The Advisory Council on the Misuse of Drugs

- Prevention Working Group

Reducing drug-related deaths

A summary

The Advisory Council on the Misuse of Drugs produced the report *Reducing drug-related deaths* because deaths due to drug misuse in the UK are currently the highest recorded and are rising.

Reduction of drug-related deaths is a performance indicator within the National Plan of the United Kingdom's Anti-Drugs Co-ordinator.

This summary for *Druglink* readers highlights the key themes, findings and recommendations of the ACMD Prevention Working Group report.

The Advisory Council on the Misuse of Drugs was established by the Misuse of Drugs Act 1971 to advise the government on drug misuse matters. *Druglink* produced this summary in collaboration with the ACMD.

CURRENT DATA

Current data does not give a reliable, comprehensive picture of the situation or trends. Using the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) system, drug-related deaths in England and Wales in 1998 came to 1076. The Office for National Statistics 'ONS restricted' approach gives 2250, while the 'standard ONS' approach gives 2922. This wide range of figures reflects the problems with the data.

The deaths recorded are due to accidental or intentional overdose – most were accidents. No account is taken of deaths from virus infections, motor vehicle accidents, or incidental violence. Data for these headings is incomplete.

Drug-related deaths are a small proportion of all deaths – about 0.6 per cent for men, 0.2 per cent for women – but a young person injecting heroin increases their risk of death 14 times over someone who is not. Heroin is the predominant cause of acute drug-related death.

In England and Wales, from about 1980 drug-misuse related deaths increased very significantly for men and significantly but less for women.

Using the ONS restricted approach, for most of 1979-1997 the age group 20-29 was most at risk in England and Wales.

There is a strong positive relationship in England and Wales between social deprivation and drug-related mortality. For men aged 15-44 deaths among the most deprived are six times those of the least deprived. This trend is similar for women.

Statistics for Scotland suggest that the upward trend of drug-related deaths has levelled out; heroin deaths predominate, methadone mentions have decreased over the last four years, while benzodiazepines are of increased importance.

In Northern Ireland the numbers remain low.

HOW DRUGS KILL

Drugs can cause immediate deaths (largely from overdose)or delayed deaths years after initial infection with HIV, hepatitis B (HBV) or hepatitis C (HCV). Deaths due to viruses transmitted by drug injection may soon exceed those from immediate effects. Between 152,000 and 228,000 present or former injecting drug users in the UK are infected with HCV. Maybe 30 per cent will die from cirrhosis or cancer of the liver over the next 10-30 years.

Less directly, drugs may impair judgement or control so lead to accidents. Drugs may cause: mood swings leading to violence, which causes deaths of others; accidental overdose of children who take drugs they discover; and accidents which kill third parties (notably road accidents). Psychological depression due to drugs or the drug taker's lifestyle often leads to suicide. Drugs may even contribute to death without their use, during violent rivalry between traffickers.

Toxic effect

Drugs most often cause immediate death by affecting respiration – opioids depress respiration. Breathing too little oxygen can lead to cardiac arrest or brain damage. General depression of the central nervous system – by barbiturates, benzodiazepines or alcohol – also causes death.

Secondary effects of depressed respiration may be obstruction of airways by saliva, mucus or vomit. Consciousness and the cough reflex can be depressed until normal protective mechanisms fail. Conditions such as 'crack lung' or opiate-induced asthma can also be fatal.

Drugs can act directly on the heart to cause: cardiac depression leading to circulation system collapse; heart rhythm disturbance reducing or stopping output; heart attack from thickening of coronary blood vessels through long-term stimulant use (notably cocaine); and rarely heart attack from acute spasm of coronary arteries.

Indirect effects on the heart include: secondary cardiac depression due to oxygen depletion from depressed respiration; fluid volume depletion due to extreme dilatation of blood vessels or sweating (commonly with extreme rise in body temperature) typically with stimulants; raised body temperature due to excessive muscular activity; reduced body temperature usually when unconscious in cold surroundings.

Strokes can result from 'recreational' doses of stimulant drugs (amphetamine, cocaine, ecstasy), which tend to raise blood pressure, sometimes enough to damage blood vessels in the brain.

Cocaine and MDMA may lead to fatal liver failure.

Kidneys can fail through: immunological reactions; blood vessel illness; breakdown products in the blood from muscles damaged by raised body temperature (cocaine, MDMA); and occasionally heroin.

Injection can result in septicaemia and infections, besides transmission of virus infections.

RISK FACTORS

Toxicity may be modified by the mode of use of a drug. Injection carries particularly high toxicity risks, plus risks from infection and damage to blood vessels. Injectors increase risk of death from: overdose; alcoholism; trauma; AIDS; infectious, circulatory, respiratory, and digestive diseases; violence; and other causes.

Drug purity appears to be a minor factor in fatal overdoses. Risks from contaminants, which dilute or 'cut' drugs, are exaggerated.

Tolerance is a factor with opioids. Withdrawal initiates loss of tolerance, so those who take opioids after a period of abstinence, without realising that previous tolerance has been reduced, are at considerable risk. Prisoners on release from jail and clients who have been detoxified or who are completing residential care, should be warned about this danger.

Opioid tablets ground-up and injected have similar effects and side effects to heroin. They also cause severe local inflammation, which can block the injected blood vessel.

There are no reports of acute death from cannabis toxicity. Cannabis may be associated with road traffic accidents, but the extent is undetermined.

Chronic cocaine use can increase bleeding from a brain aneurysm. Cocaine overdose can produce elevated body temperature and agitated delirium, thus sudden death.

Ecstasy (MDMA) and similar drugs cause a few deaths each year due to disordered heart rhythm, overheating, liver damage, or bleeding in the brain. An occasional complication is death from water intoxication, due to misinterpretation of warnings to avoid dehydration.

Benzodiazepines contribute to respiratory depression, particularly when taken with opioids or alcohol.

Amphetamine sulphate can be toxic like cocaine, but currently contributes little to drug-related death figures.

LSD does not cause toxic deaths, but anecdotes report deaths by accident.

Volatile substance deaths fell from a peak of 151 in 1990 to 58 in 1996, but now show a slight upward trend (ACMD reported on VSA in 1995).

Many drug-related deaths are caused by interaction between several different drugs. Combinations add to the dangers and are unpredictable. Alcohol often contributes to these interactions.

Social, situational and personal factors can increase risks of drug-related death, but there are few relevant studies.

More men than women die from drug misuse. More men than women inject, so corrected figures can weaken or reverse this risk factor.

Studies vary, but median age for death among injecting drug users is late twenties or early thirties. Naive users are not solely at risk – with prolonged use adverse effects accumulate.

Drug-related death has a relationship with social deprivation. Drug deaths are more frequent among unemployed and unskilled workers. But, drug misuse can lead to social deprivation.

Poor mental health among drug users, particularly depression, adds to the risk of suicide. HIV and AIDS may worsen this.

Most drug-related deaths occur in a residence, not necessarily the home of the user.

The availability and price of any drug has a bearing on its prevalence and risk of death.

Drug injectors frequently underestimate the risks they take.

Many drug deaths occur in the company of other users, but often they delay seeking help. Research recently focused on strategies drug users can initiate to decrease risk of overdose.

Although the drugs are the prime cause of drug-related deaths, personal and social contexts of users need to be taken into account.

DATA QUALITY

Current data

The present data system for drug-related deaths in Britain cannot provide information of the quality needed, so responses to drug-related deaths cannot be aimed accurately. The current approach cannot reveal whether a stated drug was primarily responsible for a death. Comparison of drug-related death rates across Europe is difficult due to variations in data collection systems. The EMCDDA is developing common criteria.

Recorded deaths cannot indicate drug prevalence – drug-related deaths could increase while drug misuse decreases in the general population, and vice versa.

Deaths due to illicit drugs and volatile substance abuse (VSA) should be recorded. There is a case for reporting alcohol-related deaths in the same system, due to interactions between alcohol and illicit drugs.

The major 'relationships' in substance-related deaths are: acute poisoning or acute illness; chronic illness; road traffic accidents; poisoning by another party.

In 1994 the General Register Office (GRO) in Scotland arranged to collect information on drug-related deaths, which has led to improved data quality.

The Communicable Disease Surveillance Centre (CDSC) has data on drug users' contribution to transmission of disease, which is fairly accurate for HIV but very incomplete for others including hepatitis (HBV and HCV).

Improving the data

A national reporting and surveillance system, similar to that for HIV deaths, should be in place for HBV and HCV. National surveys on the virus status of drug treatment agencies' clients should be conducted every two years.

There should be further research on drug misuse and road traffic accident fatalities.

Work on international comparisons of drug-related mortality deserves further support.

METHADONE

In 1995 about 30,000 people received methadone maintenance treatment in England and Wales. Methadone-related deaths have increased in recent years to an unacceptable level – their prevention must be a priority. Methadone should increase benefit and decrease risks.

Recent Scottish experience demonstrates that increased prescribing of methadone can accompany decreased methadone-related deaths. Restrictive and inflexible controls on methadone therapy could lead more people to continue intravenous drug use.

The safety of methadone maintenance treatment is determined by the care of its delivery. There is a wide variation in the way individuals accumulate or clear methadone from their body, so it has a narrow window of clinical safety. Health authorities should monitor the quality of methadone prescribing – training, commitment, institutional safeguards and supervision of treatment needs strengthening and constant review.

Methadone should normally be taken under supervision for at least six months, often longer.

Methadone deaths should be monitored by Drug Action Teams (DATs) in England and Drug and Alcohol Action Teams (DAATs) in Wales. National monitoring by ONS should feed back to the local level. Reduction in these deaths should be a national performance indicator.

The Department of Health must run trials on alternatives to methadone for treatment of addiction.

Most methadone deaths involve overdoses of diverted supplies. Prescribing should emphasise prevention of diversion. Interactions between methadone and alcohol and other drugs increase risk.

Occasionally methadone accidentally poisons children. When methadone is dispensed clear warnings should be given on the bottle.

Patients, doctors, pharmacists, agency workers, and institutions need to be more aware of the dangers of methadone. DATs and DAATs should ensure such awareness.

REDUCING DEATHS

Immediate deaths

An intensive and sustained initiative across and between agencies would reduce deaths from the immediate effects of drugs.

Agencies should encourage non-injecting clients never to inject, and injectors to stop. DATs and DAATs should ensure that training is available.

The message 'injecting is too dangerous' must be carried to drug users not in contact with treatment agencies. The HEA, in England, the corresponding body in Wales, and HEBS (Scotland) should carry the message widely and ceaselessly.

Poor prescribing practice contributes to addicts' deaths, so doctors should be licensed according to their level of expertise.

Prescribing controlled drugs in ampoules or tablet form is generally highly inadvisable.

Every prescribing agency should avoid prescribing benzodiazepines and assist current patients to come off them, as they are dangerous to drug users and easily diverted. Agencies

and public health advice should warn about combined use of opioids, benzodiazepines and alcohol.

The prevention of VSA deaths requires continued attention.

Ecstasy deaths can be prevented, about which ACMD previously reported.

Overdose can occur on drug agency premises, so staff should be trained in resuscitation and naloxone kept on site. Every agency should have policies for the prevention of immediate drug-related deaths (and deaths from blood borne virus diseases). Risk assessment should be developed and implemented. DATs and DAATs should assist and monitor implementation.

Drug agencies should prevent diversion of prescription drugs and training should support this. Staff should encourage clients to take responsibility to avoid behaviour which increases risk.

Drug agencies and mental health services should do better for drug users with mental health problems, especially suicide prevention. This sector has not received sufficient attention. Closer liaison must be developed and training enhanced.

DATs and DAATs should support and monitor primary healthcare workers to prevent drug-related deaths.

Hospital arrangements for overdose resuscitation must be satisfactory. DATs and DAATs should help establish the provision of relevant health advice to drug misusers presenting in Accident and Emergency departments.

Ambulance staff should be able to deal with drug overdose. Naloxone and training in its use should be available to paramedics. Confidentiality should be maintained in emergency calls to overdosed drug users. DATs and DAATs should help formalise these expectations locally.

Drug agencies should advise the relatives and friends of drug users on emergency action in case of an overdose. A carefully designed pilot project should test the issuing of naloxone to drug users or their relatives.

High proportions of people arrested by police are drug takers. Forensic medical examiners (police surgeons) should speak to arrestees about referral to help, and information should be available in police stations. Police should be trained to identify and deal with cocaine-induced delirium.

Prisons can prevent drug-related deaths. The recently established CARAT scheme is to be commended, but the recurrent disorganisation of prisons' response to drug misuse is disappointing. After-care of drug-using prisoners is crucial, community liaison and individual care plans should be established. Methadone maintenance should continue in prison.

Drugs can contribute to uninhibited and dangerous behaviour, so agencies should explain to their clients the risks of drugged driving.

Chronic illness deaths

Drug injectors risk septicaemia, so agencies should work closely with medical centres.

The only data on virus-related deaths due to drug injecting is for HIV. By the end of 1998 in Scotland there had been 279 deaths of injecting drug users due to AIDS.

The energy and concern which earlier characterised the response to HIV needs to translate to an initiative against all injection-transmitted viruses. Hepatitis among drug misusers is no longer a sideshow to HIV, it is an immense public health problem without data on trends or policy effectiveness.

In England and Wales, a recent study of long term injectors found 62 per cent HCV and 52 per cent HBV positive. UK estimates of former and present injectors with HCV are 152,000-228,000.

Recent data from the USA suggests that 1.8 per cent of the general population have HCV infection – injecting drug use is the main vector.

Only 5 per cent of adults infected with HBV develop long-term infection, but up to 80 per cent with HCV carry it long term. About 15-20 per cent of HBV carriers may develop cirrhosis or liver cancer.

HCV is highly infectious through blood-to-blood contact and more robust than HIV, so advice on decontamination of injecting equipment is important. HCV transmission between sexual partners is uncommon, but if one partner is HCV positive condoms should be used.

Continually updated programmes should educate staff and prisoners about risks. HBV vaccination should be available to everyone entering prisons and uptake monitored. HCV decontaminants should be widely available, with instructions on their use.

Voluntary HCV testing is encouraged, as early treatment gives better results. Partners of injecting drug users should also be tested. Counselling will be required.

The childhood vaccination programme should include HBV immunisation, and all injecting drug users should have HBV immunisation, also protecting against hepatitis D.

Drug agencies should routinely seek advice on HBV and HCV treatment from liver specialists. Agency staff need enhanced training to tackle blood-borne viruses.

Providing clean injecting equipment remains important. If sterile water is provided, it should always be in single dose ampoules to avoid HCV cross infection.

Action on all injection transmitted viruses is urgently required, it should not be postponed.

PRIORITIES AND INTENTIONS

A new, integrated, national initiative is required on prevention of drug-related deaths. Diverse, fragmented efforts must be co-ordinated.

Energy and resources are aimed at reducing drug-related deaths, but practices continue which increase risks, such as lax and irresponsible prescribing of methadone.

A considerably strengthened response to drug misuse is required from the Prison Service.

Education and training is intrinsic to the success of the overall policy. An essential element must be public awareness of overdose fatalities and viral transmission.

Heightened knowledge, commitment and multiple improvements are required across all agencies, with audited performance. Drug users who are outside agency contact must be reached.

Drug users need to be brought into partnership – rather than being treated as 'the problem' users should be part of the solution. Users must take responsibility to avoid overdose and virus infection and not risk the lives of partners and friends.

Responses to families of drug users should be strengthened – families can contribute to prevention of drug-related deaths and need help when a tragedy has occurred.

Continued and strengthened amelioration of social deprivation is required. Deprivation can breed social conditions that encourage the more dangerous forms of drug misuse.

Effective policy cannot operate without improvement of the data system. For successful implementation of the overall initiative, research is required into what prevents drug-related deaths.

DATs and DAATs are crucial to the successful implementation of everything proposed.