ABC of mental health

Addiction and dependence–I: Illicit drugs

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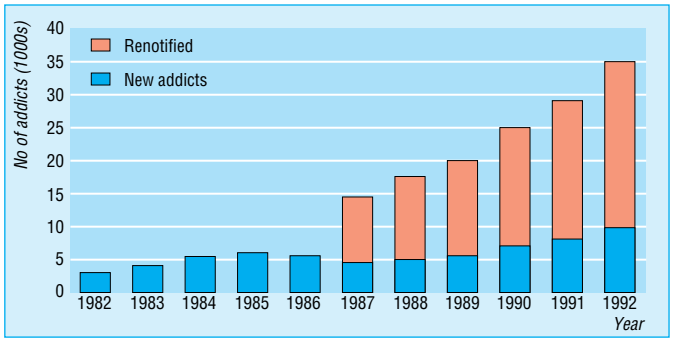
Size of the problem

About 30% of adults in Britain have used illicit drugs at some time in their lives, but misuse of prescription drugs (such as benzodiazepines and barbiturates) is probably even more widespread. Cannabis is the most commonly used illicit drug. About 100 000 people misuse heroin (diamorphine), and an unknown but increasing number use other drugs such as ecstasy and amphetamines.

While the number of new drug users continues to rise, the number who inject drugs is falling, possibly as a result of health education about risks of HIV transmission. The highest number of addicts are found in London and the north west of England.



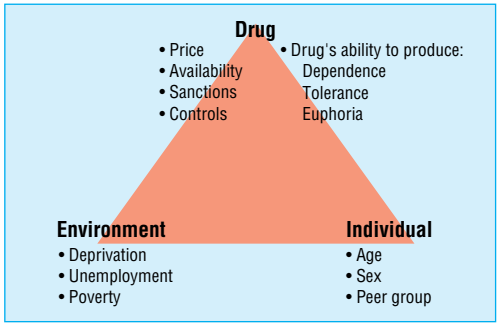
Numbers of drug addicts notified to the Home Office during 1982-92

Why misuse drugs?

What determines whether drug use becomes continuous and problematic includes

- Sociocultural factors such as cost and availability of the drug
- Controls and sanctions on its use
- Age (people in their teens to their 20s are most at risk) and sex (male)
- Peer group of the person taking the drug.

Personality factors determine how a person copes once addicted and the mechanisms he or she may use to seek help.



Factors influencing misuse of drugs

Commonly misused drugs

Common drugs of misuse tend to cause dependence and euphoria.

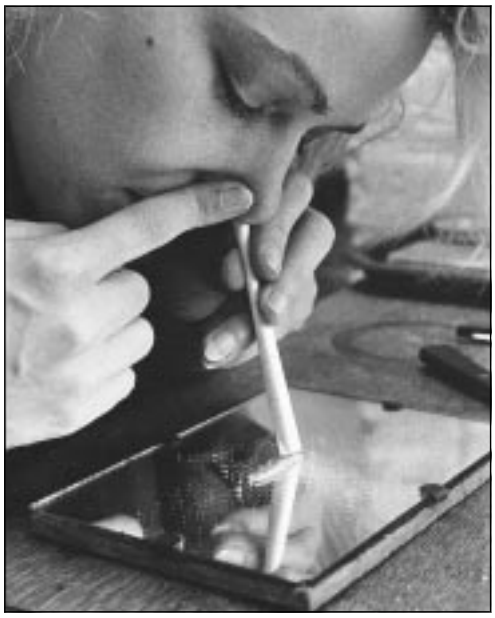
Benzodiazepines

This is the largest category of drug misuse. The most commonly misused drugs, temazepam and diazepam, usually originate from legal prescriptions or thefts from pharmacies. They may be taken alone as the drug of choice, to supplement opioids, or as a last resort when supply of opioids fails. Tolerance to benzodiazepines can occur, with daily doses escalating to 50-100 mg of diazepam. Intravenous injection of the viscous gel within temazepam capsules can cause catastrophic embolic damage to limbs and digits: temazepam is now a controlled drug.

A withdrawal syndrome can occur after only three weeks of continuous use, and it affects a third of long term users. The syndrome usually consists of increased anxiety and perceptual disturbances, especially heightened sensitivity to light and sound; occasionally there are fits, hallucinations, and confusion. Depending on the drug's half life, symptoms start one to five days after the last dose, peak within 10 days, and subside after one to six weeks.

Opioids

Opioids produce an intense but transient feeling of pleasure. Withdrawal symptoms begin a few hours from the last dose, peak after two to three days, and subside after a week. Heroin (diamorphine) is available in a powdered form, commonly mixed ("cut") with other substances such as chalk or lactose powder. It can be sniffed ("snorting"), eaten, smoked ("chasing



Snorting heroin (picture reproduced with subject's permission)

Heroin withdrawal syndrome

- Insomnia
- Muscle pains and cramps
- Increased salivary, nasal, and lacrimal secretions
- Anorexia, nausea, vomiting, and diarrhoea
- Dilated pupils
- Yawning

the dragon"), injected subcutaneously ("skin popping"), or injected intravenously ("mainlining"). Tablets can be crushed and then injected.

Amphetamines
These cause generalised overarousal with hyperactivity, tachycardia, dilated pupils, and fine tremor. These effects last about three to four hours, after which the user becomes tired, anxious, irritable, and restless. High doses and chronic use can produce psychosis with paranoid delusions, hallucinations, and overactivity. Physical dependence can occur, and termination of prolonged use may cause profound depression and lassitude. Amphetamines were widely prescribed in the 1960s: the most common current source is illegally produced amphetamine sulphate powder, which can be taken by mouth, by sniffing, or by intravenous injection.

Cocaine
Cocaine preparations can be eaten (coca leaves or paste), injected alone or with heroin ("speedballing"), sniffed ("snow"), or smoked (as "crack"). Crack is cocaine in its base form and is smoked because of the speed and intensity of its psychoactive effects. The stimulant effect ("rush") is felt within seconds of smoking crack, peaks in one to five minutes, and wears off after about 15 minutes.

Smokable cocaine produces physical dependence with craving: the withdrawal state is characterised by depression and lethargy followed by increased craving, which can last up to three months. Overdose by any route can result in death from myocardial infarction, hyperthermia, or ventricular arrhythmias.

Ecstasy (3,4-methylenedioxymethamphetamine, MDMA)
An increasingly popular drug, especially at "rave" parties, ecstasy (known as "E") has hallucinogenic properties and produces euphoria and increased energy. Continuous or excessive use with raised physical activity can lead to death through hyperthermia and dehydration.

Misused volatile substances
Such substances include glues (the most common), gas fuels, cleaning agents, correcting fluid thinners, and aerosols. Their main misuse is among young boys as part of a group activity; those who misuse alone tend to be more disturbed and in need of psychiatric help. Their effects are similar to alcohol: intoxication with initial euphoria followed by disorientation, blurred vision, dizziness, slurred speech, ataxia, and drowsiness. About 300 young teenagers die each year from misusing volatile substances, mainly through suffocation.

Dependence syndrome

The dependence syndrome is a cluster of symptoms, not all of which need be present for a diagnosis of dependence to be made. The key feature is a compulsion to use drugs, which results in overwhelming priority being given to drug-seeking behaviour. Other features are tolerance (need to achieve drug dose to achieve desired effect), withdrawal (both physical and psychological symptoms on stopping use), and use of drug to relieve or avoid withdrawal symptoms. An addict's increasing focus on drug-seeking behaviour leads to progressive loss of other interests, neglect of self care and social relationships, and disregard for harmful consequences.

"Chasing the dragon"—smoking heroin (picture reproduced with subject's permission)

Clinical conditions associated with drug misuse

Several clinical conditions are recognised as arising from misuse of drugs. Their clinical features are similar regardless of the drug misused:

Acute intoxication—May be uncomplicated or associated with bodily injury, delirium, convulsions, or coma. Includes "bad trips" due to hallucinogenic drugs

Harmful use—A pattern of drug misuse resulting in physical harm (such as hepatitis) or mental harm (such as depression) to the user. These consequences often elicit negative reactions from other people and result in social disruption for the user

Dependence syndrome—Obtaining and using the drug assume the highest priorities in the user's life. A person may be dependent on a single substance (such as diazepam), a group of related drugs (such as the opioids), or a wide range of different drugs. This is the state known colloquially as drug addiction

Withdrawal—Usually occurs when a patient is abstinent after a prolonged period of drug use, especially if large doses were used. Withdrawal is time limited, but withdrawal may cause convulsions and require medical treatment

Psychotic disorder—Any drug can produce the hallucinations, delusions, and behavioural disturbances characteristic of psychosis. Patterns of symptoms may be extremely variable, even during a single episode. Early onset syndromes (within 48 hours) may mimic schizophrenia or psychotic depression; late onset syndromes (after two weeks or more) include flashbacks, personality changes, and cognitive deterioration

Medical complications of drug misuse

Complications can arise secondary to the drug used (such as constipation), route of drug use (such as deep vein thrombosis), and the lifestyle associated with a drug habit (such as crime). Complications commonly arise from injecting drugs: using dirty and non-sterile needles risks cellulitis, endocarditis, and septicaemia; sharing injecting equipment ("works") can transmit HIV, hepatitis B, and hepatitis C; and incorrect technique can result in venous thrombosis or accidental arterial puncture.

A major hazard of intravenous misuse is overdose, which may be accidental or deliberate. Death from intravenous opioid overdose can be rapid. Opioid overdose should be suspected in any unconscious patient, especially in combination with pinpoint pupils and respiratory depression. Immediate injection of the opioid antagonist naloxone can be lifesaving.

Practical management

General principles

- Prevent misuse by careful prescribing of potential drugs of misuse such as analgesics, hypnotics, and tranquillisers
- Encourage patients into treatment
- Reduce harm associated with drug use
- Treat physical complications of drug use and interactions with prescribed drugs
- Offer general medical care (such as hepatitis immunisation and cervical screening)
- Refer to appropriate treatment centre (such as Council for Involuntary Addiction or Narcotics Anonymous).

As well as statutory services, many local voluntary and self help groups such as Narcotics Anonymous and Turning Point can provide much needed advice and support for patients with drug related problems. Most voluntary agencies prefer patients to make contact directly. Details may be found in the telephone directory or *Yellow Pages*, or obtained from:

- Standing Conference on Drug Abuse (SCODA), Waterbridge House, 32 Loman Street, London WC1 0EE.

Specific measures

The full drug history must include substances taken, duration and frequency of use, amount of drug used (recorded verbatim), and route of drug use. It is useful to ask the cost of the patient's daily habit as confirmation of use—1 g of street heroin costs £80-£100; users' average daily use is up to 1 g heroin a day.

Injecting users will have needle track marks, usually in the antecubital fossae, although any venous site can be used. Further investigation should include a (fresh) urine drug screen and contacting the Home Office Addicts Index to confirm a user's history of treatment and to establish whether the person is already in receipt of a prescription.

Withdrawal from non-opioid drugs

To withdraw a patient from any benzodiazepine, first convert the misused drug into an equivalent dose of diazepam, which has a long half life. Reduce the diazepam dose by 2 mg a fortnight over a period of two to six months. Do not use other drugs to aid withdrawal without a specific indication (such as antidepressants, buspirone, β blockers, carbamazepine).

There is no recommended substitution treatment for cocaine or amphetamines, and they may be withdrawn abruptly. Antidepressants in therapeutic doses may help specific symptoms. Cannabis, ecstasy, and volatile (solvent) substances may all be withdrawn abruptly, but abstinence is more likely to be maintained if attention is paid to any psychological symptoms that emerge.

Complications of injecting drug use

Poor injecting technique

- Abscess
- Cellulitis
- Thrombophlebitis
- Arterial puncture
- Deep vein thrombosis

Needle sharing

- Hepatitis B and C
- HIV or AIDS

Drug content or contaminants

- Abscess
- Overdose
- Gangrene
- Thrombosis

Important interactions between illicit and prescribed drugs

Amphetamines

Chlorpromazine—Antipsychotic effects opposed
Lithium carbonate—No harmful effects reported. Reduces the "high"
Monoamine oxidase inhibitors—Potentially fatal hypertensive crisis

Cannabis

Fluoxetine—Increased energy, hypersexuality, pressured speech
Tricyclic antidepressants—Marked tachycardia

Cocaine

Monoamine oxidase inhibitors—Possibility of hypertension

Ecstasy

Phenelzine—Hypertension

Opioids

Desipramine—Methadone doubles serum levels of desipramine
Diazepam—Increased central nervous system depression
Monoamine oxidase inhibitors—Potentially fatal interaction with pethidine

Data from Neil Spencer, principal pharmacist, Lambeth Healthcare NHS Trust

Useful contacts and telephone numbers

- Council for Involuntary Addiction (CITA) (0151) 949 0102
- Home Office Addicts Index (0171) 272 2213
- Narcotics Anonymous (0171) 351 6794
- Turning Point (0171) 702 2300
- *D-mag* is an informative magazine for young people published by the Institute for the Study of Drug Dependence and the Health Education Authority. For copies, telephone the National Drugs Helpline on 0800 776600. Advice is available in several languages

Factors to be recorded in a drug assessment

Drug taken

- Opioids—Heroin, methadone, buprenorphine (Temgesic), dihydrocodeine (DF 118), others
- Benzodiazepines
- Stimulants—Cocaine, amphetamines, ecstasy, others
- Alcohol

Amount taken

In weight (g), cost (£), volume (ml), No of tablets

Route of administration

Intravenous, intramuscular, subcutaneous, oral, inhaled

Benzodiazepines in equivalent doses of diazepam

Diazepam 10 mg is approximately equivalent to

Alprazolam (Xanax)	1 mg
Chlordiazepoxide (Librium, Tropium)	30 mg
Flunitrazepam (Rohypnol)	2 mg
Flurazepam (Dalmane)	30 mg
Loprazolam (Dormonoct)	1 mg
Lorazepam (Ativan)	1 mg
Lormetazepam	1 mg
Nitrazepam (Mogadon, Remnos)	10 mg
Oxazepam	30 mg
Temazepam (Normison)	20 mg

Data from sources including *British National Formulary* and *Monthly Index of Medical Specialties (MIMS)*

Treating opioid dependence

Do not start methadone treatment for patients with small habits (less than 0.25 g heroin a day) or where follow up is difficult (such as a patient seen in an accident and emergency department). Propranolol and co-phenotrope (Lomotil) provide symptomatic relief from opioid withdrawal in these patients. Expect only limited enthusiasm with the offer of this treatment.

For patients with more severe physical dependence or pregnant heroin users, for whom acute withdrawal can precipitate premature labour, methadone mixture 1 mg/ml is indicated. Any doctor can prescribe methadone. It is an effective long acting opioid substitute, unlikely to be injected, and with a low resale value on the black market. With the linctus formulation it is very difficult to obtain a "high" so death can arise from inadvertent overdose as naïve users increase the dose expecting euphoric effects.

To assess the required dose: firstly, either calculate the approximate methadone dose or prescribe 10-30 mg methadone a day; and, secondly, assess daily for withdrawal symptoms for a few days, increasing by small increments (such as 5-10 mg) until the patient is comfortable.

Irrespective of their alleged heroin use most patients can be stabilised on 40-60 mg methadone a day, and no more than 60 mg a day should be prescribed without the help of a specialist agency. After a period of stabilisation, reductions in dose should be negotiated with patients and can be 5 mg per week or per fortnight. An agreed treatment plan, allowing some flexibility, should be adhered to as patients benefit from the stability that a methadone prescription brings to their lives.

How to prescribe opioids

General practitioners can use blue FP10 (MDA) prescriptions, which allow daily instalments on a single prescription, thus reducing the risk of overdose or diversion into the black market.

Prescriptions for controlled drugs must:

- Be written in indelible ink
- Be signed and dated by the doctor
- State the form and strength of the preparation
- State doses in words and figures
- State the total dose
- Specify the amount in each instalment and the intervals between instalments.

Legal aspects—The chief medical officer maintains an index of addicts at the Home Office to assist doctors in clinical management of drug users and to provide epidemiological information on trends in drug misuse. All doctors must notify the Home Office in writing within seven days of seeing a patient who is addicted or thought to be addicted to specified drugs. Only doctors have access to the addicts index.

Opioids in equivalent doses of methadone

Drug	Dose	Methadone equivalent
Dipipanone (Diconal)	10 mg tablet	4 mg
Dihydrocodeine (DF 118)	30 mg tablet	3 mg
Dextromoramide (Palfium)	5 mg tablet	5-10 mg
	10 mg tablet	10-20 mg
Buprenorphine (Temgesic)	200 µg tablet	5 mg
	300 µg ampoule	8 mg
Pentazocine (Fortral)	50 mg capsule	4 mg
	25 mg tablet	2 mg
Codeine Linctus 100 ml	300 mg codeine phosphate	10 mg
Codeine phosphate	15 mg tablet	1 mg
	30 mg tablet	2 mg
	60 mg tablet	3 mg
Street heroin	Cannot be estimated accurately because street drugs vary in purity. Titrate dose against withdrawal symptoms: 1 g heroin = about 40-60 ml methadone	
Pharmaceutical heroin	10 mg tablet or ampoule	20 mg
	30 mg ampoule	50 mg
Pharmaceutical methadone (Physeptone)	10 mg/ml ampoule	10 mg
	Mixture (1 mg/ml) 10 ml	10 mg
	Linctus (2 mg/5 ml) 10 ml	4 mg
	5 mg tablets	5 mg
Street methadone	May have been watered down: titrate dose against withdrawal symptoms	
Pethidine	50 mg tablet	5 mg
	50 mg ampoule	5 mg
Morphine	10 mg ampoule	10 mg

Adapted from: *Drug misuse and dependence. Guidelines on clinical management.* London: HMSO, 1991

Notifiable drugs

- Cocaine
- Dipipanone
- Levorphanol
- Opium
- Phenazocine
- Dextromoramide
- Hydrocodone
- Methadone
- Oxycodone
- Piritramide
- Diamorphine (heroin)
- Hydromorphone
- Morphine
- Pethidine

Suspected addiction to any of these drugs must be notified to:

- In England, Wales, and Scotland: Chief Medical Officer, Drugs Branch, Home Office, Queen Anne's Gate, London SW1H 9AT Telephone 0171 273 2213
- In Northern Ireland: Chief Medical Officer, Department of Health and Social Services, Dundonald House, Belfast BT4 3SB Telephone 01232 520000

Further reading

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