



*National Treatment Agency
for Substance Misuse*

Reducing drug- related deaths

Guidance for drug treatment providers

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This guidance, and other resources designed to reduce drug-related deaths, are available online at: www.nta.nhs.uk

Contents

Introduction	4
Key target	4
Definition	5
Structural issues	5
Liaison and collaboration	5
Competency and training	5
Practice issues	6
Injecting drug use	6
Reducing injecting drug use	6
Reducing injecting-related harm	7
Overdose	8
Preventing overdose	9
Dealing with overdose	10
Overdose prevention	10
Ambulance protocols	10
Training courses for drug users	11
Stimulants and drug-related death	11
Health problems associated with cocaine and crack	12
Deaths in custody	12
Heart attacks	12
Strokes and seizures	13
Lung damage	13
Other issues	13
Safe storage of medicines	13
Tobacco smoking	14
Local information drives	14
Further reading	15

Introduction

This guidance is intended for providers of drug treatment services across all tiers. It is essential that efficiently functioning integrated care pathways are in place to ensure that the interface between tiers of treatment is as seamless as possible.

Drug taking is inherently risky. The actual level of risk involved in drug use is, of course, highly variable and dependent on factors such as the physiology of the person taking the drug, the type of drug used and the method of use. It is impossible to remove all risk from all drug use, but it is essential that drug treatment services work closely with individuals who are engaging in high-risk drug-taking behaviours.

Treatment services need to be attractive and accessible to drug users, while attempting to minimise the risks involved in their drug use.

Even services with the best and most comprehensive drug treatment provision will inevitably encounter clients who die as a direct result of their drug use. Services should have the aim of reducing drug-related deaths (particularly among drug users at high risk), rather than strategies that fail to engage effectively with high-risk users.

Recent concern has focused on the increasing numbers of deaths among drug users, many of which are preventable. The Advisory Council on the Misuse of Drugs report, *Reducing Drug-Related Deaths* (ACMD 2000), established the broad nature and scope of the problem and made suggestions for improvements both in the planning and delivery of services to drug users and in the collection of data.

This briefing paper sets out various strategies for reducing drug-related deaths from both short-term causes such as overdose and long-term causes such as diseases caused by the transmission of blood-borne viruses. It includes basic guidance and is not intended to be a prescriptive template, nor to stifle innovation. *Models of Care for Substance Misuse Treatment* (NTA 2002) gives guidance on the organisation and planning of treatment services and the establishment of integrated care pathways to ensure an effective drug treatment system. *Models of Care* should be extensively referred to in conjunction with this guidance.

Key target

The Department of Health Action Plan 2001 set a target, which has been included in the Updated Drugs Strategy 2002, of a 20% reduction in drug-related deaths by March 2004 – working from a national baseline set in 1999 of 1568 deaths.

Many drug-related deaths are easily preventable, others are less so, but a 20% reduction would represent around 300 lives saved nationally over one year and is an achievable target. However, it is likely that increased attention to drug-related deaths will lead to better reporting, initially causing the drug-related death rate to appear to rise.

The number of immediate drug-related deaths can be more easily measured than those resulting from long-term causes, which may occur decades after the drug use. However, the transmission of blood-borne viruses and illness related to long-term HIV and hepatitis C infection is a significant cause for concern as it will cause many deaths among drug users in the future. Indeed, unless there are great strides forward in treatment, the annual death rate attributable to hepatitis C is likely to eventually exceed the numbers of deaths caused by overdose at present.

It is therefore vital that interventions to reduce drug-related deaths from long-term causes are prioritised alongside those intended to reduce deaths from immediate causes.

Definition

Drug-related death – *death where the underlying cause is poisoning, drug abuse or drug dependence and where any of the substances controlled under the Misuse of Drugs Act (1971) are involved.*

This definition has been adopted across the United Kingdom, and is consistent with the information needs of the European Monitoring Centre for Drugs and Drug Addiction.

Structural issues

Liaison and collaboration

Preventing drug-related deaths is a responsibility that falls across all tiers of drug treatment. It is vital that the following if the tiered approach set out in *Models of Care* (NTA 2002) results in effective integrated care pathways that enable seamless transfer across drug treatment tiers.

Some sectors, in which communication with tier 3 services has often proved problematic in the past, may benefit from the employment of staff in liaison roles to ensure effective communication and to help prevent clients 'falling between services'. This is particularly likely to be so in the cases of accident and emergency departments and mental health services.

In whatever way service delivery is configured, there should be clear protocols and guidance on:

- care co-ordination
- assessment, care planning and review
- treatment philosophies and goals
- confidentiality and information sharing.

Arrangements whereby direct referrals can be made between tier 3 drug treatment services and mental health services, without the need to refer via a general practitioner, are likely to result in more efficient and timely treatment provision.

Competency and training

The training needs of staff working in drug treatment services should be determined by a training needs analysis. An organisational training plan should be developed, based on the requirements of the *Drug and Alcohol National Occupational Standards* (DANOS 2003), to ensure that, as part of their continuing professional development, all staff develop the necessary competencies, knowledge and skills to avert drug-related deaths. All staff conducting assessment procedures should have sufficient skills and knowledge to conduct 'tier-appropriate' risk assessments according to locally agreed protocols, as outlined in *Models of Care* (NTA 2002).

Agencies should establish the training needs of their organisation by:

- conducting training needs analyses as and when necessary
- developing an organisational training plan that ensures continuing professional development for staff and adequate coverage of the particular issues surrounding drug-related deaths
- 'benchmarking' staff against the organisational training plan
- where necessary, being reactive to previously unrealised training needs by altering their training plans in response to clinical governance mechanisms and the findings of inquiries into drug-related deaths.

Practice issues

Injecting drug use

Injecting is the most hazardous way of taking drugs. It is the main source of both the short- and long-term risks of drug-related death.

Therefore, it is important that all services have a clear set of strategies towards injecting drug use. These strategies fall under two main headings, as described below.

Reducing injecting drug use

The main strategies to reduce the numbers of those choosing to inject their drugs are:

- including current injecting drug users (IDUs) who desire it as a priority group for access to substitute prescribing, based on the *Drug Misuse and Dependence: guidelines on clinical management publication* (Department of Health 1999). While the evidence base for substitute prescribing is clear for those injecting opiates, it is far less so for those injecting stimulants
- publicising the risks of injecting drug use to those at high risk of becoming IDUs and advising them of realistic alternatives to injecting
- regularly but sensitively reminding current IDUs of the risks of injecting and offering them strategies to move to other routes of administration or to limit the risks of continued use
- using established interventions such as the 'Break the Cycle' campaign (DrugScope/Exchange 2002) with current IDUs, in order to limit their initiation of new injectors.

Reducing injecting-related harm

This involves providing current IDUs with both the means and opportunity to significantly reduce the risks associated with injecting. This includes providing easy access to:

- basic assessments, including risk assessments and basic physical health checks, although refusal to access such assessments should not be a barrier to provision of equipment
- a comprehensive range of sterile injecting equipment intended for single use (but not equipment specifically designed to *prevent* multiple use, sometimes described as 'difficult to re-use syringes'), including injecting 'paraphernalia'. Paraphernalia should be supplied in line with the recommendations of the Advisory Council on the Misuse of Drugs (2002)
- outlets for injecting equipment, which can include specialist treatment agencies, community pharmacies, outreach workers, mobile distribution to specific risk groups such as sex workers and, where appropriate, secondary distribution by drug users or others where appropriate training, support and supervision can be provided
- a range of disposal facilities for used injecting equipment and regular encouragement to dispose of used equipment responsibly. Disposal facilities can be provided via specialist needle exchanges, pharmacy needle exchanges and secure 'bins' in the community – particularly in 'hotspots' where used injecting equipment is regularly discarded
- information and advice on avoiding the transmission of blood-borne and other related viruses, particularly hepatitis A, B, C and HIV
- blood testing for viral status, particularly for hepatitis C and HIV
- vaccination for hepatitis B, using the protocol(s) most appropriate for the agency (those most likely to result in a full course of vaccinations for the client group), and proactively using all opportunities for vaccination, including outreach settings where appropriate
- referral for treatment for liver disease and HIV-related diseases
- advice and information on reducing drug-related harm across a range of commonly injected drugs, such as heroin, crack cocaine, powder cocaine and amphetamines
- advice and information on avoiding medical complications of injecting, including thromboses, emboli, endocarditis, abscesses, ulcers and TB. Treatment or referral to treatment for these conditions should also be readily available
- advice and information on specific problems that can result from the injection of amphetamines, including the increased likelihood of drug-induced psychosis
- credible and timely information and advice on the avoidance of acute local risks, particularly those resulting from bacterial or chemical contamination of street drugs
- advice and information to discourage the injection of unsuitable preparations such as tablets
- advice and information on physical health needs.

Agencies should review the availability of injecting equipment within localities, with a view to ensuring that geographical coverage is sufficient to meet the needs of local injectors, and increasing equipment availability in areas where there are gaps in provision.

Particular regard should be paid to the availability of equipment in areas where cocaine injecting is known to be prevalent. Agencies should ensure that any limits on the amount of equipment supplied are realistic, flexible and also meet the greater equipment needs of stimulant injectors when compared with opiate injectors.

There should be liaison between those distributing injecting equipment and appropriate local bodies to develop robust written strategies to minimise the likelihood of used injecting equipment being discarded in the community (by providing widespread access to secure disposal facilities, rather than by limiting supply of equipment) and to have arrangements for timely and appropriate disposal of discarded injecting equipment. Arrangements should be flexible to allow for changing patterns of drug use/drug-using venues and be regularly reviewed for their effectiveness.

Pharmacy needle exchange provision is extremely valuable in both supplying sterile injecting equipment and collecting used equipment for disposal. However, pharmacy needle exchange *alone* is very unlikely to be able to deliver a comprehensive range of interventions for injecting drug users as described in the bulleted list above.

The use of 'blue lights' in places such as public toilets should be actively discouraged. This measure is intended to reduce injecting in specific venues, by making venous access more difficult to achieve. It is questionable whether the use of blue lights has any appreciable effect in this objective. However, it is likely to increase physical harm to individual injectors and where it is effective, displace injecting drug use to other public areas.

Injecting drug use also carries a very high risk of overdose. Strategies for dealing with overdose are discussed below.

Overdose

At the time of writing, the majority of acute drug-related deaths are related to opiate overdose and typically occur in young men under 30 years of age. People who inject heroin are about 14 times more likely to die than their peers. Almost as many life-years are now lost due to drug-related deaths as the total from all traffic accidents. Not all overdose deaths will be preventable, but many are. Simple strategies can have a marked effect on a person's probability of survival of an accidental overdose.

Even the number of overdose deaths that occur as a result of deliberate overdose can be reduced by providing easier access to treatment programmes (where issues of depression or nihilism are more likely to be recognised and addressed), good assessment of people's mental health status and better liaison between drug treatment and mental health services. Treatment services should proactively screen and provide brief interventions for anxiety and mood disorder, low-level depression and minor psychopathology. For clients with mental health issues alongside substance use problems, the joint Alcohol Concern and DrugScope (2002) document, *Assessment and Management of Clients with Dual Diagnosis*, lays out the basis of good practice in this area. *Models of Care* (NTA 2002) gives a clear framework for the development of auditable assessment tools that are appropriate to localities and to every level of drug treatment provision.

Drug purity levels are commonly believed to be a major cause of overdose deaths, particularly when there appears to be a 'spate' or cluster of deaths. However, purity is seldom a critical factor in causing death (more often it is to do with the drug-taking behaviour of high-risk groups of drug users in the area concerned). Messages that talk about 'very strong', 'rogue' or 'contaminated' heroin should therefore only be given out to drug users and the media where this is based on the evidence of laboratory analysis. Good practice involves the sharing of relevant and credible information between all agencies.

Messages to drug users should concentrate on specific and credible risks and give clear advice on how to best avoid or limit them.

Strategies to limit the number of overdose deaths fall under two main headings, as described below.

Preventing overdose

The main strategy to prevent overdose occurring involves the giving of information and advice on the factors that are most likely to combine to cause an overdose. These include information and advice on the risks of:

- injecting
- opiate use (including prescribed opiates) alongside other depressant drugs such as alcohol or benzodiazepines
- using opiates when tolerance is low, particularly on release from prison, after detoxification or after a break in use
- using combinations of heroin and cocaine (known as 'speedballing' or 'snowballing').

Treatment services should have strategies for maintaining or establishing contact with drug users leaving prison as they are a high-risk group for overdose.

Recent evidence suggests that detoxification may carry a significant overdose risk for those who are 'successful' (in initially achieving abstinence). It is therefore important that:

- detoxification from substitute prescribing is seen as a treatment option with a significant risk of mortality that is not normally imposed on service users, but offered as a choice
- the implications of increased mortality risk are fully taken into account if service users are involuntarily excluded from substitution treatment
- detoxification programmes are of a realistic length and users are adequately supported through them, normally with an open option for users to return to substitute prescribing if they so wish
- the realities of relapse, including the likelihood of it happening and its attendant risks, are regularly discussed with those undertaking detoxification
- adequate support systems exist for those who successfully achieve abstinence – they are a group at high risk of overdose death and should therefore not be discharged from contact immediately following successful detoxification.

There are a number of particular risk factors and behaviours that indicate those who are at the highest risk of overdose death. Staff awareness of these factors and communication of them to those at most risk may limit the number of overdoses. Risk factors and behaviours include:

- injecting heroin
- recent history of non-fatal overdose
- longer injecting career
- high levels of use or intoxication
- high levels of alcohol use
- low tolerance, or lowered tolerance through detoxification or imprisonment
- depression, feelings of hopelessness and suicidal thoughts
- a history of using combinations of drugs, including benzodiazepines and/or alcohol
- sharing previously used injecting equipment or other high-risk injecting behaviours (may be indicative of low concern about personal risk);
- premature exit from a methadone treatment programme
- not being in a methadone or other treatment programme.

It is important in reducing drug-related deaths that effective, evidence-based drug treatment services are provided. This should include appropriate, well-managed methadone prescribing. Methadone prescribing services should have an emphasis on providing adequate, evidence-based dose levels and on engaging and retaining high-risk drug users in treatment. Particular care should be taken in the first week of methadone treatment, when the risk of overdose is high.

To prevent diversion of prescribed drugs, particularly to the opiate-naïve, measures such as supervised consumption should be in place for a minimum initial period, in line with *Drug Misuse and Dependence: guidelines on clinical management* (Department of Health 1999).

Dealing with overdose

Overdose prevention

The dissemination of messages on overdose prevention and how to react appropriately to an overdose situation should be an integral part of the routine work of needle exchanges and street agencies.

Ambulance protocols

Overdose incidents should be prioritised as health emergencies and the police should not routinely attend. Fear of police involvement when an ambulance is called to an overdose incident may inhibit some drug users from taking this life-saving action.

All emergency ambulance crews should carry the opiate antagonist naloxone and be trained in how to use it. Strategies should be explored that encourage overdose victims revived by the use of naloxone to attend accident and emergency departments, and to remain there until discharged by the department.

It is important that local protocols are in place that clearly delineate when it is and is not appropriate for the police to attend overdose incidents. When such protocols are in place, effective communication of the policy (especially when this represents a change in practice) to drug users is essential. Treatment services are in an excellent position to communicate this information clearly, unambiguously and continuously. It is good practice to centrally involve drug user organisations in the development and communication of such initiatives.

Training courses for drug users

There is often another person – usually a fellow drug user – present when an overdose occurs, and their actions can be crucial in determining the eventual outcome of the incident.

Strategies to promote appropriate responses to overdoses include the provision of information and training courses for drug users, their families and friends on avoiding overdose, and responding appropriately if it occurs.

The aim of such training courses should be to provide participants with the necessary basic knowledge and skills to respond effectively, appropriately and confidently to a drugs overdose, and they should cover the following learning objectives:

- summoning medical assistance appropriately and confidently
- identifying key overdose risks
- recognising the signs and symptoms of overdose
- assessing vital signs and prioritising first-aid actions
- placing someone in the recovery position
- performing mouth-to-mouth resuscitation
- providing cardiopulmonary resuscitation
- awareness of common myths and potentially dangerous practices.

First-aid training should always be provided by qualified personnel. This is usually available from the local ambulance trust, Red Cross or St John Ambulance.

Stimulants and drug-related death

The number of people known to have died as a result of cocaine-induced heart failure has shown an increase over recent years. Staff of drug treatment agencies should be competent to offer advice and information on the particular risks of stimulant use and, where appropriate, how to reduce the risks of use. Particular areas for discussion should include the risks of:

- using stimulants
- high levels of use
- combined alcohol and cocaine use
- combined opiate and cocaine use

- stimulant use in hot environments
- the possible increased danger of violent death.

The National Treatment Agency draft document, *Treating Crack and Cocaine Misuse: a resource pack for treatment providers*, although presently in draft form and subject to change following pilot testing, sets out detailed good practice guidance in commissioning, planning and providing treatment services for crack and cocaine users, in line with the *Drug and Alcohol National Occupational Standards* (DANOS 2003), *Models of Care* (2002) and *Quality in Alcohol and Drug Services* (QuADS; DrugScope 2000).

Health problems associated with cocaine and crack

Deaths in custody

Recently published analysis of drug-related deaths in police custody (Havis & Best 2003) indicates that stimulants generally, and cocaine in particular, are the main drugs associated with overdose deaths in this setting. Further research is needed in this area, but the possibility is that many such deaths are associated with some of the following factors:

- swallowing of drug packages at/around the time of arrest – it is likely that many of these packages are swallowed in haste, have not been designed to survive passage through the body and therefore leak
- concealment of drugs at the time of arrest and later consumption while in custody
- deliberate overdose connected to mental health issues
- a lack of understanding on the part of drug users of the overdose potential of cocaine
- a lack of knowledge and understanding on the part of arresting officers and custody suite staff of the potential problems associated with swallowing of stimulants.

Heart attacks

Although the known number of deaths from stimulants is relatively small when compared with those in which opiates are involved, US studies show that up to 25% of heart attacks in people aged between 18 and 45 years are due to cocaine use. The risks of having a possible heart attack are increased by 23 times in the hour after cocaine use. The risks are further increased if alcohol is used as well.

Increased risks of heart attack come from a number of factors, including:

- increased adrenaline (released because of cocaine use)
- high blood pressure (increased heart rate caused by adrenaline)
- constricted blood vessels (cocaine releases a chemical that constricts blood vessels)
- hardening of the arteries (caused by cocaine use)
- weakened heart (congestive heart failure)
- arrhythmias (erratic heartbeat)

- underlying heart problems
- other drugs that may be used in combination with cocaine, such as alcohol and/or Viagra (see below).

Coca-ethylene, a chemical produced in the liver when using cocaine and alcohol together, has a more damaging effect on the cardiovascular system than if cocaine were taken on its own. Sodium bicarbonate, used to 'wash' cocaine to turn it into crack, also may have a stressful effect on the heart.

Strokes and seizures

Strokes and seizures can also be made more likely by cocaine use. Strokes may be connected to the constriction of blood vessels and repeated increase in blood pressure from regular use. These combined factors can sometimes cut off blood flow to parts of the brain (causing seizures/blackouts) and also in some cases cause delicate blood vessels to break (causing bleeding in the brain).

Lung damage

Taking crack or cocaine can cause many lung problems. These problems are not just isolated to smoking crack – injecting crack or cocaine can also cause some of the lung problems listed below.

Lung problems that are associated with the use of crack or cocaine include:

- pulmonary oedema – build-up of fluid in the lungs
- pulmonary haemorrhage – bleeding in the lungs
- pulmonary barotrauma – air escaping from the lungs into the circulatory system (by holding in crack smoke)
- foreign bodies in lungs – poorly designed pipes or no gauze screen used
- 'crack lung' – cough, shortness of breath, inflamed lungs, fever.

Other issues

Safe storage of medicines

Accidental poisoning of children who swallow medication prescribed for their parents or carers is responsible for a number of deaths annually. All clients of services providing take-home opiate substitution treatment, and particularly those with young children living in their homes, should receive:

- advice on the dangers of drugs to young children
- advice on the safe storage of drugs
- their drugs in containers with child-resistant caps
- where possible and appropriate, the provision of lockable safes or containers in which to store their drugs.

Community pharmacists are in a good position to provide advice and information on issues of safe storage.

Tobacco smoking

Many clients of tiers 2 and 3 treatment services are likely to be dependent tobacco smokers, who would gain significant health benefits from stopping. It is good practice for services to build good working links with smoking cessation services and, when appropriate to advise their clients of the health benefits of giving up smoking and offer a referral to the smoking cessation service.

Local information drives

Regular targeted information campaigns can help to increase clients' awareness of risks and measures to reduce risk or save lives. Information campaigns should in general:

- focus on the main areas of risk
- be time-limited and change regularly
- only attempt to address one priority issue at a time, rather than having many issues competing for attention.

Targeted information campaigns should focus on areas that include:

- hepatitis B transmission and vaccination
- hepatitis C transmission
- initiation into injecting
- overdose
- starting treatment
- polydrug use
- encouraging safe disposal of used injecting equipment
- substance-specific campaigns.

Further reading

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