Drug Misuse Research in Scotland: 
The Contribution of Research to Scotland’s Drug Misuse Strategy

Effective Interventions Unit
DRUG MISUSE RESEARCH IN SCOTLAND: THE CONTRIBUTION OF RESEARCH TO SCOTLAND’S DRUG MISUSE STRATEGY

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EXECUTIVE SUMMARY

1. This review was commissioned by the Research Sub-Group of the Scottish Advisory Committee on Drug Misuse. The review was prepared to assist the work of the sub-group in identifying a programme of research in support of the Scottish Drug Misuse Strategy “Tackling Drugs in Scotland: Action in Partnership”. The review identifies areas where information relevant to delivering the strategy has been provided and identifies key gaps in knowledge and information. The review is structured in accordance with the four themes included within the UK and Scottish drug misuse strategies (young people, communities, treatment, and availability) with an additional theme added here to do with morbidity and mortality associated with drug misuse. The review was undertaken by contacting key drug misuse researchers within Scotland and requesting copies of papers based upon their most recent research and by identifying relevant publications noted on the following databases: BIDS, Embase, and Medline database of published research. The review is primarily focused upon Scottish based drug misuse research over the last ten years although limited use is also made of non Scottish based publications at certain points in the review.

YOUNG PEOPLE

7 The key aim under this heading of the UK and Scottish drug misuse strategies is to help young people to resist drug misuse in order to achieve their full potential. The key objectives of the Scottish strategy are to:

8 establish an evidence base in relation to drug education, prevention, and harm reduction
9 enhance public understanding of drug misuse and promote the avoidance of drug misuse
10 reduce the acceptability of drugs to young people in Scotland,
11 ensure that every school pupil within Scotland is provided with effective drug education
12 reduce the harm arising from drug misuse
13 increase access to information on the part of vulnerable young people (including school excludees, truants, looked after children, young homeless, and the children of drug misusing parents)

14 There have been a number of large-scale surveys undertaken within Scotland, which have provided information on the nature, and extent of drug misuse amongst young people. However, these surveys have not been sufficiently large to provide information on the pattern of drug misuse amongst young people across Scotland as a whole. Whilst there have been a number of more locally based surveys, these have only been undertaken in a relatively small number of areas. At the present time there is a lack of information on the nature and extent of drug misuse amongst young people across Scotland as a whole. Information is particularly lacking in relation to drug misuse amongst vulnerable groups (young people in care, truants, school excludees, the children of drug misusing parents). Information is also lacking in relation to primary school children’s exposure to illegal drugs. Despite the fact that most of the drug misuse surveys undertaken within Scotland have been one-off surveys (within which it is not possible to identify information on possible changes in the prevalence of drug misuse
over time) some limited trend data is now beginning to emerge as a result of a few studies that have been repeated at different points in time.

4. In addition to there being gaps in information on the nature and extent of drug misuse amongst young people, information is also lacking on those factors which increase the risk of young people using illegal drugs or which protect against the development of drug misusing behaviours. Also, very little is known about how the key transition points of moving from primary school to secondary school may influence the development of drug misusing behaviours. At the older age range very little is known about how drug misuse may be influenced by leaving school.

5. There is a need to improve information on the pattern of drug misuse amongst young people across Scotland as a whole, to better understand those factors that increase the risk of young people using illegal drugs, and those factors that exert a protective influence against drug misuse. There is also a need to rigorously assess the effectiveness of drug education provision within Scotland in the short, medium, and long term.

COMMUNITIES

6. Research on this theme within Scotland is relatively sparse. At the present time very little is known about how communities respond to drug misuse and as a result are hampered in our efforts to assist local communities in tackling drug misuse. Whilst there is a policy commitment to ensure that drug misuse is addressed within the wider context of area regeneration and social inclusion, very little research has been undertaken as to how this may be achieved or the impact of current initiatives in this area. At the present time relatively little is known about the impact of work-place health promotion and drug policies.

7. There is a need to obtain accurate information from across Scotland on the extent and impact of drug-related crime, on the prevalence of problematic drug misuse, on the interface between prisons and communities and on the effectiveness of drug enforcement strategies.

TREATMENT

8. There is a commitment within the UK and Scottish drug misuse strategies to develop effective drug misuse treatment services. This aim is currently hampered by the lack of detailed information on the effectiveness of drug misuse services within Scotland. Where research has been undertaken into the provision of methadone this would appear to have an important role in the treatment of opiate dependent drug misusers. However, it is not possible to say within Scotland what the long term impact of drug misuse treatment services is. There is a need to develop a programme of drug misuse treatment evaluation that is both comprehensive in its coverage across Scotland and in its inclusion of the range of treatment modalities that are currently available within Scotland.
MORBIDITY AND MORTALITY ASSOCIATED WITH DRUG MISUSE AND THE DRUG STRATEGY

9. The research undertaken within Scotland on HIV infection and HIV-related risk behaviour amongst injecting drug users has been valuable in identifying the extent of infection, in identifying reductions in drug injectors' risk behaviour, and in the development of appropriate services. The research in relation to Hepatitis C is still at a relatively early stage and there is a need for better information on the prevalence of HCV and HCV-related risk behaviour amongst injecting drug users (including amongst those who are HCV-positive). There is also a need to assess the impact of HCV infection amongst injecting drug users on the Scottish health service in the short, medium and long term.

10. The research to date on drug-related death and overdose has similarly been of a high standard. At the present time, however, relatively little is known about the link between drug misuse and mental health problems. The finding in recent research that a significant number of injectors surviving a drug overdose had suicidal thoughts, clearly indicates the importance of further studying this issue amongst drug misusers within Scotland. Finally, there is a need to understand the broader health-related problems associated with drug misuse and how these may be better dealt with.

AVAILABILITY

11. At the present time within Scotland there is a serious lack of information on the availability of illegal drugs, on the operation of drug markets and on the effectiveness of enforcement strategies in relation to reducing availability. Without information in these key areas it is difficult to see how the objectives in the UK and Scottish drug misuse strategies under this heading can be assessed.

CONCLUSIONS

12. This review has outlined a broad range of drug misuse research undertaken within Scotland and elsewhere and has posed the question: to what extent can that research be seen as providing an evidence base for the UK and Scottish drug strategies? This is an important question because of the commitment within both strategies to base policies and service provision on evidence of effectiveness. There has been a large amount of drug misuse research undertaken within Scotland, much of which can contribute to the process of delivering the drug strategy. Key research has been undertaken within the area of young people, treatment, and morbidity and mortality associated with drug misuse. Much less research has been undertaken in relation to communities and availability including enforcement.

13. For research to be maximally useful in delivering the Scottish drug misuse strategy a number of developments will need to happen. First, research in the area of drug misuse needs to be guided by a clear strategy; it needs to evolve incrementally in relation to prioritised topics rather than shift from topic to topic without any clear justification for the shifts in focus. Second, it is essential that the results of research, and the topics chosen for research, engage with the concerns and the experiences of drug misuse service providers. Much of the
research undertaken in this area has a direct practical pay-off in assisting agencies that are seeking to respond to the drug problem whether in terms of treatment, care, community development, and enforcement. At present, there is no systematic way of ensuring that individuals working in these areas have access to the results of research. Third, there will be a growing need for research to begin to answer questions of “what works” in terms of drug misuse services, to identify which services are effective with which groups of drug misusers, over what periods of time, and in relation to what aims. Fourth, there will be a need to ensure that there is sufficient flexibility in the funding of drug misuse research to enable studies to respond speedily to new problems as these emerge.

14. Inevitably, more research needs to be done. In particular, the research suggests that better information is required on the overall pattern of drug misuse amongst young people in Scotland. There would also be merit in undertaking nationally representative survey work on a periodic basis that can tell us whether drug misuse is increasing, decreasing, or remaining stable in all areas across Scotland. Information is also needed on the prevalence of problematic drug misuse (e.g. drug injecting, use of heroin) across Scotland as a whole. In addition to better information on the prevalence of drug misuse we need to know much more about the process through which drug misusing behaviours develop and escalate. It may also be prudent for research to evaluate the impact of the range of treatment and care services provided to drug misusers within Scotland within the short, medium and long term, and to assess the effectiveness of enforcement strategies.

15. Drug misuse is principally coped with, however, not by treatment, care, or enforcement agencies but within communities; it is within communities that the negative effects of drug misuse are felt most acutely. The literature reviewed here suggests that more research on how communities respond to drug misuse, how they mobilise, how they develop locally based initiatives in response to drug misuse and how they engage with professional drug misuse services would be useful. At the moment very little is known about this area and as a result organisations are not well placed to help communities respond to the drug problems within their midst. Finally there would appear to be a need for research to evaluate the effectiveness of enforcement strategies in relation to drug misuse.
“Scotland needs to base its anti-drugs work on well-targeted and accurate research and information, which drives policies and programmes.” (Tackling Drugs in Scotland: Action in Partnership)

14.3 This review was commissioned by the Research Sub-Group of the Scottish Advisory Committee on Drug Misuse to assist the sub-group in identifying a programme of research in support of the Scottish drug misuse strategy “Tackling Drugs in Scotland: Action in Partnership”. The aim of the review has been to assess current and recent research on drug misuse within Scotland, to identify key information on the basis of the research carried out, and to identify significant gaps in research where these might have an adverse impact on delivering the drug misuse strategy within Scotland.

14.4 In undertaking this review, drug misuse researchers within Scotland were asked to provide publications from their most recent and current research. In addition a search for relevant publications was carried out on the following databases (BIDS, Embase, Medline). The review aims to provide an overview of the research undertaken and is thematic rather than systematic; it has not been possible, for example, to undertake a meta-analysis of the research in specific areas. Rather, the review identifies what research has been carried out, the key findings of that research, and the main gaps where research is likely to be required in the future. This review has been structured in accordance with the key themes in the UK and Scottish drug misuse strategies (young people, communities, treatment, and availability) with an additional theme included here being morbidity and mortality associated with drug misuse. Each chapter summarises both the Scottish based research and selected elements of the non Scottish research where this is relevant to the concerns of the chapter.

1.3 It is important to acknowledge the limitations of this review. In the time taken to undertake this review (and to ensure that the review was available to assist the research sub-group in its work) it has not been possible to cover every single study and every single drug-related publication within Scotland. A review, which sought to be so comprehensive, would have risked losing a clear sight of its strategic aims. Nevertheless, an attempt has been made to include the main body of Scottish based drug misuse research over the last ten years within the review. Equally, no claim of comprehensiveness can be made in relation to the research from outside of Scotland that has been selectively included within the review.
CHAPTER TWO  YOUNG PEOPLE

2.1 The key aim under this heading within the UK drug misuse strategy is to help young people to resist drug misuse and to achieve their full potential in society. The key objectives within the Scottish strategy are to develop a consistent and co-ordinated evidence-based approach to drug education, prevention and harm reduction; to reduce the use of drugs amongst children and young people; to ensure that all school pupils within Scotland are provided with effective drugs education; to reduce the harm from drug misuse and to promote positive alternatives to drug misuse. There is also a commitment to increase access to information and services amongst young people who may be at particular risk of illegal drug use, including:

- 15 school excludees
- 16 young offenders
- 17 the young homeless
- 18 the children of drug misusing parents

THE EXTENT OF DRUG MISUSE AMONGST YOUNG PEOPLE IN SCOTLAND

2.2 There has been a considerable amount of research within Scotland providing detailed information on the nature and extent of licit and illicit drug use amongst young people. Overwhelmingly, this research comprises school-based surveys of secondary age pupils who are asked to report the details of their drug use over varying lengths of time (most commonly over the last week, last month, last 12 months or an ever basis).

18.3 The Office of National Statistics has recently reported the results of one of the largest surveys undertaken within Scotland in which 3538 S1 to S4 pupils across 122 schools were surveyed about their use of legal and illegal drugs. In this study, 41% of pupils had been offered illegal drugs and 18% had used such drugs. The level of illegal drug use rose sharply with increasing age; amongst the 12-year-old pupils surveyed (S1) 3% had used illegal drugs whilst amongst the 15-year-old pupils (S4) 39% had used illegal drugs. Cannabis was the most widely used illegal drug and was reported as having been used by 3% of 12-year-olds and 38% of 15-year-olds. Opiates were reported as having been used by one per cent of pupils. Stimulants were reported as having been used by 3% of 13-year-olds, by 8% of fourteen-year-olds, and by 15% of fifteen-year-olds. Boys were more likely than girls to have used illegal drugs; amongst fifteen-year-old boys 26% had used drugs in the last month compared to 22% of girls (Goddard and Higgins 1999).

18.4 Information on the prevalence of drug misuse amongst young people has also been provided on the basis of the Scottish Crime Survey (undertaken in 1993 and 1996). Such surveys are better able to provide information on the more recreational forms of misuse than the various forms of problematic use. In the 1996 survey, 38.2% of females in the 16 to 19 age range had used an illegal drug at some point in the past and 19.8% had done so within the last 12 months. Amongst the males aged 16 to 19, 40.1% had used an illegal drug at some point in the past and 26.4% had done so within the last 12 months. The vast majority of this drug misuse involved cannabis. However, 9.9% of females in the 16 to 19-age range and 8.8% of males had used amphetamines within the last 12 months. Similarly, 5.1% of females and 6.0% of males had used LSD in the last 12 months whilst 3.5% of females and 6.6% of
males had used Ecstasy within the last 12 months. The 1996 Scottish Crime Survey was unable to identify any heroin misuse over the last 12 months amongst males in the 16 to 29-age range or amongst females in the age ranges 16 to 19 and 25 to 29 (Anderson and Frischer 1997).

2.5 The largest survey reporting information on drug misuse amongst Scottish schoolchildren is that undertaken by the Research Unit in Health and Behavioural Change at Edinburgh University. This survey focused on 11, 13 and 15-year-olds and has been undertaken in 1990 (n=4079), 1994, (n=4959) and 1998 (n=5631). In the 1998 sweep, 16.8% of 13-year-olds reported having used cannabis at some point in the past, whilst amongst 15-year-olds the figure increased to 41.5%. Of those pupils who reported having used cannabis at some point in the past, 38.6% of thirteen-year olds and 52.3% of fifteen-year-olds had done so within the last month. Fourteen per cent of fifteen-year-olds had used volatile substances, 12.6% had used amphetamines, 8.9% had used magic mushrooms, 6.6% had used LSD, 3.5% had used ecstasy, 1.3% had used cocaine and 0.7% had used heroin (Todd Currie and Smith 1999).

2.6 One of the few surveys comparing the level of illegal drug use amongst young people in Scotland with that amongst young people elsewhere in the UK was undertaken by Miller and Plant in 1996. In this survey, 50.1% of girls (aged 15 to 16) in the Scottish sample (n=661) reported having used an illicit drug at some point in the past compared to 39.6% of the girls in the English sample (n=2969), 18.49% of the girls in the Northern Ireland sample (n=328) and 32.1% of the girls in the Welsh sample (n=166). Illicit drug use was also higher amongst the boys in the Scottish sample than amongst their peers from any of the other areas studied; 59.9% of boys in the Scottish sample (age 15 to 16) had used an illicit drug compared to 43.5% of the boys in the English sample, 37.8% of boys in the Northern Ireland sample, and 35.0% of boys in the Welsh sample (Miller and Plant 1996).

2.7 Recently, information has begun to emerge on changing trends in the nature and extent of drug misuse amongst young people in Scotland. The survey undertaken by Miller and Plant in 1996, for example, was repeated in 1999. In this survey the overall level of any use of an illegal drug amongst 15 to 16 year old girls in 1999 was 37.9% (compared to 50.1% in 1996). Amongst the 15 to 16 year old boys the proportion reporting having used an illegal drug at some point in the past was 45.8% (compared to 59.9% in 1996). There is some evidence here then that the overall level of drug misuse amongst young people within Scotland might be reducing. This very positive information needs to be set alongside the finding of an increase in the use of heroin amongst young Scots. In their 1996 survey Miller and Plant identified 1.6% of girls and 2.5% of boys aged 15 to 16 having used heroin in the past; whilst in their 1999 survey, the figure for girls was 5.4% and for boys was 6.1% (Plant and Miller 2000). The finding that heroin use may have increased at the same time that the overall level of drug misuse may have reduced is worrying. Whilst it is not known what proportion of young people starting to experiment with illegal drugs at this young age will go on to develop a pattern of long term drug misuse, clearly there needs to be considerable concern at those young people who are starting to experiment with heroin at this early age.

2.8 Useful as these large-scale surveys are in providing information on the overall pattern of drug misuse amongst young people in Scotland, such surveys are generally not able to provide information on the nature and extent of drug misuse amongst young people within specific parts of Scotland. Information of this kind has been produced on the basis of more
locally based surveys. Barnard and colleagues (1998), for example, have reported data on drug misuse amongst 11 to 16-year-olds in urban and rural locations within Scotland and within both state and independent secondary schools. In a survey of 758 pupils in Dundee, 31.3% had used an illegal drug. The proportion of pupils reporting having used an illegal drug rose from 11.2% of 11 to 12-year-olds to 56.7% of 15 to 16-year-olds. Cannabis was the most widely used illegal drug amongst the Dundee pupils; less than 10% of pupils had used any other illegal drug. As with most of the surveys in this area, the researchers found that girls were slightly less likely than boys to have tried an illegal drug (28.1% compared to 35.0%). Of girls, 16.4%, and 18.1% of boys reported use of more than one illegal drug (Barnard et al, 1996). Barnard and Forsyth used the same questionnaire that was used in their Dundee study to survey drug misuse amongst 765 S1 to S4 pupils in the rural area of Perth and Kinross. The overall level of illegal drug use identified in this study was 25.4%. By age fifteen, 44.4% of pupils reported having tried an illegal drug compared to 10.1% of the eleven to twelve-year-olds. Overall, 12.8% of pupils reported having used more than one illegal drug. As with the Dundee survey, cannabis was by far the most widely used illegal drug. In a survey of 557 independent school pupils (aged 11 to 16) using the same survey instrument as in the Dundee and Perth and Kinross research, Forsyth and colleagues identified that overall 26.0% of pupils had used an illegal drug, rising from 2.9% of S1 pupils to 30.2% of S4 pupils. In this survey the researchers included an older age group (S5) amongst whom 56.6% had used an illegal drug. (Forsyth et al, 1998).

In a survey of 837 12 to 13-year-olds and 15 to 16-year-olds in Fife, 55% of the older pupils reported having used cannabis on one or more occasions, 9% had used ecstasy on one or more occasions. 18% had used LSD, 17% had used magic mushrooms and 17% had used amphetamines (Cooke et al, 1997).

Whilst there have been many more drug misuse surveys carried out amongst young people within Scotland than those listed above, a recent review of these surveys undertaken for the Greater Glasgow Drug Action Team (Barnard 1997) concluded that it was impossible to combine the results of these surveys in such a way as to produce a clear picture of the overall pattern of drug misuse amongst young people. The major difficulties in this respect had to do with the fact that these surveys were often of variable quality, many of them had been published without being subject to peer review, they often had differences in the samples of young people surveyed, in the settings where the data were collected, in the methods of data collection employed, in the time periods asked about and in the analysis undertaken.

Attention has recently focused on the age of onset of illegal drug use amongst young people, with concern that this may be reducing in some areas. McKeeganey and Norrie (1999) for example, have reported information on the nature and extent of drug misuse amongst 930 11 to 12-year-olds in Scotland. Amongst these pupils one in ten reported having started to use illegal drugs. Of the 102 illegal drug-using pupils identified in this study, 79.4% had used cannabis (38.8% within the last month), 27.3% had used magic mushrooms (5.3% in the last month), 19.4% had used Temazepam (6.5% in the last month), 15.2% had used LSD (7.9% in the last month) and 6.0% had used heroin (2.6% in the last month).

It is important to stress that most of the illegal drug use identified in these surveys is of a recreational kind, principally, involving cannabis. It is not yet known what proportion of young people who have started to use illegal drugs will go on to develop more problematic
forms of drug misuse, for example, poly drug use, drug injecting, or what proportion will cease their drug misuse once they have left school. Indeed, because most of the surveys looking at young people’s use of illegal drugs have been school-based very little is known about the pattern of drug misuse more broadly amongst the non-school population.

2.13 One of the most significant developments in the use of illegal drugs in the last ten years within Scotland and elsewhere has been the phenomenon of the dance scene. Whilst there are no accurate statistics on the number of young people attending dance events within Scotland, or the proportion using illegal drugs, it is clear that there is a close association between dance events and at least certain forms of illegal drug use. Forsyth (1996) carried out interviews with 135 participants at dance events in Glasgow. Whilst the use of ecstasy was predictably high amongst interviewees, the study identified that attendees were regularly using a wide range of other drugs. In the last year, for example, 95% of interviewees had used cannabis, 39% had used Temazepam, 77% had used amphetamines, 58% had used cocaine, and 11% had used heroin.

2.14 In relation to drug misuse amongst the various vulnerable groups identified within the drug strategy, some information is beginning to emerge about the extent of drug misuse amongst the homeless population in Scotland. Hammersley and Pearl (1996) recently reported the results of a survey amongst single, homeless young people in Glasgow. In this study, 14% of respondents stated that they had been addicted to opiates in the past and 16% had been addicted to Benzodiazepines. Twenty-three per cent of respondents had used hallucinogens, stimulants and cannabis, 18% had used Temazepam and valium, and 44% had used opiates along with various other drugs. In 1999, the Office for National Statistics surveyed 225 homeless people in Glasgow (estimated as being approximately 10% of the homeless population within Glasgow at that time). The researchers on this study found that overall 25% of the homeless people interviewed had been drug dependent within the last year. In the case of individuals in the 16 to 24-age range this figure increased to 41% and was as high as 70% in the case of those homeless persons in the 25 to 34-age range (Kershaw Singleton and Meltzer 1999). 18% of the 16 to 24-age range and 33% of the 25 to 34-age range had been primarily dependent upon opiate drugs. The level of opiate dependence over the last year amongst females was more than double that amongst males (22% compared to 10%). On the basis of these results the young homeless within Scotland may be at considerable risk of using illegal drugs. Very little is known about the extent of drug misuse amongst the other vulnerable groups mentioned in the drug strategy. Research has recently begun looking at drug misusing parents and their children (Barnard and Barlow 2000) and the nature and extent of illegal drug use amongst looked after young people in Scotland (Beaton 1999).

2.15 Whilst not referring to a vulnerable group as such, Elliott and colleagues (1998) have looked at the behaviour of young people whilst on holiday when they may be more likely to engage in a range of risk behaviours including using illegal drugs. The researchers studied a group of young Scots on a foreign dance holiday and found a significant increase in some forms of drug misuse. In the case of ecstasy, 63% of the young Scots holidaymakers stated that they used this drug at home but 77% said that they used the drug whilst on holiday. Weekly use of LSD was reported by 11% of the young people at home but by 21% of the young people whilst on holiday. Weekly use of cocaine was reported by 12% of the young people at home but by 16% when on holiday. Predictably the greatest increase in drug use whilst on holiday identified in this research related to alcohol, which was reported as being
consumed on a weekly basis by 69% of the young people at home and by 91% whilst on this holiday. The increased frequency with which certain drugs were used was matched by a decreased frequency with which other drugs were used; for example at home, 76% of the young people reported weekly use of cannabis compared to 67% of the young people whilst on holiday.

UNDERSTANDING THE DEVELOPMENT OF DRUG MISUSING BEHAVIOURS

2.16 The most effective way of examining the development of drug misusing behaviours is through the use of a longitudinal research design in which young people are studied over a period of time. Whilst such studies are relatively common in the United States there have been very few carried out within Scotland. As a result relatively little is known about the process through which young people start to use illegal drugs or progress from initial experimentation with certain drugs to more regular repeated use of other drugs. One of the very few qualitative studies that entailed follow-up contact with young people is reported by Bell and colleagues (1998). In this research 15-year-old males were interviewed on three occasions over an eighteen-month period with the researchers looking in detail at the way in which the young men’s attitudes and use of cannabis, changed over this period. This study showed how the young men’s views about drug use and drug users changed over this period as changes occurred in their own lives. Some of the young men discontinued their use of cannabis as they developed an involvement in other activities and moved away from what they saw as “youth-type” activities. Others however initiated cannabis use as changes in their friendship networks and lifestyles occurred.

2.17 Pavis and Cunningham-Burley (1999) reported similar qualitative data on the place of illegal drugs within male youth street culture in a small town in East Lothian. In this study young men’s drug use was interwoven with their life on the streets. The streets were very much seen by the young men as their world, a colonised space that was adult free and it was within that space that their drug using behaviours developed (Pavis and Cunningham-Burley 1999).

2.18 Hammersley and colleagues sought to identify the factors associated with young people starting and stopping use of Buprenorphine and Temazepam in Glasgow. The researchers interviewed the same young drug users at two points over a 12-month period. The strongest predictor of starting to use Buprenorphine or Temazepam identified in this study was the young person’s prior drug use, including their use of licit drugs. As the authors of this study point out “cigarette smoking may be more of a risk factor than alcohol use for problematic drug misuse.... An adolescent who was not a near daily smoker was relatively unlikely to try Buprenorphine (Hammersley et al, 1992). Hammersley and colleagues’ findings in this regard are similar to those of McKeganey, Barnard and Norrie who surveyed 358 11 to 13-year-old pupils in Dundee Scotland in 1994 and repeated the exercise two years later. Overall, 35.2% of pupils initiated some form of illegal drug use over the two-year period. On the basis of a univariate analysis, the factors most closely associated with initiating illegal drug use was:

19 having been drunk
20 having started smoking
21 having friends who dealt drugs
2.19 On the basis of a multivariate analysis the strongest predictor for initiating illegal drug use was having started smoking (McKeganey Norrie and Barnard 2000). The finding of a close association between the use of licit and illicit drugs has been confirmed in the Office of National Statistics survey of smoking drinking and drug use amongst 12 to 15 year olds in Scotland (N=3538). The researchers on this study noted that 64% of pupils who reported being regular smokers had used an illegal drug compared to only 1% of pupils who were non-smokers; similarly 57% of those who drank alcohol at least once a week had used illegal drugs compared to only 1% of those who had never had an alcoholic drink (Goddard and Higgins 1999).

2.20 In terms of trying to identify some of the other factors that may be associated with the use of illegal drugs Forsyth and Barnard looked at whether young people's musical preference might predict their use of recreational drugs. The sample in this study comprised 1523 pupils aged 11 to 16 across the urban and rural areas of Dundee and Perth and Kinross. Whilst very few of the school pupils surveyed had used ecstasy, nevertheless fans of rave music were much more likely to have used illegal drugs than those who reported a preference for other musical styles (Forsyth et al, 1997).

NON SCOTTISH BASED RESEARCH ON THE ANTECEDENTS OF DRUG MISUSE

2.21 With respect to the non-Scottish research on the antecedents of drug misuse the literature is vast and much of it refers to the U.S. Until relatively recently, the literature in this area has lacked coherence, with many different theories accounting for different facets of the problem. In recent years, there has been a shift away from looking for single causes of drug misuse towards a more interactionist multi-causal explanatory framework. The reasons behind an individual’s misuse of drugs are now thought to be the result of a complex interaction with familial, social and environmental factors as well as those relating to personality features. In particular, substance misuse now tends to be seen as a manifestation rather than a cause of a general pattern of problem behaviours. This finding is confirmed by almost all behavioural studies (see for example a recent review by Weinberg and colleagues, 1998). The relative contributions of factors such as the family and peer influence are seen increasingly as developmentally sequenced. In this sense, whilst association with deviant peer networks might be an important facilitating mechanism in the initiation and escalation of drug use, association with such networks is itself not a random event. Rather it is a situation created at least in part by family processes and the circumstances within which the child was reared.

The Influence of the Family

2.22 A good deal of research has looked at the influence that family structures, family processes and relationships between family members might have on the development of drug use. In particular, research has considered the potential impact of family fragmentation and/or discord between family members. The rearing strategies adopted by parents and the quality of the relationships established by mothers and fathers with their children have also
been topics of research. Concern has started to focus both on the inter- and cross-generational transmission of drug use between parents and children and between siblings and cousins.

2.23 The research on family fragmentation suggests that it is not the break up of the family unit per se which places children at greater risk of drug misuse. Negative family process appears to have a much greater impact upon the development of children (Adlaf and Ivis, 1996). As Rutter and Rutter (1992) have indicated in considering the development of delinquency (of which drug misuse might be one manifestation) family adversity impedes social learning and increases vulnerability to psychosocial adversity. In particular, family discord and disruption, weak familial relationships, the criminality of other family members (parents and siblings) as well as ineffective supervision and discipline were identified as critical predisposing factors for later problems.

2.24 The manner and style of parent/child interactions have been found to have an important influence in predicting drug use in children. The key issues in parenting appear to revolve around control and parental warmth. Optimal parenting strategies have been identified by researchers who often have followed the progress of children over many years (see for example Brook et al, 1990). In brief, these might be described as those combining the setting of clear limits on acceptable behaviour with warmth, affection and good communication between parent and child. The worst parenting strategies were those which combined low care of the child by parents who were either very authoritarian or, at the other end of the spectrum, authoritatively lax and offered little support to the child. Low care variously describes parental indifference, coldness, rejection or hostility towards the child (Foxcroft and Lowe, 1995). Children raised in families where they received low support and low care have been identified in a number of studies as being at especial risk of developing delinquent behaviours (see Maccoby and Martin, 1983).

2.25 A number of research studies have identified a relationship between difficult childhood temperament and drug misuse (Brook et al, 1996). Children who showed high levels of irritability, temper tantrums and who fought with siblings were more likely to become regular users of tobacco, alcohol and cannabis in adulthood. Frequent displays of aggressive behaviour by children, which persist into adolescence, have been associated with an increased risk of drug misuse.

2.26 There is an emergent literature on the effects of parental drug use on the development of children, and in particular the likelihood of inter-generational transmission of drug misuse (Hops et al, 1996). As with the literature on the children of alcoholics it is difficult to differentiate between having an alcoholic parent as a problem per se as distinct from the effects of growing up in a household where alcohol impedes family functioning. Conflict and/or instability within the family environment, perhaps as a result of parental drug dependence, are in themselves factors enhancing psychosocial vulnerability (Motherseed et al, 1998). Parents who are also substance dependent may be more likely to exhibit problematic patterns of care for children (Gabel et al, 1998). These are recognised to be significant factors predicting problems in adolescence and adulthood, including substance dependency (Harrison and Luxenburg, 1995). Growing up in an unstable or conflicual family environment as a consequence of parental alcohol or drug dependence may exacerbate the likelihood of the child’s own initiation of drug misuse. Although there has not been a lot of attention paid to the risks of cross-generational transmission of drug use there are indications that this is a
significant route of entry for many young people. Siblings may be influential in introducing their brothers or sisters to drug use, as may cousins.
Delinquency and drug use

2.27 This has been an area of some considerable debate within the drugs field. The issue has focused on deciding the precise nature of the relationship between delinquency and drug use in terms of whether one predicts the other. Indeed there are questions over the degree to which they are related as opposed to being spuriously coincident during adolescence, as this is the time when both behaviours are most likely to occur. Engagement in seriously delinquent behaviours has been positively associated with problematic patterns of drug use (Weinberg et al, 1998). In particular, early age of onset of conduct behaviour problems and severity of involvement in such behaviours have been associated with the development of problematic patterns of drug misuse (Robins and McEnvoy, 1991). This study found that the more conduct problems engaged in by an individual, the greater the likelihood of an early age of onset of substance use. Also, early age of onset of drunkenness and illicit drugs strongly predicted later problem drug misuse. Among those respondents aged 15 with 7 or more conduct problems, more than half developed serious drug problems. Among those with only one conduct problem only 5% did so.

2.28 The relationship between delinquency and drug use is not clear cut, for even in the context of the study by Robins and McEnvoy there was still a substantial minority of individuals reporting a high number of conduct problems who did not go on to develop problems with drug misuse. Furthermore, the relationship between delinquency and drug use has been much less successfully demonstrated for that mass of individuals whose involvement either in drug use or delinquency is erratic or experimental (see for example a review by White, 1990). The links between drug use and delinquency have not been consistently shown across studies but have varied by:

24 the type of delinquency reported
25 the type of drug used
26 the sex of the individual (Kandel et al, 1986, Loeber, 1990)

2.29 The relationship between lesser forms of delinquency and drug use is not a certain one. Part of the reason for this may relate to the fact that adolescence is a time of experimentation. Both drug use and delinquency are behaviours, which are most likely to occur during this time. The evidence to date seems to be that delinquency is neither a necessary nor a sufficient reason for involvement with drugs, except at the extremes.

Peer Influences

2.30 A consistent finding has been the importance of peer networks in influencing behaviour among young people (Fagan et al, 1987, Elliott et al, 1989). Peers are a very significant influence on both the initiation and escalation of drug misuse. The developmental literature suggests that as children approach adolescence so their relationships with peers come to take on increased significance (Rutter and Rutter, 1992). Increasingly, links are being made between the processes of family socialisation in childhood and the effects of peers from early adolescence onwards in influencing the adoption and escalation of deviant behaviours, including substance use (Farrell and White, 1998). That these are age-related developmental phenomena has important consequences in the context of drug prevention. A number of recent studies have found links between adverse family experiences in middle
childhood, deviant peer association in early adolescence and later substance use (Dishion et al, 1995).

2.31 The difficulty lies in knowing the processes by which children make choices about whom they associate with and in particular the processes by which they become involved in deviant peer networks. A review of the influence of peers on substance use makes the case that the processes of peer selection rather than peer influence are more significant in the uptake of these behaviours (Bauman and Ennett, 1996). Similarly, they report on the deficiencies of measuring the behaviour of friends through asking adolescents to describe their friends’ behaviours, without linking such reports to friends’ own reported behaviours. Such measurements are considered likely to be inaccurate because of the established likelihood of respondents projecting their own behaviour onto that of others.

2.32 Some of the best work considering the processes of peer selection has been carried out by Kandel (1978, 1985, 1991). She suggests that there are dual processes of selection and socialisation, which are reciprocally influential. Peer selection is usually on the basis of similarity. However, over time there is a tendency for peers to become more like each other with concordance rated as an important feature of the friendship. Modelling behaviour has been found to be an important feature of peer relations (van Roosmalen and McDaniel, 1989). This becomes more acute in early adolescence as parental influences in the social sphere diminish relative to the weight attached to the opinions of friends (Rutter and Rutter, 1992). Examination of the processes of selection and socialisation is clearly an important area of concern in drug research, given the significance accorded peers in predicting drug use. Understanding the ways in which adolescents define the boundaries of what is personally acceptable behaviour in the face of an apparent desire for conformity and peer acceptance would greatly facilitate drug prevention work concerned with the influence of peers.

School Performance

2.33 School attendance, early drop-out from school and school performance have been shown to be linked to the use of drugs by young people. A longitudinal study of 15-year-olds found that truancy, being placed in special supervision classes and early drop-out from school were all significantly associated with drug use (Holmberg, 1985). Another longitudinal study (again from the USA) reported an association between adolescent drug use and early school drop-out (Garnier et al, 1997) in the context also of cumulative family stress, lower secondary school achievement and motivation. Academic competence and achievement have been found to be related to substance use (Wills et al, 1996). Good academic performance at school has been found to be inversely related to substance use.

Environmental Influences

2.34 Since the early 1980’s, problem drug use in the UK has come to be seen as synonymous with deprived inner cities. With an increasing prevalence of drug misuse and a reportedly greater willingness to experiment, particularly under the auspices of the rave dance culture, the use of all drugs, including those like heroin, is reportedly more widespread (Miller and Plant, 1996). Despite this, however, information from numerous official and other sources still tends to confirm that problem drug misuse is more prevalent in the inner cities and that drugs will be used with greater frequency and in greater quantities. A US study
found that young people living in disadvantaged neighbourhoods were an estimated 5.6 times more likely to have been offered cocaine relative to respondents living in more advantaged neighbourhoods (Crum et al, 1996.).

**Protective Factors**

2.35 Where previously attention has almost exclusively focused on the factors that place a child at risk of initiating and sustaining drug use, recent years have seen an increased interest in those factors that might protect a child from substance use. Research on resilience to psychosocial stress shown by some children growing up in situations of even extreme adversity problematises the notion that what protects a child from drug misuse is a simple reversal of what places them at risk.

2.36 Some of the factors, which have been shown to confer a protective effect upon children brought up in adverse circumstances, are:

- higher socio-economic status
- easy temperament
- younger age at the time of trauma
- absence of early separations or losses

2.37 Other identified protective factors are:

- competent parenting
- a good, warm relationship with at least one main parent carer
- good formal support in education and through religious activity and faith

2.38 The characteristics of resilient children’s psychological functioning identified in various studies as protecting them from stress include:

- high IQ
- good problem solving ability
- superior coping styles
- task-related self-efficacy
- internal locus of control
- a higher sense of self-worth
- interpersonal awareness and empathy
- willingness and capacity to plan
- a sense of humour (summarised in Fonagy et al, 1994)

2.39 However, as Rutter has pointed out (1990), resilience is not an inborn attribute neither is it acquired during development. It is part of a complex set of social and intra-psychic processes that take place across time and are therefore liable to change. Child attributes, family, social and cultural processes opportuneely combined are part of what protects a child from adversity and maladaptive behaviours. Where research has specifically considered factors, which protect against the development of drug use it is the rearing environment that appears most influential. Wills and Cleary report (1996) that parental support was inversely related to substance use. Good parental support meant more behavioural coping, academic competence and less acceptance of deviance. Their analyses indicated that high parental support had a buffering influence, reducing the effect of risk factors and increasing the effect
of protective factors. A study of children aged 10-15 years found the most protective factors to be attachment, commitment, involvement and belief (Gerevich and Bacskai, 1996). Longitudinal research looking at substance use initiation among adolescent children of alcoholics (Hussong and Chassin, 1997) reported a lesser likelihood of substance use initiation among those adolescents who described their families as high in organisation and reported either very high or very low behavioural coping.

**Implications of the literature on psychosocial antecedents of young people’s drug misuse**

2.40 On the basis of the literature reviewed it is important for drug prevention efforts to be able to adopt a family-centred approach, rather than focus solely upon young people set apart from their family context. This is likely to require supporting families in difficult circumstances (including families where one or both parents have a drug problem) and providing parenting training. It is likely that schools will have an important role to play in identifying children who are beginning to under-perform or who are disengaging from school at an early age. Some of these children may be beginning to experiment with illegal drugs or be at risk of such experimentation. Finally, there will be a need to support peer networks between young people where these may reduce the risk of young people forming relationships with drug misusers and individuals older than themselves. There may be an important role here for ensuring the availability of leisure/sporting activities for young people.

**DRUGS PREVENTION EDUCATION**

2.41 There has been an increasing commitment within the UK and elsewhere to base the provision of drug education on demonstrated evidence of effectiveness. However, establishing evidence of effectiveness in relation to drug education has been far from straightforward. Part of the difficulty of evaluative work in this area is the fact that educational interventions in relation to drug misuse have often had a range of different objectives that have led to different questions being asked. These include the following:

43 Whether educational programmes should seek to prevent young people from initiating drug misuse?
44 Whether the aim of drug education provision should be to delay the onset of drug misuse?
45 Whether the focus should be on preventing the escalation of drug misuse?
46 Whether the focus should be on preventing or minimising some of the harms associated with drug misuse?

2.42 Over the last thirty years a range of different methods has been used to study the effectiveness of drug prevention efforts. Most of the research in this area has taken place within the US. Overall, the most promising approaches to drug education have been shown to share three key characteristics:

47 they are based on an understanding of the aetiology of drug misuse
48 they have a theoretical framework for their outcomes
49 they have been rigorously evaluated
Traditionally, research in this area has been hampered by the lack of controlled study designs and poor measurement. This is changing with the adoption of more rigorous research methodologies, including the use of control or comparison groups. Since the nineteen-eighties, there has been a move towards using skills-based approaches in drug education. Research reviews have consistently shown that there is little evidence to suggest that information-only approaches are effective. According to De Haes (1987):

“Programmes paying attention to young people, who they are and how they live, teaching them how to overcome day-to-day difficulties and so forth are effective not only in reducing drug use but also in reducing other rebellious or attention-seeking behaviour.”

Within Scotland there have been two major evaluations of school-based drug education: the first carried out by Coggans and colleagues in 1991, and the second by Lowden and Powney in 2000. The study by Coggans and colleagues involved both process and outcome components and was carried out with a representative sample of 1197 children across 106 Scottish secondary schools. In this study the views of those teachers who had responsibility for drugs education, as well as those who did not have a specific responsibility in this area were overwhelmingly positive about the benefits of drug prevention education. Around 70% of teachers with responsibility for drug education believed that pupils were more anti-drugs, and less likely to use drugs, as a result of drug education. Amongst those teachers who did not have a specific drug education responsibility, 94.5% believed that drug education increased knowledge, 69% believed that education would change attitudes in the direction of pupils becoming more anti-drug, and 82.5% believed it would make pupils less likely to use drugs (Coggans et al, 1991). A much less positive view of the benefits of drug education arose out of the outcome evaluation. On the basis of a multivariate analysis, drug education had an effect on only two of the outcome variables, both of which had to do with aspects of drug-related knowledge rather than behaviour (Coggans et al, 1991:1107).

The second large-scale evaluation of drug education in Scotland by Lowden and Powney involved two key components. The first component involved an audit of drug education in primary and secondary schools across Scotland in 1997 and 1999 (248 primary schools and 318 secondary schools). The second component entailed a survey of primary and secondary school pupils (n=4400) in 1997 of which 1119 were re-surveyed in 1999. The findings from this evaluation contrast somewhat from the earlier research by Coggans and colleagues. The authors of this report conclude that school-based drug education has the potential to affect drug behaviours, especially if it builds on what is already known about effectiveness in drug education (Lowden and Powney 2000). The authors report that 70% of secondary pupils and 85% of primary pupils valued the drug education they received. Around 66% of pupils who reported having used illegal drugs said that in their judgement drug education had had a positive effect on their drug misuse. Thirty-eight per cent thought that drug education had helped them to reduce the risks associated with drug misuse, 18% thought that their drug use had decreased as a result of the drug education, 10% thought that the drug education they had received had helped them stop using all illegal drugs altogether, and 34% felt that their drug education had no impact on their drug misuse. It is important to recognise however, that young people saying they felt drug education had an impact on reducing their use of illegal drugs is not the same thing as showing that such an effect has taken place.
On the basis of their evaluation, Lowden and Powney identified a number of factors, which had an influence on the effectiveness of drug education in schools. First, the self-esteem of pupils seemed to be significant although as the authors point out, it should not be assumed that pupils using illegal drugs will have a lower self-esteem and poorer self-image than their non-drug using peers. Second, participative teaching methods seemed to be more effective that other more didactic approaches. Pupils preferred participative approaches and there was an indication that such approaches were particularly effective at reducing alcohol consumption. Finally, the level of free school meals seemed to be a factor in influencing the effectiveness of drug education. Schools with a high level of pupils eligible for free school meals are likely to experience the greatest difficulty in influencing pupils’ health behaviours. Clearly, one is not talking here about the effect of the meals themselves but their use as a proxy measure for socio-economic status.

Within Scotland there are a variety of groups with differing backgrounds providing drug education packages, including police officers, teachers, ex-addicts, peers and parents. As far as it has been possible to tell there are no outcome evaluations of the effectiveness of drug education programmes provided by ex- or recovering addicts. A qualitative evaluation undertaken by McKeganey and McPike (1998) found that pupils, teachers, and parents were very positive about the value of using ex-addicts in this capacity. One of the aspects that were most valued was the capacity of such individuals to describe the reality of the drug using lifestyle to young people. Local authority educational managers and advisers, however, were less positive about the value of using ex-addicts in this capacity and commented in particular on some of the dangers of young people perceiving the ex-addicts as having a high status, in part because of their past drug use and because of the difficulties of integrating the information provided by the ex-addicts with the broader educational input of teachers.

Whilst there has been no attempt within Scotland to evaluate the effectiveness of using police officers to deliver drug education material to young people this is an area that has been researched in the United States where Project DARE has been widely developed. The early evaluations of Project DARE focused on the short term and indicated that young people taking part in the projects had increased knowledge of drugs, a more positive image of the police and were possibly better able to resist peer pressure. A meta analysis of eight DARE evaluations, concluded that the only significant outcome was an increase in knowledge about drugs (Ennet et al, 1994a). A two year follow-up of DARE pupils found that they had increased self-esteem compared to controls but that this effect had disappeared by the end of the follow-up period (Ennet et al, 1994b). There has been no published evaluation of the “Police Box Learning for Life”. An unpublished evaluation that involved obtaining the views of teachers and police officers identified positive comments in relation to the bullying section of the package but more negative attitudes about the drug section, with teachers feeling that they did not have enough knowledge to effectively deliver the resource and the police officers commenting that the resource lacked information on drugs and the law (Ridley, 1997).

In relation to teacher-led drug education programmes one of the best known is the Life Skills approach. McGurk and Hurry (1995) undertook an evaluation of a Life Skills project in the north of England (Project Charlie). The initial evaluation identified mixed results with some indication that Project Charlie children were better able to resist peer pressure. A four-year follow-up study identified that Project Charlie children were less likely to experiment with tobacco and illegal drugs compared to pupils who had not been exposed to the Life Skills package (Hurry and Lloyd, 1997).
2.50 In relation to peer-led approaches, Millburn has commented positively on the possible value of these but has expressed concern at the lack of hard evidence of effectiveness (Millburn, 1995). Tobler reviewed a range of peer education projects and concluded that they were more effective than other projects at reducing self-reported drug use (Tobler, 1992). Ward and colleagues have suggested that peer-led approaches may be most effective in relation to providing information on drugs (Ward et al, 1997). Recent research undertaken with a range of peer education projects in Scotland identified a number of obstacles to assessing the effectiveness of peer education approaches (McKeganey 2000, Parkin and McKeganey 2000). First, most of the peer education projects eschewed any interest in changing drug users’ behaviour. The aim of the various projects was instead to provide young people with information that could enable them to make informed choices about whether they wished to use illegal drugs and the effects of different drugs. Second, very few projects sought to record information on client progress. In the absence of such information it was impossible to assess the extent of any improvements in drug users’ knowledge or behaviour. Third, hardly any of the peer education projects sought to maintain contact with young people; rather, most of the projects operated on the basis of rather more ad-hoc contact with their clients.

Research on Young People’s Drug Misuse and Drug Education

2.51 At the present time there are significant gaps in the evidence to support the aims and objectives of the Scottish drug misuse strategy. Whilst the various large-scale surveys that have been carried out provide useful information on the nature and extent of drug misuse amongst young people in Scotland they have not been large enough to identify regional differences in the pattern of drug misuse. Similarly, whilst there have been a number of locally based surveys, the coverage of these surveys is far from complete.

2.52 Whilst drug misuse remains a rare occurrence amongst primary age pupils in Scotland, nevertheless some primary age pupils will be being exposed to illegal drugs. At the present time within Scotland hardly anything is known about the proportion of primary age pupils who are exposed to illegal drugs. Aside from the gaps in information on the prevalence of drug misuse amongst young people there appears to be no good information available on those factors which may increase the risk of young people using illegal drugs within Scotland, or which might protect against such drug misuse.

2.53 The literature reflects a need for research to identify those factors that influence the progression from initial experimentation with certain drugs to the development of more problematic forms of drug misuse including poly drug abuse.

2.54 Whilst the main thrust of drug prevention effort targeted on young people consists of drug education within schools, relatively little is still known about the impact of such provision on drug misuse in the short, medium and long term.
CHAPTER THREE   COMMUNITIES

3.1 The key aim under the communities heading within the UK drug misuse strategy is to protect communities from drug-related anti-social and criminal behaviour, with the key objective being to reduce repeat offending amongst drug misusing offenders. Within the Scottish strategy, the key objectives are:

50 to strengthen and protect communities from drug-related crime and the fear of drug-related crime
51 to reduce drug misuse within prison
52 to develop alternatives to prosecution and imprisonment for offences related to drug misuse
53 to promote drug awareness and to develop partnerships between professionals, local people and local businesses in responding to drug misuse
54 to ensure that drug misuse is addressed within the wider context of area regeneration and social inclusion

3.2 There has been relatively little drug misuse research undertaken within Scotland under the community heading. Whilst there have been a number of community-based initiatives aimed at tackling drug misuse, many of which have been funded under the Scotland Against Drugs administered Challenge Fund. Although many projects have been evaluated, few have undergone rigorous independent assessment of their effectiveness in reducing levels of drug misuse or in changing young people’s knowledge and attitudes towards illegal drugs. In some parts of Scotland, local communities have been very active in developing local initiatives to tackle drug misuse (the best known being the Mothers Against Drugs group in the Cranhill area of Glasgow). To date, there has been very little research on the process through which local communities have been able to successfully mobilise themselves against drug misuse or the effectiveness of the various interventions that have been developed on the basis of such local initiatives. As a result, it is very difficult to provide any kind of guidance to communities in terms of assisting them in developing their own local response to drug misuse or to benefit more widely from examples of good practice in terms of the response of local communities.

PREVALENCE OF PROBLEMATIC DRUG MISUSE

3.3 To date, research under the community heading has focused upon identifying the prevalence of problematic drug misuse in various parts of Scotland, in assessing the impact of problematic drug misuse within communities and in looking at the connection between drug misuse crime and community safety. With respect to research aimed at estimating the prevalence of problematic drug misuse this information is clearly crucial in assessing the impact of drug misuse within local communities. Information on the prevalence of drug misuse across Scotland has been provided on the basis of the Scottish Crime Survey (undertaken in 1993 and 1996). This large-scale household survey is less suited to identifying the prevalence of problematic drug misuse than the various studies employing capture-recapture methods that have now been undertaken in a range of areas within Scotland. Capture-recapture methods seek to model the size of the problem drug misusing population on the basis of an analysis of the overlap between different samples of drug misusers, for
example, individuals prosecuted under the Misuse of Drugs Act, individuals in contact with
drug treatment and care agencies, individuals requesting a named HIV test. The capture-
recapture method has been identified by the European Monitoring Centre for Drugs and Drug
Addiction as being the most effective way of providing local estimates of the prevalence of
problematic drug misuse and is increasingly being used to provide such estimates throughout
Europe (Hay et al 2000). Within Scotland, estimates of problematic drug misuse using this
approach have been provided for Glasgow (Frischer et al, 1993), Dundee (Hay and
McKeganey, 1996), Grampian (Hay, 1998), Lanarkshire (Hay, 1997), and Ayrshire and Arran
(Frischer Taylor and Barr 1997). The prevalence estimates identified on the basis of the
capture-recapture methods are summarised in Table 3.1 below:

Table 3.1 Prevalence of problematic drug misuse

<table>
<thead>
<tr>
<th>City and Year</th>
<th>Drugs Referred to</th>
<th>Age</th>
<th>Prevalence % of Population in Age Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glasgow</td>
<td>Drug Injecting</td>
<td>15-54</td>
<td>1.4</td>
</tr>
<tr>
<td>Dundee</td>
<td>Opiate/Benzodiazepine</td>
<td>15-54</td>
<td>2.9</td>
</tr>
<tr>
<td>Lanarkshire</td>
<td>Opiate/Benzodiazepine</td>
<td>15-54</td>
<td>1.6</td>
</tr>
<tr>
<td>Aberdeen</td>
<td>Opiate/Benzodiazepine</td>
<td>15-54</td>
<td>2.0</td>
</tr>
<tr>
<td>Grampian</td>
<td>Opiate/Benzodiazepine</td>
<td>15-54</td>
<td>1.2</td>
</tr>
<tr>
<td>Ayrshire and Arran</td>
<td>Drug Injecting</td>
<td>15-39</td>
<td>0.5</td>
</tr>
</tbody>
</table>

7.3 At the present time something of a patchwork quilt of information exists on the prevalence
of problematic drug misuse in Scotland, although this is expected to change in the near future
as a result of funding having been allocated by the Scottish Executive to undertake a national
programme of prevalence estimation research across Scotland.

3.5 In terms of the Scottish Crime Survey, the level of any illegal drug use in the past
within the 16 to 59-age range increased from 18.3% in 1993 to 22.5% in 1996. With respect
to any illegal drug use in the last 12 months this increased from 6.8% of the 16 to 59-age
range in 1993 to 9.0% in 1996. Most of the drug misuse identified on the basis of the two
crime surveys involve cannabis, however 3.1% of the Scottish population aged 16 to 59
report having used amphetamines in the last 12 months, 2.1% report having used Ecstasy and
1.3% report having used LSD in the last 12 months (Anderson and Frischer 1997).

3.6 On the basis of the Scottish Crime Survey and the various local surveys undertaken, it
is clear that drug misuse is occurring across Scotland and in all social groups. However, in
terms of the impact of problematic drug misuse, there is an indication that this may be
particularly acute in areas characterised by multiple social deprivation. In a recent report
from the Advisory Council on the Misuse of Drugs (2000), non psychiatric hospital
admissions for drug misuse were occurring much more frequently in deprived areas than in
affluent areas, as is shown below.
3.7 Such data give an indication that the impact of drug misuse within Scotland may be unevenly distributed across different areas and may be most acute in the poorest areas. However, we know relatively little about the differential impact of drug misuse within different communities across Scotland. Whilst some of the most negative outcomes of drug misuse (overdose, hospital admissions) may be more visible within the poorest areas, this is not to say that the negative aspects of drug misuse are not being experienced within the more affluent areas.

3.8 In terms of the link between drug misuse and crime, Hammersley and colleagues looked at the extent to which drug misuse could be said to cause criminal behaviour. Focusing on recently initiated drug misusers within Glasgow they found no evidence of a simple causal relationship between drug misuse and crime. Rather, the criminality of the drug misusers was found to be an outcome of a combination of friends’ behaviour, prior criminal behaviour and drug misuse (Hammersley, Forsyth and Lavelle 1990).

7.4 More recent information on the link between drug misuse and crime in Scotland has been obtained on the basis of the pilot of the Arrestee Drug Abuse Monitoring Methodology in Strathclyde and Fife (McKeganey et al, 2000). This research involves interviewing and collecting urine samples from a broad sample of arrestees. The ADAM methodology is the main means of assessing the link between drug misuse and crime in the United States (ADAM 1999) and, following a successful pilot, is now being widely applied in England and Wales (Bennett 1998). The Scottish pilot was undertaken in 1999 and involved interviewing 220 arrestees in Strathclyde and 207 in Fife. Urine samples were collected from 67% of arrestees in Strathclyde and from 65% of arrestees in Fife. Overall, 71% of urine samples tested positive for an illegal drug: 52% of samples tested positive for cannabis, 31% tested...
positive for opiates, 12% tested positive for methadone, 8% tested positive for amphetamines, 3% tested positive for cocaine.

3.10 Research has been undertaken within Scotland to try to quantify the amount of money involved in the illegal drug economy. This is a difficult task but is one that is clearly important in assessing the impact of drug misuse upon communities. Hutchinson and colleagues have looked at the amount of money injecting drug users in Glasgow were spending on illegal drugs between 1990 and 1994. It was estimated that drug injectors were spending approximately £324 per week on drugs. On the basis that there are an estimated 8500 injectors within Glasgow, the authors estimate that something in the region of £94 million is being spent each year on illegal drugs by injectors in Glasgow and that to support such expenditure something in the region of between £129 to £258 million worth of goods must be being stolen each year (Hutchinson et al, 2000).

3.11 Under the heading of community safety, recent research has provided evidence of the link between weapon carrying by young people and the use of illegal drugs (McKeganey and Norrie 2000).

3.12 Finally, within Scotland there has been very little research that has sought to explain the different extent of drug misuse within different communities or indeed the different impact drug misuse may be having within those communities. Very little is known, for example, about the way in which the distribution network for illegal drugs within Scotland may be having an impact on the diffusion of drug misuse across Scotland. Recently, the Advisory Council for the Misuse of Drugs undertook a major enquiry into the environmental influences on drug misuse. In terms of the micro influences identified, these included the individual’s access to illegal drugs, the meanings and intentions of the individual in relation to illegal drugs, the individual’s willingness to experiment with illegal drugs and to take risks, the perception of drug use as enjoyable, the development of some level of dependence on the part of the individual, the integration of some form of drug use into the individual’s life style and the impact of family and friends in relation to initial experimentation and continued use of illegal drugs. With respect to the macro influences on drug misuse, these include the clustering of problematic drug misuse within areas of multiple social deprivation, and the impact of culture, ethnicity, and religion (ACMD 1998).
Research on Communities

3.13 Very little is yet known about how communities respond to drug misuse. As a result, very little information is available with which to assist local communities in developing and strengthening their response to drug misuse. Whilst there is a policy commitment to ensure that drug misuse is addressed within the wider context of area regeneration and social inclusion, in fact very little research has been undertaken as to how this may be achieved or the impact of current initiatives in this direction.

3.14 There is little knowledge as yet about the impact of work-place health promotion and work place drug policies. Nor is much known about the effectiveness of the success of alternatives to prosecution in the case of drug-related offending although an evaluation of court ordered treatment for drug offenders is currently underway.

3.15 The literature reviewed suggests it would be prudent to obtain better information on the differential impact of drug misuse on communities with differing social profiles e.g., urban, rural, affluent, deprived.

3.16 At the present time, very little is known about the way in which release into the community may have an impact on positive changes in drug misusers behaviour achieved whilst in prison. Equally, relatively little is known about the way in which the transition from the community into prison may have an impact on drug misusers’ treatment and recovery, although there are some indications that at the present time this shift may entail an interruption in the individual treatment (Gruer and Macleod, 1997).
CHAPTER FOUR  TREATMENT

4.1 The key aim under this heading within the UK drug strategy is to enable people with drug problems to overcome them and to live healthy and crime-free lives. The key objective of the UK strategy is to increase the participation of drug misusers in treatment programmes that have a positive impact on health and crime. Within the Scottish strategy the key objectives are:

- to reduce the health risks to individuals and communities resulting from drug misuse
- to increase the number of drug misusers becoming and remaining drug free
- to reduce the incidence of sharing of injecting equipment
- to reduce the number of drug-related deaths
- to increase the proportion of drug misusers in contact with services
- to reduce the number of drug misusers who have no quick access to treatment

4.2 A key element of Scotland’s drug misuse strategy is to provide effective services to facilitate the treatment and recovery of drug misusers. While there have been a large number of publications reporting Scottish-based research on the provision of treatment services to drug misusers, relatively little of this work has focused upon evaluating the impact of treatment. Very few of the treatment evaluations that have been carried out have entailed follow-up for longer than a 12-month period or have included information on patient and client drop-out. Most of the treatment research that has been carried out relates to Edinburgh and Glasgow, with very little work reporting on drug misuse services elsewhere within Scotland. Very little of the research on treatment services to drug misusers within Scotland has sought to include the views and experiences of clients or patients.

4.3 There has been considerable research within Scotland reporting on the provision of services to drug misusers within the primary care setting, including a national survey reporting information on general practitioners’ contact with injecting drug users within the context of concerns over the spread of HIV within Scotland (Nagi et al, 1989). Other research includes:

- the links between primary care services and specialist drug misuse services and of the importance of supporting general practitioners in their work with drug misusers (Bury 1995, Greenwood 1990, 1996)
- detailed descriptions of the development of substitute prescribing services within the primary care setting (Wilson et al, 1994)
- the development within Glasgow of a general practice-centred scheme for treating opiate addicts (Gruer, 1997)

4.4 Research in both Glasgow and Edinburgh has identified a positive role for methadone in treating drug misusers. Recent research carried out in Glasgow has reported some of the positive changes in drug injectors’ behaviour associated with the provision of methadone over a 12-month period (Hutchinson et al, 2000). Amongst 50 patients who received methadone continuously over a 12-month period, for example, the proportion reporting daily injecting of opiates over the last month fell from 78% at intake to 2% at 12 months. Other positive behavioural changes associated with methadone provision were reductions in the amount of money drug injectors were spending on drug misuse (which fell from a mean daily drug spend
of £50 at intake to £4 at 12 months), overdose in the last six months (which fell from 24% of
injectors at intake to 2% of injectors at 12 months), and acquisitive crimes (which fell from a
mean of 13 crimes committed in the previous month at intake to 3 at 12 months). Methadone
provision was also associated with important changes in drug misusers’ social networks, for
example the proportion of injectors who stated that more than half of their associates were
illicit drug users fell from 32% at intake to 18% at 12 months. These are all impressive
reductions in drug misuse-related attributes on the part of those individuals who were
receiving methadone on a continuous basis in Glasgow over the last 12 months. No less
impressive, however, were the changes in behaviour on the part of those injectors who
received on a discontinuous basis over the 12-month period. Amongst these individuals, the
proportion reporting daily injecting of opiates fell from 77% at intake to 21% at 12 months.
In the case of overdose in the last 6 months the reduction was from 28% at intake to 7% at 12
months. With regard to the amount of money individuals were spending on their drug misuse
this fell from £58 at intake to £16 at 12 months.

4.5 Other studies have reported similarly impressive reductions in drug misusers
behaviour including that by Wilson et al, reporting upon methadone maintenance prescribing
in general practice. Wilson and colleagues looked at the drug misuse of 46 injecting drug
users receiving methadone over an 18-month period. These individuals totalled some 2232
patient weeks of primary care treatment. Retention of methadone patients in treatment was
shown to be very high; at six months 83% were still in treatment, whilst at 12 months the
proportion in contact with treatment services had only reduced to 71%. The average length of
treatment was 21.1 weeks. In 78% of consultations over this period there was no evidence of
illicit opiate use by individuals who had been prescribed methadone in the previous week.
(Wilson et al, 1994).

4.6 Peters and Reid (1998) have reported on the impact of methadone prescribing for drug
misusers in contact with the Lothian Community Drugs Problem Service. In this study,
clients receiving methadone were assessed at 6, 12, and 24 months. Evidence of the possible
impact of methadone prescribing was obtained through the use of a client questionnaire.
There was evidence of a reduction in illicit drug use on the part of those receiving methadone
at six months (the level of such drug use, however, remained unchanged at 12 months and 24
months). In terms of acquisitive crime in the preceding 6 months, this was reported by 64%
of clients at induction onto the methadone programme and by 33% of clients at 6 months, by
15% of clients at 12 months and by 29% of clients at 24 months. There is some suggestion
here that the therapeutic effect of methadone prescribing on offending behaviour may start to
reduce around 24 months. This possibility was also shown in relation to injecting in the
month preceding interview. On induction, 25% of clients reported recent injecting, by 6
months methadone prescribing this had reduced to 8% of clients, by 12 months the proportion
reporting recent injecting had increased slightly to 12% whilst by 24 months the proportion
reporting injecting in the last month had increased further to 29%.

4.7 The main shortcomings of both the Glasgow and the Edinburgh evaluations are the
lack of a matched control or comparison group. In the absence of such information, it is
difficult to know to what extent the positive changes in drug misusers behaviour were the
result of the methadone programme itself.

4.8 With respect to the possible role of methadone in drug-related deaths, this has been
explored on the basis of research in both Glasgow and Lothian. Bentley and Bussitill (1996),
for example, reviewed post mortem information on 179 addict deaths in the South East of Scotland between 1989 and 1994. One hundred and twenty-five of these deaths were attributed to overdose involving one or more drugs, with methadone being the commonest drug found in cases of overdose. Methadone was identified on its own in a total of 38 overdose cases (30% of the total number of overdoses) and in combination with other drugs in a further 26 cases (21%) of overdose cases. In total then, methadone was implicated in 51% of deaths due to overdose occurring during the study period (Bentley and Busittil, 1996).

A confidential enquiry into methadone-related deaths in Glasgow looked at 32 deaths amongst drug misusers receiving methadone. In 69% of these cases the enquiry team identified “instances of substandard care”, which in some cases involved the clinician not having looked for signs of drug injecting prior to prescribing methadone (Scott et al, 1996). The problem of methadone-related overdoses within Scotland has been addressed in Glasgow by the practice of requiring drug misusers to consume their methadone under supervision.

4.9 Attention has recently focused on the relationship between services, including between prison medical facilities and community-based drug treatment services. It has been noted that the imprisonment of drug misusers can often result in an interruption to their methadone treatment (Gruer and Macleod 1997). It has also been observed that drug injectors being released into the community may be at very high risk of overdosing (Gruer and Oliver 1999).

4.10 Very few of the drug misuse treatment evaluations undertaken within Scotland have included the views of drug misusing clients. One of the few research studies addressing this issue was conducted by Neale who carried out qualitative interviews with 96 injecting drug users receiving methadone from a variety of sources. In this study, addicts were found to be broadly positive about the conditions prescribers often imposed on the provision of methadone. For example, while some individuals were critical of the requirement for supervised consumption, many addicts stated that such a requirement was helpful in releasing them from being pressurised by other addicts to pass on their methadone. Many of the addicts felt that methadone had led to improvements in their general health and in reducing their use of illicit drugs whilst others noted that methadone could cause sickness and sore joints and that it was more addictive than heroin (Neale 1999).

4.11 In relation to needle and syringe exchange services in Scotland, there have been descriptive accounts of:

7 needle exchange facilities in Glasgow (Gruer et al, 1993)
8 of the range of services provided by needle and syringe exchange clinics (Elliot et al, 1991)
9 the early opposition to the setting up of such clinics in the early nineties (Elliot and Gruer 1994)
10 the differences between needle exchange attendees and non-attendees (Frischer and Elliot 1993)

4.12 Most of the research carried out on needle exchange services within Scotland has been of a quantitative kind with much of it aiming to identify the extent to which such services have been able to reduce HIV-related risk behaviour amongst injectors. The research on needle exchange attendees and non-attendees undertaken by Frischer and Elliot (1993), for example, identified lower levels of needle and syringe sharing amongst attendees than
amongst non-attendees. In terms of more qualitative research on needle and syringe exchange services, detailed research has been carried out on drug injectors’ views of accessing and disposing of injecting equipment (Neale 1998). Similarly, Barnard has studied the impact of gender on patterns of needle sharing amongst male and female injecting drug users and has identified some of the obstacles to female injectors accessing needle and syringe exchange services (Barnard 1993) and on the impact of gender on attendance at needle and syringe exchange services. More recently, Hay and McKeeganey (2000) looked at the attendance pattern of clients of a needle exchange in Scotland and identified that a substantial minority of clients appear to attend on only one or two occasions. In the light of this finding, the authors suggest that there may be a need to specify the kind of relationship clinic staff should be aiming to have with clients (i.e. is it expected that relationships will be long term or more episodic).

4.13 Following the Department of Health Task Force to Review Drug Misuse Services (1996) there has been a growing interest in the contribution that pharmacists can make in the care and treatment of drug misusers. Matheson and colleagues undertook a postal survey with 864 community pharmacists in Scotland, and provided important information on the nature and extent of pharmacists’ contact with drug misusers, pharmacists’ attitudes towards drug misusers and any barriers to developing relationships with drug misusers (Matheson and Bond, 1997, Matheson, Bond and Mollison, 1999, Matheson and Bond, 1999). In this study only 8.8% of community pharmacists provided a needle exchange service and 53.2% of pharmacists were dispensing methadone; of these only 35.4% were currently supervising methadone consumption within the pharmacy setting. Pharmacists were more positive about contact with drug misusers if they were already providing services to drug misusers. By contrast, if pharmacists were not seeing drug misusers they tended to be more negative in their attitudes towards drug misusers. Neale and Matheson undertook qualitative research looking at drug injectors’ views and experiences of community pharmacists within Scotland (Neale 1998, 1999, Matheson 1998a, b). Over half of the drug users interviewed in this study were positive about their contacts with pharmacists; some of them had built up fairly close relationships with pharmacists over time, which had diminished some of the initial concerns pharmacists may have had regarding drug misusers. Roberts et al (1997) provided a detailed history of the increasing role of pharmacists in the Greater Glasgow area in the management of drug misuse, including the provision of sterile injecting equipment, and McKeeganey and Barnard (1992) provided a description of the operation of one such pharmacy providing sterile injecting equipment in an area where drug injecting was widespread.

4.14 There have been a number of reports outlining the development of specific services. For example:

7 Scott and Burnett (1994) described the setting up of a drug problem service in Glasgow
8 Morrison et al (1997) described the setting up of a sexual health centre for young people
9 Hepburn and Elliot described the development of an obstetric service for women with special needs (many of whom were drug injecting female prostitutes)
10 Carr et al (1996) described the setting up and running of a street level drop-in clinic for female prostitutes in Glasgow

4.15 Useful as these descriptive accounts have been, they have generally not provided evidence with which to assess the outcome effectiveness of the services described.
Over the last few years there has been a growing interest in the provision of substance misuse treatment services within prison. This interest has been fuelled in part by a growing awareness of the large proportion of drug misusers within prison, and the opportunities for treatment, which prison may represent. There has also been a growing awareness of the risks of failing to meet the needs of drug misusers within the prison context, whether in terms of the risks of HIV and other blood borne infections or the risks of overdose when drug misusers are released from prison (Taylor et al, 1995, Gruer and Oliver 1999).

Information on the extent of drug misuse within Scottish prisons has been provided from a range of sources, including the series of prison surveys undertaken in 1990, 1993, and 1998 by the prison service itself. In the 1998 Scottish Prison Survey, 44% of prisoners reported having used drugs at some point within the last six months, whilst within prison (39% reported having used cannabis, 31% heroin, 16% diazepam 8% ecstasy 4% methadone). Five percent of prisoners reported having injected within prison within the last six months (Wozniak, Dyson, and Carnie 1998). Shewan and colleagues (1994) evaluated the drug reduction programme within Saughton prison. In this study the authors contrasted the experience of prisoners on the drug reduction programme (n=30) with a control group of prisoners who were either not on the programme or who had failed to complete the programme (n=30). Analysis of these two groups found that the drug treatment clients were less likely to have used cannabis, Temgesic DF118, LSD, and amphetamine sulphate than the controls. In a continuation of this study, Shewan and colleagues looked at the extent to which positive reductions in risk behaviour achieved whilst within prison were maintained on release. The researchers found that following an initial resumption of injecting soon after release, the pattern of drug injecting amongst ex-inmates thereafter came to resemble that amongst injectors within the wider community (Shewan et al, 2000)

Outwith the provision of treatment services, McIntosh and McKeganey (2000 a, and b) have undertaken qualitative work on the recovery from dependent drug use. By interviewing 70 recovering and recovered addicts the researchers were able to build up a detailed picture of the addicts' strategies for avoiding relapse and constructing a non-addict identity. Similarly, Davies has looked at the way in which addicts’ verbal reports of their drug use emphasise the non-volitional elements of their behaviour, and in doing so construct an image of themselves as addicts (Davies 1996, 1997, 1998). The objectivity of the nature of addiction has been further questioned by Shewan and colleagues who have looked at non-problematic use of heroin. Relatively little is known about the development of addictive drug use and within the context of such limited understanding it is easy to assume that any use of certain drugs (e.g., heroin) will inevitably lead to addition. Shewan and colleagues have shown, however, that this is not necessarily the case and some individuals appear to be able to moderate their use of heroin so as to avoid experiencing the range of problems commonly associated with such drug use (Shewan, Dalgarno, Marshall, Low et al, 1998).

NON-SCOTTISH BASED RESEARCH ON TREATMENT EFFECTIVENESS

The importance of evaluating the effectiveness of drug misuse treatment services has been forcibly underlined by the Department of Health Task Force Review to Drug Misuse Treatment Services (the Polkinghorne Report) which called for a programme of research within the UK to identify the effectiveness of drug misuse treatment services within the UK in the short, medium, and long term. Unquestionably the area of drug misuse treatment that
has been more widely evaluated than any other is that associated with the provision of methadone to opiate dependent drug misusers. Despite this, there have been only five randomised control trial evaluations of the effectiveness of methadone provision. The vast majority of the research into methadone provision consists of observational studies in which drug misusers receiving methadone are followed up over varying lengths of time and in some cases, though not all, compared with drug misusers receiving other forms of treatment.

METHADONE MAINTENANCE

4.20 Three major reviews of the effectiveness of methadone maintenance are those by Farrell and colleagues (1994), by Bertschy (1995), and by Ward and colleagues (1999). The conclusions of these reviews with regard to the important role of methadone in the treatment of opiate addiction have been broadly consistent. In relation to the impact of methadone maintenance on the use of heroin, each of the reviews outlines the finding that individuals receiving methadone on a maintenance basis appear to use lower levels of alternative drugs than do individuals not receiving methadone.

4.21 In relation to the other identified benefits, research has shown that those addicts receiving methadone are more likely than addicts not receiving methadone to have obtained employment. McGlothin and Anglin (quoted in Bertschy) reported that the average time spent in full or part-time employment ranged from 38% to 47% for addicts not in treatment to 52% to 62% for addicts involved in a methadone maintenance programme. Patients who built up more than one year of methadone maintenance over a 10-year period had a higher number of months at work than patients who had been on methadone for less than one year (Maddux and Desmond 1992). Similarly, research has shown that methadone maintained addicts commit fewer crimes than their non-methadone maintained peers. In a study of 617 patients enrolled on methadone maintenance, Ball and Ross (1991), for example, identified a 79% reduction in the number of offences committed between the year before admission and the most recent year in methadone maintenance. In a study by Lehmann et al, after one year on methadone maintenance 89% of 51 patients had no contact with the judicial system compared to 58% of addicts on entry (Lehmann, Lauzon and Amsel, 1993).

4.22 Methadone maintenance has also been shown to be associated with lower levels of HIV related risk behaviour. Longshore and colleagues, for example, compared 105 patients on methadone maintenance with 153 patients who were not on a methadone programme. Needle sharing in the last year amongst the methadone group was 63% compared to 79% in the non-methadone group (Longshore, Hsieh, Danila and Anglin, 1993). Methadone maintenance has been shown to be associated with a reduced risk of overdose amongst opiate addicts. In a 2-year randomised study undertaken by Gunne and Gronbladh (1981) there were no deaths in the methadone maintenance group (n=17) and two deaths in the no-treatment group (n=17). Bell, Digiusto and Byth (1992) have reported that patients who apply to, but are rejected for, methadone maintenance have a higher mortality rate than addicts who are treated on such a programme (Bell et al, 1992). There also appear to be benefits associated with methadone in terms of retention in treatment, with addicts who are receiving methadone remaining in contact with treatment services for longer than those of their peers not receiving methadone (Ball and Ross 1991).
4.23 It has been recognised that there is considerable variation in the effectiveness of methadone provision across different agencies. In the review by Farrell and colleagues it is suggested that the most effective clinics providing methadone were those where the average dose of methadone was higher, where the treatment goal was maintenance rather than abstinence, where there were high quality counselling services, low staff turnover, better management and more medical services. In the review by Ward and colleagues, the optimal conditions for prescribing methadone were those where there was adequate duration of treatment (as opposed to premature cessation of treatment), where the goal of treatment was maintenance rather than abstinence, where there was rapid client centred assessment, where there were adequate psycho-social services to deal with addicts’ social and psychological needs, where there were trained staff with positive attitudes towards methadone maintenance, and where there was a willingness amongst staff to engage with patients rather than to adopt a punitive stance in relation to evidence of ongoing drug misuse. Farrell and colleagues approvingly quote the Advisory Council for the Misuse of Drugs which has concluded in relation to the therapeutic role of methadone that “the benefits to be gained from oral methadone maintenance programmes both in terms of individuals and public health and cost effectiveness has now been clearly demonstrated and we conclude that the development of structured programmes in the UK would represent a major improvement in this area of service delivery”.

National Treatment Outcomes Research Study

4.24 Within the UK, the largest single study assessing the impact of drug misuse treatment is the National Treatment Outcome Research Study. This project, initiated within the context of the Task Force to Review Services to Drug Misusers, involves regular assessment of a cohort of 1075 drug misusers who started drug misuse treatment in 1995. The treatment modalities included within this research are rehabilitation services, methadone maintenance, methadone reduction, and in-patient drug dependency units. In the simplest of terms this research has shown that treatment works. At six months, 75.3% of the original cohort were contacted. Statistically significant reductions in drug misusing behaviours (illegal drug use, injecting and needle and syringe sharing) as well as in criminal behaviour were noted across each of the treatment modalities studied (Gossop et al 1997). Similar impressive reductions in drug users risk behaviour were also noted at one-year follow-up. Amongst those individuals recruited into the methadone maintenance programmes, 57.4% had used heroin in the previous three months, whilst at one year after starting treatment this had reduced to 24%. Amongst those addicts recruited into the methadone reduction programmes heroin use had reduced from a high of 70.2% at intake to 30.4% at one-year follow-up. Similar reductions were recorded in relation to non-prescribed use of methadone, benzodiazepines, crack cocaine, cocaine powder and amphetamines. The finding of similar reductions in both the methadone maintained group and those on a methadone reduction programme was surprising. The authors of this report point out that clients in both the maintained and reducing groups had similar starting dosages, similar retention in treatment and similar dosage levels at the one year assessment. On this basis they conclude that even those addicts on the methadone reduction programmes were in effect being exposed to an element of methadone maintenance. The positive effects identified should perhaps then be seen as an outcome of methadone exposure rather than the result of distinct forms of methadone prescribing (Gossop 2000).
4.25 Whilst the National Treatment Outcomes Research Study has been very influential in quantifying the impact of drug misuse treatment both in general terms, and in terms of the various treatment modalities included within the research, it has not been able to specify those aspects of individual drug misuse services that are associated with favourable outcomes. This is a shortcoming in the study design that would need to be overcome in any extension of the research within Scotland.

**EVALUATING DRUG MISUSE TREATMENT SERVICES**

4.26 Evaluating the effectiveness of drug misuse treatment services is far from straightforward. Some of the difficulties of research in this area arise as a result of the nature of the population being studied (which can make long term follow-up research difficult) whilst others have to do with the lack of clear aims on the part of many drug misuse treatment services themselves. Meier (2000) has provided a useful review of some of the key methodological considerations in evaluating drug misuse services. Accordingly, she notes that there is a need within such research for:

1. clear definitions of targeted outcomes
2. a control or comparison group
3. following ethical considerations (which can bear upon the possibility of having a non-treatment comparison group)
4. ensuring adequate sample size
5. ensuring the most appropriate timing of patient assessment points
6. obtaining information on the frequency of treatment and the duration of treatment
7. reducing to a minimum the impact of missing data
8. ensuring the validity, reliability and objectivity of measures
9. the need to combine self-report and objective measures of drug use
10. the importance of avoiding reliance on dichotomous scales i.e. questions where there are only two possible response categories e.g. yes/no or use/non use responses

**Drug Misuse Treatment Research and the Drug Strategy**

4.27 There is a clear commitment within the UK and Scottish drug misuse strategies to developing effective drug misuse treatment services. This aim is currently hampered by the lack of information on the effectiveness of drug misuse services within Scotland. By far the greatest proportion of evaluation research to date has focused upon the provision of methadone to drug misusers. Whilst there are clear gaps in this research (for example on the long term impact of methadone) the gaps are much greater in relation to almost all of the other services provided to drug misusers within Scotland. Very little is known about the effectiveness of residential services, detoxification and counselling as these are provided to drug misusers.

4.28 Current research suggests a need to assess the effectiveness of a much broader range of drug misuse services within Scotland. Wherever possible such evaluations should ideally be carried out using a comparison group and should involve follow-up with drug misuse service clients in the short, medium and long term. It would also seem prudent to obtain the views of clients as to the quality of the services provided. Whilst some initiatives have been developed to reduce the risk of overdose amongst injecting drug
users (including the provision of information cards warning of the dangers of overdose to prisoners who are soon to be released) the impact of such developments in reducing addict deaths in Scotland is not yet known.
CHAPTER FIVE MORBIDITY AND MORTALITY ASSOCIATED WITH DRUG MISUSE

5.1 Although there is not a specific theme on morbidity and mortality within the UK and Scottish drug misuse strategies, issues to do with both of these appear at various points throughout both strategies. For example, under the treatment heading within the Scottish strategy there is a commitment to reducing drug-related deaths and preventing the further spread of HIV and HCV infection.

HIV INFECTION

5.2 By far the largest proportion of research on drug-related morbidity and mortality relates to HIV infection. Much of this research has been carried out in Edinburgh and Glasgow and to a lesser extent in Dundee. More recently, research on the behavioural aspects of HIV has receded as evidence has accumulated that HIV has not spread as widely or as rapidly amongst injecting drug users within Scotland as was once feared.

5.3 By far, the largest proportion of the HIV-related research has had an epidemiological focus in seeking to establish the extent of HIV infection and HIV-related risk behaviour amongst injecting drug users. The impetus for this work arose from the early reports of widespread HIV infection amongst injecting drug users in Edinburgh in the mid to late nineteen-eighties. In 1986, reports began to emerge that as many as 51% of injecting drug users in Edinburgh might be HIV-positive (Robertson et al, 1986). Other reports at around the same time confirmed a similarly high level of HIV infection amongst injecting drug users within Edinburgh. Peutherer, for example, reported that 38% of 106 injecting drug users attending a general hospital in Edinburgh were HIV-positive (Peutherer et al, 1985). Brettle and others (1987) reported that 65% of 46 injecting drug users attending a self-referral clinic in Edinburgh were HIV-positive. Although there were uncertainties as to how far the various tested populations constituted discrete samples of injectors, there was little doubting the core finding of these studies that a considerable proportion of injecting drug users in Edinburgh had become HIV-positive.

5.4 In the period following these early reports, well-designed research studies were mounted in Glasgow, and Edinburgh funded by the Medical Research Council, and in Dundee, funded by the then Scottish Home and Health Department. Each of these studies used a broadly similar methodology in surveying city-wide samples of drug injectors from both treatment and non-treatment sites. Injectors were interviewed using a standard instrument and asked to provide a saliva sample, which could be tested to identify whether the individual was HIV-positive. In Glasgow, this research identified that between one percent and 2% of injectors were HIV-positive (Taylor et al, 1994). In Edinburgh, the research identified that 19.7% of injectors were HIV-positive (Davies, 1995) and in Dundee, 26.8% of injecting drug users were HIV-positive (Haw and Higgins, 1998).

5.5 This research identified a substantial reduction in the sharing of non-sterile injecting equipment, as injectors became aware of the risks of sharing, and sterile injecting equipment became more widely available in an attempt at reducing the extent of HIV infection amongst
injectors. In Glasgow, for example, the proportion of injectors reporting not sharing injecting equipment over the last 6 months increased from 57% to 71% in 1990 (Frischer et al, 1992). Whilst such reductions in risk behaviour were impressive, other research indicated a continuing willingness amongst injectors to share needles and syringes should the need arise (McKeganey et al, 1995). Research also looked at the extent of HIV infection and HIV-related risk behaviour amongst female and male prostitutes in Scotland. This work was largely carried out in Glasgow, where around 70% of the women selling sex on the streets were found to be injecting drug users and around 3% of these women were HIV-positive (McKeganey and Barnard, 1992, Goldberg et al, 1994). Research undertaken in Glasgow identified that there was a low prevalence of injecting drug use amongst male prostitutes but that sexual risk taking was widespread (Bloor et al, 1990).

5.6 Research has been undertaken to assess the extent of drug injecting and HIV infection amongst drug misusers within Scottish prisons. Gore and colleagues have reported data on the extent of injecting-related risk behaviour and HIV infection amongst inmates of Glenochil prison in 1993. On the basis of the research carried out it was estimated that 4% of inmates were HIV-positive, 27% of inmates were injecting drug users and of those who reported past injecting drug use, 42% said that they had injected whilst in prison (Gore et al, 1995). Similar research undertaken in HM Prison Barlinnie in 1994 found that one per cent of inmates were HIV-positive and 36% of inmates reported having injected drugs (Bird et al, 1995). Taylor et al have reported on an outbreak of HIV at HM Prison Glenochil in 1993 (Taylor et al, 1995).

HEPATITIS C

5.7 Aside from the epidemiologically focused research on HIV and HIV-related risk behaviour, research of a more ethnographic kind was also undertaken, looking at the reasons why injectors share injecting equipment and the situations within which such sharing occurs. Barnard for example (1993) looked at the pattern of sharing amongst male and female injectors in Glasgow. She identified that whilst the availability of sterile injecting equipment was one of the factors influencing sharing, this was also influenced by patterns of sociability amongst male and female injectors (Barnard, 1993). Taylor (1993) undertook ethnographic work looking at a group of female injectors within Glasgow.

5.8 Information is now beginning to emerge on the extent of Hepatitis C infection amongst injecting drug users in Scotland. This suggests that a substantial proportion of injectors are Hepatitis C-positive. Goldberg and colleagues, for example, reported the results of having analysed stored serum obtained from drug injectors requesting a named HIV test in Glasgow between 1990 and 1995. Of 295 individuals tested in 1990, 90% were found to be HCV-positive. In 1995, 77% of 370 individuals tested HCV-positive (Goldberg et al, 1998). Further information on the extent of HCV infection and HCV-related risk behaviour amongst injecting drug users within Glasgow has been provided by Taylor and colleagues (2000), who found that 61% of saliva samples (n= 1949) collected from injecting drug users in Glasgow between 1990 to 1994 and 1996 were found to be HCV-positive. Being positive for Hepatitis C in this study was found to be associated with four factors: length of injecting career, year starting injecting, number of times having been in prison overnight or longer, and place of residence. The prevalence of HCV antibodies amongst those who had injected for less than 2 years was 36%, whilst amongst those injectors who had been injecting for more than 15 years,
77% were found to be HCV-positive. Drug injectors who had been in prison were approximately one-and-a-half times more likely to be HCV-positive compared to injectors who had never been in prison. Out of 195 drug injectors interviewed in 1996, 37% of those who were HCV-positive reported having passed on used injecting equipment in the month before interview. On the basis of these results there is a clear need to further develop and extend needle and syringe exchange services within Glasgow (and elsewhere) to ensure that injectors have ready access to sterile injecting equipment (Taylor et al, 2000).

DRUG-RELATED DEATHS

5.9 In relation to drug-related deaths there have been a number of important research studies undertaken within Scotland. This research has been fuelled in part by what appears to have been a significant increase in the number of drug-related deaths within Scotland over the last few years. For example, in Greater Glasgow in the early 1980’s there were about five drug-related deaths per year, rising to 50 in 1989 and around 100 per year during the 1990’s. In Scotland as a whole, between 1994 and 1998, the annual total of deaths amongst individuals known or suspected to be drug dependent rose from 247 to 276.

5.10 Frischer and colleagues (1993) undertook a retrospective analysis of drug-related deaths in 1989 within the Greater Glasgow Health Board area. The researchers reviewed data held by the General Register Office, by the Procurator Fiscal’s Office and a Scottish-based HIV test register held by the then Communicable Diseases (Scotland) Unit. This research identified substantial under-reporting in the official data on addict deaths. Between 1967 and 1981 there were a total of 65 deaths amongst drug addicts notified to the UK Home Office and yet Frischer and colleagues were able to identify a total of 51 addict deaths in this one health board area for a single year. By comparing the total number of addict deaths identified in Glasgow with an estimate of the prevalence of injecting drug use, Frischer and colleagues were able to calculate an annual mortality rate of 0.54% amongst Glasgow injecting drug users. Amongst male injectors, the mortality rate was calculated as 0.42% compared to 0.85% for females. Over 90% of the deaths identified were attributed to suicide or overdose and the mortality rate amongst HIV-positive injectors was found to be considerably higher than that amongst HIV negative injectors (Frischer et al, 1993).

5.11 Frischer and colleagues continued this important research on drug-related deaths in 1997 by following up a total of 459 individuals who had been treated for drug misuse in Glasgow between 1982 and 1994. The average duration of follow-up was 5.5 years and 10.2 years since commencement of injecting. By the end of 1994, 53 cohort members had died, suggesting an annual mortality rate of 1.8%. In this study, drug misusers within Glasgow were found to have an Excess Mortality Ratio of 22.0 (Frischer et al, 1997). This figure compares with an Excess Mortality Ratio for heroin addicts in London of 11.9 (Oppenheimer et al, 1994).

5.12 Hammersley and colleagues sought to identify the possible reasons for the increased risk of overdose amongst Glasgow injectors by comparing toxicological information on addict deaths in Glasgow and Edinburgh between 1990 and 1992. The researchers identified that a much higher proportion of the Glasgow addict deaths were associated with the individual having used multiple drugs than were the addict deaths in Edinburgh. Particular
concern was expressed over the dangers of combining heroin, Temazepam, Diazepam and alcohol (Hammersley et al, 1997).

5.13 In 1995, the General Register for Scotland reported that there were 98 drug-related deaths in Glasgow and in 34 of these cases toxicological examination identified the presence of methadone. In the light of this finding a confidential enquiry into methadone-related deaths was carried out in Glasgow in 1996 (Scott et al, 1996). The enquiry team reviewed the circumstances of each of these deaths and identified possible failings in clinical care in 18 cases and inadequacies in the organisation of medical services in 22 cases. In 16 cases, shortcomings in both areas were felt to have occurred. In 13 cases no urinalysis for drugs of abuse had been undertaken before the prescribing of methadone had been undertaken. On the basis of this enquiry, there is a clear need to differentiate between those deaths in which methadone might be implicated, but which arise more from the way in which the drug has been made available, and those deaths directly arising from the drug itself. In an attempt to reduce the risks of overdose associated with the wider provision of methadone, the Greater Glasgow Health Board has developed a system of supervised consumption of methadone. The benefits of adopting this system have become increasingly evident in the reduced number of addict deaths where methadone is implicated within Greater Glasgow (Gruer et al, 1999) and in the international attention that has been directed at the Glasgow scheme for supervised consumption (Weinrich and Stuart, 2000).

5.14 Research has recently looked at the risks of death faced by addicts being released from prison. Shewan and colleagues identified 14 sudden and unexpected deaths amongst female prisoners released into the community between 1993 and 1995. Ten of these deaths were a result of drug overdose and whilst 3 of the deaths occurred within 38 days of liberation the remainder occurred at least 147 days after liberation. According to Shewan and colleagues the explanation that addicts are at increased risk of death around the time that they are released from prison is too simple in explaining this pattern of death. Some addicts who resume their previous pattern of drug misuse will die from a drug overdose, however other addicts may abstain or moderate their drug misuse for many months following release but then may die from an overdose if they resume drug injecting. Within the latter scenario, it is the risks associated with drug injecting rather than release from prison, which explains a proportion of the addict deaths (Shewan et al, 2000a). Gruer and Oliver (1999), by contrast, found that a substantial proportion of individuals dying from a fatal drug overdose in Strathclyde had been recently released from prison. Seaman and colleagues sought to examine the possible impact of release from prison amongst HIV-positive male injectors. The researchers studied a total of 316 HIV-positive injectors released from prison and identified that in the two weeks following release they were eight times more likely to die from an overdose than during any other period spent outside prison (Seaman, Brettle and Gore, 1998).

5.15 Considerable research, both within Scotland and elsewhere, has been undertaken to try and identify those factors that are particularly associated with drug-related death. Most UK and international studies have identified that drug-related deaths are more common amongst male compared to female drug misusers. However, some studies appear to show either very little difference in addict deaths between males and females or that females may be at greater risk of death compared to males. In the research undertaken by Frischer and colleagues, for example, the excess mortality amongst female injectors was greater than that amongst male injectors (Frischer et al, 1994). Similarly, in a long term follow-up study of a cohort of
injectors in London, Oppenheimer and colleagues (1994) found no difference between male and female heroin addicts in the risk of death.

5.16 Most of the research undertaken tends to show that drug-related deaths occur most frequently amongst drug misusers within their early thirties. It is difficult to distinguish however between the effect of age in explaining drug-related deaths and length of drug use itself since these two things are clearly related. Drug-related deaths have been shown to be more common amongst unemployed and unskilled workers. However, problematic drug misuse is itself known to be associated with these factors, so again it is difficult to be sure what distinctive contribution these factors may be making in explaining drug-related deaths.

5.17 Relatively little is known about the extent of psychiatric illness amongst drug misusers, however the analysis of drug-related deaths undertaken by Bentley and Bussitill (1996) reported that 9% of the drug-related deaths in their study were the result of suicide. Neale (2000), by comparison, identified that almost half of those addicts admitted to hospital following a non-fatal overdose had contemplated suicide. In a study of drug-related deaths in the UK, Ghodse and colleagues (1985) found that 4.6% of deaths were in individuals without a fixed abode. In the study by Neale (2000), a substantial minority of addicts admitted for a non-fatal drug overdose were homeless.

5.18 The impact of drug availability on drug-related deaths has not been widely studied although it seems very likely that this factor would influence drug-related death. It has been noted from Glasgow that most drug-related deaths occur near centres of drug supply (Cassidy et al, 1995). Hyatt and Rhodes (1995) identified a significant negative relationship between the price of cocaine and the level of medical emergencies and deaths due to cocaine. Both the UK and the international literature show that compared to the various other modes of drug use, drug injecting carries the greatest risk in terms of overdose and other health-related risks (AIDS, other infectious illnesses, circulatory and respiratory problems and violence).

5.19 Whilst it is often suggested that drug-related overdoses may be explained by the use of exceptionally pure heroin, in fact there is little evidence that this explains the excess mortality amongst injecting drug users (Hall and Darke, 1998). What may be more important than the purity of the heroin being used are significant fluctuations in purity, making it very difficult for drug users to calculate the quantity of the drug they can tolerate without experiencing an overdose. There has been very little research undertaken which has explored the role of contaminants in explaining drug-related deaths although Kaa (1992) has suggested that the inclusion of bitter tasting additives may have meant that addicts had found it more difficult to judge the quality of the heroin they were using and that this may have explained some of the addict deaths in Sweden. Monforte (1977) found that 74% of fatal heroin overdose cases had blood levels no higher than those detected in a similar group of heroin users who died of other causes. A third of the overdose cases studied by Zador had morphine levels below the toxic level for individuals without a history of opiate use. Similarly, many fatal overdose cases have been found to have a morphine level no higher than samples of drug misusers who have survived an overdose (Aderjan et al, 1995). Fatal heroin overdoses cannot then be entirely explained in terms of the amounts of heroin ingested. Attention has been directed at the possible role of contaminants in causing heroin overdoses. As Darke and Zador point out however, the possible role of contaminants in fatal heroin overdose is far from clear and is something anyway that may be subject to considerable regional variation (Darke and Zador, 1996). Most recently, research has focused upon the possible role of poly drug use in
explaining fatal drug overdose. Particular concern has been expressed about the practice of combining drugs, including alcohol (Fugelstad et al, 1995 Zador et al, 1996).

5.20 Alongside the various studies looking at the extent and possible causes of drug-related deaths, research has also been undertaken within Scotland looking at non-fatal drug overdose. Neale interviewed 74 drug users within 48 hours of their having been admitted to an Accident and Emergency department as a result of a drug overdose. One of the surprising findings of this study was the fact that almost half of those interviewed commented that they had experienced suicidal thoughts at the time of their overdose. Such feelings were found to be linked to domestic disputes, physical and sexual abuse, problems with accommodation, personal bereavement, self-reported mental health problems, and difficulties in gaining access to drug services (Neale, 1999, 2000). The finding in this study that a substantial proportion of drug misusers admitted for a non-fatal drug overdose had suicidal thoughts confirms earlier research by Hawton and colleagues who compared 61 cases where the individuals had committed suicide following a previous failed suicide attempt with 124 controls. In a multivariate analysis the two factors that best differentiated the two groups were substance misuse. This research underlines the importance of assessing the extent of co-morbidity amongst drug misusers and ensuring that drug misuse services are able to respond to their clients’ drug treatment needs and their mental health needs. Whilst relatively little is known about the extent of mental health problems experienced by drug misusers within Scotland, research is currently underway which should go some way to filling this important gap.

5.21 Most of the research undertaken in this area has focused on the toxicology and epidemiology of fatalities. Increasingly, research is focusing on the social circumstances of death. It has been shown, for example, that the majority of deaths attributed to overdose occur in the presence of other people (Zador et al, 1996). Attention has also been directed at the amount of time that may elapse between when an overdose occurs and when emergency medical services are called - clearly the time elapsed can have a significant influence in determining whether the overdose is fatal or non-fatal. Only 14% of overdose cases studied by Zador were instantaneous and 22% were estimated to have died after a period of time in excess of three hours. An interval of more than three hours was reported to have occurred in 52% of the overdose cases studied by Garriot and Sturner (1973).
Morbidity and Mortality associated with Drug Misuse and the Drug Strategy

5.22 The research identifying that drug injectors are at particular risk of death is clearly of relevance within Scotland where drug injecting remains widespread. In terms of reducing drug-related deaths there is likely to be a need to explore interventions that seek to reduce drug injecting. Positive results have been identified from an intervention in England, which has attempted to discourage experienced drug injectors from initiating other drug misusers into experimenting with drug injecting (Hunt et al, 1988).

5.23 The literature reviewed suggests that it would be important to ensure that drug misuse services can respond to mental health problems on the part of drug misusers. Finally, the recognition that drug misusers in their thirties may be at increased risk of overdosing is relevant within Scotland where many drug injectors are now in their mid to late thirties having started injecting in the mid nineteen eighties. Many of these individuals may be approaching a time when they are at greatest risk of overdosing (McKeganey and Neale 2000).

5.24 The research undertaken within Scotland on HIV infection and HIV-related risk behaviour amongst injecting drug users has been tremendously valuable in identifying the extent of infection and in identifying reductions in drug injectors’ risk behaviour. The research in relation to Hepatitis C is still at a relatively early stage and there is a clear need for better information on the prevalence of HCV amongst injecting drug users across Scotland, on drug injectors’ responses to an HCV diagnosis and the extent of HCV-related risk behaviour more broadly amongst injecting drug users. There is also going to be an increasing need to assess the impact of HCV infection amongst injecting drug users on the Scottish health service in the short, medium and long term.

5.25 The research to date on drug-related death and overdose has similarly been of a very high standard. At the present time, however, relatively little is known about the link between drug misuse and mental health. The finding that a significant number of injectors surviving a drug overdose had suicidal thoughts clearly indicates the importance of further studying this issue amongst drug misusers within Scotland. Clearly, until this issue is further explored and services are developed that can meet drug misusers’ addictive needs and their mental health needs, it remains difficult to see how a reduction in drug-related deaths can be brought about. Finally, research suggests it would be important to understand the broader health-related problems associated with drug misuse and how these may be better dealt with.
CHAPTER SIX  AVAILABILITY

6.1 The key aim under this theme within the UK drug strategy is to stifle the availability of illegal drugs on our streets and the key objective is to reduce access to illegal drugs on the part of those aged 5 to 16. The key objectives within the Scottish drug misuse strategy are:

7 to reduce access to drugs on the part of all age groups
8 to support enforcement agencies in identifying and prosecuting those involved in the supply and trafficking of illegal drugs
9 to reduce the amount of illegal drugs entering Scotland
10 to support community efforts at reducing the availability of drugs locally
11 to reduce the availability of drugs within prisons

6.2 There is less research on this theme than on any of the core themes within the Scottish drug misuse strategy. Whilst information is available on the quantities of illegal drugs seized, and their street value, no independent published research has been carried out with which to assess the effectiveness of enforcement initiatives in reducing access and availability to illegal drugs. Nor has research been carried out aimed at producing an agreed definition for measuring the availability and accessibility of illegal drugs. Barnard and colleagues have sought to examine young people’s exposure to illegal drugs through measuring the proportion of young people who:

7 report having friends who use illegal drugs
8 say that they could get illegal drugs
9 have been offered illegal drugs
10 have been in situations within which illegal drugs have been used (Barnard et al, 1996)

6.3 Taken together, these items may provide an effective operational definition of availability through which it may be possible to assess whether the UK key objective on reducing young people’s access to illegal drugs is being reduced. However, there is likely to be a need to undertake further research to specify the appropriate ways of measuring availability of illegal drugs within communities.

6.4 With respect to reducing drug misuse within prison, the annual prison surveys provide information on the nature and extent of drug misuse amongst prisoners with which to judge whether the overall level of such drug misuse is increasing, decreasing or remaining stable.

6.5 At the present time within Scotland there is a serious lack of independent, rigorous assessment of the effectiveness of enforcement strategies in relation to drug misuse. Without information in this area it is difficult to see how the key objectives in the UK and Scottish drug misuse strategies under this heading can be assessed.

6.6 Within the United States, evaluative research in this area is commonly undertaken by independent research agencies working in close collaboration with enforcement agencies. Clearly, it would not be possible within this review to summarise what is itself a substantial literature. The aim here will only be to identify some of the research evaluations that have been carried out.
DRUG ENFORCEMENT

6.7 There have been a variety of policing tactics employed by enforcement agencies in the US with one of the most popular being the use of what have been termed “buy and bust” operations (Moore, 1976). Within such operations, police officers working undercover attempt to buy drugs from street dealers, who are then arrested in the course of making a sale. Evaluations of this strategy have not indicated that the strategy is particularly effective in reducing drug dealing (Wilson, 1978). Since the nineteen-eighties in many cities within the United States, police departments have focused upon retail level enforcement activities by targeting police resources on known centres of drug dealing. An evaluation of one such operation in Washington DC (Operation Clean Sweep) produced mixed findings (Reuter et al, 1988, Sherman, 1990). There were indications that the operation had reduced the number of street drug markets within the targeted areas and led to a marked increase in the number of arrests and prosecutions. There was no evidence, however, that the operation had an impact on actual drug use and there was some indication that it may have led to increased violence within the targeted areas. A police crackdown in two areas within Hartford, Connecticut was similarly shown to have had an uneven impact. Within one of the targeted areas, more than 80% of residents reported that there was less violent crime in the area and fewer people selling drugs. However, in the other targeted area such positive results were reported by only 30% of residents (Caulkins, Rich and Larson, 1991).

6.8 The use of Tactical Narcotics Teams within New York has been extensively evaluated by a number of researchers. The TNT operations include both undercover “buy and bust activity” and intensive policing. The narcotics teams work within identified areas for a period of 90 days and move from area to area. An evaluation of the initiative by Sadd and Crinc (1993) involved interviews with residents, community leaders and business people in all of the areas targeted by the teams. Data were collected prior to the programme being implemented, at the end of the 90-day period and three months after the teams had left the area. There was a feeling amongst community leaders that the positive effects on reducing drug dealing and overt drug usage were transitory, with drug dealing activities returning to their pre-intervention levels relatively quickly once the teams had left the area. According to the researchers, the relative failure of the initiative was the result of a number of factors: the short time period of each operation, lenient sentences for drug dealers, racial and ethnic conflicts within the targeted areas, residents’ fear of retaliation for co-operating with the police and the influence of larger social problems within the areas. An evaluation by Sviridoff and Hillsman (1994) however, found that the TNT operations were particularly successful in virtually shutting down drug-selling activities in one area and making them much less visible in other areas that were geographically distant from highly concentrated drug markets, and which catered for drug purchasers from outside neighbourhoods.

6.9 Concern has often been expressed about the extent to which intensive policing approaches of the kind described above may lead to a displacement of drug-related activities to neighbouring areas. The data, in relation to assessing whether displacement occurs, is far from conclusive however, and is clearly something that requires closer attention. Lurigio et al (1993), tracked a sample of drug dealers who were re-located to a range of areas. Working with local law enforcement staff they identified that no new arrests for drug dealing had occurred at the sites to which the dealers had been moved, although interviews with local people in these areas indicated that drug selling was occurring at a number of the locations. On the basis of these, and similar evaluations, it has been suggested that the benefits of forced
relocation of drug dealers (in terms of the possibility of displacement) may depend on the extent of the individual’s drug dealing activity. Occasional dealers may be less likely to undertake the work of resuming drug-selling activities in the new area, whereas those individuals for whom drug dealing represented the major source of their income may be more inclined to undertake the work of building up a new network of drug buyers.

6.10 A further evaluation to identify the extent of drug displacement activities was undertaken by detectives from the Milwaukee Police Department (1994). In this study, detectives successfully followed up 97% of a sample of individuals who had been evicted as a result of drug dealing activities. By checking complaints at the new locations, and attempting to buy drugs on an undercover basis, the detectives were able to show that of those who were at liberty to sell drugs only 19% had resumed their drug-selling activities. This research indicates that displacement may not be as widespread as might be thought, however there is a need to identify the possible extent of displacement in relation to enforcement strategies within Scotland. That some level of displacement may occur within the UK context has been shown in relation to evaluations of the use of CCTV (Pease, 1997).

6.11 In terms of the possible impact of enforcement initiatives on the work of other agencies, Maher and Dixon (1999) have looked at the way in which intensive policing operations targeting drug dealers/users can conflict with the work of health-related agencies. Ethnographic research was undertaken in an area of Australia where drug-related activities were widespread. In this study, the researchers found that there were a number of significant health-related effects resulting from the increase in police activity within the area. These included drug users/dealers being reluctant to carry needles and syringes for fear of being stopped (with the consequence that they were more likely to find themselves in a situation where there was a temptation to use other people’s injecting equipment), drug users and dealers making themselves more hidden by going underground (thereby making the work of health-related agencies in contacting the individuals more difficult). The researchers also noted that as a result of local police having been successful in targeting the known drug markets within the area, drug users/dealers displaced their activities to new areas and as a result opened up new drug-selling markets. There was also evidence of displacement in relation to the type of crimes committed with individuals who had previously obtained money on the basis of drug-selling activities switching to other forms of crime once police targeted the activities of local drug dealers (Maher and Dixon, 1999).

7.3 Perhaps the most important implication for drug misuse enforcement initiatives in Scotland of the work described above is not so much the results of the specific evaluations undertaken but the fact that the evaluations were undertaken at all. Such research shows that it is possible for enforcement agencies to work in collaboration with independent research groups to assess the effectiveness of their operations. Within the US it has been possible to apply “before and after” comparisons to assess the impact of specific enforcement initiatives. Clearly, such evaluations are only possible if there is some level of sharing of information on police operations in advance of those operations being undertaken. At the present time, it is unlikely that information of this kind is being shared between Drug Action Team members within Scotland although this would be needed to mount the kind of evaluations that have been undertaken within the US.
Availability and the Effectiveness of Enforcement Strategies

6.13 The literature reviewed suggests it would be prudent within Scotland to undertake research on the operation of drug markets. It would also be prudent need to undertake research to assess the effectiveness of enforcement agencies and enforcement strategies in disrupting drug supply and reducing the availability of illegal drugs throughout Scotland.
CHAPTER SEVEN CONCLUSIONS

7.1 This review has outlined a broad range of drug misuse research undertaken within Scotland and elsewhere and considered the extent to which that research provides an evidence base for the Scottish drug strategy “Tackling Drugs in Scotland: Action in Partnership”. This is an important question because of the commitment within the Scottish strategy to base policies and service provision on evidence of effectiveness.

7.2 There has been a large amount of drug misuse research undertaken within Scotland, much of which does indeed contribute to the process of delivering the drug strategy. Key research has been undertaken within the area of young people, treatment, and morbidity and mortality associated with drug misuse. Much less research, however, has been undertaken in relation to communities and availability including enforcement.

7.3 For research to be maximally useful in assisting the Scottish drug misuse strategy a number of developments will need to take place. First, research in the area of drug misuse needs to be guided by a clear strategy; it needs to evolve incrementally in relation to prioritised topics rather than shift from topic to topic without any clear justification for the shifts in focus. In this regard, it is valuable that the Scottish Advisory Committee on Drug Misuse has recently convened a research sub-group that will advise on research priorities in the light of the drug strategy. Second, it is essential that the results of research, and the topics chosen for research, engage with the concerns and the experiences of drug misuse service providers. Much of the research undertaken in this area has a direct practical pay-off in assisting agencies that are seeking to respond to the drug problem, whether in terms of treatment, care, community development, and enforcement. At present, there is no systematic way of ensuring that individuals working in these areas have access to the results of research. Clearly, this will need to change. Third, there will be a growing need for research to begin to answer questions of “what works” in terms of drug misuse services. It is known, on the basis of the evaluations carried out, that methadone is an important tool in enabling drug misusers (with an opiate-based dependency) to stabilise their life and to begin to contemplate the possibility of a life free from drug dependency. As yet it is not known what proportion of methadone treated addicts will become drug free or over what period such an aim may be realised. Research will need to answer this question. The research also suggests a need for evidence of effectiveness, however, in relation to the entire range of treatment and care services provided to drug misusers. Fourth, there needs to be a recognition that not all research on drug misuse can be or should be strategically directed. There will be a continuing need to ensure that the research capacity within Scotland is sufficiently flexible to be able to respond quickly to new research topics and problems associated with drug misuse as these arise.

7.4 The evidence in relation to young people suggests that a very substantial proportion of are using illegal drugs within Scotland. Most of that drug misuse relates to cannabis although in many cases other drugs are also being used, and there is some suggestion that the age at which young people are beginning to use illegal drugs within Scotland may be reducing. There is some indication, not yet conclusive, that the overall level of drug misuse amongst young people in Scotland may have reduced over the last few years, although equally there is
some indication that the proportion of young people having used heroin within Scotland may have increased over the last few years.

7.5 The literature reviewed here suggests the need for better information on the overall pattern of drug misuse amongst young people in Scotland. Trying to assess the extent of drug misuse amongst young people on the basis of a patchwork quilt of local studies and one or two large-scale studies would seem to be counter-productive. Nationally representative survey work needs to be undertaken on a periodic basis in order to establish whether drug misuse is increasing, decreasing, or remaining stable in all areas across Scotland. In addition to better information on the national pattern of drug misuse amongst young people in Scotland much more information is required about the process through which drug misusing behaviours develop. Why is it that some young people are able to resist becoming involved with illegal drugs whilst others are not, and why is it that some young people cease their drug misuse following experimentation whilst others progress and develop more problematic forms of drug misuse? Research in this area will assist the development of evidence-based drug prevention services within Scotland. Research into the antecedents of drug misuse however cannot be funded on a short term basis. The research also suggests a need for longitudinal research in this area and this will require the capacity to fund some research on a long term basis. In addition to better information on the nature and extent of drug misuse amongst young people we also require better information on the prevalence of problematic drug misuse across Scotland as a whole.

7.6 Drug misuse is principally coped with not by treatment, care, or enforcement agencies but within communities; it is within communities that the negative effects of drug misuse are felt most acutely. There is a need to know more about how communities respond to drug misuse, how they mobilise, how they develop locally-based initiatives, how effective those initiatives are, and how groupings of local people can work alongside professional drug misuse services to maximum effect. At the moment very little is known about this area, and as a result are not well placed to help communities seeking to respond to drug problems within their midst. Finally, the literature reviewed here suggests the need to work with enforcement agencies to develop a strong evidence base as to what initiatives work best over what period and within which communities.

7.7 At present within Scotland very few drug misuse services have undergone any kind of rigorous and independent assessment of their effectiveness. Where assessments of effectiveness have been carried out very few have involved follow-up contact with drug misusers for longer than 12 months. The UK Department of Health Task Force to Review Drug Misuse Services has called for research to evaluate the effectiveness of drug misuse services in the short, medium, and long term. It would seem prudent within Scotland to respond positively to that request and to mount a programme of evaluative research. At the time of writing this report, funding has been agreed to undertake a programme of research within Scotland applying a similar methodology to that used in the National Treatment Outcomes Research study in which a cohort of drug misusers starting treatment are followed-up and assessed at regular intervals.

7.8 Finally, the literature reviewed here suggests there would be merit in assessing the effectiveness of enforcement strategies within Scotland in order to identify which strategies have the most impact on reducing the availability of illegal drugs throughout Scotland.
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