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Monitoring Problem Drug Use in Bristol

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A prospective multi-agency survey of problem drug use associated with illicit drugs and solvents in the city of Bristol in 1984–1985 found 759 problem drug users, giving a period prevalence rate of 0.4–0.8% of those aged 10–44 years. The group was a young one, with 92% under the age of 35. Over half had problems associated with opiates, mainly illicit heroin; 17% had problems associated with solvents, 9% with cannabis, 13% with stimulants, mainly illicit amphetamine, and 3% with hallucinogens. There was little indication of problematic use of barbiturates or cocaine. The problems associated with drugs and solvents were wide-ranging and not specific for individual drugs. Future community surveys would find it cost-effective to concentrate on the five best sources identified here, and to supplement these with indications of drug-taking among teenagers. The difficulties of using the definition of problem drug use for research and the value of case-register surveys for community drug monitoring are discussed.

In view of increasing concern about the extent of drug misuse, all health authorities have been required to monitor their local drug problems (Department of Health and Social Security, 1984, 1985). How best can this be done?

The published work on the community prevalence of problems associated with drug misuse in Britain is sparse. Surveys in the 1960s and 1970s concentrated on the extent of use of heroin (de Alarcon & Rathod, 1968; Kosviner *et al*, 1968), of heroin and methadone (Arroyave *et al*, 1973), and of injected drugs (Bishop *et al*, 1976), while more recently attention has turned to solvent misuse (Gay *et al*, 1982). In the USA, statistical methods have been developed to estimate the prevalence of opiate users in large cities (Greene, 1974; Newmeyer & Johnson, 1976), and although some of these have been successfully applied in London recently (Hartnoll *et al*, 1985*b*), they are less appropriate for small communities.

Not all drug problems are associated with opiates, however. There has been increasing recognition that drug users frequently use a variety of different drugs, and that a host of physical, psychological, social and legal problems can be associated with drug or solvent use. The Advisory Committee on the Misuse of Drugs (1982) has recommended a problem-orientated approach and used a definition of "problem drug taker".

Method

Scope of the survey

The aim was to assess the number of problem drug users known to a variety of agencies in Bristol, prospectively over the 12-month period March 1984 to February 1985. A problem drug user was defined as one who had medical, social, or legal problems associated with his non-therapeutic use of certain categories of drugs, namely opiates, stimulants, hallucinogens, barbiturates, cannabis or solvents. Non-therapeutic use included taking drugs without medical advice, taking prescribed drugs in a manner markedly different from the directions of the prescriber, and taking prescribed drugs for the treatment of dependence.

TABLE I
Sources of information, and numbers notified by each agency

Agency	*Numbers notified*
Medical	
General practitioners[1]	267
Psychiatrists[1]	80
Accident and emergency departments	172
Health visitors[1]	15
Public Health Laboratory	33
Hospital consultants	2
Social	
Social workers[1]	13
Probation officers[1]	128
Education welfare officers[1]	50
The Child and Family Guidance Service[1]	31
Youth workers[1]	1
Life for the World Trust[1]	21
Local press	37
Special schools	9
Legal	
Bristol coroner	6
The Home Office Addicts Index	196

1. Visited personally and asked to complete questionnaires.

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The survey included those who were resident in the city of Bristol and those resident elsewhere who were known to agencies based in the city.

Sources of information

Information was collected from the sources listed in Table I, which are all denoted 'agencies' below.

Questionnaires

As marked in Table I, many of the agencies were visited personally and asked to complete an individual questionnaire for all those patients/clients known to them on 1 March 1984 and over the period March 1984 to February 1985 who, in their professional opinion, had problems associated with their use of drugs or solvents.

There was concern that some drug users would be known to many agencies and would be counted more than once, which made it desirable to collect sufficient identifying information to distinguish one individual from another. It was not possible to obtain names and addresses (as previous community surveys had done), but most of the agencies taking part in the survey provided anonymous identifiers, namely initials, date of birth, sex and area of residence. The questionnaire included questions about the individual's drug use, his associated problems and his contact with other services. It also asked if there were adequate support or services to help the individual drug user; if not, it asked what was necessary.

Other surveys

Anonymous details were recorded of all cases of hepatitis B due to intravenous drug-taking known to the Bristol Public Health Laboratory, and anonymous details of Bristol residents known to the Home Office Addicts Index were made available. The records of all inquests held by the Bristol coroner were searched for deaths of problem drug or solvent users. The three accident and emergency departments of the Bristol Royal Infirmary, Southmead Hospital, and Frenchay Hospital co-operated in a special prospective survey to detect all problem drug users who were treated there. Consultants in the three hospitals were informed of the survey and asked to provide information about any cases known to them. The two local papers – the *Western Daily Press* and the *Evening Post* – were scrutinised for details of Bristol drug users.

Results

Notifications

Over the 12-month period, 1061 notifications were received, which related to 759 individuals. The numbers notified by each agency are shown in Table I. The vast majority were notified by only one agency (75%), with 16% being notified twice, 5.5% three times, 2% four times, 1% five times and four people six times.

Age and sex distributions, and residence

The group notified was a young one; 32% were aged 10–19 years and 60% were aged 20–34 years. There were 558 males and 195 females (sex not known for six cases), and males outnumbered females in all age groups.

Information about the area of residence was available for 93% of the individuals notified. There were 88% living in Bristol, 9% living in Avon and only 3% living elsewhere.

Drugs associated with problems

The six drug categories have been arranged in a hierarchical order so that each individual was counted only once, no matter how many different drugs he used. Opiates took precedence over stimulants, which took precedence over hallucinogens, and these over barbiturates, then cannabis. Solvents were the last in the order. The hierarchy was used in an empirical way, being based both on the perceived danger associated with the drugs according to the categorisation of the Misuse of Drugs Act, and also on the habits of many drug users. Opiate users typically used cannabis and other soft drugs before taking opiates; at the other extreme, solvent users were generally younger and used solvents before taking illicit drugs.

The age and sex distribution of problem drug users using different drugs are shown in Table II. Solvent users (17% of the total) were predominantly under 20 years, and males outnumbered females by almost 5:1. Problem hallucinogen users accounted for only 3%, and were mainly older teenagers. Problem cannabis users represented 9% of the total, and their ages were spread from the early teens to the early 40s.

Barbiturate users were only 1% of the total, and typically had taken an overdose of drugs prescribed for therapeutic reasons. Six of the eight individuals were women, and all were aged 25 or over.

Problem stimulant users accounted for 13% of the total, and the vast majority of these used illicitly manufactured amphetamine, with only a minority using tablets such as Tenuate Dospan. Cocaine was only mentioned in 39 cases, and of these the majority also used opiates or amphetamine. Problem stimulant users were typically in their late teens or 20s, and the male:female ratio was approximately 3:1.

Problem opiate users accounted for 54% of the total (51% of all males and 63% of the females notified). Apart from one 14-year-old heroin user, the youngest problem opiate users were 17 years old. The peak ages for problem opiate users were 20–24 years for women and 25–29 years for men, and these correspond to prevalence rates of 53 per 10 000 males aged 25–29 years, and 28 per 10 000 females aged 20–24 years.

Within the city of Bristol there were wide variations in the prevalence of drug problems between the wards. Opiate users were concentrated in wards in the centre of the city (with the highest rate being 141 problem opiate users per 10 000 population aged 16–39 years), while stimulant users were more dispersed, and the prevalence rates for solvent users were highest in the peripheral estates.

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TABLE II
Age and sex distribution of problem drug users using different drugs[1]

Drugs	*Age groups*								*Total*
	10–14	*15–19*	*20–24*	*25–29*	*30–34*	*35–39*	*40–44*	*45+*	
Opiates									
Males	1	20	63	75	64	23	11	4	261
Females	—	12	35	30	25	4	—	5	111
Total	1	32	98	105	89	27	11	9	372
Stimulants									
Males	1	17	19	16	12	5	—	1	71
Females	1	12	4	6	2	—	—	—	25
Total	2	29	23	22	14	5	—	1	96
Hallucinogens									
Males	—	12	4	—	1	—	—	—	17
Females	—	1	1	—	1	—	—	—	3
Total	—	13	5	—	2	—	—	—	20
Cannabis									
Males	5	20	11	8	2	1	—	1	48
Females	2	5	3	1	2	—	—	—	13
Total	7	25	14	9	4	1	—	1	61
Barbiturates									
Males	—	—	—	1	—	—	—	1	2
Females	—	—	—	1	2	1	2	—	6
Total	—	—	—	2	2	1	2	1	8
Solvents									
Males	26	61	10	1	—	1	—	—	99
Females	12	7	1	—	—	—	—	—	20
Total	38	68	11	1	—	1	—	—	119

1. This table refers to 676 individuals where the age, sex and drugs were all specified.

Problems associated with drug use

We defined problems associated with drug use as those problems the drug user had, in the opinion of the agency (not of the drug user himself), in which the drug use was either the cause or a major contributory factor. This avoided discussions of a chicken-and-egg type over whether problems were caused by drug use. The problems had to be present during March 1984 to February 1985.

Table III shows the great diversity of problems associated with drugs or solvents that agencies know about. It is a minimal list, as some agencies provided considerable detail of their clients' problems but others' reports were sparse. The largest categories are opiate dependence (mentioned for 80% of problem opiate users), relationship difficulties, and legal problems. In general the range of problems was similar whichever drugs the person took.

It is impossible to predict service needs from catalogues of problems that have already presented, but the diversity of the problems points to the need for a multi-disciplinary approach and good liaison between different services.

Contact between agencies

One of the advantages of operating a case register where it was possible to distinguish one individual from another was that it allowed estimation of the degree of under-reporting by agencies. For example, all those notified to the Home Office Addicts Index by Bristol GPs could have been notified to the survey, and those known to probation officers who indicated that the person was also known to a psychiatrist should have been notified by the psychiatric team. All these measures were inexact, but indicated that approximately twice as many contacts were made as were notified to the survey.

Discussion

The epidemiology of drug misuse is an inexact science, not only because of the difficulties of defining cases adequately, but also because of the illicit nature of drug-taking and the denial which characterises many drug takers. Even if it were possible to accurately estimate problem drug use,

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TABLE III
Problems associated with drug use

Problem	*Number with problem*	*Percentage of total (759)*	*Numbers with problem, using specific drugs*					
			Opiates (411)	*Stimulants (95)*	*Hallucinogens (21)*	*Cannabis (65)*	*Barbiturates (8)*	*Solvents (126)*
Medical								
Ill health	90	12	61	11	—	4	1	12
Hepatitis	65	9	48	3	—	—	—	1
Infections due to injection	43	6	41	1	—	—	—	—
Trauma	22	3	9	6	3	—	—	3
Deliberate self-harm	59	8	33	11	2	3	2	5
Opiate dependence	321	42	321	—	—	—	—	—
Dependence on other drugs	28	4	7	16	—	1	4	4
Self-medication or deception	59	8	55	—	—	1	1	—
Adverse effects of use	65	9	13	16	12	10	—	14
Psychiatric diagnoses	90	12	41	23	3	11	2	9
Alcohol problems	18	2	12	3	—	1	—	1
Pregnancy and drug use	5	1	4	1	—	—	—	—
Brain damage	5	1	1	—	—	—	—	4
Social								
Spouse or social group using drugs	28	4	25	—	1	1	—	1
Children in care	6	1	5	—	—	—	—	1
School problems	56	7	1	3	—	7	—	45
User in care	19	3	—	3	—	2	—	13
Relationship difficulties	209	28	107	34	2	13	3	48
Behavioural difficulties	58	8	15	10	2	10	—	19
Financial	68	9	51	9	—	4	1	3
Accommodation	55	7	37	9	1	1	1	5
Work	60	8	39	12	1	—	1	7
Not specified	31	4	5	3	1	1	—	21
Legal								
Drug offences	51	7	23	9	—	17	—	—
Theft offences	36	5	21	7	—	3	—	—
Prostitution/ soliciting	9	1	8	1	—	—	—	—
Not specified	101	13	55	15	3	5	—	23

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however, the situation could change rapidly in response to local factors, such as drug availability, police activity, or the death or imprisonment of well-known drug users. This survey has confined itself to estimating the numbers of problem drug users known to the services in Bristol, while acknowledging that the relationship between drug users with problems and agencies is a dynamic one.

The increased concern over the confidentiality of patient or client information made it impossible to request names for a research register. While it was possible to distinguish individuals on the basis of anonymous identifiers, it remains to be seen if patients' and clients' rights of access to computer-held information will limit agencies' participation and prevent multi-agency surveys in the future.

This survey has estimated that between 750 and 1500 individuals with problems associated with illicit drugs or solvents are known to agencies in Bristol, and that over half have problems associated with opiates, mainly illicit heroin. The other main drugs associated with problems were illicitly manufactured amphetamine, cannabis, and solvents; there was little indication of widespread problematic use of barbiturates or cocaine. Benzodiazepines were excluded from the survey, but were available cheaply on the black market. As expected, solvent users were predominantly teenagers, but the sex ratio of five males to one female is high in comparison with the self-reported use of solvents by 14–15-year-old Bristol school-children in 1985 (Parker *et al*, unpublished). Girls and boys reported identical patterns of ever having sniffed solvents, and of using them frequently or recently. Are girls able to sniff glue with fewer problems than boys, or are agencies more attuned to consider glue-sniffing as a contributory factor in boys' problems?

The majority of opiate users of both sexes were using illicitly manufactured heroin, although at least a third received a prescription of methadone for some part of the year. Only a handful of cases received maintenance prescriptions, as the policy in Bristol remains firmly against this, and methadone is generally prescribed either over several weeks for detoxification, or by one psychiatric team for up to six months. Methadone linctus is inevitably available on the black market, as are Diconal, DF118 and pethidine, but the indications are that chemists' burglaries and GP prescriptions are less important than in 1971–1973, due to the availability of illicit heroin.

The number of problem cannabis users is small by comparison with the number of people who take cannabis, according to information from the police, from fieldwork and from the survey of schoolchildren (Parker *et al*, unpublished). Those having problems were typically vulnerable teenagers or young adults, whose cannabis use contributed to psychoses, not obtaining work, not coping at school or difficulties with parents.

Estimates of the prevalence of drug problems

The prevalence of known problem drug or solvent users in Bristol in 1984–1985 was 0.4–0.8% of the population aged 10–44 years. At the beginning of the survey period there were few specific facilities in the city for drug or solvent users, and although there have been marked improvements over the last two years, with the development of a voluntary counselling service, a specialist drug clinic and excellent training facilities for professional staff, it could be argued that the relatively low figures reflect the deficiency of appropriate services more than the real extent of drug and solvent problems. It has been possible to check the results of the multi-agency survey by several other methods which are only applicable for opiate users (see Table IV). The multi-agency survey detected 411 problem opiate users, and allowing for the degree of under-reporting, would predict a total of 400–800 in the city. Wright (personal communication) undertook fieldwork with opiate addicts in Bristol in 1983 and estimated 250–500 addicts. If the samples of problem opiate users known to the police (via a survey of those with opiate-related offences over the same time period), probation service, GPs and psychiatrists are used in the capture–recapture method (or indicator–dilution method, see Hartnoll *et al* (1985*b*)), estimates of 520–675 are achieved (Table V). (This method extrapolates from those known to agencies to estimate all those with problems in the community.) Five Bristol opiate users died during 1984: if it is assumed that the local mortality rate of opiate users is similar

TABLE IV
Estimates of the number of opiate users in Bristol

Method	*Estimate*
Multi-agency prospective survey of problem opiate users	400–800 problem users
Fieldwork in Bristol in 1983	250–500 addicts
Indicator–dilution or capture–recapture method (see Table V)	520–675 problem users
Projection from deaths of opiate users using formula that 1–2% of British regular users die per year	250–500 regular users
Estimates from involved sources	350–2000 regular users

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TABLE V

Indicator–dilution or capture–recapture method for estimating the number of opiate users in Bristol (Hartnoll et al, *1985b)*

Agency 1	*Number of opiate users known to agency 1* N_1	*Agency 2*	*Number of opiate users known to agency 2* N_2	*Number known to both agency 1 and agency 2* X	*Estimate* $\frac{(N_1 \times N_2)}{X}$
Police[1]	54	Home Office Index	190	19	540
Police[1]	54	GPs	177	19	503
Probation Officers	71	Home Office Index	190	20	675
Probation Officers	71	GPs	177	22	571
Probation Officers	71	Accident and emergency departments	66	9	520

1. There were 54 people arrested in Bristol for an opiate offence during the survey period.

to that of addicts known to drug treatment clinics (Stimson *et al*, 1978; Cottrell *et al*, 1985) or to the Home Office (Ghodse *et al*, 1985) – that is, 1–2% die each year – this would predict 250–500 opiate users in Bristol. Local people in touch with opiate users through Narcotics Anonymous or the dealer network provided estimates of 350–2000 regular heroin users in the city; it is, however, noteworthy that research in America (Newmeyer & Johnson, 1976; Riley *et al*, 1981) suggests that people involved in the drug field, either as users or in helping agencies, tend to over-estimate the size of "the problem" to make their case.

These various methods have all provided estimates of the same order of magnitude, and allow an estimate of 500–1000 problem opiate users in Bristol, with some measure of confidence.

It is possible to compare the 1984–1985 results for opiate users with those of the previous Bristol survey in 1971–1973 (Bishop *et al*, 1976) and with recent figures from north-east London (Hartnoll *et al*, 1985*b*) and from Merseyside (Parker *et al*, 1987), although the different definitions employed must be noted. The 1971–1973 Bristol survey enumerated all addicts known to agencies who injected drugs (almost invariably opiates). Over the three-year period it found 148 individuals, of whom over 90% were under 30 years. It gave an overall period prevalence rate of 6.8 per 10 000 Bristol residents aged 15–29 years. By comparison, the definition of problem opiate user in the present agency survey is broader in two ways: (a) it is not restricted to injectors, in keeping with the recent trends of smoking or inhaling heroin, and (b) it includes those with problems associated with opiates other than addiction (although at least 80% of cases were considered to be dependent). Over the 12-month period, 411 problem opiate users were identified, and the prevalence rates for all age and sex groups were 3–10 times higher than in the 1970s survey. The local indirect indicators of drug abuse – that is, acute hepatitis notifications, notifications of addicts to the Home Office, drug-related admissions to psychiatric hospitals, and police data regarding seizures of drugs – would all support the results of the comparison that there has been a marked increase in opiate problems in Bristol from 1971 to 1985. It is interesting to note the particular increase in those aged 30–44 years. Although some have continued to use opiates from the 1970s, many have only recently started.

The north-east London survey used a variety of indirect methods – relying largely on contact with agencies – to provide estimates of the numbers of regular opioid users. In practice the definition would not be markedly different from 'problem opiate user'. The results were similar to the current surveys in showing a sex ratio of approximately two males to one female, and highest prevalence rates in those aged 25–34 years. The Bristol prevalence rates were approximately one third to one half of those for north-east London (Table VI).

Parker *et al* (1987) investigated the prevalence of heroin use in Wirral, Merseyside, by a retrospective multi-agency survey, similar to the one reported here. Their typical "new heroin user" was young, unemployed, family-based, and from a socially deprived area. The male:female ratio was 4:1, and "chasing the dragon" was the commonest way of taking heroin. The annual prevalence rate was highest for the 16–24 age group, at 182 per 10 000 approximately ten times the Bristol rate for the same period, while the rates for the 25–34 (55 per 10 000) and 35–44 (5 per 10 000) age groups were similar to those in Bristol.

Bristol thus has fewer heroin users than Wirral or North East London, and while it has some estates where the Wirral stereotype applies, in general the profile of users is more like that in London.

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TABLE VI
Rates per 10 000 population for north-east London and Bristol surveys

Age range: years	*Rates per 10 000 population*	
	North-east London	*Bristol*[1]
16–19	50	13–26
16–24	120	21–42
25–34	210	35–70
35–44	50	9–18

1. Figures based on the multi-agency survey and allowing for under-reporting.

Problems with 'problem drug use'

The Advisory Council on the Misuse of Drugs (1982) proposed a definition of 'problem drug taker', both to move away from earlier substance-specific definitions and to emphasise the range of problems drug users had. While the concept is commendable, it is problematical for epidemiological purposes, by being value-laden. It is necessary to outline what counts as a problem, who has to have the problem, who has to acknowledge the problem and the relationship between drug use and the problem. This survey relied upon over 1000 professional staff to identify which of their drug-taking patients or clients they considered to be problem drug users. Inevitably there were differences in the way individual staff applied the definition, and to some extent this depended on the client's age, sex, social standing and ethnic background. The difficulty was most apparent in agencies working with young people. On one hand some agencies saw recreational drug-taking or solvent misuse as part of normal adolescent experience, and related their clients' undoubted problems to their environment. At the other extreme agencies saw any drug or solvent misuse in teenagers as a problem *per se*.

The disparity between drug users and agencies over what constituted problem drug use was even greater, however. Our experience interviewing drug users confirmed Pattison *et al*'s (unpublished) comments: "Drug takers seemed often to under-estimate their own and other drug takers' problems, believing their only difficulties were with the police and in obtaining drugs."

Finally, the definition of problem drug user is of limited value for epidemiologists and planners because it is so broad, encompassing a range of individuals with diverse problems and needs.

Further information is needed about the sorts of people and the drugs involved, the problems they are experiencing and those for which they are seeking help. The word problem has two common usages in English, namely a difficulty and a matter needing resolution. Knowing which difficulties a person is considered to have associated with his drug use is not necessarily the same as knowing which he wishes to resolve; lack of motivation to change was frequently mentioned as a problem by agencies.

Monitoring drug problems in a community

Drug advisory committees in different parts of the country will perceive different priorities for the evaluation of their local drug problems, and not all will wish to undertake a case register survey. As noted by Hartnoll *et al* (1985*a*), the case register method is relatively expensive and time-consuming, but its results can act as a calibration for long term monitoring, and can assess the way in which indirect indications of drug problems reflect the local situation. It is of most use in small communities, and the numbers of cases predicted limit its value for city populations.

In Bristol, the five best sources of information were GPs, the accident and emergency departments, the Home Office Addicts Index, probation officers and psychiatrists. Together these sources identified 90% of all the problem opiate users known to all the agencies listed above, 85% of all the problem stimulant users, 95% of all the problem hallucinogen users, all the barbiturate users, but only 55% of the problem cannabis users and 45% of the problem solvent users. It could be concluded that future case register surveys should concentrate on these five sources as the most cost-effective way of estimating the prevalence of problem drug users. The low values for solvents and cannabis, however, reflect the fact that these sources are less likely to know younger people; that is, under 18 years. It would be prudent to supplement any survey limited to the five sources with a method able to investigate the extent of drug and solvent use amongst the under 18s, such as a survey of youth-orientated agencies, a school survey or fieldwork.

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References

ADVISORY COUNCIL ON THE MISUSE OF DRUGS (1982) *Treatment and Rehabilitation*. London: Her Majesty's Stationery Office.

DE ALARCON, R. & RATHOD, N. H. (1968) Prevalence and early detection of heroin abuse. *British Medical Journal*, *i*, 549–553.

ARROYAVE, F., LITTLE, D., LETEMENDIA, F. & DE ALARCON, R. (1973) Misuse of heroin and methadone in the city of Oxford. *British Journal of Addiction*, **68**, 129–135.

https://doi.org/10.1192/bjp.152.2.214 Published online by Cambridge University Press

BISHOP, B. P., CAVE, G. H., GAY, M. J. & MORGAN, H. G. (1976) A city looks at its problem of drug abuse by injection. *British Journal of Psychiatry*, **129**, 465–471.

COTTRELL, D., CHILDS-CLARKE, A. & GHODSE, A. H. (1985) British opiate addicts: an 11 year follow-up. *British Journal of Psychiatry*, **146**, 448–450.

DEPARTMENT OF HEALTH AND SOCIAL SECURITY (1984) *Services for Drug Misusers*. Health circular HC(84)14, LAC(84)12. London: DHSS.

—— (1985) *Drug Misuse Prevalence and Service Provision: a Report on Surveys and Plans in English NHS Regions*. London: DHSS.

GAY, M. J., MELLOR, R. & STANLEY, S. (1982) Drug abuse monitoring: a survey of solvent abuse in the county of Avon. *Human Toxicology*, **1**, 257–263.

GHODSE, A. H., SHEEHAN, M., TAYLOR, C. & EDWARDS, G. (1985) Deaths of drug addicts in the UK 1967–1981. *British Medical Journal*, **290**, 425–428.

GREENE, M. H. (1974) *Estimating the Prevalence of Heroin Use in a Community*. Washington DC: Special Action Office for Drug Abuse Prevention.

HARTNOLL, R., DAVIAUD, E., LEWIS, R. & MITCHESON, M. (1985*a*) *Drug Problems: Assessing Local Needs*. London: Drug Indicators Project, Birbeck College.

——, MITCHESON, M. C., LEWIS, R. & BRYER, S. (1985*b*) Estimating the prevalence of opioid dependence. *The Lancet*, *i*, 203–205.

KOSVINER, A., MITCHESON, M. D., OGBOURNE, A. *et al* (1968) Heroin use in a provincial town. *The Lancet*, *i*, 1189–1192.

NEWMEYER, J. A. & JOHNSON, G. R. (1976) The heroin epidemic in San Francisco: estimates of incidence and prevalence. *International Journal of the Addictions*, **11**, 417–438.

PARKER, H., NEWCOMBE, R. & BAKX, K. (1987) The new heroin users: prevalence and characteristics in Wirral, Merseyside. *British Journal of Addiction*, **82**, 147–157.

RILEY, W. J., WAGENFIELD, M. O. & SONNAD, S. (1981) Triangulated investigating: an approach to the estimating of the extent of heroin use. *International Journal of the Addictions*, **16**, 97–108.

STIMSON, G., OPPENHEIMER, E. & THORLEY, A. (1978) Seven year follow-up of heroin addicts: drug use and outcome. *British Medical Journal*, *i*, 1190–1192.

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