evidence-based recommendations for the management of conditions and disorders by healthcare professionals
- be used as the basis to set standards to assess the practice of healthcare professionals
- form the basis for education and training of healthcare professionals
- assist patients and carers in making informed decisions about their treatment and care

- improve communication between healthcare professionals, patients and carers
- help identify priority areas for further research.

2.1.2 Uses and limitations of clinical guidelines

Guidelines are not a substitute for professional knowledge and clinical judgement. They can be limited in their usefulness and applicability by a number of different factors: the availability of high-quality research evidence, the quality of the methodology used in the development of the guideline, the generalisability of research findings and the uniqueness of individuals who misuse drugs.

Although the quality of research in this field is variable, the methodology used here reflects current international understanding on the appropriate practice for guideline development (AGREE: Appraisal of Guidelines for Research and Evaluation Instrument; www.agreecollaboration.org), ensuring the collection and selection of the best research evidence available and the systematic generation of treatment recommendations applicable to the majority of people with these disorders and situations. However, there will always be some people and situations for which clinical guideline recommendations are not readily applicable. This guideline does not, therefore, override the individual responsibility of healthcare professionals to make appropriate decisions in the circumstances of the individual, in consultation with the person who misuses drugs/or carer.

In addition to the clinical evidence, cost-effectiveness information, where available, is taken into account in the generation of statements and recommendations of the clinical guidelines. While national guidelines are concerned with clinical and cost effectiveness, issues of affordability and implementation costs are to be determined by the NHS.

In using guidelines, it is important to remember that the absence of empirical evidence for the effectiveness of a particular intervention is not the same as evidence for ineffectiveness. In addition, of particular relevance in mental health, evidence-based treatments are often delivered within the context of an overall treatment programme including a range of activities, the purpose of which may be to help engage the person and to provide an appropriate context for the delivery of specific interventions. It is important to maintain and enhance the service context in which these interventions are delivered; otherwise the specific benefits of effective interventions will be lost. Indeed, the importance of organising care in order to support and encourage a good therapeutic relationship is at times as important as the specific treatments offered.

2.1.3 Why develop national guidelines?

The National Institute for Health and Clinical Excellence (NICE) was established as a Special Health Authority for England and Wales in 1999, with a remit to provide a single source of authoritative and reliable guidance for patients, professionals and the public. NICE guidance aims to improve standards of care, to diminish unacceptable variations in the provision and quality of care across the NHS and to ensure that the health service is patient centred. All guidance is developed in a transparent and collaborative manner using the best available evidence and involving all relevant stakeholders.

NICE generates guidance in a number of different ways, three of which are relevant here. First, national guidance is produced by the Technology Appraisal Committee to give robust advice about a particular treatment, intervention, procedure or other health technology. Second, NICE commissions public health intervention guidance focused on types of activity (interventions) that help to reduce people's risk of developing a disease or condition or help to promote or maintain a healthy lifestyle. Third, NICE commissions the production of national clinical practice guidelines focused upon the overall treatment and management of a specific condition. To enable this latter development, NICE has established seven National Collaborating Centres in conjunction with a range of professional organisations involved in healthcare.

2.1.4 The National Collaborating Centre for Mental Health

This guideline has been commissioned by NICE and developed within the National Collaborating Centre for Mental Health (NCCMH). The NCCMH is a collaboration of the professional organisations involved in the field of mental health, national patient and carer organisations, a number of academic institutions and NICE. The NCCMH is funded by NICE and is led by a partnership between the Royal College of Psychiatrists' research unit (College Research and Training Unit – CRTU) and the British Psychological Society's equivalent unit (Centre for Outcomes Research and Effectiveness – CORE).

2.1.5 From national guidelines to local protocols

Once a national guideline has been published and disseminated, local healthcare groups will be expected to produce a plan and identify resources for implementation, along with appropriate timetables. Subsequently, a multidisciplinary group involving commissioners of healthcare, primary care and specialist mental health professionals, patients and carers should undertake the translation of the implementation plan into local protocols taking into account both the recommendations set out in this guideline and the priorities set in the National Service Framework for Mental Health and related documentation. The nature and pace of the local plan will reflect local healthcare needs and the nature of existing services; full implementation may take a considerable time, especially where substantial training needs are identified.

2.1.6 Auditing the implementation of guidelines

This guideline identifies key areas of clinical practice and service delivery for local and national audit. Although the generation of audit standards is an important and necessary step in the implementation of this guidance, a more broadly based implementation strategy will be developed. Nevertheless, it should be noted that the Healthcare Commission will monitor the extent to which Primary Care Trusts (PCTs), trusts responsible for mental health and social care and Health Authorities have implemented these guidelines.

2.2 The national psychosocial management of drug misuse guideline

2.2.1 Who has developed this guideline?

The Guideline Development Group (GDG) was convened by the NCCMH and supported by funding from NICE. The GDG included two service users and a carer, and professionals from psychiatry, clinical psychology, general practice, the Prison Service, the National Treatment Agency for Substance Misuse and the private and voluntary sectors.

Staff from the NCCMH provided leadership and support throughout the process of guideline development, undertaking systematic searches, information retrieval, appraisal and systematic review of the evidence. Members of the GDG received training in the process of guideline development from NCCMH staff and the service users and carer received training and support from the NICE Patient and Public Involvement Programme. The NICE Guidelines Technical Adviser provided advice and assistance regarding aspects of the guideline development process.

All GDG members made formal declarations of interest at the outset, which were updated at every GDG meeting. The GDG met a total of nine times throughout the process of guideline development. It met as a whole, but key topics were led by a national expert in the relevant topic. The GDG was supported by the NCCMH technical team, with additional expert advice from special advisers where needed. The group oversaw the production and synthesis of research evidence before presentation. All statements and recommendations in this guideline have been generated and agreed by the whole GDG.

2.2.2 For whom is this guideline intended?

This guideline will be relevant for adults and young people who misuse drugs.

The guideline covers the care provided by primary, community, secondary, tertiary and other healthcare professionals who have direct contact with, and make decisions concerning the care of, adults and young people who misuse drugs.

The guideline will also be relevant to the work, but will not cover the practice, of those in:

- occupational health services
- social services
- the independent sector.

The experience of drug misuse can affect the whole family and often the community. The guideline recognises the role of both in the treatment and support of people who misuse drugs.

2.2.3 Specific aims of this guideline

The guideline makes recommendations for the psychosocial management of drug misuse. Specifically, it aims to:

- evaluate the role of specific psychosocial interventions in the treatment of drug misuse
- evaluate the role of specific psychosocial interventions in combination with pharmacological interventions in the treatment of drug misuse
- integrate the above to provide best-practice advice on the care of individuals throughout the course of their drug misuse
- promote the implementation of best clinical practice through the development of recommendations tailored to the requirements of the NHS in England and Wales.

2.2.4 The structure of this guideline

The guideline is divided into chapters, each covering a set of related topics. The first three chapters provide a summary of the clinical practice and research recommendations and a general introduction to guidelines and to the methods used to develop them. The fourth chapter provides an introduction to the drug misuse topic. Chapters 4 to 9 provide the evidence that underpins the recommendations.

Each evidence chapter begins with a general introduction to the topic that sets the recommendations in context. Depending on the nature of the evidence, narrative reviews or meta-analyses were conducted. Therefore, the structure of the chapters varies. Where appropriate, details about current practice, the evidence base and any research limitations are provided. Where meta-analyses were conducted, information is given about both the interventions included and the studies considered for review. Clinical summaries are then used to summarise the evidence presented. Finally, recommendations related

to each topic are presented at the end of each chapter. On the CD-ROM, full details about the included studies can be found in Appendix 16. Where meta-analyses were conducted, the data are presented using forest plots in Appendix 17 (see Text Box 1 for details).

Text Box 1: **Appendices on CD-ROM**

Content	Appendix
Included/ excluded studies	Appendix 14
Forest plots	Appendix 15
GRADE evidence profiles	Appendix 16

3 Methods used to develop this guideline

3.1 Overview

The development of this guideline drew upon methods outlined by NICE (*The Guidelines Manual*[1] [NICE, 2006]). A team of health professionals, lay representatives and technical experts known as the Guideline Development Group (GDG), with support from the NCCMH staff, undertook the development of a patient-centred, evidence-based guideline. There are six basic steps in the process of developing a guideline:

- Define the scope, which sets the parameters of the guideline and provides a focus and steer for the development work.
- Define clinical questions considered important for practitioners and service users.
- Develop criteria for evidence searching and search for evidence.
- Design validated protocols for systematic review and apply to evidence recovered by search.
- Synthesise and (meta-) analyse data retrieved, guided by the clinical questions, and produce evidence profiles.
- Answer clinical questions with evidence-based recommendations for clinical practice.

The clinical practice recommendations made by the GDG are therefore derived from the most up-to-date and robust evidence base for the clinical and cost effectiveness of psychosocial interventions for people who misuse drugs. In addition, to ensure a service user and carer focus, the concerns of service users and carers regarding health and social care have been highlighted and addressed by recommendations agreed by the whole GDG.

3.2 The Scope

Guideline topics are selected by the Department of Health and the Welsh Assembly Government, which identify the main areas to be covered by the guideline in a specific remit (see *The Guideline Development Process – An*

[1] Available from: www.nice.org.uk

Overview for Stakeholders, the Public and the NHS (second edition)[2]). The remit for this guideline was translated into a scope document by staff at the NCCMH.

The purpose of the scope was to:

- provide an overview of what the guideline will include and exclude
- identify the key aspects of care that must be included
- set the boundaries of the development work and provide a clear framework to enable work to stay within the priorities agreed by NICE and the NCC and the remit from the Department of Health/Welsh Assembly Government
- inform the development of the clinical questions and search strategy
- inform professionals and the public about the expected content of the guideline
- keep the guideline to a reasonable size to ensure that its development can be carried out within a 12-month period.

The draft scope was subject to consultation with stakeholders over a 4-week period. During the consultation period, the scope was posted on the NICE website (www.nice.org.uk). Comments were invited from stakeholder organisations and Guideline Review Panel (GRP). Further information about the GRP can also be found on the NICE website. The NCCMH and NICE reviewed the scope in light of comments received, and the revised scope was signed off by the GRP.

3.3 The Guideline Development Group

The GDG consisted of: two service users and a carer, and professionals from psychiatry, clinical psychology, general practice, the Prison Service, the National Treatment Agency for Substance Misuse and the private and voluntary sectors. The guideline development process was supported by staff from the NCCMH, who undertook the clinical and health economics literature searches, reviewed and presented the evidence to the GDG, managed the process and contributed to drafting the guideline.

3.3.1 Guideline Development Group meetings

Nine GDG meetings were held between November 2005 and February 2007. During each day-long GDG meeting, in a plenary session, clinical questions and clinical and economic evidence were reviewed and assessed, and

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[2] National Institute for Health and Clinical Excellence (September 2006) *The Guideline Development Process – An Overview for Stakeholders, the Public and the NHS (second edition)*. London: National Institute for Health and Clinical Excellence. Available from: www.nice.org.uk

recommendations formulated. At each meeting, all GDG members declared any potential conflicts of interest, and service user and carer concerns were routinely discussed as part of a standing agenda.

3.3.2 Topic groups

The GDG divided its workload along clinically relevant lines to simplify the guideline development process, and GDG members formed smaller topic groups to undertake guideline work in that area of clinical practice. Topic Group 1 covered questions relating to identification and recognition. Topic Group 2 covered brief interventions and the reduction of injection and sexual risk behaviours, Topic Group 3 covered formal psychological interventions and Topic Group 4 covered inpatient and prison settings. These groups were designed to efficiently manage the large volume of evidence appraisal prior to presenting it to the GDG as a whole. Each topic group was chaired by a GDG member with expert knowledge of the topic area (one of the healthcare professionals). Topic groups refined the clinical questions, refined the clinical definitions of treatment interventions, reviewed and prepared the evidence with the systematic reviewer before presenting it to the GDG as a whole and helped the GDG to identify further expertise in the topic. Topic group leaders reported the status of the group's work as part of the standing agenda. They also introduced and led the GDG discussion of the evidence review for that topic and assisted the GDG Chair in drafting the section of the guideline relevant to the work of each topic group.

3.3.3 Service users and carers

Individuals with direct experience of services gave an integral service-user focus to the GDG and the guideline. The GDG included two service users and a carer. They contributed as full GDG members to writing the clinical questions, helping to ensure that the evidence addressed their views and preferences, highlighting sensitive issues and terminology relevant to the guideline, and bringing service-user research to the attention of the GDG. In drafting the guideline, they contributed to writing the guideline's introduction and identified recommendations from the service user and carer perspective.

3.3.4 Special advisors

Special advisors, who had specific expertise in one or more aspects of treatment and management relevant to the guideline, assisted the GDG, commenting on specific aspects of the developing guideline and making presentations to the GDG. Appendix 2 lists those who agreed to act as special advisors.

3.3.5 National and international experts

National and international experts in the area under review were identified through the literature search and through the experience of the GDG members. These experts were contacted to recommend unpublished or soon-

to-be published studies in order to ensure up-to-date evidence was included in the development of the guideline. They informed the group about completed trials at the pre-publication stage, systematic reviews in the process of being published, studies relating to the cost effectiveness of treatment and trial data if the GDG could be provided with full access to the complete trial report. Appendix 5 lists researchers who were contacted.

3.4 Clinical questions

Clinical questions were used to guide the identification and interrogation of the evidence base relevant to the topic of the guideline. Before the first GDG meeting, draft questions were prepared by NCCMH staff based on the scope and an overview of existing guidelines. They were then discussed by the GDG at their first two meetings and amended as necessary. Where appropriate, the questions were refined once the evidence had been searched and, where necessary, sub-questions were generated. The final list of clinical questions can be found in Appendix 6.

For questions about interventions, the PICO (patient, intervention, comparison and outcome) framework was used. This structured approach divides each question into four components: the patients (the population under study), the interventions (what is being done), the comparisons (other main treatment options) and the outcomes (the measures of how effective the interventions have been) (see Text Box 2).

Text Box 2: Features of a well-formulated question on effectiveness intervention — the PICO guide

Patients/ population	Which patients or population of patients are we interested in? How can they be best described? Are there subgroups that need to be considered?
Intervention	Which intervention, treatment or approach should be used?
Comparison	What is/are the main alternative/s to compare with the intervention?
Outcome	What is really important for the patient? Which outcomes should be considered: intermediate or short-term measures; mortality; morbidity and treatment complications; rates of relapse; late morbidity and readmission; return to work, physical and social functioning and other measures such as quality of life; general health status; costs?

Questions relating to diagnosis do not involve an intervention designed to treat a particular condition, therefore the PICO framework was not used. Rather, the questions were designed to pick up key issues specifically relevant to diagnostic tests, for example their accuracy, reliability, safety and acceptability to the patient.

In some situations, the prognosis of a particular condition is of fundamental importance, over and above its general significance in relation to specific interventions. Areas where this is particularly likely to occur relate to assessment of risk, for example in terms of behaviour modification or screening and early intervention. In addition, questions related to issues of service delivery are occasionally specified in the remit from the Department of Health (DH)/Welsh Assembly Government. In these cases, appropriate clinical questions were developed to be clear and concise.

To help facilitate the literature review, a note was made of the best study design type to answer each question. There are four main types of clinical question of relevance to NICE guidelines. These are listed in Text Box 3. For each type of question, the best primary study design varies, where 'best' is interpreted as 'least likely to give misleading answers to the question'.

However, in all cases, a well-conducted systematic review of the appropriate type of study is likely to always yield a better answer than a single study.

Deciding on the best design type to answer a specific clinical or public health question does not mean that studies of different design types addressing the same question were discarded.

Text Box 3: Best study design to answer each type of question

Type of question	Best primary study design
Effectiveness or other impact of an intervention	Randomised controlled trial; other studies that may be considered in the absence of an RCT are the following: internally / externally controlled before and after trial, interrupted time-series
Accuracy of information (e.g. risk factor, test, prediction rule)	Comparing the information against a valid gold standard in a randomised trial or inception cohort study
Rates (of disease, patient experience, rare side effects)	Cohort, registry, cross-sectional study
Costs	Naturalistic prospective cost study

3.5 Systematic clinical literature review

The aim of the clinical literature review was to systematically identify and synthesise relevant evidence from the literature in order to answer the specific clinical questions developed by the GDG. Thus, clinical practice recommendations are evidence based, where possible, and, if evidence is not available, informal consensus methods are used (see Section 3.5.6) and the need for future research is specified.

3.5.1 Methodology

A stepwise, hierarchical approach was taken to locating and presenting evidence to the GDG. The NCCMH developed this process based on methods set out in *The Guidelines Manual*[3] and after considering recommendations from a range of other sources. These included:

- Clinical Policy and Practice Program of the New South Wales Department of Health
- Clinical Evidence online
- The Cochrane Collaboration
- New Zealand Guidelines Group
- NHS Centre for Reviews and Dissemination
- Oxford Centre for Evidence-Based Medicine
- Scottish Intercollegiate Guidelines Network (SIGN)
- United States Agency for Healthcare Research and Quality
- Oxford Systematic Review Development Programme
- Grading of Recommendations: Assessment, Development and Evaluation (GRADE) Working Group.

3.5.2 The review process

After the scope was finalised, a more extensive search for systematic reviews and published guidelines was undertaken. Existing NICE guidelines were updated where necessary. Other relevant guidelines were assessed for quality using the AGREE instrument (AGREE Collaboration, 2003). The evidence base underlying high-quality existing guidelines was utilised and updated as appropriate.

At this point, the review team, in conjunction with the GDG, developed a review protocol that detailed all comparisons necessary to answer the clinical questions. The initial approach taken to locating primary-level studies depended on the type of clinical question and availability of evidence.

The GDG decided which questions were best addressed by good practice based on expert opinion, which questions were likely to have a good evidence base and which questions were likely to have little or no directly relevant evidence. Recommendations based on good practice were developed by

[3] National Institute for Health and Clinical Excellence (April 2006) *The Guidelines Manual*. London: National Institute for Health and Clinical Excellence. Available from: www.nice.org.uk

informal consensus of the GDG. For questions with a good evidence base, the review process depended on the type of key question (see below). For questions that were unlikely to have a good evidence base, a brief descriptive review was initially undertaken by a member of the GDG.

Searches for evidence were updated 6–8 weeks before the stakeholder consultation. After this point, studies were included only if they were judged by the GDG to be exceptional (for example, the evidence was likely to change a recommendation).

The search process for questions concerning interventions

For questions related to interventions, the initial evidence base was formed from well-conducted randomised controlled trials (RCTs) that addressed at least one of the clinical questions. Although there are a number of difficulties with the use of RCTs in the evaluation of interventions in mental health, the RCT remains the most important method for establishing treatment efficacy (this is discussed in more detail in appropriate clinical evidence chapters). For other clinical questions, searches were for the appropriate study design.

All searches were based on the standard mental health related bibliographic databases (EMBASE, MEDLINE, PsycINFO, Cochrane Library, CINAHL) for all trials potentially relevant to the guideline.

Where the evidence base was large, recent high-quality English-language systematic reviews were used primarily as a source of RCTs (see Appendix 10 for quality criteria used to assess systematic reviews). However, in some circumstances existing data sets were utilised. Where this was the case, data were cross-checked for accuracy before use. New RCTs meeting inclusion criteria set by the GDG were incorporated into the existing reviews and fresh analyses performed.

After the initial search results were scanned liberally to exclude irrelevant papers, the review team used a purpose-built 'study information' database to manage both the included and the excluded studies (eligibility criteria were developed after consultation with the GDG). For questions without good-quality evidence (after the initial search), a decision was made by the GDG about whether to (a) repeat the search using subject-specific databases (for example, AMED, SIGLE or PILOTS), (b) conduct a new search for lower levels of evidence or (c) adopt a consensus process (see Section 3.5.6). Future guidelines will be able to update and extend the usable evidence base starting from the evidence collected, synthesised and analysed for this guideline.

In addition, searches were made of the reference lists of all eligible systematic reviews and included studies, as well as the list of evidence submitted by stakeholders. Known experts in the field (see Appendix 5), based both on the

references identified in early steps and on advice from GDG members, were sent letters requesting relevant studies that were in the process of being published[4]. In addition, the tables of contents of appropriate journals were periodically checked for relevant studies.

The search process for questions of diagnosis and prognosis

For questions related to diagnosis and prognosis, the search process was the same as described above, except that the initial evidence base was formed from studies with the most appropriate and reliable design to answer the particular question. That is, for questions about diagnosis, the initial search was for cross-sectional studies; for questions about prognosis, it was for cohort studies of representative patients. In situations where it was not possible to identify a substantial body of appropriately designed studies that directly addressed each clinical question, a consensus process was adopted (see Section 3.5.6).

Search filters

Search filters developed by the review team consisted of a combination of subject heading and free-text phrases. Specific filters were developed for the guideline topic and, where necessary, for each clinical question. In addition, the review team used filters developed for systematic reviews, RCTs and other appropriate research designs (Appendix 8).

Study selection

All primary-level studies included after the first scan of citations were acquired in full and re-evaluated for eligibility at the time they were being entered into the study information database. Eligibility criteria were developed for each clinical question and are described in the relevant clinical evidence chapters. Eligible systematic reviews and primary-level studies were critically appraised for methodological quality (see Appendix 10 and Appendix 15 [the characteristics of included studies table]). The eligibility of each study was confirmed by at least one member of the appropriate topic group.

For some clinical questions, it was necessary to prioritise the evidence with respect to the UK context (that is, external validity). To make this process explicit, the topic groups took into account the following factors when assessing the evidence:

- participant factors (for example, gender, age and ethnicity)

[4] Unpublished full trial reports were also accepted where sufficient information was available to judge eligibility and quality (see section on unpublished evidence).

- provider factors (for example, model fidelity, the conditions under which the intervention was performed and the availability of experienced staff to undertake the procedure)

- cultural factors (for example, differences in standard care and differences in the welfare system).

It was the responsibility of each topic group to decide which prioritisation factors were relevant to each clinical question in light of the UK context and then decide how they should modify their recommendations.

Unpublished evidence

The GDG used a number of criteria when deciding whether or not to accept unpublished data. First, the evidence must have been accompanied by a trial report containing sufficient detail to properly assess the quality of the data. Second, the evidence must have been submitted with the understanding that data from the study and a summary of the study's characteristics would be published in the full guideline. Therefore, the GDG did not accept evidence submitted as commercial in confidence. However, the GDG recognised that unpublished evidence submitted by investigators might later be retracted by those investigators if the inclusion of such data would jeopardise publication of their research.

3.5.3 Data extraction and synthesising the evidence

Outcome data were extracted from all eligible studies, which met the quality criteria. Where possible, meta-analysis was used to synthesise the evidence using Review Manager 4.2.8 (Cochrane Collaboration, 2005). If necessary, reanalyses of the data or sub-analyses were used to answer clinical questions not addressed in the original studies or reviews.

Where possible, dichotomous efficacy outcomes were calculated on an intention-to-treat basis (that is, a 'once-randomised-always-analyse' basis). This assumes that those participants who ceased to engage in the study – from whatever group – had an unfavourable outcome. Adverse effects were entered into Review Manager as reported by the study authors because it was usually not possible to determine whether early withdrawals had an unfavourable outcome. For the outcome 'leaving the study early for any reason', the denominator was the number randomised.

Included/excluded studies tables, generated automatically from the study information database, were used to summarise general information about each study (see Appendix 15). Where meta-analysis was not appropriate and/or possible, the reported results from each primary-level study were also presented in the included studies table (and included, where appropriate, in a narrative review).

Consultation was used to overcome difficulties with coding. Data from studies included in existing systematic reviews were extracted independently by one reviewer and cross-checked with the existing data set. Where possible, two independent reviewers extracted data from new studies. Where double data extraction was not possible, data extracted by one reviewer was checked by the second reviewer. Disagreements were resolved with discussion. Where consensus could not be reached, a third reviewer resolved the disagreement. Masked assessment (that is, blind to the journal from which the article comes, the authors, the institution and the magnitude of the effect) was not used since it is unclear that doing so reduces bias (Jadad *et al.*, 1996; Berlin, 2001).

3.5.4 Presenting the data to the GDG

Summary characteristics tables and, where appropriate, forest plots generated with Review Manager were presented to the GDG in order to prepare an evidence profile for each review and to develop recommendations.

Evidence profile tables

An evidence profile table was used to summarise both the quality of the evidence and the results of the evidence synthesis (see **Table 1** for an example of an evidence profile table). Each table included details about the quality assessment of each outcome: number of studies, the study design, limitations (based on the quality of individual studies; see Appendix 12 for the quality checklists and Appendix 15 for details about each study), information about the consistency of the evidence (see below for how consistency was measured), directness of the evidence (that is, how closely the outcome measures, interventions and participants match those of interest) and any other considerations (for example, effect sizes with wide confidence intervals (CIs) would be described as imprecise data). Each evidence profile also included a summary of the findings: number of patients included in each group, an estimate of the magnitude of the effect, and quality of the evidence. The quality of the evidence was based on the quality assessment components (study design, limitations to study quality, consistency, directness and any other considerations) and graded using the following definitions:

- **High** = Further research is very unlikely to change our confidence in the estimate of the effect
- **Moderate** = Further research is likely to have an important impact on our confidence in the estimate of the effect and may change the estimate
- **Low** = Further research is very likely to have an important impact on our confidence in the estimate of the effect and is likely to change the estimate
- **Very low** = Any estimate of effect is very uncertain.

For further information about the process and the rationale of producing an evidence profile table, see GRADE (2004).

Table 1: Example of GRADE evidence profile for methadone maintenance treatment plus contingency management versus methadone maintenance treatment plus control (not all outcomes are shown)

Quality assessment						Summary of findings					
						No of patients		Effect		Quality	Impor -tance
No of studies	Design	Limitations	Consistency	Directness	Other considerations	MMT+CM	MMT+ control	Relative (95% CI)	Absolute (95% CI)		
Minimum 3-26 weeks' abstinence (Chutuape, 2001; McClellan, 1993; Petry, 2002; Pierce, 2006; Rawson, 2002; Schottenfeld, 2005; Silverman, 1998; Silverman, 2004; Stitzer, 1992)											
9	RCT	No limitations	No important inconsistency	Some uncertainty (-1)[1]	Strong association (+1)[2]	130/403 (32.3%)	34/404 (8.4%)	RR 3.89 (2.78 to 5.45)	-	⊕⊕⊕⊕ High	9
Minimum 3-6 weeks' abstinence (Petry, 2002; Rawson, 2002; Silverman, 1998; Stitzer, 1992)											
4	RCT	No limitations[3]	No important inconsistency	Some uncertainty (-1)[1]	Strong association (+1)[2]	48/94 51.1%	15/97 15.5%	RR 3.28 (2.00 to 5.36)	-	⊕⊕⊕⊕ High	9
Minimum 8-12 weeks' abstinence (Chutuape, 2001; McClellan, 1993; Pierce, 2006; Schottenfeld, 2005)											
4	RCT	No limitations	No important inconsistency	Some uncertainty (-1)[1]	Strong association (+1)[2]	71/283 25.1%	19/281 6.8%	RR 3.87 (2.43 to 6.16)	-	⊕⊕⊕⊕ High	9
Minimum of 26 weeks' abstinence (Silverman, 2004)											
1	RCT	No limitations[3]	Important inconsistency (-1)[2]	Some uncertainty (-1)[1]	Imprecise or sparse data (-1)[3] Very strong association (+2)[4]	11/26 42.3%	0/26 0%	RR 23.00 (1.43 to 371.00)	-	⊕⊕⊕⊕ High	9
Abstinence (6-month follow-up) (Rawson; 2002; Petry, 2005c)											
2	RCT	No limitations	No important inconsistency	Some uncertainty (-1)[1]	None	28/70 40%	15/67 22.4%	RR 1.81 (1.07 to 3.06)	-	⊕⊕⊕◯ Moderate	9
Abstinence from cocaine (6-month follow-up) (Petry, 2002)											

1	RCT	No limitations	No important inconsistency	Some uncertainty (-1)[1]	Imprecise or sparse data (-1)[3] Strong association (+1)[5]	19/221 8.6%	23/639 3.6%	-	SMD -1.43 (-2.12 to 0.75)	⊕⊕⊕◯ Moderate	9
Abstinence (12-month follow-up) (Rawson, 2002)											
1	RCT	No limitations	No important inconsistency	Some uncertainty (-1)[1]	Imprecise or sparse data (-1)[3]	16/30 53.3%	8/30 26.7%	RR 2.00 (1.01 to 3.95)	-	⊕⊕◯◯ Low	9

Footnotes:

1. No UK studies
2. RR > 2
3. 1 small study
4. RR > 5
5. SMD > 100

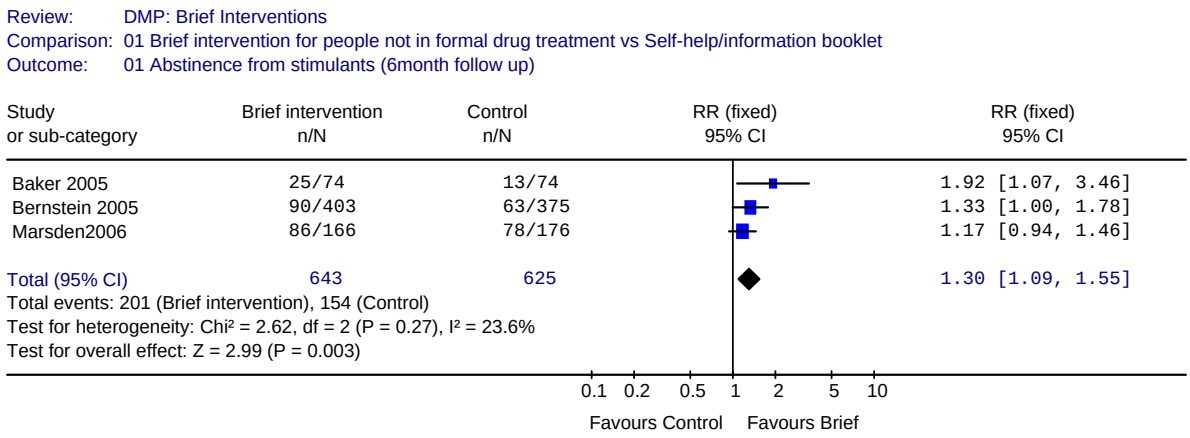
Forest plots

Forest plots were used to present the results of the meta-analyses to the GDG (see Appendix 15). Each forest plot displayed the effect size and confidence interval (CI) for each study, as well as the overall summary statistic.

For dichotomous data, the graphs were generally organised so that the display of data in the area to the right of the 'line of no effect' indicated a favourable outcome for the treatment in question. Dichotomous outcomes were presented as relative risks (RR) with the associated 95% CI (for an example, see **Figure 1**). A relative risk (or risk ratio) is the ratio of the treatment event rate to the control event rate. An RR of 1 indicates no difference between treatment and control.

The CI shows with 95% certainty the range within which the true treatment effect should lie and can be used to determine statistical significance. If the CI does not cross the 'line of no effect', the effect is statistically significant.

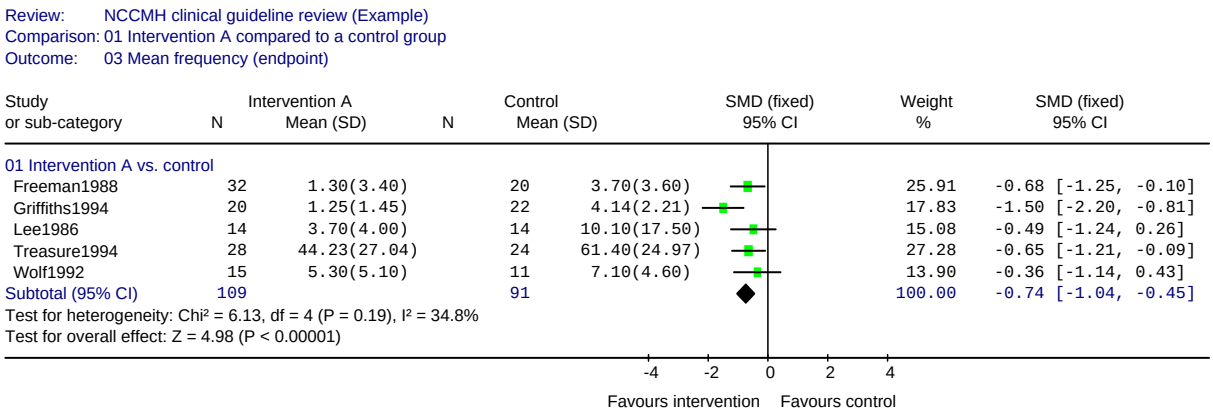
Figure 1. Example of a forest plot displaying dichotomous data



For continuous data, the graphs were generally organised so that the display of data in the area to the left of the 'line of no effect' indicated a favourable outcome for the treatment in question. Continuous outcomes were analysed as weighted mean differences (WMD), or as standardised mean differences (SMD) when different measures were used in different studies to estimate the same underlying effect (for an example, see

Figure 2). If provided, intention-to-treat data, using a method such as 'last observation carried forward', were preferred over data from completers.

Figure 2: Example of a forest plot displaying continuous data



To check for consistency between studies, both the I^2 test of heterogeneity and a visual inspection of the forest plots were used. The I^2 statistic describes the proportion of total variation in study estimates that is due to heterogeneity (Higgins & Thompson, 2002). The I^2 statistic was interpreted in the follow way:

- > 50%: notable heterogeneity (an attempt was made to explain the variation, for example outliers were removed from the analysis or sub-analyses were conducted to examine the possibility of moderators. If studies with heterogeneous results were found to be comparable, a random-effects model was used to summarise the results (DerSimonian & Laird, 1986). In the random-effects analysis, heterogeneity is accounted for both in the width of CIs and in the estimate of the treatment effect. With decreasing heterogeneity, the random-effects approach moves asymptotically towards a fixed-effects model)

- 30 to 50%: moderate heterogeneity (both the chi-squared test of heterogeneity and a visual inspection of the forest plot were used to decide between a fixed- and random-effects model)

- < 30%: mild heterogeneity (a fixed-effects model was used to synthesise the results).

3.5.5 Forming the clinical summaries and recommendations

The included study tables, forest plots and evidence profiles formed the basis for developing the evidence summaries and recommendations.

For intervention studies, quality assessment was conducted using SIGN methodology (SIGN, 2002) and classified according to a hierarchy (see Text Box 4).

Once the evidence profile tables and evidence summaries were finalised and agreed by the GDG, recommendations were developed, taking into account factors from the evidence, including trade-offs between the benefits and risks of treatment. Other important factors that were considered in developing recommendations included economic considerations, values of the GDG and society, and the group's awareness of practical issues (Eccles *et al*., 1998).

Text Box 4: Levels of evidence for intervention studies

Level	Type of evidence
1^{++}	High-quality meta-analyses, systematic reviews of RCTs or RCTs with a very low risk of bias
1^{+}	Well-conducted meta-analyses, systematic reviews of RCTs or RCTs with a low risk of bias
1^{-}	Meta-analyses, systematic reviews of RCTs or RCTs with a high risk of bias*
2^{++}	High-quality case–control or cohort studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal
2^{+}	Well-conducted case–control or cohort studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal
2^{-}	Case–control or cohort studies with a high risk of confounding bias or chance and a significant risk that the relationship is not causal*
3	Non-analytic studies (for example, case reports and case series)
4	Expert opinion, consensus methods
*Studies with a level of evidence '–' should not be used as a basis for making a recommendation Reproduced with permission from the Scottish Intercollegiate Guidelines Network	

3.5.6 Consensus method used to answer a key question in the absence of appropriately designed, high-quality research

In the absence of level I evidence (or a level that is appropriate to the question), or where the GDG were of the opinion (on the basis of previous searches or their knowledge of the literature) that there was unlikely to be such evidence, a consensus process was adopted. This process focused on those questions that the GDG considered a priority.

The starting point for the process of consensus was that a member of the topic group identified, with help from the systematic reviewer, a narrative review that most directly addressed the key question. Where this was not possible, a brief review of the recent literature was initiated.

This existing narrative review or new review was used as a basis for beginning an iterative process to identify lower levels of evidence relevant to the clinical question and to lead to written statements for the guideline. The process involved a number of steps:

1. A description of what is known about the issues concerning the clinical question was written by one of the topic group members.

2. Evidence from the existing review or new review was then presented in narrative form to the GDG and further comments were sought about the evidence and its perceived relevance to the clinical question.

3. Based on the feedback from the GDG, additional information was sought and added to the information collected. This may include studies that did not directly address the clinical question but were thought to contain relevant data.

4. If, during the course of preparing the report, a significant body of primary-level studies (of appropriate design to answer the question) were identified, a full systematic review was done.

5. At this time, subject possibly to further reviews of the evidence, a series of statements that directly addressed the clinical question were developed.

6. Following this, on occasions and as deemed appropriate by the development group, the report was then sent to appointed experts outside of the GDG for peer review and comment. The information from this process was then fed back to the GDG for further discussion of the statements.

7. Recommendations were then developed and could also be sent for further external peer review.

8. After this final stage of comment, the statements and recommendations were again reviewed and agreed upon by the GDG.

3.6 Health economics review strategies

The aim of the health economics review was to contribute to the guideline's development by providing evidence on the economic burden of drug misuse as well as on the relative cost effectiveness of different treatment options covered in the guideline. Where available, relevant evidence was collected and assessed in order to help the decision-making process.

This process was based on a preliminary analysis of the clinical evidence and had two stages:

- identification of the areas with likely major cost impacts within the scope of the guideline

- systematic review of existing data on the economic burden of drug misuse and cost-effectiveness evidence of different psychosocial treatment options for problem drug misuse.

In addition, in areas with likely major resource implications where relevant data did not already exist, a primary economic analysis based on available effectiveness data was undertaken alongside the guideline development process, in order to provide cost-effectiveness evidence and assist decision making.

3.6.1 Key economic issues

The following economic issues relating to the epidemiology and the management of drug misuse were identified by the GDG in collaboration with the health economist as primary key issues that should be considered in the guideline:

- the global economic burden of drug misuse with specific reference to the UK
- comparative cost effectiveness between psychological and physical interventions for the treatment of drug misuse
- comparative cost effectiveness between different types of service provision appropriate for the management of drug misuse.

3.6.2 Systematic literature review

A systematic review of the health economics evidence was conducted. The aim of the review was threefold:

- to identify publications providing information on the economic burden of drug misuse relevant to the UK context
- to identify existing economic evaluations of pharmacological, psychological and physical treatment interventions, as well as of appropriate forms of service configuration, for the management of problem drug users, that could be transferable to the UK patient population and healthcare setting
- to identify studies reporting health-state utility data transferable to the UK population to facilitate a possible cost–utility modelling process.

Although no attempt was made to review systematically studies with only resource use or cost data, relevant UK-based information was extracted for future modelling exercises if it was considered appropriate.

3.6.3 Search strategy

For the systematic review of economic evidence on drug misuse and its psychosocial interventions, the standard mental health related bibliographic databases (EMBASE, MEDLINE, CINAHL, PsychINFO and HTA) were searched. For these databases, a health economics search filter adapted from the Centre for Reviews and Dissemination (CRD) at the University of York was used in combination with a general filter for drug misuse. The subject

filter employed a combination of free-text terms and medical subject headings, with subject headings having been exploded. Additional searches were performed in specific health economics databases (NHS EED, OHE HEED). HTA and NHS EED databases were accessed via the Cochrane Library, using the general filter for drug misuse. OHE HEED was searched using a shorter, database-specific strategy. Initial searches were performed between November 2005 and October 2006. The searches were updated regularly, with the final search between 6 and 8 weeks before the first consultation.

In order to identify economic evidence on different types of service configurations appropriate for problem drug users, further searches were undertaken using the same electronic databases. In this case a similar methodology was applied, but a service configuration–focused filter was used.

In parallel to searches of electronic databases, reference lists of eligible studies and relevant reviews were searched by hand, and experts in the field of psychosocial interventions for drug misuse and mental health economics were contacted in order to identify additional relevant published and unpublished studies. Studies included in the clinical evidence review were also screened for economic evidence.

The database searches for general health economics evidence related to psychosocial interventions for drug misuse resulted in over 14,342 references. Of these, 758 were identified as being potentially relevant. Secondary searches using 'needle exchange', 'economic', 'cost', 'heroin', 'opiate', 'QALY', 'substance abuse', and 'crime' yielded 121 references. Additional searches for relevant 'contingency management' and 'pharmacoeconomic' papers resulted in a further 49 references, of which only six were considered acceptable in terms of basic criteria for health economics appraisal (as reported in Drummond, 1997). Further potentially eligible studies (including those where relevance/eligibility was not clear from the abstract) were obtained, a total of 12 papers. At this stage, inclusion was not limited to papers only from the UK. In total, 37 relevant effectiveness and health economics references were determined to be pertinent to the health economics of drug misuse.

Full texts of all potentially eligible studies (including those for which relevance/eligibility was not clear from the abstract) were obtained. These publications were then assessed against a set of standard inclusion criteria by the health economist, and papers eligible for inclusion as economic evaluations were subsequently assessed for internal validity. The quality assessment was based on the 35-point checklist used by the *British Medical Journal* to assist referees in appraising full economic analyses (Drummond & Jefferson, 1996) (Appendix 12).

3.6.4 Selection criteria

The following inclusion criteria were applied to select studies identified by the economic searches for further analysis:

- No restriction was placed on language or publication status of the papers.
- Studies published between 1985 and 2006 were included. This date restriction was imposed in order to obtain data relevant to current healthcare settings and costs.
- Only studies from Organisation for Economic Co-operation and Development (OECD) countries were included, as the aim of the review was to identify economic information transferable to the UK context. For the systematic review on the cost effectiveness of different types of service configuration, only studies conducted in the UK were considered, as it was believed that resource use associated with various types of service provision was likely to differ significantly between the UK and other OECD countries.
- Selection criteria based on types of clinical conditions and patients were identical to the clinical literature review.
- Studies were included provided that sufficient details regarding methods and results were available to enable the methodological quality of the study to be assessed, and provided that the study's data and results were extractable.

Additional selection criteria were applied in the case of economic evaluations:

- Only full economic evaluations that compared two or more options and considered both costs and consequences (that is, cost-minimisation analysis, cost–consequences analysis, cost-effectiveness analysis, cost–utility analysis or cost–benefit analysis) were included in the review.
- Economic studies were considered only if they utilised clinical evidence derived from a meta-analysis, a well-conducted literature review, a randomised controlled trial, a quasi-experimental trial or a cohort study.

3.6.5 Data extraction

Data were extracted by the health economist using an economic data extraction form (Appendix 13). Masked assessment, whereby data extractors are blind to the details of journal, authors, and so on, was not undertaken.

3.6.6 Presentation of the results

The economic evidence identified by the health economics systematic review is summarised in the respective chapters of the guideline, following presentation of the clinical evidence. The characteristics and results of all economic studies included in the review are provided in the form of evidence tables in Appendix 14. Results of additional economic modelling undertaken alongside the guideline development process are also presented in the relevant chapters.

3.7 Stakeholder contributions

Professionals, service users and companies have contributed to and commented on the guideline at key stages in its development. Stakeholders for this guideline include:

- service user/carer stakeholders: the national service user and carer organisations that represent people whose care is described in this guideline
- professional stakeholders: the national organisations that represent healthcare professionals who are providing services to service users
- commercial stakeholders: the companies that manufacture medicines used in the treatment of drug misuse
- Primary Care Trusts
- Department of Health and Welsh Assembly Government.

Stakeholders have been involved in the guideline's development at the following points:

- commenting on the initial scope of the guideline and attending a briefing meeting held by NICE
- contributing possible clinical questions and lists of evidence to the GDG
- commenting on the first and second drafts of the guideline.

3.8 Validation of this guideline

Registered stakeholders had two opportunities to comment on the draft guideline, which was posted on the NICE website during the consultation periods. The GRP also reviewed the guideline and checked that stakeholders' comments had been addressed.

Following the final consultation period, the GDG finalised the recommendations and the NCCMH produced the final documents. These were then submitted to NICE. NICE then formally approved the guideline and issued its guidance to the NHS in England and Wales.

4 Introduction to drug misuse

4.1 Drug misuse

This guideline is concerned with psychosocial treatment of the misuse of opiates, stimulants and cannabis. In the UK, it has been estimated that around 4 million people use illicit drugs each year, with cannabis by far the most commonly used, followed by cocaine and ecstasy (Roe & Man, 2006). Opiate misuse occurs on a smaller scale but is associated with much greater rates of harm than either cocaine or cannabis.

Opiates refer to a class of psychoactive substances derived from the poppy plant, including opium, morphine and codeine, as well as semi-synthetic forms including heroin (WHO, 2004). In this guideline, the term 'opiate' is used more broadly to incorporate synthetic compounds (including methadone and buprenorphine) with similar properties, also commonly known as opioids (WHO, 2004). Illicit use of opiates generally involves injection, or inhalation of the fumes produced by heating the drug. Stimulants refer broadly to any substance that activates, enhances or increases neural activity (WHO, 2006).

Illicit stimulants include cocaine, crack cocaine and amphetamines. Cocaine is one of the most commonly misused illicit stimulants in the UK (Roe & Man, 2006). Cocaine is extracted from the leaf of the coca plant and generally sniffed in powder form. Crack cocaine is usually smoked but sometimes injected. Amphetamines are a group of synthetic substances with different chemical structures but broadly similar stimulant properties to cocaine, and include dexamfetamine sulphate (a prescription drug licensed for the treatment of narcolepsy and attention-deficit hyperactivity disorder [ADHD]) but which has misuse potential) and methamphetamine.

Cannabis is a generic term denoting the various preparations of the cannabis sativa plant, including cannabis leaves (the most common form, which is smoked), hashish resin and the rarely used cannabis oil. Tetrahydrocannabinol (THC) is the key constituent of cannabis that produces the psychoactive effect sought by most users, and the different forms of cannabis vary in their THC content. (WHO, 2006). Cannabis is the most commonly used illicit drug in the UK (Roe & Man, 2006).

Definitions

Drug misuse is defined as the use of a substance for a purpose not consistent with legal or medical guidelines (WHO, 2006). It has negative impacts on health or functioning and may take the form of drug dependence, or be part of a wider spectrum of problematic or harmful behaviour (Department of Health, 2006). In the UK, the Advisory Council on the Misuse of Drugs

(ACMD) characterises problem drug use as a condition that may cause an individual to experience social, psychological, physical or legal problems related to intoxication and/or regular excessive consumption, and/or dependence, as a consequence of his or her use of drugs or other chemical substances (ACMD, 1998).

In this guideline, dependence is defined as a strong desire or sense of compulsion to take a substance, a difficulty in controlling its use, the presence of a physiological withdrawal state, tolerance of the use of the drug, neglect of alternative pleasures and interests and persistent use of the drug, despite harm to oneself and others (WHO, 2006). Dependence is diagnosed according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) when three or more of the following criteria are present in a 12-month period: tolerance; withdrawal; increasing use over time; persistent or unsuccessful attempts to reduce use; preoccupation or excessive time spent on use or recovery from use; negative impact on social, occupational or recreational activity; and continued use despite evidence of its causing psychological or physical problems (APA, 1994).

The diagnosis of dependence is clearest with opiates. The WHO states that 'opioid dependence develops after a period of regular use of opioids, with the time required varying according to the quantity, frequency and route of administration, as well as factors of individual vulnerability and the context in which drug use occurs. Opioid dependence is not just a heavy use of the drug but a complex health connotation that has social, psychological and biological determinants and consequences, including changes in the brain. It is not a weakness of character or will.' (WHO, 2006) However, under the above definition, dependence can also occur with stimulants and cannabis.

Repeated use of a drug can lead to the development of tolerance in which increased doses of the drug are required to produce the same effect. Tolerance develops to opiate, stimulants and cannabis. Cessation of use leads to reduced tolerance and this may present significant risks for people who misuse drugs who return to drug doses at a level to which they had previously developed tolerance. This can lead to accidental overdoses and, in the case of opiate misuse, could lead to respiratory depression and death.

Withdrawal syndromes have clearly been identified after cessation or reduction of opiate and stimulant use. DSM-IV criteria for a withdrawal disorder include the development of a substance-specific syndrome due to cessation or reduction in use; the syndrome causing clinically significant distress; and symptoms not due to a general medical condition or better explained by another mental disorder (American Psychiatric Association, 1994). Whilst withdrawal effects have been associated with cessation of heavy cannabis use, their clinical significance is presently uncertain (Budney *et al.*, 2004).

Opiates, stimulants and cannabis also produce intoxication, that is, disturbances in psychophysiological functions and responses, including consciousness, cognition and behaviour, following administration of a psychoactive substance (WHO, 2006). These are described in greater detail in section 4.5.

People who misuse drugs may present with a range of health and social problems other than dependence, which may include (particularly with opiate users):

- physical health problems (for example, thrombosis, abscesses, overdose, hepatitis B and C, HIV, and respiratory and cardiac problems)
- mental health problems (for example, depression, anxiety, paranoia, and suicidal thoughts)
- social difficulties (for example, relationship problems, financial difficulties, unemployment and homelessness)
- criminal justice problems.

Many people who misuse drugs use a range of substances concurrently and regularly (known as poly-drug misuse). The use of opiates alongside cocaine or crack cocaine is common, with the National Drug Treatment Monitoring System (NDTMS), which collects, collates and analyses information from those involved in the drug treatment system, reporting an increase in the use of both drugs, from 18% of those presenting for drug treatment in 1998 to 24% in 2001 (NTA, 2005). Alcohol misuse is also common in all types of people who misuse drugs; data from the National Treatment Outcomes Research Study (NTORS) suggested that 22% of participants drank alcohol frequently, 17% drank extremely heavily and 8% drank an excessive amount on a daily basis (Gossop *et al.*, 2000a). People who misuse opiates in particular may often take a cocktail of substances, including alcohol, cannabis and prescribed drugs such as benzodiazepines, which can have particularly dangerous effects in comparison to those of each drug taken by itself.

Drug dependence is associated with a high incidence of criminal activity with associated costs to the criminal justice system in the UK estimated as reaching £1 billion per annum in 1996 (United Kingdom Anti-Drugs Coordinating Unit, 1998). For example, more than 17,000 offences were reported by an NTORS cohort of 753 participants in a 90-day period before entering treatment (Gossop *et al.*, 2000b). Notably, most of the offences were committed by a small proportion of the cohort (10% of participants accounted for 76% of the crimes). Illicit drug use is also much more common amongst known offenders in the UK than amongst comparable age cohorts drawn from the general population. In a sample of 1,435 arrestees drug-tested and

interviewed by Bennett and colleagues (2001), 24% tested positive for opiates. The average weekly expenditure on drugs (heroin and crack/cocaine) was £290, and the main sources of illegal income were theft, burglary, robbery, handling stolen goods and fraud. The NTORS also found 61% of a drug misuse treatment sample reported committing crimes other than drug possession in the 3 months prior to starting treatment, with the most commonly reported offence shoplifting.) In addition, there is a high prevalence of drug misuse among the incarcerated population: between 41 and 54% of remand and sentenced prisoners were reported to be opiate, stimulant and/or cannabis dependent in the year prior to incarceration (Singleton *et al.*, 1999). Drug treatment can lead to significant reductions in offending levels (Gossop *et al.*, 2003) and, as a consequence, the prison and the broader criminal justice system is an increasingly significant referral source and venue for the provision of drug treatment.

4.2 Epidemiology

According to the national British Crime Survey (Roe & Man, 2006), 34.9% of 16–59 year olds have used one or more illicit drugs in their lifetime, 10.5% in the last year and 6.3% in the last month. These figures are much lower for opiate use, with 0.1% of the population having used opiates (including heroin and methadone) in the last year. However, estimates based on data that also take into account other indicators such as current service usage provide an illicit drug use figure of 9.35 per thousand of the population aged 15–64 years (360,811), of whom 3.2 per thousand (123,498) are injecting dug users (Chivite-Matthews *et al.*, 2005). Analysis of the 2004/5 data from the NDTMS suggests that there were an estimated 160,450 people in contact with treatment services in England during that period, the majority for primary opiate misuse (National Treatment Agency, 2005b). Males comprise over 70% of new presentations to treatment, and the majority of those requiring treatment are opiate dependent (typically using illicit heroin). Similar figures have emerged from Frischer and colleagues (2001), who estimated that 0.5% of the population of Britain (that is, 226,000 people) to be problem drug users. More recent estimates indicate that there are around 327,000 problem (opiate and/or crack cocaine use) drug users in the UK, with 280,000 of these opiate users (Hay *et al.*, 2006).

Drug misuse is commoner in certain vulnerable groups. For example, Ward and colleagues (2003) found that amongst care leavers aged between 14 and 24 years, drug misuse is much higher than in the general population, with three quarters of the sample having at some time misused a drug and over half having misused a drug in the previous month. Levels in the young homeless population are also much higher than the general population, with one survey finding that almost all (95%) of the sample had at some time misused drugs, many (76%) having used cocaine, heroin, and/or amphetamine in the past month.

4.3 Aetiology and maintenance of drug misuse

Drug misuse is increasingly portrayed in the field as a medical disorder (known as the 'disease model' of drug misuse), in part due to advances in our understanding of the neurobiology underlying dependence (Volkow & Li, 2005). There is also no question that numerous socioeconomic and psychological factors all play an important part in the aetiology of drug misuse. These conceptualisations are not mutually exclusive, rather they are facets of the multifactorial aetiology of drug misuse.

A defining characteristic of drug dependence is that drug use initiates as a voluntary action to seek a rewarding stimulus, but continued use results in loss of control over the use, despite its negative consequences (Dackis & O'Brien, 2005). The effects of many illicit drugs are mediated via various brain circuits, in particular the mesolimbic systems, which have evolved to respond to basic rewards (such as food and sex) to ensure survival. A diverse range of substances, including opiates, stimulants and cannabis, as well as alcohol and nicotine, all appear to produce euphoric effects via increasing levels of dopamine (a neurotransmitter) in the nucleus accumbens (Dackis & O'Brien, 2005). This has been well demonstrated in human brain-imaging studies (Volkow *et al*., 1999). Euphoria resulting from use then potentiates further use, particularly for those with a genetic vulnerability (see below). Chronic drug use may produce long-lasting changes in the reward circuits, including reductions in dopamine receptor levels (Volkow *et al*., 1999), and again these contribute to the clinical course of drug dependence, including craving, tolerance and withdrawal (Lingford-Hughes & Nutt, 2003). In addition, other types of neurotransmitter systems (for example, opiates, glutamates and cannabinoids) are implicated in the misuse of specific drugs.

Studies of twins, families, and people who have been adopted show that vulnerability to drug misuse may have a genetic component (Prescott *et al.*, 2006), but it is not clear whether for a given individual repeated use is primarily determined by genetic predisposition or whether socioeconomic and psychological factors lead an individual to try and then later to use opiates compulsively. Family relationships play a part and experiences such as childhood neglect, homelessness or abuse increase the likelihood that the individual will develop problems with drugs later on in life (Kumpfer & Bluth, 2004). Risk factors for heavy, dependent drug use are much more significant when they occur together rather than individually.

Initiation into drug use does not lead inevitably to regular and problematic use for many people. Vulnerability to use is highest among young people, with most problem heroin users initiating before the age of 20. Individuals dependent on drugs often become so in their early twenties and may remain intermittently dependent for many years. However, it is clear that when use begins, it often escalates to misuse and then to dependence (tolerance,

withdrawal symptoms and compulsive drug-taking). Once dependence is established, particularly with opiates, there may be repeated cycles of cessation and relapse extending over decades (National Consensus Development Panel on Effective Medical Treatment of Opiate Addiction, 1998).

Drug users exhibit different patterns of use, which includes intermittent 'recreational' use to dependent heroin injecting. Recreational use is more common with cannabis and cocaine and it is likely that there are different patterns of use, with cocaine use dividing between those who take the drug on an episodic basis and those who take it on a daily basis; cannabis use in contrast usually moves in only a small number of cases to repeated (daily) increasingly heavy use, with many using intermittently. These differences may relate to the different intensities of action different drugs produce within the neural reward sites (Stimmel & Kreek, 2000).

The neurobiological account of fundamental reward systems implicated in drug misuse may parallel the sociocultural–behavioural–cognitive model presented by Orford (2001). He conceptualised drug misuse as an 'excessive appetite', belonging to the same class of disorders as gambling, eating disorders and sex addiction. All involve activities that form strong attachment, and were once rewarding, but with excessive consumption result in compulsion and negative consequences. Orford argues that the emotional regulation of such appetitive behaviours in their respective social contexts (for example, the excitement associated with gambling or the anticipation of the next 'fix' of heroin), well characterised within the principles of operant conditioning, is a primary factor driving excessive use. Secondary factors such as internal conflict (knowing that the behaviour is harmful yet being unable to disengage from it) potentiate these emotions and thus excessive use, but an alternative result is that the individual alters behaviour in order to resolve such conflict. This crucially suggests that recovery is not impossible, but also that successful treatment attempts are likely to operate against a background of powerful natural processes (Orford, 2001).

4.4 The course of drug misuse

Drug misuse is a relapsing and remitting condition often involving numerous treatment episodes over several years (Marsden *et al.*, 2004). Of those attending for treatment (predominantly opiate users), most individuals develop dependence in their late teens or early twenties, several years after their first use of heroin, and continue use over the next 10–20 years. In a long-term outcome study (up to 24 years) of 581 male opiate users in the US, 29% were abstinent, 23% had positive urine tests for opiates, 18% were in prison and 28% were dead (Hser *et al.*, 1993). Longitudinal data from the US also showed that the average time from first to last opiate use was 9.9 years, with 40% addicted for over 12 years (Joe *et al.*, 1990). Although it is the case that

problem drug users can cease drug use without any formal treatment (Biernacki, 1986), for many it is treatment that alters the course of opiate dependence.

Although drug misuse can affect all socioeconomic groups, deprivation and social exclusion are likely to make a significant contribution to the maintenance of drug misuse (ACMD, 1998).

Factors that influence the cessation of drug use in adulthood are similar to those associated with lack of drug use in adolescence. For example, conventionality in a social role (such as a job, mortgage or marriage), a social context not favourable to using drugs (for example, employment), and good health are not associated with long-term use. Peer influences are a major influence on experimental use and are also likely to influence the move towards regular use. The level of drug use is also a predictor of continued use; the more used, the more likelihood there is of continued problematic use. Once an individual is dependent, drug use is generally a chronic condition, interspersed with periods of relapse and remission. Repeated interaction with the criminal justice system, long-term unemployment and increasing social isolation serve to further entrench drug use.

4.5 The pharmacological effects of drug misuse

Opiates

Opiate drugs have many effects on the brain, mediated through specific receptors (mu, kappa or delta) in particular areas of the brain. The key opiate receptor subtype is mu, which mediates 'liking' as well as respiratory depression and is the main target for opiates (Lingford-Hughes & Nutt, 2003). The kappa receptor is involved in mood regulation. Drugs such as heroin and methadone are agonists, which stimulate the receptor. Buprenorphine is a partial agonist; that is, it occupies the receptors in the same way but only partially activates it. In addition, it is an antagonist at the kappa receptor and therefore is less likely to lower mood compared to agonists.

Soon after injection (or inhalation), heroin metabolises into morphine and binds to opiate receptors. This is subjectively experienced as a euphoric rush, normally accompanied by warm flush, dry mouth, and sometimes nausea, vomiting and severe itching. As the rush wears off, drowsiness, slowing of cardiac function and breathing (sometimes to the point of death in an overdose) persist for several hours (NIDA, 2005a). The effects of methadone are similar but more drawn out and therefore less intense (lasting up to 24 hours when taken orally as prescribed); however, this may be circumvented by illicit users who inject the drug.

The most obvious consequence of long-term opiate use is the development of opiate dependence itself, and the associated harms. Repeated injection will

also have medical consequences such as scarring, infection of blood vessels, abscesses, and compromised functioning of the kidney, liver and lungs (with increased vulnerability to infections).

Stimulants

As central nervous system stimulants, cocaine and amphetamine affect a number of neurotransmitter systems in the brain but exert their effects primarily via dopamine, which mediates reward. Cocaine blocks the presynaptic reuptake of dopamine, such that it is not removed from the intracellular space and leads to extended firing of post-synaptic neurons, resulting in physiological arousal. Amphetamines also increase the availability of dopamine but are thought to do so by triggering a presynaptic leakage.

The acute subjective effects of cocaine are euphoria, increased energy, heightened alertness, sexual arousal, increased sociability and talkativeness. Physiologically there can be acute adverse effects on the breathing, cardiovascular and central nervous systems: increased heart rate, blood pressure and body temperature, and pupil dilation. All these effects have near-immediate onset but also diminish quickly (roughly 15–30 minutes if the drug is snorted and 5–10 minutes if smoked), as cocaine is metabolised rapidly by the body (NIDA, 2005b). As acute effects wear off, users experience a rebound period ('crash') which may include restlessness, anxiety, agitation and insomnia. This can lead to the user bingeing on cocaine in an attempt to displace these negative effects. Chronic misuse of cocaine may lead to increased paranoia, inability to concentrate, sexual dysfunction and cognitive deficits.

For amphetamines, the acute effects are broadly similar except that they are long lasting (normally 4–8 hours), due to slower metabolism. Overdoses may lead to dangerously elevated body temperature, convulsions or even death. Chronic misuse may cause long-term damages to the brain's ability to manufacture dopamine, possibly resulting in amphetamine psychosis.

Cannabis

Cannabis affects almost every body system, via cannabinoid receptors in the brain, which regulate a range of cognitive and motor functions (Ashton, 2001; NIDA, 2005c). Within minutes of smoking cannabis, the heart rate increases and the bronchial passages relax. Often the individual experiences intoxication, mild euphoria and increased sociability. However, anxiety or paranoia may sometimes occur, particularly among first-time or psychologically vulnerable users (Johns, 2001). Distorted perceptions are common, for example colours may appear more intense and time may seem to slow down. The euphoria reaches a plateau lasting 2 hours or more,

depending on the dose, after which the individual may feel sleepy or depressed.

Cannabis use also impairs memory, attention and motor co-ordination, with especially dangerous consequences on driving performance. Such effects may last for many hours after administration of the drug; the numerous metabolites of a single moderate dose of cannabis may require up to 4 weeks to be completely eliminated from the body (Maykut, 1985). The smoke from cannabis contains the same constituents as tobacco smoke; hence chronic cannabis smoking is associated with a range of respiratory tract disorders, including bronchitis, emphysema and cancers (Hashibe *et al*, 2005; Tashkin, 1990).

4.6 The public health impact of drug misuse

The harms associated with illicit heroin use include increased mortality from overdose and from other directly or indirectly associated harms such as increased risk of infection with blood-borne viruses (HIV, hepatitis C and hepatitis B); high levels of depression and anxiety disorders; social problems such as disrupted parenting, employment and accommodation; and increased participation in income-generating crime.

Mortality, particularly in heroin-dependent users, is high, with estimates of between 12 times (Oppenheimer *et al*., 1994) and 22 times (Frischer *et al*., 1997) that of the general population. In England and Wales, there were between 1,382 drug-related deaths in 2005 (National Programme on Substance Abuse Deaths, 2005). The majority (59%) were cases of accidental poisoning, although a sizeable proportion (16%) were of intentional self-poisoning. Opiates (alone or in combination with other drugs) accounted for some 70% of the deaths, and cocaine 13%. Many of the deaths appear to be due to multiple drug toxicity, especially the presence of central nervous system depressants (for example, alcohol and benzodiazepines), rather than simply an 'overdose' of an opiate. This is supported by research that shows those whose deaths were attributed to overdose have opiate levels no higher than those who survive, or than heroin users who die from other causes (Darke & Zador, 1996). Recent cohort studies have shown that mortality rates from methadone-related death are decreasing (Brugal *et al.*, 2005).

HIV infection is a major problem for injecting drug users, with the number of new diagnoses of HIV in the UK holding at around a hundred for the last few years, with 5.6% of all UK diagnoses attributed to injecting drug use by the end of 2005 (Health Protection Agency, 2006). There are differences in geographical distribution of HIV in the UK, with rates higher in some centres such as London. Approximately 50% of injecting drug users have been infected with hepatitis C, but this rate, like the HIV prevalence rate, is lower than in many other countries (Health Protection Agency, 2006). Transmission of both hepatitis A and B continues even though there are effective vaccines.

Needle and syringe sharing increased in the late 1990s, and since then has been stable with around one in three injecting drug users reporting this activity in the last month (Health Protection Agency, 2005).

Psychiatric comorbidity is common in drug misuse populations, with anxiety and depression generally common, as are antisocial and other personality disorders in opioid-using populations (Regier *et al.*, 1990, 1998).The national US Epidemiological Catchment Area study of the prevalence of mental health disorders reported a 47% lifetime prevalence rate of substance misuse (drugs and alcohol) among patients with schizophrenia compared to 16% in the general population, and that more than 60% of people with a diagnosis of bipolar I disorder had a lifetime diagnosis of substance misuse disorder. Around one in five of the patients in the NTORS sample had previously received treatment for a psychiatric health problem other than substance misuse (Marsden *et al.*, 2000). Drug misuse disorders complicated by other comorbid mental disorders have been recognised as having a poorer prognosis and being more difficult to treat than those without comorbid disorders; comorbid disorders are more likely to be chronic and disabling, and result in greater service utilisation.

Lost productivity and unemployment increase with the severity and duration of drug misuse, and personal relationships are placed under considerable strain by dependent drug use. Problems with accommodation are also common in such groups. For example, prior to intake in the NTORS, 7% of the study group were homeless and living on the street, 5% were living in squats and 8% were living in temporary hostel accommodation (Gossop *et al.*, 1998). Drug misuse may also have a negative impact on children and families. In the UK it is estimated that 2–3% of all children under the age of 16 years have parents with drug problems (ACMD, 2003). While use of opiates does not necessarily impact on parenting capacity, registration on UK child protection registers for neglect has been correlated strongly with parental heroin use, and parental problem drug use has been shown to be one of the commonest reasons for children being received into the care system (Barnard & McKeganey, 2004).

4.7 Identification and assessment of drug misuse

Many drug users do not present to specific drug treatment services, but they may present to other medical services, the criminal justice system and social care agencies. Many will not be seeking help for their drug problems and a significant proportion, for example some of those primarily misusing cocaine or cannabis, may not be aware of the potentially harmful effects of their drug use.

Routine screening for drug misuse is largely restricted in the UK to criminal justice settings, including police custody and prisons (Matrix Research and

Consultancy & NACRO, 2004); it is sparsely applied in health and social care settings. For example, a recent study of psychiatric inpatients in London found that only 1 in 50 patients admitted to hospital had undergone screening for drug misuse (Barnaby *et al.*, 2003). The updated National Treatment Agency's Models of Care service framework emphasises the importance of non-specialist (Tier 1) services in the identification of drug misuse as a precursor to referral for treatment (NTA, 2006). Opportunistic methods for the effective identification of drug misuse should therefore be considered in a variety of healthcare settings. These are described in Chapter 6.

For those identified and considering treatment, a good assessment is essential to continuing care. Assessment skills are important across all of those health and social care professionals who may come into contact with substance misuse. Assessment includes information about past and current drug use (amount, type, duration, periods of abstinence and effect of abstinence), history of injecting, risk of HIV and other blood-borne viruses, medical history, forensics and previous contact with treatment services. The assessment of a patient is a continuous process carried out at every contact with the individual and their healthcare professional/counsellor/social worker and can be carried out over many years. Urine testing for the absence or presence of drugs is an important part of assessment and monitoring. Formal rating scales may be helpful in assessing outcomes and in certain areas of monitoring, for example the monitoring of withdrawal symptoms.

4.8 The aims of the treatment and management of drug misuse

The clinical management of drug misuse may be categorised into three broad approaches: harm reduction, maintenance oriented and abstinence oriented. All treatments aim to prevent or reduce the harms resulting from use of drugs.

Harm reduction aims to prevent or reduce negative health or other consequences associated with drug misuse, whether to the drug-using individual or to the wider society. With such approaches, it is not essential for there to be a reduction in the drug use itself (although, of course, this may be one of the methods of reducing harm). For instance, needle and syringe exchange services aim to reduce transmission of blood-borne viruses through the promotion of safer drug injecting behaviour.

Maintenance-oriented treatments in the UK context primarily refer to the pharmacological maintenance of people who are opiate dependent, through the prescription of opiate substitutes (methadone or buprenorphine). This therapy aims to reduce or end their illicit drug use and the consequential harms of such.

Abstinence-oriented treatments aim to reduce an individual's level of drug use, with the ultimate goal of abstinence. Although initially attractive, these

may be associated with subsequent increased risk of overdose death in the event of relapse after a period of abstinence during which drug tolerance is lost (Verger, 2003). Consequently, it is particularly important for abstinence-oriented treatment to include education on post-detoxification vulnerability to relapse (Gossop *et al.*, 1989) and to overdose, and for wider psychosocial rehabilitation support to be provided. However, the NTORS found that approximately one third of those entering treatment services were abstinent 5 years later (Gossop *et al.*, 2003).

When developing any treatment or management plan, a number of factors should influence the content of such a plan and include:

- type and pattern of use
- level of dependence
- comorbid mental and physical health problems
- location (for example, prison or community)
- age and gender
- patient aspirations and expectations.

The general principles of treatment include: no single treatment is appropriate for all individuals; treatments should be readily available, and begin when the service user presents; and the capacity to address multiple needs. It is also accepted that treatments will change over time and that treatment does not need to be voluntary to be successful. For most people in long-term treatment, that is those with opiate dependence, substitute medications, such as methadone and buprenorphine, are important elements of care. However, services also need to address coexisting problems, such as mental health and physical health problems, alongside the drug misuse.

Keyworking forms the core part of treatment for most service users with long-term drug misuse problems (NTA, 2005). Typically, this involves the following:

- conducting an assessment of need (and risk assessment)
- establishing and sustaining a therapeutic relationship
- clarification of the service user's goals in relation to his/her drug use
- discussion, implementation, evaluation and revision of a treatment plan to address the client's goals and needs
- liaison and collaboration with other care providers
- integration of a range of interventions based on a biopsychosocial model of drug use (for example, prescribing, addressing needs such as housing and improving personal relationships)

- use of one or more techniques derived from one or more therapeutic models to engage and retain the client in treatment and to support the treatment plan (for example, use of drug diaries and motivational skills) in the absence of delivering a complete episode of formal psychological therapy.

4.9 Current care and treatment in the NHS

The British response to drug problems dates back to the report of the Rolleston Committee of 1926. The Committee accepted dependence as a disease and established a medical approach to drug problems in Britain rather than the predominantly punitive one pursued in other countries such as the USA. Rolleston gave doctors a large degree of clinical freedom in their response to patients who were addicted, including the use of maintenance treatment. To this day, maintenance is considered an essential aspect of drug treatment.

A large increase in the number of people with heroin dependence in Britain in the mid-1960s prompted the establishment of a network of drug dependence clinics set in psychiatric hospitals and run directly by the NHS. The second British epidemic of heroin use in the early 1980s led to a further reshaping of the British treatment response. A multidisciplinary approach was encouraged through the establishment of community drug teams and attempts to increase GP involvement in drug treatment, with the first in a series of clinical guidelines setting out the responsibilities of the prescribing doctor (DH, 1999). The guidelines also sought to encourage shared care of the person who misuses drugs by different professional groups. While the drug dependence clinics remained the cornerstone of this reshaped approach, the vast majority of treatment prescriptions, namely oral methadone, were now dispensed by community pharmacists and consumed at home.

The emergence of HIV/AIDS in the 1980s led to the introduction of needle and syringe exchange schemes as an addition to the treatment services available. These schemes provided needles and syringes to the dependent and non-dependent injector. Harm reduction also became an important aspect of treatment responses to drug misuse. Another refocusing of drug treatment came in the 1990s, with increased concern over the link between criminal activity and drug misuse. Criminal justice settings were seen as an important conduit for getting people who misuse drugs into treatment and a number of interventions such as Drug Treatment and Testing Orders (DTTOs) were established. In 2003, the Home Office, with the Department of Health and the National Treatment Agency as its key partners, introduced the Drug Interventions Programme, which seeks to bring treatment and criminal justice services together in responding to drug misuse (Witton *et al.*, 2004).

Current practice

Much of the current treatment of drug misuse in the NHS services (those directly provided or purchased by the NHS) focuses on the treatment of opiate misuse. In large part, this is reactive to the drug problems that service users present, which may themselves be informed by awareness of relevant treatments as well as their own perceptions of whether their drug use is problematic. Few services are focused solely on the treatment of cocaine and cannabis misuse; often these problems are only addressed when the primary presenting problem is opiate misuse. In particular, the provision of treatment is almost non-existent for people who primarily misuse cannabis. The main treatments for opiate misuse are opiate substitution therapies (methadone and buprenorphine), with stabilisation of the drug user being the treatment aim, leading to improved physical health, well-being, social stabilisation and reduced criminality and costs to society. There is also provision of harm-reduction interventions, for example needle and syringe exchange facilities, alongside formal drug treatment, aiming to minimise the health risks resulting from illicit drug use to the individuals themselves as well as to wider society.

Only a minority entering treatment choose abstinence initially and enforced abstinence appears ineffective. However, approximately one third entering treatment services generally are abstinent 5 years later (at least for a period of time) (Gossop *et al*., 1998).

Despite the increase in treatment research, current UK practice is not underpinned by a strong evidence base and there is wide variation in the implementation of psychosocial treatment across services. Two factors may contribute to this situation. First, practice tends to be influenced more by the background and training of those delivering treatment within services than by what research has shown to be effective. Second, there is a lack of studies from the UK, with most evidence coming from the US. These studies will be reviewed in Chapter 7.

The most common types of psychosocial interventions available in NHS programmes specifically targeting drug-use behaviours, might be based on one of a number of models, including cognitive-behavioural (including motivational interviewing and relapse prevention), humanistic and 12-step approaches (Wanigaratne, 2005). Often this is unfocused, and therapist and client may not have a clear understanding of the therapeutic goals or therapeutic method. In addition, there exist formal psychological therapies delivered within adult mental health settings, aiming to address drug users' coexisting mental health problems (NTA, 2006).

In addition to formal, structured treatment, there is a long tradition in North America and Europe of community-based, peer-led self-help groups for people with substance misuse. The most well-established of these deliver the principles of 12-steps, which has its origins in Alcoholics Anonymous (AA).

Two such organisations especially relevant to people who misuse drugs are Narcotics Anonymous (NA) and Cocaine Anonymous (CA). The 12-step fellowships of AA and NA largely predate the existing drug treatment field as a medical specialism. AA was founded in the USA in 1935 and in the UK in 1947. NA was founded in the USA in 1953, and the first UK meeting was held in 1980 (White, 1998).

Brief interventions, typically empathic in nature and lasting up to two sessions, have a variety of potential advantages in the treatment of drug misuse, including ease of delivery and retaining drug users. These interventions can be conducted in a variety of settings, opportunistically to people not in formal drug treatment and as an adjunct to formal, structured drug treatment (Ashton, 2005). Although brief interventions are considered to be an important component of psychosocial treatment in open-access drug services (for example, NTA, 2002, 2006), provision of such interventions varies widely throughout England and Wales.

As previously mentioned, the mainstay of current UK drug treatment lies in the pharmacological maintenance of dependent opiate users. Very little is currently known or practiced in relation to managing the misuse of cocaine, amphetamines or cannabis. Recent research on brief interventions provides for potential development in this area, and is covered more extensively in Chapter 7.

Needle and syringe exchange programmes, which provide injecting drug users with clean injecting paraphernalia, have proven effective at helping to reduce the risk of HIV/AIDS (Wodak, 2006). Some of these initiatives include opportunities for psychosocial support alongside needle exchanges. Needle and syringe exchange programmes have been established in all drug action team regions in England, with the overwhelming majority providing specialist services alongside pharmacy provision (NTA, 2006), although the level of provision appears to be variable across regions and on average appears to be insufficient to provide injecting drug users with a clean needle/syringe for every instance of injection. Specialist services provide a wider range of harm-reduction interventions (for example, on-site blood-borne virus testing) than pharmacies, but it does not appear that service users in all specialist services receive comprehensive harm-reduction support.

Residential rehabilitation programmes and therapeutic communities for the treatment of drug problems are well established in the UK. These programmes often have abstinence as their goal. They respond to the complex problems related to the drug misuse of their residents by offering respite and highly structured and intensive programmes of support and care as they seek to make fundamental changes to the lifestyles of the residents, and treatment in some programmes is lengthy, lasting 6–12 months (N TA, 2006).

Most drug treatment is initiated as a result of drug users themselves seeking treatment. However, there has recently been a rapid expansion in forms of legally mandated treatment, whereby the person who misuses drugs is mandated into treatment as an alternative or adjunct to criminal sanctions (Wild *et al.*, 2002). Such treatment may be legally ordered by the court or through diversion away from the judicial process, usually following arrest and charge for drug-related and other offences. Despite recent policy shifts of diversion away from the courts, however, many people who misuse drugs still serve prison sentences. A recent estimate suggests that around 39,000 prisoners with a serious drug problem are in custody at any one time (All-Parliamentary Group on Prison Health, 2006). Within the prison setting, drug misuse treatment is increasingly being offered following a number of recent developments, including the phased transfer of responsibilities for commissioning healthcare in publicly funded prisons from the Home Office to the NHS (Department of Health, 2006c). Whilst the mainstay of treatment in prison has traditionally been one of detoxification upon admission, there has been a recent policy shift allowing increased access to opiate substitution therapy and psychosocial interventions.

4.10 Service-user organisations

As outlined in Chapter 5, organisations for people who misuse drugs, such as the 12-step fellowship of NA, were formed in the United States before the drug treatment field had fully defined itself as a medical specialism. Many rehabilitation centres in the US based themselves on the 'concept houses' that developed out of AA. In this sense, drug services and service user organisations have always been inextricably linked. However, since this time, some service-user organisations have moved away from abstinence as the ultimate goal to exploring harm minimisation and maintenance-oriented therapies.

In the UK, service-user organisations have existed for almost 20 years. Some of them developed in reaction to the poor service provided by drug treatment centres in the 1970s. In the 1980s and 1990s, as harm reduction moved up the agenda due to the advent of HIV and AIDS, organisations such as Drug Dependents Anonymous and Mainliners were established. Although the profile of such organisations is now in decline, there has been growth in collaborations amongst clinicians, researchers and service users, most notably in the UK Harm Reduction Alliance. In the late 1990s, there was a move towards forming national drug organisations: the National Drug Users Development Agency (NDUDA) and The Methadone Alliance (later called The Alliance).

Recently, services have started to formally involve service users from such organisations and take account of their experience. The National Treatment Agency (NTA) was established as a special health authority to increase the availability of drug treatment in the UK and improve its quality. From the

outset, the NTA embraced user involvement as a central component of its strategy.

Since the early 1980s service-user involvement in service provision has developed considerably (see Chapter 5). User groups are now widespread in the UK and are firmly established in the drug treatment field.

4.11 Economic impact of drug misuse

Drug misuse is a growing public health and health economics concern. It is often associated with health and social costs as a result of transmission of infectious disease, crime and violence (Petry *et al*., 2004). In a study of 1,127 AIDS cases reported in Philadelphia (USA), 40% were attributable to injection drug use (Davis *et al*., 2005). It has been estimated that problematic drug use accounts for annual economic and social costs in England and Wales of approximately £13,750 million, or £35,455 per user, per year (Godfrey *et al.*, 2002. In addition to the costs of crime, chronic health problems comprise a significant element of the health and social care costs of drug misuse. For example, the prevalence of HIV among injecting drug users is 4.2% (Judd *et al*., 2005). The costs associated with HIV may have very little, if any, lag time following the initial infection. Godfrey and colleagues (2002) estimated the median per person annual cost of combination therapy at £13,381 for asymptomatic, £14,222 for symptomatic and £24,314 for AIDS patients. These estimates yielded median annual costs to the NHS of £12.5 million, £25 million and £24 million, respectively, totalling over £60 million.

In 1999, the reported prevalence of hepatitis B in injecting drug users was estimated at 25% amongst those attending agencies in London and 17% outside London, with a combined estimate for England and Wales of 21% (Godfrey *et al*., 2002). Based on these estimates, the same study calculated that the number of injecting drug users who were infected with hepatitis in 2002 was 53,975 (median estimate). An annual cost of £143 per year assumes a lifetime cost of £4,300 to treat patients with hepatitis over their average life expectancy of 30 additional years (Godfrey *et al*., 2002). The annual NHS treatment cost of hepatitis B for injecting drug users was therefore calculated at approximately £7.8 million (Godfrey *et al.*, 2002). Similar estimates for hepatitis C (based on a median 2002 estimate of 81,782 injecting drug users with the virus) yielded an annual NHS treatment cost of £11.7 million (Ibid.) (prevalence for HIV: 43.7% Judd et al., 2005). Beyond the healthcare costs from the user, the neonatal NHS costs relating to drug misuse were calculated at £4.3 million per year (Godfrey et al., 2002), with the annual cost of social services in caring for these children amounting to £63 million. The same authors estimated the median number of HIV positive injectors in England and Wales at the time of 2002 to comprise 931 asymptomatic, 1,756 symptomatic and 1,007 AIDS individuals. Thus the health and cost burden due to drug-related diseases is considerable.

Including primary care, A&E, inpatient care, community mental health, and inpatient mental health care, problem drug users are estimated to cost the health service between£ 283 million and £ 509 million per year (Godfrey *et al.*, 2002). This estimate was in addition to special, proactive addictive treatment they may receive which at present costs £ 1,000 per user, per year, largely in the form of psychosocial interventions (Godfrey *et al.*, 2002). Furthermore, the above estimates did not include the lost output of the victim or perpetrator, long-term requirements for psychological care, nor the intangible effects on the community at large such as security expenditure, property depreciation, or increased reliance on private transportation.

4.12 Clinical practice recommendations

4.12.1.1 Healthcare professionals should, on initial contact with services and at subsequent formal reviews, involve people who misuse drugs in decision-making about their treatment and care. This should include options for abstinence-oriented, maintenance-oriented and harm-reduction interventions.

4.12.1.2 Healthcare professionals should ensure, when assessing and developing a care plan, that the following issues are considered:

- a full assessment of medical, psychological, social and occupational needs
- the history of drug use
- the experience of previous treatment (if any)
- the clarification of the service user's goals in relation to his or her drug use
- the service user's treatment preferences.

4.12.1.3 Healthcare professionals who are responsible for the delivery and monitoring of an agreed care plan should ensure that:

- an appropriate therapeutic relationship is established and sustained
- the service user is helped to identify situations or states in which he or she is vulnerable to drug use and to consider alternative coping strategies
- full access to a wide range of appropriate healthcare services is available to all service users
- maintaining engagement with the service remains a major focus of the care plan
- effective liaison and collaboration with other care providers is maintained.

5 Service-user involvement and experience, and impact on carers

5.1 Introduction

This chapter first offers an overview of the ways in which people who misuse drugs have become involved in service user organisations and the ways in which these organisations have intersected with and influenced drug treatment services. The second part of the chapter describes some people's experiences of drug services and the final part looks at the impact of drug misuse on carers.

The way that organisations for people who misuse drugs have become involved in services reflects a general intention in health and social care to take greater account of service-user experience in shaping the development of services. With evidence that patient and public involvement improves outcomes, service delivery and planning (Department of Health, 2004), services are increasing their collaboration with service-user organisations, individuals and carers.

5.2 Historical perspectives of service-user involvement

5.2.1 Introduction

This section offers a brief historical overview of service-user organisations and the ways service-user experience has influenced drug misuse services, in particular the contribution they are able to make to the development and provision of services. Although service-user organisations have existed for almost 20 years in the UK, it was not until recently that drug misuse services have sought to involve such organisations.

5.2.2 12-step fellowships

The 12-step fellowships of Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) largely predate the existing drug treatment field as a medical specialism. AA was founded in the USA in 1935 and in the UK in 1947. NA was founded in the USA in 1953, and the first UK meeting was held in 1980 (White, 1998).

Although these fellowships are user-led organisations that are concerned with the treatment and recovery of people suffering from a drug problem, they also

provide a form of treatment in itself – a pathway to recovery, which may be employed on its own, or as an adjunct to more formal treatment, as used in the Minnesota Model (Kelly, 2003).

Until quite recently, people who misuse drugs who had an association with the 12-step model tended to avoid the wider service user movement. There are a number of possible reasons for this. The notion of anonymity is a core concept in the 12-step fellowships and some members feel that open involvement with service user groups can seriously jeopardise their anonymity. Such concerns are often expressed alongside worries about the potential for relapse in these circumstances, because members inevitably come into contact with people who actively misuse illegal drugs.

Nevertheless, there have been voices within the 12-step fellowships suggesting that wider involvement in service user organisations is possible without breaching the 12 traditions, and this idea appears to be gaining some support (White, 2000), with an increase in people with a 12-step background actively engaging in the user organisations. The extent to which this collaboration is successful appears to depend on the experience and sophistication of those who are facilitating these events. Despite the points of conflict between people recovering from dependency and people who are actively using, when facilitators are able to keep participants focused upon common goals, members of these two groups have been able to work together effectively. An example where this collaborative working has flourished is the 'Experts by Experience' programme, established in 1993. Now funded by the National Treatment Agency for Substance Misuse (NTA) and facilitated by the National Institute for Mental Health in England (NIMHE), this project has sought to build the skill levels of service users and ex-users who are involved in service improvement programmes.

5.2.3 Concept house residential rehabilitation programmes in the USA

Concept houses, a form of residential rehabilitation programme organised around a single 'big idea' or 'concept', grew out of AA. They were first developed by an organisation called Synanon, founded in the mid-1950s by Charles Diederich. A member of AA, Diederich was concerned about the number of drug-dependent people turning up at AA meetings who were being turned away.

Although Diederich and Synanon later fell into disrepute, many rehabilitation centres in the USA based their programmes on the concept house's model of addiction and its theory and practice of treatment, namely confrontation and 'attack therapy'. As an indicator of motivation, prospective residents were required to get on their knees and beg to be admitted. The encounter group

became the basic treatment modality for rehabilitation programmes, in which residents were expected to 'confront' others about their behaviour. Failure to do so was regarded as a sign of relapse. Residents were forced to wear humiliating signs around their necks in order to address some psychological flaw, whether real or imagined. Services recruited staff almost exclusively from their ex-residents. It was not until residential rehabilitation programmes began to hire staff with professional qualifications — a practice that in some areas did not start until the late 1980s and early 1990s — that these practices began to change.

There has always been a fairly high level of representation of people with a history of illicit drug use or with personal experience of dependence both working in the field and occupying key decision-making roles in services. Some members of this group advanced a model of drug use and drug treatment that was based on the ideas that dependence is a disease that is chronic, progressive and fatal, that people who are drug dependent have no control over their drug use and that the only way to arrest the progress of the 'disease' is through abstinence. However, this model of addiction is opposed by the experience of people finding some stability through maintenance therapy.

5.2.4 The birth of user involvement in services: the 1980s and 1990s

Current user involvement in services developed to some extent as a reaction against drug treatment centres. In the 1970s, problems reported by service users in rehabilitation centres could include:

- inappropriate and sometimes coercive or punitive treatment regimes for chronic dependence
- encounter group sessions, where vulnerable women with a history of sexual abuse were 'confronted' about their sexuality by a room full of men
- vulnerable people being ejected from rehabilitation centres with no means of support

In large areas of the UK there were also problems with outpatient treatment. Treatment varied significantly in different clinics; in some, high doses of opiates were dispensed without titration; in others, methadone maintenance was unavailable. Twenty-eight-day detoxification programmes were common, and so people went through repeated and often unsuccessful detoxifications in an attempt to stay away from the black market and criminal convictions for as long as possible. Prior to 1987, there were still large areas of the country where no specialist drug treatment was available.

These limitations of the services were a powerful impetus to the user movement; the first signs of which became apparent in the mid-1980s. One major catalyst was the publication of a number of articles by New York researcher Sam Friedman, who had been working in Holland and had become aware of the work of Nico Adriaans and the Rotterdam 'Junkiebond' or Addicts' Union (Friedman *et al.*, 1987). In the early 1980s, Adriaans and his group distributed clean syringes and needles throughout the streets and dealing spots of Rotterdam in response to an outbreak of what would later be identified as hepatitis C[5]. With the advent of HIV and AIDS, their work became even more critical. As a consequence of their work, they were regularly consulted by the local police and the city council on policy matters and by the university, which employed them as fieldworkers/research assistants. The idea spread to Amsterdam and various groups made the case for a national Junkiebond (Trautmann, 2006).

In the UK, the arrival of HIV and AIDS meant that the public health priority shifted, and the prevention of infection became more important than the achievement of abstinence. Some ex-users who were working in the drug treatment field found that the new model of 'harm reduction' gave them the opportunity to articulate a different, more pragmatic model of drug treatment. At the first International Conference on the Reduction of Drug Related Harm, held in Liverpool in 1990, user involvement became a critical part of the harm reduction agenda (Buning *et al.*, 1992). A number of other groups emerged at this time in the UK. They included:

- Drug Dependents Anonymous (DDA), a charity whose goals were to help drug users and their families. The charity's board of trustees was a balance of users, families and other sympathetic local people. DDA engaged in a wide range of activities, including needle exchange, advocacy in treatment disputes, outreach work and community liaison (DDA, 1989).
- Mainliners, another user-led organisation, was originally established in 1990 as a self-help and advocacy organisation for intravenous drug users living with HIV. It rapidly gained a national profile in its original form as a user-led charity, but after reorganisation it followed the trajectory of the residential rehabilitation sector, as professional drugs workers were employed and the organisation became a standard Tier-2 drug treatment provider.

By the mid 1990s, the idea of user involvement was becoming part of the common parlance of drug treatment, particularly in harm reduction circles, although there was no unifying force or organisation in the UK. If there was a

[5] Hepatitis C was discovered in the early 1980s but was referred to as non-A and non-B hepatitis; only in 1989 was it properly identified as hepatitis C. Screening for it was developed in 1991. (http://www.hepcuk.info/data/usercontentroot/home/hepatitis%20c/Introduction.asp_

single event that solidified the idea of service-user involvement as a viable and coherent notion, it was an international meeting of a pan-European group of service users. This meeting brought together representatives of user groups from across Europe and put together a position paper on the human rights of drug users in light of the AIDS epidemic, which was presented to the World Health Organization and the European Commission.

This was to be the high point of user involvement in the 1990s, however; throughout the rest of the decade, user-led organisations and user involvement in general were in decline. Part of the reason was due to the nature of drug dependence as an illegal and highly stigmatised activity. The small group of users who had the skills and experience that would enable them to be effective in user involvement activities tended also to have careers that they were reluctant to put at risk by identifying themselves as users.

More recently there has been an emphasis on coalition working, in which users and workers work collaboratively towards a common goal. Here a notable success has been the UK Harm Reduction Alliance, a group of clinicians, researchers and service users who are committed to raising the profile of the harm reduction agenda in drug treatment and drug policy (http://www.ukhra.org). Other examples include the work of Edith Springer with the Clinton Peer AIDS Education Coalition (a group of sex workers and treatment providers who became AIDS activists) and Crew 2000, a peer coalition aimed at drugs education and harm reduction around dance drugs in Edinburgh (McDermott *et al.*, 1993).

5.2.5 User involvement today

Two groups, both of which had aspirations to be national drug user organisations, emerged towards the end of the 1990s, were headed by drug users with a long history of working in the drug treatment field.

The first of these was the National Drug Users Development Agency (NDUDA) (Southwell, 2002). NDUDA aspired to be a central development organisation that would co-ordinate and help in the development of all local user involvement projects. With initial funding from Comic Relief, NDUDA was also able to help local groups to obtain small grants that would be sufficient to establish them in their area. The current user involvement movement can be said to have evolved out of NDUDA.

The second, established at the same time as NDUDA, was The Methadone Alliance http://www.m-alliance.org.uk), which sought to emulate the work of the US organisation, the National Alliance of Methadone Advocates (NAMA), the primary goal of which was to advocate for better treatment for people receiving methadone maintenance treatment.

NDUDA and The Methadone Alliance had entered into an informal non-compete agreement. NDUDA would act as the focal point of all user groups in the UK, while The Methadone Alliance would specialise solely in advocacy needs. The Methadone Alliance later became The Alliance, following a request from the NTA that it become more responsive to people with advocacy needs in all areas of drug treatment. The Alliance has recently secured Department of Health funding to enable it to employ six regional advocates, thus securing national coverage. However, two years after being funded by the NTA, organisational and management problems led to the collapse of the NDUDA.

In 2002, the Audit Commission completed its assessment of drug treatment in the UK and its findings echoed some of the views of people who had been involved with the user movement. The Audit Commission found that:

- people had difficulty accessing drug treatment services in the UK
- there were long waiting times and limited options for treatment
- there was a lack of staff training and expertise
- treatment did not always follow good practice
- there was suboptimal dosing for patients receiving pharmacotherapy (Audit Commission, 2002).

Perhaps in anticipation of this report, the government established the NTA in 2001. The NTA is a special health authority tasked with increasing the availability of drug treatment in the UK and with improving its quality. From the very beginning, the NTA embraced user involvement as a core component of its strategy (Best *et al.*, 2006). By placing user involvement at the heart of its strategy for improving drug treatment in the UK, the NTA has managed to make it an integral part of the drug treatment landscape in the UK. Since its foundation, the NTA has:

- established the National Users Advisory Group
- established a user forum in each of the nine NTA regions
- ensured that service user involvement is a component of each of the NTA's activities at every level, including representation on the NTA board
- issued guidance to local providers and drug action teams on how to implement user involvement projects
- made progress on user involvement one of its performance indicators for local Drug Action Teams.

Despite its achievements, the NTA's efforts in the user involvement arena have been criticised by some (Audit Commission, 2004). A subsequent follow-

up report in 2004 by the Audit Commission suggested that the drug treatment field needed to improve its user focus and put in place a strategy that provided:

- a system for incorporating user and carer views into the development of national policy
- effective national and regional structures that involve users and carers in planning and performance management
- easy access to the wealth of advice on community and user engagement and opportunities for peer support (Audit Commission, 2004).

In the last year, a new national user organisation, the National Users Network was established to replace the NTA's National User Advisory Group in response to the regionalisation of many of the NTA's functions. This organisation is expected to fulfil a similar role to that originally envisaged for NDUDA.

Over the last 30 years, service-user involvement in drug treatment has developed considerably in the UK. User groups now exist in most areas of the UK, though they remain patchy in many, and they still face many challenges, which are predominantly developmental and resource focused. However, the principle is now firmly established within the drug treatment field.

5.3 Service-user experience of services

This section provides an overview of 'treatment journeys' based both on interviews conducted by Salter and colleagues and excerpts taken from personal stories on the WIRED website (http://www.wiredinitiative.com/research-addiction.htm). It reviews experiences of inpatient treatment and service-user perceptions of abstinence and maintenance.

5.3.1 Treatment journeys

Salter and colleagues conducted semi-structured interviews with 15 service users regarding their experiences of dependence and recovery. The sample comprised individuals either in treatment or those using aftercare services. A grounded theory analysis was performed, from which seven dominant themes emerged: the nature of dependence and its development, the reasons/factors for use, the negative effects of use, the process of realisation, behaviour change, treatment and recovery. While it is helpful to identify common themes that emerge, treatment journeys are highly individual experiences and it should be borne in mind that the following is based on experiences from only 15 service users.

Reasons for use

In the sample, initial contact and experimentation with drugs were attributed to social pressure (*'We always used to try everything together; 'I wanted to be part of something'*) and as an aid to dealing with personal circumstances such as bereavement (Heroin *'took everything away'*). The decision to continue using was associated with the search for a 'buzz', but this eventually led towards more excessive use in order to avoid withdrawal symptoms:

> *'It becomes a need. It changes from a craving to a complete obsession where you are thinking about it constantly.'*
>
> *'The most important thing on your mind is to make yourself better so the first thing you do is go out and score.'*
>
> *'I don't want to be turkeying, so I'm going to keep taking these drugs…as long as I've had my drugs in the morning I can still do a day's work.'*

Nature of dependence

A common theme that emerged in the personal accounts was that individuals experienced a rapid acceleration in their drug misuse that eventually led to them feeling 'controlled' by the drug. There was also some recognition of drug misuse as a 'disease':

> *'…It just spiralled out of control; it just went mad.'*
>
> *'The disease can take over and control you, manipulate you as a person. And you can manipulate others around you when you're under the influence of alcohol or drugs; it's very, very powerful…'*
>
> *'There was no way out…I could see no way out of this…I felt there was absolutely nothing I could do; I thought I was going to die…'*

Service users acknowledged that heroin in particular is a highly addictive drug, although many initially reported not knowing this: *'It's taken me until now to realise how powerful addiction is'*.

Negative effects of use

The personal accounts suggested that drug use affects the individual in a number of negative ways: it can lead to physical and emotional/ psychological problems, breakdown in relationships, social exclusion and employment difficulties.

Physical effects

Although physical health problems are common in people who misuse drugs, the need for the drug may militate against any concerns the individual may have about his or her health:

> *'I knew that I was ill. My chest was killing and I had a constant cough, but I didn't care.'*
>
> *'The main thing is physically I have days where I wake up and I feel like I've done 10 rounds with Mike Tyson; my body feels totally battered, aching all over.'*

Emotional/psychological effects

The testimonies suggest that some people use drugs as a means of coping with emotional or psychological problems, only to find that drug misuse exacerbates the problem:

> *'My mental health suffered as well. As long as I was blocking stuff out with the substance, I wasn't dealing with it, so the problems were getting worse all the time. It's not that it's not getting better, it's getting worse.'*
>
> *'You don't have emotions when you're on gear. Emotions don't even come into the equation.'*

Relationships and social exclusion

Long-term drug use can have devastating effects upon the family, leading to the individual feeling excluded from the family unit or culminating in him or her leaving home:

'It's really hurt my family. My mum washed her hands of me saying "we've done everything we can for him and he doesn't want to help himself".'

Not understanding the nature of dependence may cause the person who misuses drugs to feel that he or she is the only person with a problem:

'I felt isolated; I thought I was the only one who ever felt the way I felt. I thought that nobody could understand me'.

Within drug communities, there may also be a sense of isolation:

'Gear causes a lot of arguments and you end up falling out with everybody…you become really greedy; you don't want to share with your mates. I became really selfish.'

Employment

Long-term drug misuse may cause serious employment problems, leading to unemployment or preventing the person from finding a job:

'I was always in the manager's office. I started to take every Monday off, a long weekend, then I started to take every Friday off long weekend, and then I ended going in two days a week, and the rest of the time getting stoned'.

Process of realisation about dependence

In the early stages of dependence, service users were unaware of their dependence or chose to ignore it:

> *'I didn't see it as a problem; it was other people around me that saw it as a problem.'*

> *'I knew inside that I had a problem, but I didn't want to admit it so I just carried on.'*

Some individuals only came to realise the true extent of their dependence when they experienced withdrawal symptoms; however, this did not necessarily result in acceptance of the problem:

> *'I remember the day of having physical withdrawals and that's when I knew I needed it.'*

> *'It dawned on me that I had a problem, but finding the solution didn't really come until my parents found out.'*

Recognition of the problem can also occur as the dependence progresses:

> *'The deeper into my addiction I've got, the more I've realised I have a problem.'*

> *'I completely blocked things out. It's only now that I'm in rehab that I've got a clear head to be able handle what was going on then. At the time, I tried hard not to think about it – I just used more and more.'*

Acceptance of the problem came to many when their drug misuse adversely affected members of their family and, in particular, their children:

> *'I was doing it 50-50 for myself and my parents. I didn't want to have to put them through any more and I could see the state of myself.'*

> *'I was getting to realise that I didn't really know my family anymore and that I must have spent longer away from them and a lot longer off my face on one thing or another….I started to notice that gradually and then it hit me full on since I've been in [treatment]; I realised that I was losing touch with them.'*

Behaviour change

A common theme emerging from the personal accounts was that individuals felt that they had to reach a crisis point before engaging in behaviour change:

> *'You've just got to hit rock bottom basically before you decide that you've got to stop doing this to yourself.'*

'I couldn't go any lower; the only way was up.'

'I had to get out of injecting it because I knew that I would die.'

Some patients reached a stage whereby treatment was the only option:

'I was too ill not to go [for treatment]…'

Treatment

Many participants perceived treatment to be an opportunity for a fresh start:

'It gives you a chance to start again; you've got a new chance at life now to start again from scratch…I'm going back to college, getting my own place, getting a job… and starting again…'

Some individuals were aware that they needed to be ready and motivated to access treatment in order for it to be effective:

'You have to actually seek treatment. It's up to them if they want to start…If a person's not ready, they're not ready.'

'My true feeling is that you have to do it for yourself.'

However, participants perceived the long waiting times to be an obstacle in accessing treatment:

'I'd go with all the intentions to get off it…but the longer you have to wait, the more and more trouble you get in. Eight months is a long time; you don't know what is going to happen to you.'

Participants reported that, once they accessed treatment, they became more aware of their dependence as a problem and began to ask for help, which facilitated recovery:

'I've been taught to empty your closet…that's one thing I've never done is gone up to somebody and told them my problems…now I'm learning to go and ask for help. It's not that bad asking for help; it's not going to kill you.'

During treatment, participants were able to learn about the nature of their dependence and how to alter their drug-using lifestyles in order to deter further drug misuse:

'I've come here to learn how to deal with these problems without having to turn to drugs.'

'I've learnt how it all works for you – how it makes your body and how it makes you feel.'

Participants were also aware that treatment requires active engagement and a complete change in mindset:

> *'You get out of it what you put in. If you don't put anything in, you don't get anything out.'*

> *'You've got to be willing to change everything – your behaviour, your thought patterns. It's not just about putting a drink or drug down, it's about changing your life.'*

Recovery

Treatment was perceived as a crucial tool aiding recovery as it provides a 'safe' area, in which participants can meet people in similar situations, and therefore reduces isolation:

> *'I needed treatment. I tried to do it myself and it just didn't work and I felt very alone doing it myself because I couldn't really talk to people about how I was feeling and how awful I felt…they've not been in the same boat and they don't understand…'*

5.3.2 Access to help and services, and early contact

The following extracts are taken from personal stories on the WIRED website and demonstrate that, although treatment can successfully reduce drug use and lead to abstinence, some service users reported that they did not receive adequate help when trying to access services:

> *'I went to every doctor's…everywhere. But we're smack heads, "See the door, close it on the way out, fuck off". That's all we got…them days…I was asking for methadone, that was all. I wasn't asking for valies [valium] or temazies [temazepam] or anything…You get sick of asking for help and not getting any.'*

Service users expressed concern over the delay in accessing treatment and how this can lead to criminal behaviour, return to drug misuse and can have a negative impact on seeking further treatment:

> *'In them days, you'd have to wait up to a year for help and in that time you could have stolen millions of pounds worth of items'.*

> *'I was trying to get help from loads of drug agencies and they were like, "Sorry, we can't help you for four months, we've already got people on our books". I thought "I can't carry on like this for 4 months, it's going to be easier to end it". I think that's what one of the big problems is. Help not being available, when you need it. There were times where I'd get into a really bad way, try and get help and couldn't get it. And then when the help comes around you've usually got a bit of money and you think, 'I'm not ready to quit now.'*

> *'I've been waiting to change for a long time, especially the last two years. We're all crying out for help and people just think if they give you a methadone script you'll shut up and go away, but it ain't that easy…And then you're like "Oh yeah, I'll have a bit of gear, one bit won't hurt." But it's never just one, is it?...You ask anyone.'*

It was not uncommon for service users to report being unaware of treatment facilities open to them. In some cases, the person or his or her family would be the ones who actively sought out options:

> *'Even going to the doctors, you'd walk in and, as soon as you told them what the problem was, they'd have you out the door. It dawned on me that I had a problem, but finding the solution didn't really come until my parents found out.'* [After hours of 'trawling' through the Yellow Pages, Stephen's parents contacted the NHS helpline, which put them in touch with a local drug agency.]

Accessing treatment in the prison setting was perceived by some service users as problematic due to their experience that little help or support was offered and hearing that:

'*CARAT [counselling, advice, referral, assessment and throughcare] workers' visits were infrequent and not very helpful'.*

However, for others the prison setting was seen as a fast-track to accessing services:

> *'I reached the point where he believed prison was the "best bet" because of the strict routine imposed there.'*

Due to the strain on resources and limited spaces available in different treatment settings, some patients experienced being turned away from services:

> *'I really thought I was going to get off it, but I was told that I was going to have to wait a month for an appointment. When I went for that appointment they said I wasn't on it too badly so there wasn't a rush for me to be seen; it was going to take over 6 months.'*

Conversely, for some service users the obstacle to accessing treatment was fear of involving social services with regards to their children:

> *'I used to work around the children so that I could pick them up from school and make dinner and things like that…I was worried what would happen to the children if I went to get help…so I just stayed on it, so I could get up in the morning and get the kids to school.'*

5.3.3 Inpatient treatment

There is very limited research on users' perceptions of inpatient programmes and therapeutic aspects of treatment (Bacchus *et al.*, 1999). Through semi-structured interviews with 42 drug users receiving inpatient treatment, Bacchus and colleagues (1999) found that patients acknowledged the high demand for the service and were therefore generally satisfied with pre-admittance waiting times. However, some clients reported that, during the waiting period, their motivation to cease drug misuse decreased, and continued exposure to drug-using friends increased social pressure to maintain use. Clients – and especially parents who misuse drugs – wished to receive more support and visits from family, though some felt the treatment environment was not appropriate for their young children. Most clients were able to develop a rapport with their key worker, which motivated patients to achieve or maintain abstinence for fear of letting him or her down. Befriending and supporting other new patients was also conducive to abstinence maintenance and increased self-esteem, and the independent thinking involved in this role often operated as a marker of self-improvement. Attending an inpatient service also offered opportunities for self-reflection and reassessment. 62% of clients had made prior arrangements for aftercare, thus demonstrating their desire to maintain abstinence (Bacchus *et al.*, 1999).

5.3.4 Service-user perceptions of abstinence and maintenance treatment

Several authors have investigated drug users' perceptions of treatment services, their opinions of healthcare delivery and reasons for seeking treatment. McKegany and colleagues (2004) investigated drug users' reasons for seeking treatment: specifically, whether treatment was sought to reduce risk behaviour or to become abstinent from drug use. Eighty-two per cent of the sample cited becoming abstinent and achieving stabilisation as their aim, with 57% of the sample attending a drug agency primarily to achieve abstinence. Patients expressed a preference for non-methadone drugs, thereby further demonstrating their desire to become abstinent. Very few people who misuse drugs cited harm-reduction outcomes, such as reduced use, stabilisation or safer use, as the only change they desired. This suggests that people who misuse drugs who approach treatment services have reached a stage whereby they no longer want to misuse drugs. Similar results were reported in the NTA service-user satisfaction survey conducted in 2005. This revealed that users of prescribed methadone were more likely, when compared with users of heroin, cocaine and crack cocaine, to be satisfied with their level of use, but 50% wanted to stop completely and just over 10% wanted to reduce their use (Best *et al.*, 2006).

A self-report questionnaire administered by Clarke and Wilkes (1997) found that, of a sample of 70 drug misusing clients, the primary reason for seeking help was being 'fed up' with using (78%), followed by concerns for family (72%), money worries (61%) and health problems (57%). These findings suggest that, after a certain length of drug misuse, clients become frustrated with their lifestyles and seek treatment to change their current behaviour. This sample was comprised of individuals receiving methadone maintenance. Thus, the most frequently desired service was receiving methadone prescriptions, and 82% reported being satisfied with the service they were receiving. However, 20% of the sample did express a wish to receive a quick detoxification, which suggests that some methadone users would rather achieve total abstinence than be maintained on methadone (Clarke & Wilkes, 1997).

A significant proportion of people who misuse drugs in the UK currently receive methadone maintenance treatment, and therefore it is important to examine users' perceptions of the effectiveness of such treatment. Neal (1998) conducted semi-structured, qualitative in-depth interviews with 80 people who misuse drugs currently receiving prescribed methadone. Clients expressed mixed views on methadone: 45% felt that prescribed methadone had improved their emotional and physical well-being in terms of reduced painful withdrawal symptoms and sleep facilitation. However, a similar percentage (43%) also reported experiencing negative health effects while on methadone, in particular damaged teeth, weight problems (gains or losses), stiffness and soreness. Moreover, there was widespread recognition that methadone is simply a substitution of one drug (heroin) for another highly addictive substance that produces similarly bad withdrawal symptoms when people attempt to discontinue use (Neal, 1998). Another common criticism was that being on methadone scripts is very time consuming, as the script must be collected on a daily basis. For many, this restricts the opportunity to perform a regular job. Conversely, while employment opportunities are not necessarily enhanced, people perceive themselves to be in a better financial situation as they may no longer have to sell their personal belongings or accrue debts to finance an illicit drug habit.

5.4 Impact of drug misuse on carers

There is an increasing recognition that drug misuse affects the entire family and the communities in which these families live. For example, the Home Office's updated Drug Strategy (2002) includes targets on increasing access to help, advice and counselling for parents, carers and families of people who misuse drugs. Additionally, the NTA user satisfaction survey found that 25% of respondents felt that staff did not offer families and carers enough support (Best *et al.*, 2006).

There has also been a growth in carer organisations, most notably ADFAM and Families Anonymous (FA), for carers of people who misuse drugs and over 100 peer support family groups in the UK founded on parents own experience of drug use in their families. ADFAM evolved in the mid 1980s after a distressed mother of a drug user found that there were no support services to assist and advise her regarding her child's drug problem. The main ethos of the service is to provide support, training and advocacy for families of drug and alcohol users. It also informs the government about patient and family needs and challenges policy makers, decision makers and the media to better represent and understand the issues facing families of drug users. ADFAM has undergone marked development over the past two decades, during which it has provided a nationwide helpline service (which closed in 2002), added training and criminal justice work to the service in the 1990s and recently expanded its community development team.

Families Anonymous (FA) is a self-help service base on the 12-steps and is aimed at helping families affected by drug use and behavioural problems. Families attend meetings on a regular basis and share their experiences with other families. Through these meetings family members are able to support one another and overcome some of the issues they face. Families also learn that their behaviour may enable drug users to persist in drug use, for example protecting the person who misuses drugs from the consequences of dependence may encourage him or her to continue negative drug behaviours. FA originated in Los Angeles in 1971, and was introduced to the UK in 1980. Like ADFAM it has also expanded in recent years, with approximately 50 groups running throughout the UK at present and have services worldwide.

However, despite the recognition of carers' needs and the growth of carer organisations, there is a rather limited evidence base assessing the impact on carers/families of drug misuse, on interventions intended to support them, and even less attention given to the needs of the family/carer in their own right. Most interventions have targeted carers/families primarily to improve outcomes of the person who misuses drugs and only secondarily to address the needs of the family. Bancroft and colleagues (2002) noted that there is a division in the literature between those who consider drug misuse 'a problem *for* the family' and those who consider it 'a problem *of* the family'. Taking the latter approach may result in the carer or family member feeling stigmatised and less likely to seek professional help.

There is a need to assess the impact on family members and carers of people who misuse drugs in order to identify the challenges they face and to evaluate the most effective ways to offer help and support to them. Velleman and colleagues' (1993) report of 50 close relatives of people who misuse drugs suggested a strong psychological (for example, feelings of loneliness, isolation, anxiety and depression) and physical (including raised blood pressure, ulcers, and so on) impact on families/carers. Hudson and colleagues (2002) assessed the social adjustment of 65 female family members and

significant others of people who misuse drugs using the Social Adjustment Scale — Self-Report (SAS-SR; Weismann & Bothwell, 1976). They compared SAS-SR scores for family members and significant others of people who misuse drugs with 'standard' control conditions derived from two other published studies (Rorty *et al*., 1999; Weissman *et al.*, 1978). Family members and significant others of people who misuse drugs were found to have greater difficulties in relation to social, work, social/leisure and extended family adjustment than a 'standard' comparison group. However, the rather problematic nature of the comparison group (derived from other studies with clear geographical and temporal differences) limits the ability to make a genuine comparison between the two groups.

It appears the impact on family members may differ depending on the roles and responsibilities within the family. Lewis and Williams (1994), in their study of a family support group for African-American grandparents, found that grandparents often took the role of primary carer for their grandchildren because their children had difficulties fulfilling parental responsibilities, due to drug misuse, serving jail sentences, and so on. This sometimes resulted in financial problems as government funding for childcare was not always passed on to the grandparents. Velleman and colleagues (1993) found partners were more likely to report physical violence, threatening behaviour and pressure for money, while parents were more likely to report lying, manipulation and self-neglect by the person who misuses drugs. Hudson and colleagues (2002) also compared the experiences of partners and parents of people who misuse drugs and found that partners tended to have slightly greater adjustment problems than parents of people who misuse drugs. The main difference appeared to be financial, with partners of drug users experiencing greater financial problems than parents.

Adfam's (2002) report identified a number of needs for families of people who misuse drugs and alcohol. One of the major needs reported by families was the need to cope with stigma. It was argued that stigma was a major barrier in preventing carers or family members from accessing services both in terms of actual exclusion from primary care services as well as self-exclusion through fear of being judged. A further need was to access services. Provision of services for families of people who misuse drugs was found to be rather limited (see also Bancroft, 2002), but even where these services were available, many families were either not aware of them or how to access them. Many families also perceived themselves to be excluded from participation in the treatment provided for their family member. Some families felt that workers were hiding behind confidentiality when they could have provided general information about treatment.

5.4.1 Clinical practice recommendations

5.4.1.1 Healthcare professionals should explore with people who misuse drugs whether to involve their families and carers in assessment and treatment plans, ensuring that the service user's right to confidentiality is respected.

5.4.1.2 When in contact with family members or carers of people who misuse drugs, all healthcare professionals should:

- enquire about family and carer concerns in relation to the impact of drug misuse on their lives and relationships
- provide verbal and written information and education on the impact of drug misuse on service users, families and carers.

5.4.1.3 Healthcare professionals should make themselves accessible to family members and carers if appropriate. The needs of family members and carers should be taken into account, including:

- the welfare of dependent children, siblings and vulnerable adults
- a regular assessment of carers' personal, social and mental health needs.

6 Identification and recognition

6.1 Introduction

6.1.1 Defining screening and identification

Screening has been defined as the systematic application of a test or enquiry to identify individuals at high risk of developing a specific disorder who may benefit from further investigation or preventative action (Peckham & Dezateux, 1998). Screening programmes detect people who have the condition or at risk of developing the condition in the future. They do not establish a diagnosis but give some indication of any action that may be required, such as further diagnostic investigation, closer monitoring or even preventative action. Screening is not necessarily a benign process (Marteau, 1989). Since screening tools may never be 100% accurate, people who are incorrectly identified as being at risk of developing a condition (false positives) can be subject to further possibly intrusive, harmful or inappropriate investigations, management or treatment. Those falsely identified as not being at risk of developing a condition (false negatives) will also suffer by not being given the opportunity to undergo the further investigations that are needed.

The National Screening Committee (NSC), in its guidance for determining whether a national screening programme should be undertaken for any disorder, has set 22 criteria for appraising the viability, effectiveness and appropriateness of a programme for large population screening (NSC, 2003). These include: the need for a simple, safe, precise and validated screening test; an agreed policy on the further evaluation of individuals with a positive test result; the availability of an effective intervention for those identified through early detection, with evidence of early treatment leading to better outcomes than later treatment; adequate resources available prior to commencement; and acceptability to the population. It is important that the majority of these criteria are satisfied before a screening programme is adopted, not least because screening can cause adverse effects, including distress secondary to asking specific questions, raising concerns and raising expectations of care.

Existing NICE mental health guidelines have considered the case for general population screening for a number of mental health disorders and concluded that screening should only occur for specific high-risk populations where benefits outweigh risks (for example, NICE, 2004, 2005).

Screening has two main functions: identification and prediction. For the purpose of this guideline, identification refers to the detection of current drug misuse. Prediction refers to the detection of risk factors, either current or past, that increase the probability of developing drug misuse. This chapter will

only be addressing identification of current drug misuse, as prediction lies outside of the current scope.

Additionally, this chapter distinguishes between methods to identify drug misuse and tools used to provide comprehensive clinical assessment of drug misuse. The latter are again outside of the scope but are covered in greater detail in the NICE clinical guideline Drug Misuse - Detoxification (NICE, in press).

Prevalence of drug use

As was described in Chapter 4, the British Crime Survey 2005/06 (Roe & Man, 2006) estimated that 34.9% of 16–59 year olds had used one or more illicit drugs in their lifetime, 10.5% had used one or more in the past year and 6.3% in the past month. Cannabis was the most widely used drug; 8.7% of 16–59 year olds reported using this drug in the last year. Cocaine was the next most commonly used drug; 2.4% reported using either cocaine powder or crack cocaine in the past year. This was followed by ecstasy at 1.6% and amphetamines at 1.3%. Heroin use was much lower, with 0.1% reportedly using opiates in the past year. The large majority of these individuals do not present to drug treatment services, but they do present to acute medical services, the criminal justice system and social care agencies, often as a consequence of the drug misuse (Crome, in press). Effective methods are needed to identify people who misuse drugs therefore may have value in promoting access to appropriate treatment services. This chapter will not deal with the use of large scale screening/identification tools the workplace, schools and sport, which is beyond the scope of the guideline. It will be restricted to identification of at-risk populations in health, social care and criminal justice settings.

Current practice

Routine screening for drug misuse in the UK is largely restricted to criminal justice settings, including police custody and prisons (Matrix Research and Consultancy & NACRO, 2004). In health and social care settings, however, the use of methods for identification and recognition is sparse. Initiatives are underway to introduce routine or targeted screening for alcohol misuse in health and criminal justice settings as part of the National Alcohol Harm Reduction Strategy (Prime Minister's Strategy Unit, 2004) and the public health strategy (DH, 2004). A recent study of psychiatric inpatients in London found that only 1 in 50 patients admitted to a teaching hospital had undergone screening for drug misuse (Barnaby *et al.*, 2003). The updated Models of Care service framework emphasises the importance of non-specialist (Tier 1) services in the identification of drug misuse as a precursor to referral for treatment (NTA, 2006a). However, most of these programmes are in the early stages of development and there is a clear need for improvement of identification methods for drug misuse in the UK.

6.2 Identification tools

There are a range of tools for identifying drug misuse including routine clinical enquiry (where the clinician asks questions about whether an individual uses drugs, and if appropriate, frequency and consequences of this use) , questionnaires (paper and pencil tests, based either on clinician rating or self-report, to assess if an individual meets certain criteria for dependence or abuse of drugs) biological testing (biological testing of urine, oral fluid or hair samples to assess if a person has used certain drugs within a certain period of time).

The key measures of effectiveness of a drug misuse identification instrument are generally considered to be sensitivity (the probability that someone with drug dependence will have tested positive), specificity (the probability that someone without drug dependence will have tested negative), the positive predictive value (the probability that someone with a positive test result will receive a diagnosis of drug dependence), the negative predictive value (the probability that someone with a negative test result will not receive a diagnosis of drug dependence) and overall efficiency (percentage of cases correctly classified by the test as having or not being dependent). A good test will have good results on all these different measures. The relative value placed on each measure in determining which test to use is based on several factors, including the prevalence of the disorder among the group being considered and the risks of missing a diagnosis. It can be argued that the positive predictive value is of particular importance. As the prevalence of a condition reduces, so does the positive predictive value, i.e. there are more individuals who have screened positive but do not have the condition (false positives).

6.2.1 Identification questionnaires

Several identification questionnaires have been developed to identify drug misuse. These may be of potential use for identifying drug misuse in at-risk populations. Only questionnaires of fewer than 30 items, validated against a structured interview that yielded a diagnosis of drug abuse/dependence were included in this review. Eight studies reviewed below met the eligibility criteria. These studies were evaluated in terms of psychometric effectiveness (sensitivity, specificity, positive predictive value and negative predictive value); feasibility for use in health, social and criminal justice settings; and relevance to UK context.

Clinician-rated questionnaires for adult populations

The Drug Use Disorders Identification Test (DUDIT; Berman *et al.*, 2005) is based on the World Health Organization's validated and widely used Alcohol Use Disorders Identification Test (AUDIT; Babor *et al.*, 2001). DUDIT consists of 11 clinician-rated items covering domains of drug consumption, dependence and problems associated with use. It has been validated in a

Swedish drug-using population, and in that context had an acceptable level of sensitivity (90%) but not specificity (78%) (Berman *et al.*, 2005).

The CAGE questionnaire has been adapted to include drugs (CAGE-AID; Brown & Rounds, 1995). CAGE was originally developed to identify alcohol misuse and in that context has an acceptable sensitivity and specificity. Among a general hospital population, three of the four items of the clinician-rated CAGE-AID had fairly low sensitivity (71%) and specificity (76%) (Brown *et al.*, 1998).

The Chemical Use Abuse and Dependency (CUAD) scale is clinician rated and has been developed and used in psychiatric populations (McGovern & Morrison, 1992). A validation study found high sensitivity (88%) and specificity (93%) (Appleby *et al.*, 1997). Also used in psychiatric populations is the Dartmouth Assessment of Lifestyle Instrument (DALI), an 18-item clinician-rated scale concerned mainly with alcohol, cocaine and cannabis use (Rosenberg *et al.*, 1998). The items for alcohol and drug use were analysed separately; the items designed to measure cannabis and cocaine use had a sensitivity of 80% and a specificity of 100%.

Of the questionnaires discussed above, DUDIT had the highest sensitivity and specificity and was also relatively quick to administer (11-items). However, this has not been validated outside of a known drug-using population and would require further research before it can be recommended for general use in the UK. It is also important to note that most of the other questionnaires have only been studied in North American psychiatric populations and their validity in other settings is unknown.

Clinician-rated questionnaires for adolescent populations

The only questionnaire identified was CRAFFT (Knight *et al.*, 1999).This is a nine-item measure developed to identify drug misuse for 14-18 year olds in an adolescent medical clinic. A cut-off score of two had a sensitivity of 92% and specificity of 82%. However, this questionnaire has not been validated in a general clinical population administered by clinicians, and its properties in a UK adolescent population, are unknown.

Self-report questionnaires for adult populations

The shorter variant of the Drug Abuse Screening Test (DAST-10) has been used as a self-report drug misuse screening tool in psychiatric populations (Carey *et al.*, 2003; Maisto *et al.*, 2000). Maisto and colleagues (2000) found that sensitivity ranged from 70–90% and specificity ranged from 67–80%, depending on the cut-off used. It is therefore not of value as an identification tool.

Self-report questionnaires for adolescents

The self-report DAST has been adapted for use in adolescent psychiatric populations (Martino *et al.*, 2000) with moderate sensitivity (79%) and specificity (85%). However, with 27 items, it is not likely to feasible for use as an identification tool.

The Problem-Oriented Screening Instrument for Teenagers (POSIT; Latimer *et al.*, 2004) is a 17-item scale adapted from the 139-item POSIT. It does not have an acceptable level of sensitivity (77%), specificity (60%) or positive predictive value (19%).

There appear to be no feasible or psychometrically acceptable self-report identification questionnaires.

6.2.2 Biological Testing

Urinalysis

Urinalysis remains the most reliable tool for identifying drug use in a drug using population (Wolff, in press). In the context of identification of drug misuse for at-risk populations in general health and social care populations, the evidence for the sensitivity and specificity of urinalysis is sparse. However, a recent targeted screening study by Tomaszewski and colleagues (2005) in a US emergency department found excellent sensitivity and specificity for opiates (sensitivity = 100%, specificity = 98.7%) and cocaine use (sensitivity = 96.8%, specificity = 100%) but lower sensitivity for cannabis use (sensitivity = 87.5%, specificity = 99.3%) when comparing near-patient urine testing with confirmatory laboratory tests. George and Braithwaite's (2002) review of point-of-care testing tools (including urine, oral fluid and hair analysis) suggested limited or variable sensitivity in detecting drug use. Similarly, Wolff (in press) argues that such devices may be useful for the detection of short-term usage of drugs but not suitable for widespread routine use.

Oral fluid analysis

One of the major advantages of oral fluid drug testing is that it can be relatively easily obtained and is less intrusive than urinalysis. These properties enable oral fluid testing to be conducted by personnel with relatively little training and make it less open to adulteration (Wolff, in press). However, oral fluid can only identify very recent consumption of drugs. Detection times for drugs in oral fluid are considerably shorter (5–48 hours) compared with 1.5–4 days in urine (Verstraete, 2004).

There is sparse evidence for the sensitivity and specificity of oral fluid testing products (Wolff, in press). Gronholm and Lillsunde (2001) found poor sensitivity for detecting benzodiazepines and cannabinoids. In a small study (n = 15), results obtained by law enforcement officers correlated well with

laboratory results for cocaine and amphetamines but were unsatisfactory for detecting heroin and cannabis use (Samyn & Van Haeren, 2000).

There is a lack of evidence to support the widespread routine use of oral fluid testing for the identification of drug use in at-risk populations in health and social care settings.

Hair analysis

The testing of human scalp hair for drug use has the potential for detecting drug use over a longer period than urine or oral fluid testing (Wolff, in press). Hair analysis is also potentially less intrusive than urinalysis.

However, there are a number of difficulties associated with the use of hair analysis. This form of testing is still in a period of development, with sufficient quality-control criteria yet to be established (Wolff, in press). Therefore, hair analysis is associated with the need for a higher level of expertise and consequently the greater costs involved. Once more, there is a lack of evidence to support widespread and routine use of hair analysis for the identification of drug use in at-risk populations.

6.2.3 Clinical summary

The development of questionnaire tools for identification of drug misuse is in its infancy in comparison to the equivalent methods for detection of alcohol misuse. Although some measures had reasonable sensitivity and specificity the evidence base for this was often drawn only from one or at best two studies. In addition the test with the highest sensitivity and specificity, urinalysis, is not easy to administer as a routine identification instrument and has also low acceptability to service users in non-specialist health care settings. The self-administered or clinician administered measures are easier to administer and probably more acceptable to service users but have weaker sensitivity and specificity and can be time consuming to administer and score. The technologies for oral fluid and hair analysis do not seem to be either well enough developed or available to lend themselves for use in as routine identification tools. Therefore none of the tools identified in this review, applied to either adults or adolescents, can be recommended for routine implementation in any setting on the basis that insufficient validation has been carried out, particularly in the UK context. They confer no significant advantages over the use of sensitive routine clinical enquiry.

6.2.4 Clinical practice recommendations

Clinical enquiry

6.2.4.1 Healthcare professionals in mental health and criminal justice settings where drug misuse is known to be prevalent should routinely ask service users questions about recent legal and illicit drug use including whether they have used drugs and:

- of what type and method of administration
- in what quantity and
- how frequently.

6.2.4.2 In settings such as primary care, general hospitals and accident and emergency departments, enquiry about recent drug use should be considered in presentations in which drug misuse may be implicated, for example in:

- acute chest pain in a young person
- acute psychosis
- mood and sleep disorders.

Biological testing

6.2.4.3 Healthcare professionals should use biological testing (for example, urine or oral fluid samples) as part of a comprehensive assessment of drug use, but they should not rely on it as the sole method of diagnosis and assessment.

7 Brief interventions and reduction of injection and sexual risk behaviours

7.1 Introduction

Reducing drug-related harm is a widely cited aim in the treatment of people who misuse drugs (for example, Department of Health, 1999; NTA, 2006a) and is relevant to all chapters in this guideline. This chapter concerns the use of brief interventions to reduce drug-related harm (focused on opiate, stimulants and cannabis) by encouraging abstinence and/or reduction of drug use. Additionally, drug misuse is often associated with increased injection and sexual risk behaviours. This chapter will also consider interventions designed to reduce such risk behaviours.

7.2 Brief interventions

7.2.1 Introduction

Brief interventions have a variety of potential advantages in the treatment of drug misuse, including ease of delivery and less difficulty associated with retaining people who misuse drugs. The provision of such interventions is better developed in the treatment and management of alcohol related problems (SIGN, 2003). It should be noted that a significant proportion of people misusing opiates, stimulants and cannabis also misuse alcohol and this is reflected in the participants in some of the trials described below. These interventions can be conducted in a variety of settings including non-medical settings and can be given opportunistically to people not in formal drug treatment or as an adjunct to formal structured drug treatment (Ashton, 2005).

7.2.2 Definitions of interventions

Brief interventions are defined here as interventions with a maximum duration of two sessions. The main aim of the intervention is to enhance the possibility of change in terms of abstinence or the reduction of harmful behaviours associated with drug use. The principles of brief interventions include expressing empathy with the service user, not opposing resistance and offering feedback, with a focus on reducing ambivalence.

In the included studies reviewed below, brief interventions were compared with no treatment/minimal interventions and other active interventions. The minimal interventions mainly consisted of providing a self-help or information booklet on drug misuse. The active interventions included relapse-prevention cognitive behavioural therapy and, for people within formal treatment, standard care.

Relapse-prevention cognitive behavioural therapy focuses on helping drug users to develop skills to identify situations or states where they are most vulnerable to drug use, to avoid high-risk situations, and to use a range of cognitive and behavioural strategies to cope more effectively with these situations (Carroll & Onken, 2005).

Standard care for people in formal drug treatment ranged from methadone maintenance treatment (MMT) to cocaine or opiate detoxification and relapse-prevention cognitive behavioural therapy.

7.2.3 Outcomes

The primary outcomes assessed were related to abstinence and drug use. Abstinence can be expressed in a variety of ways, but the two main measures examined were point abstinence and duration of abstinence. Measures of abstinence based on urinalysis were preferred but self-report measures were not excluded. Point abstinence refers to evidence for the absence of drug use at a particular point in time (for example, end of treatment or at 12-month follow-up). The main limitation of this measure is that, due to the relapsing nature of drug misuse, it is not necessarily indicative of abstinence over a longer period of time. For example, where a person is abstinent at the end of treatment it does not indicate whether he or she used drugs less during treatment than others who were not abstinent at the end of treatment. Therefore, a measure of the duration of abstinence over a period of time is also important to assess how long a person remains abstinent, and the proportion of days a person is abstinent over a period of time.

Frequency of illicit drug use is also an important measure because, although abstinence may be a desired goal, reducing the frequency of drug misuse may be a more realistic way of reducing drug-related harm. Drug misuse is usually measured by self-report, usually in terms of the frequency of using particular drugs over a period of time.

Current practice

Although brief interventions are considered to be an important component of psychosocial treatment in open-access drug services (for example, NTA, 2002, 2006a), provision of such interventions varies widely throughout England and Wales. They have been provided in evaluative studies in a range of settings, including in-patient psychiatric settings (Baker *et al.*, 2002), schools (Tait & Hulse, 2003), higher educational settings (Mc Cambridge & Strang, 2003), and general healthcare settings (Miller *et al.*, 2006), as well as in formal drug treatment services (Stotts *et al.*, 2001). However, despite this work, the precise extent of the use and distribution of these interventions is not well understood, but it is reasonable to assume that they are not widely implemented in the UK at the present time. The review considers, therefore, not only the efficacy of brief interventions but also the settings in which they are provided, so as to better understand the likely benefit for people who misuse drugs who are not in formal drug treatment, as well as those who are.

7.2.4 Databases searched and inclusion/exclusion criteria

Information about the databases searched and the inclusion/ exclusion criteria used for this section of the guideline are in **Table 2**.

Table 2: Databases searched and inclusion/exclusion criteria for clinical effectiveness of brief interventions

Electronic databases	MEDLINE, EMBASE, CINAHL, HMIC, PsycINFO, Cochrane Library
Date searched	Database inception to May 2006; table of contents December 2005 to November 2006
Study design	RCT
Patient population	People who misuse opiates, stimulants, cannabis; poly-drug misuse
Interventions	Brief interventions
Outcomes	Abstinence: point abstinence, duration of abstinence Illicit drug use

7.2.5 Studies considered[6]

The review team conducted a new systematic search for RCTs that assessed the efficacy of brief interventions.

For the brief intervention review for people not in formal drug treatment or for those seeking treatment , seven trials (BAKER2005; BERNSTEIN2005; COPELAND2001; MARSDEN2006; MCCAMBRIDGE2004; STEPHENS2000; STEPHENS2002) met the guideline eligibility criteria, providing data on 2,701 participants. All were published in peer-reviewed journals. In four trials brief interventions were assessed for people who misuse cannabis (COPELAND2001; MCCAMBRIDGE2004; STEPHENS2000; STEPHENS2002), in three trials for people who misuse stimulants (BAKER2005; BERNSTEIN2005; MARSDEN2006) and in one trial for people who misuse opiates (BERNSTEIN2005).

For the brief intervention review for people within formal drug treatment, four trials (CARROLL2006A; MILLER2003; MITCHESON in press; STOTTS2001) met the guideline eligibility criteria, providing data on 625 participants. Of these trials, three were published in peer-reviewed journals and one trial was in press (the full trial report was provided by the author). In all four trials brief interventions were assessed for people who misuse stimulants, in one trial for people who misuse cannabis (CARROLL2006A) and in one trial for people who misuse illicit opiates (MILLER2003).

For the review comparing brief interventions and CBT (RP), four trials (BAKER2005; COPELAND2001; STEPHENS2000; STEPHENS2002) met the guideline eligibility criteria, providing data on 807 participants. All of these

[6] Here, and elsewhere in the guideline, each study considered for review is referred to by a study ID in capital letters (primary author and date of study publication, except where a study is in press or only submitted for publication, then a date is not used).

were published in peer-reviewed journals. In three trials comparisons between brief interventions and CBT (RP) were examined for people who misuse cannabis (COPELAND2001; STEPHENS2000; STEPHENS2002) and in one trial for people who misuse stimulants (BAKER2005).

In addition, nine studies were excluded from the analysis. The most common reason for exclusion was not providing required outcomes (further information about both included and excluded studies can be found in Appendix 14).

7.2.6 Brief interventions for people who misuse drugs and are not in formal drug treatment or are seeking drug treatment

This section assesses brief interventions for people who are not in formal drug treatment (for example, opportunistic interventions for people who are presenting for a physical health problem in primary care) and people who are not in drug treatment but who are seeking treatment for a drug problem.

Table 3: Study information table for trials of brief interventions for people who misuse drugs and are not in formal drug treatment or are seeking drug treatment

	Brief intervention versus self-help/information booklet (not in formal drug treatment)	Brief intervention versus waitlist (seeking drug treatment)	Individual CBT (RP) versus brief intervention (seeking drug treatment)	Group CBT (RP) versus brief intervention (seeking drug treatment)
Total no. of trials (total no. of participants)	4 RCTs (1 cluster randomised) (N = 1,731)	3 RCTs (N = 970)	3 RCTs (N = 602)	1 RCT (N = 205)
Study ID	BAKER2005 BERNSTEIN2005 MARSDEN2006 MCCAMBRIDGE 2004	COPELAND2001 STEPHENS2000 STEPHENS2002	BAKER2005 COPELAND2001 STEPHENS2002	STEPHENS2000
Problem drug or diagnosis	Cannabis: MCCAMBRIDGE 2004 Cocaine: BERNSTEIN2005 MARSDEN2006 Crack cocaine: MARSDEN2006 Amphetamine: BAKER2005 Heroin: BERNSTEIN2005	Cannabis: COPELAND2001 Cannabis (DSM-III-R/IV dependence): COPELAND2001 STEPHENS2000, 2002	Amphetamine: BAKER2005 Cannabis: COPELAND2001 Cannabis (DSM-III-R/IV dependence): COPELAND2001, STEPHENS2002	Cannabis (DSM-IV): STEPHENS2000
Baseline severity: mean (SD)	Years regular amphetamine use: 8.98 (6.99); daily level amphetamine use (OTI): 1.50 (1.65) (BAKER2005)	Years weekly cannabis use: 13.9 (COPELAND 2001) Years cannabis	Years regular amphetamine use: 8.98 (6.99); daily level amphetamine use: (OTI): 1.50 (1.65) (BAKER2005)	Years cannabis use: 17.35 (5.21); days of use in past 90 days: 74.64 (18.54) (STEPHENS2000)

	DAST score: 8.0 (BERNSTEIN2005)	use: 17.35 (5.21); days of use in past 90 days: 74.64 (18.54) (STEPHENS 2000) Proportion days of use in past 90 days: 0.88 (STEPHENS 2002)	Proportion days of use in past 90 days: 0.88 (STEPHENS2002)	
Treatment length	1 session	2 sessions	CBT: 4 sessions (BAKER2005; COPELAND2001) 9 sessions (STEPHENS2002) Brief intervention: 1 session (BAKER2005) 2 sessions (COPELAND2001; STEPHENS2000)	CBT: 14 sessions Brief intervention: 2 sessions
Length of follow-up	3 to 6 months	Up to 12 months	Up to 12 months	16 months
Age (years)	16 to 38	32 to 36	30 to 36	34

Table 4: Summary evidence table for trials of brief interventions for people who misuse drugs and are not in formal drug treatment or are seeking drug treatment*

	Brief intervention versus self-help/information booklet (not in formal drug treatment)	Brief intervention versus waitlist (seeking drug treatment)	Individual CBT (RP) versus brief intervention (seeking drug treatment)	Group CBT (RP) versus brief intervention (seeking drug treatment)
Total no. of trials (total no. of participants)	4 RCTs (1 cluster randomised) (N = 1,731)	3 RCTs (N = 970)	3 RCTs (N = 602)	1 RCT (N = 205)
Study ID	BAKER2005 BERNSTEIN2005 MARSDEN2006 MCCAMBRIDGE 2004	COPELAND2001 STEPHENS2000 STEPHENS2002	BAKER2005 COPELAND2001 STEPHENS2002	STEPHENS2000
Overall quality of evidence	High	Moderate	Moderate	Low
Point Abstinence	Stimulants 3- to 6-month follow-up: RR 1.34 (1.12 to 1.60), K = 3, N = 1,665 Heroin Follow-up: RR 1.54 (1.09 to 2.16), K = 1, N = 1,175	Continuous duration for cannabis: 3 to 4 months: RR 3.45 (1.94 to 6.10), K = 3, N = 570 Proportion days not using	Cannabis: Follow-up: RR 2.60 (1.45 to 4.66) K = 2, N = 462 Follow-up: SMD 0.24 (-0.13 to 0.51) K = 1, N = 102	

	Heroin and cocaine Follow-up: RR = 1.45 (1.02 to 2.05), K = 1, N = 1,175	cannabis: 3-month follow-up: SMD -0.42 (-0.81 to -0.03), K = 1, N = 105	Amphetamine: RR 0.89 (0.57 to 1.39) K = 1, N = 140	
Drug use	Cannabis 3-month follow up (adjusted for baseline differences): B = 11.54 (6.91 to 16.18), p<0.0001 K = 1, N = 200	Cannabis 4-month follow-up: SMD -0.68 (-0.88 to -0.49), K = 2, N = 432	Cannabis 9-month follow-up: SMD -0.43 (-0.58 to -0.17) K = 1, N = 245	Cannabis 12-month follow-up: SMD 0.03 (-0.65 to 0.23) K = 1, N = 179

* RR >1 favours intervention; in comparisons of CBT and brief interventions RR >1 favours CBT; negative SMD values favour intervention; in comparisons of CBT and brief interventions negative SMD values favour CBT; B >1 favours intervention

Most studies were for people who misuse cannabis or stimulants; brief interventions were associated with greater abstinence and reduced drug use compared to no treatment or minimal control groups for these people (see Table 3 for study information and Table 4 for evidence summary). One trial conducted on opiate users suggests brief interventions may also be effective for this group.

There were mixed results for comparisons of brief interventions with relapse-prevention cognitive behavioural therapy. For people who misuse cannabis, individual relapse-prevention cognitive behavioural therapy, but not group relapse-prevention cognitive behavioural therapy, appeared to be more effective than brief interventions but it should be noted that the relapse-prevention cognitive behavioural therapy interventions provided in both trials had four times as many sessions as the brief intervention. For people who misuse stimulants (amphetamines), no differences were found between individual relapse-prevention cognitive behavioural therapy and brief interventions.

7.2.7 Adjunctive brief interventions versus standard care for people who misuse drugs and are receiving formal drug treatment

Brief interventions have also been assessed as an adjunct to formal drug treatment programmes. This section is concerned with whether such an additional intervention for people already engaged in formal treatment improves abstinence and drug use outcomes.

Table 5: Summary evidence table for trials of brief interventions for people who misuse drugs and are receiving drug treatment*

	Brief intervention versus standard care for people who misuse drugs and/or alcohol	Brief intervention versus standard care for people undergoing cocaine detoxification	Brief intervention versus standard care for people undergoing MMT	Brief intervention versus standard care for people who are primarily stimulant or heroin misusers
Total no. of trials (total	1 RCT (N = 336)	1 RCT (N=52)	1 cluster randomizes trial	1 RCT (N=208)

no. of participants)			(N=29)	
Study ID	CARROLL2006A	STOTTS2001	MITCHESON in press	MILLER2003
Problem drug/ diagnosis	Alcohol (50%), cannabis (20%), stimulants (24%)	Cocaine (100%)	Crack cocaine (100%)	Cocaine (53%), heroin (29%)
Baseline severity	ASI: Drug: 0.11 (0.12) (CARROLL2006A)	Mean duration of cocaine use: 10 years	Crack cocaine use in last 30 days: 100%	-
Treatment length	1 session	2 sessions	1 session	1 session
Length of follow-up	3 months	End of detoxification treatment (10 days)	1 month	12 months
Age (years)	33	35	39	33
Overall quality of evidence	Low	Moderate	Moderate	Low
Abstinence		Abstinent from cocaine after detoxification: RR = 1.44 (1.03 to 2.01)		Abstinence: F(1, 55) = 1.12, p<.29
Drug use	Days of primary substance use at 1-month follow-up: SMD = -0.11 (-0.33 to 0.10) Days of primary substance use of 3-month follow-up: SMD = 0.04 (-0.18 to 0.25)		Days of crack cocaine use in last 30 days: SMD = -0.07 (-0.81 to 0.67)	Illicit drug use: F (3, 157) = 0.89, p<.45

* RR >1 favours brief intervention; negative SMD values favour brief intervention

The use of brief interventions as an adjunct to formal drug treatment did not have any important effects on drug use compared to standard care (see Table 5). Miller and colleagues (2003) found no statistically significant differences between the brief intervention and standard care groups for days abstinent from illicit drugs or for treatment attendance. This finding was consistent for inpatient and outpatient samples, and for primary cocaine and heroin users. Similarly, Carroll and colleagues (2006a) found no statistically significant differences in days using primary substances.

A cluster randomised trial in the UK also found no statistically significant differences between the brief intervention and control groups on the primary outcome of crack-cocaine use. However, the brief intervention group reported a statistically significant reduction in heroin use compared to control (Mitcheson *et al.*, in press).

In contrast, Stotts and colleagues (2001) found that an adjunctive brief intervention reduced cocaine use during cocaine detoxification. However, the intervention appeared to be more effective for those with lower motivation at baseline. This offers a possible explanation for why the effect of the brief intervention was more pronounced in this study than the others. Participants in other studies receiving formal drug treatment may have already felt motivated to change their drug use and therefore did not require an additional motivational intervention.

7.2.8 Clinical summary

The majority of meta-analyses of brief interventions do not distinguish the context in which the intervention is conducted (for example, Burke, 2003). The results of the current systematic review, discussed above, suggest this is important. People who misuse cannabis or stimulants, and not in formal drug treatment, appear to respond well to brief interventions both in terms of increased abstinence levels and reduced drug use. There is some evidence to suggest people who misuse opiates who are not in formal drug treatment may also benefit from such interventions.

In contrast, for people already receiving formal drug treatment, an additional brief intervention did not appear to have much effect on abstinence or drug use in most studies. Although one study did find evidence of benefit, this was mainly accounted for by participants with lower motivation at baseline. The majority of studies were for people who misuse stimulants, although similar findings were also found for people who misuse cannabis or heroin. Ashton (2005), in a review of brief interventions, suggested that such interventions are effective for people who are ambivalent about change but ineffective for people who are motivated to change and already receiving treatment.

Results were mixed for comparisons of brief interventions with longer interventions for people who misuse cannabis or amphetamines. All the studies were for people seeking drug treatment. Individual relapse-prevention cognitive behavioural therapy, lasting between four and nine sessions, was associated with greater levels of abstinence and reductions in drug use for people who misuse cannabis, although interventions of such duration are effectively brief treatments. However, no differences were found for group relapse-prevention cognitive behavioural therapy for cannabis misuse or individual relapse-prevention cognitive behavioural therapy for amphetamine misuse. Further research is required to assess the efficacy of brief interventions in comparison with individual and group relapse-prevention cognitive behavioural therapy, other interventions, and with people who misuse drugs other than cannabis.

7.2.9 Clinical practice recommendations

7.2.9.1 For people in limited contact with services (for example, attendance at a needle and syringe exchange) and if concerns about

drug misuse are identified by the service user or healthcare professional, opportunistic brief interventions should be offered. These interventions should:

- be of a maximum duration of two sessions (normally ranging between 10 and 45 minutes)
- offer appropriate information and feedback in an empathic manner.

7.2.9.2 For people not in contact with drug misuse services and if concerns about drug misuse are identified by the service user or healthcare professional, opportunistic brief interventions should be offered. These interventions should:

- be of a maximum duration of two sessions (normally ranging between 10 and 45 minutes)
- offer appropriate information and feedback in an empathic manner.

7.3 Psychosocial interventions to improve compliance with physical healthcare

7.3.1 Introduction

Psychosocial interventions to improve compliance with physical healthcare for problems associated with the misuse of drugs have been developed which potentially could improve the prevention (for example, hepatitis B vaccinations), identification (for example, HIV or hepatitis C tests) and treatment (for example, anti-retrovirals for people with hepatitis C) of the physical problems in people who misuse drugs. The psychosocial interventions that have received the most research attention in this area are contingency management and outreach.

Contingency management provides a system of incentives and disincentives (although almost all studies are concerned with provision of incentives) designed to make continual drug use less attractive and abstinence more attractive (Griffith *et al.*, 2000). The two major methods of providing incentives in the context of increasing compliance with physical healthcare are:

Voucher-based reinforcement: the individual receives vouchers with various monetary values for engaging in a particular behaviour (for example, returning for a TB skin test or hepatitis B vaccination). Once earned, vouchers are exchanged for goods or services such as food or shopping.

Cash: the individual receives cash for engaging in a particular behaviour.

Outreach involves targeting high risk and local priority groups. The four generally agreed aims of outreach work are to: identify and contact hidden

populations, refer members of these populations to existing care services, initiate activities aimed at prevention and at demand reduction, and promote safer sex and safer drug use (European Monitoring Centre for Drugs and Drug Addiction, 1999).

Current practice

There are a number of physical health problems commonly associated with drug misuse. For example, more than two in five injecting drug users in the UK have been infected with hepatitis C. In England and Wales, hepatitis C transmission among injecting drug users is high, with one in six of those who had started to inject since the beginning of 2002 having become infected (Health Protection Agency, 2005).

Uptake of testing for hepatitis C among injecting drug users in contact with drug services has increased in recent years as offering tests has become part of routine management (NTA, 2006). It is estimated, however, that around half of those injecting drug users with hepatitis C in contact with these services still remain unaware of their infection (Health Protection Agency, 2005). It is also likely that there are substantial numbers of current and former injecting drug users who are not in contact with services who will be unaware that they have hepatitis C. A recent study found that case finding for hepatitis C in injecting drug users is cost effective (Castelnuovo *et al.*, 2006). In addition, NICE has recommended the use of pegylated interferon and ribavirin for the treatment of hepatitis C (NICE, 2004, 2006).

7.3.2 Databases searched and inclusion/exclusion criteria

Information about the databases searched and the inclusion/ exclusion criteria used for this section of the guideline are in Table 6.

Table 6: Databases searched and inclusion/exclusion criteria for clinical effectiveness of interventions to improve compliance with physical healthcare

Electronic databases	MEDLINE, EMBASE, CINAHL, HMIC, PsycINFO, Cochrane Library
Date searched	Database inception to May 2006; table of contents December 2005 to November 2006
Study design	RCT Observational studies
Patient population	People who misuse opiates, stimulants, cannabis; poly-drug misuse
Interventions	CM, outreach
Outcomes	compliance with physical health/harm-reduction interventions

7.3.3 Studies considered[7]

For the search on psychosocial interventions to reduce injection and sexual risk behaviour (see Section 7.4), a study on increasing compliance with

[7] Here, and elsewhere in the guideline, each study considered for review is referred to by a study ID in capital letters (primary author and date of study publication, except where a study is in press or only submitted for publication, then a date is not used).

physical healthcare was identified (MALOTTE2001). The review team then conducted an additional systematic search for RCTs and observational studies that assessed the efficacy of psychosocial interventions to increase compliance with physical healthcare.

For the efficacy review of contingency management, five RCTs (MALOTTE1998; MALOTTE1999; MALOTTE2001; SEAL2003; SORENSEN2006) met the eligibility criteria, providing data on 2,412 participants.

Two trials were for reinforcing return for a TB test (MALOTTE1998; MALOTTE1999), one trial to reinforce compliance with prophylactic TB medication (MALOTTE2001), one trial to reinforce hepatitis B vaccination (SEAL2003) and one trial for compliance with HIV anti-retroviral medication (SORENSEN2006).

For the review of implementing contingency management, a further five studies met the eligibility criteria (BRASSARD2004; CHAISSON1998; FITZGERALD1999; LORVICK1999; PERLMAN2003), providing data on 2,417 participants. All studies were published in peer-reviewed journals.

Three studies were for reinforcing return for a TB skin test (BRASSARD2004; CHAISSON1998; FITZGERALD1999), one study was for a chest x-ray to confirm TB (PERLMAN2003), and one study (LORVICK1999) was for returning a TB skin test followed by prophylactic medication (further information about both included and excluded studies can be found in Appendix 14).

7.3.4 Contingency management to improve physical healthcare

Table 7: Summary evidence table for contingency management to improve physical healthcare*

	One-off CM versus standard care for compliance with TB skin tests and hepatitis B vaccination	CM versus standard outreach for compliance with prophylactic TB medication, HIV anti-retroviral medication and hepatitis B vaccination
Total no. of trials (total no. of participants)	3 RCTs (N = 2,183)	3 RCTs (N = 325)
Study ID	MALOTTE1998 MALOTTE1999 SEAL2003	MALOTTE2001 SEAL2003 SORENSEN2006
Problem drug or diagnosis	Injection drug use: all Crack cocaine: MALOTTE1998, 1999	Injection drug use: all Crack cocaine: MALOTTE2001 HIV positive: SORENSEN2006
Baseline severity: mean (SD)	Drug use in past 30 days: injection only – 24%, crack only – 41%, crack and injection – 23% (MALOTTE1998)	Injection in past 30 days: heroin – 74%, methamphetamine – 16%, speedball (heroin with methamphetamine) – 51% (SEAL2003)

	Drug use in past 90 days: injection only – 11%, crack cocaine 77%, crack and injection – 12% (MALOTTE1999) Injection in past 30 days: heroin – 74%, methamphetamine – 16%, speedball (heroin with methamphetamine) – 51% (SEAL2003)	
Nature of incentive	One-off cash payment or voucher, $5–20 in value	Cash or vouchers
Treatment length	Single reward for adherence to single session	6 months
Length of follow-up	Up to 5 months	Not followed up
Age (years)	18 to 43	23 to 49
Overall quality of evidence	High	High
Adherence to harm-reduction intervention	Returned for skin test or vaccination: RR 2.00 (1.48 to 2.72) K = 3, N = 828	Completed full course of vaccination or prophylaxis: RR 6.38 (1.00 to 40.54), K = 2, N = 206 Proportion medication taken on time: During treatment: SMD -1.07 (-1.59 to -0.55), K = 1, N = 66 During 1-month follow-up: SMD -0.48 (-0.97 to 0.01) K = 1, N = 66

*RR>1 favours contingency management, negative SMD values favour contingency management

Table 6 shows that contingency management, with either cash or vouchers, is more effective than standard care or outreach for increasing compliance with a range of physical healthcare interventions, including returning for TB skin tests and hepatitis B vaccinations, and compliance with medication (TB prophylaxis and HIV anti-retrovirals).

Implementation studies of contingency management to engage people in harm-reduction treatment

Three comparative studies with historical controls (Chaisson *et al.*, 1998; FitzGerald *et al.*, 1999; Perlman *et al.*, 2003) and two case series (Brassard *et al.*, 2004; Lorvick *et al.*, 1999) have documented the implementation of contingency management to enhance compliance with TB screening and prophylaxis in a variety of settings where injection drug use is prevalent.

Using a prospective comparative design, Chaisson and colleagues (1996) analysed return rates for purified protein derivative tuberculin skin test readings among 666 HIV-infected participants (49% of whom injected drugs) in an urban HIV clinic in Baltimore, USA. Participants had a purified protein derivative skin test planted and were offered respectively over three phases of the study: no intervention (n = 272); a fast-food voucher incentive, roughly US$4 in value, on return for purified protein derivative reading within 3 days (n = 229); or a brief educational message from the test nurse emphasising the importance of returning for a reading, in addition to a fast-food voucher upon

return (n = 158). Return rates for both voucher incentive (RR = 1.38; 95% CI: 1.11 to 1.70) and voucher incentive plus education (RR = 1.74; 95% CI: 1.42 to 2.14) groups were higher than for the control group.

Similar findings were reported by FitzGerald and colleagues (1999), who studied 1,107 service users of a community-based needle and syringe exchange service in Vancouver, Canada. In the first phase of the study, 558 participants were offered no incentives, whereas the 549 participants in the second phase were offered CA$5 cash on return for a purified protein derivative reading. The return rate was again significantly higher for the incentive group than for the control group (RR = 1.77; 95% CI: 1.59 to 1.97). Another Canadian study, a case series (Brassard *et al.*, 2004), also reported a very high return rate (94% of 262 injecting participants) for purified protein derivative readings, where a cash incentive of CA$10 was offered contingent on return.

In a comparative study by Perlman and colleagues (2003), 177 service users of an inner-city needle and syringe exchange service in New York with a positive purified protein derivative reading were referred off site for a confirmatory chest x-ray. Consecutive cohorts of participants were offered, respectively, standard reimbursement for transportation (n = 119) and an additional US$25 cash incentive on adherence within 7 days to the chest x-ray referral (n = 58). The incentive group were more likely to adhere to the chest x-ray referral than the control group (RR = 2.69; 95% CI: 2.06 to 3.52).

One case series (Lorvick *et al.*, 1999) followed 205 street-recruited injection drug users in the San Francisco Bay Area, USA, from initial purified protein derivative skin test through to isoniazid (anti-tuberculosis) prophylaxis (where indicated). Cash incentives of US$10 were offered at each point of initial contact (skin-test reading, medical evaluation and prophylaxis enrolment appointment) as well as subsequent contact for observed medication, which was administered twice weekly over a 6-month course. Adherence was high throughout, for example with 87% of 205 participants having returned for the purified protein derivative reading, and 89% of the 27 participants requiring prophylaxis having completed the full course of treatment.

In summary, non-RCTs of the implementation of contingency management in routine care provide further evidence to support the effectiveness of monetary incentives in encouraging people who misuse drugs to comply with preventive interventions for TB. These interventions were implemented in different localities across the USA as well as Canada with apparently consistent effectiveness, which should be noted in considering whether similar interventions may be successfully implemented in the UK. Participants in the above studies were recruited from a number of different settings with a high rate of injecting drug use, including needle and syringe

exchange programmes and HIV clinics. It should also be noted that, in all the studies considered, the one-off incentives were all modest in value, ranging from US$4–25 (approximately £2–12.50).

7.3.5 Clinical summary

The main interventions assessed in this section were contingency management for one-off practices (for example, TB skin test readings and hepatitis B vaccinations) and compliance with physical health medication (TB prophylaxis, HIV anti-retrovirals). Contingency management interventions appear to be considerably more successful than standard care or outreach in increasing the proportion of participants presenting for TB tests, vaccinations for hepatitis B and compliance with TB and HIV medications. Although TB is possibly not as prevalent among drug users in the UK in comparison with the US, it is likely these findings can be generalised to physical health problems more common in the UK (such as hepatitis C). Although there are no UK studies assessing contingency management in this context, the findings are consistent across a number of locations in the US and Canada, and also in a variety of naturalistic studies, increasing the likelihood that these effects are generalisable to other contexts.

A number of these studies (for example, Fitzgerald et al, 1999; Bassard et al, 2004) have looked at the effectiveness of contingency management in improving compliance with TB screening in injecting drug users. Both reported on the impact of small financial incentives for completion of the screening programme and Fitzgerald and colleagues (1999) described increased compliance (43% v.78%) following the introduction of contingency management.

7.3.6 Clinical practice recommendation

7.3.6.1 For all people at risk of physical health problems (including transmittable diseases) resulting from their drug misuse, the use of modest material incentives (for example, shopping vouchers, up to £10 in value) should be considered to encourage specified harm-reduction objectives. Incentives should be delivered on a one-off basis or over a limited duration, contingent on compliance with or completion of each intervention, in particular:

- hepatitis B/C and HIV testing
- hepatitis B immunisation schedule
- TB test.

7.4 Psychosocial interventions to reduce injecting and sexual risk behaviours

7.4.1 Introduction

It is widely accepted that injecting drug users are at greater risk of developing blood-borne viruses than the general population and that many

engage in injecting and sexual risk behaviours. A recent prospective cohort study of new injecting drug users in London found high levels of injecting risk behaviour (Judd et *al.*, 2005). A total of 24% reported having injected in the last 4 weeks with needles and syringes used by someone else and 53% having shared injecting paraphernalia. The baseline prevalence of antibodies to hepatitis C virus was 44% and of antibodies to HIV 4%. It would appear that injecting drug users in London have a higher incidence of hepatitis C virus than those in many cities worldwide, and an incidence of HIV comparable to that among men who have sex with men attending clinics for sexually transmitted infections in London (Judd *et al.*, 2005). Therefore, reducing the risk of blood-borne viruses among injecting drug users is an important issue in the UK. It has also been noted that people who misuse crack or cocaine have also exhibited high levels of sexual risk behaviour (for example, Malow *et al.*, 1994). Therefore, it is important not to exclude other groups of people who misuse drugs from such interventions.

One of the central public health interventions to reduce injection drug use in the UK has been through the establishment of needle and syringe exchange programmes. A number of studies have assessed the efficacy of needle and syringe exchange programmes. The results have been summarised in several recent systematic reviews (for example, Gibson *et al.*, 2001; Ksobiech, 2003; Wodak & Coney, 2006). The main aim of these studies was to assess the efficacy of needle and syringe exchange programmes on a range of outcomes, including reducing injection risk behaviour and HIV seroconversions. While the efficacy of needle and syringe exchange programmes *per se* is beyond the scope of this guideline, the additional psychosocial elements of these programmes are assessed below.

Current practice

One of the primary methods of reducing injection risk behaviour in the UK is through the use of needle and syringe exchange programmes. In 1998, there were 2,000 needle and syringe exchange outlets in the UK distributing over 25 million syringes annually (Hunter *et al.*, 2000).

The psychosocial components of needle and syringe exchange programmes can be divided into two main aspects: methods of distributing sterile needles, and psychosocial interventions designed specifically to reduce sexual and injection risk behaviours above and beyond providing sterile needles.

The distribution of needles can vary widely in the extent of psychosocial contact involved. Some needle and syringe exchange programmes provide sterile needles by dispensing machine and therefore potentially involve very little psychosocial contact. Conversely, other programmes distribute sterile needles through counsellors and therefore may involve more opportunities for interaction with the person who misuses drugs.

Needle and syringe exchange programmes often include additional psychosocial interventions such as education about blood-borne viruses to reduce injection and sexual risk behaviours (for example, Des Jarlais, 1996; Huo, 2006).

7.4.2 Definitions of interventions

The most common intervention designed to reduce injection and sexual risk behaviour is psychoeducation.

Psychoeducation, as described here, is a programme designed for individuals or groups of people who misuse drugs that combines education about blood-borne viruses (such as HIV or hepatitis C) with skills training to improve communication skills, assertiveness, and safe sexual and injection risk behaviour. It also provides people who misuse drugs with an opportunity to ask questions and receive relevant feedback. These interventions are typically provided over 4 to 6 sessions in a variety of settings such as methadone maintenance clinics, needle and syringe exchanges, and outreach programmes.

7.4.3 Outcomes

HIV seroconversion refers to the production of specific antibodies to antigens present in the body resulting in a change of a serologic test from negative to positive, indicating the development of antibodies in response to infection (Macpherson, 2002).

Injection risk behaviour includes the frequency of injection drug use, sharing needles and reusing needles (Darke *et al.*, 1991).

Sexual risk behaviour refers to unsafe sexual practices, including not using condoms, either with a regular or casual partner, having multiple sexual partners and anal sex (Darke *et al.*, 1991).

7.4.4 Databases searched and inclusion/exclusion criteria

Information about the databases searched and the inclusion/ exclusion criteria used for this section of the guideline are in Table 8.

Table 8: Databases searched and inclusion/exclusion criteria for clinical effectiveness of interventions to reduce HIV risk behaviours

Electronic databases	MEDLINE, EMBASE, CINAHL, HMIC, PsycINFO, Cochrane Library
Date searched	Database inception to May 2006; table of contents December 2005 to November 2006
Study design	RCT
Patient population	People who misuse opiates, stimulants, cannabis; poly-drug misuse
Interventions	HIV psychoeducation, CM, psychosocial components of NSE programmes, CBT(RP), CBT (S), IPT, BCT, family-based interventions
Outcomes	Reduced risk behaviours associated with HIV and other blood-borne viruses, HIV seroconversion

7.4.5 Studies considered[8]

The review team conducted a new systematic search for RCTs that assessed the efficacy of psychosocial interventions to reduce sexual and injection risk behaviour.

For the review of psychoeducation, 15 trials (AVANTS2004; BAKER1993; COLON1993; ELDRIDGE1997; EPSTEIN2003; HARRIS1998, KOTRANSKI1998; MALOW1994; O'NEILL1996; SIEGAL1995, SCHILLING1991; SORENSEN1994: study 1; SORENSEN1994: study 2; STERK2003; WECSHBERG2004) met the eligibility criteria, providing data on 4,651 participants. All trials were published in peer-reviewed journals.

For the review of standard education, five trials (BAKER1993; BAKER1994; GIBSON1999: study 1; GIBSON1999: study 2; TUCKER2004A) met the eligibility criteria, providing data on 735 participants. All trials were published in peer-reviewed journals.

For the review of psychosocial interventions within needle and syringe exchange programmes, one RCT (KIDORF2005) met the eligibility criteria providing data on 302 participants. This trial was published in a peer-reviewed journal.

An additional search for observational studies on psychosocial interventions within needle and syringe exchange programmes was undertaken, since only one RCT on psychosocial interventions was identified from the original search and no trials that assessed directly the efficacy of machine-dispensing needle and syringe exchange programmes in comparison with counsellor-distributed programmes.

For the review of psychosocial interventions within needle and syringe exchanges, a narrative review (DOLAN2003) and two descriptive studies (JACOB2000; NELLES1999) were identified.

In addition, 18 studies were excluded from the analysis. The most common reason for exclusion was not being an RCT (further information about both included and excluded studies can be found in Appendix 14).

7.4.6 Skills-based HIV psychoeducation versus standard HIV education

Table 9: Study information table for trials of HIV education for people who misuse drugs

	Psychoeducation versus standard HIV education	Psychoeducation versus self-help booklet	Standard education versus self-help booklet	Psychoeducation versus standard education, for at-

[8] Here, and elsewhere in the guideline, each study considered for review is referred to by a study ID in capital letters (primary author and date of study publication, except where a study is in press or only submitted for publication, then a date is not used).

				risk subgroup
Total no. of trials (total no. of participants)	12 RCTs (N = 4,412)	4 RCTs (N = 334)	5 RCTs (N = 735)	4 RCTs (N = 2,816)
Study ID	AVANTS2004 BAKER1993 COLON1993 ELDRIDGE1997 EPSTEIN2003 HARRIS1998 KOTRANSKI1998 MALOW1994 O'NEILL1996 SIEGAL1995 STERK2003 WECSHBERG2004	BAKER1993 SCHILLING1991 SORENSEN1994: study 1 SORENSEN1994: study 2	BAKER1993 BAKER1994 GIBSON1999: study 1 GIBSON1999: study 2 TUCKER2004A	COLON1993 KOTRANSKI1998 MALOW1994 SIEGAL1995
Problem drug or diagnosis	Injection drug use: BAKER1993 COLON1993 KOTRANSKI1998 O'NEILL1996 SIEGAL1995 STERK2003 Crack: WECSHBERG2004 Cocaine (DSM-III-R/IV dependence): AVANTS2004 MALOW1994 Opiates (DSM-III-R/IV dependence or MMT): AVANTS2004 HARRIS1998 O'NEILL1996 Court-ordered inpatient treatment: ELDRIDGE1997 HIV positive: BAKER1993 (6%), ELDRIDGE1997 (2.9%), KOTRANSKI1998 (5%), SIEGAL1995 (1.5%)	Injection drug use: BAKER1993 Opiates (DSM-III-R/IV dependence, MMT or undergoing detoxification): SCHILLING1991, SORENSEN1994: studies 1 & 2 HIV positive: BAKER1993 (6%)	Injection drug use: all Heroin: TUCKER2004A Opiates (entering detoxification): GIBSON1999: studies 1 & 2 HIV positive: BAKER1993 (6%) Hepatitis C: TUCKER2004A (64%)	Injection drug use: COLON1993, KOTRANSKI1998, SIEGAL1995 Cocaine (DSM-III-R/IV dependence): MALOW1994 HIV positive: KOTRANSKI1998 (5%), SIEGAL1995 (1.5%)
Treatment length	3 to 16 sessions	2 to 6 sessions	1 session	3 to 4 sessions

Table 10: Summary evidence table for trials of HIV education for people who misuse drugs*

	Psychoeducation versus standard HIV education	Psychoeducation versus self-help booklet	Standard education versus self-help booklet	Psychoeducation versus standard education, for at-risk subgroup

Total no. of trials (total no. of participants)	12 RCTs (N = 4,412)	4 RCTs (N = 334)	5 RCTs (N = 735)	4 RCTs (N = 2,816)
Study ID	AVANTS2004 BAKER1993 COLON1993 ELDRIDGE1997 EPSTEIN2003 HARRIS1998 KOTRANSKI1998 MALOW1994 O'NEILL1996 SIEGAL1995 STERK2003 WECSHBERG2004	BAKER1993 SCHILLING1991 SORENSEN1994: study 1 SORENSEN1994: study 2	BAKER1993 BAKER1994 GIBSON1999: study 1 GIBSON1999: study 2 TUCKER2004	COLON1993 KOTRANSKI1998 MALOW1994 SIEGAL1995
Overall quality of evidence	Moderate	Moderate	Moderate	Moderate
Injection risk behaviours	Engaging in risk behaviours: RR 0.95 (0.73 to 1.23) K = 3, N = 841 Various measures: SMD -0.21 (-0.42 to 0.00) K = 3, N = 353	Various measures: SMD -0.02 (-0.33 to 0.29) K = 3, N = 166	Engaging in risk behaviours: 3-month follow-up: RR 0.89 (0.53 to 1.50) K = 2, N = 296 Various measures: 1- to 3-month follow-up: SMD -0.04 (-0.29 to 0.21) K = 2, N = 243 4- to 6-month follow-up: SMD -0.17 (-0.50 to 0.16) K = 2, N = 140	Unsafe at baseline, safer at endpoint: RR 1.09 (0.98 to 1.21) K = 3, N = 1261
Sexual risk behaviours	Engaging in risk behaviours: Endpoint: RR 0.91 (0.73 to 1.12) K = 5, N = 1,123 6-month follow-up: RR 0.94 (0.82 to 1.07) K = 2, N = 460 Various measures: SMD -0.30 (-0.47 to -0.13), favours psychoeducation K = 5, N = 541	Engaging in risk behaviours: RR 0.58 (0.35 to 0.98) K = 1, N = 92 Various measures: SMD -0.32 (-0.57 to -0.07) K = 4, N = 240	Engaging in risk behaviours: 3-month follow-up: RR 0.94 (0.74 to 1.21) K = 2, N = 296 Various measures: 1- to 3-month follow-up: SMD -0.09 (-0.34 to 0.17) K = 2, N = 243 6-month follow-up: SMD 0.06 (-0.27 to 0.39) K = 2, N = 140	Unsafe at baseline, safer at endpoint: RR 1.56 (1.25 to 1.95), K = 3, N = 1,195

* RR>1 favours intervention, negative SMD values favour intervention

7.4.7 Clinical summary

A number of RCTs have been conducted to assess the efficacy of HIV psychoeducation for reducing injection and sexual risk behaviours. The review also drew on a number of observational studies. From this review, it appears that psychoeducational programmes have little or no effect on

injection risk behaviour and a limited and inconsistent impact on the reduction of sexual risk behaviour in people who misuse drugs. Interpretation of the research is made difficult by the lack of data on HIV seroconversion rates.

7.4.8 Clinical practice recommendations

7.4.8.1 Healthcare professionals should provide during routine contacts and opportunistically (for example at a needle and syringe exchange) information and advice to all people who misuse drugs about reducing their exposure to the transmission of blood-borne viruses including the reduction of sexual and injection risk behaviours, and if appropriate offer testing for such viruses.

7.4.8.2 Healthcare professionals should not routinely provide separate group-based psychoeducational interventions for people who misuse drugs designed specifically to provide information and advice about reducing exposure to blood-borne viruses, including the reduction of sexual and injection risk behaviours.

7.4.9 Psychosocial components of needle and syringe exchange programmes

Modes of distribution

There are no studies that directly compare machine-distributed needle exchanges with counsellor-distributed needle exchanges. Some brief indirect comparisons can be made, although conclusions are difficult to draw from such studies. Jacob and Stover (2000) assessed the establishment of two needle and syringe exchange programmes (one in a men's prison and another in a women's prison) in Germany over a 2-year period. Both prisons were given the option of distributing needles through slot machines or by counsellors; the men's prison opted for counsellors distributing needles whereas the women's prison opted for slot machines. Each prison offered similar levels of psychosocial support.

Although this allows some comparisons to be made between the two modes of distribution, the study was predominantly descriptive. The general conclusions were that staff and prisoners evaluated the machine distribution needle and syringe exchange programme more positively than the counsellor distribution programme. Prisoners appeared to prefer the anonymity of machine distribution of needles.

Nelles and colleagues (1998) also described the establishment of a machine-distributed needle and syringe exchange programme in a women's prison in Switzerland. There were reported reductions in sharing of needles and injection drug use.

In addition, Dolan (2003) reviewed a study on counsellor-distributed needle and syringe exchange programmes in two Spanish prisons. Once more, there was evidence of the effectiveness of the programme, with reduced levels of blood-borne viruses.

Psychosocial interventions conducted in needle and syringe exchange programmes

Assessment of the efficacy of additional psychosocial interventions within needle and syringe exchange programmes requires comparison with a minimal control or no treatment group. Only one RCT was found that compared psychosocial interventions with a control in needle and syringe exchange programmes. Kidorf and colleagues (2005) compared the use of a one-session brief intervention with standard referral and an attentional control. No statistically significant differences were found between the brief intervention group and the two control groups.

7.4.10 Clinical summary

Only one trial was found that assessed an additional psychosocial intervention compared to a standard needle and syringe exchange programme. No differences were found in terms of reduction of risk behaviour. Further research is required to assess the efficacy of additional interventions within these programmes.

Most studies evaluating needle and syringe exchange programmes failed to provide enough detail on the mode of distribution. Studies that provided these details were primarily descriptive and did not seek to compare different methods of distributing needles. At present, it is not possible to conclude whether machine or counsellor distribution of syringes or needles are associated with better outcomes.

7.4.11 Research recommendation - psychosocial interventions within needle and syringe exchange programmes

7.4.11.1 For people who use injection drugs, do needle and syringe exchange programmes with greater psychosocial content (including staff distribution of syringes and needles and/or provision of psychoeducation on reducing blood-borne virus risk) compared with those with minimal psychosocial content (including machine dispensing of syringes and needles and minimal or no information on reducing blood-borne virus risk) reduce injection and sexual risk behaviours and seroprevalence blood-borne virus rates associated with drug use?

Why this is important

There is extensive literature assessing whether needle and syringe exchange programmes reduce injection and sexual risk behaviour and HIV seroprevalence rates. However, there is very little research that seeks to distinguish the impact of the provision of sterile needles from the psychosocial interventions often offered in such programmes. Psychosocial contact and interventions in needle and syringe exchange programmes require a great deal of resources, therefore it is important to assess whether these additional psychosocial elements are clinically and cost-effective.

8 Psychological interventions

8.1 Introduction

Psychological approaches to the treatment of drug misuse have been the subject of much research and debate over the years (Wanigaratne *et al.*, 2005). Such approaches vary depending on the theoretical model underpinning them but are broadly based on the use of the interaction between therapist and service user to elicit changes in the service user's behaviour (for example, drug use), as well as other related factors including cognition and emotion. This chapter is concerned with structured psychological approaches used to help people with drug problems in their efforts to change drug-using behaviour. The approaches reviewed here contrast with those reviewed within the brief interventions chapter in that they are longer in duration, and usually are part of a treatment plan within specialist services.

Over recent years, there has been an increase in the development and evaluation of psychological interventions in drug misuse treatment including: cognitive behavioural therapy, motivational approaches, contingency management treatments and family-based interventions. Psychological interventions within this field have been used either as stand-alone treatments or in combination with pharmacological interventions. In order to reflect this, the chapter has been divided into four sections: psychological interventions alone that are used without pharmacological interventions, psychological interventions used in combination with opiate agonist maintenance treatment, psychological interventions used in combination with naltrexone maintenance treatment and, finally, the application of psychological treatments within broader packages of care (for example, day care and case management). In addition, the available research on self-help approaches is also reviewed.

Psychological treatments can also be used to help people who misuse drugs address coexisting disorders such as anxiety and depression. These approaches are not covered within this review and the reader is referred to the separate NICE guidelines that address psychological interventions for specific mental health problems[9]. Healthcare professionals should note that, although the presence of substance misuse problems may impact, for example, on the duration of a formal psychological treatment, there is no evidence supporting the view that psychological treatments for common mental disorders are ineffective for people with substance misuse disorders (see for example, Woody *et al.*, 1985). The position with regard to severe mental disorders such as schizophrenia is different and current evidence suggests that specifically designed interventions are required for this group (Bellack *et al*, 2006).

[9] www.nice.org.uk

Clinical practice recommendation

8.1.1.1 Cognitive behavioural therapy should be considered for the treatment of comorbid disorders such as anxiety and depression (in line with existing NICE guidance for the treatment of these disorders) for people who misuse cannabis, stimulants and opiates.

Current practice

Despite the recent increase in research on psychological treatments, current UK practice is not underpinned by a strong evidence base and there is wide variation in the uptake and implementation of psychological approaches to treatment across services. A number of factors may contribute to this situation. First, the emphasis in many community-based opiate treatment services is based on pharmacological management and supportive case coordination, with practice tending to be influenced more by the background and training of those delivering treatment within services than what research has shown to be effective. Second, a considerable amount of the evidence is extrapolated from other disorders (predominantly alcohol misuse) or other healthcare systems, for example the United States or Australia, and inevitably this raises questions about the applicability of the evidence to UK drug misuse services. Thirdly, there has been weak dissemination of the evidence base concerning psychological interventions until recently (Wanigaratne *et al.*, 2005). Fourthly, the limited availability of appropriately trained therapists also contributes significantly to variable access to such services in the UK (Lovell *et al*; 2003).

Standard care in the UK typically consists of keyworking (Roxburgh, 2006) which, as a matter of good practice, involves the building of a therapeutic relationship with the client and which includes:

- an initial care plan, if required, to address immediate needs (for example, providing information and advice on drug and alcohol misuse)
- harm reduction interventions
- motivational interventions to enhance retention in treatment
- developing and agreeing the care plan with the client and implementation of the care plan — with interventions relevant to each stage of the treatment journey and regular care plan reviews.

While formal psychological interventions may be delivered by a keyworker, this activity is not part of the keyworking process *per se*. The keyworker may

provide a level of ongoing face-to-face therapeutic support involving the use of some psychological techniques.

Most NHS drug services in the UK tend to focus on people who misuse opiates and to be dominated by substitute prescribing. People who misuse cannabis tend not to be seen as a priority and are rarely included in service contracts. Cocaine treatment services have been developed recently but tend to lack focus and use mostly education-based approaches, for which no evidence has yet been identified.

When evaluating the outcomes of the studies described below it is important to consider that standard care in the United States, where most of the research considered in this chapter is conducted, may involve higher levels of care and regular counselling, which surpass that usually available in the UK. The American Society of Addiction Medicine (ASAM, 2001) has defined standard outpatient treatment in the US as organised, non-residential services with designated drug misuse professionals providing regular treatment sessions totalling fewer than 9 contact hours per week. Treatment might typically consist of weekly individual and/or group counselling, which would aim to address not only the drug misuse but also wider medical, psychological and social needs. 'Treatment as usual' in recent US-based multi-site clinical trials reflects this characterisation (for example, Peirce *et al.*, 2006; Rawson *et al.*, 2004). Timko and colleagues (2003) surveyed all 176 Veterans Affairs substance misuse treatment programmes across the US and found that nearly all (99%) provided some form of drug or alcohol counselling or psychotherapy as part of standard outpatient care, with correspondingly high (90%) utilisation by service users.

8.2 Outcomes

The primary outcomes assessed were related to abstinence and drug use. Abstinence can be expressed in a variety of ways, but the two main measures examined were point abstinence and duration of abstinence. Measures based on urinalysis were preferred but studies reporting only self-report measures were not excluded. Point abstinence refers to evidence for the absence of drug use at a particular point in time (for example, end of treatment or at 12-month follow-up). The main limitation of this measure is that, due to the relapsing nature of drug misuse, it is not necessarily indicative of abstinence over a longer period of time. For example, where a person is abstinent at the end of treatment it does not indicate whether he or she used drugs less during treatment than others who were not abstinent at the end of treatment.

Therefore, a measure of the duration of abstinence over a period of time is also important to assess how long a person remains abstinent, and the proportion of days a person is abstinent over a period of time.

Frequency of illicit drug use is also an important measure because, although abstinence may be a desired goal, reducing drug misuse may be a more realistic way of reducing drug-related harm. Drug misuse is usually measured by self-report, often in terms of the frequency of using particular drugs over a period of time.

8.3 Psychological interventions alone for the management of drug misuse (cocaine, cannabis and opiates)

8.3.1 Introduction

This section reviews the evidence for psychological interventions alone for the treatment of drug misuse; that is, without pharmacological interventions. Most of this evidence is focused on studies of drugs for which there is, as yet, little or no evidence for effective pharmacological interventions or substitute prescribing, for example cannabis and cocaine.

8.3.2 Definitions of interventions

Contingency management

Contingency management provides a system of incentives and disincentives (although almost all studies are concerned with provision of incentives) designed to make continual drug use less attractive and abstinence more attractive (Griffith *et al.*, 2000). There are three primary methods of providing incentives:

- Voucher-based reinforcement: people who misuse drugs receive 'vouchers' with various monetary values (usually increasing in value after successive periods of abstinence) for providing biological samples (usually urine) that are negative for the tested drugs. These vouchers are withheld when the biological sample indicates recent drug use. Once earned, vouchers are exchanged for goods or services that are compatible with a drug-free lifestyle.

- Prize-based reinforcement: this is more formally referred to as the 'variable magnitude of reinforcement procedure' (Prendergast *et al.*, 2006). Participants receive draws, often from a number of slips of paper kept in a fishbowl, for providing a negative biological specimen. Provision of a specimen indicating recent drug use results in the withholding of draws. Each draw has a chance of winning a 'prize', the value of which varies. Typically, about half the draws say 'Good job!' The other half result in the earning of a prize, which may range in value from £1 to £100 (Prendergast *et al.*, 2006).

- Clinic privileges: Participants receive clinic privileges for providing a negative biological sample. Privileges include take-home

methadone doses (for example, Stitzer *et al*, 1992), and changes in methadone dose (for example, Stitzer *et al*, 1986).

Community reinforcement approach

In community reinforcement emphasis is placed on environmental contingencies in aspects of life such as work, recreation, family involvement, and so on, to promote a lifestyle that is more rewarding than drug misuse (Roozen *et al.*, 2004). In almost all studies, the community reinforcement approach for people who misuse drugs is conducted in combination with contingency management.

Standard cognitive behavioural therapy

Standard cognitive behavioural therapy is a discrete, time limited, structured psychological intervention, derived from a cognitive model of drug misuse (Beck *et al.*, 1993). There is an emphasis on identifying and modifying irrational thoughts, managing negative mood and intervening after a lapse to prevent a full-blown relapse (Maude-Griffin, 1998).

Relapse-prevention cognitive behavioural therapy

This differs from standard cognitive behavioural therapy in the emphasis on training drug users to develop skills to identify situations or states where they are most vulnerable to drug use, to avoid high-risk situations, and to use a range of cognitive and behavioural strategies to cope effectively with these situations (Carroll & Onken, 2005).

Behavioural couples therapy

Behavioural couples therapy usually involves (a) the person who misuses drugs stating his or her intention not to use drugs each day and his or her partner expressing support for the former's efforts to stay abstinent; (b) teaching more effective communication skills, such as active listening and expressing feelings directly; and (c) helping to increase positive behavioural exchanges between partners by encouraging them to acknowledge pleasing behaviours and engage in shared recreational activities (Fals-Stewart *et al.*, 2002).

Family-based interventions

In this approach professionals work jointly with the person who misuses drugs and his or her family members, partner or others from a wider social network (for example, a close friend) to seek reduced drug use or abstinence (for example, Copello *et al*, 2005).

Interpersonal therapy

Interpersonal therapy is a discrete, time limited, structured psychological intervention, originally developed for the treatment of depression, that focuses on interpersonal issues and where therapist and service user: a) work collaboratively to identify the effects of key problematic areas related to

interpersonal conflicts, role transitions, grief and loss, and social skills, and their effects on current drug misuse, feelings states and/or problems; and b) seek to reduce drug misuse problems by learning to cope with or resolve interpersonal problem areas (Weissman *et al*, 2000).

Short-term psychodynamic interventions

Short-term psychodynamic interventions are derived from a psychodynamic/ psychoanalytic model in which: a) therapist and patient explore and gain insight into conflicts and how these are represented in current situations and relationships, including the therapy relationship; b) service users are given an opportunity to explore feelings and conscious and unconscious conflicts originating in the past, with the technical focus on interpreting and working through conflicts; c) therapy is non-directive and service users are not taught specific skills such as thought monitoring, re-evaluation or problem solving. Treatment typically consists of 16 to 30 sessions (Leichsenring *et al*, 2004).

8.3.3 Databases searched and inclusion/exclusion criteria

Information about the databases searched and the inclusion/ exclusion criteria used for this section of the guideline is in table 1.

Table 11: Databases searched and inclusion/ exclusion criteria for clinical effectiveness of psychological interventions

Electronic databases	MEDLINE, EMBASE, CINAHL, HMIC, PsycINFO, Cochrane Library
Date searched	Database inception to May 2006; table of contents December 2005 to November 2006
Study design	RCT
Patient population	People who misuse opiates, stimulants, cannabis, poly drugs
Interventions	CM, CBT , BCT, CRA, IPT, family-based interventions, psychodynamic interventions
Outcomes	Abstinence: point abstinence, duration of abstinence Drug use: frequency of using illicit drugs over a period of time

8.3.4 Studies considered[10]

The review team conducted a new systematic search for RCTs that assessed the efficacy of contingency management, cognitive behavioural therapy, interpersonal therapy, behavioural couples therapy, family-based interventions and short-term psychodynamic interventions.

In the review of standard cognitive behavioural therapy, two trials (CRITS-CHRISTOPH1999; MAUDE-GRIFFIN1998) met the eligibility criteria,

[10] Here, and elsewhere in the guideline, each study considered for review is referred to by a study ID in capital letters (primary author and date of study publication, except where a study is in press or only submitted for publication, then a date is not used).

providing data on 370 participants. Both trials were for cocaine dependence and were published in peer-reviewed journals.

In the review of relapse-prevention cognitive behavioural therapy, seven trials (BROWN2002; CARROLL1991; MONTI1997; MCKAY2004; STEPHENS1994; STEPHENS2000; STEPHENS2002) met the eligibility criteria, providing data on 1,214 participants. Of these trials, four were on cocaine dependence (BROWN2002; CARROLL1991; MONTI1997; MCKAY2004) and three were on cannabis dependence (STEPHENS1994; STEPHENS2000; STEPHENS2002). All trials were published in peer-reviewed journals.

For contingency management, 14 trials (BUDNEY2006; CARROLL2006B; HIGGINS1993; HIGGINS1994; JONES2004; KADDEN2006; PETRY2004; PETRY2005A; PETRY2005B; PETRY2006; RAWSON2006; ROLL2006; SHOPTAW2005; SHOPTAW2006) met the eligibility criteria, providing data on 1,498 participants. Of these trials, six were for cocaine dependence (HIGGINS1993; HIGGINS1994; PETRY2004; PETRY2005A; PETRY2006; RAWSON2006), one for cocaine and/or heroin dependence (PETRY2005B), three for methamphetamine dependence (ROLL2006; SHOPTAW2005; SHOPTAW2006) and three for cannabis dependence (BUDNEY2006; CARROLL2006A; KADDEN2006). All trials were published in peer-reviewed journals.

For behavioural couples therapy, three trials (FALS-STEWART1996; KELLEY2002; WINTERS2002) met the eligibility criteria, providing data on 123 participants. All trials were published in peer-reviewed journals and were for people who were cocaine dependent or heroin dependent (all participants in these trials underwent detoxification, if required, before receiving the intervention).

For psychodynamic interventions, one trial (CRITS-CHRISTOPH1999) met the eligibility criteria, providing data on 247 participants. This trial was published in a peer-reviewed journal and was for cocaine dependence.

For IPT, one trial (CARROLL1991) met the eligibility criteria, providing data on 42 participants. This trial was published in a peer-reviewed journal and was for cocaine dependence.

In addition 37 studies were excluded from the analysis. The most common reason for exclusion was no drug use outcomes (further information about both included and excluded studies can be found in Appendix 14).

Table 12: Study information and summary of evidence table for trials of cognitive behavioural therapy versus waitlist or standard care, for people who are cocaine or cannabis dependent

	CBT (RP) versus	CBT (RP) versus standard care	CBT (RP) versus standard

	waitlist for cannabis dependence	for cannabis dependence	care for cocaine dependence
Total no. of trials (total no. of participants)	2 RCTs (N = 444)	1 RCT (N = 212)	4 RCTs (N = 558)
Study ID	STEPHENS2000 STEPHENS2002	STEPHENS1994	BROWN2002 CARROLL1991 MONTI1997 MCKAY2004
Problem drug or diagnosis	Cannabis dependence (DSM-IV)	Cannabis dependence (DSM-IV)	Cocaine dependence (DSM-III/III-R/IV)
Treatment length	9 individual sessions (STEPHENS2002) 14 group sessions (STEPHENS2000)	12 group sessions + 2 booster sessions at follow-up	8 sessions (MONTI1997) 10 sessions (BROWN2002) 12 sessions (CARROLL1991) 12 individual + 12 group sessions (MCKAY2004)
Length of follow-up	12 months	12 months	12 months
Age (years)	34 to 36	32	27 to 42
Overall quality of evidence	High	Moderate	Moderate
Point abstinence	Negative urine: 4-month follow-up: RR 4.90 (2.77 to 8.85) K = 2, N = 444	Negative urine: 3-month follow up: RR 0.74 (0.48 to 1.14) 12-month follow-up: RR 0.75 (0.37 to 1.51) K = 1, N = 212	Self-report: Endpoint: RR 1.14 (0.96 to 1.36) K = 3, N = 427 12-month follow-up: RR 0.96 (0.71 to 1.29) K = 1, N = 257
Duration of abstinence	-	-	Days in past 3 months: 3-month follow-up: SMD -0.08 (-0.33 to 0.17) K = 1, N = 247 6-month follow-up: SMD -0.11 (-0.34 to 0.11) K = 2, N = 301 12-month follow-up: SMD -0.13 (-0.39 to 0.13) K = 1, N = 247
Illicit drug use	-	Days per month: 3-month follow-up: SMD -0.11 (-0.41 to 0.20) 12-month follow-up: SMD -0.02 (-0.32 to 0.29) K = 1, N = 212	Drug use in last 3 months (6 month follow up): SMD -0.19 (-0.68 to 0.30) K=1 N=65

Table 12: Study information and summary of evidence table for trials of cognitive behavioural therapy versus waitlist or standard care, for people who are cocaine or cannabis dependent *(continued)*

	CBT (S) versus standard care for cocaine dependence	CBT (RP) versus IPT for cocaine dependence
Total no. of trials (total no. of participants)	2 RCTs (N = 370)	1 RCT (N=42)
Study ID	CRITS-CHRISTOPH1999 MAUDE-GRIFFIN1998	**CARROLL2002**
Problem drug or diagnosis	Cocaine dependence (DSM-III-R/IV)	Cocaine dependence (DSM-III)
Treatment length	12 sessions (MAUDE-GRIFFIN1998) 39 sessions (CRITS-CHRISTOPH1999)	12 sessions
Length of follow-up	6 to 9 months	3 months
Age (years)	34	27
Overall quality of evidence	Moderate	Moderate
Point abstinence	Negative urine: Endpoint: RR 1.00 (0.78 to 1.30) K = 2, N = 370	Self-report: 3-month follow up: RR 1.71 (0.84 to 3.48) K=1 N=42
Duration of abstinence	-	-
Illicit drug use	-	-

Relapse-prevention cognitive behavioural therapy appeared to be effective for cannabis dependence, particularly compared with waitlist control. However, in one trial (Stephens *et al.*, 1994), where the therapy was compared with a support group, no significant differences were found. This may be explained by the use of group therapy in this trial; individual therapy appears to be more effective (for example, Stephens *et al.*, 2002).

Neither relapse-prevention nor standard cognitive behavioural therapy was effective for the treatment of cocaine dependence. No differences were found for abstinence and drug misuse outcomes compared to control groups.

Table 13: Study information table for trials of contingency management for people who misuse drugs

	CM versus control for cocaine and/or heroin use	CM versus control for methamphet-amine dependence	CM versus control for cannabis dependence	CM versus CBT (RP) for stimulant dependence	CM versus CBT (RP) for cannabis dependence
Total no. of trials (total no. of participants)	6 RCTs (N = 742)	2 RCTs (N = 222)	2 RCTs (N = 183)	2 RCTs (N = 200)	4 RCTs (N = 375)

Study ID	HIGGINS1993 HIGGINS1994 PETRY2004 PETRY2005A PETRY2005B PETRY2006	ROLL2006 SHOPTAW2006	CARROLL2006B KADDEN2006	RAWSON2006 SHOPTAW2005	BUDNEY2006 CARROLL2006B KADDEN2006
Problem drug or diagnosis	Cocaine dependence (DSM-III-R/IV) Opiate dependence (DSM-IV): PETRY2005B	Methampheta-mine dependence (DSM-IV)	Cannabis dependence (DSM-IV)	Cocaine dependence (DSM-IV): RAWSON2006 (90%) Metampheta-mine dependence (DSM-IV): RAWSON2006 (10%), SHOPTAW2005	Cannabis dependence (DSM-IV)
Nature of incentive	Vouchers (HIGGINS1993, HIGGINS1994), Prizes (PETRY2004, PETRY2005A, PETRY2005B, PETRY2006)	Vouchers	Vouchers	Vouchers	Vouchers
Treatment length	12 weeks	12 weeks	8 weeks (CARROLL2006 B) 9 weeks (KADDEN2006)	16 weeks	8 weeks (CARROLL2006 B) 9 weeks (KADDEN2006) 14 weeks (BUDNEY2006)
Length of follow-up	3 to 12 months	3 to 6 months	6 to 12 months	12 months	12 months
Age (years)	29 to 35	30 to 32	21 to 32	36 to 37	33

Table 14: Summary of evidence table for trials of contingency management for people who misuse drugs*

	CM versus control for cocaine and/or heroin use	CM versus control for methamphet-amine dependence	CM versus control for cannabis dependence	CM versus CBT (RP) for stimulant dependence	CM versus CBT (RP) for cannabis dependence
Total no. of trials (total no. of participants)	7 RCTs (N = 833)	2 RCTs (N = 222)	2 RCTs (N = 183)	2 RCTs (N = 200)	4 RCTs (N = 375)
Study ID	HIGGINS1993 HIGGINS1994 JONES2004 PETRY2004 PETRY2005A PETRY2005B PETRY2006	ROLL2006 SHOPTAW2006	CARROLL2006B KADDEN2006	RAWSON2006 SHOPTAW2005	BUDNEY2006 CARROLL2006 B KADDEN2006

Overall quality of evidence	High	Low	Low	Moderate	Low
Durations of abstinence	Continuous duration: 3 weeks: RR 1.81 (1.47 to 2.24), K = 4, N = 612 6 weeks: RR 4.07 (2.25 to 7.39) K = 3, N = 197 9 weeks: RR 3.10 (2.15 to 4.47) K = 5, N = 660 12 weeks: RR 4.60 (2.94 to 7.22) K = 6, N = 741 Longest duration: SMD -0.55 (-0.85 to -0.25) K = 2, N = 182	Continuous duration: 3 weeks: RR 1.24 (0.83 to 1.86) K = 1, N = 109 12 weeks: RR 2.74 (0.89 to 8.37) K = 1, N = 113 Longest duration: SMD -0.22 (-0.59 to 0.15) K = 1, N = 113	Continuous duration: 9 weeks: RR 1.97 (0.83 to 4.64) K = 1, N = 116 Longest duration: SMD -0.37 (-0.87 to 0.12) K = 1, N = 64 Abstinent for past 3 months: 12-month follow-up: RR 0.89 (0.36 to 2.24) K = 1, N = 116	Continuous duration: 3 weeks: RR 1.66 (1.11 to 2.47), K = 1, N = 118 Longest duration: SMD -0.79 (-1.24 to -0.34) K = 1, N = 82 Proportion of urines negative: SMD -0.66 (-1.11 to -0.22) K = 1, N = 82	Continuous duration: 6 weeks: RR 3.00 (1.25 to 7.21) K = 1, N = 60 9 weeks: RR 1.32 (0.85 to 2.04) K = 1, N = 115 Longest duration: SMD -0.24 (-0.73 to 0.25) K = 1, N = 64
Point abstinence	-	-	Negative urine: 3-month follow-up: RR 0.97 (0.35 to 2.71) 6-month follow-up: RR 1.13 (0.62 to 2.07) K = 1, N = 67	Negative urine: Endpoint: RR 1.11 (0.89 to 1.39) 6-month follow-up: RR 0.98 (0.78 to 1.25) 12-month follow-up: RR 0.89 (0.71 to 1.13) K = 1, N = 82	Negative urine: Endpoint: RR 1.33 (0.66 to 2.69) K = 1, N = 60 3-month follow-up: RR 0.93 (0.44 to 1.95) K = 2, N = 129 6-month follow-up: RR 1.43 (0.82 to 2.49) K = 2, N = 129 9-month follow-up: RR 1.25 (0.37 to 4.21) K = 1, N = 60 12-month follow-up: RR 0.80 (0.41 to

		1.59) K = 2, N = 175
Illicit drug use	Never abstinent: RR 0.35 (0.16 to 0.74)** K = 3, N = 212	Days used: Endpoint: SMD 0.09 (-0.34 to 0.53) 6-month follow-up: SMD 0.28 (-0.16 to 0.71) 12-month follow-up: SMD -0.15 (-0.59 to 0.28) K = 1, N = 82

*RR > 1 favours intervention; in comparisons of contingency management and relapse-prevention cognitive behavioural therapy > 1 favours contingency management
SMD negative values favour intervention; in comparisons of contingency management and cognitive behavioural therapy negative values favour contingency management
** RR < 1 favours intervention

There is strong evidence that contingency management is associated with much longer continuous periods of abstinence for cocaine compared to control groups. People in contingency management groups were more likely to be abstinent from cocaine over 3, 6, 9 and 12 continuous weeks in both prize and voucher reinforcement studies. Only one study compared prize and voucher reinforcement, there was a trend favouring prizes (RR =1.59; 95% CI: 0.94 to 2.69). More research is required to assess its efficacy for methamphetamine and cannabis dependence. There were trends favouring contingency management on periods of continuous abstinence for both methamphetamine and cannabis. During treatment, it was associated with longer periods of continuous abstinence than cognitive behavioural therapy; however, this difference was not sustained at follow-up.

Table 15: Summary evidence table for trials of behavioural couples therapy and psychodynamic interventions for people who misuse drugs*

	BCT versus CBT (RP)	Psychodynamic interventions versus control
Total no. of trials (total no. of participants)	3 RCTs (N = 198)	1 RCT (N = 247)
Study ID	FALS-STEWART1996 KELLEY2002 WINTERS2002	CRITS-CHRISTOPH1999
Problem drug or diagnosis	Primary cocaine dependence (DSM-III-R): FALS-STEWART1996 (51%), KELLEY2002 (38%), WINTERS2002 (22%) Primary opiate dependence, detoxification provided if necessary before treatment (DSM-III-R): FALS-STEWART1996 (38%), KELLEY2002 (48%), WINTERS2002 (14%)	Cocaine dependence (DSM-IV)
Treatment	12 sessions	26-week active phase + 12 weeks

length		(monthly booster session)
Length of follow-up	12 months	18 months
Age range	34 to 36 years	40 years
Overall quality of evidence	Moderate	Low
Durations of abstinence	Proportion days in past 3 months: Endpoint: SMD -0.38 (-0.66 to -0.09) K=3 N=198 6-month follow-up: SMD -0.52 (-0.81 to -0.24) K=3 N=198 12-month follow-up: SMD -0.34 (-0.62 to -0.06) K = 3, N = 198	Continuous duration: 2 months: RR 0.76 (0.55 to 1.06) K = 1, N = 247
Illicit drug use	-	Relapsed at 12 months follow-up: RR 1.04 (0.80, 1.36) K = 1, N = 247

*RR > 1 favours intervention; SMD negative values favour intervention

Behavioural couples therapy was consistently associated with abstinence both at end of treatment and at 6- and 12-month follow up for people with primary stimulant and/or heroin dependence. There was a lack of trials assessing psychodynamic interventions. The one included trial did not appear to be effective in terms of abstinence and illicit drug use outcomes.

8.3.5 Clinical summary

Stimulant misuse — People presenting to treatment with stimulant misuse (including cocaine and amphetamines) receiving contingency management were more likely to be abstinent for longer periods of time during treatment than people in the control group. Both prize- and voucher-based reinforcement were found to be effective. In contrast, contingency management for cannabis did not appear as effective during treatment as for cocaine, although there was a trend towards favouring contingency management, this was evident at follow-up. Psychodynamic therapy was also ineffective during treatment and at follow-up in significantly reducing cocaine use. Direct comparisons of relapse-prevention cognitive behavioural therapy and contingency management for stimulant misuse demonstrated the superior effectiveness of contingency management during treatment but not at follow-up. It is unclear whether the lack of difference between contingency management and relapse-prevention cognitive behavioural therapy at follow-up is due to a delay in the benefits of cognitive behavioural therapy, being observable only at follow-up, and/or a weakening of the effects of contingency management after treatment has ended.

Cannabis misuse — In contrast, relapse-prevention cognitive behavioural therapy focused on drug misuse and relapse prevention strategies was effective for people with cannabis-related problems when compared to no intervention (a waitlist control), but a statistically significant benefit for group relapse-prevention cognitive behavioural therapy was not seen when compared to standard case management. It appears individual therapy may be more effective than group therapy. This would suggest the provision of individual relapse-prevention cognitive behavioural therapy alone for the treatment of cannabis misuse would be appropriate. It should be noted that the population in these studies had long-standing problematic cannabis misuse of an average of 15 years' duration.

Opiate and stimulant misuse — Individuals with cocaine and/or opiate dependence and who have contact with a family member or carer benefit from behavioural couples therapy both during treatment and at follow-up.

8.3.6 Clinical practice recommendations

8.3.6.1 Drug misuse services should introduce contingency management programmes to reduce illicit drug use, promote abstinence and/or promote engagement in services for people who primarily misuse stimulants.

8.3.6.2 Healthcare professionals should consider the use of individual cognitive behavioural therapy for people who present with problematic cannabis use. The cognitive behavioural therapy should be focused on drug use and should:

- consist of at least 12 weekly sessions
- focus on the identification of situations or states in which the service user is most vulnerable to drug use
- focus on skills training to help the service user to cope in such situations or states.

8.3.6.3 Cognitive behavioural therapy should not be routinely provided for people presenting for treatment of stimulant misuse or for people receiving methadone maintenance treatment.

8.3.6.4 Behavioural couples therapy should be considered for people who are in close contact with a partner, family member or carer and who misuse cocaine, heroin and/or have completed opiate detoxification. These interventions should:

- focus on the service user's drug misuse
- consist of at least 12 weekly sessions
- be based on cognitive behavioural principles.

8.4 Psychological interventions in combination with opiate agonist maintenance treatment

8.4.1 Introduction

The use of psychological interventions in combination with drug maintenance treatment is by far the most common application of psychological interventions in UK statutory drug treatment services. The most widely used of the drug treatments is methadone, originally pioneered by Dole and Nyswander (1965) as a treatment for heroin dependence. Less commonly prescribed is buprenorphine which is a partial opiate agonist but which along with methadone is an accepted maintenance treatment for opiate misuse (NICE, 2006 TA). The rationale for maintenance treatment is that, by using a synthetic opiate, cravings are relieved and, by switching from heroin to a controlled drug, risks and harms associated with illicit drug use can be reduced (for example, injecting behaviour and illegal activities associated with obtaining drugs) and stability can be increased. This stability may create a platform from which to continue psychological work in order to cope with the risk of relapse, deal with associated problems and eventually aim to achieve abstinence and develop a drug-free lifestyle.

As previously discussed, current practice is very varied in the UK. The most common scenario is for people on a maintenance prescription to have regular contact with a worker where practical issues are discussed and reviewed. Furthermore, it is rare in UK services to deliver psychological interventions specifically focused on attempting to reduce illicit drug use within methadone maintenance or buprenorphine maintenance treatment programmes. Most commonly, a significant proportion of people in these programmes continue to experience a range of difficulties with other substances, including illicit drugs and alcohol.

8.4.2 Databases searched and inclusion/exclusion criteria

Information about the databases searched and the inclusion/ exclusion criteria used for this section of the guideline is in Table 16.

Table 16: Databases searched and inclusion/exclusion criteria for clinical effectiveness of psychological interventions in combination with opiate agonist maintenance treatment

Electronic databases	MEDLINE, EMBASE, CINAHL, HMIC, PsycINFO, Cochrane Library
Date searched	Database inception to May 2006; table of contents December 2005 to November 2006
Study design	RCT
Patient population	People who are receiving opiate agonist maintenance treatment and who misuse an additional opiate, stimulant and/or cannabis
Interventions	Pharmacological maintenance treatment: buprenorphine, methadone Psychological interventions: BCT, CRA, CM, CBT, family-based interventions, STPT, IPT
Outcomes	Abstinence: point abstinence, duration of abstinence

8.4.3 Studies considered[11]

The review team conducted a new systematic search for RCTs that assessed the efficacy and/or safety of contingency management, cognitive behavioural therapy, behavioural couples therapy, short-term psychodynamic therapy, family-based interventions, and interpersonal therapy in combination with opiate agonist maintenance treatment.

For methadone maintenance treatment in combination with standard cognitive behavioural therapy, one trial (WOODY1983) met the eligibility criteria, providing data on 78 participants. This trial was published in a peer-reviewed journal.

In the review of methadone maintenance treatment in combination with relapse-prevention cognitive behavioural therapy, three trials (EPSTEIN2003; RAWSON2002; UKCBTMM2004) met the eligibility criteria, providing data on 146 participants. One trial (UKCBTMM2004) was unpublished (a full trial report was obtained from the authors) and two trials were published in peer-reviewed journals.

For methadone maintenance treatment in combination with contingency management, 12 trials (CHUTUAPE2001; EPSTEIN2003; MCLELLAN1993; PETRY2002; PETRY2005C; PEIRCE2006; PRESTON2000; RAWSON2002; SCHOTTENFELD2005; SILVERMAN1998; SILVERMAN2004; STITZER1992) met the eligibility criteria, providing data on 1,436 participants. All trials were published in peer-reviewed journals between 1992 and 2006.

For buprenorphine maintenance treatment in combination with contingency management, three trials (GROSS2006; KOSTEN2003; SCHOTTENFELD2005) met the eligibility criteria, providing data on 202 participants. All trials were published in peer-reviewed journals.

For behavioural couples therapy, one trial (FALS-STEWART2003) met the eligibility criteria, providing data on 36 participants. This trial was published in a peer-reviewed journal.

For family-based interventions, one trial (CATALANO1999) met the eligibility criteria providing data on 132 participants. This trial was published in a peer-reviewed journal.

[11] Here, and elsewhere in the guideline, each study considered for review is referred to by a study ID in capital letters (primary author and date of study publication, except where a study is in press or only submitted for publication, then a date is not used).

For psychodynamic interventions, two trials (WOODY1983; WOODY1995) met the eligibility criteria, providing data on 150 participants. All trials were published in peer-reviewed journals.

In addition 24 studies were excluded. The most common reason for exclusion was not providing extractable data (further information about both included and excluded studies can be found in Appendix 14).

For the review of implementing contingency management a further 8 studies met the eligibility criteria; three focused on patient based outcomes (PETRY2001, SHOPTAW2006, LAWENTAL2006,) four focused on staff attitudes (WILLENBRING2004, MCGOVERN2004, KIRBY2006; RITTER2006) and one focused on both staff attitudes and organisational development (KELLOGG2005). All studies were published in peer-reviewed journals.

Table 17: Study information table for trials of CBT and contingency management for people in opiate agonist maintenance treatment

	CBT (RP) versus standard care within MMT	CBT (S) versus standard care within MMT	CM versus standard care within MMT	CM versus standard care within BMT
Total no. of trials (total no. of participants)	3 RCTs (N = 146)	1 RCT (N = 78)	12 RCTs (N = 1,436)	3 RCTs (N = 202)
Study ID	EPSTEIN2003 RAWSON2002 UKCBTMM2004	WOODY1983	CHUTUAPE2001 EPSTEIN2003 MCLELLAN1993 PETRY2002 PETRY2005C PEIRCE2006 PRESTON2000 RAWSON2002 SCHOTTENFELD2005 SILVERMAN1998 SILVERMAN2004 STITZER1992	GROSS2006 KOSTEN2003 SCHOTTENFELD 2005
Problem drug or diagnosis	Opiate dependence (MMT) Cocaine dependence (DSM-III-R/IV): EPSTEIN2003, RAWSON2002	Opiate dependence (MMT)	Opiate dependence (MMT) Cocaine: SILVERMAN1998 Cocaine dependence (DSM-III-R/IV): PETRY2002, 2005C, RAWSON 2002, EPSTEIN2003, SILVERMAN2004	Opiate dependence (buprenorphine maintenance)
Nature of incentive	N/A	N/A	Vouchers (EPSTEIN2003; PRESTON2000; RAWSON2002; SILVERMAN1998; SILVERMAN2004; SCHOTTENFELD2005)	Vouchers

			Prizes (PETRY2002; PETRY2005C; PEIRCE2006) Take home methadone (CHUTUAPE2001; MCLELLAN1993; SILVERMAN2004; STITZER1992)	
Treatment length	12 weeks	26 weeks	8 weeks (PRESTON2000) 12 weeks (EPSTEIN2003; PETRY2002; PEIRCE2006; PETRY2005C; SCHOTTENFELD2005SILVERMAN1998 16 weeks (RAWSON2002) 25 weeks (STITZER1992) 26 weeks (MCLELLAN1993) 34 weeks (CHUTUAPE2001) 52 weeks (SILVERMAN2004)	12 weeks (GROSS2006; SCHOTTENFELD 2005) 24 weeks (KOSTEN2003)
Length of follow-up	0 to 12 months	12 months	0 to 15 months	3 to 6 months
Age (years)	27 to 42	33	35 to 44	32 to 37

Table 17: Study information table for trials of CBT and contingency management for people in opiate agonist maintenance treatment (continued)*

	CBT (RP) versus standard care within MMT	CBT (S) versus Standard care within MMT	CM versus standard care within MMT	CM versus standard care within buprenorphine maintenance treatment
Total no. of trials (total no. of participants)	3 RCTs (N = 146)	1 RCT (N = 78)	12 RCTs (N = 1,436)	3 RCTs (N =163)
Study ID	EPSTEIN2003 RAWSON2002 UKCBTMM2004	WOODY1983	CHUTUAPE2001 EPSTEIN2003 MCLELLAN1993 PETRY2002 PETRY2005C PEIRCE2006 PRESTON2000 RAWSON2002 SCHOTTENFELD 2005 SILVERMAN1998 SILVERMAN2004	GROSS2006 KOSTEN2003 SCHOTTENFELD 2005

			STITZER1992	
Overall quality of evidence	Low	Low	High	Low
Durations of abstinence	Cocaine Continuous duration: 3 weeks: RR 1.50 (0.72 to 3.14) K = 1, N = 60 Heroin Proportion days abstinent: Change from baseline: SMD -0.17 (-0.74 to 0.39) K = 1, N = 49	-	Cocaine and opiates Continuous duration: 3 weeks: RR 2.06 (1.20 to 3.54) K = 5, N = 278 6 weeks: RR 4.17 (2.42 to 7.18) K = 4, N = 198 8 weeks: RR 3.87 (2.61 to 5.74) K = 6, N = 667 12 weeks: RR 3.08 (1.73 to 5.47) K = 5, N = 582 26 weeks: RR 23.00 (1.43 to 371.00) K = 1, N = 52	8 weeks continuous abstinence: RR 1.10 (0.30 to 4.11) K=1 N=82 Longest duration: SMD 0.12 (-0.18 to 0.43) K = 2, N = 162 Opiates Longest duration: SMD -0.26 (-0.69 to 0.18) K = 1, N = 83 Cocaine and opiates Continuous duration: 8 weeks: RR 1.10 (0.30 to 4.11) K = 1, N = 83 Longest duration: SMD 0.06 (-0.21 to 0.34) K = 3, N = 202 Total duration: SMD 0.50 (-0.13 to 1.13) K = 1, N = 40
Point abstinence	Cocaine 12-month follow-up: RR 2.25 (1.16 to 4.36) K = 1, N = 60	-	Negative urine for cocaine and opiates: Endpoint: RR 2.65 (1.46 to 4.79) K = 2, N = 137 6-month follow-up: RR 1.81 (1.07 to 3.06) K = 2, N = 137 12-month follow-up: RR 2.00 (1.01 to 3.95) K = 1, N = 60	-
Drug use	Opiates Endpoint, change from baseline: SMD 0.12 (-0.28 to 0.52) K = 2, N = 146 6 to 12 months follow-up, change from baseline: SMD 0.04 (-0.29 to 0.36) K = 2, N = 146	Opiates Endpoint, change from baseline: SMD 0.07 (-0.40 to 0.54) K = 1, N = 69 Cocaine Endpoint, change from baseline: SMD -0.23 (-0.70 to 0.25) K = 1, N = 69	Never abstinent from cocaine or opiates: RR 0.63 (0.30 to 1.35) K = 4, N = 218	-

*RR > 1 favours intervention; SMD negative values favour intervention

Relapse-prevention and standard cognitive behavioural therapy do not appear to be effective in reducing elicit drug use for people undergoing methadone maintenance treatment. The majority of trials found no benefit for either form of cognitive behavioural therapy in comparison with control groups for abstinence and reduction in illicit drug use. Consistent with the evidence above of contingency management for cocaine misuse, there is good evidence that contingency management for people undergoing methadone maintenance treatment is strongly and consistently associated with longer periods of continuous periods of abstinence during treatment and point abstinence at 6- and 12-month follow-up. These findings were consistent for studies using vouchers, prizes and privileges as reinforcers.

However, the evidence of contingency management for people undergoing buprenorphine maintenance treatment is absent. It appears that contingency management is not associated with improved abstinence and illicit drug use outcomes for this population.

Table 18: Study information and summary of evidence table for trials of family-based and psychodynamic interventions for people in methadone maintenance treatment*

	BCT versus standard care within MMT	Family-based intervention versus standard care within MMT	Psychodynamic interventions versus standard care within MMT	Psychodynamic interventions versus CBT (S) within MMT
Total no. of trials (total no. of participants)	1 RCT (N = 36)	1 RCT (N = 132)	2 RCTs (N = 150)	1 RCT (N = 56)
Study ID	FALS-STEWART 2001	CATALANO1999	WOODY1983 WOODY1995	WOODY1983
Problem drug or diagnosis	Opiate dependence (MMT)	Opiate dependence (MMT)	Opiate dependence (MMT)	Opiate dependence (MMT)
Treatment length	12 weeks	32 weeks	6 to 26 weeks	26 weeks
Length of follow-up	3 months	12 months	12 months	12 months
Age (years)	34	35	34 to 36	30
Overall quality of evidence	Moderate	Moderate	Low	Low
Point abstinence	-	-	-	-
Illicit drug use	Endpoint: SMD -1.22 (-1.94 to -0.50) K = 1, N = 36	Illicit opiate use: Endpoint: SMD -0.47 (-0.82 to -0.12) Cocaine use: Endpoint: SMD -0.34 (-0.68 to 0.01) Cannabis use: Endpoint: SMD -0.16	Illicit opiates Days used: Endpoint: SMD -0.04 (-0.37 to 0.30) K = 2, N = 150 Stimulants Days used: Endpoint: SMD -0.38 (-0.72 to -0.05)	Opiates Days used: Endpoint: SMD -0.08 (-0.56 to 0.41) K = 1, N = 65 Stimulants Days used: Endpoint: SMD 0.00

	(-0.51 to 0.18)	K = 2, N = 150	(-0.49 to 0.49) K = 1, N = 56

*RR > 1 favours intervention; negative SMD values favour intervention; in the comparison of psychodynamic interventions and standard cognitive behavioural therapy, negative values favour psychodynamic interventions

Consistent with the evidence reviewed above of primary stimulant or heroin misuse, behavioural couples therapy and family-based interventions for people undergoing methadone maintenance treatment were associated with reductions in illicit drug use. Psychodynamic interventions did not appear to be effective for reducing illicit opiate use for people undergoing methadone maintenance treatment but there was some evidence for benefit on the secondary outcome of stimulant use.

8.4.4 Health economics

Literature review of health economic evidence

A systematic literature review of economic evidence on drug misuse and its effective treatments was performed using a wide range of standard bibliographic databases (summarised in Appendix 10). Relevant publications were assessed for internal validity using standard methods of health economic appraisal. An adaptation of the 35-point checklist used by the British Medical Journal (Drummond and Jefferson, 1996) was utilised to assess eligibility for inclusion in the guideline. Additional references were identified by handsearching or, in some instances, as a courtesy from authors whose studies were accepted into press. From this review, data were extracted by the health economists, summarised on a data extraction table, and presented for comparison in a cost-effectiveness model in accordance with standard principles of health economic appraisal.

Introduction — rationale for economic modelling and comparison of interventions

Provision of contingency management for people undergoing methadone maintenance treatment who misuse cocaine and/or illicit opiates was identified by the GDG as an area with potential major resource implications. Therefore, a decision-analytic model was developed in order to assess the cost effectiveness of contingency management versus standard care for cocaine and illicit opiate users under methadone maintenance treatment in the UK. Contingency management was defined as involving regular contact with a case worker over 12 weeks, combined with reinforcement in the form of vouchers exchangeable for retail goods and services awarded to the user when weekly abstinence from cocaine and/or opiate use was achieved. Standard care consisted of less regular contact with a case worker over the 12-week period.

Economic model structure

A decision tree was developed to assess the costs and benefits associated with contingency management and standard care over 52 weeks. According to the model structure, a hypothetical cohort of people misusing cocaine and/or illicit opiates under methadone maintenance treatment received either contingency management or standard care over 12 weeks. All people in the cohort underwent urinalysis for the detection of cocaine and/or opiates every time they contacted a case worker. Service users receiving contingency management were awarded a voucher exchangeable for retail goods and services for every week they remained abstinent over the 12 weeks of treatment. After the 12-week intervention period, the cohort was followed for a further 40 weeks and underwent further urinalysis. Service users who had received contingency management were awarded vouchers if they were found abstinent at 24, 36 or 52 weeks.

Costs and health benefits included in the analysis

The economic analysis adopted the perspective of the NHS. Health service costs included intervention costs and additional healthcare costs such as those associated with Accident and Emergency (A&E) attendances, and primary and secondary care for physical health problems, as well as mental healthcare. A further analysis considering a wider NHS and criminal justice system perspective was also undertaken, as the economic impact of drug misuse on the criminal justice system was considered to be significant.

The measure of health benefit used in the analysis was the number of weeks people in the study population remained abstinent from cocaine and illicit opiates. Estimation of health benefits in the form of quality adjusted life years (QALYs) was not possible, as appropriate data on the health-related quality of life of the study population (that is, utilities for the health state of abstinence from cocaine and illicit opiates following treatment and for the health state of lack of abstinence despite treatment) were not available in the literature.

Effectiveness data utilised in the model

Effectiveness data used in the model were derived from meta-analyses of RCTs that compared the effectiveness of contingency management and standard care in the study population, which were included in the systematic review of clinical studies undertaken for the guideline. Data for the 12-week period of treatment were taken from studies reporting outcomes in the form of percentage of service users undergoing methadone maintenance treatment remaining abstinent from cocaine and opiates over a minimum number of consecutive weeks during the period of treatment. Follow-up data were based on studies that reported outcomes in the form of percentage of service users that were abstinent at the end of treatment, at 6 months and at one year of follow-up. Table 19 presents the effectiveness data used in the economic analysis and the clinical studies from which they were derived. Details of the clinical studies are provided in Appendix 14.

Table 19: Effectiveness data utilised in the economic model

Data derived from the guideline meta-analysis			Studies included
A. Percentage of users abstinent over a minimum of 1 week during treatment			
Intervention	Mean	95% CI	PETRY2002 PRESTON2000 SILVERMAN1998
CM	70.59%	58.13% to 80.70%	
Standard care	48.57%	36.57% to 60.72%	
RR	1.47	1.10 to 1.96 (fixed-effects model)	
B. Percentage of users abstinent over a minimum of 2 weeks during treatment			
Intervention	Mean	95% CI	PETRY2002 PRESTON2000 SILVERMAN1998
CM	61.76%	49.14% to 73.04%	
Standard care	28.57%	18.72% to 40.80%	
RR	2.19	1.44 to 3.34 (fixed-effects model)	
C. Percentage of users abstinent over a minimum of 3 weeks during treatment			
Intervention	Mean	95% CI	PETRY2002 PRESTON2000 SCHOTTENFELD2005 SILVERMAN1998 RAWSON2002
CM	52.17%	43.54% to 60.68%	
Standard care	27.14%	20.14% to 35.42%	
RR	2.06	1.20 to 3.54 (random-effects model)	
D. Percentage of users abstinent over a minimum of 6 weeks during treatment			
Intervention	Mean	95% CI	PETRY2002 PRESTON2000 SCHOTTENFELD2005 SILVERMAN1998
CM	46.59%	35.99% to 57.49%	
Standard care	12.73%	7.39% to 20.76%	
RR	4.17	2.42 to 7.18 (fixed-effects model)	
E. Percentage of users abstinent over a minimum of 8 weeks during treatment			
Intervention	Mean	95% CI	MCLELLAN1993 PETRY2002 PEIRCE2006 PRESTON2000 SCHOTTENFELD2005 SILVERMAN1998
CM	27.46%	22.82% to 32.63%	
Standard care	7.23%	4.78% to 10.71%	
RR	3.87	2.61 to 5.74 (fixed-effects model)	
F. Percentage of users abstinent over 12 weeks during treatment			
Intervention	Mean	95% CI	MCLELLAN1993 PETRY2002 PEIRCE2006 SILVERMAN1998 SILVERMAN2004
CM	12.33%	8.89% to 16.79%	
Standard care	4.14%	2.26% to 7.31%	
RR	3.08	1.73 to 5.47 (fixed-effects model)	
G. Percentage of users abstinent at end of treatment			
Intervention	Mean	95% CI	PETRY2005C RAWSON2002
CM	42.86%	31.28% to 55.22%	
Standard care	16.42%	8.87% to 27.91%	
RR	2.65	1.46 to 4.79	
H. Percentage of users abstinent at 6-month follow-up			
Intervention	Mean	95% CI	PETRY2005C RAWSON2002
CM	40.00%	28.69% to 52.41%	
Standard care	22.39%	13.47% to 34.52%	
RR	1.81	1.07 to 3.06	
I. Percentage of users abstinent at 1-year follow-up			
Intervention	Mean	95% CI	RAWSON2002
CM	53.33%	34.64% to 71.20%	
Standard care	26.67%	12.98% to 46.18%	
RR	2.00	1.01 to 3.95	

It must be noted that data referring to the 12-week treatment report the longest minimum consecutive period of abstinence achieved by the users. That means that if a user remained abstinent, for example, over 6 consecutive

weeks, then used cocaine and/or opiates for a short period and subsequently remained abstinent for another 3 weeks, this latter period of abstinence was not reported in the studies. Owing to lack of such data, it was conservatively assumed in the analysis that each user had only one period of consecutive weeks in abstinence during treatment, lasting 1 week at the minimum and 12 weeks at the maximum. The percentages of users who remained abstinent over consecutive periods of weeks during treatment that were not reported in the trials (for example, over 4 weeks, 5 weeks, and so on) were estimated assuming that the percentage of users remaining abstinent over an increasing number of weeks (between periods of consecutive weeks for which data was available) declined at a constant rate. In order to estimate the percentages of service users remaining abstinent within each week between the end of treatment and one year follow-up, it was assumed that the percentage of service users being abstinent over each week changed at a constant rate between the time points for which relevant data were reported in the literature.

Cost data

Estimation of costs was based on deterministic costing of relevant resources. Resource utilisation was estimated and subsequently combined with unit prices to provide total costs associated with each arm of the model. Resource utilisation regarding the interventions assessed, reflecting UK clinical practice, was based on the GDG expert opinion. For each intervention, the GDG estimated the number of contacts with case workers over 12 weeks. In every such contact a urinalysis test (dipstick) was undertaken for the detection of cocaine and/or opiates. Users in the contingency management arm were assumed to receive a £10 voucher for each week they remained abstinent from cocaine and opiates during the 12-week treatment, and £20 vouchers each time they were found to be abstinent in checks performed at 24, 36 and 52 weeks. Costs of methadone maintenance treatment as well as follow-up costs up to a year from the start of the model were excluded from the analysis, as they were common to the two arms of the model. Case-worker unit costs (assumed to be equivalent to those of community psychiatric nurses [CPNs]) were taken from Curtis & Netten (2005). The price of urine dipsticks was determined by personal communication with a pharmacist. Resource utilisation estimates and unit costs associated with contingency management and standard care are presented in Table 20.

Table 20: Resource utilisation estimates and unit costs associated with contingency management and standard care

Resource utilisation (GDG opinion)

CM Weeks 1–3: 3 contacts per week with a case worker, lasting 30 min each Weeks 4–6: 2 contacts per week with a case worker, lasting 30 min each Weeks 7–12: 1 contact per week with a case worker, lasting 30 min Plus: urinalysis (dipstick) at every contact Reinforcers: £10 voucher per week of abstinence during the 12-week treatment £20 voucher for abstinence in checks performed at 24, 36 and 52 weeks Standard care Weeks 1–12: 1 contact per fortnight with a case worker, lasting 30 min Plus: urinalysis (dipstick) at every contact	
Unit costs	
Case worker per hour of clinic contact: £56 Urinalysis (dipstick): £2	Curtis & Netten (2005); cost of CPN excluding qualification costs Personal communication with a pharmacist

Additional healthcare costs, including costs associated with A&E attendances, GP visits and inpatient care for physical health problems, as well as inpatient and outpatient mental healthcare, were derived from Godfrey and colleagues (2002). The study estimated the annual healthcare cost incurred by Class A problem drug users in England and Wales, excluding treatment for dependence. Costs were reported separately for users not in treatment for dependence and those already in treatment; costs incurred by the latter were utilised in the economic analysis. It must be noted that additional healthcare costs estimated by Godfrey and colleagues were not adjusted to take into account the impact of current drug use on future healthcare demands. As a consequence, potential future costs from infectious disease risks among users of cocaine and illicit opiates were not included in the estimation of healthcare costs. Criminal justice costs were also based on Godfrey and colleagues (2002). As with healthcare costs, annual criminal justice costs incurred by Class A problem drug users undergoing formal drug treatment were used.

It was assumed in the model that service users did not incur any additional healthcare costs (apart from intervention and methadone maintenance treatment costs) or criminal justice costs for periods within the time frame of the analysis over which they were abstinent from cocaine and illicit opiates. This is a rather strong assumption, especially for service users found to be abstinent only for short time periods, such as 1–2 weeks, and is acknowledged as a limitation of the analysis.

Costs were adjusted to 2005 prices using the hospital and community health services pay and price inflation index (Curtis & Netten, 2005). Discounting was not applied, as the time horizon of the analysis was 1 year. Table 21 provides all cost data utilised in the base-case economic analysis.

Table 21: Cost data utilised in the economic model

Cost parameter	Cost (2005 prices)	Source – comments

Intervention CM Standard care	 £630 £180	Cost of staff from Curtis & Netten (2005); costs of dipsticks from personal communication; cost of reinforcers in the form of vouchers not included. For more details see Table 20.
Additional annual healthcare cost	£1,418	Godfrey et al. (2002); cost for Class A problem drug users undergoing treatment for dependence, excluding cost of treatment for dependence
Annual criminal justice cost	£8,657	Godfrey et al. (2002); cost for Class A problem drug users undergoing treatment for dependence

Sensitivity analysis

In addition to the base-case analysis, which utilised the most accurate data available, a sensitivity analysis was undertaken to investigate the robustness of the results under the uncertainty characterising the model input parameters. Selected input parameters were varied over a range of values and the impact of these variations on the results was explored. The following input parameters were tested in sensitivity analysis:

- Relative risks (RRs) of the percentage abstinence over a consecutive number of weeks during treatment or at follow-up, of service users receiving contingency management versus standard care. The 95% confidence intervals (CIs) of RRs calculated in the guideline meta-analyses, as shown in Table 19, were used. Two scenarios examined the simultaneous use of the lower 95% CIs and the upper 95% CIs of all estimated RRs, respectively.

- Costs of vouchers received by abstinent service users undergoing contingency management. A 100% increase and a 50% decrease in the total value of vouchers were tested.

- Additional healthcare costs and criminal justice costs. Lowest and highest estimates as reported in Godfrey and colleagues (2002) were used.

Method of presentation of the results

The results of the economic analysis are presented in the form of incremental cost-effectiveness ratios (ICERs), expressing additional cost per additional unit of benefit associated with one intervention versus another (in this case an additional week of abstinence achieved). In the case of an intervention being more effective (that is, providing greater benefit) and less costly than its comparator, the calculation of such a ratio is not required; the intervention is clearly more cost effective than its comparator, and is characterised as the dominant option.

Results

Base-case analysis

Contingency management was more effective than standard care, as it resulted in a higher number of weeks of abstinence from cocaine and illicit opiates in the study population over 1 year. From the NHS perspective, it was more costly than standard care, resulting in an ICER of £18 per additional week of abstinence achieved.

When criminal justice costs were considered in the analysis, contingency management was the dominant option, as, in addition to being more effective, it also led to cost savings compared to standard care. Full results of the analysis are provided in Table 22.

Table 22: Results of the economic analysis: total average costs and benefits per user under contingency management or standard care, over a year of follow-up

A. NHS perspective			
Intervention	Average total cost	Average number of weeks of abstinence	Cost effectiveness
CM	£1,514	22.51	ICER of CM versus standard care: £18 per additional week of abstinence achieved
Standard care	£1,298	11.03	
Difference	£216	11.49	
B. NHS + criminal justice system perspective			
Intervention	Average total cost	Average number of weeks in abstinence	Cost effectiveness
CM	£6,417	22.51	CM dominates standard care
Standard care	£8,119	11.03	
Difference	-£1,702	11.49	

As indicated by the base-case results, contingency management was shown to be clearly cost effective from the wider perspective of the NHS and the criminal justice system.

In order to interpret the ICER of contingency management versus standard care when the narrower NHS perspective was considered, the minimum required improvement in health-related quality of life (HRQoL) was calculated, characterised by a week of abstinence from cocaine and illicit opiates in the study population, that would make the estimated ICER (transformed into £/QALY) fall below the NICE-set threshold of £30,000/QALY[12]. Using this upper threshold seemed reasonable given the wide effect of drug misuse on various aspects of users' lives, such as personal relationships and social functioning; the limited effectiveness of other interventions aimed at reducing the prevalence of drug misuse; the special risks associated with drug injection, such as the risk of contracting and spreading HIV and hepatitis B, which have a substantial economic impact on the NHS, and which may be considerably reduced if long-term user abstinence is achieved; and the wider financial and non-financial implications for society of drug misuse. It was estimated that abstinence from cocaine and

[12] http://www.nice.org.uk/page.aspx?o=201973

illicit opiates needed to reflect at least a 0.03 improvement in the HRQoL of users under methadone maintenance treatment (on a scale of 0–1), in order for the base-case ICER to fall below the £30,000/QALY threshold. This level of improvement in HRQoL was deemed to be a realistic estimate, and therefore contingency management was considered a cost-effective intervention from the perspective of the NHS.

Sensitivity analysis

Results were robust in the majority of the scenarios explored in sensitivity analysis. Varying the value of vouchers and the additional healthcare and criminal justice costs had no impact on the base-case results. From the NHS perspective, the ICER of contingency management versus standard care varied between £4 and £25 per additional week of abstinence achieved; this range required only a slight improvement in HRQoL owing to abstinence, between 0.01 and 0.04 (on a scale of 0–1), in order for contingency management to be cost effective according to the NICE cost-effectiveness threshold of £30,000/QALY gained. From the wider NHS and criminal justice system perspective, contingency management remained the dominant strategy.

Results were sensitive to changes in the RRs of the percentage abstinence achieved by users receiving contingency management versus standard care. When the lower 95% CIs of all RRs were used, the ICER of contingency management versus standard care, from the NHS viewpoint, rose to £218 per additional week of abstinence achieved, which translated into a minimum 0.38 improvement in HRQoL related to abstinence (on a scale of 0–1), in order for contingency management to remain cost effective according to the NICE cost-effectiveness threshold. However, the value of 0.38 was deemed to be higher than the actual improvement in HRQoL experienced by users in periods of abstinence, and therefore contingency management was not cost effective from the NHS perspective in this scenario. Regarding the wider NHS and criminal justice system viewpoint, contingency management was more costly than standard care, with an ICER of £51 per additional week of abstinence achieved. This meant that a minimum improvement of 0.09 (on a scale of 0–1) in HRQoL was required in order for the contingency management to be cost effective according to the NICE-set threshold, which was considered a realistic figure. When the upper 95% CIs of all RRs were used, contingency management dominated standard care from both perspectives examined. It must be noted that the base-case results were robust under changes in the RRs of abstinence rates referring to the 12-week period of treatment only (that is, when RRs of abstinence rates achieved at follow-up remained intact). It was therefore the uncertainty characterising the follow-up data used in the analysis that strongly affected the results.

Limitations of the economic analysis and overall conclusions

The results of the analysis are subject to various limitations. In order to utilise the available efficacy data, a number of assumptions were required. It was assumed that users had only one period of consecutive weeks of abstinence, as only one (that is the longest) such period was recorded for every user in the trials considered in the analysis. Rates of abstinence for periods of consecutive weeks in treatment not reported in the trials were extrapolated from existing data. Follow-up data on abstinence were derived from a limited number of studies, and referred to three different time points only: end of treatment, 6 months and one year. Such evidence may not accurately reflect abstinence trends among users over time, which means that estimation of weekly abstinence rates over one year, required for the construction of the economic model, by extrapolating available follow-up data, is subject to uncertainty.

Intervention costs were based on GDG estimates of relevant resource use, owing to lack of research-based data. Other healthcare costs included in the analysis were based on a UK study. However, that study (and consequently the economic analysis as well) did not take into account long-term costs associated with drug misuse, such as costs associated with infectious disease risks among users of cocaine and illicit opiates which may impose a significant burden on the health service. Costs related to neonatal care of infants born to mothers misusing cocaine and/or opiates were also not considered in the analysis, although there is evidence that maternal drug misuse and subsequent care of infants born to drug users may also impose a significant economic burden on the health service (Godfrey *et al*., 2002; Behnke *et al*., 1997; Chiu *et al*., 1990; Joyce *et al*., 1995; Norton *et al*., 1996; Phibbs *et al*., 1991; US General Accounting Office, 1990). A strong assumption of the model, with respect to additional healthcare and criminal justice costs, was that users did not incur any such costs in periods during which they were found to be abstinent from cocaine and illicit opiates, even when the periods of abstinence were short, for example 1–2 weeks.

Despite the limitations of the analysis, there was little variation in the components utilised in the model and the results were therefore generally robust, as demonstrated in a sensitivity analysis. Overall, the results of the analysis indicate that contingency management is a cost-effective option for users of cocaine and illicit opiates undergoing methadone maintenance treatment, especially when the wider economic, social and public health consequences of drug misuse are considered.

8.4.5 Implementation studies of contingency management

Evidence for the efficacy of contingency management in the treatment of drug miscue has been available for over a decade (Petry, 2001) but it has not seen widespread implementation in the NHS or even in the United States where much of the efficacy research on contingency management has been conducted. In this respect contingency management is not different from many other non-pharmacological treatments where uptake of the

interventions can be limited even after the publications of guidance specifically designed to promote their uptake (Sheldon et al, 2004; Grimshaw et al, 2004). Despite these similarities contingency management appears to raise particular concerns about its implementation in routine care (Petry, 2001).

The concerns raised relate to a number of areas and include the attitudes of staff and senior managers, the particularities of the RCTs and the participants recruited to such studies, the costs associated with its implementation, the reluctance of service users to willingly participate in a contingency management programme and the cultural difference between the health care system of the United States and other, particularly publicly funded health care systems such as exist in the UK. All of these concerns are seen as potential barriers to effective implementation and will be discussed in light of evidence from implementation studies identified.

A number of studies (Willinberg et al, 2004; McGovern et al, 2004; Kellogg et al 2005; Kirby et al, 2006; Ritter and Cameron, 2006) have looked at staff attitudes to contingency management have reported a generally positive attitude by the majority surveyed. Four of the studies took place in the United States, with one in Australia (Ritter and Cameron, 2006) and the majority of the participants were employed in publicly funded services such as the Veterans Administration substance misuse services. A number of studies have used a questionnaire, the Provider Survey of Incentives (Kirby et al., 2006) to facilitate comparisons between services. In one such comparison, between the US and Australian services, US services showed more positive responses but a significant number of the Australian respondents were neutral rather than negative to contingency management (Ritter and Cameron, 2006). More senior staff such as senior clinicians and programme mangers tended to have more positive attitudes to contingency management, where as other staff favoured the use of other psychosocial interventions such as cognitive behavioural therapy or motivational enhancement (McGovern et al, 2004). The specific objections raised by staff are well summarised by Kirby et al (2006) and mirror findings from the other studies. They included: the possibility that incentive programs are viewed by treatment providers as being too costly and labour intensive; too difficult to implement, and a poor fit with what clinicians are already doing; and that treatment providers are not adequately trained to administer contingency management.

A number of studies have reported on the implementation of contingency management which focus on organisational responses and service user outcomes. In the most comprehensive report Kellogg et al (2005), describe the introduction of contingency management into a large publicly funded substance misuse services in New York. The services involved in the implementation programme included; eight methadone treatment programmes, 19 outpatient chemical dependency treatment programmes,

eight inpatient detoxification units, two halfway houses, a residential programme run in partnership with a community-based provider, four hospital intervention and referral services, and an intensive case management programme. The programme described by Kellogg et al, sought to address the concerns commonly raised and provided important information both on the necessary changes required from staff, the training and support programmes required to support its implementation and the responses of services users. Unsurprisingly key to successful implementation was the endorsement of the programme directors and a willingness of the directors and implementation team to engage with the concerns of staff. This also needed to be supported with a full educational and training programme which provided clear direction for staff many of whom were unfamiliar with the basic principles of contingency management. A crucial element seemed to be that staff recognised contingency management as an intervention aimed at changing key behaviours and not simply rewarding people for generally being well behaved. Service user based quantitative outcomes in this study whilst positive, were very limited and were concerned only with increased participation, for example in vocational rehabilitation programmes. However, a series of interviews and discussions with staff and service users suggested that contingency management had : increased service user motivation for treatment; facilitated therapeutic progress; improved the attitude and morale of staff; and promoted the development of more positive relationships not only between service users and staff, but also amongst staff members (Kellogg *et al*., 2005). In this study contingency management shifted from being an intervention which was viewed as being potentially problematic to integrate with other interventions to becoming the main focus of interventions with the programme's users.

Three other studies report some service user based outcomes, the first, Petry *et al*. (2001), is a small case series which describe the successful use of contingency management in individuals with a range of substance misuse and psychiatric problems. The second study, by Lawental and Eshkol (2006) describes the impact of the implementation of contingency management in a methadone maintenance programme in a drug treatment unit in Haifa, Israel. This study described the outcomes for two groups before implementation (n = 35) and after implementation (n = 41) of contingency management and reported an improvement of 36% in clean urine tests (chi sq. = 11.08, $p<0.01$) following the implementation. No other adjustments were made to the delivery of the unit's treatment programme other than the introduction of contingency management. The final study by Shoptaw *et al*. (2006) looked at the impact of contingency management on the reduced use of metamphetemine among gay and bisexual men in specialist HIV services in San Francisco. The intention of the programme was to reduce metamphetemine use and thereby also reduce risky sexual practices in a group with a high HIV prevalence. The group studied (n = 143) had a high rate of metamphetemine use with 42.7% reporting daily use and a further

43.4% at least weekly use, 77.6 % of the sample were HIV positive with large numbers engaging in unprotected sex (for example, 70.6% reported unprotected anal sex in the last month). The programme reported good recruitment rates, reduced drug use comparable with results in trials with similar populations (Shoptaw *et al*., 2005) and acceptability by service users. However, retention rates (30% at 12 weeks) were lower than in comparable programmes for non-HIV populations which were possibly attributed to the lower reinforcement values offered. The costs were considered by the authors to be 'modest' and the implementation programme was continued following the completion of the evaluation.

8.4.6 Clinical summary

Contingency management — For people in methadone maintenance treatment programmes who misuse illicit drugs, contingency management leads to clinically significant reductions in the illicit drug use (including both opiates and cocaine), during treatment and at follow-up. In contrast, the evidence for the efficacy of contingency management for people maintained on buprenorphine was weak, with no effects comparable to those obtained with contingency management and methadone maintenance treatment. This may reflect differences in the population in the trials, comparator groups or possibly the impact of the differential effects of the methadone and buprenorphine on the reward system under-pinning contingency management.

Family or couples based interventions — For individuals who have contact with a family member or carer and who are in receipt of methadone maintenance treatment, the addition of behavioural couples therapy or behaviourally focused family-based interventions can lead to reduction in the use of illicit opiates or cocaine.

Short-term psychodynamic therapy — Short-term psychodynamic therapy did not appear to reduce illicit opiate use but in one trial there was evidence of reduced stimulant use during treatment.

Cognitive behavioural therapy — Standard and relapse-prevention cognitive behavioural therapy did not show evidence of a benefit in the methadone maintenance treatment trials on opiate use but there was very limited evidence of benefits on stimulant use. Additionally, in a direct comparison between standard cognitive behavioural therapy and psychodynamic therapy, there were no statistically significant differences between the two treatments either for opiate or stimulant use.

In summary, the use of contingency management in combination with methadone maintenance treatment, but not with buprenorphine, shows significant benefit in the reduction of illicit opiate and stimulant use. Similar results are obtained for behaviourally-orientated family interventions, albeit

from a more limited evidence base. There is little evidence to support the use of short-term psychodynamic psychotherapy or standard or relapse-prevention cognitive behavioural therapy in methadone treatment programmes. A small number of studies describe some of the barriers to successful implementation of contingency management and there are limited but encouraging results from these studies suggesting that it may be possible to implement contingency management programmes outside of clinical trials and in countries other than the United States.

8.4.7 Clinical practice recommendations

8.4.7.1 Drug misuse services should introduce contingency management programmes to reduce illicit drug use and/or promote engagement in services for people undergoing methadone maintenance treatment.

8.4.7.2 Contingency management aimed at reducing illicit drug use for people undergoing methadone maintenance treatment or for people who primarily misuse stimulants should adhere to the following principles.

- The scheme should provide incentives (usually privileges or vouchers) contingent on each presentation of a drug-negative screen (for example, free from cocaine or non-prescribed opiates).
- The frequency of screening should be set at three tests per week for the first 3 weeks, two tests per week for the next 3 weeks and once weekly thereafter until stability is achieved
- If vouchers are used they should have monetary values in the region of £5 and increase in value with each additional, continuous period of abstinence
- Urinalysis is the preferred method of testing but consideration may be given to the use of oral fluids.

8.4.7.3 When delivering contingency management programmes healthcare professionals should ensure that:

- the target goal is agreed in collaboration with the service user
- the service user fully understands the relationship between the desired behaviour change and the incentive schedule
- incentives are individualised, with choice available so that the incentive is perceived as such by the service user (not just the healthcare professional) and supports a healthy/drug free lifestyle.

8.4.7.4 Family or couples-based interventions should be considered for people who are in close contact with a partner, family member or

carer and continue to use illicit drugs when in opiate agonist maintenance treatment. These interventions should:

- focus on the service user's drug misuse
- consist of at least 12 weekly sessions
- be based on cognitive behavioural principles.

8.4.7.5 All interventions for people who misuse drugs should be delivered by trained staff who are competent in delivering the intervention and are in receipt of appropriate supervision.

8.4.8 Research recommendation – contingency management

Implementation of contingency management

8.4.8.1 For people who misuse drugs, what methods of implementing contingency management (including delivering and ceasing rewards) and in what settings (including legally mandated, community-based and residential), compared with one another and standard care, are associated with longer periods of continued abstinence, reduced drug use and maintenance of abstinence/reduction of drug use at follow-up?

Why this is important

Although the efficacy of contingency management for drug misuse has been extensively investigated, there is a lack of large-scale and well-conducted implementation studies. The implementation of contingency management programmes in the UK would be aided by research assessing specific components of the programme.

Testing within contingency management programmes

8.4.8.2 For people who misuse drugs and are receiving contingency management, are urinalysis, sweat and oral fluid analyses alone and in comparison with one another sensitive, specific, cost-effective and acceptable to service users?

Why this is important

There is a lack of data comparing sensitivity and specificity, cost-effectiveness and acceptability to service users of these methods of identification of drug use. Identifying drug use during treatment is an important aspect of contingency management; therefore assessing which method(s) are more effective on the above outcomes is an important issue for health and social care settings intending to implement contingency management programmes.

8.5 Psychological interventions in combination with naltrexone maintenance treatment

8.5.1 Introduction

Naltrexone is an opiate antagonist which blocks the euphoric and other effects of opiates, and therefore eliminates the positive rewards associated with opiate use. A recent health technology appraisal conducted by NICE (2006) concluded that naltrexone may have some limited benefit in helping those who have been detoxified from opiates in remaining abstinent, although very limited evidence also suggests naltrexone to be more effective in individuals who are highly motivated. The HTA also recommended that people who are prescribed naltrexone engage in psychosocial interventions, such as counselling and self-help groups. However, the presented evidence only suggests that contingency programmes, providing incentives for individuals to remain abstinent, have any positive impact on naltrexone compliance and other outcomes. A central question is whether the wider evidence base for psychosocial interventions substantiates the HTA's recommendation.

Naltrexone is not widely used in the UK, accounting for only 11,000 to 14,000 prescriptions per annum, not all of which would be for managing opiate dependence (NICE, 2006). Where it is prescribed, it is not evident whether this is done as part of a comprehensive package of care that includes psychological intervention and general support.

8.5.2 Databases searched and inclusion/exclusion criteria

Information about the databases searched and the inclusion/ exclusion criteria used for this section of the guideline is in Table 23.

Table 23: Databases searched and inclusion/exclusion criteria for clinical effectiveness of psychological interventions in combination with naltrexone maintenance treatment

Electronic databases	MEDLINE, EMBASE, PsycINFO, HMIC, Cochrane Library
Date searched	Database inception to May 2006; table of contents December 2005 to November 2006
Study design	RCT
Patient population	People who are undergoing naltrexone maintenance treatment for opiate dependence
Interventions	Opiate antagonist treatment: naltrexone Psychological interventions: CM, CBT, family-based interventions, psychodynamic interventions
Outcomes	Abstinence: point abstinence, duration of abstinence Illicit drug use: frequency of using illicit drugs over a period of time Compliance with naltrexone: number of doses or days taken

8.5.3 Studies considered[13]

The review team conducted a new systematic search for RCTs that assessed the efficacy of contingency management, interpersonal therapy, cognitive behavioural therapy, behavioural couples therapy, psychodynamic and family-based interventions (see Table 24).

In the review of naltrexone in combination with contingency management, three trials (CARROLL2001B; CARROLL2002; PRESTON1999) met the eligibility criteria, providing data on 171 participants. All trials were published in peer-reviewed journals.

For naltrexone in combination with relapse-prevention cognitive behavioural therapy, two trials (RAWSON2001; TUCKER2004B) met the guideline eligibility criteria, providing data on 256 participants. All trials were published in peer-reviewed journals.

For naltrexone in combination with family-based interventions, two trials (CARROLL2001B; FALS-STEWART2003) met the eligibility criteria, providing data on 216 participants. All trials were published in peer-reviewed journals.

In addition, two studies were excluded from the analysis. The most common reason for exclusion was poor study quality (further information about both included and excluded studies can be found in Appendix 14).

8.5.4 Summary evidence profiles for psychological interventions in combination with pharmacological maintenance treatment

[13] Here, and elsewhere in the guideline, each study considered for review is referred to by a study ID in capital letters (primary author and date of study publication, except where a study is in press or only submitted for publication, then a date is not used).

Table 24: Study information table for trials of psychological interventions in combination with naltrexone versus control

	Naltrexone + CM versus naltrexone + standard care	Naltrexone + CBT (RP) versus naltrexone + standard care	Naltrexone + family-based interventions versus naltrexone + standard care
Total no. of trials (total no. of participants)	3 RCTs (N = 172)	2 RCTs (N = 253)	2 RCTs (N = 216)
Study ID	CARROLL2001B CARROLL2002 PRESTON1999	RAWSON2001 TUCKER2004B	CARROLL2001B FALS-STEWART2003
Problem drug or diagnosis	Opiate dependence	Opiate dependence	Opiate dependence
Treatment length	12 weeks (CARROLL2001B, CARROLL2002, PRESTON1999)	12 weeks (TUCKER2004B) 52 weeks (RAWSON2001)	12 weeks (CARROLL2001B) 24 weeks (FALS-STEWART2003)
Length of follow-up	3 to 6 months	3 to 12 months	12 months
Age (years)	32 to 33	30 to 33	33 to 34
Overall quality of evidence	Moderate	Moderate	Moderate
Compliance with naltrexone	Days/doses used: SMD -0.69 (-1.32 to -0.06) K = 3, N = 172	Days/doses used: SMD -0.74 (-1.19 to -0.29) K = 1, N = 81	Days/doses used: SMD -0.46 (-0.73 to -0.19) K = 2, N = 216
Durations of abstinence	Cocaine Longest duration: SMD -0.32 (-0.67 to 0.03) K = 2, N = 133 Proportion days abstinent: SMD -0.32 (-0.77 to 0.12) K = 1, N = 77 Opiates Longest duration: SMD -0.41 (-0.76 to -0.05) K = 2, N = 133 Proportion days abstinent: SMD -0.07 (-0.52 to 0.37) K = 1, N = 77	Continuous duration: 3 weeks: RR 1.46 (1.02 to 2.10) 8 weeks: RR 1.19 (0.68 to 2.09) K = 1, N = 81 Proportion opiate negative urines during treatment: SMD -0.66 (-1.11 to -0.22) K = 1, N = 81	Cocaine Longest duration: SMD -0.43 (-0.84 to -0.01) K = 1, N = 92 Proportion days abstinent: SMD -0.41 (-0.76 to -0.05) K = 2, N = 133 Opiates Longest duration: SMD -0.45 (-0.86 to -0.03) K = 1, N = 92 Proportion days abstinent: SMD -0.43 (-0.70 to -0.16 K = 2, N = 133
Point abstinence	-	Negative urine or self-report: Endpoint: RR 1.13 (0.62 to 2.05) K = 1, N = 81	-
Illicit drug use	-	Days heroin use in past month: Endpoint: SMD -0.16 (-0.58 to 0.26) K = 1, N = 88 3-month follow-up: SMD 0.13 (-0.30 to 0.56) K = 1, N = 84	-
Mortality	-	RR 0.98 (0.14 to 6.59) K = 1, N = 81	-

1

8.5.5 Clinical summary

Contingency management, behavioural couples therapy and family-based interventions were all associated with significantly improved outcomes during treatment, but there is very limited follow-up data in any of the six trials and no evidence of long-term benefit.

There were mixed results for cognitive behavioural therapy. The trial with a 52-week duration appeared to be effective, however, a more recent 12-week trial did not appear to effect drug use.

Given the recommendation in the NICE technology appraisal for a specific psychosocial intervention to support the use of naltrexone (which currently has a very low rate of uptake in the NHS) current evidence would suggest that service user and clinician preference, and whether the service user is in close contact with a partner or family member, should direct the choice of contingency management, behavioural couples therapy and family-based interventions.

8.5.6 Clinical practice recommendation

8.5.6.1 For people on naltrexone maintenance treatment to prevent relapse to opiate dependence, healthcare professionals should consider the use of the following psychosocial interventions:

- For all service users – contingency management
- For all people in contact with a partner, family member, or carer – family or couples-based interventions.

These should be based on the same principles as those used for people on methadone maintenance treatment.

8.6 Self-help groups

Introduction

There is a long tradition in North America and Europe of self-help groups for people with substance misuse. Most of these offer a programme of recovery known as the 12-steps, which has its origins in Alcoholics Anonymous. Self-help groups especially relevant to drug users are Narcotics Anonymous (NA) and Cocaine Anonymous (CA). There are other self-help groups available that offer alternative philosophies and approaches, but these have not taken root in the UK to the same extent as 12-step groups. There is open access to groups; the only entry requirement is for individuals to acknowledge that they have a drug problem. People may attend simply with a desire to become abstinent; it is not a requirement to be drug-free at first attendance.

There have been few research studies into the acceptability of the 12-step programme among British drug users; however, a series of studies conducted

in London NHS inpatient detoxification services (for example, Harris *et al.*, 2000; Best *et al.*, 2001) have suggested that people who were drug dependent reported more positive attitudes to NA/AA and to the 12-step programme than those who were alcohol dependent and reported a greater intention to attend after detoxification.

Current practice

Over the past 15 years, there has been a marked increase in availability of self-help group meetings in the UK. In 2003, there were approximately 500 regular NA group meetings nationwide; by 2006, this had risen to 800 (www.ukna.org). Many individuals will make use of self-help groups without first having contact with statutory drug services, either self-referring or attending following advice from a non-drug specialist such as a GP or other member of the primary care team.

One of the limitations of the literature reviewed below is the lack of UK studies, with the majority of studies on 12-step self-help groups conducted in the US. However, the growth of NA in the UK suggests that there is some acceptability of this resource among people who misuse drugs.

8.6.1 Definitions of interventions

Self-help groups

A group of people who misuse drugs meet regularly to provide help and support for one another. The group is typically community-based, peer-led and non-professional.

12-step self-help groups

A non-profit fellowship of people who meet regularly to help each other remain abstinent. The core of the 12-step programme is a series of 12 steps that include admitting to a drug problem, seeking help, self-appraisal, confidential self-disclosure, making amends – when possible – where harm has been done, achieving a spiritual awakening and supporting other drug addicts who want to recover.

8.6.2 Databases searched and inclusion/exclusion criteria

Information about the databases searched and the inclusion/ exclusion criteria used for this section of the guideline is in Table 25.

Table 25: Databases searched and inclusion/exclusion criteria for clinical effectiveness of self-help interventions

Electronic databases	MEDLINE, EMBASE, CINAHL, HMIC, PsycINFO, Cochrane Library
Date searched	Database inception to May 2006; table of contents December 2005 to November 2006
Study design	RCT Observational studies
Patient population	People who misuse opiates, stimulants, cannabis, poly drugs
Interventions	Self-help 12-step SHGs
Outcomes	Abstinence: point abstinence , duration of abstinence Illicit drug use: frequency of using illicit drugs over a period of time

The review team conducted a systematic search for RCTs and observational studies that assessed the efficacy of 12-step self-help groups. Seven studies met the inclusion eligibility criteria set by the GDG. Two were RCTs (MCAULIFFE1990; TIMKO2006), two were cohort studies (MOOS1999; ETHERIDGE1999), one was a prospective longitudinal study (FIORENTINE2000), one was a case series (TOMBOUROU2002) and one was a sub-analysis of self-help group participation in all groups of an RCT (WEISS2005). All studies were published in peer-reviewed journals.

In addition, 16 studies were excluded from the analyses. The most common reason for exclusion was diagnosis of comorbid psychosis.

Benefits of attendance at self-help groups

The majority of studies on self-help groups have looked at 12-step-based groups. Various studies show that 12-step involvement has a positive impact on outcomes. For example, Weiss and colleagues (2005) show that, while simple attendance did not predict drug use, active participation in self-help groups did predict lower cocaine use in the following month and increasing levels of participation produced a significant incremental benefit. Similar associations between NA attendance and improved drug-use outcomes are reported by Fiorentine and Hillhouse (2000). 417 participants commencing outpatient substance misuse treatment completed an intake interview and 8 months later completed a follow-up interview, in order to determine the relationship between drug treatment participation and 12-step involvement. Overall findings illustrate that individuals who regularly attended 12-step programmes prior to treatment had significantly higher rates of successful treatment completion. Fiorentine and Hillhouse also demonstrate an additive effect of engaging in treatment and a 12-step self-help groups at the same time, as this results in significantly better treatment outcomes when compared to drug treatment or 12-step self-help group participation alone. In Australia, Tombourou and colleagues (2002) conducted interviews with 91 new members entering NA self-help groups. At baseline, participants filled in questionnaires regarding sociodemographic status and attendance levels at 12-step self-help groups in the year prior to the first interview. At 12-month

follow-up, participants completed a second interview detailing levels of involvement, highest step completed and levels of weekly attendance at the self-help groups. Self-report measures indicated that higher and more stable levels of NA involvement were associated with less marijuana and hazardous alcohol use.

McAuliffe and colleagues (1990) conducted an RCT comparing a recovery training and self-help programme with a control condition. The recovery training and self-help group received a combined programme of professionally led recovery skills workshops and weekly self-help group meetings (not 12-step). They showed improved drug-use outcomes at 6 and 12 months in both a US and a Hong Kong sample. This may indicate that non -12- step self-help groups are also beneficial in reducing relapse.

There is consistent evidence that 12-step attendance mediates better substance misuse outcomes. However, it should be noted that in most studies reviewed above self-help groups attendance was assessed alongside other treatment programmes. Although there are clear associations between self-help group attendance and drug-use outcomes, the impact of self-help groups outside of intensive treatment programmes has not been assessed in enough detail.

Facilitating self-help group affiliation

A variety of studies have assessed interventions that encourage self-help group affiliation. These interventions range from 'intensive referral', providing advice, information and a personal contact (Timko *et al.*, 2006), to residential programmes with a strong 12-step focus.

A large-scale prospective cohort study (n = 3,018) conducted by Moos and colleagues (1999) revealed that people receiving 12-step-based treatment for drug and/or alcohol misuse had superior abstinence outcomes compared to those in cognitive behavioural therapy or eclectic (based on a combination of 12-step and cognitive behavioural therapy principles) treatment groups. Humphreys and colleagues (1999) sought to further investigate the relationship between post-treatment self-help group participation and abstinence. They suggest that the level of participation in self-help groups may mediate the relationship between self-help group involvement and abstinence; that is, those receiving 12-step-based treatment programmes were more highly involved in self-help groups than those in either cognitive behavioural therapy or eclectic treatment programmes; thus, increased levels of participation may have facilitated positive outcomes.

Timko and colleagues (2006) investigated the effects of intensive versus standard referral to self-help groups (based on the 12-step model), in order to determine which method increased self-help group attendance over a 6-month period. Participants commencing substance-use outpatient treatment were randomly assigned to either group; those in the standard referral group

received a timetable of local meetings. Participants in the intensive referral group received the same material as those in the standard group, with the addition of an information pack detailing various aspects of 12-step meetings and a more intensive discussion of the benefits, and potential concerns, of attending 12-step meetings. They were required to keep a record of self-help group meetings they attended and give brief descriptions of their personal reactions to and thoughts regarding the meeting. Counsellors also arranged for the participants to meet with a self-help group volunteer who would accompany them to their first meeting. At 6 months' follow-up, the intensive referral group showed greater attendance of and participation in self-help groups compared with those in the standard referral group. Furthermore, those in the intensive referral group showed greater reduction in alcohol and drug use and were more likely to be abstinent compared with those in the standard referral group.

Ouimette and colleagues (1998) showed that there was a synergistic effect between outpatient aftercare provision and 12-step self-help group participation following treatment. Service users who participated in both did better than those who only participated in one or the other. Those who did neither had the poorest outcomes. Once again, this study showed that increased frequency of attendance and increased involvement in 12-step activities enhanced outcomes.

Clinical Summary

In summary, there have been several studies assessing the use of self-help groups for people who misuse drugs. The majority of studies have been conducted on 12-step programmes. There is limited but consistent evidence from these studies that 12-step attendance is associated with abstinence from illicit drugs and alcohol, and fewer drug and alcohol problems. Furthermore, involvement in such programmes can be improved by interventions from healthcare professionals to encourage regular attendance and active participation with such groups.

8.6.3 Clinical practice recommendations

8.6.3.1 Healthcare professionals should routinely provide information about self-help groups for people who misuse drugs. The most established of such groups are those based on 12-step principles, for example Narcotics Anonymous and Cocaine Anonymous.

8.6.3.2 If a person who misuses drugs has expressed an interest in attending 12-step self-help groups, healthcare professionals should consider facilitating the person's initial contact with the groups.

8.7 Co-ordination of care and case management

8.7.1 Introduction

This section focuses on the evidence for the use of psychological interventions as part of broader packages of care, in particular case management. Case management is a strategy to improve the co-ordination of care for people who misuse drugs. It was devised for people with complex and multiple needs. An individual worker is responsible for the co-ordination and, where necessary, provision of care for service users. Contact with the case manager is usually expected to be on a regular ongoing basis. Case management originated in the mental health field and since the early 1980s it has been used in substance misuse services, mostly in the US but also in some European countries (in particular the Netherlands and Belgium).

In UK practice, case management has not been applied systematically in the same way as it has in the US and other European countries. The closest to case management in the UK is care planning and care co-ordination approach, which have recently been the focus of much attention from the NTA, who established this as an important area for development in UK services. Care planning and care co-ordination have also been the subject of the recent Health Commission and NTA review of services across the UK, establishing these as important areas for development in UK services (NTA, 2006a). One of the conclusions of this review is that there is wide variation in procedures across the country.

8.7.2 Definitions of interventions

Case management

There is no unified definition of case management, and programmes vary depending on clinical populations and treatment systems. The guiding principle, consistent with a long-term view of drug problems, is that of co-ordinating episodes of care both over time and across health and social care systems. In practice, a case manager works with the service user in order to enrol the service user in the required services and co-ordinate the various services required for the complex array of problems.

Intensive referral

This intervention aims to engage service users into treatment via an initial needs assessment and referral session, but does not provide the element of ongoing contact that is considered here as characteristic of case management.

Standard referral

Service user is provided with a list of contact details and they are expected to make their own appointments.

8.7.3 Databases searched and inclusion/exclusion criteria

Information about the databases searched and the inclusion/ exclusion criteria used for this section of the guideline is in Table 26.

Table 26: Databases searched and inclusion/exclusion criteria for clinical effectiveness of case management

Electronic databases	MEDLINE, EMBASE, CINAHL, HMIC, PsycINFO, Cochrane Library
Date searched	Database inception to May 2006; table of contents December 2005 to November 2006
Study design	RCT
Patient population	People who misuse opiates, stimulants, cannabis, poly drugs
Interventions	Case management, intensive referral, care coordination
Outcomes	Abstinence: point abstinence, duration of abstinence Drug use: frequency of using illicit drugs over a period of time

The review team conducted a new systematic search for RCTs that assessed the efficacy of case management (see Table 27). For trials of intensive referral versus standard referral, two RCTs met the eligibility criteria, providing data on 286 participants. For trials of case management with ongoing contact versus standard care, eight RCTs met the eligibility criteria providing data on 2,623 participants.

All trials were published in peer-reviewed journals. In addition, 5 studies were excluded from the analysis. The most common reason for exclusion was not providing required outcomes (further information about both included and excluded studies can be found in Appendix 14).

8.7.4 Case management

Table 27: Study information table for trials of case management for people who misuse drugs

	Intensive referral versus standard care for people not in formal drug treatment	Case management (with ongoing contact) versus standard care for people not in formal drug treatment
Total no. of trials (total no. of participants)	2 RCTs (N = 286)	8 RCTs (N = 2,623)
Study ID	STRATHDEE2006 ZANIS1996	COVIELLO2006 MARTIN1993 MEJTA1997 MORGENSTERN2006 NEEDELS2005: Study 1 NEEDELS2005: Study 2 SALEH2002 SORENSEN2005
Problem drug or diagnosis	IDU: STRATHDEE2006 (100%) Opiate dependence (seeking MMT): STRATHDEE2006 (100%), ZANIS1996 (100%)	Any drug misuse in past 6 months: NEEDELS2005 (87%) History of drug use associated with HIV risk: MARTIN1993 (100%) Any substance dependence (DSM-IV):

		MORGENSTERN2006 (100%; 33% primarily alcohol) Seeking residential substance misuse treatment: SALEH2002 (100%) Opiate dependence: COVIELLO2006 (100%), MEJTA1997 (100%), SORENSEN2005 (100%)
Treatment length	1 week: STRATHDEE2006 2 weeks: ZANIS1996	6 weeks: COVIELLO2006 6 months: MARTIN1993, SORENSEN2005 12 months: SALEH2002 15 months: MORGENSTERN2006 36 months: MEJTA1997
Length of follow-up	Up to 2 weeks	Up to 3 years
Age (years)	41 to 42	17 to 45

1
2
3

Table 28: Summary of evidence table for trials of case management for people who misuse drugs

	Intensive referral versus standard care for people not in formal drug treatment	Case management versus standard care for people not in formal drug treatment
Total no. of trials (total no. of participants)	2 RCTs (N = 286)	8 RCTs (N = 2,623)
Study ID	STRATHDEE2006 ZANIS1996	COVIELLO2006 MARTIN1993 MEJTA1997 MORGENSTERN2006 NEEDELS2005: Study 1 NEEDELS2005: Study 2 SALEH2002 SORENSEN2005
Overall quality of evidence	Moderate	Moderate
Durations of abstinence	-	Drug-free days per month: SMD -0.13 (-0.47 to 0.20) K = 1, N = 140
Point abstinence at follow-up	-	Cannabis: RR 1.14 (0.97 to 1.35) K = 3, N = 1,538 Cocaine: RR 1.26 (0.81 to 1.98) K = 3, N = 1,538 Opiates: RR 1.34 (0.63 to 2.87) K = 2, N = 192 All drugs: RR 1.16 (0.59 to 2.31) K = 2, N = 565
Initiation of treatment	Started any treatment: RR 2.92 (0.52 to 16.35) K = 2, N = 286	Started any treatment: RR 1.34 (1.04 to 1.72) K = 4, N = 2,028 Time taken to enter treatment: SMD -1.63 (-1.88 to -1.37) K = 1, N = 316

Retention in treatment	-	In treatment at follow-up: RR 1.60 (0.90 to 2.86) K = 3, N = 1,602 Completed at least one outpatient programme: RR 1.92 (1.35 to 2.72), K = 1, N = 302 Retained in any treatment for at least 3 months: RR 2.29 (1.55 to 3.39) K = 1, N = 302 Time retained in treatment: SMD -0.93 (-1.16 to -0.70), K = 1, N = 316

RR >1 favours intervention, negative SMD values favour intervention

8.7.5 Clinical summary

One of the difficulties when interpreting this evidence is the variation in the sample populations, as well as what constitutes 'case management' in different studies.

Bearing in mind these sources of variation, overall, the evidence available consistently suggests that both intensive referral and case management, whether limited to a 'brief' care planning session, or initial care planning with ongoing contact, is effective at engaging service users in treatment at different stages of the treatment process. In terms of effects on illicit drug use, however, the evidence is mixed, with the overall suggestion of the meta-analysis that there is no improvement in outcomes compared to standard care.

While all the studies reviewed are US-based and hence interpretation should consider the cultural and health system differences already outlined, it should be noted that a remarkably similar picture is presented in mainstream mental health contexts in the UK and US, in that case management tends to improve treatment engagement but does not itself necessarily make a difference to outcomes (for example, for schizophrenia; NICE, 2003). The current evidence implies that for people who misuse drugs, effective, structured psychological interventions must be delivered in addition to standard care planning in order to achieve improved outcomes.

8.7.6 Clinical practice recommendation

8.7.6.1 Healthcare professionals should be aware that service users are at high risk of losing contact with services at points of transition between services and should ensure that clear and agreed plans are in place to ensure effective transfer through services. This could be achieved through the use of agreed care plans, identified professionals and appropriate assessment systems.

8.8 Multi-modal care programmes

8.8.1 Introduction

Multi-modal care programmes for the purpose of this review are defined as including a combination of therapy activities delivered in intensive schedules of 10 hours per week or more. Content of these programmes varies but would usually include education, daily living skills and other psychologically based interventions (for example, cognitive behavioural therapy, relapse prevention and reinforcement-based approaches), mostly delivered in group format. Such programmes are not common in generic drug treatment services in the UK?, although they are available in some areas. They are more commonly used within drug services linked to the criminal justice system as a way of providing more intensive programmes for those referred. The current use of these interventions in the UK is limited and their distribution is not well understood.

8.8.2 Definitions

Standard outpatient treatment

Treatment occurs in regularly scheduled sessions typically totalling 1–2 hours per week. Examples include weekly or twice-weekly individual therapy, weekly group therapy or a combination of the two.

Extended outpatient treatment

Outpatient treatment as above, but with up to 9 contact hours per week, typically involving additional groupwork (group therapy, educational groups and/or self-help groups).

Intensive outpatient treatment

Healthcare professionals provide several treatment components to service users. Treatment consists of regularly scheduled sessions within a structured programme, with a minimum of 9 contact hours per week (American Society of Addiction Medicine, 2001).

Intensive outpatient treatment with reinforcement-based treatment

Intensive outpatient treatment as above, but with additional benefits (such as the right to undertake vocational training and/or paid work) contingent on providing a drug-free urine sample.

Structured day treatment

Structured day treatment provides intensive community-based support, treatment and rehabilitation. Clear programmes of defined activities should be offered for a fixed period of time with specified attendance criteria, usually 4–5 days (20 hours total) per week (NTA, 2002).

8.8.3 Databases searched and inclusion/exclusion criteria

Information about the databases searched and the inclusion/ exclusion criteria used for this section of the guideline is in Table 29.

Table 29: Databases searched and inclusion/exclusion criteria for clinical effectiveness of multi-modal care programmes

Electronic databases	MEDLINE, EMBASE, CINAHL, HMIC, PsycINFO, Cochrane Library
Date searched	Database inception to May 2006; table of contents December 2005 to November 2006
Study design	RCT
Patient population	People who misuse opiates, stimulants, cannabis, poly drugs
Interventions	Intensive outpatient treatment, reinforcement-based intensive and extended outpatient treatment, day treatment
Outcomes	Abstinence: point abstinence, duration of abstinence Illicit drug use: frequency of using illicit drugs over a period of time

The review team conducted a new systematic search for RCTs that assessed the efficacy of multi-modal care programmes (see Table 30).

In the review of intensive outpatient treatment, 4 trials met the eligibility criteria providing data on 717 participants. All trials were published in peer-review journals.

In the review of day treatment, 2 trials met the guideline eligibility criteria providing data on 370 participants. All trials were published in peer-reviewed journals.

In the review of intensive outpatient treatment with reinforcement-based therapy, three trials met the eligibility criteria providing data on 282 participants. Two trials were published in peer-reviewed journals and one was in press.

8.8.4 Multi-modal treatment programmes

Table 30: Study information table for trials of intensive outpatient treatment, day treatment and reinforcement-based therapy

	Intensive outpatient treatment versus standard outpatient treatment	Intensive outpatient treatment versus extended outpatient treatment	Day treatment versus standard outpatient treatment	Intensive outpatient treatment with RBT versus standard care
Total no. of trials (total	3 RCTs (N = 623)	1 RCT (N = 94)	2 RCTs (N = 370)	3 RCTs (N = 282)

no. of participants)				
Study ID	MCLELLAN1993 VOLPICELLI2000 WEINSTEIN1997	COVIELLO2001	AVANTS1999 MARLOWE2003	JONES2005 SILVERMAN2001 SILVERMAN in press
Problem drug or diagnosis	Cocaine dependence (DSM-III-R/IV): VOLPICELLI2000 WEINSTEIN1997 Opiate dependence (MMT): MCLELLAN1993	Cocaine dependence (DSM-III-R/IV): COVIELLO2001	Cocaine dependence (DSM-III-R/IV): MARLOWE2003 Opiate dependence (MMT): AVANTS1999	Opiate dependence (MMT)
Treatment length	3 months: WEINSTEIN1997 6 months: MCLELLAN1993 12 months: VOLPICELLI2000	1 month	3 months: AVANTS1999 4 months: MARLOWE2003	6 months
Length of follow-up	Up to 9 months	7 months	Up to 6 months	0 to 12 months
Age (years)	32 to 41	40	34 to 36	38 to 45

Table 31: Summary evidence table for trials of intensive outpatient treatment, day treatment and reinforcement-based therapy

	Intensive outpatient treatment versus standard outpatient treatment	Intensive outpatient treatment versus extended outpatient treatment	Day treatment versus standard outpatient treatment	Intensive outpatient treatment with RBT versus standard care
Total no. of trials (total no. of participants)	3 RCTs (N = 623)	1 RCT (N = 94)	2 RCTs (N = 370)	3 RCTs (N = 282)
Study ID	COVIELLO2001 MCLELLAN1993 VOLPICELLI2000 WEINSTEIN1997	COVIELLO2001	AVANTS1999 MARLOWE2003	JONES2005 SILVERMAN2001 SILVERMAN in press
Overall quality of evidence	Moderate	Moderate	Moderate	Moderate
Durations of abstinence	Cocaine (secondary to MMT) Continuous duration: 8 weeks: RR 1.02 (0.81 to 1.28) 16 weeks: RR 1.28 (0.67 to 2.46) K = 1, N = 67 Opiates Continuous duration: 8 weeks: RR 0.91 (0.76 to 1.10) 16 weeks: RR 1.94 (0.97 to 3.87) K = 1, N =67	-	Maximum consecutive cocaine-negative urines: SMD 0.14 (-0.30 to 0.59) K = 1, N = 79	Cocaine Proportion negative urines: SMD -0.59 (-1.22 to 0.05) K = 1, N = 40 Opiates Proportion negative urines: SMD -0.63 (-1.27 to 0.01) K = 1, N = 40 Cocaine and opiates Negative urines during treatment: RR 2.48 (1.40 to 4.37) K = 2, N = 170 Proportion negative urines: SMD -0.66 (-

				1.30 to -0.02) K = 1, N = 40
Point abstinence	-	Cocaine Endpoint: RR 0.96 (0.63 to 1.45) 3-month follow-up: RR 1.04 (0.68 to 1.61) K = 1, N = 96	Cocaine (secondary to MMT) Endpoint: RR 0.94 (0.74 to 1.19) 6-month follow-up: RR 1.01 (0.72 to 1.41) K = 1, N = 291 Opiates Endpoint: RR 1.05 (0.83 to 1.32) 6-month follow-up: RR 0.89 (0.65 to 1.23) K = 1, N = 291 Cocaine and opiates Endpoint: RR 0.99 (0.73 to 1.34) 6-month follow-up: RR 0.90 (0.59 to 1.36) K = 1, N = 291	Cocaine Endpoint: RR 0.60 (0.25 to 1.43) K = 1, N = 56 Opiates Endpoint: RR 0.82 (0.51 to 1.32) K = 1, N = 56
Drug use	Cocaine Self-reported days: Change from baseline: SMD 0.25 (-2.38 to 2.88) K = 2, N = 219	-	-	-

8.8.5 Clinical summary

The evidence related to intensive outpatient treatments and day treatments (defined respectively as at least 9 and 20 hours of group work per week) does not support the notion that 'more is better' when comparing more intensive treatments to standard outpatient treatment in relation to drug-use outcomes. There is some evidence that reinforcement-based treatment can improve drug use outcomes, though real-world application of this type of intervention may be limited. It is important to note, however, that some of the standard practice in the US appears to be better structured and more intensive than routine outpatient UK practice.

8.9 Psychological interventions for carers

8.9.1 Introduction

There is an increasing recognition that drug misuse affects the entire family and the communities in which these families live. For example, the Home Office's updated Drug Strategy (2002) includes targets on increasing access to help, advice and counselling for parents, carers and families of people who misuse drugs. Additionally, the NTA user satisfaction survey found that 25% of respondents felt that staff did not offer families and carers enough support

(Best *et al.*, 2006). Therefore there is a need to assess if interventions for carers are effective.

8.9.2 Definitions of interventions

5-Step intervention

The 5-Step intervention seeks to help families and carers in their own right, independent of relatives who misuse drugs. It focuses on three key areas: stress experienced by relatives, their coping responses and the social support available to them. Step 1 consists of listening and reassuring the carer, Step 2 involves providing relevant information, Step 3 counselling about coping, Step 4 counselling about social support and Step 5 discussion of the need for other sources of specialist help. This intervention consists of up to five sessions.

Community reinforcement and family training

Community reinforcement and family training is a manualised treatment programme that includes training in domestic violence precautions, motivational strategies, positive reinforcement training for carers and their significant other, and communication training. However, the primary aim of the treatment appears to be encouraging the person who misuses drugs to enter treatment. This intervention consists of up to five sessions.

Self-help support groups

A group of families and carers of people who misuse drugs meet regularly to provide help and support for one another.

Guided self-help

A professional offers a self-help manual (for example, based on the 5-Step intervention) , provides a brief introduction to the main sections of the manual and encourages the families and/or carers of people who misuse drugs to work through it in their own time at home.

8.9.3 Databases searched and inclusion/exclusion criteria

Information about the databases searched and the inclusion/ exclusion criteria used for this section of the guideline is in Table 23.

Table 32: Databases searched and inclusion/exclusion criteria for clinical effectiveness of psychological interventions for carers

Electronic databases	MEDLINE, EMBASE, CINAHL, HMIC, PsycINFO, Cochrane Library
Date searched	Database inception to September 2006; table of contents September 2006 to November 2006
Study design	RCT
Patient population	Families and/or carers of people who misuse drugs
Interventions	Psychosocial interventions: CRAFT, 5-Step
Outcomes	Reduced stress Increased coping

The review team conducted a new systematic search for RCTs that assessed the efficacy and/or safety of community reinforcement and family training and 5-Step for families/carers of people who misuse drugs (see Table 18).

For community reinforcement and family training, two trials (KIRBY1999; MEYERS2002) met the eligibility criteria, providing data on 152 participants. Both trials were published in peer-reviewed journals.

For the 5-Step intervention, one trial (COPELLOin press) met the eligibility criteria, providing data on 114 participants. This trial is in press.

In addition, two trials were excluded from the analysis because they did not have control groups.

Community reinforcement and family training

In both trials (Kirby *et al.*, 1999; Meyers *et al.*, 2002), community reinforcement and family training was compared with 12-step-based self-help groups (including 12-step facilitation) for carers.

The primary outcomes of these studies were to engage people who misuse drugs and who had refused treatment into treatment, to reduce carers' reported problems (social/emotional, relationship and health-related) and improve carers' psychological functioning (mood and social adjustment). Neither study found statistically significant differences between community reinforcement and family training and 12-step-based self-help groups in relation to carer problems and psychological functioning. Kirby and colleagues (1999) found statistically significant changes from baseline for both groups in relation to carer problems and psychological functioning. However, Meyers and colleagues found no statistically significant differences (after Bonferroni corrections) in changes from baseline at 12-month follow-up.

5-Step intervention

Copello and colleagues (in press) conducted a cluster-randomised trial (n = 143) comparing two intensities of a 5-Step intervention. Primary care professionals were trained how to offer the 5-Step intervention and asked to

recruit and deliver the intervention to family members of people who misuse drugs and/or alcohol. All family members had experienced significant distress and lived with the person who misuses drug or alcohol in the last 6 months. The majority of the sample were relatives of people who misuse alcohol; only 41.2% were relatives of people who misuse drugs. The largest proportions of family members included in the study were wives (43.1%) and children (35.3%).

Each primary care professional was treated as a cluster and was randomised to either the full intervention or guided self-help condition. The 'full intervention' consisted of up to five sessions, while guided self-help comprised of one session, with the primary care professional introducing the self-help manual (based on the 5-Step model used in the full intervention) to the family member and encouraging him or her to work through it in his or her own time.

The two primary outcomes related to physical and psychological health (symptom rating test), and coping (the coping questionnaire). No statistically significant differences were found between the full intervention and the guided self-help conditions for both physical and psychological symptoms (WMD = 0.23; 95% CIs: -4.11 to 3.65), and coping (WMD = 0.12; 95% CIs: -5.42 to 5.19).

8.9.4 Clinical summary

For both community reinforcement and family training and 5-Step interventions, there were no statistically significant differences found between these more intensive interventions and self-help (that is, 12-step self-help groups and guided self-help). It appears that self-help interventions are as effective as more intensive psychological interventions in reducing stress and improving psychological functioning for carers and families of people who misuse drugs.

8.9.5 Clinical practice recommendations

8.9.5.1 Families and carers should be informed of, and if appropriate offered, services to specifically address their needs. These may include:

- the use of guided self-help
- support groups – for example, self-help groups solely for families and carers, which are focused on addressing carers' needs.

8.9.5.2 If families and carers have been offered but not benefited from guided self help and/or support groups and continue to have

significant family problems, consideration should be given to providing formal psychological interventions. This should:

- provide information and education about drug misuse
- help identify sources of drug misuse related stress
- exploring and promoting effective coping behaviours
- normally consist of at least five weekly sessions.

9 Residential, prison and inpatient care

9.1 Introduction

This chapter considers the extent to which the setting in which drug treatment is provided can have an impact upon the effectiveness of that treatment. Drug treatment in the UK currently takes place in a variety of settings. The settings are considered in the tiered approach to treatment (NTA, 2006a). In this system, Tier 1 treatment refers to the provision of generic services to drug users (for example, provision of general medical services by general practitioners). Tier 2 treatment refers to low-threshold drug-specific services such as needle and syringe and distribution. Tier 3 treatment refers to more structured interventions for drug misuse, which are delivered in the community. Examples of such interventions include opiate maintenance therapy and drug-misuse-specific psychological therapies. Tier 4 treatment refers to structured interventions that take place in residential settings. Examples include drug treatment in residential rehabilitation centres, prisons or hospitals. The primary focus of this chapter is on Tier 4 but where possible comparisons will be made with services provided at other tiers.

In the UK, most structured drug treatment takes place in the community provided by statutory and independent sector services. Traditionally this has been through people who misuse drugs volunteering to enter treatment. However, there has recently been a rapid expansion in forms of so-called 'coerced' treatment. Coerced treatment, also referred to as legally mandated treatment, requires that the drug user enter into treatment as an alternative or adjunct to criminal sanctions (Wild *et al.*, 2002). Such treatment can either be legally ordered by the court or through diversion away from the judicial process, usually following arrest and charge of the person who misuses drugs for drug related and other offences.

Despite the recent policy shift to diversion away from the courts, however, many people who misuse drugs still serve prison sentences. Strang *et al.* (2006) found that 55% of a random sample of male prisoners in England and Wales had reported prior use of heroin, cocaine or amphetamine and that 59% of these prisoners had reported using these drugs a month before current imprisonment. Furthermore, over recent years, the prison population in the UK has been rising suggesting the importance of drug-misuse treatment in the prison setting. Such treatment is increasingly being offered following a number of recent developments, including the phased transfer of responsibilities for commissioning healthcare in publicly funded prisons from the Home Office to the NHS (DH, 2006a). Whilst the mainstay of treatment has traditionally been one of detoxification upon admission to prison, there

has been a recent policy shift allowing increased access to opiate substitution therapy and psychosocial interventions.

Despite the increasing recognition and availability of appropriate specialist treatment in hospitals the primary method of planned alternative treatment to community services remains residential rehabilitation. Best and colleagues (2005) estimated that 6,090 places were made available for residential rehabilitation in 2003/4. Day and colleagues (2005) also conducted a survey, although the focus was predominantly on provision of inpatient detoxification. There were an estimated 532 beds available for people who misuse drugs in residential rehabilitation units in the UK with a total of 1,085 admissions per year. In contrast, there were estimated to be 356 specialist in-patient beds available for problem drug users with an estimated 6,829 annual admissions. In addition, there were an estimated 103 beds available in non-specialist psychiatric or medical wards with a total of 2,077 admissions per year. This resulted in a combined estimate of 10,711 annual admissions for people who misuse drugs in inpatient or residential treatment (Day *et al.*, 2005).

9.2 Inpatient settings

The key feature of an NHS inpatient unit for the treatment of drug misuse is the provision of assessment, stabilisation and/or detoxification, and psychosocial interventions with 24-hour cover from a multi-disciplinary team (including psychiatrists, psychologists, nurses, occupational therapists, and so on) with specialist training in drug misuse. Inpatient treatment is provided for people with significant physical or psychiatric comorbidities who require 24-hour medical care (SCAN, 2006).

Day and colleagues (2005) survey of inpatient services in England found that NHS inpatient units offered a mean of 18 hours per week of psychological treatment predominantly delivered within groups. The most frequently provided psychological treatments in this setting were relapse-prevention cognitive behavioural therapy (82%), motivational enhancement (50%) and standard cognitive behavioural therapy (43%).

The primary drug problems for most people admitted to inpatient units were opiate misuse (35%), poly-drug misuse (12%), and drug and alcohol misuse (10%). In contrast, only 3% of people admitted had a primary stimulant problem (Day *et al.*, 2005).

There are no studies that have specifically assessed the efficacy of inpatient treatment in comparison with a meaningful control group. Although NTORS included eight NHS inpatient units, outcomes from residential and inpatient settings were combined, therefore specific conclusions on the efficacy of inpatient treatment are not possible (Gossop *et al.*, 2003).

9.2.1 Clinical practice recommendation

9.2.1.1 Psychosocial interventions in inpatient settings should consist of the same range of interventions offered in community settings and would normally include contingency management, family interventions, cognitive behavioural interventions and encouragement to participate in self-help programmes. Treatment in inpatient settings should normally be reserved for those who require a high level of medical and nursing support because of comorbid physical or severe psychiatric problems, and may be associated with a detoxification programme.

9.3 Residential settings

9.3.1 Introduction

It has been accepted policy for some time that residential rehabilitation centres comprise an important element in the integrated care pathways for people who misuse drugs at different stages of their treatment, being of particular importance in providing a possible pathway out of dependence (DH, 2006b; NTA, 2006b). However, residential rehabilitation treatment has not experienced the same growth as community-based treatment options, and some have argued for the need to increase both its availability and uptake (for example, Best *et al.*, 2005). The absence of good evidence from formal evaluations of the relative efficacy of residential centres compared to community based alternatives may be one reason for this limited expansion in services. In addition little is known about which subgroups of the drug misusing population are most likely to benefit from treatment in residential settings, the relative treatment and cost effectiveness of different types of treatment philosophy, and the cost-effective length of stay in such units.

The primary focus of drug misuse treatment in the UK has tended of recent years towards harm reduction rather than abstinence. However, recent policy changes have brought a renewed focus on abstinence as a primary treatment goal (NTA ,2005)and in line with this shift in attitude, there has been a growing number of residential facilities in the UK offering abstinence-oriented treatment . Many residential rehabilitation programmes aim to achieve abstinence from substance misuse, offer psychosocial support and provide structured programmes of daily activities, which residents are required to attend. In England, the National Treatment Outcomes Research Study (NTORS; Gossop *et al.*, 1999) has identified 12-step programmes and TCs along with Christian houses as the main providers of residential services.

12-step-based residential treatment

Just under half of the services in the NTA online directory of residential rehabilitation currently describe themselves as 12-step-based (Meier, 2005). The 12-step model, an increasingly broad term stemming from the 12 steps of

the Alcoholics Anonymous (AA) model, assumes that drug users have lost control over their dependence as a result of biological or psychological vulnerability (www.alcoholics-anonymous.org.uk). Treatment attempts to bring about acceptance of the condition by having an 'addict' identity, and acceptance of abstinence as the goal of treatment by involvement in 12-step activities (Finney *et al.*, 1998). In the context of residential treatment, residents usually work their way through the steps as part of a planned programme of care, which also involves other individual and group therapeutic activities. The residential element of 12-step programmes is often quite short, lasting no longer than 3 months, but ex-residents will be expected to continue to attend self-help group meetings in the community, for example Narcotics Anonymous (NA) and Cocaine Anonymous (CA). (NTA, 2006b).

Therapeutic communities

Over half of residential services in the NTA online directory describe themselves as therapeutic communities, which, like 12-step programmes, have abstinence from illicit and prescribed drugs as a primary goal. Where they differ from other treatment approaches is in the use of the residential 'community' as the key agent for change. Peer influence is used to help individuals acquire social skills and learn social norms and so take on an increased level of personal and social responsibility within the unit (Smith *et al.*, 2006). In addition to social learning theory-based therapeutic communities, there are rehabilitation centres that emphasise more behavioural, hierarchical principles that positively and negatively reinforce a range of behaviours. Residential therapeutic communities involve therapeutic group work, one-to-one key working, the development of practical skills and interests, education and training. The intensive nature of their approach means that such programmes tend to be longer in duration (6 to 12 months) (Greenwood, 2001).

The evidence base for residential units

There have been a number of cohort studies in the UK, US and Australia that have investigated residential treatment. Many of these have reported improved outcomes (Bennett & Rigby, 1991; De Leon & Jainchill, 1982; Gossop *et al*, 1999). NTORS included 15 residential rehabilitation units and about half of the service users (51%) had been abstinent from opiates throughout the 3 months prior to 1-year follow-up; rates of injection drug use were also halved, and rates of needle sharing were reduced to less than a third of intake levels (Gossop *et al.*, 1999).

The NTORS 4–5 year follow-up found that the percentage of residential service users who were abstinent from illicit drug use had increased from 1% at intake to 38% after 4–5 years. Almost half (49%) of the residential service users were abstinent from heroin after the same period (Gossop *et al.*, 2003).In the Drug Abuse Reporting Programme (DARP), Simpson and Sells (1990) found that most of the long-term (12 years) improvement was attained in the first 3 years after treatment. The similarities between the results of the NTORS

and those of studies such as the DARP, Treatment Outcome Prospective Study (TOPS) and Drug Abuse Treatment Outcome Study (DATOS) (Hubbard *et al*. 1989; Simpson & Sells, 1990; Hubbard *et al.*, 1997) have been noted (for example, Leshner, 1997).

The US DATOS examined predictors of self-reported health status among a sample comprising 10,010 service users receiving drug misuse treatment. Results revealed that there were good outcomes after one year for service users (n = 2,966) treated using long-term residential and short-term inpatient treatment modalities. Regular cocaine misuse, the most common presenting problem, was reduced to about one third of intake levels among service users from both the long- and short-term programmes, as was regular heroin misuse (Flynn *et al.*, 1997). Rates of abstinence from cocaine and heroin also improved after residential treatment.

Although these large-scale cohort studies provide some interesting data, there are a number of factors that limit their usefulness in evaluating residential treatment. Firstly, in the cohort studies discussed above, there is a lack of meaningful comparison groups. Therefore, conclusions are limited to before and after changes in outcome for the residential treatment group, with the possibility that changes may be due to spontaneous recovery or some systematic bias in the selection of those who enter residential treatment. Additionally, data from very different residential treatments are often combined, therefore making it impossible to assess the effectiveness of various types of residential treatment. These limitations suggest the need for studies that use appropriate comparison groups and assess the efficacy of specific types of residential treatment.

9.3.2 Databases searched and inclusion/exclusion criteria

Table 33: Databases searched and inclusion/exclusion criteria for clinical effectiveness of residential treatment

Electronic databases	MEDLINE, EMBASE,CINAHL, HMIC, PsycINFO, Cochrane Library
Date searched	Database inception to May 2006 ; table of contents December 2005 to November 2006
Study design	RCT and cohort
Patient population	People who misuse drugs
Interventions	Residential interventions
Outcomes	Abstinence, drug misuse

9.3.3 Studies considered[14]

The review team conducted a new systematic search for RCTs and cohort studies that assessed the efficacy of residential interventions. Comparisons

[14] Here, and elsewhere in the guideline, each study considered for review is referred to by a study ID in capital letters (primary author and date of study publication, except where a study is in press or only submitted for publication, then a date is not used).

between residential and community-based treatment, as well as meaningful comparisons between residential treatments, were focused on.

For the review of therapeutic communities, two RCTs (GREENWOOD2001; NEMES1999) met the eligibility criteria set by the GDG, providing data on 673 participants. Both were published in peer-reviewed journals.

For the review of 12-step residential treatment, one cohort study (FINNEY1998) met the eligibility criteria set by the GDG, providing data on 3018 participants. This was published in a peer-reviewed journal.

For the review comparing residential and day treatments, two RCTs (GREENWOOD2001; SCHNEIDER1996) met the eligibility criteria set by the GDG providing data on 335 participants. Both were published in peer-reviewed journals.

In addition, 15 studies were excluded from the analysis. The most common reason for exclusion was not providing required outcomes (further information about both included and excluded studies can be found in Appendix 14).

9.3.4 Outcomes

The primary outcomes assessed were related to abstinence and drug use. Abstinence can be expressed in a variety of ways, but the two main measures examined were point abstinence and duration of abstinence. Measures based on urinalysis were preferred but self-report measures were not excluded. Point abstinence refers to evidence for the absence of drug use at a particular point in time (for example, end of treatment or at 12-month follow-up). Measures of the duration of abstinence over a period of time were also assessed, for example, how long a person remained abstinent, and the proportion of days a person was abstinent over a period of time.

Frequency of illicit drug use was also an important measure because, although abstinence may be a desired goal, reducing drug misuse may be a more realistic way of reducing drug-related harm. Drug misuse is usually measured by self-report, often in terms of the frequency of using particular drugs over a period of time.

9.3.5 Therapeutic communities

Table 34: Summary evidence table for trials of therapeutic communities*

	Residential TC versus day treatment TC	10 months residential + 2 months aftercare versus 6 months residential + 6 months aftercare
Total no. of trials (total	1 RCT (N = 261)	1 RCT (N = 412)

no. of participants)		
Study ID	GREENWOOD 2001	NEMES1999
Problem drug or diagnosis	Crack cocaine: 67% Heroin: 13% Alcohol: 10%	Crack cocaine – percentages not provided
Treatment length	12 months	See above
Length of follow-up	18 months	12 months
Age (years)	33	No data provided
Point abstinence	12-month follow-up: RR 0.90 (0.67 to 1.22) K = 1, N = 261	Abstinence from crack/cocaine at 12-month follow-up: RR 1.10 (0.90 to 1.35) K = 1, N = 412
Duration of abstinence	-	-
Illicit drug use	-	-

*Residential versus day: RR > 1 favours residential
10 months + 2 months versus 6 months + 6 months: RR>1 favours 10 months + 2 months

Table 34 summarises the data on therapeutic communities. No differences in abstinence at 12-month (RR = 0.90; 95% CI: 0.67 to 1.22) or 18-month (RR = 0.86; 95% CI: 0.65 to 1.14) follow-up were found between a residential therapeutic community and a day treatment therapeutic community programme (Greenwood *et al.*, 2001). Nemes and colleagues (1999) found that a 12-month course of treatment that included at least 6 months in a residential therapeutic community followed by community aftercare was as effective as 10 months in a residential therapeutic community followed by 2 months of community aftercare in terms of abstinence outcomes. However, the lack of an adequate comparison group (for example, community-based treatment or treatment as usual) makes it difficult to assess the efficacy of either treatment programme.

It is very difficult to draw conclusions from this data due to the sparseness of the evidence. Furthermore, it is questionable whether the high proportions of participants with a primary crack cocaine problem reported in these studies are comparable with UK residential treatment populations, where only an estimated 3% had a primary stimulant problem (Day *et al.*, 2005). This evidence is consistent with Smith and colleagues (2006), who conducted a systematic review and concluded that there is a lack of research assessing the effectiveness of therapeutic communities or whether one type of therapeutic community is better than another.

9.3.6 12-step-based residential rehabilitation

Table 35: Summary evidence table for trials of 12-step residential treatment*

	Residential 12-step versus residential RP	Residential 12-step versus eclectic residential
Total no. of trials (total no. of participants)	1 cohort study (N ~ 1,500)	1 cohort study (N ~ 1,500)
Study ID	FINNEY 1998	FINNEY1998
Problem drug or diagnosis	Drug dependence (13%) Drug and alcohol dependence (51%) Alcohol dependence (36%)	Drug dependence (13%) Drug and alcohol dependence (51%) Alcohol dependence (36%)
Treatment length	3 to 4 weeks	3 to 4 weeks
Length of follow-up	12 months	12 months
Age (years)	43	43
Point abstinence	12-month follow-up: RR 1.25 (1.13 to 1.39), favours 12-step K = 1, N = 3,018	12-month follow-up: RR 1.13 (1.01 to 1.25), favours 12-step K = 1, N = 3,018
Drug use	-	-

* RR >1 favours 12-step

Only one study was found assessing the effectiveness of 12-step-based residential treatment (see 35). This study was a large prospective cohort (n = 3,018) that compared 12-step-based residential treatment with relapse-prevention cognitive behavioural therapy and eclectic (combining elements of 12-step and cognitive behavioural therapy approaches) residential treatments (Finney *et al.*, 1998). At 12-month follow-up, participants receiving 12-step-based treatment were more likely to remain abstinent and had fewer substance use problems than those in the relapse-prevention cognitive behavioural therapy and eclectic programmes. However, for both comparisons the effect was small and would equate to a number needed to treat of 11 for 12-steps compared with the relapse-prevention cognitive behavioural therapy group and a number needed to treat of 25 for 12-steps compared with the eclectic group.

9.3.7 Comparison of residential and day treatment

There were two trials comparing residential and day treatment (see Table 36).

Table 36: Summary evidence table for trials comparing residential with day treatment*

	Residential treatment versus day treatment
Total no. of trials (total no. of participants)	2 RCTs (N = 335)
Study ID	GREENWOOD2001 SCHNEIDER1996
Problem drug or diagnosis	GREENWOOD2001: Crack cocaine (67%) Heroin (13%) Alcohol (10%) SCHNEIDER1996: Cocaine dependent (100%)
Treatment length	GREENWOOD2001 Residential TC: 40 hours/week plus additional time at weekend for 12 months Day treatment TC: received in the same treatment centre with the same intensity but did not have the 24-hour structure of the programme SCHNEIDER1996 Residential: 30-42 hours/week for 2 weeks — group psychoeducation, CBT (RP), 12-step facilitation Day treatment: 25 hours/week for 2 weeks — group psychoeducation, counselling, CBT (RP), 12-step facilitation
Length of follow-up	3 months (SCHNEIDER1996) 12 months to 5 years (GREENWOOD2001)
Age (years)	31 to 40
Point abstinence	Abstinence for TC at 12-month follow-up: RR 0.90 (0.67 to 1.22) K = 1, N = 261 Abstinence at 3-month follow-up: RR 1.65 (0.99 to 2.74) K=1 N=74
Drug use	-

*RR>1 favours residential

One trial compared therapeutic communities in residential and day treatment (Greenwood *et al.*, 2001). All participants received their treatment in the same treatment centre; the first 6 months of treatment was focused on drug misuse problems and the last 6 months helped participants develop independent employment and living arrangements. The main differences between the groups were that the day treatment group did not have the 24-hour structure

experienced by the residential group. Additionally, the requirement of abstinence from illicit drugs was more stringent for the residential group, who received immediate expulsion from the programme for non-compliance. Although abstinence was also a requirement for the day treatment group, this was enforced more flexibly.

The other included trial compared eclectic residential and day treatment. This intervention was of a much shorter duration of 2 weeks. The residential group was slightly more intensive than the day treatment group, receiving 6 hours a day of treatment. It is not clear whether the same level of intensity was provided during the weekend. The day treatment group received 5 hours of interventions per day from Monday to Friday. Interventions included group relapse-prevention cognitive behavioural therapy, counselling, psychoeducation and 12-step facilitation (Schneider *et al.*, 1996).

It is not possible to meta-analyse the results of these two studies as they differ in terms of treatment length, content and follow up. Greenwood and colleagues (2001) found no differences between residential and day treatment at 12 month (RR = 0.90; 95% CI: 0.67 to 1.22) or 18 month (RR = 0.86; 95% CI: 0.65 to 1.14) follow up. However, Schneider and colleagues (1996) found that participants in the residential group were more likely to be abstinent than those in day treatment at 3 month follow up (RR = 1.65; 95% CI: 0.99 to 2.74).

9.3.8 Predictors of benefit from residential rehabilitation

The DATOS found that service users with a history of previous residential treatment engagement had poorer outcomes (Anglin *et al.*, 1997; Hser *et al.*, 1999), in contrast to clinical practice in the UK, where residential rehabilitation has traditionally been reserved for those who have tried and failed all other community-based options (Day *et al.*, 2005). There is some limited evidence to suggest that drug users with more severe problems will experience better outcomes from treatment stays of 90 days or longer, rather than programmes of shorter duration (Simpson, 1997). The NTORS found that, for cocaine users, improvements in rates of abstinence were found only among those in residential rehabilitation (Gossop *et al.*, 2003). However, the importance of this finding is difficult to interpret as cocaine misuse did not appear to be the primary problem for most participants in this study.

One issue that affects most research evaluations of residential rehabilitation programmes is that treatment dropout is common. In common with outcomes from other treatment modalities, service users who completed residential programmes achieved better outcomes on drug misuse, crime, employment and other social-functioning measures (De Leon *et al.*, 1982; Hubbard *et al.*, 1989). It is unclear whether this relates to choice or motivation on the part of the service user or whether active retention in treatment achieves successful outcomes.

9.3.9 Clinical summary

There is a lack of well-conducted studies assessing the efficacy of residential in comparison to community-based treatment for drug misuse and the efficacy of specific types of residential treatment. Additionally, many studies (for example, Finney, 1998) contain samples that have large proportions of participants who do not misuse drugs. Therefore, it is difficult to draw any firm conclusions from the studies on the comparative efficacy of 12-step-based and TC residential treatments or even if these interventions confer any advantages over well delivered community based interventions. Given the relatively high costs of these interventions it is clear that further research in this area is urgently needed. There is some indication of benefit from cohort studies but in the absence of RCT evidence few conclusions can be drawn from these studies. It is also not possible to distinguish the additional benefit that might accrue to an individual from a period in residential rehabilitation over and above that which was obtained from the initial period of detoxification.

Whilst traditional practice in the UK has been for service users to be referred for residential treatment when they have failed a long period of community care, there is some evidence to suggest that those less well established in their drug using careers may benefit from residential care.

9.3.10 Clinical practice recommendations

9.3.10.1 Residential treatment may be considered for people who have comorbid physical, psychiatric, or social (for example, housing instability) problems and/or have not benefited from previous community-based treatment. Treatment is often associated with a detoxification programme and may be followed by a period of community-based aftercare.

9.3.10.2 People who have relapsed to opiate use during or after treatment in an inpatient or residential setting should be offered an urgent assessment and considered for prompt access to alternative community or inpatient support including maintenance treatment.

9.3.11 Research recommendation – residential treatment

9.3.11.1 For people who misuse drugs, is residential treatment associated with better outcomes compared to community based care as measured by higher rates of abstinence or reduction in drug use?

Why this is important

There have been some studies comparing residential treatment with community based treatment. However, these studies are often based on small

sample sizes, lack methodological quality and have produced inconsistent results. Residential treatment requires significantly more resources than community based treatment, therefore it is important to assess whether residential treatment is more effective.

9.4 Legally mandated treatment interventions

9.4.1 Introduction

Recently in the UK, drug treatment has increasingly been offered as part of a legal mandate either by order or a court, or by diversion from the judicial system. Commentators have noted that compulsory (also known as legally mandated) treatment and coerced treatment are not necessarily the same. For example, Wild and colleagues (2002) found that evaluations of those mandated to compulsory treatment have shown wide variations in perceptions of coercion, readiness to change their behaviour and perceived justifiability of a mandate to socially control their drug misuse. Additionally, although legally mandated treatment status does predict perceived level of coercion, many legally mandated users do not feel coerced into treatment. Paradoxically, many who self-refer do report feeling coercion, often by family members (Polcin & Weisner, 1999).

The critical question for NHS services is whether people who misuse drugs who are engaged in criminal activity require criminal sanctions, drug treatment or a combination of both. This section seeks to present the evidence pertaining to the effectiveness of coerced versus voluntary treatment across a number of outcome variables. These outcomes include uptake of treatment, retention in treatment, abstinence from drugs or a reduction in drug taking, and reduction in rates of imprisonment.

9.4.2 Databases searched and inclusion/exclusion criteria

Table 37: Databases searched and inclusion/exclusion criteria for clinical effectiveness of legally mandated treatment

Electronic databases	MEDLINE, EMBASE, CINAHL, HMIC, PsycINFO, Cochrane Library
Date searched	Database inception to May 2006; table of contents December 2005 to November 2006
Study design	RCT Observational studies Systematic reviews
Patient population	People who misuse drugs
Interventions	Legally mandated drug treatment
Outcomes	Abstinence, drug misuse

For the review of legally mandated treatment, one systematic review (WILD2002) met the eligibility criteria set by the GDG. This review was published in a peer-reviewed journal.

9.4.3 Comparisons of legally mandated and voluntary treatment

Most of the research in this area has been conducted in the USA. Wild and colleagues' (2002) systematic review showed that mandated treatment generally demonstrated better outcomes in terms of treatment process; that is, uptake of treatment following referral and retention in treatment. However, mandated treatment was not superior to voluntary treatment in terms of reductions in criminal behaviour or substance misuse.

A 12-month prospective cohort study in Australia of 92 heroin users compared those mandated to treatment with those who self-referred. They found that cumulative incarceration rates were higher in the mandated group than the voluntary treatment group, though the mandated group was more problematic (that is, had lower levels of education and employment and higher levels of antisocial behaviour) at baseline (Dresland & Batey, 1992).

A US-based study of 610 service users compared those mandated to methadone maintenance with those who accessed methadone maintenance voluntarily. They found a higher dropout rate, due to incarceration, for those mandated to treatment. However, there was no difference between the groups at 1-year follow-up for percentage of positive urine samples (Desmond & Maddux, 1996).

9.4.4 Clinical summary

There has been limited research assessing the efficacy of legally mandated treatment. Despite potential concerns of some commentators the evidence reviewed above does suggest that the more negative outcomes found in legally mandated treatments may be explained by the nature of the difficulties of those entering mandated treatment when compared to those in voluntary treatment rather than its compulsory nature.

9.4.5 Clinical practice recommendation

9.4.5.1 For people who misuse drugs, access to and choice of treatment should be the same whether they participate in treatment voluntarily or are legally required to do so.

9.5 Prison

Relatively few studies have evaluated the effectiveness of prison-based psychosocial interventions. In this section, research findings are presented for the effectiveness of the following interventions based in the prison setting: therapeutic communities use the residential 'community' as the key agent for change. Peer influence is used to help individuals acquire social skills and learn social norms and so take on an increased level of personal and social responsibility within the unit (Smith *et al.*, 2006). Therapeutic communities involve therapeutic group work, one-to-one key working, the development of practical skills and interests, education and training. The intensive nature of

their approach means that such programmes tend to be longer in duration (6–12 months) (Greenwood, 2001).

Therapeutic community work release programmes are for people who have been released from prison and who misuse drugs. They consist of community-based residential therapeutic community programmes with additional emphasis on assisting former prisoners to enter employment.

Boot camps refer to the delivery of the correctional intervention within a paramilitary style of working.

9.5.1 Databases searched and inclusion/ exclusion criteria

Information about the databases searched and the inclusion/ exclusion criteria used for this section of the guideline can be found in Table 38.

Table 38: Databases searched and inclusion/ exclusion criteria for clinical effectiveness of prison-based psychosocial interventions

Electronic databases	MEDLINE, EMBASE, PsycINFO, Cochrane Library
Date searched	Database inception to May 2006; table of contents December 2005 to November 2006
Study design	RCT Observational studies
Patient population	People who misuse drugs
Interventions	Prison-based treatment: therapeutic communities, 12-steps Community-based post-release residential treatment: therapeutic communities, 12-steps Boot camps, shock incarceration
Outcomes	Abstinence, drug misuse, reincarceration, recidivism, criminal activity

9.5.2 Studies considered[15]

The review team conducted a new systematic search for RCTs and observational studies that assessed the efficacy of prison-based and post-release treatment.

For the prison-based and post-release therapeutic community review, three RCTs (NEILSEN1996; SACKS2003; WEXLER1999) met the eligibility criteria set by the GDG, providing data on 1,682 participants. All of these were published in peer-reviewed journals.

For the review of boot-camps, two studies conducted by (ZHANG2000) met the eligibility criteria. These studies were published in a peer-reviewed journal.

[15] Here, and elsewhere in the guideline, each study considered for review is referred to by a study ID in capital letters (primary author and date of study publication, except where a study is in press or only submitted for publication, then a date is not used).

In addition, 12 studies were excluded from the analysis. The most common reason for exclusion was unrequired outcomes (further information about both included and excluded studies can be found in Appendix 14).

9.5.3 Outcomes

Relapse is referred to here as the use of any illicit drugs during treatment or at follow-up.

Illicit drug use is the frequency of illicit drug use over a period of time and is usually measured by self-report.

Criminal activity is referred to here as the frequency of criminal activities committed by a person. This is often measured by self-report as not all criminal activity will be officially detected.

Recidivism is the frequency of a person being arrested and charged for criminal activity.

Reincarceration refers to whether a person who has been released from prison has returned to prison after a particular period of time.

Table 39: Summary evidence table for trials of prison and work release therapeutic communities, and boot camps*

	Prison TC + aftercare versus prison control	Residential TC work release programmes versus standard aftercare	Boot camp versus traditional juvenile camp
Total no. of trials (total no. of participants)	2 RCTs (N = 993)	1 RCT (N = 688)	Retrospective cohort study (N = 854)
Study ID	SACKS2003 WEXLER1999	NEILSEN1996	ZHANG2000
Diagnosis	Drug: 20% crack/cocaine, 30% cannabis, 30% alcohol Psychiatric: 70% Axis I, 39% ASPD (SACKS2003) Drug: 100% illicit drug use Psychiatric: 51.5% ASPD (WEXLER1999)	Cocaine: 40% Crack: 11% Heroin: 13% Cannabis:11% Alcohol: 13%	Drug and/or alcohol history
Treatment length	1 year prison TC and 1 year community-based aftercare (WEXLER1999) 1 year prison TC and 6 months' community-based aftercare (WEXLER1999)	6 months	6 months' boot camp and 6 months' aftercare
Length of	1 to 5 years	1 year	1 year

follow-up			
Illicit drug use	-	Relapse 6-month follow-up: RR 0.49 (0.41 to 0.58) K = 1, N = 688	Illicit drug use 12-month follow-up: SMD -0.21 (-0.49 to 0.06) K = 1, N = 200
Crime	Reincarceration: 12-month follow-up: RR 0.48 (0.20 to 1.12) K = 2, N = 854 5-year follow-up: RR 0.93 (0.87 to 0.99) K = 1, N = 715 Criminal activity: RR 0.69 (0.52 to 0.93), K = 1, N = 139	Recidivism 6-month follow-up: RR 0.65 (0.53 to 0.78) K =1, N = 688	Arrested 12-month follow-up: RR 0.95 (0.73 to 1.22) K = 1, N = 200 Arrested 4-year follow-up: RR 0.99 (0.94 to 1.05) K = 1, N = 854

* RR < 1 favours intervention; negative SMD values favour intervention

9.5.4 Therapeutic communities

Three RCTs have been conducted in the prison setting evaluating the evidence for psychosocial interventions. All of the three RCTs evaluated therapeutic communities and were conducted in the USA (NIELSEN1996; SACKS2004; WEXLER1999). In two of the three trials the intervention included treatment within prison followed by release to a residential community of 6 months' duration (SACKS2004; WEXLER1999). The third trial (NIELSEN1996) assessed a work release therapeutic community programme.

The main outcomes were for crime and relapse and were assessed over a follow-up period of up to 5 years. In summary, therapeutic community prison and aftercare programmes and therapeutic community work release programmes were associated with reductions in criminal activity (RR = 0.69; 95% CI: 0.52 to 0.93), recidivism (RR = 0.65; 95% CI: 0.53 to 0.78) and relapse (RR = 0.49; 95% CI: 0.49 to 0.58). For reincarceration, the difference was not statistically significant at 12-month follow-up (RR = 0.48; 95% CI: 0.20 to 1.12) but there was a strong trend favouring prison therapeutic communities, with a number needed to treat of 5. At 5-year follow-up the difference was statistically significant (RR = 0.93; 95% CI: 0.87 to 0.99).

9.5.5 Boot camps

There was a retrospective cohort study on boot camps with a total of 854 participants reported by a team of researchers in the US (Zhang 2000). Participants in boot camps did not differ from controls for drug use at 12-month follow up (SMD = -0.21; 95% CI: -0.49 to 0.06) and for proportion arrested at 12 months (RR = 0.95; 95% CI: 0.73 to 1.22) and 4 years (RR = 0.99; 95% CI: 0.94 to 1.05).

9.5.6 Clinical summary

The therapeutic community approach in prison settings in the United States appeared to be associated with a reduction in reincarceration rates, criminal activity and recidivism and these effects were maintained at follow up. The evidence also suggests that, subsequent to release from prison, continuing community-based interventions such as therapeutic community attendance or involvement in community-based work programmes may be important in maintaining the benefits of the intervention. In contrast, boot camps do not appear to be effective for offenders who misuse drugs — no differences were reported on crime outcomes and drug misuse at follow-up.

9.5.7 Clinical practice recommendations

9.5.7.1 For people in prison with drug misuse problems, treatment options offered should be broadly equivalent to those available in the community. Healthcare professionals should take into account additional considerations specific to the prison setting, which include:

- length of sentence or remand, and the possibility of unplanned release
- risk of self-harm, death and post-release overdose.

9.5.7.2 People in prison with significant drug misuse problems should be offered access, if appropriate, to a therapeutic community developed for the specific purpose of treating drug misuse within the prison environment.

9.5.7.3 For people who have made an informed and appropriate decision to receive drug treatment after release from prison, community-based residential treatment should be arranged as part of an overall care plan.

10 Appendices

Supplied as separate files on the website:

Appendix 1: Scope for the development of the clinical guideline

Final version

28th September 2005

Guideline title

Drug misuse: psychosocial management of drug misusers in the community and in prison[16].

Short title

Drug misuse – psychosocial interventions[17].

Background

The National Institute for Health and Clinical Excellence ('NICE' or 'the Institute') has commissioned the National Collaborating Centre for Mental Health (NCCMH) to develop a clinical guideline on psychosocial management of drug misusers[18] in the community and prison settings, for use in the NHS in England and Wales. This follows referral of the topic by the Department of Health (see Appendix below). The guideline will provide recommendations for good practice that are based on the best available evidence of clinical and cost effectiveness.

The Institute has simultaneously commissioned the NCCMH to develop a clinical guideline on opiate detoxification of people who misuse drugs in the community, hospital and prison settings for use in the NHS in England and Wales.

The Institute's clinical guidelines will support the implementation of National Service Frameworks (NSFs) in those aspects of care where a Framework has been published. The statements in each NSF reflect the evidence that was used at the time the Framework was prepared. The clinical guidelines and technology appraisals published by the Institute after an NSF has been issued will have the effect of updating the Framework.

NICE clinical guidelines support the role of healthcare professionals in providing care in partnership with patients, taking account of their individual needs and preferences, and ensuring that patients (and their carers and

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[16] The guideline title changed during the development process to *Drug Misuse: Psychosocial Management of Drug Misuse*

[17] The short title changed during the development process to *Drug Misuse - Psychosocial*

[18] The term *drug misusers* has been replaced with *people who misuse drugs* throughout the guideline, with the exception of the scope

families, where appropriate) can make informed decisions about their care and treatment.

Clinical need for the guideline

The term opiate is used throughout this scope. Although this term normally implies substances containing natural opium, in this scope the term is used more broadly to include opioids (synthetic substances with similar properties).

It is estimated that there are between 250,000 and 500,000 problem drug users in the UK, of whom about 125,500 are in treatment in any year. There is a government target of ensuring 200,000 are in effective treatment in 2008. The majority of those requiring treatment are opiate dependent (and currently or previously using illicit heroin), although the use of other drugs such as stimulants (for example cocaine) is known to be increasing.

Severe opiate dependence is a disorder of multi-factorial aetiology, with multiple and varied perpetuating factors. It has a central feature of psychological reinforcement of repeated drug-taking behaviour and it also has a marked withdrawal syndrome. Disturbances of the brain reward pathways may be important underlying pathological mechanisms. For this reason, it is usually considered that a range of interventions may be required in addition to pharmacological treatments.

There may be associated problems of family, social and criminal justice difficulties, health problems including blood-borne viruses, and other drug and alcohol problems. Families themselves may be affected by the drug misuse and are often a major resource in resolving problems and supporting the family member through treatment.

For people with severe drug dependency and others with long-standing dependency, the disorder has characteristics as a long-term chronic relapsing disorder with periods of remission and relapse, so while abstinence may be one of a range of long-term goals of treatment, it is not always achieved. Even when abstinence is achieved, the benefits are not always maintained, and periods of relapse may still occur.

The societal costs of drug misuse have been estimated at many billions of pounds, with opiate dependence and use of other Class A drugs constituting the main cause of these costs.

Opiate substitution therapies (methadone and buprenorphine are most commonly used) allow the patient to replace street heroin with a longer-acting, less euphoriant and safer drug, while avoiding the withdrawal syndrome. Once stabilised, many patients remain on maintenance treatment,

which brings improvements in illicit drug use, physical health, well-being, social stabilisation and reduced criminality and costs to society. Pharmacological treatments for stimulant and cannabis misuse are not well developed.

Psychosocial interventions play an important part in the treatment of drug misusers. For opiate misusers they are often an important adjunct to pharmacological treatments and have been demonstrated to be effective. For stimulant misusers, psychosocial interventions are the mainstay of effective treatment interventions and there is an established evidence base. A similar, but less well-developed, evidence base also exists for psychosocial interventions for cannabis misusers.

People who misuse drugs in prison sometimes receive assistance with withdrawal symptoms and some receive a treatment programme in prison. Access to regular high levels of illicit drugs in prisons is limited, so most people with drug dependency lose tolerance and are at risk of overdose if – as commonly happens – they begin using again on release.

The guideline

The guideline development process is described in detail in two publications, which are available from the NICE website (see 'Further information'). *The Guideline Development Process – an Overview for Stakeholders, the Public and the NHS (Second Edition)* (NICE, 2006) describes how organisations can become involved in the development of a guideline. *The Guidelines Manual* (NICE, 2006) provides advice on the technical aspects of guideline development.

This document is the scope. It defines exactly what this guideline will (and will not) examine, and what the guideline developers will consider. The scope is based on the referral from the Department of Health (see Appendix below).

The areas that will be addressed by the guideline are described in the following sections:

Population

Groups that will be covered:

- adults and young people who misuse opiates
- adults and young people who misuse cannabis
- adults and young people who misuse stimulants (for example, cocaine or amphetamines)
- adults and young people who misuse more than one of the above.

Groups that will not be covered:

- Adults and young people with dual diagnoses, where the primary diagnosis and focus of intervention is not substance misuse but another mental disorder, for example depression, schizophrenia or other psychoses. Where appropriate, this guideline will refer to other NICE guidance for the treatment of other mental health disorders.

- Adults and young people who misuse alcohol, where the primary diagnosis and focus of intervention is alcohol misuse.

- Adults and young people who misuse prescription drugs, for example benzodiazepines.

- Adults and young people who misuse solvents (for example, aerosols and glue) or other street drugs (for example, LSD [lysergic acid diethylamide]).

- Adults and young people prescribed opiates and related drugs for therapeutic purposes unrelated to substance misuse.

Healthcare setting

The guideline will be of relevance to the NHS and related organisations, including:

- prison services

- inpatient and specialist residential and community-based treatment settings.

This is an NHS guideline. Although it will comment on the interface with other services such as those provided by social services, educational services and the voluntary sector, it will not provide specific recommendations directed solely to non-NHS services, except insofar as they are provided under contract to the NHS.

Clinical management – areas that will be covered

The guideline will cover the following areas of clinical practice and will do so in a way that is sensitive to the cultural, ethnic and religious backgrounds of people who misuse drugs/ are drug dependent and their families and carers.

- The guideline will include advice on the appropriate use of individual and group structured psychosocial interventions including their type, modality, frequency and duration. The psychosocial interventions considered may include motivational interviewing, cognitive behavioural therapy, contingency management, brief reinforcement-based intensive outpatient therapy, cue exposure therapy, programmes for treatment drop-outs, enhanced outreach counselling programmes, vocational rehabilitation programmes, family- and couple-based interventions and other psychological interventions provided in the NHS.

- The guideline will include the appropriate use of combination individual and/or group structured psychosocial interventions with pharmacological treatments. The pharmacological treatments will include methadone, buprenorphine, naltrexone and other appropriate pharmacological therapies.

- When referring to pharmacological treatments, the guideline will, wherever possible, recommend use within their licensed indications. However, where the evidence clearly supports it, recommendations for use outside the licensed indications may be made in exceptional circumstances.

- The safety, side effects and other disbenefits of the interventions reviewed will be considered.

- The guideline will address, where relevant, the issues of relapse prevention and the minimisation of harm and drug-related deaths

- The guideline will include guidance on risk management and suicide prevention, including appropriate assessment and aftercare.

- The guideline will address the integration of the interventions reviewed with a broad approach to the care and treatment of people who misuse drugs/are drug dependent and their families and carers.

- The guideline will consider the separate needs of families and carers as well as addressing the potential positive contribution of family and carers in the treatment and support of people who misuse drugs/ are drug dependent.

- The guideline will address the various needs for information of patients, families and carers, at different stages of their treatment and in different settings, including the role of self-help interventions and of support and self help groups.

Clinical management – areas that will not be covered

- The guideline will not consider diagnosis or primary prevention.

Status

Scope

This is the final draft of the scope following consultation, which will be reviewed by the Guidelines Review Panel and the Institute's Guidance Executive.

The guideline will incorporate the following NICE guidance, which is published or in development:

Methadone and Buprenorphine for the Treatment of Opiate Drug Misuse. NICE technology appraisal. (Publication expected March 2007.)

Naltrexone to Prevent Relapse in Drug Misuse. NICE technology appraisal. (Publication expected March 2007.)

Drug Misuse: Opiate Detoxification of Drug Misuse. NICE clinical guideline. (Publication expected July 2007.)

Schizophrenia: Core Interventions in the Treatment and Management of Schizophrenia in Primary and Secondary Care. NICE clinical guideline no. 1 (2002).

Anxiety: Management of Anxiety (Panic Disorder, with or without Agoraphobia, and Generalised Anxiety Disorder) in Adults in Primary, Secondary and Community Care. NICE clinical guideline no. 22 (2004).

Depression: Management of Depression in Primary and Secondary Care. NICE clinical guideline no. 23 (2004).

Self-Harm: the Short-Term Physical and Psychological Management and Secondary Prevention of Self-Harm in Primary and Secondary Care. NICE clinical guideline no. 16 (2004).

Guideline

The development of the guideline recommendations will begin in September 2005.

Further information

Information on the guideline development process is provided in:

- *The Guideline Development Process – an Overview for Stakeholders, the Public and the NHS (Second Edition)* (NICE, 2006)
- *The Guidelines Manual* (NICE, 2006)

These booklets are available as PDF files from the NICE website (www.nice.org.uk). Information on the progress of the guideline will also be available from the website.

Appendix – referral from the Department of Health

The Department of Health asked the Institute to prepare a guideline for the NHS in England and Wales on the psychosocial management of drug misusers in the community and prison settings.

The guidance will:

- by using the evidence base, examine the effectiveness and cost effectiveness of psychosocial interventions for the management of opiate, stimulant and cannabis misusers
- identify those groups of drug misusers who are most likely to benefit from psychosocial interventions
- identify the key components of the effectiveness of these treatments, within a wider package of pharmacological interventions, and the overall care provided for drug misusers.

Appendix 2: Special advisors to the Guideline Development Group

The Guideline Development Group and the National Collaborating Centre for Mental Health review team would like to thank the following people, who acted as advisors on specialist topics:

Appendix 3: Stakeholders who responded to early requests for evidence

College of Occupational Therapists
Community Health Sciences, Edinburgh University, and Muirhouse Medical Group
Darwin Centre for Young People
Derbyshire Mental Health Services NHS Trust
Pfizer Ltd
Royal College of Nursing
Royal College of Pathologists
Royal Pharmaceutical Society of Great Britain
Royal College of Physicians of Edinburgh
Royal College of Psychiatrists
SCAN
Sheffield Teaching Hospitals NHS Foundation Trust

Appendix 4: Stakeholders and experts who responded to the consultation draft of the guideline

Stakeholders

1

2

3 **Experts**

Appendix 5: Researchers contacted to request information about unpublished or soon-to-be published studies

Amanda Baker
Donald A. Calsyn
Kathleen M. Carroll
Paul Crits-Christoph
Michael J. Crawford
George DeLeon
Karen K. Downey
William Fals-Stewart
David Farabee
Michael Gossop
Edward Gottheil
Joseph Guydish
Stephen Higgins
Martin Y. Iguchi
Hendree E. Jones
Kimberly C. Kirby
Thomas Kosten
Susanne MacGregor
Jim McCambridge
Jane McCusker
James McKay
Jesse Milby
William Miller
Jo Neale
Ashwin A. Patkar
Nancy Petry
Richard Rawson
Damaris J. Rohsenow
Grace A. Rowan-Szal
Joy M. Schmitz
Harvey Siegal
Kenneth Silverman
Robert Stephens
Maxine Stitzer
Betty Tai
Olivia Washington
Stephen P. Weinstein
Roger Weiss
George Woody
David A. Zanis

Appendix 6: Clinical questions

Tier 1: Drug-related information and advice, screening and referral by generic services

1) Are there sensitive and specific methods for the identification of people who misuse drugs in health and social care settings where drug misuse is prevalent or where presentations are associated with drug misuse as an aetiological factor?

Tier 2: Open access, non-care-planned drug-specific interventions

2) For people who misuse drugs, are there effective psychosocial components of drug agencies* associated with reduced injection risk behaviours, reduced incidence of blood-borne diseases and engagement in treatment?

*including needle and syringe exchange programmes, drop-in centres and outreach services

3) For people who misuse drugs, are brief interventions associated with engagement in treatment, reduction/abstinence in use of drug(s)?

3.1) For people who misuse drugs, are interventions of a longer duration (for example, 12 weeks or more) compared with brief interventions associated with a reduction in the use of drug(s)/ abstinence and reduced risk of relapse at follow-up?

Tier 3: Structured, care-planned drug treatment

4) For people who misuse drugs, what structured psychosocial interventions are associated with a reduction in the use of drug(s)/abstinence and reduced risk of relapse at follow-up?

5) For people who misuse drugs, what structured psychosocial interventions in combination with pharmacological interventions are associated with a reduction in the use of drug(s)/abstinence and reduced risk of relapse at follow-up?

Tier 4: Residential settings

6) For people who misuse drugs, are residential settings associated with a reduction in use of drug(s) /abstinence and reduced risk of relapse at follow-up?

6.1) For people who misuse drugs, are there particular subgroups who are more likely to benefit from treatment in residential settings?

7) For people who misuse drugs, are coerced interventions in comparison with no treatment and/or prison associated with reduced risk of relapse at follow-up and reduced crime?

Appendix 7: Search strategies for the identification of clinical studies

1 General search filters

Drug misuse

a. MEDLINE, EMBASE, PsycINFO, CINAHL — Ovid interface

1	Amphetamine-related disorders/
2	Cannabis addiction/ or Marijuana abuse/
3	Cocaine dependence/ or Cocaine-related disorders/
4	Heroin addiction/
5	exp Narcotic dependence/
6	Opiate addiction/ or exp Opioid-related disorders/
7	Drug abuse/ or Drug abuse pattern/ or Drug addiction/ or Drug misuse/ or Drug overdoses/ or Intravenous drug abuse/ or Substance abuse/ or Substance-related disorders/ or "Substance use disorders"/
8	Drug dependence/ or Drug dependency/ or Substance dependence/
9	Multiple drug abuse/ or Polydrug abuse/
10	Neonatal abstinence syndrome/
11	Psychoses, substance-induced/
12	Substance abuse, intravenous/
13	Substance abuse, perinatal/
14	Substance withdrawal syndrome/
15	(((stimulant$ or polydrug$ or drug$1 or substance) adj3 (abstain$ or abstinen$ or abus$ or addict$ or (excessive adj use$) or dependen$ or disorder$ or intoxicat$ or misuse$ or over dos$ or overdos$ or (use$ adj (disorder$ or illicit)) or withdraw$)) or (drug$1 adj user$)).tw.
16	or/1-15
17	exp amphetamines/ or exp amphetamine derivative/
18	exp Cannabis/
19	exp CNS stimulating drugs/ or exp central nervous system stimulants/ or exp central stimulant agent/ or exp psychostimulant agent/
20	exp Cocaine/
21	Diamorphine/ or exp Heroin/
22	exp Methadone/
23	exp Narcotic agent/ or exp Narcotics/
24	Naltrexone$.sh.
25	exp Opiate/ or exp Opiates/ or exp Opium/
26	(amphetamine$ or crank or dextroamphetamine$ or methamphetamine$ or speed or uppers).tw.
27	(Adrafinil$ or Amphetaminil$ or Butanamine$ or Benzphetamine$ or Bromantan$ or Chloramphetamine$ or Deanol$ or Dexamphetamine$ or Dexmethylphenidate$ or Dimethoxy or Methylamphetamine$ or Hydroxyamphetamine$ or Lefetamine$ or Meclofenoxate$ or Mefexamide$ or Methcathinone$ or Methoxyamphetamine$ or Methylamphetamine$ or Methylphenidate$ or Modafinil$ or Pemoline$ or Picamilon$ or Sydnocarb$ or Sydnofen$ or Tetrabenazine$).mp.
28	(Butanamine$ or Methylamphetamine$ or Methylenedioxymethamphetamine$ or Ethylbarbituric Acid$ or Allylglycine$ or Amfonelic Acid$ or Amiphenazole$ or Apomorphine$ or Bemegride$ or Benzphetamine$ or Brucine$ or Carphedon$ or Cathinone$ or Chloramphetamine$ or Convulsant Agent or Cropropamide$ or Crotetamide$ or Dexamphetamine$ or Dexoxadrol$ or Dextroamphetamine$ or Dimefline$ or Dimetamfetamine$ or Doxapram$ or Ephedrine$ or Etamivan$ or Ethimizole$ or Methylenedioxyamphetamine$ or Fencamfamin$ or Fenetylline$ or

		Flurothyl$ or Fominoben$ or Harmaline$ or Homococaine$ or Hydroxyamphetamine$ or Lobeline$ or Mazindol$ or Meclofenoxate$ or Mefexamide$ or Methamphetamine$ or Methcathinone$ or Methylephedrine$ or Methylphenidate$ or Ethylamphetamine$ or Nikethamide$ or Norcocaine$ or Pemoline$ or Pentetrazole$ or Phenmetrazine$ or Phentermine$ or Picrotoxin$ or Pipradol$ or Prethcamide$ or Prolintane$ or Pseudoephedrine$ or Pyrovalerone$ or Racephedrine$ or Strychnine$ or Butylbicycloorthobenzoate$ or Butylbicyclophosphorothioate$ or Tetramethylsuccinimide$ or Theodrenaline$).mp.
	29	(analeptic$ or psychostimulant$ or stimulant$).tw.
	30	(cannabis or hashish or marihuana or marijua$).mp.
	31	(cocaine or crack).tw.
	32	(diethylpropion or ephedrine or fenfluramine or methylphenidate or pemoline or phenmetrazine or phendimetrazine or phenylpropanolamine).mp.
	33	(heroin or diacetylmorphine or diamorphine or morphin$ or morfin$ or smack).tw.
	34	methadone.tw.
	35	(antaxone or dihydroxymorphinan or nalorex or naltrel or naltrexone or revia or trexan or vivitrex).tw.
	36	(opiate$ or opioid$ or opium).mp.
	37	(ardinex or codein$ or isocodein$ or codipertussin or codyl or methyl morfine or methylmorfine or methyl morphine or methylmorphine or morphine 3 methyl ether or morphine methyl ether or morphine monomethyl ether or pentuss or trans codeine or 467-15-2).mp,rn.
	38	(dihydrocodeine or codhydrin$ or codicontin or cohydrin or dehacodin or Df 118 or Df118 or didrate or dihydrin or dihydroneopine or drocode or hydrocodeine or hydrocodin or nadein$ or napacodin or novicodin or paracodein or paracodin or paramol or parzone or rapacodin or remedacen or tiamon mono or 5965-13-9).mp,rn.
	39	or/17-38
	40	(abstain$ or abstinen$ or abus$ or addict$ or (drug adj use$) or (excessive adj use$) or dependen$ or (inject$ adj2 drug$) or intoxicat$ or misus$ or over dos$ or overdos$ or (use$ adj (disorder$ or illicit)) or withdraw$).mp.
	41	and/39-40
	42	or/16,41

b. Cochrane Database of Systematic Reviews — Wiley Interscience interface

	#1	MeSH descriptor Amphetamine-Related Disorders, this term only in MeSH products
	#2	MeSH descriptor Substance-Related Disorders, this term only in MeSH products
	#3	MeSH descriptor Cocaine-Related Disorders, this term only in MeSH products
	#4	MeSH descriptor Marijuana Abuse, this term only in MeSH products
	#5	MeSH descriptor Neonatal Abstinence Syndrome, this term only in MeSH products
	#6	MeSH descriptor Opioid-Related Disorders explode all trees in MeSH products
	#7	MeSH descriptor Psychoses, Substance-Induced, this term only in MeSH products
	#8	MeSH descriptor Substance Abuse, Intravenous, this term only in MeSH products
	#9	MeSH descriptor Substance Withdrawal Syndrome, this term only in MeSH products
	#10	(stimulant* or polydrug* or drug* or substance) near (abstain* or abstinen* or abus* or addict* or dependen* or disorder* or intoxicat* or misuse* or over dos* or overdos* or withdraw*) in All Fields in all products
	#11	drug user* in All Fields in all products
	#12	(#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11)
	#13	MeSH descriptor Amphetamines explode all trees in MeSH products
	#14	MeSH descriptor Cannabis, this term only in MeSH products
	#15	MeSH descriptor Central Nervous System Stimulants explode all trees in MeSH products
	#16	MeSH descriptor Cocaine explode all trees in MeSH products
	#17	MeSH descriptor Heroin, this term only in MeSH products

#18	MeSH descriptor Methadone explode all trees in MeSH products
#19	MeSH descriptor Narcotics explode all trees in MeSH products
#20	MeSH descriptor Opium explode all trees in MeSH products
#21	amphetamine* or crank or dextroamphetamine* or methamphetamine* or speed in All Fields in all products
#22	Adrafinil* or Amphetaminil* or Butanamine* or Benzphetamine* or Bromantan* or Chloramphetamine* or Deanol* or Dexamphetamine* or Dexmethylphenidate* or Dimethoxy or Methylamphetamine* or Hydroxyamphetamine* or Lefetamine* or Meclofenoxate* or Mefexamide* or Methcathinone* or Methoxyamphetamine* or Methylamphetamine* or Methylphenidate* or Modafinil* or Pemoline* or Picamilon* or Sydnocarb* or Sydnofen* or Tetrabenazine* in All Fields in all products
#23	Butanamine* or Methylamphetamine* or Methylenedioxymethamphetamine* or Ethylbarbituric Acid* or Allylglycine* or Amfonelic Acid* or Amiphenazole* or Apomorphine* or Bemegride* or Benzphetamine* or Brucine* or Carphedon* or Cathinone* or Chloramphetamine* or Convulsant Agent* or Cropropamide* or Crotetamide* or Dexamphetamine* or Dexoxadrol* or Dextroamphetamine* or Dimefline* or Dimetamfetamine* or Doxapram* or Ephedrine* or Etamivan* or Ethimizole* or Methylenedioxyamphetamine* in All Fields in all products
#24	Fencamfamin* or Fenetylline* or Flurothyl* or Fominoben* or Harmaline* or Homococaine* or Hydroxyamphetamine* or Lobeline* or Mazindol* or Meclofenoxate* or Mefexamide* or Methamphetamine* or Methcathinone* or Methylephedrine* or Methylphenidate* or Ethylamphetamine* or Nikethamide* or Norcocaine* or Pemoline* or Pentetrazole* or Phenmetrazine* or Phentermine* or Picrotoxin* or Pipradol* or Prethcamide* or Prolintane* or Pseudoephedrine* or Pyrovalerone* or Racephedrine* or Strychnine* or Butylbicycloorthobenzoate* or Butylbicyclophosphorothioate* or Tetramethylsuccinimide* or Theodrenaline* in All Fields in all products
#25	analeptic* or psychostimulant* or stimulant* in All Fields in all products
#26	cannabis or hashish or marihuana or marijua* in All Fields in all products
#27	cocaine or crack in All Fields in all products
#28	diethylpropion or ephedrine or fenfluramine or methylphenidate or pemoline or phenmetrazine or phendimetrazine or phenylpropanolamine in All Fields in all products
#29	heroin or diacetylmorphine or diamorphine or morphin* or morfin* or smack in All Fields in all products
#30	methadone in All Fields in all products
#31	antaxone or dihydroxymorphinan or nalorex or naltrel or naltrexone or revia or trexan or vivitrex in All Fields in all products
#32	opiate* or opioid* or opium in All Fields in all products
#33	ardinex or codein* or isocodein* or codipertussin or codyl or methylmorfine or methylmorphine or morphin* or pentuss in All Fields in all products
#34	dihydrocodeine or codhydrin* or codicontin or cohydrin or dehacodin or Df 118 or Df118 or didrate or dihydrin or dihydroneopine or drocode or hydrocodeine or hydrocodin or nadein* or napacodin or novicodin or paracodein or paracodin or paramol or parzone or rapacodin or remedacen or tiamon mono in All Fields in all products
#35	(#13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22)
#36	(#23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34)
#37	(#35 OR #36)
#38	abstain* or abstinen* or abus* or addict* or drug user* or dependen* or inject* drug* or intoxicat* or misus* or overdos* or illicit use* or withdraw* in All Fields in all products
#39	(#37 AND #38)
#40	(#12 OR #39)

c. Database of Abstracts of Reviews of Effects – Wiley Interscience interface

#1	MeSH descriptor Amphetamine-Related Disorders, this term only in MeSH products
#2	MeSH descriptor Substance-Related Disorders, this term only in MeSH products
#3	MeSH descriptor Cocaine-Related Disorders, this term only in MeSH products
#4	MeSH descriptor Marijuana Abuse, this term only in MeSH products
#5	MeSH descriptor Neonatal Abstinence Syndrome, this term only in MeSH products
#6	MeSH descriptor Opioid-Related Disorders explode all trees in MeSH products
#7	MeSH descriptor Psychoses, Substance-Induced, this term only in MeSH products
#8	MeSH descriptor Substance Abuse, Intravenous, this term only in MeSH products
#9	MeSH descriptor Substance Withdrawal Syndrome, this term only in MeSH products
#10	(stimulant* or polydrug* or drug* or substance) near (abstain* or abstinen* or abus* or addict* or dependen* or disorder* or intoxicat* or misuse* or over dos* or overdos* or withdraw*) in All Fields in all products
#11	drug user* in All Fields in all products
#12	(#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11)
#13	MeSH descriptor Amphetamines explode all trees in MeSH products
#14	MeSH descriptor Cannabis, this term only in MeSH products
#15	MeSH descriptor Central Nervous System Stimulants explode all trees in MeSH products
#16	MeSH descriptor Cocaine explode all trees in MeSH products
#17	MeSH descriptor Heroin, this term only in MeSH products
#18	MeSH descriptor Methadone explode all trees in MeSH products
#19	MeSH descriptor Narcotics explode all trees in MeSH products
#20	MeSH descriptor Opium explode all trees in MeSH products
#21	amphetamine* or crank or dextroamphetamine* or methamphetamine* or speed in All Fields in all products
#22	Adrafinil* or Amphetaminil* or Butanamine* or Benzphetamine* or Bromantan* or Chloramphetamine* or Deanol* or Dexamphetamine* or Dexmethylphenidate* or Dimethoxy or Methylamphetamine* or Hydroxyamphetamine* or Lefetamine* or Meclofenoxate* or Mefexamide* or Methcathinone* or Methoxyamphetamine* or Methylamphetamine* or Methylphenidate* or Modafinil* or Pemoline* or Picamilon* or Sydnocarb* or Sydnofen* or Tetrabenazine* in All Fields in all products
#23	Butanamine* or Methylamphetamine* or Methylenedioxymethamphetamine* or Ethylbarbituric Acid* or Allylglycine* or Amfonelic Acid* or Amiphenazole* or Apomorphine* or Bemegride* or Benzphetamine* or Brucine* or Carphedon* or Cathinone* or Chloramphetamine* or Convulsant Agent* or Cropropamide* or Crotetamide* or Dexamphetamine* or Dexoxadrol* or Dextroamphetamine* or Dimefline* or Dimetamfetamine* or Doxapram* or Ephedrine* or Etamivan* or Ethimizole* or Methylenedioxyamphetamine* in All Fields in all products
#24	Fencamfamin* or Fenetylline* or Flurothyl* or Fominoben* or Harmaline* or Homococaine* or Hydroxyamphetamine* or Lobeline* or Mazindol* or Meclofenoxate* or Mefexamide* or Methamphetamine* or Methcathinone* or Methylephedrine* or Methylphenidate* or Ethylamphetamine* or Nikethamide* or Norcocaine* or Pemoline* or Pentetrazole* or Phenmetrazine* or Phentermine* or Picrotoxin* or Pipradol* or Prethcamide* or Prolintane* or Pseudoephedrine* or Pyrovalerone* or Racephedrine* or Strychnine* or Butylbicycloorthobenzoate* or Butylbicyclophosphorothioate* or Tetramethylsuccinimide* or Theodrenaline* in All Fields in all products
#25	analeptic* or psychostimulant* or stimulant* in All Fields in all products
#26	cannabis or hashish or marihuana or marijua* in All Fields in all products
#27	cocaine or crack in All Fields in all products
#28	diethylpropion or ephedrine or fenfluramine or methylphenidate or pemoline or phenmetrazine or phendimetrazine or phenylpropanolamine in All Fields in all

products
#29 heroin or diacetylmorphine or diamorphine or morphin* or morfin* or smack in All Fields in all products
#30 methadone in All Fields in all products
#31 antaxone or dihydroxymorphinan or nalorex or naltrel or naltrexone or revia or trexan or vivitrex in All Fields in all products
#32 opiate* or opioid* or opium in All Fields in all products
#33 ardinex or codein* or isocodein* or codipertussin or codyl or methylmorfine or methylmorphine or morphin* or pentuss in All Fields in all products
#34 dihydrocodeine or codhydrin* or codicontin or cohydrin or dehacodin or Df 118 or Df118 or didrate or dihydrin or dihydroneopine or drocode or hydrocodeine or hydrocodin or nadein* or napacodin or novicodin or paracodein or paracodin or paramol or parzone or rapacodin or remedacen or tiamon mono in All Fields in all products
#35 (#13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22)
#36 (#23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34)
#37 (#35 OR #36)
#38 abstain* or abstinen* or abus* or addict* or drug user* or dependen* or inject* drug* or intoxicat* or misus* or overdos* or illicit use* or withdraw* in All Fields in all products
#39 (#37 AND #38)
#40 (#12 OR #39)

d. Cochrane Central Register of Controlled Trials — Wiley Interscience interface

#1 MeSH descriptor Amphetamine-Related Disorders, this term only in MeSH products
#2 MeSH descriptor Substance-Related Disorders, this term only in MeSH products
#3 MeSH descriptor Cocaine-Related Disorders, this term only in MeSH products
#4 MeSH descriptor Marijuana Abuse, this term only in MeSH products
#5 MeSH descriptor Neonatal Abstinence Syndrome, this term only in MeSH products
#6 MeSH descriptor Opioid-Related Disorders explode all trees in MeSH products
#7 MeSH descriptor Psychoses, Substance-Induced, this term only in MeSH products
#8 MeSH descriptor Substance Abuse, Intravenous, this term only in MeSH products
#9 MeSH descriptor Substance Withdrawal Syndrome, this term only in MeSH products
#10 (stimulant* or polydrug* or drug* or substance) near (abstain* or abstinen* or abus* or addict* or dependen* or disorder* or intoxicat* or misuse* or over dos* or verdos* or withdraw*) in All Fields in all products
#11 drug user* in All Fields in all products
#12 (#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11)
#13 MeSH descriptor Amphetamines explode all trees in MeSH products
#14 MeSH descriptor Cannabis, this term only in MeSH products
#15 MeSH descriptor Central Nervous System Stimulants explode all trees in MeSH products
#16 MeSH descriptor Cocaine explode all trees in MeSH products
#17 MeSH descriptor Heroin, this term only in MeSH products
#18 MeSH descriptor Methadone explode all trees in MeSH products
#19 MeSH descriptor Narcotics explode all trees in MeSH products
#20 MeSH descriptor Opium explode all trees in MeSH products
#21 amphetamine* or crank or dextroamphetamine* or methamphetamine* or speed in All Fields in all products
#22 Adrafinil* or Amphetaminil* or Butanamine* or Benzphetamine* or Bromantan* or Chloramphetamine* or Deanol* or Dexamphetamine* or Dexmethylphenidate* or Dimethoxy or Methylamphetamine* or Hydroxyamphetamine* or Lefetamine* or Meclofenoxate* or Mefexamide* or Methcathinone* or Methoxyamphetamine* or

		Methylamphetamine* or Methylphenidate* or Modafinil* or Pemoline* or Picamilon* or Sydnocarb* or Sydnofen* or Tetrabenazine* in All Fields in all products
	#23	Butanamine* or Methylamphetamine* or Methylenedioxymethamphetamine* or Ethylbarbituric Acid* or Allylglycine* or Amfonelic Acid* or Amiphenazole* or Apomorphine* or Bemegride* or Benzphetamine* or Brucine* or Carphedon* or Cathinone* or Chloramphetamine* or Convulsant Agent* or Cropropamide* or Crotetamide* or Dexamphetamine* or Dexoxadrol* or Dextroamphetamine* or Dimefline* or Dimetamfetamine* or Doxapram* or Ephedrine* or Etamivan* or Ethimizole* or Methylenedioxyamphetamine* in All Fields in all products
	#24	Fencamfamin* or Fenetylline* or Flurothyl* or Fominoben* or Harmaline* or Homococaine* or Hydroxyamphetamine* or Lobeline* or Mazindol* or Meclofenoxate* or Mefexamide* or Methamphetamine* or Methcathinone* or Methylephedrine* or Methylphenidate* or Ethylamphetamine* or Nikethamide* or Norcocaine* or Pemoline* or Pentetrazole* or Phenmetrazine* or Phentermine* or Picrotoxin* or Pipradol* or Prethcamide* or Prolintane* or Pseudoephedrine* or Pyrovalerone* or Racephedrine* or Strychnine* or Butylbicycloorthobenzoate* or Butylbicyclophosphorothioate* or Tetramethylsuccinimide* or Theodrenaline* in All Fields in all products
	#25	analeptic* or psychostimulant* or stimulant* in All Fields in all products
	#26	cannabis or hashish or marihuana or marijua* in All Fields in all products
	#27	cocaine or crack in All Fields in all products
	#28	diethylpropion or ephedrine or fenfluramine or methylphenidate or pemoline or phenmetrazine or phendimetrazine or phenylpropanolamine in All Fields in all products
	#29	heroin or diacetylmorphine or diamorphine or morphin* or morfin* or smack in All Fields in all products
	#30	methadone in All Fields in all products
	#31	antaxone or dihydroxymorphinan or nalorex or naltrel or naltrexone or revia or trexan or vivitrex in All Fields in all products
	#32	opiate* or opioid* or opium in All Fields in all products
	#33	ardinex or codein* or isocodein* or codipertussin or codyl or methylmorfine or methylmorphine or morphin* or pentuss in All Fields in all products
	#34	dihydrocodeine or codhydrin* or codicontin or cohydrin or dehacodin or Df 118 or Df118 or didrate or dihydrin or dihydroneopine or drocode or hydrocodeine or hydrocodin or nadein* or napacodin or novicodin or paracodein or paracodin or paramol or parzone or rapacodin or remedacen or tiamon mono in All Fields in all products
	#35	(#13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22)
	#36	(#23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34)
	#37	(#35 OR #36)
	#38	abstain* or abstinen* or abus* or addict* or drug user* or dependen* or inject* drug* or intoxicat* or misus* or overdos* or illicit use* or withdraw* in All Fields in all products
	#39	(#37 AND #38)
	#40	(#12 OR #39)

2. Systematic review search filters

a. MEDLINE, EMBASE, PsycINFO, CINAHL — Ovid interface

1	exp meta analysis/ or exp systematic review/ or exp literature review/ or exp literature searching/ or exp cochrane library/ or exp review literature/
2	((systematic or quantitative or methodologic$) adj5 (overview$ or review$)).mp.
3	(metaanaly$ or meta analy$).mp.

4 (research adj (review$ or integration)).mp.
5 reference list$.ab.
6 bibliograph$.ab.
7 published studies.ab.
8 relevant journals.ab.
9 selection criteria.ab.
10 (data adj (extraction or synthesis)).ab.
11 ((handsearch$3 or (hand or manual)) adj search$).tw.
12 ((mantel adj haenszel) or peto or dersimonian or der simonian).tw.
13 (fixed effect$ or random effect$).tw.
14 review$.pt,mp. and (bids or cochrane or index medicus or isi citation or medlars or psyclit or psychlit or scisearch or science citation or web adj1 science).mp.
15 (systematic$ or meta$).pt.
16 or/1-15

3. Randomised controlled trials search filters

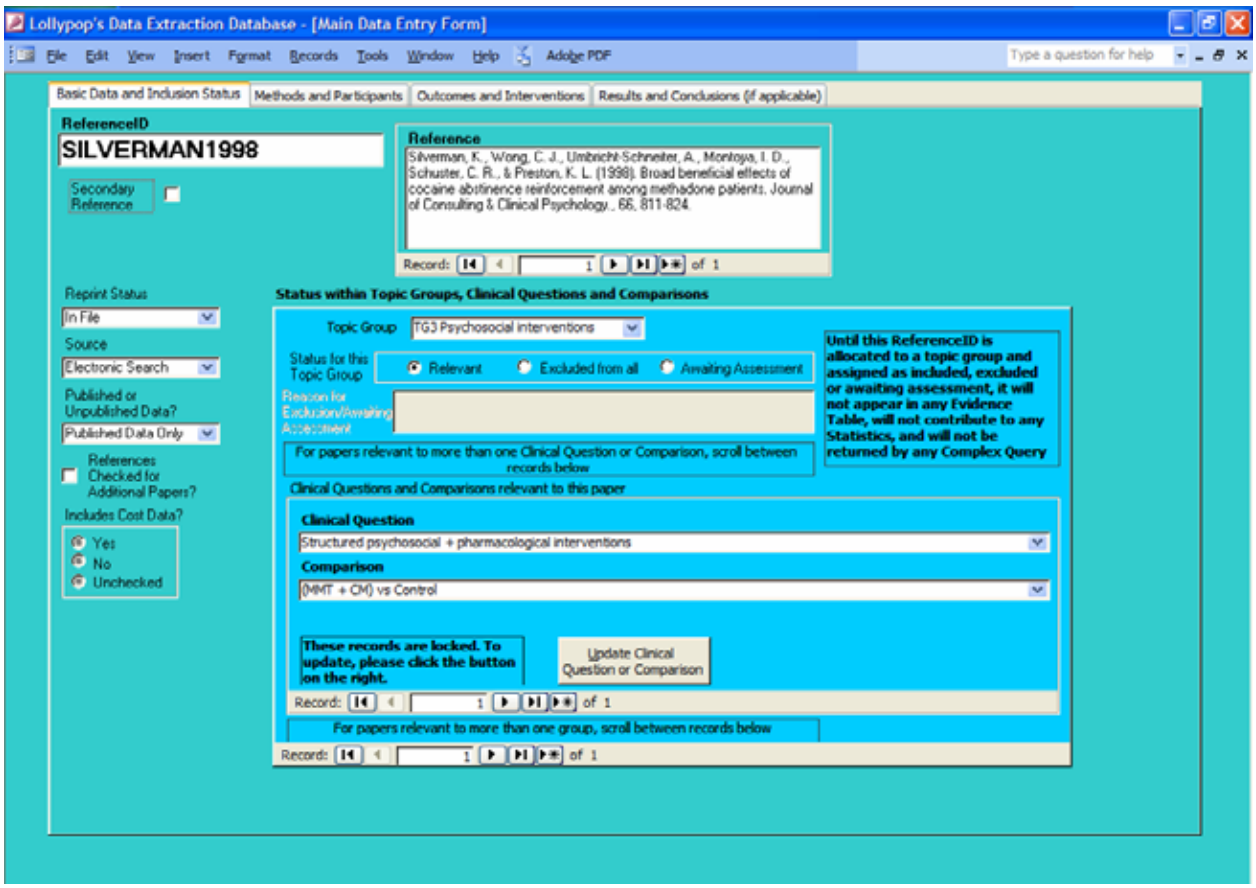
a. MEDLINE, EMBASE, PsycINFO, CINAHL — Ovid interface

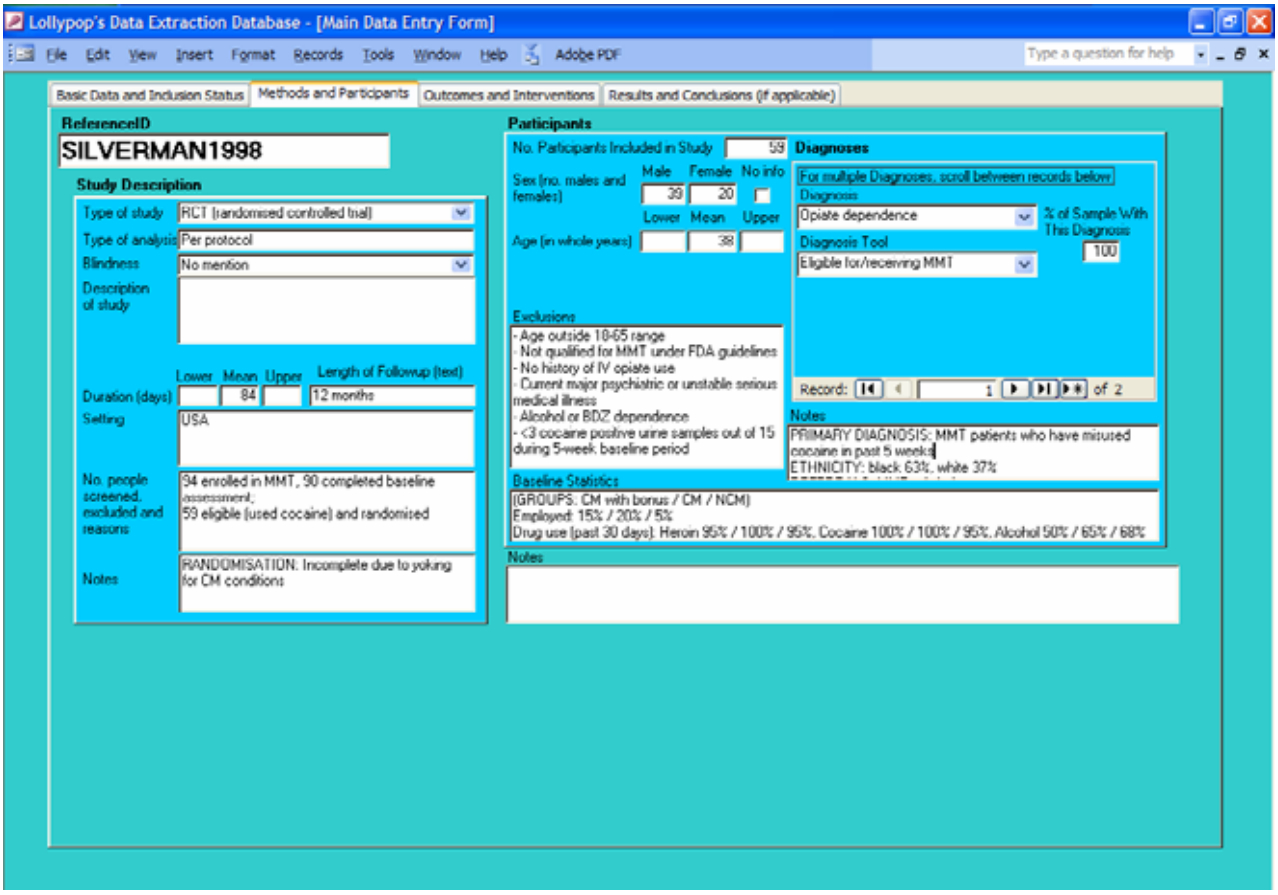
1 exp clinical trials/ or exp clinical trial/ or exp controlled clinical trials/
2 exp crossover procedure/ or exp cross over studies/ or exp crossover design/
3 exp double blind procedure/ or exp double blind method/ or exp double blind studies/ or exp single blind procedure/ or exp single blind method/ or exp single blind studies/
4 exp random allocation/ or exp randomization/ or exp random assignment/ or exp random sample/ or exp random sampling/
5 exp randomized controlled trials/ or exp randomized controlled trial/
6 (clinical adj2 trial$).tw.
7 (crossover or cross over).tw.
8 (((single$ or doubl$ or trebl$ or tripl$) adj5 (blind$ or mask$ or dummy)) or (singleblind$ or doubleblind$ or trebleblind$)).tw.
9 (placebo$ or random$).mp.
10 (clinical trial$ or clinical control trial or random$).pt.
11 animals/ not (animals/ and human$.mp.)
12 animal$/ not (animal$/ and human$/)
13 (animal not (animal and human)).po.
14 (or/1-10) not (or/11-13)

Details of additional searches undertaken to support the development of this guideline are available on request.

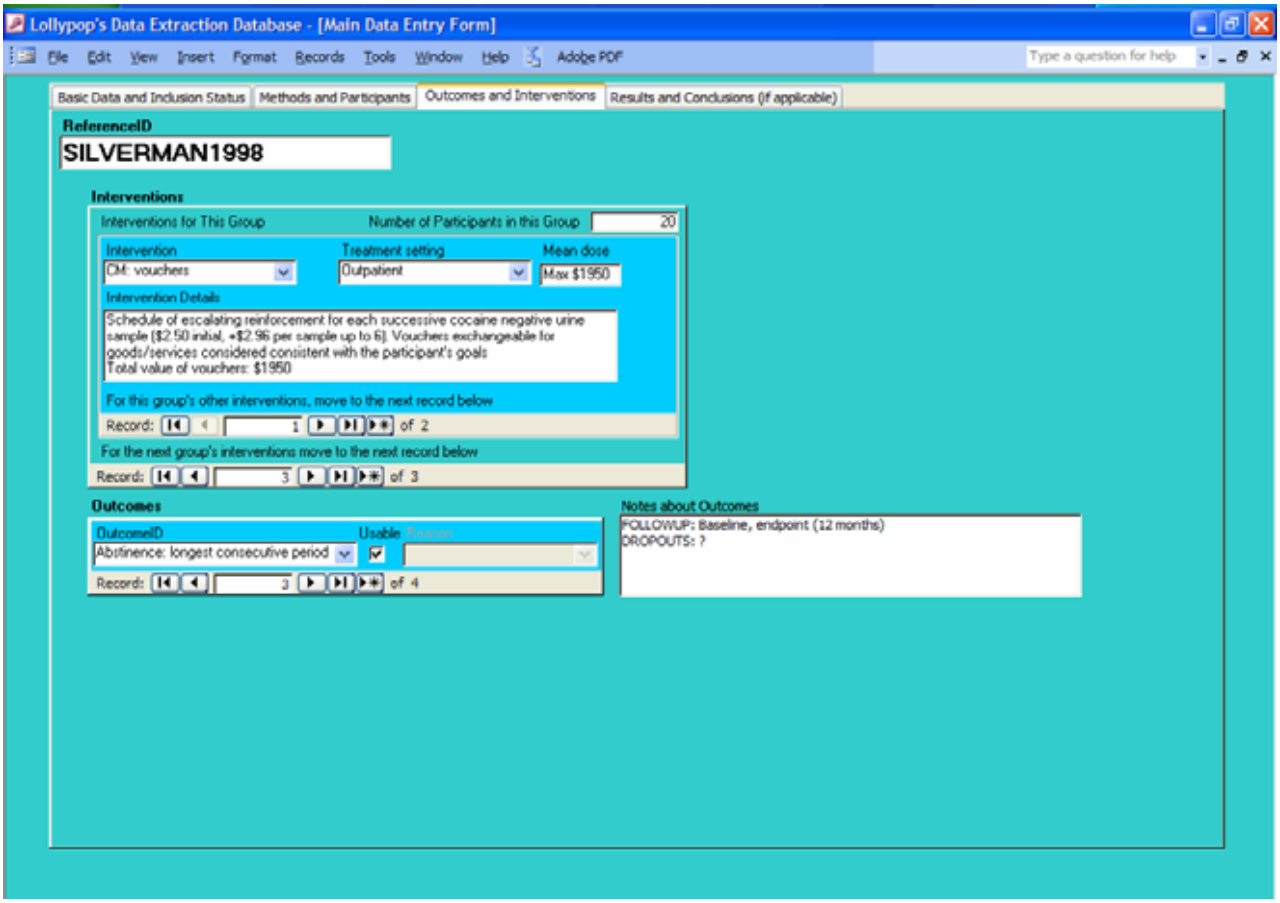
Appendix 8: Clinical study data extraction form

Information about each study was entered into an Access database using specially designed forms (see below for an example).




Lollypop's Data Extraction Database - [Main Data Entry Form]
File Edit View Insert Format Records Tools Window Help Adobe PDF
Type a question for help
Basic Data and Inclusion Status
Methods and Participants
Outcomes and Interventions
Results and Conclusions (if applicable)
ReferenceID
SILVERMAN1998
Study Description
Type of study
RCT (randomised controlled trial)
Type of analysis
Per protocol
Blindness
No mention
Description of study
Lower Mean Upper
Length of Followup (text)
Duration (days)
84
12 months
Setting
USA
No. people screened, excluded and reasons
94 enrolled in MMT, 90 completed baseline assessment;
59 eligible (used cocaine) and randomised
Notes
RANDOMISATION: Incomplete due to yoking for CM conditions
Participants
No. Participants Included in Study
59
Sex (no. males and females)
Male Female No info
39
20
Age (in whole years)
Lower Mean Upper
38
Exclusions
- Age outside 18-65 range
- Not qualified for MMT under FDA guidelines
- No history of IV opiate use
- Current major psychiatric or unstable serious medical illness
- Alcohol or BDZ dependence
- <3 cocaine positive urine samples out of 15 during 5-week baseline period
Baseline Statistics
(GROUPS: CM with bonus / CM / NCM)
Employed: 15% / 20% / 5%
Drug use (past 30 days): Heroin 95% / 100% / 95%; Cocaine 100% / 100% / 95%; Alcohol 50% / 65% / 68%
Notes
Diagnoses
For multiple Diagnoses, scroll between records below
Diagnosis
Opiate dependence
% of Sample With This Diagnosis
100
Diagnosis Tool
Eligible for/receiving MMT
Record: 1 of 2
Notes
PRIMARY DIAGNOSIS: MMT patients who have misused cocaine in past 5 weeks
ETHNICITY: black 63%, white 37%

1
2


Lollypop's Data Extraction Database - [Main Data Entry Form]
File Edit View Insert Format Records Tools Window Help Adobe PDF
Type a question for help
Basic Data and Inclusion Status
Methods and Participants
Outcomes and Interventions
Results and Conclusions (if applicable)
ReferenceID
SILVERMAN1998
Interventions
Interventions for This Group
Number of Participants in this Group
20
Intervention
Treatment setting
Mean dose
CM: vouchers
Outpatient
Max $1950
Intervention Details
Schedule of escalating reinforcement for each successive cocaine negative urine sample ($2.50 initial, +$2.96 per sample up to 6). Vouchers exchangeable for goods/services considered consistent with the participant's goals
Total value of vouchers: $1950
For this group's other interventions, move to the next record below
Record: 1 of 2
For the next group's interventions move to the next record below
Record: 3 of 3
Outcomes
OutcomeID
Usable
Abstinence: longest consecutive period
Record: 3 of 4
Notes about Outcomes
FOLLOWUP: Baseline, endpoint (12 months)
DROPOUTS: ?

3

Appendix 9: Quality checklists for clinical studies and reviews

The methodological quality of each study was evaluated using dimensions adapted from SIGN (Scottish Intercollegiate Guidelines Network, 2001). SIGN originally adapted its quality criteria from checklists developed in Australia (Liddel *et al.*, 1996). Both groups reportedly undertook extensive development and validation procedures when creating their quality criteria.

Quality Checklist for a Systematic Review or Meta-Analysis			
Study ID:			
Guideline topic:		Key question no:	
Checklist completed by:			
SECTION 1: INTERNAL VALIDITY			
In a well-conducted systematic review:		In this study this criterion is: *(Circle one option for each question)*	
1.1	The study addresses an appropriate and clearly focused question.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.2	A description of the methodology used is included.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.3	The literature search is sufficiently rigorous to identify all the relevant studies.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.4	Study quality is assessed and taken into account.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.5	There are enough similarities between the studies selected to make combining them reasonable.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
SECTION 2: OVERALL ASSESSMENT OF THE STUDY			
2.1	How well was the study done to minimise bias? *Code ++, + or –*		

Notes on the use of the methodology checklist: systematic reviews and meta-analyses

Section 1 identifies the study and asks a series of questions aimed at establishing the internal validity of the study under review — that is, making sure that it has been carried out carefully and that the outcomes are likely to be attributable to the intervention being investigated. Each question covers an aspect of methodology that research has shown makes a significant difference to the conclusions of a study.

For each question in this section, one of the following should be used to indicate how well it has been addressed in the review:

- well covered
- adequately addressed
- poorly addressed
- not addressed (that is, not mentioned or indicates that this aspect of study design was ignored)
- not reported (that is, mentioned but insufficient detail to allow assessment to be made)
- not applicable.

1.1 The study addresses an appropriate and clearly focused question

Unless a clear and well-defined question is specified in the report of the review, it will be difficult to assess how well it has met its objectives or how relevant it is to the question to be answered on the basis of the conclusions.

1.2 A description of the methodology used is included

One of the key distinctions between a systematic review and a general review is the systematic methodology used. A systematic review should include a detailed description of the methods used to identify and evaluate individual studies. If this description is not present, it is not possible to make a thorough evaluation of the quality of the review, and it should be rejected as a source of level-1 evidence (though it may be useable as level-4 evidence, if no better evidence can be found).

1.3 The literature search is sufficiently rigorous to identify all the relevant studies

A systematic review based on a limited literature search — for example, one limited to Medline only — is likely to be heavily biased. A well-conducted review should as a minimum look at Embase and Medline and, from the late 1990s onward, the Cochrane Library. Any indication that hand searching of key journals, or follow-up of reference lists of included studies, were carried out in addition to electronic database searches can normally be taken as evidence of a well-conducted review.

1.4 Study quality is assessed and taken into account

A well-conducted systematic review should have used clear criteria to assess whether individual studies had been well conducted before deciding whether to include or exclude them. If there is no indication of such an assessment, the review should be rejected as a source of level-1 evidence. If details of the

assessment are poor, or the methods are considered to be inadequate, the quality of the review should be downgraded. In either case, it may be worthwhile obtaining and evaluating the individual studies as part of the review being conducted for this guideline.

1.5 There are enough similarities between the studies selected to make combining them reasonable

Studies covered by a systematic review should be selected using clear inclusion criteria (see question 1.4 above). These criteria should include, either implicitly or explicitly, the question of whether the selected studies can legitimately be compared. It should be clearly ascertained, for example, that the populations covered by the studies are comparable, that the methods used in the investigations are the same, that the outcome measures are comparable and the variability in effect sizes between studies is not greater than would be expected by chance alone.

Section 2 relates to the overall assessment of the paper. It starts by rating the methodological quality of the study, based on the responses in Section 1 and using the following coding system:

++	All or most of the criteria have been fulfilled. Where they have not been fulfilled, the conclusions of the study or review are thought **very unlikely** to alter.
+	Some of the criteria have been fulfilled. Those criteria that have not been fulfilled or not adequately described are thought **unlikely** to alter the conclusions.
–	Few or no criteria fulfilled. The conclusions of the study are thought **likely or very likely** to alter.

Quality Checklist for an RCT			
Study ID:			
Guideline topic:		**Key question no:**	
Checklist completed by:			
SECTION 1: INTERNAL VALIDITY			
In a well-conducted RCT study:		**In this study this criterion is: (Circle one option for each question)**	
1.1	The study addresses an appropriate and clearly focused question.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.2	The assignment of subjects to treatment groups is randomised.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.3	An adequate concealment method is used.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable

1.4	Subjects and investigators are kept 'blind' about treatment allocation.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.5	The treatment and control groups are similar at the start of the trial.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.6	The only difference between groups is the treatment under investigation.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.7	All relevant outcomes are measured in a standard, valid and reliable way.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.8	What percentage of the individuals or clusters recruited into each treatment arm of the study dropped out before the study was completed?		
1.9	All the subjects are analysed in the groups to which they were randomly allocated (often referred to as intention-to-treat analysis).	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.10	Where the study is carried out at more than one site, results are comparable for all sites.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
SECTION 2: OVERALL ASSESSMENT OF THE STUDY			
2.1	How well was the study done to minimise bias? *Code ++, + or –*		

Notes on the use of the methodology checklist: randomised controlled trials

Section 1 identifies the study and asks a series of questions aimed at establishing the internal validity of the study under review — that is, making sure that it has been carried out carefully and that the outcomes are likely to be attributable to the intervention being investigated. Each question covers an aspect of methodology that research has shown makes a significant difference to the conclusions of a study.

For each question in this section, one of the following should be used to indicate how well it has been addressed in the review:

- well covered
- adequately addressed
- poorly addressed
- not addressed (that is, not mentioned or indicates that this aspect of study design was ignored)

- not reported (that is, mentioned but insufficient detail to allow assessment to be made)
- not applicable.

1.1 The study addresses an appropriate and clearly focused question

Unless a clear and well-defined question is specified, it will be difficult to assess how well the study has met its objectives or how relevant it is to the question to be answered on the basis of its conclusions.

1.2 The assignment of subjects to treatment groups is randomised

Random allocation of patients to receive one or other of the treatments under investigation, or to receive either treatment or placebo, is fundamental to this type of study. If there is no indication of randomisation, the study should be rejected. If the description of randomisation is poor, or the process used is not truly random (for example, allocation by date or alternating between one group and another) or can otherwise be seen as flawed, the study should be given a lower quality rating.

1.3 An adequate concealment method is used

Research has shown that where allocation concealment is inadequate, investigators can overestimate the effect of interventions by up to 40%. Centralised allocation, computerised allocation systems or the use of coded identical containers would all be regarded as adequate methods of concealment and may be taken as indicators of a well-conducted study. If the method of concealment used is regarded as poor, or relatively easy to subvert, the study must be given a lower quality rating, and can be rejected if the concealment method is seen as inadequate.

1.4 Subjects and investigators are kept 'blind' about treatment allocation

Blinding can be carried out up to three levels. In single-blind studies, patients are unaware of which treatment they are receiving; in double-blind studies the doctor and the patient are unaware of which treatment the patient is receiving; in triple-blind studies patients, healthcare providers and those conducting the analysis are unaware of which patients receive which treatment. The higher the level of blinding, the lower the risk of bias in the study.

1.5 The treatment and control groups are similar at the start of the trial

Patients selected for inclusion in a trial should be as similar as possible, in order to eliminate any possible bias. The study should report any significant differences in the composition of the study groups in relation to gender mix, age, stage of disease (if appropriate), social background, ethnic origin or comorbid conditions. These factors may be covered by inclusion and exclusion criteria, rather than being reported directly. Failure to address this question, or the use of inappropriate groups, should lead to the study being downgraded.

1.6 The only difference between groups is the treatment under investigation

If some patients receive additional treatment, even if of a minor nature or consisting of advice and counselling rather than a physical intervention, this treatment is a potential confounding factor that may invalidate the results. If groups are not treated equally, the study should be rejected unless no other evidence is available. If the study is used as evidence, it should be treated with caution and given a low quality rating.

1.7 All relevant outcomes are measured in a standard, valid and reliable way

If some significant clinical outcomes have been ignored, or not adequately taken into account, the study should be downgraded. It should also be downgraded if the measures used are regarded as being doubtful in any way or applied inconsistently.

1.8 What percentage of the individuals or clusters recruited into each treatment arm of the study dropped out before the study was completed?

The number of patients that drop out of a study should give concern if the number is very high. Conventionally, a 20% drop-out rate is regarded as acceptable, but this may vary. Some regard should be paid to why patients drop out, as well as how many. It should be noted that the drop-out rate may be expected to be higher in studies conducted over a long period of time. A higher drop-out rate will normally lead to downgrading, rather than rejection, of a study.

1.9 All the subjects are analysed in the groups to which they were randomly allocated (often referred to as intention-to-treat analysis)

In practice, it is rarely the case that all patients allocated to the intervention group receive the intervention throughout the trial, or that all those in the comparison group do not. Patients may refuse treatment, or contraindications arise that lead them to be switched to the other group. If the comparability of groups through randomisation is to be maintained, however, patient outcomes must be analysed according to the group to which they were originally allocated, irrespective of the treatment they actually received. (This is known as intention-to-treat analysis.) If it is clear that analysis is not on an intention-to-treat basis, the study may be rejected. If there is little other evidence available, the study may be included but should be evaluated as if it were a non-randomised cohort study.

1.10 Where the study is carried out at more than one site, results are comparable for all sites

In multi-site studies, confidence in the results should be increased if it can be shown that similar results have been obtained at the different participating centres.

Section 2 relates to the overall assessment of the paper. It starts by rating the methodological quality of the study, based on the responses in Section 1 and using the following coding system:

++	All or most of the criteria have been fulfilled. Where they have not been fulfilled, the conclusions of the study or review are thought **very unlikely** to alter.
+	Some of the criteria have been fulfilled. Those criteria that have not been fulfilled or not adequately described are thought **unlikely** to alter the conclusions.
–	Few or no criteria fulfilled. The conclusions of the study are thought **likely or very likely** to alter.

Quality Checklist for a Cohort Study*			
Study ID:		Relevant questions:	
Guideline topic:			
Checklist completed by:			
SECTION 1: INTERNAL VALIDITY			
In a well conducted cohort study:		**In this study the criterion is:** (*Circle one option for each question*)	
1.1	The study addresses an appropriate and clearly focused question.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
SELECTION OF SUBJECTS			
1.2	The two groups being studied are selected from source populations that are comparable in all respects other than the factor under investigation.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.3	The study indicates how many of the people asked to take part did so, in each of the groups being studied.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.4	The likelihood that some eligible subjects might have the outcome at the time of enrolment is assessed and taken into account in the analysis.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.5	What percentage of individuals or clusters recruited into each arm of the study dropped out before the study was completed?		
1.6	Comparison is made between full participants and those lost to follow-up, by exposure status.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
ASSESSMENT			
1.7	The outcomes are clearly defined.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.8	The assessment of outcome is made blind to exposure status.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable

1.9	Where blinding was not possible, there is some recognition that knowledge of exposure status could have influenced the assessment of outcome.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.10	The measure of assessment of exposure is reliable.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.11	Evidence from other sources is used to demonstrate that the method of outcome assessment is valid and reliable.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
1.12	Exposure level or prognostic factor is assessed more than once.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
CONFOUNDING			
1.13	The main potential confounders are identified and taken into account in the design and analysis.	Well covered Adequately addressed Poorly addressed	Not addressed Not reported Not applicable
STATISTICAL ANALYSIS			
1.14	Have confidence intervals been provided?		
SECTION 2: OVERALL ASSESSMENT OF THE STUDY			
2.1	How well was the study done to minimise the risk of bias or confounding, and to establish a causal relationship between exposure and effect? *Code ++, + or –*		

*A cohort study can be defined as a retrospective or prospective follow-up study. Groups of individuals are defined on the basis of the presence or absence of exposure to a suspected risk factor or intervention. This checklist is not appropriate for assessing uncontrolled studies (for example, a case series where there is no comparison [control] group of patients).

Notes on the use of the methodology checklist: cohort studies

The studies covered by this checklist are designed to answer questions of the type 'What are the effects of this exposure?' It relates to studies that compare a group of people with a particular exposure with another group who either have not had the exposure or have a different level of exposure. Cohort studies may be prospective (where the exposure is defined and subjects selected before outcomes occur) or retrospective (where exposure is assessed after the outcome is known, usually by the examination of medical records). Retrospective studies are generally regarded as a weaker design, and should not receive a 2++ rating.

Section 1 identifies the study and asks a series of questions aimed at establishing the internal validity of the study under review —that is, making sure that it has been carried out carefully, and that the outcomes are likely to be attributable to the intervention being investigated. Each question covers an aspect of methodology that has been shown to make a significant difference to the conclusions of a study.

Because of the potential complexity and subtleties of the design of this type of study, there are comparatively few criteria that automatically rule out use of a

study as evidence. It is more a matter of increasing confidence in the likelihood of a causal relationship existing between exposure and outcome by identifying how many aspects of good study design are present and how well they have been tackled. A study that fails to address or report on more than one or two of the questions considered below should almost certainly be rejected.

For each question in this section, one of the following should be used to indicate how well it has been addressed in the review:

- well covered
- adequately addressed
- poorly addressed
- not addressed (that is, not mentioned or indicates that this aspect of study design was ignored)
- not reported (that is, mentioned but insufficient detail to allow assessment to be made)
- not applicable

1.1 The study addresses an appropriate and clearly focused question

Unless a clear and well-defined question is specified, it will be difficult to assess how well the study has met its objectives or how relevant it is to the question to be answered on the basis of its conclusions.

1.2 The two groups being studied are selected from source populations that are comparable in all respects other than the factor under investigation

Study participants may be selected from the target population (all individuals to which the results of the study could be applied), the source population (a defined subset of the target population from which participants are selected) or from a pool of eligible subjects (a clearly defined and counted group selected from the source population). It is important that the two groups selected for comparison are as similar as possible in all characteristics except for their exposure status or the presence of specific prognostic factors or prognostic markers relevant to the study in question. If the study does not include clear definitions of the source populations and eligibility criteria for participants, it should be rejected.

1.3 The study indicates how many of the people asked to take part did so in each of the groups being studied

This question relates to what is known as the participation rate, defined as the number of study participants divided by the number of eligible subjects. This should be calculated separately for each branch of the study. A large difference in participation rate between the two arms of the study indicates that a significant degree of selection bias may be present, and the study results should be treated with considerable caution.

1.4 The likelihood that some eligible subjects might have the outcome at the time of enrolment is assessed and taken into account in the analysis

If some of the eligible subjects, particularly those in the unexposed group, already have the outcome at the start of the trial, the final result will be biased. A well-conducted study will attempt to estimate the likelihood of this occurring and take it into account in the analysis through the use of sensitivity studies or other methods.

1.5 What percentage of individuals or clusters recruited into each arm of the study dropped out before the study was completed?

The number of patients that drop out of a study should give concern if the number is very high. Conventionally, a 20% drop-out rate is regarded as acceptable, but in observational studies conducted over a lengthy period of time a higher drop-out rate is to be expected. A decision on whether to downgrade or reject a study because of a high drop-out rate is a matter of judgement based on the reasons why people drop out and whether drop-out rates are comparable in the exposed and unexposed groups. Reporting of efforts to follow up participants that drop out may be regarded as an indicator of a well-conducted study.

1.6 Comparison is made between full participants and those lost to follow-up by exposure status

For valid study results, it is essential that the study participants are truly representative of the source population. It is always possible that participants who drop out of the study will differ in some significant way from those who remain part of the study throughout. A well-conducted study will attempt to identify any such differences between full and partial participants in both the exposed and unexposed groups. Any indication that differences exist should lead to the study results being treated with caution.

1.7 The outcomes are clearly defined

Once enrolled in the study, participants should be followed until specified end points or outcomes are reached. In a study of the effect of exercise on the death rates from heart disease in middle-aged men, for example, participants might be followed up until death, reaching a predefined age or until completion of the study. If outcomes and the criteria used for measuring them are not clearly defined, the study should be rejected.

1.8 The assessment of outcome is made blind to exposure status

If the assessor is blinded to which participants received the exposure, and which did not, the prospects of unbiased results are significantly increased. Studies in which this is done should be rated more highly than those where it is not done or not done adequately.

1.9 Where blinding was not possible, there is some recognition that knowledge of exposure status could have influenced the assessment of outcome

Blinding is not possible in many cohort studies. In order to assess the extent of any bias that may be present, it may be helpful to compare process measures used on the participant groups — for example, frequency of observations, who carried out the observations and the degree of detail and completeness of observations. If these process measures are comparable between the groups, the results may be regarded with more confidence.

1.10 The measure of assessment of exposure is reliable

A well-conducted study should indicate how the degree of exposure or presence of prognostic factors or markers was assessed. Whatever measures are used must be sufficient to establish clearly that participants have or have not received the exposure under investigation and the extent of such exposure, or that they do or do not possess a particular prognostic marker or factor. Clearly described, reliable measures should increase the confidence in the quality of the study.

1.11 Evidence from other sources is used to demonstrate that the method of outcome assessment is valid and reliable

The inclusion of evidence from other sources or previous studies that demonstrate the validity and reliability of the assessment methods used should further increase confidence in study quality.

1.12 Exposure level or prognostic factor is assessed more than once

Confidence in data quality should be increased if exposure level or the presence of prognostic factors is measured more than once. Independent assessment by more than one investigator is preferable.

1.13 The main potential confounders are identified and taken into account in the design and analysis

Confounding is the distortion of a link between exposure and outcome by another factor that is associated with both exposure and outcome. The possible presence of confounding factors is one of the principal reasons why observational studies are not more highly rated as a source of evidence. The report of the study should indicate which potential confounders have been considered and how they have been assessed or allowed for in the analysis. Clinical judgement should be applied to consider whether all likely confounders have been considered. If the measures used to address confounding are considered inadequate, the study should be downgraded or rejected, depending on how serious the risk of confounding is considered to

be. A study that does not address the possibility of confounding should be rejected.

1.14 Have confidence intervals been provided?

Confidence limits are the preferred method for indicating the precision of statistical results and can be used to differentiate between an inconclusive study and a study that shows no effect. Studies that report a single value with no assessment of precision should be treated with caution.

Section 2 relates to the overall assessment of the paper. It starts by rating the methodological quality of the study, based on the responses in Section 1 and using the following coding system:

++	All or most of the criteria have been fulfilled. Where they have not been fulfilled, the conclusions of the study or review are thought **very unlikely** to alter.
+	Some of the criteria have been fulfilled. Those criteria that have not been fulfilled or not adequately described are thought **unlikely** to alter the conclusions.
–	Few or no criteria fulfilled. The conclusions of the study are thought **likely or very likely** to alter.

Appendix 10: Search strategies for the identification of health economics evidence

Search strategies for the identification of health economics and quality-of-life studies

1 General search filters

Drug misuse

a. MEDLINE, EMBASE, PsycINFO, CINAHL — Ovid interface

1	Amphetamine-related disorders/
2	Cannabis addiction/ or Marijuana abuse/
3	Cocaine dependence/ or Cocaine-related disorders/
4	Heroin addiction/
5	exp Narcotic dependence/
6	Opiate addiction/ or exp Opioid-related disorders/
7	Drug abuse/ or Drug abuse pattern/ or Drug addiction/ or Drug misuse/ or Drug overdoses/ or Intravenous drug abuse/ or Substance abuse/ or Substance-related disorders/ or "Substance use disorders"/
8	Drug dependence/ or Drug dependency/ or Substance dependence/
9	Multiple drug abuse/ or Polydrug abuse/
10	Neonatal abstinence syndrome/
11	Psychoses, substance-induced/
12	Substance abuse, intravenous/
13	Substance abuse, perinatal/
14	Substance withdrawal syndrome/
15	(((stimulant$ or polydrug$ or drug$1 or substance) adj3 (abstain$ or abstinen$ or abus$ or addict$ or (excessive adj use$) or dependen$ or disorder$ or intoxicat$ or misuse$ or over dos$ or overdos$ or (use$ adj (disorder$ or illicit)) or withdraw$)) or (drug$1 adj user$)).tw.
16	or/1-15
17	exp amphetamines/ or exp amphetamine derivative/
18	exp Cannabis/
19	exp CNS stimulating drugs/ or exp central nervous system stimulants/ or exp central stimulant agent/ or exp psychostimulant agent/
20	exp Cocaine/
21	Diamorphine/ or exp Heroin/
22	exp Methadone/
23	exp Narcotic agent/ or exp Narcotics/
24	Naltrexone$.sh.
25	exp Opiate/ or exp Opiates/ or exp Opium/
26	(amphetamine$ or crank or dextroamphetamine$ or methamphetamine$ or speed or uppers).tw.
27	(Adrafinil$ or Amphetaminil$ or Butanamine$ or Benzphetamine$ or Bromantan$ or Chloramphetamine$ or Deanol$ or Dexamphetamine$ or Dexmethylphenidate$ or Dimethoxy or Methylamphetamine$ or Hydroxyamphetamine$ or Lefetamine$ or Meclofenoxate$ or Mefexamide$ or Methcathinone$ or Methoxyamphetamine$ or Methylamphetamine$ or Methylphenidate$ or Modafinil$ or Pemoline$ or icamilon$ or Sydnocarb$ or Sydnofen$ or Tetrabenazine$).mp.
28	(Butanamine$ or Methylamphetamine$ or Methylenedioxymethamphetamine$ or Ethylbarbituric Acid$ or Allylglycine$ or Amfonelic Acid$ or Amiphenazole$ or

Apomorphine$ or Bemegride$ or Benzphetamine$ or Brucine$ or Carphedon$ or Cathinone$ or Chloramphetamine$ or Convulsant Agent or Cropropamide$ or Crotetamide$ or Dexamphetamine$ or Dexoxadrol$ or Dextroamphetamine$ or Dimefline$ or Dimetamfetamine$ or Doxapram$ or Ephedrine$ or Etamivan$ or Ethimizole$ or Methylenedioxyamphetamine$ or Fencamfamin$ or Fenetylline$ or Flurothyl$ or Fominoben$ or Harmaline$ or Homococaine$ or Hydroxyamphetamine$ or Lobeline$ or Mazindol$ or Meclofenoxate$ or Mefexamide$ or Methamphetamine$ or Methcathinone$ or Methylephedrine$ or Methylphenidate$ or Ethylamphetamine$ or Nikethamide$ or Norcocaine$ or Pemoline$ or Pentetrazole$ or Phenmetrazine$ or Phentermine$ or Picrotoxin$ or Pipradol$ or Prethcamide$ or Prolintane$ or Pseudoephedrine$ or Pyrovalerone$ or Racephedrine$ or Strychnine$ or Butylbicycloorthobenzoate$ or Butylbicyclophosphorothioate$ or Tetramethylsuccinimide$ or Theodrenaline$).mp.

29 (analeptic$ or psychostimulant$ or stimulant$).tw.

30 (cannabis or hashish or marihuana or marijua$).mp.

31 (cocaine or crack).tw.

32 (diethylpropion or ephedrine or fenfluramine or methylphenidate or pemoline or phenmetrazine or phendimetrazine or phenylpropanolamine).mp.

33 (heroin or diacetylmorphine or diamorphine or morphin$ or morfin$ or smack).tw.

34 methadone.tw.

35 (antaxone or dihydroxymorphinan or nalorex or naltrel or naltrexone or revia or trexan or vivitrex).tw.

36 (opiate$ or opioid$ or opium).mp.

37 (ardinex or codein$ or isocodein$ or codipertussin or codyl or methyl morfine or methylmorfine or methyl morphine or methylmorphine or morphine 3 methyl ether or morphine methyl ether or morphine monomethyl ether or pentuss or trans codeine or 467-15-2).mp,rn.

38 (dihydrocodeine or codhydrin$ or codicontin or cohydrin or dehacodin or Df 118 or Df118 or didrate or dihydrin or dihydroneopine or drocode or hydrocodeine or hydrocodin or nadein$ or napacodin or novicodin or paracodein or paracodin or paramol or parzone or rapacodin or remedacen or tiamon mono or 5965-13-9).mp,rn.

39 or/17-38

40 (abstain$ or abstinen$ or abus$ or addict$ or (drug adj use$) or (excessive adj use$) or dependen$ or (inject$ adj2 drug$) or intoxicat$ or misus$ or over dos$ or overdos$ or (use$ adj (disorder$ or illicit)) or withdraw$).mp.

41 and/39-40

42 or/16,41

b. NHS Economic Evaluation Database — Wiley Interscience interface

#1 MeSH descriptor Amphetamine-Related Disorders, this term only in MeSH products

#2 MeSH descriptor Substance-Related Disorders, this term only in MeSH products

#3 MeSH descriptor Cocaine-Related Disorders, this term only in MeSH products

#4 MeSH descriptor Marijuana Abuse, this term only in MeSH products

#5 MeSH descriptor Neonatal Abstinence Syndrome, this term only in MeSH products

#6 MeSH descriptor Opioid-Related Disorders explode all trees in MeSH products

#7 MeSH descriptor Psychoses, Substance-Induced, this term only in MeSH products

#8 MeSH descriptor Substance Abuse, Intravenous, this term only in MeSH products

#9 MeSH descriptor Substance Withdrawal Syndrome, this term only in MeSH products

#10 (stimulant* or polydrug* or drug* or substance) near (abstain* or abstinen* or abus* or addict* or dependen* or disorder* or intoxicat* or misuse* or over dos* or overdos* or withdraw*) in All Fields in all products

#11 drug user* in All Fields in all products

#12 (#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11)

#13 MeSH descriptor Amphetamines explode all trees in MeSH products

#14	MeSH descriptor Cannabis, this term only in MeSH products
#15	MeSH descriptor Central Nervous System Stimulants explode all trees in MeSH products
#16	MeSH descriptor Cocaine explode all trees in MeSH products
#17	MeSH descriptor Heroin, this term only in MeSH products
#18	MeSH descriptor Methadone explode all trees in MeSH products
#19	MeSH descriptor Narcotics explode all trees in MeSH products
#20	MeSH descriptor Opium explode all trees in MeSH products
#21	amphetamine* or crank or dextroamphetamine* or methamphetamine* or speed in All Fields in all products
#22	Adrafinil* or Amphetaminil* or Butanamine* or Benzphetamine* or Bromantan* or Chloramphetamine* or Deanol* or Dexamphetamine* or Dexmethylphenidate* or Dimethoxy or Methylamphetamine* or Hydroxyamphetamine* or Lefetamine* or Meclofenoxate* or Mefexamide* or Methcathinone* or Methoxyamphetamine* or Methylamphetamine* or Methylphenidate* or Modafinil* or Pemoline* or Picamilon* or Sydnocarb* or Sydnofen* or Tetrabenazine* in All Fields in all products
#23	Butanamine* or Methylamphetamine* or Methylenedioxymethamphetamine* or Ethylbarbituric Acid* or Allylglycine* or Amfonelic Acid* or Amiphenazole* or Apomorphine* or Bemegride* or Benzphetamine* or Brucine* or Carphedon* or Cathinone* or Chloramphetamine* or Convulsant Agent* or Cropropamide* or Crotetamide* or Dexamphetamine* or Dexoxadrol* or Dextroamphetamine* or Dimefline* or Dimetamfetamine* or Doxapram* or Ephedrine* or Etamivan* or Ethimizole* or Methylenedioxyamphetamine* in All Fields in all products
#24	Fencamfamin* or Fenetylline* or Flurothyl* or Fominoben* or Harmaline* or Homococaine* or Hydroxyamphetamine* or Lobeline* or Mazindol* or Meclofenoxate* or Mefexamide* or Methamphetamine* or Methcathinone* or Methylephedrine* or Methylphenidate* or Ethylamphetamine* or Nikethamide* or Norcocaine* or Pemoline* or Pentetrazole* or Phenmetrazine* or Phentermine* or Picrotoxin* or Pipradol* or Prethcamide* or Prolintane* or Pseudoephedrine* or Pyrovalerone* or Racephedrine* or Strychnine* or Butylbicycloorthobenzoate* or Butylbicyclophosphorothioate* or Tetramethylsuccinimide* or Theodrenaline* in All Fields in all products
#25	analeptic* or psychostimulant* or stimulant* in All Fields in all products
#26	cannabis or hashish or marihuana or marijua* in All Fields in all products
#27	cocaine or crack in All Fields in all products
#28	diethylpropion or ephedrine or fenfluramine or methylphenidate or pemoline or phenmetrazine or phendimetrazine or phenylpropanolamine in All Fields in all products
#29	heroin or diacetylmorphine or diamorphine or morphin* or morfin* or smack in All Fields in all products
#30	methadone in All Fields in all products
#31	antaxone or dihydroxymorphinan or nalorex or naltrel or naltrexone or revia or trexan or vivitrex in All Fields in all products
#32	opiate* or opioid* or opium in All Fields in all products
#33	ardinex or codein* or isocodein* or codipertussin or codyl or methylmorfine or methylmorphine or morphin* or pentuss in All Fields in all products
#34	dihydrocodeine or codhydrin* or codicontin or cohydrin or dehacodin or Df 118 or Df118 or didrate or dihydrin or dihydroneopine or drocode or hydrocodeine or hydrocodin or nadein* or napacodin or novicodin or paracodein or paracodin or paramol or parzone or rapacodin or remedacen or tiamon mono in All Fields in all products
#35	(#13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22)
#36	(#23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34)
#37	(#35 OR #36)
#38	abstain* or abstinen* or abus* or addict* or drug user* or dependen* or inject* drug*

or intoxicat* or misus* or overdos* or illicit use* or withdraw* in All Fields in all products

#39 (#37 AND #38)

#40 (#12 OR #39)

c. Health Technology Assessment Database — Wiley Interscience interface

#1 MeSH descriptor Amphetamine-Related Disorders, this term only in MeSH products

#2 MeSH descriptor Substance-Related Disorders, this term only in MeSH products

#3 MeSH descriptor Cocaine-Related Disorders, this term only in MeSH products

#4 MeSH descriptor Marijuana Abuse, this term only in MeSH products

#5 MeSH descriptor Neonatal Abstinence Syndrome, this term only in MeSH products

#6 MeSH descriptor Opioid-Related Disorders explode all trees in MeSH products

#7 MeSH descriptor Psychoses, Substance-Induced, this term only in MeSH products

#8 MeSH descriptor Substance Abuse, Intravenous, this term only in MeSH products

#9 MeSH descriptor Substance Withdrawal Syndrome, this term only in MeSH products

#10 (stimulant* or polydrug* or drug* or substance) near (abstain* or abstinen* or abus* or addict* or dependen* or disorder* or intoxicat* or misuse* or over dos* or overdos* or withdraw*) in All Fields in all products

#11 drug user* in All Fields in all products

#12 (#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11)

#13 MeSH descriptor Amphetamines explode all trees in MeSH products

#14 MeSH descriptor Cannabis, this term only in MeSH products

#15 MeSH descriptor Central Nervous System Stimulants explode all trees in MeSH products

#16 MeSH descriptor Cocaine explode all trees in MeSH products

#17 MeSH descriptor Heroin, this term only in MeSH products

#18 MeSH descriptor Methadone explode all trees in MeSH products

#19 MeSH descriptor Narcotics explode all trees in MeSH products

#20 MeSH descriptor Opium explode all trees in MeSH products

#21 amphetamine* or crank or dextroamphetamine* or methamphetamine* or speed in All Fields in all products

#22 Adrafinil* or Amphetaminil* or Butanamine* or Benzphetamine* or Bromantan* or Chloramphetamine* or Deanol* or Dexamphetamine* or Dexmethylphenidate* or Dimethoxy or Methylamphetamine* or Hydroxyamphetamine* or Lefetamine* or Meclofenoxate* or Mefexamide* or Methcathinone* or Methoxyamphetamine* or Methylamphetamine* or Methylphenidate* or Modafinil* or Pemoline* or Picamilon* or Sydnocarb* or Sydnofen* or Tetrabenazine* in All Fields in all products

#23 Butanamine* or Methylamphetamine* or Methylenedioxymethamphetamine* or Ethylbarbituric Acid* or Allylglycine* or Amfonelic Acid* or Amiphenazole* or Apomorphine* or Bemegride* or Benzphetamine* or Brucine* or Carphedon* or Cathinone* or Chloramphetamine* or Convulsant Agent* or Cropropamide* or Crotetamide* or Dexamphetamine* or Dexoxadrol* or Dextroamphetamine* or Dimefline* or Dimetamfetamine* or Doxapram* or Ephedrine* or Etamivan* or Ethimizole* or Methylenedioxyamphetamine* in All Fields in all products

#24 Fencamfamin* or Fenetylline* or Flurothyl* or Fominoben* or Harmaline* or Homococaine* or Hydroxyamphetamine* or Lobeline* or Mazindol* or Meclofenoxate* or Mefexamide* or Methamphetamine* or Methcathinone* or Methylephedrine* or Methylphenidate* or Ethylamphetamine* or Nikethamide* or Norcocaine* or Pemoline* or Pentetrazole* or Phenmetrazine* or Phentermine* or Picrotoxin* or Pipradol* or Prethcamide* or Prolintane* or Pseudoephedrine* or Pyrovalerone* or Racephedrine* or Strychnine* or Butylbicycloorthobenzoate* or Butylbicyclophosphorothioate* or Tetramethylsuccinimide* or Theodrenaline* in All Fields in all products

#25 analeptic* or psychostimulant* or stimulant* in All Fields in all products

#26	cannabis or hashish or marihuana or marijua* in All Fields in all products
#27	cocaine or crack in All Fields in all products
#28	diethylpropion or ephedrine or fenfluramine or methylphenidate or pemoline or phenmetrazine or phendimetrazine or phenylpropanolamine in All Fields in all products
#29	heroin or diacetylmorphine or diamorphine or morphin* or morfin* or smack in All Fields in all products
#30	methadone in All Fields in all products
#31	antaxone or dihydroxymorphinan or nalorex or naltrel or naltrexone or revia or trexan or vivitrex in All Fields in all products
#32	opiate* or opioid* or opium in All Fields in all products
#33	ardinex or codein* or isocodein* or codipertussin or codyl or methylmorfine or methylmorphine or morphin* or pentuss in All Fields in all products
#34	dihydrocodeine or codhydrin* or codicontin or cohydrin or dehacodin or Df 118 or Df118 or didrate or dihydrin or dihydroneopine or drocode or hydrocodeine or hydrocodin or nadein* or napacodin or novicodin or paracodein or paracodin or paramol or parzone or rapacodin or remedacen or tiamon mono in All Fields in all products
#35	(#13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22)
#36	(#23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34)
#37	(#35 OR #36)
#38	abstain* or abstinen* or abus* or addict* or drug user* or dependen* or inject* drug* or intoxicat* or misus* or overdos* or illicit use* or withdraw* in All Fields in all products
#39	(#37 AND #38)
#40	(#12 OR #39)

d. OHE EED — Clarinet interface

1	AX=(stimulant* or polydrug* or drug* or substance) and (abstain* or abstinen* or abus* or addict* or dependen* or disorder* or intoxicat* or misuse* or overdos* or withdraw*)
2	AX='illicit use' or 'drug use' or 'drug user' or 'drug users'
3	AX=amphetamine* or crank or dextroamphetamine* or methamphetamine* or speed or uppers
4	AX=Adrafinil* or Amphetaminil* or Butanamine* or Benzphetamine* or Bromantan* or Chloramphetamine* or Deanol* or Dexamphetamine* or Dexmethylphenidate* or Dimethoxy or Methylamphetamine* or Hydroxyamphetamine* or Lefetamine* or Meclofenoxate* or Mefexamide* or Methcathinone* or Methoxyamphetamine* or Methylamphetamine* or Methylphenidate* or Modafinil* or Pemoline* or Picamilon* or Sydnocarb* or Sydnofen* or Tetrabenazine*
5	AX=Butanamine* or Methylamphetamine* or Methylenedioxymethamphetamine* or Ethylbarbituric* or Allylglycine* or Amfonelic* or Amiphenazole* or Apomorphine* or Bemegride* or Benzphetamine* or Brucine* or Carphedon* or Cathinone* or Chloramphetamine* or Convulsant* or Cropropamide* or Crotetamide* or Dexamphetamine* or Dexoxadrol* or Dextroamphetamine* or Dimefline* or Dimetamfetamine* or Doxapram* or Ephedrine*
6	AX=Etamivan* or Ethimizole* or Methylenedioxyamphetamine* or Fencamfamin* or Fenetylline* or Flurothyl* or Fominoben* or Harmaline* or Homococaine* or Hydroxyamphetamine* or Lobeline* or Mazindol* or Meclofenoxate* or Mefexamide* or Methamphetamine* or Methcathinone* or Methylephedrine* or Methylphenidate* or Ethylamphetamine* or Nikethamide* or Norcocaine* or Pemoline* or Pentetrazole* or Phenmetrazine* or Phentermine* or Picrotoxin*
7	AX=Pipradol* or Prethcamide* or Prolintane* or Pseudoephedrine* or Pyrovalerone*

		or Racephedrine* or Strychnine* or Butylbicycloorthobenzoate* or Butylbicyclophosphorothioate* or Tetramethylsuccinimide* or Theodrenaline*
	8	AX=analeptic* or psychostimulant* or stimulant*
	9	AX=cannabis or hashish or marihuana or marijua*
	10	AX=cocaine or crack
	11	AX=diethylpropion or ephedrine or fenfluramine or methylphenidate or pemoline or phenmetrazine or phendimetrazine or phenylpropanolamine
	12	AX=heroin or diacetylmorphine or diamorphine or morphin* or morfin* or smack or methadone
	13	AX=antaxone or dihydroxymorphinan or nalorex or naltrel or naltrexone or revia or trexan or vivitrex
	14	AX=opiate* or opioid* or opium
	15	AX=ardinex or codein* or isocodein* or codipertussin or codyl or morfine or methylmorfine or methylmorphine or pentuss or codeine
	16	AX=dihydrocodeine or codhydrin* or codicontin or cohydrin or dehacodin or didrate or dihydrin or dihydroneopine or drocode or hydrocodeine or hydrocodin or nadein* or napacodin or novicodin or paracodein or paracodin or paramol or parzone or rapacodin or remedacen or tiamon
	17	AX=abstain* or abstinen* or abus* or addict* or 'drug use' or 'drug user' or 'drug user' or dependen* or 'injecting drug' or 'inject drug' or 'injecting drugs' or inject drugs' or intoxicat* or misus* or overdos* or 'illicit use' or withdraw*
	18	3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16
	19	CS=17 AND 18
	20	CS=19 OR 1 OR 2

2 Health economics and auality-of-life search filters

a. MEDLINE, EMBASE, PsycINFO, CINAHL — Ovid interface

	1	exp "costs and cost analysis"/ or "health care costs"/
	2	exp health resource allocation/ or exp health resource utilization/
	3	exp economics/ or exp economic aspect/ or exp health economics/
	4	exp value of life/
	5	(burden adj5 (disease or illness)).tw.
	6	(cost$ or economic$ or expenditure$ or price$1 or pricing or pharmacoeconomic$).tw.
	7	(budget$ or fiscal or funding or financial or finance$).tw.
	8	(resource adj5 (allocation$ or utilit$)).tw.
	9	or/1-8
	10	(value adj5 money).tw.
	11	exp quality of life/
	12	(quality$ adj5 (life or survival)).tw.
	13	(health status or QOL or well being or wellbeing).tw.
	14	or/9-13

Details of additional searches undertaken to support the development of this guideline are available on request.

Appendix 11: Quality checklists for economic studies

1.1 Full economic evaluations

Author: **Date:**

Title:

	Study design	Yes	No	NA
1	The research question is stated	❑	❑	
2	The viewpoint(s) of the analysis are clearly stated	❑	❑	
3	The alternatives being compared are relevant	❑	❑	
4	The rationale for choosing the alternative programmes or interventions compared is stated	❑	❑	
5	The alternatives being compared are clearly described	❑	❑	
6	The form of economic evaluation used is justified in relation to the question addressed	❑	❑	
	Data collection			
1	The source of effectiveness data used is stated	❑	❑	
2	Details of the design and results of the effectiveness study are given	❑	❑	❑
3	The primary outcome measure(s) for the economic evaluation are clearly stated	❑	❑	
4	Methods to value health states and other benefits are stated	❑	❑	
5	Details of the subjects from whom valuations were obtained are given	❑	❑	
6	Indirect costs (if included) are reported separately	❑	❑	❑
7	Quantities of resources are reported separately from their unit costs	❑	❑	
8	Methods for the estimation of quantities and unit costs are described	❑	❑	
9	Currency and price data are recorded	❑	❑	
10	Details of currency of price adjustments for inflation or currency conversion are given	❑	❑	❑
11	Details of any models used are given	❑	❑	❑
12	The choice of model used and the key parameters on which it is based are justified	❑	❑	❑
	Analysis and interpretation of results			
1	Time horizon of costs and benefits is stated	❑	❑	
2	The discount rate(s) is stated	❑	❑	❑
3	The choice of rate(s) is justified	❑	❑	❑
4	An explanation is given if costs or benefits are not discounted	❑	❑	❑
5	Details of statistical tests and confidence intervals are given for stochastic data	❑	❑	❑
6	The approach to sensitivity analysis is given	❑	❑	
7	The choice of variables for sensitivity analysis is given	❑	❑	
8	The ranges over which the variables are varied are stated	❑	❑	
9	Relevant alternatives are compared	❑	❑	
10	Incremental analysis is reported	❑	❑	❑

11	Major outcomes are presented in a disaggregated as well as aggregated form	❑	❑
12	The answer to the study question is given	❑	❑
13	Conclusions follow from the data reported	❑	❑
14	Conclusions are accompanied by the appropriate caveats	❑	❑

1

1.2 Partial economic evaluations

Author: **Date:**

Title:

	Study design	Yes	No	NA
1	The research question is stated	❑	❑	
2	The viewpoint(s) of the analysis is clearly stated and justified	❑	❑	
	Data collection			
1	Details of the subjects from whom valuations were obtained are given	❑	❑	
2	Indirect costs (if included) are reported separately	❑	❑	❑
3	Quantities of resources are reported separately from their unit costs	❑	❑	
4	Methods for the estimation of quantities and unit costs are described	❑	❑	
5	Currency and price data are recorded	❑	❑	
6	Details of currency of price adjustments for inflation or currency conversion are given	❑	❑	❑
7	Details of any model used are given	❑	❑	❑
8	The choice of model used and the key parameters on which it is based are justified	❑	❑	❑
	Analysis and interpretation of results			
1	Time horizon of costs is stated	❑	❑	
2	The discount rate(s) is stated	❑	❑	❑
3	Details of statistical tests and confidence intervals are given for stochastic data	❑	❑	❑
4	The choice of variables for sensitivity analysis is given	❑	❑	
5	The ranges over which the variables are varied are stated	❑	❑	
6	Appropriate sensitivity analysis is performed	❑	❑	
7	The answer to the study question is given	❑	❑	
8	Conclusions follow from the data reported	❑	❑	
9	Conclusions are accompanied by the appropriate caveats	❑	❑	

Appendix 12: Data extraction form for economic studies

Reviewer: **Date of Review:**

Authors:

Publication Date:

Title:

Country:

Language:

Economic study design:

- ❑CEA
- ❑CBA
- ❑CUA
- ❑CMA
- ❑ CCA
- ❑ CA

Modelling:

- ❑ No
- ❑Yes

Source of data for effect size measure(s):

- ❑RCT
- ❑Quasi experimental study
- ❑Cohort study
- ❑Mirror image (before-after) study
- ❑Meta-analysis
- ❑RCT
- ❑ Quasi experimental study
- ❑ Cohort study
- ❑ Mirror image (before-after) study
- ❑ Expert opinion

Comments _____

Primary outcome measure(s) (please list):

_____

Interventions compared (please describe):

Treatment: _____

Comparator: _____

Setting (please describe):

_____

_____

Patient population characteristics (please describe):

_____

_____

_____

Perspective of analysis:

❑Societal ❑ Other: _____
❑ Patient and family
❑ Health care system
❑ Health care provider
❑ Third party payer

Time frame of analysis: _____

Cost data:

❑ Primary ❑ Secondary

If secondary please specify: _____

Costs included:

Direct medical	Direct non-medical	Lost productivity
❑ direct treatment	❑ social care	❑ income forgone due to illness
❑ inpatient	❑ social benefits	❑ income forgone due to death
❑ outpatient	❑ travel costs	❑ income forgone by caregiver
❑ day care	❑ caregiver out-of-pocket	
❑ community health care	❑ criminal justice	
❑ medication	❑ training of staff	

Or

❑ staff
❑ medication
❑ consumables
❑ overhead
❑ capital equipment
❑ real estate Others: _____

Currency: _____ **Year of costing:** _____

Was discounting used?
❑ Yes, for benefits and costs ❑ Yes, but only for costs ❑ No

Discount rate used for costs: _____

Discount rate used for benefits: _____

Result(s):

_____

_____

_____

_____

Comments, limitations of the study:

_____

_____

_____

Quality checklist score (Yes/NA/All): ……/……/……

Appendix 13: Evidence tables for economic studies

[To be added]

Appendices 14, 15 and 16 are available as separate files on the website.

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12 Abbreviations

AA	Alcoholics Anonymous
A&E	accident and emergency
AGREE	Appraisal of Guidelines for Research and Evaluation Instrument
AMED	A bibliographic database produced by the Health Care Information Service of the British Library
ASI	Addiction Severity Index
ASPD	antisocial personality disorder
AUDIT	Alcohol Use Disorders Identification Test
BBV	blood-borne virus
BCT	behavioural couples therapy
BNF	British National Formulary
CA	Cocaine Anonymous
CBT	cognitive behavioural therapy (S: standard; RP: relapse prevention)
CENTRAL	Cochrane Central Register of Controlled Trials
CI	confidence interval
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CM	contingency management
CPN	community psychiatric nurse
CRA	community reinforcement approach
CUAD	Chemical Use Abuse and Dependency scale
CVD	cardiovascular disease
CXR	chest x-ray
DALI	Dartmouth Assessment of Lifestyle Instrument
DARE	Database of Abstracts of Reviews of Effects
DARP	Drug Abuse Reporting Programme
DAST-10	Drug Abuse Screening Test
DATOS	Drug Abuse Treatment Outcome Study
DDA	Drug Dependents Anonymous
DH	Department of Health
DSM	Diagnostic and Statistical Manual of Mental Disorders (versions III-R and IV-TR)
DUDIT	Drug Use Disorders Identification Test
EMBASE	Excerpta Medica database
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction

FA	Families Anonymous
FSO	family members and significant others
GDG	Guideline Development Group
GMC	General Medical Council
GP	general practitioner
GRADE	Grading of Recommendations: Assessment, Development and Evaluation (Working Group)
GRP	Guideline Review Panel
HIV	human immunodeficiency virus
HMIC	Health management and policy database from the Healthcare Management Information Consortium
HRQoL	health-related quality of life
HTA	Health Technology Assessment
ICD	International Classification of Diseases (10th edition)
ICER	incremental cost-effectiveness ratio
IDU	injecting drug user
IPT	interpersonal therapy
MEDLINE	Compiled by the US National Library of Medicine and published on the web by Community of Science, MEDLINE is a source of life sciences and biomedical bibliographic information
MMT	methadone maintenance treatment
MRC	Medical Research Council
NA	Narcotics Anonymous
NACRO	National Association for the Care and Rehabilitation of Offenders
NCCMH	National Collaborating Centre for Mental Health
NDUDA	National Drug Users Development Agency
NDTMS	National Drug Treatment Monitoring System
NHS	National Health Service
NHS EED	National Health Service Economic Evaluation Database
NICE	National Institute for Health and Clinical Excellence
NPV	negative predictive value
NSC	National Screening Committee
NSE	needle and syringe exchange
NSF	National Service Framework
NTA	National Treatment Agency for Substance Misuse

NTORS	National Treatment Outcomes Research Study
OECD	Organistion for Economic Co-operation and Development
OHE HEED	Office of Health Economics, Health Economics Evaluation Database
OTI	Opiate Treatment Index
PAIS International	Database containing references to a wide range of indexed research material from over 120 countries
PCT	Primary Care Trust
PICO	patient, intervention, comparison and outcome
PILOTS	An electronic index to the worldwide literature on post-traumatic stress disorder and other mental-health consequences of exposure to traumatic events, produced by the US National Center for PTSD
POSIT	Problem-Oriented Screening Instrument for Teenagers
PPD	purified protein derivative
PPV	positive predictive value
PsycINFO	An abstract (not full text) database of psychological literature from the 1800s to the present
QALY	quality adjusted life years
QoL	quality of life
RBT	reinforcement-based therapy
RCT	randomised controlled trial
RP	relapse prevention
RR	relative risk
RRP	residential rehabilitation programme
SAS-SR	Social Adjustment Scale — Self-Report
SD	standard deviation
SHG	self-help group
SIGLE	System for Information on Grey Literature in Europe database
SIGN	Scottish Intercollegiate Guidelines Network
SMD	standardised mean difference
SMI	serious mental illness
SR	systematic review
SSCI	Social Sciences Citation Index
STPT	short-term psychodynamic therapy

TAU	treatment as usual
TB	tuberculosis
TC	therapeutic community
TOPS	Treatment Outcome Prospective Study
WHO	World Health Organization
WMD	weighted mean difference

13 Glossary

12-step self-help group
A non-profit fellowship of people who meet regularly to help each other remain **abstinent**. The core of the 12-step programme is a series of 12 stages that include admitting to a drug problem, seeking help, self-appraisal, confidential self-disclosure, making amends (when possible) where harm has been done, achieving a spiritual awakening and supporting other people who misuse drugs who want to recover.

Abstinence
Abstinence-oriented treatments aim to reduce an individual's level of drug use, with the ultimate goal of refraining from use altogether.

Agonist
An agonist is a substance that mimics the actions of a neurotransmitter or hormone to produce a response when it binds to a specific receptor in the brain. Opiate drugs, for example heroin and **methadone**, are agonists that produce responses such as 'liking', analgesia and respiratory depression.

Alcoholics Anonymous (AA)
Alcoholics Anonymous is an informal fellowship of people who, through shared experiences and support for one another, aim to achieve abstinence and help others to recover from alcoholism. The only requirement for membership is a desire to stop misusing alcohol. An international organisation, AA was founded in the US in 1935 and established in the UK in 1947. It was from AA that the **12-step** treatment model originated.

Antagonist
In contrast to the action of an **agonist**, an antagonist, such as **naltrexone**, binds to a specific receptor in the brain but does not activate it. Therefore, if an agonist, for example heroin or **methadone**, is present and activating the receptor, taking naltrexone will counteract the activation, resulting in withdrawal.

Behavioural couples therapy
Behavioural couples therapy usually involves (a) the person who misuses drugs stating his or her intention not to use drugs each day and his or her partner expressing support for the former's efforts to stay abstinent; (b) teaching more effective communication skills, such as active listening and expressing feelings directly; and (c) helping to increase positive behavioural exchanges between partners by encouraging them to acknowledge pleasing behaviours and engage in shared recreational activities (Fals-Stewart *et al.*, 2002).

Brief intervention
Brief interventions are those with a maximum duration of two sessions, lasting up to an hour each. The main principles include expressing empathy with the service user, not opposing resistance and offering feedback in order to increase the motivation of the service user to make changes to his or her drug use.

Buprenorphine
An analgesic **opiate** substitute used in **maintenance**-oriented treatment, buprenorphine has both **agonist** and **antagonist** properties.

Cannabis
Cannabis is a generic term denoting the various psychoactive preparations of the hemp plant, including marijuana leaves, hashish resin and oil (WHO, 2006). It is the most commonly used illicit drug in the UK.

Case management
Case management is a method of co-ordinating care for people who misuse drugs. An individual worker, the case manager, is responsible for the co-ordination and, where necessary, provision of this care. Contact with the case manager is usually expected to be on a regular ongoing basis.

Coerced/legally mandated treatment
Coerced, or legally mandated, treatment requires that the person who misuses drugs enter into treatment as an alternative or adjunct to criminal sanctions (Wild *et al.*, 2002). Such treatment can either be legally ordered by the court or through diversion away from the judicial process, usually following arrest and charge for drug-related and other offences.

Cognitive behavioural therapy
Cognitive behavioural therapy encompasses a range of behavioural and cognitive behavioural therapies, in part derived from the cognitive behavioural model of affective disorders, in which the patient works collaboratively with a therapist using a shared formulation to achieve specific treatment goals. Such goals may include recognising the impact of behavioural and/or thinking patterns on feeling states and encouraging alternative cognitive and/or behavioural coping skills to reduce the severity of target symptoms and problems. Therapies relevant to the field of drug misuse include **standard cognitive behavioural therapy** and **relapse-prevention cognitive behavioural therapy**.

Confidence interval (CI)
The range within which the 'true' values (for example, size of effect of an intervention) are expected to lie with a given degree of certainty (for example, 95% or 99%). (Note: confidence intervals represent the probability of random errors, but not systematic errors or bias.)

Contingency management

Contingency management provides a system of incentives and disincentives designed to make continual drug use less attractive and abstinence more attractive (Griffith *et al.*, 2000). The two main methods of providing incentives are voucher-based, whereby vouchers representing monetary values are provided upon receipt of biological samples (usually urine) that are negative for the tested drugs, and prize-based, whereby participants receive prize-draw entries upon presentation of a negative biological sample.

Dependence

Dependence is defined by the World Health Organization as a strong desire or sense of compulsion to take a substance, a difficulty in controlling its use, the presence of a physiological withdrawal state, tolerance of the use of the drug, neglect of alternative pleasures and interests and persistent use of the drug, despite harm to oneself and others (WHO, 2006).

Detoxification

Detoxification is the process by which an individual is withdrawn from the effects of a psychoactive substance. As a clinical procedure, the withdrawal process should be supervised and carried out in a safe and effective manner, such that withdrawal symptoms are minimised. Typically, the individual is clinically intoxicated or already in withdrawal at the outset of detoxification. Detoxification may involve the administration of medication, the dose of which is calculated to relieve withdrawal symptoms without inducing intoxication, and is gradually tapered off as the individual recovers.

Drug misuse/problem drug use

Drug misuse is the use of a substance for a purpose not consistent with legal or medical guidelines (WHO, 2006). The Advisory Council on the Misuse of Drugs defines problem drug use as a condition that may cause an individual to experience social, psychological, physical or legal problems related to intoxication and/or regular excessive consumption, and/or dependence; any injection drug use also constitutes misuse (ACMD, 1998).

Extended outpatient treatment

Treatment occurs in regularly scheduled sessions, usually totalling fewer than 9 contact hours per week. Examples include weekly or twice-weekly individual therapy, weekly group therapy or a combination of the two in association with participation in self-help groups.

Family-based intervention

Family-based interventions work jointly with the person who misuses drugs and his or her family members, partner or others from a wider social network (for example, a close friend) to seek reduced drug use or abstinence based on cognitive-behavioural principles.

Harm reduction
Harm reduction describes measures aiming to prevent or reduce negative health or other consequences associated with drug misuse, whether to the drug-using individual or to society. Attempts are not necessarily made to reduce the drug use itself.

Incremental cost-effectiveness ratio (ICER)
The difference in the mean costs in the population of interest divided by the differences in the main outcomes in the population of interest.

Interpersonal therapy
A discrete, time limited, structured psychological intervention that focuses on interpersonal issues and where therapist and service user: a) work collaboratively to identify the effects of key problematic areas related to interpersonal conflicts, role transitions, grief and loss, and social skills, and their effects on current drug misuse, feelings states and/or problems; and b) seek to reduce drug misuse problems by learning to cope with or resolve interpersonal problem areas.

Last observation carried forward (LOCF)
A type of data analysis used in clinical trials, often when data is lacking, in which the last results before a subject drops out of the trial are counted as if they occurred at the end of the trial.

Maintenance
Maintenance-oriented treatment in the UK context refers primarily to the pharmacological maintenance of people who are opiate dependent; that is, prescription of opiate substitutes (**methadone** or **buprenorphine**). This aims to reduce illicit drug use and its consequent harms.

Meta-analysis
The use of statistical techniques in a **systematic review** to integrate the results of several independent studies.

Methadone
A synthetic, psychoactive **opiate** substitute used in **maintenance**-oriented treatment, particularly heroin dependence. Methadone has **agonist** properties.

Naltrexone
An **antagonist** that blocks the effects of **opiate** drugs on receptors in the brain, naltrexone is used in **maintenance** treatment.

Narcotics Anonymous (NA)
Narcotics Anonymous is a non-profit fellowship of men and women for whom drug misuse has become a severe problem. Members meet regularly with the aim of helping each other to remain abstinent. The only requirement

for membership is a desire to stop misusing drugs. Originating in the US in 1953, the first UK NA meeting was held in 1980. At the core of the NA programme is the **12-step** treatment model, adapted from **Alcoholics Anonymous**.

National Collaborating Centre for Mental Health (NCCMH)
One of seven centres established by the **National Institute for Health and Clinical Excellence (NICE)** to develop guidance on the appropriate treatment and care of people with specific diseases and conditions within the NHS in England and Wales. Established in 2001, the NCCMH is responsible for developing mental health guidelines, and is a partnership between the Royal College of Psychiatrists and the British Psychological Society.

National Institute for Health and Clinical Excellence (NICE)
An independent organisation responsible for providing national guidance on the promotion of good health and the prevention and treatment of ill health. It provides guidance on three areas of health: public health, health technologies and clinical practice.

National Treatment Agency for Substance Misuse (NTA)
The NTA is a special health authority, which was established by the government in 2001. It is tasked with increasing the availability, capacity and effectiveness of treatment for drug misuse in England and embraces user involvement as a core component of its strategy.

Needle and syringe exchange (NSE)
NSE services aim to reduce transmission of blood-borne viruses through the promotion of safer drug injection behaviour, primarily via the distribution of sterile needles, but often also by offering education and other psychosocial interventions.

Opiate
Opiates refer to a class of psychoactive substances derived from the poppy plant, including opium, morphine and codeine, as well as their semi-synthetic counterparts, including heroin (WHO, 2004). In this guideline, the term 'opiate' is used more broadly to incorporate synthetic compounds (including **methadone**) with similar properties, also commonly known as opioids.

Outreach
Outreach involves targeting high risk and local priority groups. The general aims of outreach work are to: identify and contact hidden populations, refer members of these populations to existing care services, initiate activities aimed at prevention and at demand reduction, and to promote safer sex and safer drug use (European Monitoring Centre for Drugs and Drug Addiction, 1999).

Point abstinence

Point abstinence refers to evidence for the absence of drug use at a particular point in time (for example, at the end of treatment or at 12-month follow-up).

Psychoeducation
Psychoeducation is a programme designed for individuals or groups of people who misuse drugs that combines education about blood-borne viruses with skills training to improve communication, assertiveness and safe sexual and injection risk behaviour. It also provides people with an opportunity to ask questions and receive relevant feedback.

Psychosocial intervention
Psychosocial interventions are any formal, structured psychological or social intervention with assessment, clearly defined treatment plans and treatment goals, and regular reviews (NTA, 2006), as opposed to advice and information, drop-in support or informal keyworking.

Quality adjusted life years (QALY)
A form of utility measure calculated by estimating the total life years gained from a treatment and weighting each year with a quality-of-life score in that year.

Randomised controlled trial (RCT)
An experiment in which investigators randomly allocate eligible people into groups to receive or not to receive one or more interventions that are being compared. The results are assessed by comparing outcomes in the different groups. Through randomisation, the groups should be similar in all aspects, apart from the treatment they receive during the study.

Relapse-prevention cognitive behavioural therapy

This differs from standard cognitive behavioural therapy in the emphasis on training drug users to develop skills to identify situations or states where they are most vulnerable to drug use, to avoid high-risk situations, and to use a range of cognitive and behavioural strategies to cope effectively with these situations (Carroll & Onken, 2005).

Relative risk (RR)
The ratio of risk in the intervention group to the risk in the control group. The risk (proportion, probability or rate) is the ratio of people with an event in a group to the total in the group. An RR of 1 indicates no difference between comparison groups. For undesirable outcomes, an RR that is less than 1 indicates that the intervention was effective in reducing the risk of that outcome.

Residential rehabilitation programme

Residential rehabilitation centres provide accommodation in a drug-free environment and a range of structured interventions to address drug misuse, including, but not limited to, abstinence-oriented interventions (NTA, 2006). Services vary and are based on a number of different treatment philosophies.

Screening

Screening is the systematic application of a test or enquiry to identify individuals at high risk of developing a specific disorder who may benefit from further investigation or preventative action (Peckham & Dezateux, 1998). Routine screening for drug misuse in the UK is largely restricted to criminal justice settings, including police custody and prisons (Matrix Research and Consultancy & NACRO, 2004).

Self-help group

A group of people who misuse drugs meet regularly to provide help and support for one another. The group is typically community-based, peer-led and non-professional.

Sensitivity

A term used to assess **screening** tools, sensitivity refers to the proportion of people with disease who test positive for that disease.

Short-term psychodynamic intervention

Psychological interventions, derived from a psychodynamic/psychoanalytic model in which: a) therapist and patient explore and gain insight into conflicts and how these are represented in current situations and relationships, including the therapy relationship; b) service users are given an opportunity to explore feelings and conscious and unconscious conflicts originating in the past, with the technical focus on interpreting and working through conflicts; c) therapy is non-directive and service users are not taught specific skills such as thought monitoring, re-evaluation or problem solving.

Specificity

A term used to assess **screening** tools, specificity refers to the proportion of people without disease who test negative for that disease.

Standard cognitive behavioural therapy

Standard cognitive behavioural therapy is a discrete, time limited, structured psychological intervention, derived from a cognitive model of drug misuse (Beck *et al*., 1993). There is an emphasis on identifying and modifying irrational thoughts, managing negative mood and intervening after a lapse to prevent a full-blown relapse (Maude-Griffin, 1998).

Standard deviation (SD)

A statistical measure of variability in a population of individuals or in a set of data. Whilst the average measures the expected middle position of a group of numbers, the standard deviation is a way of expressing how different the numbers are from the average. The standard deviation is (approximately) the amount by which the average person's score differs from the average of all scores.

Standardised mean difference (SMD)
In a **meta-analysis**, an SMD is a way of combining the results of studies that may have measured the same outcome in different ways, using different scales. Statistically, it is calculated by dividing the weighted average effect size by the pooled standard deviation. The SMD is expressed as a standard value with no units.

Stimulant
Stimulants refer broadly to any substances that activate, enhance or increase neural activity (WHO, 2006). Illicit stimulants include cocaine, crack cocaine and methamphetamine. Cocaine is one of the most commonly misused stimulants in the UK; crack cocaine refers to the cocaine alkaloid that has been purified from the other components of cocaine powder, and methamphetamine is one of a group of synthetic substances (amphetamines) with broadly similar properties to cocaine.

Systematic review (SR)
Research that summarises the evidence on a clearly formulated question according to a predefined protocol using systematic and explicit methods to identify, select and appraise relevant studies, and to extract, collate and report their findings. It may or may not use statistical meta-analysis.

Therapeutic community
The primary goal of therapeutic communities is abstinence from illicit and prescribed drugs, with the residential 'community' acting as the key agent for change. Peer influence is used to help individuals acquire social skills and learn social norms, and so take on an increased level of personal and social responsibility within the unit (Smith *et al.*, 2006).

Weighted mean difference (WMD)
A method of meta-analysis used to combine measures on continuous scales, where the mean, standard deviation and sample size in each group are known. The weight given to each study (for example, how much influence each study has on the overall results of the **meta-analysis**) is determined by the precision of its estimate of effect and, in the statistical software used by the **NCCMH**, is equal to the inverse of the variance. This method assumes that all of the trials have measured the outcome on the same scale.