Review of grey literature on drug prevention among young people

May 2006

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This publication was commissioned by the Health Development Agency (HDA) but published after the HDA’s functions were transferred to NICE on 1 April 2005. The publication does not represent NICE guidance.

This document is also published on the NICE website at:
www.publichealth.nice.org.uk

ISBN: 1-84629-184-4

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The Health Development Agency (HDA) was established in 2000. Between then and 2005, when the functions of the HDA were transferred to the National Institute for Health and Clinical Excellence (NICE), the HDA helped to build the evidence base in public health with an emphasis on what works and a special focus on reducing inequalities in health.

The HDA had the task of mapping and synthesising the evidence across priority areas of public health. It developed a number of ways of taking a systematic approach to compiling the evidence, identifying gaps and making the evidence base accessible. The evidence briefing series was one of the ways in which the HDA Evidence Base was disseminated (full details of the process of developing the Evidence Base and the associated methodological activities can be found in Graham and Kelly 2004; Kelly et al. 2002, 2003, 2004; Killoran and Kelly 2004; Swann et al. 2005).

The necessity for reviewing reviews, or tertiary-level research, stems from the proliferation over the last decade, or more, of systematic and other types of review in medicine and public health. The HDA published a range of evidence briefings that cover:

- Teenage pregnancy and parenthood
- HIV prevention
- Prevention of sexually transmitted infections
- Management of obesity and overweight
- Ante- and post-natal home-visiting programmes
- Prevention of low birth weight
- Breastfeeding
- Accidental injuries in children and older people
- Public health interventions for increasing physical activity among adults
- Smoking and public health
- Drug misuse
- Youth suicide prevention
- Health impact assessment
- Prevention and reduction of alcohol misuse
- Prevention and reduction of exposure to second-hand smoke
- Secondary interventions for chronic illness
- Housing.

Taken together these briefings provide a comprehensive synthesis of the evidence drawn from review-level literature. They are available on the NICE website – www.publichealth.nice.org.uk

These evidence briefings have been based on evidence drawn from systematic and other kinds of reviews. This means that the type of evidence that does not traditionally find its way into reviews has not been considered in detail for these documents.

In another HDA evidence series, evidence reviews, of which this is one, the scope of the coverage is extended to primary research, other kinds of evidence and other types of study. Evidence reviews are traditional reviews, overviews or syntheses of multiple evidence sources drawn from different research traditions. These take a variety of forms and formats (see for example the evidence reviews on drug misuse prevention (Coomber et al. 2004a) and risky behaviour (Coomber et al. 2004b). In some cases evidence reviews consist of analyses of primary studies, drawn from the published and unpublished literature. In other cases they comprise summaries of the theoretical concepts and ideas that relate to the evidence base in public health. Overall, evidence reviews provide a general evidence resource on a range of public health topics.

The construction of the HDA Evidence Base involved collaboration with a number of partners who have
interests and expertise in practical and methodological matters concerning the drawing together of evidence and its dissemination. In particular the HDA acknowledged the following: the Centre for Reviews and Dissemination at the University of York; the EPPI-Centre at the Institute of Education at the University of London; Health Evidence Bulletins Wales; the ESRC UK Centre for Evidence Based Policy and Practice at Queen Mary College, University of London and its nodes at the City University London and the MRC Public Health Sciences Unit at the University of Glasgow; members of the Cochrane and Campbell collaborations; the United Kingdom and Ireland Public Health Evidence Group and the members of the Public Health Evidence Steering Group. This latter organisation acted as the overall guide for the HDA’s evidence-building project. The cooperation of colleagues in these institutions and organisations has been of significant help in the general work in preparing the framework for how we assess the evidence.

Every effort has been made to be as accurate and up-to-date as possible in the preparation of this briefing. However, we would be very pleased to hear from readers who would like to comment on the content or on any matters relating to the accuracy of the briefing. We will make every effort to correct any matters of fact in subsequent editions. Comments can be made by using our website, www.publichealth.nice.org.uk

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Acknowledgements

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Introduction

The Updated Drug Strategy (Home Office 2002) highlights the marked growth in drug prevention initiatives for young people in the UK since 1998. The majority of primary (80%) and secondary schools (95%) have adopted drug education policies (Department for Education and Skills 2004) and drug education in schools is now widely available as part of the personal, social and health education (PSHE) curriculum. The National Healthy Schools programme* also includes drug education as one of its core themes.

The Connexions service, which, as part of its wider activities, identifies young people with drug problems and provides appropriate referral or support, now covers most of England (80%). Treatment is offered to young people with drug problems in most (80%) of the Drug (and Alcohol) Action Team (D[A]AT) areas and all Youth Offending Teams (YOTs) have named drugs workers available to support young offenders with drug problems. Positive Futures** has been offering diversionary sports and art activities to young ‘vulnerable’ people, and the FRANK initiative (www.talktofrank.com) offers drug-related information to users and their friends and family.

A cross-governmental report, Tackling Drugs – Changing Lives: Keeping Communities Safe from Drugs (Home Office 2004), has summarised progress made against targets and describes a range of policies and interventions aimed at decreasing illicit drug-related harm by 2008. It states that drug-prevention programmes will be improved, drug education will be offered to all young people, and increased services and support will be available for those who are identified as key risk groups for drug use/problems. It also provides a framework for preventing harm associated with drug use from early years to adulthood.

However, the drug-prevention evidence base is still limited and predominantly focused on published work. For example, small(er)-scale projects that deliver local responses to these initiatives and strategies are catalogued on databases such as DEPIS* and EDDRA,** but gathering together learning from these interventions is rarely done. There is therefore a need to communicate potentially valuable approaches and successes to the wider field.

Prevention targeted at young people is most effective when designed and implemented in accordance with evidence-based principles of effectiveness. Drug prevention draws from wide-ranging areas of research, incorporating aspects of psychology, sociology, psychopharmacology, biological and behavioural sciences, public health, policy, culture and the media. Settings for interventions can be the school and/or the community (including community services such as primary care and criminal justice), and the intensity and lengths of a programme vary.

There are a number of programme approaches. Information dissemination provides knowledge about drugs (eg the effects of taking drugs). Affective education, on the other hand, aims to address intra-individual variables such as self-esteem. Project ALERT and LifeSkills Training (LST) programmes are popular

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* The National Healthy School Standard (www.wiredforhealth.gov.uk) has three strategic aims: to reduce health inequalities, promote social inclusion and raise educational standards. Themes include PSHE, citizenship, drug education (including alcohol and tobacco), emotional health and wellbeing, healthy eating, physical activity, safety, and sex and relationship education.

** www.drugs.gov.uk/young-people/positive-futures

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* See the DEPIS section at www.dh.gov.uk
** http://eddra.emcdda.eu.int
school-based universal drug-prevention programmes that have been developed (and mainly delivered) in the USA. They aim to equip students with general and specific skills and abilities to overcome social influences to take drugs. Other programmes use art and sports to promote drug prevention and community engagement (eg Positive Futures). These programmes can be delivered by adults (such as teachers, police officers, health professionals) and/or young people (such as social and/or school peers), and the choice of facilitator can have important effects on the outcome (Mellanby et al. 2000).

It is beyond the scope of this review to provide a thorough narrative of contemporary drug prevention, but in initial attempts to build an evidence base, the Health Development Agency (now part of the National Institute of Health and Clinical Excellence, NICE) published an evidence briefing on drug prevention among young people (Canning et al. 2004). This systematically reviewed tertiary-level evidence* on drug prevention aimed at young people aged between 7 and 25.

Aims and objectives

The aim of this review is to complement the evidence base built by mainstream literature (eg Canning et al. 2004; Dusenbury et al. 1997; Tobler and Stratton 1997) for drug prevention among young people by systematically reviewing those drug-prevention materials that do not traditionally find their way into systematic reviews, namely grey literature. These materials were mostly published in the UK, although high-quality international studies were also considered if relevant.

There are three research areas for this study:

- highlight which interventions in the grey literature have the potential to prevent drug use and/or reduce drug-related harm among young people aged 7–25
- identify consistent findings/advice for effective good practice for young people aged 7–25 years both among the general population and for vulnerable groups
- identify gaps and inconsistencies in the evidence base and provide a direction for future research commissioning.

Policy context

Drug-prevention interventions must be considered within the current policy context. The Every Child Matters Change for Children programme (2004)** aims to reform children’s services to enable the services to reach their full potential, tackling not only substance use but also the risk factors that may lead to substance misuse. ‘Choose not to use illegal drugs’ is part of the ‘Be healthy’ objective of the programme. This work is closely linked to the Updated Drug Strategy (Home Office 2002) and Change for Children: Young people and drugs (Department for Education and Skills 2005) sets out how the aims of the two strategies are to be achieved. This work contributes to the Public Service Agreement (PSA) target to ‘Reduce the use of Class A drugs and the frequent use of any illicit drug among all young people under the age of 25, especially by the most vulnerable young people’ (HM Treasury 2002). The Choosing Health public health white paper (Department of Health 2004) considers drug use in the context of general population health, and aims to improve the provision of health information and advice to young people.

Grey studies have the potential to provide a topical and valuable description of current drugs activity (Fountain 2002). There are often protracted time periods between submission of a manuscript and peer-reviewed publication. As drug use is often a dynamic phenomenon and behaviours are locally determined, it requires a relatively rapid assessment to ensure efficient responses (Daniulaityte et al. 2004; Siegal et al. 2000). Reliance on peer-reviewed publications results in a delay of dissemination of useful information.

Moreover, unpublished studies tend to provide detailed information of process and implementation, both of which can be missing from scientific papers (Fountain

* Reviews and syntheses of existing systematic reviews and meta-analyses.
** See www.everychildmatters.gov.uk/aims for more information.
These types of data can highlight important information such as barriers to implementation and the solutions to these barriers, which could inform practice. While the scientific evidence often provides a framework of plausibility for prevention interventions, practitioner knowledge and application provide a basis for understanding the likelihood of success of particular interventions. However, it is not possible to rely on traditional sources of evidence (ie peer-reviewed academic texts) to complete our understanding of practitioner experience, as they are rarely available.

One of the disadvantages of including unpublished studies in a systematic review is their quality. When some of these reports are systematically appraised, criteria for inclusion (and exclusion) and systematic appraisal need to be more tolerant than those for peer-reviewed articles. On the other hand, to be confident about the findings critical appraisal should distinguish between research findings which are based on robust methodology and those that are only suitable for providing contextual information, or which offer insights into ways of working. To assist with this process a set of suitable criteria was created based on papers that have reviewed grey literature (eg White et al. 2004) and those that provide guidelines for evaluating qualitative studies (Greenhalgh and Taylor 1997; Yardley 2000).

Methodology

Note: a complete methodology is provided in the main review.

The methodology proceeded in several stages. Four search strategies were used to identify work:

- web searches (including online databases such as Mentor UK)
- consultation with the NCCDP network group of drug and health professionals
- consultation with Drug (and Alcohol) Action Teams (DATs and DAATs)
- use of specialist libraries and databases (eg DrugScope, Web of Science, MEDLINE, PsychInfo). The latter source was included to identify book chapters and supportive academic texts.

Reports were selected according to key inclusion criteria – for example, whether they were:

- outcome or process evaluations
- detailed universal, targeted and indicated prevention interventions
- descriptions of services in Tiers 1 to 3 of UK drug service provision*
- focused on ‘upstream’ interventions that include learning from a range of non-clinical interventions, eg reports of policy, sociological and psychological interventions and action research
- drawn from both UK and international settings.

A total of 290 documents were independently appraised by two reviewers according to specially developed quality criteria. Of these, 26 were considered to be of sufficient quality to be included in the review, 136 were judged to provide suitable contextual material, and 128 were rejected outright.

Results, key findings and conclusions

For organisation and summary of the literature identified, refer to section 3 and Appendix 2.

With respect to the three research areas, the following findings were identified and appropriate recommendations made. Reference is made to relevant sections in the text of the full report that provide supportive evidence and statements.

Highlight what interventions in the grey literature suggest a real potential to prevent drug use and/or reduce drug-related harm among young people aged 7–25

- Due to a lack of rigorously tested studies, it is difficult to determine the effectiveness of particular approaches or components of drug prevention identified in this review. Common methodological problems include the use of inappropriate outcome measures (eg self-reported learning, section 4.1.1 in main report), the absence of, or the presence of, non-equivalent, control groups (section 4.1.1), a reliance on self-report (eg recent drug use, Opening Doors project, section 4.4), and a lack of long-term measures (eg ‘I wanna be...’, section 4.1.2).

* Drug service provision in the UK is divided into four tiers, from Tier 1, universal and generic services, to Tier 4, specialised residential units and clinical intervention. See Burrell K, Jones L, Sumnall H et al. (2005) Drug prevention and treatment among young people. Liverpool: NCCDP.
This review identifies a number of approaches to drug prevention among young people that could inform the planning of future interventions. Settings can be in a school or within a community; there are no reports of interventions within structured drug services (section 4.1). Content can be provided by classroom teachers (section 4.1), peers (section 4.6) or contributors from external agencies (section 4.6). There is a range of intervention types (eg school-based skills training, drama and media interventions) and different types of interventions can be integrated to form a multi-component programme.

School-based universal drug-prevention programmes that have a police input show some short-term effects in increasing knowledge (section 4.1.1). This seems to support the evidence from the mainstream literature that police-led interventions are effective in increasing knowledge in the short term. However, it should be noted that the studies did not separately examine the effectiveness of the police component. Also, due to poor methodology in these evaluation studies, it is not possible to draw any firm conclusions about programme effectiveness. Further research is needed to determine the efficacy of these programmes.

The use of drama is associated with a short-term increase in drug awareness, drug knowledge and attitudes towards drugs (section 4.1.2). This is not markedly inconsistent with the evidence from the mainstream literature. Theatre in education (TIE) approaches are found to be more effective than information dissemination methods in impacting on mediators (ie attitudes) of drug-use behaviour (see also Canning et al. 2004). However, it must be noted that these interventions are of short duration and it may be inappropriate to expect brief interventions to have a significant long-term prevention effect. Drama and theatre may be thought of as a form of delivery that holds the potential to interest and engage young people, but it must be integrated into existing programmes (eg curricular based), and adequate preparatory and follow-up work must be included if it is to have any lasting long-term impact.

A well evaluated, long-term multi-component programme, NE Choices, was not effective in preventing drug use (Botvin 1999; Flay 2000; Lloyd et al. 2000). Although outcomes were disappointing, the thorough process and outcome evaluations associated with this work provide a rich source of material for developing future activities.

It seems reasonable to conclude that LifeSkills Training (LST) does have some significant prevention effects (sections 4.1.4 and 4.6). However, these effects are mainly limited to legal substances and the impact on the use of illicit drugs is small. Also, the effectiveness appears to be confined to sub-groups of young people, such as students, whose drug use is already low, and/or to those who received the complete programme. This is likely to exclude those young people already using drugs or those at most risk.

Research findings reveal that drug-prevention programmes that are effective for young white people are similarly effective for black and minority ethnic populations (section 4.3). However, there is also evidence to suggest that adding components which increase the cultural sensitivity of the programme can enhance effectiveness. These findings are also consistent with evidence from the mainstream literature (eg Belgrave et al. 2004; Hawkins et al. 2004).

Media interventions are not effective in preventing drug use if they are used as a stand-alone intervention (section 4.5). More positive outcomes may be gained if they are included as a form of delivery in a multi-component drug-prevention programme, although this has yet to be assessed. More research is also needed to determine the efficacy of each type of media intervention (eg Internet, TV). The use of media advocacy warrants further investigation, as it has the potential to contribute to community drug-prevention efforts and to actively engage young people in local projects.

The social marketing approach can provide a framework for targeted drug-prevention media campaigns (section 4.5). There is evidence to suggest that campaigns based on this approach can effectively reach the target group and communicate campaign messages to them, with some evidence to suggest that behavioural change can be effected.

Drug prevention can be delivered by a number of different providers, each with the potential to make a
unique contribution. For example, peer-led approaches are flexible and versatile as they can be used in a variety of places such as schools and community settings. Peer leaders can be students, drug (ex-)users, drug workers, youth workers, those from minority ethnic groups and people who are socially excluded. Moreover, peer approaches can have features that aim to benefit the peer leaders. Providers must be used appropriately and not be expected to deliver content outside their expertise or professional role (eg police officers should not deliver health messages). More research is needed to determine the effectiveness of each type of provider in preventing drug use.

- Police officers should play the role of expert visitors who support school-based drug education (section 4.1.1). However, this may require some effort and time as it will involve partnership working among the police, schools and other relevant organisations. There needs to be a mechanism that assesses the extent to which police input contributes to creating good collaborative relationships between the police and schools (section 4.6).

- There is no difference in the level of long-term effectiveness of types of external contributors (section 4.7). This suggests that it is the preparatory and follow-up work that is critical.

Identify consistent findings/advice for effective good practice for young people aged 7–25, for both the general population and vulnerable groups

- In general, it is more challenging to effect behavioural change than attitudinal or knowledge change (eg DARE, section 4.1.1). This is also true for measuring changes in behaviour, attitudes and knowledge.

- Some evaluation reports provide good process information, including satisfaction surveys with teachers, students and parents (eg HPSA/Bristol Old Vic Drama Project, section 4.1.2). Although process information does not include data on outcome effectiveness, it is an important source of programme information.

- Harm reduction rather than total abstinence from drugs appears to be the goal favoured by many programmes and studies reviewed. Reducing risk factors while improving protective factors for drug use not only benefits drug prevention but also leads to positive social improvement and maximisation of personal potential (Sumnall et al. 2006).

- Many evaluation studies have made great effort to carry out studies with control groups. These studies, however, did not have rigorous methodology to make the effort worthwhile.

- There are research findings that support a view that drug prevention can be effective whether it is based on a theory or not (section 4.8). However, the findings could mean that the theory is valid but that it was partially or wrongly translated in the interventions. Also, the fidelity of implementation of the programme could have been low. Other features of drug-prevention programmes (eg types of deliverer, intensity and teaching style) may play more important roles in prevention of drug use than the content of the programmes.

Identify gaps and inconsistencies in the evidence base and provide a direction for future research commissioning

- Overall, there is a lack of methodologically sound studies. Methodological problems include a lack of random allocation of participants (or schools) to conditions, a total reliance on self-report, a lack of long-term measures, and an inappropriate choice of control groups and outcome measures. However, it must be noted that poorly-conducted studies are not uncommon among mainstream studies (for discussion see Canning et al. 2004; White et al. 2004).

- More research is required to assess mechanisms of drug use, to determine internal, external and developmental factors to improve understanding of drug use and to enhance the efficacy of drug-prevention programmes.

- Further investigations are needed for multi-component programmes to assess their overall effectiveness and the relative effectiveness of each component.

- It is estimated that the social benefits derived from to the prevention effects of these programmes exceed the cost of running the programmes (section 4.1.5). This is achieved largely because of the high social cost of drug use and not because of high efficacy in preventing...
drug use. The generalisation of this finding to the UK situation requires some caution and further investigation as the analysis in this study is solely based on research and survey findings from the USA.

• There is no difference in the level of effectiveness in preventing drug use for the long term among external contributors who support school-based drug education (section 4.7). This indicates that more research is needed to identify effective teaching methods that providers can employ.

• There are no studies that evaluated programmes aimed at young people aged over 16. This is a major gap in the evidence base as this is the age when drug use typically escalates. These programmes need to be evaluated for effectiveness.

Concluding remarks

The aim of this review is to increase the evidence base for drug prevention among young people by identifying and reviewing relevant grey literature. A quality assessment tool was developed and applied to the literature identified. The findings were expected to complement the existing evidence base (eg Canning et al. 2004), which has been predominantly built by researching peer-reviewed literature.

In general, many of the approaches reviewed correspond with those from the peer-reviewed literature, which suggests that some service providers are implementing the evidence base locally. However, from information included in evaluation reports it is evident that many projects are more likely to be based on intuition rather than evidence of effective practice, or they reference questionable research evidence and approaches. There is also misunderstanding about the relative value of mechanisms of delivery (eg theatre, media) and the actual content delivered. This results in increased focus on delivery at the expense of content. Many projects and authors also chose arbitrary outcome variables as indicators of success. While these allowed them to conclude that there were successful outcomes according to the intervention aims, they do not contribute to more meaningful and generalisable discussions of the efficacy of the adopted/developed approach.

Of the 290 reports selected for initial screening (out of a total of 1339 identified by the search strategy outlined in the methodology), only 26 were considered robust enough to withstand scrutiny by the critical appraisal tool. This not only reflects the generally poor quality of the prevention evaluations examined, but also highlights the usefulness of the tool and the importance of subjecting literature (of all types) to this type of review.

Although the strict selection criteria limited the potential grey evidence base, only those studies of (relative) high quality were examined. While it is important to consider a variety of sources of evidence to drive prevention strategies, it is vital that only those that report well-designed and well-implemented projects are considered further. In this respect, the literature examined in this review did not add anything new to the evidence base, but adds value by describing locally derived and adapted strategies that attempt to implement it. The problems faced by many projects trying to do so are clear and the review process is useful in identifying areas to which more attention should be paid.

There is a need for more effective communication and dissemination of the current evidence base. Similarly, many local projects require extensive guidance on evaluating their drug prevention work.* The commissioning of independent (eg university) researchers improved the quality of evaluations in some of the work reviewed, but this was often hampered by poor prevention intervention design and an apparent failure to include evaluation in the initial design of the project (ie evaluation was an ‘afterthought’).

* At the time of writing the UK Department of Health offers the DEPIS Plus service, an evaluation consultancy service providing individual consultancy support to meet the evaluation needs of drug education and prevention projects. See the Drug Education and Prevention Information Service (DEPIS) website at www.dh.gov.uk
1.1 Drug use in young people

While still a minority activity, illegal drug use is not uncommon among school-aged children in England. A recent national survey, in 2004, estimated that 10% of young people* aged between 11 and 15 reported taking illicit drugs in the previous month, with more (18%) reporting drug use in the previous 12 months (National Centre for Social Research/National Foundation for Educational Research 2005). Although these figures were lower than the same survey result from the previous year, the decline was only small (between 2% and 3%).

The most commonly used illicit drug was reported to be cannabis (11%), followed by glue/solvents (6%). The prevalence of class A drug use in this population has remained at 4% since 2001. Use of any drug tends to be similar in boys and girls up to the age of 14. After this age, there is a gender divide as more boys than girls report recent drug use (last year and last month), and they tend to take drugs more frequently. Finally, more boys than girls (aged 11–15) tend to report having ever been offered drugs, mainly cannabis (28% vs 22%); amyl nitrate ‘poppers’ (12% vs 10%), and psilocybin mushrooms (11% vs 10%). However, slightly more girls (aged 11–15) report having been offered volatile substances such as glue (15% vs 14%). Offers of any illegal drug are reported to be as high as 50% in other surveys using convenience sampling (ie population selection is based on easy availability and/or accessibility (School Health Education Unit 2005).

The European School Survey Project on Alcohol and Other Drugs (ESPAD), a pan-European school survey conducted every 4 years among 15–16 year olds, found that male and female school pupils in the UK consistently report higher levels of lifetime use of any illegal drug than other European citizens (36% vs 16%) (Hibell et al. 2004).

Data from the 2003/04 British Crime Survey (Chivite-Matthews et al. 2005), the most recent available for the general population, have indicated that drug use among young people (aged 16–24) increases somewhat as they get older. In this analysis, nearly a quarter (28%) of young people aged 16–24 used an illicit drug in the previous year. The most widely used drug was cannabis (24.8% in the previous year), which corresponds with the national survey of students aged 11–15 (National Centre for Social Research/National Foundation for Educational Research 2005).*

However, young people seem to use solvents/glue less as they get older, as only 0.5% of 16–24 year olds reported use in the previous year. The second most reported drug of choice in this age group was ecstasy (5.3% in the previous year), followed by cocaine (4.9%), amyl nitrate (4.4%) and amphetamines (4%). The use of class A drugs, excluding cocaine and ecstasy, in the previous year has been stable at around 8% since 1996. Moreover, young people’s preference for certain drugs has appeared to have changed with time: the British Crime Survey has revealed that reported use of cocaine and ecstasy has significantly increased since 1998, while the use of LSD decreased.

Detailed analysis of the 2003 Crime and Justice Survey has indicated that young people (aged 10–24) identified as belonging to vulnerable groups** account for more

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* In this review young people are, in accordance with Home Office definitions, those individuals aged under 25. Deviations from this age range are noted in the text.
than half of the total of young class A drug users, despite accounting for less than a third of the sampled population (Becker and Roe 2005). School truants and offenders reported the highest levels of use of cannabis, cocaine and ecstasy, although use of crack cocaine and heroin was less than 1%. These groupings are not exclusive—many young people will be part of multiple groups or transfer between groups and there may be particularly vulnerable sub-sets of young people within these classifications. Accordingly, this analysis found that members of more than one vulnerable group (eg a school truant living in care) reported higher levels of class A drug use than members of just one group.

1.2 Why young people decide to take drugs

The choice to use a particular drug involves sophisticated decisions and risk assessments, but drugs are usually taken to produce certain perceived effects and fulfil specific functions (Boys et al. 1999, 2001; Hansen et al. 2001; Williams and Parker 2001).

The World Health Organization provides the following broad categories of drug use:

- **experimental use** that might or might not continue
- **functional use** that serves some purpose, such as for recreation, but does not cause problems
- **dysfunctional use** that leads to impaired psychological or social functioning
- **harmful use** that causes damage to the user’s physical or mental health
- **dependent use** that could involve tolerance, and/or withdrawal symptoms if use is ceased, and continued use.

Increasing evidence indicates that certain childhood problems and personality traits, such as attention deficit behaviours and sensation seeking/impulsivity, are associated with an increased risk of experimenting with controlled drugs and developing drug use disorders in later life (Giancola et al. 1996; Lynskey and Hall 2001; Tapert and Brown 2000). However, these are associated risk factors, and do not represent medicalisation of young peoples’ drug use, ie drug use as a disease state.

There are different reasons for initial drug experimentation and continuation of use. Beliefs about drug effects may influence use behaviours independently of biological, sociocultural and psycho-pharmacological factors (Brown et al. 1980). For example, youths and adults with strong expectations of positive and arousing effects from future alcohol intoxication start and maintain drinking from an earlier age, and are more likely to develop drinking problems later in life (Blume et al. 2003; Goldman and Christiansen 1985). Initial experiences of cocaine largely determine whether use progresses beyond experimentation and there are strong links between the age of first opportunity to use a drug and actual age of first use (Davidson et al. 1993). For drug use to be maintained, users have to make sophisticated cost-benefit analyses (Parker et al. 1998). So, in general, positively perceived effects of drug use (eg enhanced mood, perceptual and aesthetic components) need to be sufficiently salient and more frequently experienced than negative effects (eg criminality, anxiety, ‘hangover effects’, effect on education, work, financial state and relationships) for use to be maintained (Van Etten et al. 1998).

However, people often continue to take drugs despite knowledge or experience of negative effects or the potential risks involved (Cottler et al. 2001). Users may accept these negative effects and symptoms as part of the overall drug experience and so not be unduly worried by them.

A wide variety of risk factors has been proposed to predict initiation into drug dependence from experimental and irregular use. These include laws and norms favourable towards drug use, extreme economic deprivation, neighbourhood disorganisation, physiological characteristics, family history of drug use, academic failure, early peer rejection and social influences to use drugs. The extent in variety of determining factors suggests that drug use may be a particular manifestation of a general underlying behavioural state, ie there are a range of factors that can give rise to drug use, among other potentially health-compromising behaviours.

In general, the social characteristics of the majority of young recreational drug users are not different from the non-drug using population (Aust and Condon 2003; Calafat et al. 1998). Most individuals stop using drugs when they reach their mid-20s, coinciding with dedication to career and family, or if they no longer desire the effects that drugs produce (Chen and Kandel 1998).

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* From the WHO Lexicon of alcohol and drug terms – www.who.int/substance_abuse/terminology/who_lexicon/en
1.3 Overview of national drug policy in England and Wales

The government launched its 10 year drugs strategy in 1998 (Tackling drugs to build a better Britain, updated in 2002 – Home Office 1998, 2002).* It provides a framework for designing and implementing policies to address drugs. Prevention of young people’s drug use is one of the four elements of the strategy, alongside drug use and community, treatment for drug use, and drug availability. In particular, the Spending Review 2004 (HM Treasury 2004) Public Service Agreement (PSA) states that by 2008 there should be a reduction of use of all class A drugs and the frequency of use of any illicit drugs among all young people under the age of 25, especially by the most vulnerable (see definition in footnote on p7).

Focusing on young people is particularly important as this age group reports the highest level of drug use in the general population and will suffer the most years of ill health and/or social difficulties if adversely affected. There may be negative effects of drug use on psychological development and accumulating evidence suggests that younger initiates perform worse at school and have fewer employment prospects than abstainers (Hickman et al. 2004; Lynskey and Hall 2001). Early initiates are also more likely to go on to use or become dependent on multiple substances (Chen et al. 2005; Lynskey et al. 2003).

According to the Updated Drug Strategy (Home Office 2002), drug prevention initiatives in the UK have grown markedly since 1998. One of the most high profile of these is the FRANK initiative (www.talktofrank.com), which offers drug-related information to users and their friends and family. The majority of primary (80%) and secondary schools (95%) have adopted drug education policies (Department for Education and Skills 2004). Drug education in schools is now widely available and is a part of the personal, social and health education (PHSE) curriculum, and the National Healthy Schools programme** includes drug education as one of its core themes. The Connexions service, which, as part of its wider activities, identifies young people with drug problems and provides appropriate referral or support, now covers most of England (80%). Treatment is offered to young people with drug problems in most (80%) of the Drug (and Alcohol) Action Team areas. All Youth Offending Teams (YOTs) have named drugs workers available to support young offenders with drug problems. Positive Futures* has been offering diversionary sports and art activities to young ‘vulnerable’ people.

Tackling Drugs – Changing Lives: Keeping Communities Safe from Drugs (Home Office 2004) is a cross-governmental report summarising the progress made against targets, and describes a range of policies and interventions to decrease illicit drug-related harm by 2008. It states that drug prevention programmes would be improved and drug education offered to all young people, and increased services and support would be available for those identified as key risk groups for drug use/problems. It also provides a framework for preventing harm associated with drug use from early years to adulthood.

The Every Child Matters Change for Children programme (2004)** aims to reform children’s services to enable services to reach their full potential, tackling not only substance use but also the risk factors that may lead to substance misuse. ‘Choose not to use illegal drugs’ is part of the ‘Be healthy’ objective of the programme. This work is closely linked to the Updated Drug Strategy and contributes to the PSA target above. The Choosing Health public health white paper (Department of Health 2004) considers drug use in the context of general population health, and aims to improve the provision of health information and advice to young people.

1.4 Drug-use prevention in young people

1.4.1 Introduction

The primary aims of drug-use prevention are to prevent the onset, delay the initiation, promote cessation and reduce the harms of drug use. Prevention also aims to reduce those factors that promote the risk of initiating drug-use behaviours and substance-use disorders, and to promote

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* The strategies in Wales, Scotland and Northern Ireland are: Tackling Substance Misuse in Wales: a Partnership Approach; Tackling Drugs in Scotland: Action in Partnership; and Drug Strategy for Northern Ireland.

** The National Healthy School Standard (www.wiredforhealth.gov.uk) has three strategic aims: to reduce health inequalities, promote social inclusion and raise educational standards. Themes include PSHE, citizenship, drug education (including alcohol and tobacco), emotional health and wellbeing, healthy eating, physical activity, safety, and sex and relationship education.

* www.drugs.gov.uk/young-people/positive-futures

** See www.everychildmatters.gov.uk/aims/ for more information.
protective factors that improve resistance to risk. Drug use has direct and indirect health, economic and social costs, and problematic patterns of drug use can be a burden on families and communities. Increased understanding of the reasons why young people use drugs (section 1.2), and the role that drugs play in their lives, means that drugs cannot be considered in isolation, and there is a strong relationship between drug use and participation in other risky social and personal behaviours and activities. The most successful prevention interventions provide generic and specific support in response to the changes taking place in young people’s lives (eg healthy development, changes in independence) (Canning et al. 2004). Drug-use prevention is therefore a means of addressing a range of health-related behaviours, and if used appropriately is a means of reducing health inequalities and promoting social inclusion (Canning et al. 2004).

1.4.2 Evidence base for drug-use prevention

Prevention targeted at young people is most effective when designed and implemented in accordance with evidence-based principles of effectiveness. Drug-use prevention draws from wide-ranging areas of research, incorporating aspects of psychology, sociology, psychopharmacology, biological and behavioural sciences, public health, policy, culture and the media. Settings for interventions can be school and/or community-based (including community services such as primary care and criminal justice), and the intensity and lengths of a programme can be varied.

There are a number of different programme approaches. Information dissemination provides knowledge about drugs (eg effects of taking drugs). Affective education, on the other hand, aims to impact positively on intra-individual variables such as self-esteem. The Project ALERT and LifeSkills Training (LST) programmes are frequently implemented and adapted (whether accurately or not) school-based universal drug prevention programmes developed (and mainly delivered) in the USA, and aim to equip students with general and specific skills and abilities to overcome social influences to take drugs. Other programmes use art and sport to promote prevention of drugs and community engagement (eg Positive Futures). These programmes can be delivered by adults (eg teachers, police officers, health professionals) and/or young people (eg social and/or school peers), and the choice of facilitator can have important effects on the outcome (Mellanby et al. 2000).

It is beyond the scope of this review to provide a thorough narrative of contemporary drug prevention, but in initial attempts to build an evidence base, the Health Development Agency (now part of the National Institute of Health and Clinical Excellence, NICE) published an evidence briefing for drug prevention among young people (Canning et al. 2004). It systematically reviewed tertiary-level evidence* on drug prevention aimed at young people aged between 7 and 25.

Overall, the evidence briefing reported that school-based drug prevention programmes can have positive but rather small and short-term impact on delaying the onset of drug use among non-users and reducing the amount of use among users (White and Pitts 1998). While this may be deemed a success in the general population, the usefulness of delayed onset in ‘at-risk’ populations might be questioned. If drug use is considered to be a product of generic risk behaviours, then if these are not addressed simultaneously it will reoccur.

However, more detailed examination of the research evidence has highlighted that some features of drug-prevention programmes are more effective than others, and go some way to providing a ‘whole person’ approach. Effective programmes have tended to have a mix of focused and generic components/interventions, and those that include interactive elements (eg discussion, debate, group projects) show greater effects than non-interactive programmes (eg lecture, information leaflet) (Black et al. 1998; Parkin and McKeganey 2000). Furthermore, multi-component programmes (ie those that address several life issues by different means and settings) can have a positive impact on prevention of drug use and/or drug problems. These may involve, for example, school, parents, community and mass media (Botvin 1999; Flay 2000; Lloyd et al. 2000), although some of these approaches are more (cost) effective than others. Police-led drug education (eg Drug Abuse Resistance Education (DARE)) can have a short-term impact on attitudes towards the police and drug knowledge, but its effect on use behaviours is limited (Allot et al. 1999).

Nevertheless, the evidence briefing also identified inconsistencies in evidence. Effective programmes tend to have booster sessions or additional elements that have a similar purpose. However, the strength of evidence on the

* Reviews and syntheses of existing systematic reviews and meta-analyses.
relationship between booster sessions per se is not strong (Coggans et al. 2003; Cuijpers 2002). Intensive programmes that have a large amount of dedicated curriculum time (eg 10 or more sessions) have demonstrated programme effectiveness. However, intensity cannot solely account for effectiveness, since some less intensive programmes have shown positive outcomes (Black et al. 1998; White and Pitts 1998), and recent work offering brief interventions to psychostimulant users has reported short-term (3 month follow-up) successes (McCambridge and Strang 2004). Furthermore, LifeSkills Training (LST) has demonstrated long-term prevention effects for tobacco, alcohol and cannabis use (Dusenbury et al. 1997; White and Pitts 1998), albeit small, and limited to a sub-population of participants (Coggans et al. 2003; Gorman 2002) and those who received the programme relatively completely (Coggans et al. 2003). The evidence briefing also identified many gaps in the research base. There is a lack of review-level evidence for the effectiveness of school-based interventions among primary school age children in drug-use behaviour (Belcher and Shinitzky 1998; Lloyd et al. 2000), and there has been little consideration of the transition between different levels of education (eg primary to secondary school). Also, the majority of British studies have focused more on conducting process rather than outcome evaluations* of drug-prevention programmes (Lloyd et al. 2000; White and Pitts 1998). Furthermore, there is a lack of methodologically sound evidence for targeted interventions for particular groups of young people (eg ‘vulnerable’ young people) (Dusenbury et al. 1997; Edmonds et al. 2005; Smyth and Saulnier 1996) including those not based in schools (White and Pitts 1998). Methodological issues include low participation rates, inappropriate choice of outcome measures, absence of appropriate control groups for comparison and high rates of attrition (Allot et al. 1999).

A lack of similarity in research designs between evaluation studies was also highlighted, which makes meaningful comparisons and combination of evidence difficult (Dusenbury et al. 1997). Many studies have also been over-reliant on self-reported measures of drug use, which are not the most accurate measures (Fendrich 2005; Percy et al. 2005), and very few used more objective toxicological data, such as saliva, hair or blood tests (White and Pitts 1998).

1.4.3 Evidence into practice

Despite the evidence base highlighting (small to moderate) successes in some prevention approaches, it is pertinent to consider whether theory- and research-driven programmes can be successfully implemented in practice. This has been described as the efficacy-effectiveness interface (ie the power of an intervention to produce an effect and subsequent production of the desired effect in practice) and requires investigation in its own right (August et al. 2004). Key factors characterising research-based practice and its application are discussed in a NICE Evidence into practice briefing, authored by the NCCDP (Sumnall et al. 2006). Briefly, to improve the chances of successful implementation there are a series of factors, drivers, barriers and challenges that need to be considered. These include:

- **client factors** – eg the nature of the target group and their specific needs
- **practitioner factors** – eg the training needs and work focus of service deliverers; process and fidelity of implementation
- **structural factors** – eg current service provision and gaps, local strategies, partner organisations and champions, multi-agency working
- **political factors and national drivers** – eg national drugs strategy, local priorities.

Careful consideration of these factors provides a framework for strategic planning and programme delivery (Kelly et al. 2003). Success often depends on practitioner knowledge of local population groups/settings and health improvement needs. While the scientific evidence often provides a framework of plausibility for prevention interventions, practitioner knowledge and practice provide a basis for understanding the likelihood of success of particular interventions. However, it is not possible to rely on traditional sources of evidence (ie peer-reviewed academic texts) to complete our understanding of these, as they are rarely available.

1.5 The role of grey literature in strengthening the evidence base

As has been discussed, the HDA’s evidence briefing identified ‘what works’, ‘what is less likely to work’, and inconsistencies and gaps in evidence. However, as most of the research evidence came from mainstream studies,

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* Process evaluation focuses on how the intervention was implemented and operated, whereas outcome evaluations examine whether the objectives of an intervention were achieved, eg reduction in frequency of drug use.
it can be argued that this reliance on published data might have introduced bias in the resultant evidence base. Practitioner experience, innovative mechanisms of implementation and indications of effectiveness (or failures) may never be distributed to wide readerships.

Equally important, details of work that did not achieve the anticipated/hypothesised outcomes are rarely disseminated. Academic journal editors, for instance, are more likely to accept studies that produce significant positive, but not negative or non-significant, results (Sussman 2003; Werch and Owen 2002). Dickersin and Min (1993) calculated that this was approximately six times more likely. This is not a product of poorly-conducted work, as bias in favour of significant findings is present even when the quality of studies is controlled (Stern and Simes 1997).

Werch and Owen (2002) reviewed the extent and characteristics of drug-prevention studies that produced negative results. In total, 17 negative results studies were identified. However, the authors argue that because their review did not include many unpublished prevention programme studies, and since peer-reviewed journals accept significant positive studies more readily, the true magnitude of iatrogenic* effects of drug-prevention programmes could not be determined. This would lead to an over-emphasis on the apparent successes of particular prevention approaches in the literature, which could prove costly to commissioners responding to ‘evidence-based’ funding bids. Also, studies were less likely to be published if they were unfunded (or poorly, or internally funded) and/or had smaller sample sizes (Conn et al. 2003).

Whereas this latter feature would be a concern in randomised clinical trials, or community population studies, resulting in a loss of statistical power, it may have described an innovative or promising pilot project/intervention, or offered access to hard-to-reach populations (Conn et al. 2003). For example, the authors of a recent review of costs and effects of strategies to increase immunisation in developing countries conclude that the inclusion of grey literature in their work provided a more up-to-date and geographically heterogeneous analysis (Batt et al. 2004).

Cooper and colleagues (1997) reported that factors other than negative results deter some researchers from publishing their results. About two-thirds of completed studies that had been approved by a relevant research review committee (meaning the study was judged to be of high standard) did not result in publication. It was reported that about a half of these studies did not reach publication owing to reasons other than non-significant findings, for example a lack of interest and targets other than journals (eg internal or funder report, student thesis).

Selective availability can result from publication bias, publication procedures and factors associated with the researchers (eg researchers’ lack of interest in publication) and it introduces bias in the evidence base. Reduction of bias can be achieved by including non-peer reviewed papers in systematic reviews (Hopewell et al. 2002). Such materials refer to grey literature. Alberani and colleagues have defined grey literature as: ‘All that non-conventional material including reports, theses, conference proceedings, technical specifications and standards, translations, bibliographies, technical and commercial documentation, and official documents’ (Alberani et al. 1990). The Third International Conference on Grey Literature in Luxembourg in 1997 added: ‘That which is produced on all levels of government, academics, business and industry in print and electronic formats, but which is not controlled by commercial publishers.’

However, a problem with including this type of material is that if the same inclusion and exclusion criteria for assessing robustness of studies were applied to both types of literature then it would be highly likely that many grey literature studies would be discarded. This is because the methodological quality of peer-reviewed studies tends to be superior to that of many types of unpublished studies (or there is a perception of superiority, especially to that produced by practitioners and service providers who may have received little appropriate formal training) (Fountain 2002).

Despite criticisms (Sacks et al. 1996), it is plausible that many grey literature studies are well-designed and conducted, but are excluded from review on presumptive criteria (Easterbrook et al. 1991). Some are conducted by contracted university researchers with experience of publishing in the peer-reviewed arena, and subject to rigorous internal quality assurance protocols at departmental, faculty, and steering group levels. The methodological rigour of grey literature studies may be

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* Harm that is induced by the intervention itself.
addressed in subsequent systematic reviews by explicit a priori exclusion and inclusion criteria related to study characteristics. The development and adherence to robust critical appraisal tools increases the compatibility of such approaches with the more traditional literature review.

Also, even if some types of grey literature studies suffer from poor methodology and are excluded from review, they still have the potential to provide a topical and valuable description of current drugs activity (Fountain 2002).

There are protracted periods between submission of a manuscript and peer-review publication. As drug use is often a dynamic phenomenon and behaviours are locally determined, it requires a relatively rapid assessment to ensure efficient responses (Daniulaityte et al. 2004; Siegal et al. 2000). Reliance on peer-reviewed publications results in a delay of dissemination of useful information. Moreover, unpublished studies tend to provide detailed information of process and implementation, both of which can be missing from scientific papers (Fountain 2002). These types of data can highlight important information such as barriers to implementation and the solutions to these barriers, which could inform practice.

Some authors have suggested that without the inclusion of grey literature, meta-analyses* may over-represent studies with statistically significant findings (ie false positives and negatives), and inflate effect-size estimates (ie the effectiveness of a particular intervention is overstated). Grey literature is therefore an important part of the evidence base for practice in complex fields such as drug prevention, as it has multiple stakeholders and a lack of predictability, standardised approaches and outcomes.

1.6 Aims of this review

The aim of this review is to increase the evidence base for drug prevention among young people by systematically reviewing those drug-prevention materials that do not traditionally find their way into systematic reviews, namely grey literature.

As previously discussed, one of the disadvantages of including unpublished studies in a systematic review is associated with their quality. When some of these reports are systematically appraised, criteria for inclusion (and exclusion) and systematic appraisal need to be relatively tolerant, compared with peer-reviewed articles. However, to be confident about the findings from included work, critical appraisal should distinguish between research findings which are based on robust methodology, and those which are only suitable for providing contextual information, or offer insights into ways of working. To assist with this process a set of suitable criteria was created, based on past papers that reviewed grey literature (eg White et al. 2004), and which provided guidelines for evaluation of qualitative studies (Greenhalgh and Taylor 1997; Yardley 2000).

Another disadvantage of the inclusion of grey literature in a systematic review is that it is often difficult and time-consuming to locate and obtain unpublished literature (Hopewell et al. 2002). To achieve a relatively wide search of grey literature, the Internet was used extensively. Drug prevention experts, Drug (and Alcohol) Action Teams (D(A)ATs) and specialist libraries were also consulted.

1.6.1 Research questions

There are three research areas for this study:

- highlight what interventions in the grey literature suggest a potential to prevent drug use and/or reduce drug-related harm among young people aged 7–25
- identify consistent findings/advice for effective and good practice for young people aged 7–25 years both among the general population and for vulnerable groups
- identify gaps and inconsistencies in the evidence base, and provide a direction for future research commissioning.

The overall aim of this work is to complement the evidence base built by mainstream literature (eg Canning et al. 2004; McGrath et al. 2006). To compare and develop these findings in the wider body of knowledge, review findings are discussed in the context of the peer-reviewed literature. This is designed to provide supportive theoretical and practical evidence for data drawn from ‘grey’ documents. The academic literature also provides an international perspective, allowing comparison with approaches and findings from the UK and abroad.

* Meta-analysis is a set of statistical procedures designed to accumulate experimental results across independent studies and is a widely accepted method of research synthesis (Lipsey and Wilson 2001).
2 Methodology

The methodology proceeded in several stages, described in full below. The stages were adapted in part from strategies developed by Simkhada et al. (2005) and White et al. (2004). First, a method of collating grey sources and literature on this subject was developed, based on standard systematic review methodology. Key terms and search criteria were established from earlier academic review publications (Canning et al. 2004; McGrath et al. 2006). A critical appraisal tool, equivalent to that used for standard academic systematic reviews, was developed specifically for this review, and the value and quality of evidence found was assessed.

2.1 Search strategies for identifying relevant grey literature

Grey literature is of limited distribution. This makes it harder to find and obtain compared to published academic literature (Alberani et al. 1990). Therefore, four search strategies were used to identify work (Figure 1). These were:

- use of specialist libraries and databases
- web-based searches (including online databases)
- consultation with the National Collaborating Centre for Drug Prevention (NCCDP) network group of drug and health professionals
- consultation with D(A)ATs.

2.1.1 Use of specialist libraries

Two specialist libraries in England were contacted to identify unpublished reports on substance use/misuse prevention among young people:

- DrugScope (www.drugscope.org.uk), an independent centre of expertise on drugs based in London. One of its services is a customised literature search. This was requested with a detailed description of the search (post-1998 UK and USA outcome and process evaluation of primary and secondary drug prevention projects/programmes, targeted towards young people aged between 7 and 25). In total, 99 documents or book chapters were identified and these results were returned with bibliographies and abstracts.
- HIT (www.hit.org.uk), an organisation based in Merseyside that runs media campaigns and training courses on effective interventions for substance use/misuse, community safety and other public health concerns. It also runs a library service, and the library collection was hand-searched to identify relevant unpublished substance use reports and documents. This search process found 20 references and full reports for each were obtained for further screening.

2.1.2 Web-based searches

A list of websites and electronic databases that might include grey literature was constructed based on previous work (Coomber et al. 2003), an Internet search engine (Google) and advice from experts in this field. This resulted in 123 potentially useful websites and databases (Appendix 4 and 5).

Each of the 123 sources was examined to determine whether it contained relevant information for this review. A website or database was selected for the next stage of this screening process if it included substance use/misuse literature and/or a list of (grey literature) publications, or actual documents relating to issues on substance use/misuse among young people.

Of the 123 websites/sources, 71 were judged to be relevant for review by two researchers (Appendix 3). The next stage involved identifying references relating to the
aims of this review from these sources. Search strategies differed among the sources, depending on how these websites were designed for the user. A typical search involved using the site’s database or search facility, using search terms for ‘drugs’ (drug and substance use or abuse or misuse), ‘intervention types’ (prevention, education and interventions) and ‘population types’ (youth, young, children etc). When there was no database or search function on a website, the site was hand-searched for relevant publications. In some cases, sources were contacted directly to identify potentially useful reports. Out of this process, a list of possible references with bibliographies and abstracts (when available) from each source was constructed. This process generated a total of 1115 references (including duplicates of the same documents).

2.1.3 Consultation with NCCDP network group members

This electronically convened NCCDP network group (n = 68) was established to comment on literature, advise and offer expertise, and offer general guidance on all NCCDP activities, and draws on expertise in policy, research, practice and strategy. Members were contacted via email for assistance in locating reports on substance use/misuse evaluation studies and relevant unpublished articles relating to the prevention of drug-related problems. Seven members responded with information or reports and this resulted in 74 pieces of work (Appendix 5).

2.1.4 Consultation with D(A)ATs

A total of 127 D(A)AT coordinators in England and Wales were contacted directly by post or email to identify and collect unpublished evaluation reports of substance use/misuse prevention projects they had commissioned or produced. Thirteen responses to this request for information and/or reports were received, resulting in 17 reports (Appendix 6).

2.1.5 Total identified

Besides these four identification strategies, 14 reports were identified from other sources (eg advice from colleagues). A total of 1339 reports were identified by these searches (including some duplicates).

2.2 Selection

2.2.1 Screening (selection phase 1)

Titles and abstracts (if available) of the references generated were screened and evaluated by two reviewers to determine whether the full report should be retrieved. Inclusion criteria at this stage of screening were:

- outcome or process evaluations
- universal, selective, and indicated prevention interventions
- services within Tiers 1 to 3
- longitudinal studies
- issues or topics related to the effective substance use/misuse prevention research
- ‘upstream’ intervention that included learning from a range of non-clinical interventions, eg reports of policy, sociological and psychological interventions and action research
- targeted at young people
- post-1998 reports
- both UK and international settings.

From the total of 1339 reports identified, 495 reports were selected. It should be noted that since a list of potential references was constructed for each source at the identification stage, there were many duplicates of items among different websites, databases and sources of information. It must also be noted that some key reports that were published before 1999 were included, as they reported on projects that were still in existence and were recommended by the NCCDP network group.

Methods of retrieving these reports varied depending on the sources. Many of these items were available electronically and downloaded from the websites from which they were identified. However, some items were retrieved by the British Library Document Supply Service. Other articles were obtained by contacting identified organisations directly, or from researchers who had conducted similar reviews.

Of the 495 reports identified, 409 were retrieved by the cut-off date (31 December 2004). However, as many items were identified from more than one source of information, the actual number of retrieved reports was 290.
2.2.2 Preliminary selection (selection phase 2)

Retrieved reports were independently appraised by two reviewers. This appraisal process involved assessing the quality of each using key inclusion criteria, which were derived from existing guidelines for evaluating qualitative and grey research (Box 1) (eg Greenhalgh and Taylor 1997; White et al. 2004; Yardley 2000). These were supplemented by the HDA Critical Appraisal Tool (see Appendix D in Canning et al. 2004, or available on request from the authors).

Box 1: Inclusion/exclusion categories

<table>
<thead>
<tr>
<th>Category A (Accepted)</th>
<th>Reports judged to have a sufficient quality to be included in the next stage of selection process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category B (Background)</td>
<td>Reports judged to provide background or contextual information</td>
</tr>
<tr>
<td>Category R (Rejected)</td>
<td>Reports judged to be of no use for purpose of this review</td>
</tr>
</tbody>
</table>

At this point, judgements were made based on the quality of information/data described in the reports. In particular, it was assessed whether they:

- had a clear research question(s)
- stated key findings
- gave sufficient details on population(s) studied, interventions, study design, method of analysis and evaluation outcomes.

This screening process generated 26 Category A, 136 Category B and 128 Category R reports.

2.2.3 Selection and data extraction (selection phase 3)

All 26 Category A reports were further screened by the two reviewers to choose data that would be included in the main review. This involved detailed reading and appraisal of reports, and key data regarding aims, methodology and findings were extracted using the proforma (Appendix 7).

At this stage, the quality of research findings was assessed in terms of:

- The content: it should provide topical and valuable snapshots of the current situation on substance use/misuse prevention programmes
- Methodology: the strength of the evidence.

Each report was either classified as ‘include’ or ‘not include’. All of the 26 reports were judged to be worthy of inclusion in the review.

2.3 Academic literature

The search strategy was adapted from the one described in the HDA evidence briefing on drug misuse prevention (Canning et al. 2004), but focused on drug use in populations of vulnerable young people. This was supplemented by work already identified for the NCCDP update of the evidence briefing (McGrath et al. 2006); hence the search was not as comprehensive as previously described.

Identified abstracts were inspected by two reviewers and retrieved if considered suitable for the review, according to the inclusion and exclusion criteria below (for included papers see reference list):

- the paper described research relevant to the topics identified in the grey literature
- the paper dealt with issues relating to the effectiveness of drug use and prevention research in young people
- the paper identified current topics relating to drug use and prevention (including methodology) in young people
- the paper was a primary study, review, or meta-analysis of drug use and prevention in young people.
Figure 1: Grey literature search and appraisal strategies

- Specialist libraries (s = 2 sources)
- Web-based searches (s = 123)
- Consultation with Network Group (s = 66)
- Consultation with D(A)AATs (s = 127)

- DrugScope HIT (n = 119 articles)
- Checked for relevance (s = 73 sources)
- Search for possible references (n = 1115)*

- Screening of article title and abstract (n = 1339)*
  - Rejected (n = 844;* 63%)
  - Accepted (n = 495;* 37%)

- Preliminary selection (n = 290)
  - Category R (n = 128)
  - Category A (n = 26)
  - Category B (n = 136)

- Selection (n = 26)
  - Include in the main review
  - Not include in the main review

* Total includes duplicate items; s = number of sources; n = number of references; Category R = rejected reports; Category A = accepted reports; Category B = reports used as background material.
3 Literature identified and organisation of data

Of the 26 selected reports, 10 evaluated outcomes of drug prevention programmes (Benett et al. 1996; Bigger 1998; De Witt et al. 1998; Eisen 2002; Frith 1997; Needham 1999; Orme and Starkey 1998; Phelps et al. 1999; Stead et al. 2000, 2001), and three were process evaluations (Henderson 1998, 2000; Parkin 1998). There were two meta-analyses (Bledsoe 2002; Derzon and Lipsey 2002), one systematic review (White et al. 2004), and one economic evaluation study (Caulkins et al. 2002). The remaining nine reports were reviews (Coggans et al. 2003; Hastings and Stead 1999; National Drug Research Institute and Centre for Adolescent Health in Australia 2004), or primary studies (eg surveys, case studies etc) (Eadie et al. 2002; Lowden and Powney 2000; Measham et al. 1998; O’Connor 1999; O’Connor et al. 2001; Shiner 2000). These reports were organised into eight categories, according to shared key themes (Table 2).

**Note:** Documents are presented in narrative not alpha order in each group both here and in the findings section.

<table>
<thead>
<tr>
<th>Main topic of focus</th>
<th>Author(s) (year)</th>
<th>Sub-themes</th>
<th>Types of document (country, if non-UK)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal school-based prevention</td>
<td>Phelps et al. (1999)</td>
<td>Police input</td>
<td>Outcome evaluation report published by the Education Advisory Service for Shropshire and Telford &amp; Wrekin</td>
</tr>
<tr>
<td>Frith (1997)</td>
<td></td>
<td>Police input</td>
<td>Outcome evaluation report for the Metropolitan Police</td>
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<tr>
<td>Bigger (1998)</td>
<td></td>
<td>Police input, parental involvement</td>
<td>Outcome evaluation report, Buckinghamshire Health Authority</td>
</tr>
<tr>
<td>Benett et al. (1996)</td>
<td></td>
<td>Police input, parental involvement</td>
<td>Outcome evaluation report, University of Huddersfield, Centre for Research in Education</td>
</tr>
<tr>
<td>Needham (1999)</td>
<td></td>
<td>Drama</td>
<td>Outcome evaluation report, York University and York City Council</td>
</tr>
<tr>
<td>Orme and Starkey (1998)</td>
<td></td>
<td>Drama</td>
<td>Outcome evaluation report, Bristol North Primary Care Trust</td>
</tr>
<tr>
<td>Coggans et al. (2003)</td>
<td></td>
<td>LifeSkills Training</td>
<td>Review report for Effective Interventions Unit</td>
</tr>
<tr>
<td>Main topic of focus</td>
<td>Author(s) (year)</td>
<td>Sub-themes</td>
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<tr>
<td>Australian review</td>
<td>National Drug Research Institute and the Centre for Adolescent Health in Australia (2004)</td>
<td>Outcome evaluations, risk and protective factors</td>
<td>Monograph</td>
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<td>Targeted interventions</td>
<td>De Witt et al. (1998)</td>
<td>School-based targeted prevention</td>
<td>Outcome evaluation report, Addiction Research Foundation (Canada)</td>
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<td></td>
<td>Eadie et al. (2002)</td>
<td>Media advocacy</td>
<td>Review report, Centre for Social Marketing, University of Strathclyde</td>
</tr>
<tr>
<td></td>
<td>O’Connor (1999)</td>
<td>Police input</td>
<td>Report by the Drug Education and Prevention Research Unit, Roehampton Institute</td>
</tr>
<tr>
<td></td>
<td>O’Connor et al. (2001)</td>
<td>Police input</td>
<td>Report for the Metropolitan Police</td>
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4 Review findings

4.1 Universal school-based drug prevention

Of the 26 reports identified, 11 were studies of school-based universal drug prevention, reflecting the popularity of delivery in this environment in the UK and close connections with national policy (e.g., Allott et al. 1999; see section 1.3). Four out of the 11 reports evaluated drug-prevention programmes that had a police input (Benett et al. 1996; Bigger 1998; Frith 1997; Phelps et al. 1999). Two looked at drug-prevention drama programmes (Needham 1999; Orme and Starkey 1998). Two by the same research team provided process evaluation and outcomes of a school-based long-term multi-component drug-prevention programme (Stead et al. 2000, 2001). Two examined the effectiveness of LifeSkills Training in preventing drug use (Coggans et al. 2003; Eisen 2002). The remaining report was an economic evaluation study that analysed social benefits of school-based drug-prevention programmes (Caulkins 2002).

4.1.1 School-based universal drug prevention and police input

Four reports examined drug prevention programmes with a police input (Benett et al. 1996; Bigger 1998; Frith 1997; Phelps et al. 1999). Most of these interventions were multi-component programmes and had other features such as parental involvement. There is evidence from mainstream literature to show that this type of intervention is more effective in preventing drug use than other approaches (Botvin 1999; Flay 2000; Lloyd et al. 2000). However, the extent to which individual components contribute to the overall effectiveness of multi-component programmes has not been rigorously tested. The four evaluation studies identified in this review were not an exception, as they only examined the overall effectiveness of the programmes. It is therefore not possible to determine whether observed effects were directly a result of police involvement. In this section, the four studies are reviewed for their overall effectiveness, with a special emphasis on the police input.

STAR (Stop/Think/Act/Reflect) (Phelps et al. 1999)

STAR (based on the Stop/Think/Act/Reflect model) was a weekly drug education programme for pupils aged between 9 and 11, and is one of the few that has targeted primary schoolchildren in the UK. According to the programme designers, its aim was to positively impact on potential mediators of drug use (e.g., drug-related knowledge and skills) so that pupils could make informed decisions about the use of licit and illicit drugs. It was a joint initiative between the police and schools, a shift from earlier exclusively police-led drug education in the area.

The programme consisted of seven lessons on drug-related knowledge, social pressures to take drugs, self-esteem, drug awareness, assertiveness, decision-making and skills training, and was delivered by uniformed police officers and/or teachers (89% of teachers conducted joint teaching). A variety of teaching methods were used to deliver the programme, such as individual and group work, discussion, the use of video and role-play. Pupils were also given homework (80% of schools) with the aim of promoting drug-related communication between pupils and their parents, although the nature of this work is not described.

Twenty-nine schools from Hereford, Worcester and Shropshire participated in this study. Learning outcomes, knowledge and skills gain were assessed immediately after each session by a self-report questionnaire. Results of the immediate post-session evaluations (n = 1109) suggest that STAR was effective in increasing pupils'
drug-related knowledge, awareness and skills. For example, the majority of the pupils (81%) reported statements that indicated possession of drug-related personal and social skills (eg ‘I learned I could be assertive’); nearly half of the pupils (42%) reported that they had learned not to take drugs; while more than a third (37%) commented that they had learned more about the effects of various types of legal and illegal drugs. Also, it was reported that the programme facilitated parent-child communication about drugs.

Although these outcomes appear to highlight positive programme effects, it is difficult to ascertain the true extent of effectiveness, as the study did not have baseline measures, a control group or follow-up data. Reported outcomes such as increased parental communication may have been due to discussion of the day’s events (lessons) within families, and not focused on specific learning and behaviours about drugs. It is also important to note that 71% of parental questionnaires were completed by the female carer of the child. Follow-up times were short (for parents, < 1 week after receiving education; for children, as part of the lesson’s activities) and therefore there was no indication of the time course of effect.

Self-reported learning is conceptually different from objective increases in knowledge or skills, as children may have simply been recalling key themes from lessons, so reflecting memory of events. This interpretation is supported by a low percentage of pupils recalling individual project themes, with none exceeding 45%.

Another limitation of this study concerns the validity of responses from the pupils, as the outcomes relied solely on self-report. Furthermore, the fidelity of implementation of the programme was not consistent among schools. For example, a maximum of half the teachers who responded to the STAR teacher evaluation reported that they reviewed their pupil’s learning, or included all the suggested activities in each unit; this was as low as 10% for units exploring persuasion and influence. Also, schools had a variable amount of police input.

The authors recognise these weak methodological points, and it is argued that the evaluation exercise was developed as a learning tool for pupils to reflect on what they had learned during the sessions. However, there is no assessment of the nature and quality of this ambiguous outcome.

One of the highlighted benefits of this project, though, was the shift of responsibility of education delivery from police officers to teachers, who have the skills and ability to integrate lessons in existing curriculums.

CLEAR D (Bigger 1998)

CLEAR D (Combined Local Educational Approach Relating to Drugs) was established in 1995 and was a universal drug education programme targeted at 10–11 year old pupils in Buckinghamshire (Bigger 1998). The main aim of the programme was to prevent drug-related crime and ‘drug abuse’ by positively impacting on children’s attitudes towards drugs, decision-making and self-esteem. It was a multi-component programme involving schools, police, a youth community service and parents. However, the main part of the programme was sessions delivered by police officers.

There were two police-led sessions, which addressed drug-related knowledge, decision-making and problem-solving skills. Teachers also delivered sessions, although the aim of these was only to prepare and to follow-up the police-led activities. A youth and community service (Drugs Prevention Education for Adults Project) provided the parents with a presentation session on drugs knowledge in support. Several types of outcome measures were taken before and after the intervention (immediate, 1 year and 2 year follow-up), including those that aimed to assess drug-related knowledge and drug use.

The quasi-experimental design compared 365 CLEAR D pupils with 102 no-treatment control pupils (sampled from a single school in a neighbouring region). Baseline drug use was very low for both types of school (2–3.5% pooled mean in experimental schools vs 1.4–5.9% in the control school). Programme effectiveness was found for drug use and knowledge. Compared to control groups, CLEAR D pupils demonstrated more ‘complex knowledge’ (not defined) about drugs at 1 year follow-up (76% CLEAR D pupils vs 71% control pupils). Moreover, percentages of self-reported drug use were smaller among CLEAR D pupils than control group pupils, including smoking (never smoked, 84.9% and 65.7%, respectively), drinking (never drank, 30.1% and 11.8%), solvent use (had ever sniffed glue, 19.3% and 21.6%), and illegal drug use (had ever used illegal drugs, 1.6% and 6.3%). At the 2 year follow-up, although pupils in both conditions showed an increase in reported drug use,
abstinence reported was higher among CLEAR D pupils than control group pupils, except for alcohol (never drank, 16.1% for CLEAR D, 20.8% for controls).

However, it should be noted that whether these differences in the prevalence percentages between experimental and control groups were statistically significant cannot be determined, as no relevant statistical analyses were conducted. Similar to other projects (see Canning et al. 2004 for description), parental involvement was poor, not all schools held parents' evenings to underpin the programme and in one observed session there was no teacher support. There was poor assessment of the type of drug-related interaction between parents and their children. Considering the aims of this particular intervention this must be considered a project failure.

Although the author suggests most of these outcomes indicate programme effectiveness, which supported continuation of the work, there are several issues that undermine the strength of this conclusion. These are not discussed in the evaluation. It can be argued that although this study attempts to measure short- and long-term programme impacts by assessing differences in levels of drug use and drug-related knowledge between experimental and control groups, which is an important objective lacking in the majority of UK evaluation literature, the study design undermines the attempt. This is because baseline and immediate post-intervention data are not used for the analysis. However, even if collected it would not be possible to conduct this analysis as the outcome measures used (ie items in the questionnaire) at baseline and immediate post-test were different from those used at 1 and 2 year follow-ups. Also, comparability of the experimental and control groups can be questioned, as no random allocation to the conditions was conducted.

Although it is reported that the control school was selected for its 'comparable profile', there were markedly fewer pupils in the control than in the experimental condition, and baseline drug use and reported opportunities to use at the beginning of the intervention were different.

Furthermore, there is no indication of attrition and follow-up study participatory rates. In the control school, for example, the number of pupils responding decreased from 102 to 77, which resulted in an increase in drug-use prevalence from 5.9% to 10.4%, an increase of 76%, despite only two additional pupils reporting initiation. These figures do not allow the reader to conclude whether the follow-up set of drug users included existing users plus two initiates or represented a new set of users. Both these factors resulted in inflation of the reported success of the CLEAR D programme.

Finally, no clear indication is given of the number of schools originally enrolled in the scheme, but at the 1 year follow-up 10 schools were included (two did not respond), and at 2 years two secondary schools were sampled, each covering pupils from around 20 primary and middle schools. No rationale is given for these selection criteria and it is not clear whether all pupils sampled at follow-up periods had even received CLEAR D education, or in equivalent formats.

The use of different measurements at different data collection points (ie concern over data comparability), and a lack of random allocation to the conditions (ie concern over group comparability) seem to have failed to inform programme effectiveness despite an attempt to assess short- and long-term programme impacts. Furthermore, the fidelity of implementation of the programme seems to be low. Although the police-led sessions were a fixed component, it is reported that the schools had flexibility over an implementation of other features of the programme.

Finally, the author claims that CLEAR D is more cost effective than any other programme. However, economic calculations underpinning this statement are absent from the evaluation, and considering the relative weakness of the evidence presented, it is hard to conclude that the author presented 'effectiveness' with any degree of confidence.

DARE and PAE (Benett et al. 1996)

Benett et al. (1996) examined the effectiveness of the police-led Drug Abuse Resistance Education (DARE – see www.dare.com) initiative and a drugs programme that involved parents (Parents as Educators, PAE), which took place in 27 of the 162 primary schools in Kirklees, West Yorkshire. This implementation of DARE, a longstanding programme in the USA, was 17 weeks long and aimed to develop drug-related knowledge, confidence, self-esteem and decision-making skills to help children resist peer pressure associated with drug taking and delinquent behaviour. Similarly, PAE also dealt with issues of peer pressure and drug-related knowledge through a 5 week programme that provided drug education to both children and their parents, including collaborative homework.
In total, 985 pupils from 31 schools (including four control schools that received no intervention) participated in this study. The study design was rather complex and had five conditions. Of 985 pupils, 360 received DARE while 489 pupils were given PAE. Furthermore, 47 pupils had both DARE and PAE, and 89 control participants received no programme. In addition, the PAE group was subdivided into two groups – those with or without parent involvement. Several outcome measures were used to assess pre- and post-intervention changes in both drug-use behaviour and its mediators (including attitudes and knowledge).

Within-group analyses (ie the change from pre- to post-programme) found that both DARE and PAE produced statistically significant improvements in pupils’ knowledge of drugs (names of cocaine, cannabis, and heroin), but not their social skills (resisting peer pressure) or drug-use intentions (intending to use a drug in the future). DARE and PAE were also effective in enhancing health-related attitudes but the impact was only found among girls.

PAE had a significant effect on drinking habits (a composite indicator covering frequency of alcohol use and intentions for use when older). Comparisons with the control group showed that PAE students had a significant impact on their attitude towards health, police officers (positive view of police), knowledge about drugs and determination not to take drugs. DARE students, in contrast, only demonstrated a significant increase in drug knowledge with ‘familiar’ names. The students who received both DARE and PAE showed a significant gain in knowledge of both strange (hallucinogens, barbiturates, opiates, amphetamines) and familiar names.

It must be noted that on these key measures (drug knowledge, drinking habits), there were clear pre-programme differences between the experimental groups and controls. There was a large difference between pupils receiving the DARE programme and other groups. Furthermore, girls (in all groups except the control) scored higher than boys on all measures. It is therefore not possible to conclude that differences in improvements between groups were related to programme attendance and not pre-existing differences. These results do not allow a decision to be made about the relative effectiveness of each approach.

PAE therefore appears to be effective in impacting on drinking behaviour and attitudes, as well as knowledge, while DARE’s effectiveness is limited to simple knowledge gain. This may suggest that PAE offers greater advantage to the target audience than DARE, perhaps through the involvement of parents. Importantly, neither type of approach changed pupils’ intention to abstain from drug use in the future.

According to the theory of reasoned action (Ajzen and Fishbein 1980), behavioural intent is determined by the individual’s attitude towards performing the behaviour and the subjective norm (the belief that significant others close to the individual think that they should perform the behaviour) held by the individual. It is reported that programme exposure had no effect on attitudes or social skills, both indicators that may have predicted intent to use drugs. Increased focus or development of these two key areas may have therefore produced the desired change to intentions. However, intention not to use drugs was very high at baseline (> 90% in all groups), which would have proved very difficult to increase further.

Finally, there was no additive or synergistic effect of exposure to both types of intervention. However, a lack of random allocation to conditions, the complex nature of the study, reliance on self-report measures and the absence of long-term follow-up mean that efficacy of these programme gains cannot be guaranteed.

Despite these negative programme conclusions, this was one of few UK examples of an attempt at a research-led evaluation, initiated in conjunction with development of the intervention, something that is generally lacking in the literature (Canning et al. 2004). The authors clearly outlined experimental groupings (ie which schools received the intervention), and described the development of specific hypotheses, the approach to data collection (questionnaire and structured interview) and subsequent analysis. Experimental and statistical analysis was described in such a way that a practitioner with an interest in statistics and research could replicate the procedures for their own data.

RIDE (Frith 1997)

RIDE was a drugs awareness programme targeted at year 1, 3, 5, 7, 9, and 11 pupils in County Durham (Frith 1997) (RIDE – Resistance In Drug Education – see http://freespace.virgin.net/ride.drugeducation for current information). It aimed to equip pupils with life skills (not defined) to enable them to make informed decisions about
the use of licit and illicit drugs. It comprised 13 weekly interactive lessons on skills training and information-based drugs education, of which three were delivered by a uniformed police officer, nine by a personal, social and health education (PSHE) teacher (there was an option to receive assistance from a school nurse or first aid teacher) and one jointly by a police officer and a teacher.

To assess the impact of the programme, year 7 pupils (11 year olds) from four schools in County Durham participated in an evaluation study. A questionnaire before and 3 months after the intervention measured changes in knowledge, attitudes, and behaviour towards drugs.

The author reports that RIDE had a positive impact on prevention of illicit drug use but not licit drugs. There was no reduction in the current use of alcohol, for example, and no change in the intention to stop. Smoking and solvent use increased after RIDE exposure. There was an increase in knowledge and awareness about the potential dangers of drugs and where to seek help or information. The author suggests that RIDE was ‘very effective’ in increasing peer resistance to use drugs, but this was only assessed by one closed answer question, and there was no indication whether this had changed across the programme period. Similarly, by requesting pupils to state simple reasons why children initiate and terminate drug use, the author concludes that there was a reinforcement of negative drug factors that support drug abstention.

In relation to drugs, it is hypothesised that the value of drug use is a function of the cost/benefit ratio of consumption relative to the cost/benefit ratio of all other available alternative activities (eg Kirby and Petry 2004; Parker et al. 1998). By focusing on simplistic and extreme reasons for abstaining (eg ‘fear of death’) (cf Boys et al. 1999) the RIDE programme designers/deliverers discussed drug use in a context that is unfamiliar and unlikely to be relevant to young people. The majority of young people generally engage in periods of drug use without experiencing harmful outcomes. The costs of drug use (in the above context) can be made more salient by focusing on costs of relevance, such as trouble with the law/family or poor school/sporting performance.

It should be noted that percentages or any other statistics were not reported in the results section of the report, so the extent and statistical significance of any of the self-reported changes could not be assessed, and no secondary analysis could be performed.

From a methodological perspective, since the questionnaire was not longitudinally administered to the same pupils (ie pre- and post-RIDE samples were different), the reported impact does not adequately illustrate the effects of the programme. Further research with a more rigorous study design (eg a control group or within-subjects design, not total reliance on self-report) is needed to determine the efficacy of the programme.

Summary of school-based universal drug prevention with police input

To summarise, findings from these studies indicate some possible programme effectiveness for the multi-component programmes with police input, but this seems largely limited to knowledge gain. However, poor methodology in these studies does not allow any firm conclusions about impact to be made. Further research is needed to determine the efficacy of these programmes.

4.1.2 School-based universal drug prevention and drama

Drama or theatre has been used in the UK as a method for drug prevention or education, and during the 1990s was identified as an innovative and popular approach to drug education by several government departments (Department for Education and Employment 1998; Office for Standards in Education 1997; Standing Conference on Drug Abuse 1998). While there is a lack of wide-ranging evidence from mainstream literature about the efficacy of drama methods in changing health-related behavioural intentions, they appear to be more effective in changing drug-related attitudes than information dissemination approaches (eg Canning et al. 2004; Denman et al. 1995), perhaps through the communication skills of professional actors.

Theatre in education (TIE) has been introduced into the National Curriculum via citizenship and personal, social and health education (CPHSE), and new theatre companies tend to offer education through young person’s theatre (Sextou 2003). This type of approach is considered as useful support for existing drug education rather than a means in its own right (Starkey and Orme 2001).

Two evaluation reports on school-based drug prevention drama programmes were identified (Needham 1999; Orme and Starkey 1998).
‘I wanna be…’ (Needham 1999)

‘I wanna be…’ was a school-based drug education drama programme targeted at pupils aged 9–11 (years 5–6) in North Yorkshire (Needham 1999). In total, 18 primary schools, two secondary schools and one community special school received the programme, about 1300 pupils in total. It aimed to equip pupils with knowledge, attitudes and skills for preventing drug use (alcohol, cigarettes and solvents) and gambling, and to enhance their self-confidence and self-esteem. This programme involved teachers and a professional theatre group working cooperatively under the direction of North Yorkshire Specialist Health Promotion Service.

Teachers provided pupils with two preparatory sessions in the week leading up to drama workshop. The theatre company delivered four scenarios on the intervention day, each of which focused on how drugs and/or gambling can adversely affect lives of the users and how to avoid such consequences. For example, one concerned a 12 year old girl who wanted to be a pop star but who damaged her vocal chords as a result of sniffing hairspray. The play was followed by an 80 minute workshop with the actors that discussed the content of the four story lines. Teachers delivered a follow-up session (time after the intervention not reported), which covered topics such as peer pressure as well as drugs knowledge.

Eight schools self-assigned (self-selected) to an intervention, while two schools chose to be in a control group. At baseline, experimental groups were well matched on demographics and knowledge (with the exception of ‘bad effects of gambling’). Both groups received questionnaires that measured both licit and illicit drug-related knowledge, attitudes, skills, drug use intention and self-esteem before and after the intervention.

In the subsequent evaluation, compared with control students ($n = 68$), intervention students ($n = 512$) showed a significant increase in drug-related knowledge, more unfavourable overall attitudes towards drug and gambling behaviour and solvent use and a decrease in their intention to use solvents and to gamble. An increase in the level of self-esteem was found among the intervention pupils, but the level was not significantly different from that of pupils in the control group, suggesting this may have been a spontaneous improvement. Moreover, there was a significant decrease in the level of decision-making skills among intervention pupils. The importance of this decrease is unclear, but might be related to the effects of the intervention, where children may have felt compelled to provide ‘acceptable’ answers (see discussion below), which would limit the scope and variety of appropriate decisions made in response to the cue.

Although the author reports many significant positive effects on potential mediators of drug use, there were several methodological issues that limit the validity of the findings. Despite reporting no significant differences between the experimental and control groups in baseline drug-use behaviour and demographic variables, self-selection into conditions may have introduced some group differences, as willingness and motivation to provide pupils with a drug-prevention programme were likely to be higher among the experimental schools. Also, the lack of random assignment to conditions, teacher-administered assessment (with attendant differences in fidelity), and the considerably smaller control sample size may have limited the validity of the findings.

Furthermore, this was a short-term evaluation and so long-term effectiveness cannot be assessed. The time between pre- and post-intervention sessions differed between schools and experimental conditions, meaning that reported successes may have been time limited (e.g. in the intervention group, post-test assessment may have been undertaken after a shorter period of time than in control schools, meaning that short-term effects, which may have dissipated with time, were over-represented in the analysis).

With regard to fidelity, half ($n = 4$) of the schools failed to provide follow-up work with pupils as the programme designers had intended. In addition, it must be noted that drug- and gambling-related knowledge was examined by using an open-ended question format concerning only negative effects of drugs and gambling (pupils were asked to write as many bad effects as possible about using drugs and gambling). This may have acted as a type of ‘prime’ that would have influenced the outcomes of the attitudes, skills, and decision-making assessments.

HPSA/Bristol Old Vic Drama Project
(Orme and Starkey 1998)

Orme and Starkey (1998) evaluated the HPSA (Health Promotion Service Avon)/Bristol Old Vic Drama Project, which targeted pupils aged between 9 and 11. It aimed...
to contribute to schools’ drug education by providing a drama workshop that set out to explore attitudes, develop relevant skills and increase pupils’ awareness about the consequences of certain decisions.

The drama day began with a play performed by actors about a young girl who has a number of problems at home and school. One day, she meets a wizard who offers her a magic potion that helps her escape from the problems and feel better. She first has to give her arms and legs but when she was asked to give him her heart she realises that it is a too high price to pay and has to live in the ‘real’ world. This story was set out to look at drugs through the ‘wizard’ and ‘potion’. The play also explored issues such as bereavement, loneliness, lack of communication, bullying, self-blame, depression and escapism.

The play was followed by an actor-led workshop, which involved discussion, role-play and rehearsals for a children’s drama production. Parents were invited to attend the performance. HPSA also provided parent sessions that discussed drugs and communication.

Forty-one schools (pupils: n = 297 in pre-assessment, n = 253 in post-assessment) were selected to participate in this project. To measure changes in drug-related knowledge and attitudes, children were given a ‘draw and write’ exercise before and 4 weeks after the intervention. Children were also given four problem-solving scenarios to assess changes in problem-solving skills. Furthermore, their parents were surveyed to see whether the intervention created some opportunities to talk about drugs with their children.

Results of the pre- and post-intervention ‘draw and write’ exercise suggest that some children showed better awareness about drugs after the intervention. They were more able to name specific drugs and to report that alcohol and cigarettes were also drugs. Less stereotypical views about people who use drugs were also observed, although the numbers expressing such thoughts were low (fewer than five participants).

According to the authors, the intervention had some impact on the children’s knowledge of health and familial consequences of drug use. The quality of solutions for problem-solving tasks was reported to have remained relatively unchanged before and after the intervention. The most frequent solutions for each scenario were categorised as either third class or second class solutions.* Results of a parent survey (n = 336 in pre-assessment, n = 202 in post-assessment) uncovered some success in increasing opportunities for parent-child communication about drugs. However, the quality and content of the interaction are not known, as these variables were not explored in detail.

In summary, this study reports that children were more aware of drugs and had more knowledge of the consequences of using drugs, but it did not show considerable changes in problem-solving skills after the intervention. However, a lack of a control group and a total reliance on self-report measures make it difficult to establish programme effectiveness. In addition, the selection of schools was not conducted in a random manner and so generalisation of the findings of this study to other schools requires caution.

One major criticism of the ‘draw and write’ assessment, which can be applied to many of the evaluations in this review, is that it is likely that children focus on ideas and answers of the dominant discourse of drugs and drug-related education associated with the culture to which they are members (see Backett-Milburn and McKie 1999 for a detailed discussion). Children may also respond in a way in which they perceive the task and its meaning to them (response expectation), for example providing a ‘correct’ answer (ie socially-acceptable answers), rather than one that reflects experiences, beliefs, and attitudes.

Summary of school-based universal drug prevention and drama

To conclude, findings from these studies suggest that the use of drama is associated with a short-term increase in possible mediators of drug use, such as drug awareness, drug knowledge and attitudes towards a broad range of

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* First-class solutions are those in which the child takes responsibility for his/her own actions and intends to use verbal or written communication to resolve the issues. These include solutions involving direct interaction between the child and events in the scenario. It demonstrates that the child accepts responsibility for their own actions and intends to use verbal or written communication skills to resolve interpersonal and/or problem issues. Second-class solutions are those where the child resolves the interpersonal or problem issues through indirect means, such as telling an adult, or in the case of peer pressure, running away. Third-class solutions are those where the child does not accept responsibility for his/her actions and in the case of peer pressure is either ambivalent or goes along with peers. Third-class solutions also include a very hostile or aggressive tone such as ‘beat them up’. The hostile tone of the child’s interaction may create a problem rather than resolve the current issue.
drugs (as opposed to specific types of drugs). This is not markedly inconsistent with the evidence obtained from mainstream literature that theatre in education approaches are more effective than information dissemination methods in impacting on mediators (i.e. attitudes) of drug-use behaviour. Drama seems to have no marked influence on improvement in skills such as decision-making and problem-solving and further research is needed to determine its effect on drug-use behaviour. However, it must be noted that these interventions are short in duration and it may be inappropriate to expect such brief interventions to have a significant prevention effect.

4.1.3 School-based long-term multi-component drug prevention programmes

Two reports were identified that looked at the process and effectiveness of a school-based multi-component drug prevention programme. There is good evidence from mainstream literature to suggest that multi-component programmes are more effective in preventing drug use and/or drug use problems than other types of approach (Botvin, 1999; Flay, 2000; Lloyd et al. 2000).

NE Choices (Stead et al. 2000, 2001)

NE Choices was a school-based multi-component drug prevention programme in the North East of England, targeting students aged between 13 and 16. The aim of this programme was to decrease drug-use prevalence and frequency, delay the onset of the use of drugs and reduce mixing of drugs and alcohol. It was a 3 year programme and the content differed slightly every year but drama was one of the main components for the first two years of the programme.

• The first year programme consisted of an in-school drama workshop that was followed up by classroom teaching, as well as small group work on information and discussion, parent sessions, training for school governors and information packs.
• The second year comprised an all-day out-of-school drama workshop that was followed up by four sessions at school, together with training for teachers and media information products.
• In contrast, the final year had three components – including a youth work programme, parents’ programme, and a 1 week residential intervention for students who were assessed as at-risk of drug use/problems.

Press and public relation activities, a website and information packs for governors and parents ran every year. The length of each component of the programme was rather short (1 hour to 1 day) despite the programme itself lasting 3 years.

Ten schools participated in this programme. Each school was randomly allocated into full intervention, partial intervention and control conditions. A crucial difference between the full and partial intervention groups was that the latter group did not have parental involvement. Outcomes measured included drug use, drug use pattern and intention to use drugs, and these were assessed before, during and after the completion of the programme.

Between-group analyses found no statistically significant evidence for the effectiveness of NE Choices in preventing drug use. Despite reaching a large number of pupils (92% of the target group received the interventions) and being delivered with fidelity (there was strong consistency between drama sessions in terms of length, structure, and content), the analyses did not show any differences in reported drug-use behaviour between the intervention and control conditions. There was a marked increase in the percentages of students who reported having ‘ever used drugs’ from all the three conditions (full intervention group 26% to 39%; partial intervention group 25% to 34%; control group 22% to 35%). Regular use of drugs* was also reported to increase over time for all three groups (full intervention group 2% to 3%; partial intervention group 1% to 4%; control group 1% to 5%). However, reported regular use of drugs was less prevalent than the onset of use and this suggests that not all the students who tried drugs experimentally developed a regular pattern of use. A comprehensive analysis was hindered by the reluctance of many respondents to provide identification codes to enable matching of pre- and post-intervention data.

It should be noted that there were group differences between the intervention and control samples owing to non-equivalent attrition of participants. Those who dropped out from the programmes were more likely to be drug experimenters, early initiates and frequent users at baseline compared with those who remained in the programme. Due to a high attrition rate, between-group

* Defined in this study as having tried a drug, taken it six or more times in the past 6 months and having strong intention to take that drug again.
analyses (ie those receiving the programme vs those who did not) were conducted with only 54% of the original study cohort. Therefore, generalisation of the study findings is somewhat limited to this less ‘at risk’ sub-population of the sample. It is interesting to note that at baseline, those pupils who expressed definite intentions to take drugs were more likely to attend an informal and voluntary interaction information session, suggesting that alternative peer-led approaches are more appealing to some sub-populations than structured lessons.

The authors suggest additional reasons why the programme had been unsuccessful in achieving its prevention objectives. First, there is a lack of evidence for the effectiveness of social influences approaches in 13–16 year olds in the UK; most published work has been conducted with 10–13 year olds in the USA. Second, this older group may have already established opinions about drugs and the roles that they play in their lives, based on their own experiences of that of their friends. These may have been harder to overcome compared with pupils in formative decision-making stages.

Furthermore, while NE Choices included a parental component (an approach popular in similar programmes in the USA where parents of targeted children often have a more active role in school life and activity), these were very poorly attended with less than 10% of those invited participating.

The authors report that insufficient programme intensity (ie the number of sessions delivered and the amount of time it was sustained for) may have also been a contributing factor. The majority of pupils received around 15 hours of contact time, much less than similar programmes in the USA that have reported successes (see section 4.1.4). However, intensity alone is unlikely to account for effectiveness, since some less intensive social influence-based programmes demonstrate positive outcomes, and as shall be discussed (section 4.1.4), only a small subset of pupils receive the full programme in the USA (Black et al. 1998; White and Pitts 1998).

Unlike results from the mainstream literature examining multi-component programmes (see above), NE Choices was not effective in preventing drug use. However, the manner in which the programme was developed and implemented, and the parallel evaluation, was of a high standard. The programme was shaped by local strategy and needs, and was refined through systematic formative research. Sampling of pupils and allocation to experimental groups was robust and the intervention and control schools were well matched on academic achievement and sociodemographic composition (using census data). There was a clear description of programme components and outcomes, and a comprehensive methodology. The use of an integrated research programme, combining process, impact, outcome and formative approaches allowed for a more complete analysis of programme design, delivery, learning processes and engagement.

While the specific drug-related outcomes were not achieved, the authors were able to analyse mechanisms of delivery and based on this were able to make a series of recommendations to improve future work adopting a similar approach.

This was a complex programme, based on a collaborative partnership between schools, families, communities and service providers. Theoretically, each partner should understand their commitments and contributions to the programme and the benefits they would receive. However, in practice there was a failure to understand the programme design and objectives by some partners. For example, process evaluation revealed that some components (eg follow-up to drama in the classroom) received insufficient planning and resources, meaning that they were not delivered as intended (reduced fidelity).

4.1.4 School-based universal drug prevention and LifeSkills Training

LifeSkills Training programme (LST)* is a universal drug-prevention programme in the USA. It is based on social influence approaches that explain that drug use behaviour is caused by social influences (eg media and peer pressures) on individuals and mediated by intra-personal factors. These factors include assertiveness, self-esteem, social efficacy (ie how assurance in their own abilities can lead to an individual positively contributing to society/community), social anxiety (ie fear of social encounters) and locus of control (ie expectancies for internal versus external control of reinforcement). People with an internal locus of control believe that their own actions determine the rewards that they obtain.

* The LST website (www.lifeskillstraining.com) has full details of this programme approach.
while those with an external locus of control believe that their own behaviour does not matter much and that rewards in life are generally outside of their control and ability to influence (ie influencing peers). LST aims to improve these social and intra-personal factors to prevent drug use.

LST comprises three main components:

- drug resistance skills
- personal self-management
- general social skills.

It is used for young people aged between 6 and 14 in a school setting and the contents are delivered in an interactive and participatory manner. LST usually delivers 30 sessions over 3 years. The first year consists of 15 sessions while the remaining 15 sessions are regarded as ‘booster sessions’ and are delivered in the second and the third year of the programme.

LST has been identified as one of the few drug-prevention programmes that has been rigorously tested (White and Pitts 1998). However, it needs to be noted that many of the evaluations of this programme have been conducted by Gilbert Botvin and colleagues, who developed LST. While this does not necessarily negate findings, caution is always warranted when researchers have an interest in study outcomes.* LST has been adapted for use in other drug-prevention programmes, including Project ALERT and DARE (Coggans et al. 2003). Like LST, these programmes have skills-training approaches to drug prevention, based on the notion that social influences are a major mechanism in which drug use behaviour is mediated.

Two reports that examined the effectiveness of LST were identified (Coggans et al. 2003; Eisen 2002). Coggans et al. (2003) critically reviewed evidence regarding effectiveness of LST, while Eisen’s report (2002) is an evaluation of an LST programme in the USA called Skills for Adolescence (SFA).

LST and smoking (Coggans et al. 2003)

Coggans et al. (2003) review early evidence purportedly showing that LST is effective in preventing cigarette use among young people. They report that Botvin et al.’s (1980)* evaluation study, which looked at 10 sessions of LST, produced a significant effect in preventing the onset of smoking among students aged between 13 and 16. However, it is noted that the sample size was too small to draw a firm conclusion about effectiveness. Furthermore, the potential mediating factors hypothesised to drive smoking (ie ‘life skills’) were not affected by the intervention.

There is some evidence to suggest that peer-led LST is more effective in preventing smoking than teacher-led LST.** However, Coggans et al. argue that the better training and support that peer leaders received could have contributed to the observed positive results.

Botvin et al.’s 1983 study*** is also cited, as it demonstrated evidence that the intensity of the programme can have an impact on smoking outcomes. An intensely-delivered LST programme (a complete programme delivered in 1 month) was significantly more effective than a normal 15 week programme, or 15 week programme with booster sessions, in preventing smoking at 12 month follow-up.

LST and other drugs (Coggans et al. 2003)

Coggans et al.’s review of evaluation studies of LST on the use of both licit and illicit drugs found good evidence for programme effectiveness for smoking, but rather less for use of other drugs. First, Botvin et al.’s 1990**** 3 year follow-up study is cited. This reported that LST students showed a significant reduction in smoking, drunkenness and cannabis use at 3 year follow-up compared with controls. Nevertheless, it is pointed out that these effects were small, as the levels of drug use was low among both experimental and control groups; the mean score for cannabis use was reported to be below ‘tried it, but don’t use now’.

* Authors submitting manuscripts for consideration in scientific journals must always declare any potential conflicts of interest.

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The same sample of students was followed up 3 years later (ie 6 year follow-up) and the evaluation* showed that LST could be effective for up to 6 years in preventing the weekly use of cigarettes, but not other drugs. However, when analyses were conducted for a sub-population of the original sample, who received the programme relatively completely (ie with high fidelity, defined as receiving at least 60% of the programme), LST was found to be effective for other drug use including weekly use of alcohol and cannabis, monthly use of cannabis, and polydrug use (ie cigarettes, alcohol and cannabis). It must be noted that the sub-population of the sample consisted of less than half of the original sample (46.2%) and generalisation of the findings is therefore limited.

Another concern is expressed by Coggans et al. (2003) – that the chosen measure of effectiveness might have overstated the magnitude of positive effects. For example, it was reported that there were 66% fewer LST (high-fidelity) students who used cigarettes, alcohol and cannabis (polydrug use) at 6 year follow-up. Coggans et al. argue that this is a relative difference and the figure is large because the actual drug prevalence among the participants was very low. The proportion of subjects using drugs was only 0.02 for LST schools and 0.06 for control schools and this implies that the absolute difference was only 4%.

It is also argued that the validity of the outcome measure responses could be questioned, as more than a quarter of the participants completed the questionnaire in out-of-school settings (telephone survey = 22.6%; postal survey = 5.8%) and these participants did not receive biochemical validation (those who completed the questionnaire at school did receive such validation). In addition, outcomes were measured using items that required ‘yes/no’ types of responses, and a criticism is that this method cannot adequately assess the extent of drug-use patterns.

Finally, Coggans et al. (2003) argue that it is not appropriate to compare the outcome data from 3 and 6 year follow-ups, since the unit of analysis was at the individual level for the 3 year follow-up but it was at the school-level for the 6 year follow-up.

Coggans et al. (2003) also review a 6.5 year follow-up study of LST, again conducted by Botvin and colleagues.* This study reported that 46% of LST students used cannabis compared with 55% of controls, while 22% of LST students used other drugs in comparison with 30% of controls. These findings suggested evidence for significant long-term programme effects for both licit and illicit drug use. However, as only a small sub-set of the original cohort (7.5%) was used for the follow-up analyses, and no justification for selecting this set of participants was given, the findings should be interpreted with great caution (Coggans et al. 2003; also see Gorman 2002).

Other LST programmes: Skills for Adolescence (Eisen 2002)

Skills for Adolescence (SFA) is a school-based life skills education programme in the USA (programme details at www.lions-quest.org). It targets pupils in middle schools (11–13 year olds) and aims to delay the onset and reduce the frequency of both licit and illicit drugs use. Similar to LST, it consists of generic and specific skills training (eg training for self-esteem, personal responsibility, communications, decision-making, resistance and social influence, and assertiveness), as well as dissemination of drugs knowledge. A unique feature of this programme is reported to be its ‘media literacy’ component, which deals with media influences on drug use through the presentation of written and role-playing counter-arguments to representation of drugs in the popular media. A variety of teaching techniques is used in the programme, including role-play, discussion, individual and group work, and homework.

Eisen (2002) describes intermediate results of SFA (ie baseline through to the end of the intervention year). Thirty-four middle schools in the USA were pair-matched on drug prevalence rates (alcohol, cigarettes, inhalants, cannabis and other illegal drugs), and then randomly assigned to experimental or control conditions. Both licit and illicit drug use outcomes were measured before and after the intervention.

Results show that SFA had a significant prevention effect on the onset of regular smoking and the lifetime use of

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cannabis among student non-users at the baseline. The prevalence rate for recent smoking was significantly lower in the SFA schools (2.9%) than control schools (3.8%) and lifetime cannabis use was also significantly lower in the former (9.5%) than the latter group (11.6%). However, as the study reported only use in the last 30 days and not lifetime use of cannabis for the baseline assessment, it is not certain whether the change in lifetime use was an effect of SFA participation.

Students who reported to be already using drugs at baseline also appeared to have benefited in specific ways from the programme. Although, as the author predicted, there was an increase in the use of alcohol, cigarettes and cannabis post-intervention among ‘users’ from both control and intervention conditions, the SFA students showed a considerably slower ‘progression’ to use other drugs compared to the control students. The SFA students who reported ‘alcohol use’ but no ‘recent smoking’ and no ‘lifetime use of cannabis’ at baseline showed a significantly lower prevalence rate for smoking than controls (SFA 8%; control 12%). Moreover, among those who reported ‘recent binge drinking’ but no ‘recent smoking’ and no ‘lifetime cannabis use’ at baseline, prevalence of cannabis use was significantly lower among the SFA students than controls (SFA 21.1%; control 37.6%).

However, among those who reported ‘recent cigarette use’ or ‘recent alcohol use’ at baseline, there was no significant difference between the conditions in terms of their drug use at follow-up (cigarette: SFA 39.6%, control 36.8%; alcohol: SFA 16.8%, control 23.5%). No significant differences were reported between the conditions for other illegal drugs and inhalant use.

These results indicate that SFA may provide short-term effectiveness in preventing the onset of regular smoking and cannabis use. Also, more programme benefits were found for those who use alcohol than those who use alcohol plus other drugs. However, there are several limitations in this study that weaken the strength of its conclusions.

First, it is noted that those who did not report recent cannabis use at baseline were significantly more likely to be retained in the programme. In other words, students who use cannabis were more likely to have dropped out from the programme. This biased attrition could have resulted in incomparability between the experimental and control groups at the post-intervention stage and also could limit the generalisability of the research findings.

Second, there is an issue of self-selection, as the schools volunteered to participate in this research.

Third, these results only illustrate short-term outcomes, measured immediately after the programme. Therefore determination of its long-term effects requires further investigation. In addition, it may be interesting to note that although SFA consists of 100 sessions, since many schools initially showed little interest in participating in this project the researchers had to shorten the programme to 40 sessions. Even after offering this abridged version, eight key sessions had to be highlighted for those teachers who were not able to dedicate adequate classroom time.* Data on the proportion of teachers offering the different programme lengths was not provided, but would, if other evidence of the importance of programme length were to be believed (see section on LST), have had an important influence on outcomes. The relative effectiveness of the original 100 session version and the shortened version(s) needs future research. If the shortened version is found to be equally effective as the longer one, then the 40 session (or eight session) version should be used, as it is would be more cost effective.

Summary of LST

It seems reasonable to conclude that LifeSkills Training does have some significant prevention effects.** However, these effects are rather limited to licit drugs and an impact on the use of illicit drugs is small. Also, the effectiveness appears to be confined to a sub-group of young people, such as students whose drug use is already low and/or those who have received the complete programme.

4.1.5 Economic evaluation of school-based universal drug prevention

Meta-analysis (White and Pitts 1998) has shown that school-based drug-prevention programmes can deter the initiation of drug use among non-users and decrease the level of use in those who have already started. However,

* These included sessions dedicated to decision-making, communication skills, refusal skills, media literacy and perception of harm.
** Note that a relationship between the effectiveness of LST and underlying theory is reviewed in a later section (4.7).
the size of the effect of this type of programme was small and short-lived; the effect size* for short-term effects was 0.037 while the long-term effect size was 0.018. These small effect sizes raise an important question as to whether the cost of providing young people with drug-prevention programmes outweighs the benefits to society that they may bring about. In other words, a drug-prevention programme should offer value for money and its cost effectiveness needs to be part of the commissioning process.

An economic evaluation of school-based universal drug prevention (Caulkins et al. 2002)

There is a lack of economic evaluations of UK programmes. However, there is evidence from the USA – Caulkins et al. (2002) have examined the social benefits of providing school-based drug prevention programmes. To estimate these benefits the researchers constructed a 10 factor model (Figure 2).

The three main constructs of this model are:

- lifetime drug use per person in the absence of prevention (‘amount of use’)
- percentage decrease in lifetime use expected from the prevention intervention (‘percentage reduction’)
- social costs per unit of drug use (‘social cost’).

The main sources of information or data used to estimate the three constructs are past research findings (including drug-prevention evaluation studies and other types of primary studies such as Project ALERT and LST) and National Household Survey data. The authors conclude that both source types provide rigorous data.

Two out of the three constructs are estimated from other estimates (or factors). ‘Amount of use’ is estimated from three factors.

- Factor 1 is the amount of use per person who initiate drug use in the absence of prevention.
- Factor 2 is the proportion of a cohort who would have started to use drugs without prevention.
- Factor 3 is a discount factor that accounts for a reduction in immediate costs of drug-prevention programmes and later benefits derived from the programme.

‘Percentage reduction’ is estimated from two factors, including percentage reductions in drug use reported at the end of drug-prevention programmes (Factor 4) and estimated percentage decreases in lifetime drug use due to drug-prevention programmes (Factor 5).

Factor 4 is estimated from aggregated results of seven evaluation studies on USA school-based drug-prevention programmes, namely LST, Midwest Prevention Project, Project Northlands, Iowa Strengthening Families, Project ALERT, Enhanced Alcohol Misuse Prevention Study and Project TNT. These studies were selected as the result of a systematic literature search and a critical appraisal process. Studies were included if they were published in peer-reviewed journals, used a pre-and post-test design with both treatment and control groups, had an adequate sample size, conducted 2–3 year follow-ups, and evaluated universal programmes. Results from each study are aggregated to produce a single number that indicates programme effectiveness for different types of licit and illicit drugs.

Factor 5 is estimated from analysing multiple possible ‘scenarios’ about long-term effectiveness of drug-prevention programmes, as the seven studies did not measure long-term outcomes (with the exception of the LST study). However, the long-term results of LST are not used for this analysis, as they could not be appropriately compared with the earlier (short-term) results, owing to a difference between the samples at the two data collection points (see section 4.1.4).

The estimated percentage reduction in lifetime drug consumption due to prevention is then adjusted by four factors:

- factors that can negatively impact on prevention effects (‘correlation qualifier’ – Factor 6)
- weakened effects of programmes that could be brought about by programmes implemented less completely in the ‘real world’ (‘scale up qualifier’ – Factor 7)

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* An effect size is a measure of the strength of the difference between two groups (the difference between two population means divided by the standard deviation of the control group population). Minus or plus signs indicate direction of difference, not magnitude of difference; no sign means plus by default. The value (ignoring the sign preceding it) of the effect size is interpreted as follows: an effect size (d) between 0 and 0.2 is small (d = 0.2 implies a 14.7% non-overlap between the two distributions compared), d = 0.5 represents a medium effect size and corresponds to a 33% non-overlap between the two distributions compared, and d greater than 0.8 represents a large effect size (d = 0.8 corresponds to 47.4% non-overlap between the two distributions compared).
Figure 2: 10 factor model to estimate social benefit of drug prevention (derived from Caulkins et al. 2002)

- Factor 1: Use per initiate
- Factor 2: Proportion of cohort who would initiate without drug prevention
- Factor 3: Discount factor
- Factor 4: Reported % reduction
- Factor 5: Estimated % reduction due to drug prevention
- Factor 6: Correlation factor
- Factor 7: Scale-up qualifier
- Factor 8: Social multiplier
- Factor 9: Market multiplier
- Factor 10: Estimated social cost per unit of use

Cost of 30 sessions of drug prevention = $150

Social cost averted by drug prevention $840 per participant

Multiply

Estimated amount of use without drug prevention

Estimated % reduction due to drug prevention

Adjusted estimated % reduction due to drug prevention

Factor 10 Estimated social cost per unit of use

$840 per participant
• ‘social multiplier’ (Factor 8), which refers to a facilitating effect of one person’s drug use to other individuals to start using drugs.
• Effect that reducing drug use has on market supply and demand (‘market multiplier’ – Factor 9).

‘Social costs’ (Factor 10) includes both personal and external costs, consisting of direct and indirect healthcare expenditures due to drug use, productivity reductions associated with drug-related premature death and with crime victimisation, other crime costs and social welfare administration costs. Impaired productivity due to drug use and non-tangible costs (such as a reduction in the quality of life of the user and his/her family) is not included in the analysis.

The analysis based on this model reveals that an estimated social benefit from reduced drug use (tobacco, alcohol, cannabis, and cocaine) per person participating in a school-based drug-prevention programme was considerably greater ($840) than an estimated cost of running a programme with 30 sessions ($150). Even when a large set of possible outcomes of prevention programmes is randomly generated and repeatedly analysed, the social benefits were more than $300 95% of the time. If the assumption is made that drug-prevention programmes can have effects on other illicit drugs such as heroin (which is not assessed in this study because of a lack of data), as they had on cocaine use, then an estimated benefit per participant rises to about $1000. A comparison of the relative size of social benefits estimated for different types of drugs shows that the greatest cost saving is derived from prevention of tobacco use (43.4%), followed by alcohol (31.1%), cocaine (22.2%) and cannabis (3.3%).

This model suggests that school-based drug prevention programmes can produce positive social benefits that exceed the cost of running the programmes. In addition, the majority of social benefits came from prevention of licit, not illicit, drug use. However, social benefits of school-based drug prevention programmes calculated in this study are based on a number of estimates. Since these estimates are calculated from research findings and survey data, the extent to which they are valid and reliable is highly dependent on the strength of the research evidence or the validity and reliability of the original research data.

Unfortunately, the quality of methodologies for evaluating studies of drug-prevention programmes for young people has been highly criticised. Methodological problems include the use of inappropriate control groups, low participation, self-selection and excessive attrition (Allot et al. 1999). An over-reliance on self-report of drug use is also a common feature of evaluation studies (Allot et al. 1999; White and Pitts 1998) – responses can be open to bias. The validity of general population drug-use data can also be questioned. In the USA’s National Household Survey on Drug Abuse it is likely that a large number of (drug using) people were excluded as a result of living in non-traditional households. Moreover, there was large diversity among the seven prevention studies included in this analysis in terms of programme content, delivery method, intensity, study design and outcome measures. Therefore, the generalisation of the findings requires some caution.

Interestingly, it is reported that cost effectiveness was achieved not because prevention programmes had been effective in preventing a large proportion of drug use but because of the profoundly high social costs of drug use. Corresponding to the findings of White and Pitts (1998), the researchers found that the prevention effects of the seven programmes included in the study were small. It was estimated that the programmes could decrease lifetime consumption of tobacco by 2.3%, alcohol by 2.2% and cocaine by 3% (this includes an effectiveness delay calculation, as it is known that the effects of intervention decay with time). As drug use is extremely expensive to society, such small prevention effects can result in a sizeable reduction in social cost. Most of the social benefit (66.4%) came from the reduction in alcohol and tobacco use rather than the use of illicit drugs. Prevention of cannabis, which is a target of the majority of interventions in schools (White and Pitts 1998), accounted for only 2.9% of the received benefit. This is probably a result of less potential for dependence than cocaine, or a reduced associated criminality.

One of the costs of running a drug-prevention programme is that pupils do not receive the replaced traditional classroom sessions. Therefore, there is added benefit if sessions have some educational value, and if evaluations include a component examining educational components (e.g. critical thinking). A drug-prevention programme with academic benefits could be much more cost effective than one without educational values, even if the latter programme is more effective in preventing drug use.
Summary of economic evaluation

It can be concluded that school-based drug-prevention programmes are cost-beneficial, as it is estimated that social benefits due to prevention effects of these programmes exceed the cost of running them. However, this is achieved largely because of the high social cost of drug use and not the high efficacy of preventing drug use.

It is important to note that the generalisation of the findings from this economic evaluation to the UK requires some caution and further investigation, as the analysis in this study was solely based on research and survey findings from USA studies. However, despite the more advanced state of the drug-prevention field in the USA, it would be possible to run a similar analysis in the UK. Health economic assessments routinely take place in clinical medicine and the (public) health service to assist decision-making and programme planning (eg Coles et al. 2002; Godfrey et al. 2005). The three main constructs outlined by Caulkins et al. (2002) are transferable to the UK. For example, drug consumption values could be recoded from the British Crime Survey or Crime and Justice Survey; aggregated composite programme effects on drug-use variables could be calculated for each particular type of approach (eg LST); and Home Office research studies provide estimates of economic and social costs of drug use in the UK (Godfrey et al. 2002).

4.2 Australian review

Australian review of drug prevention (National Drug Research Institute and the Centre for Adolescent Health in Australia 2004)

The high prevalence of drug use among young people is not confined to the UK. In 2001, a national survey* found that about a quarter of Australian young people aged between 14 and 19 reported that they had used illicit drugs in the past 12 months (male 28%; female 26.6%). Cannabis was reported to be the most commonly-used illicit drug in the past 12 months (male 26.6%; female 22.6%), followed by amphetamines (male 5.7%; female 6.8%) and ecstasy (male 5.7%; female 4.3%). Another survey* showed that nearly half of the respondents aged 17 reported that they had tried cannabis (male 53.1%; female 46.4%). A comparison between 1996 and 1999 surveys data showed that there was an increase in illicit drug use among those aged between 12 and 17, except for the use of cannabis (male 7.9% reduction; female 6.6% reduction).

The National Illicit Drug Strategy (1997) in Australia has an integrated approach, consisting of strategies of supply reduction, demand reduction and harm reduction, aims similar in scope to the key indicators of the National Drugs Strategy in the UK. There are great similarities between UK and Australian drug culture, perhaps more so than with the USA (Hansen et al. 2001), therefore a recent monograph on drug prevention in Australia (National Drug Research Institute and the Centre for Adolescent Health in Australia 2004) provides a useful source of evidence on effective interventions. Titled The prevention of substance use, risk and harm in Australia: a review of the evidence, it provides an evidence base for implementation of the national drug-prevention agenda. Its aim is to map the systems, pathways and strategies that connect a variety of risk and protective factors for drug use/problems and drug-use outcomes. To achieve this, both distal and proximal interacting factors** for drug use are examined and evidence regarding drug prevention is reviewed. The main discussion points follow.

Research findings from longitudinal and other studies examining significant factors for young people’s drug use have demonstrated a number of predictive factors during early and late childhood (including adolescence):

- weak family functioning
- childhood abuse and neglect
- social disadvantage
- poor school performance
- negative peer influences (especially negative peer associations)
- certain behavioural temperaments (eg aggression)
- delinquency
- favourable attitudes to drugs
- parental drug use and positive attitudes to drugs
- perceived and actual local drug availability.


** Distal factors are those that occurred some time ago, such as early life experiences; proximal factors are those that occurred recently, such as stressful events.
While family drug use does not directly lead to an increase in prevalence in children, it exerts influence over the choice of the child’s peer group (Bahr et al. 1993); this in turn may then influence the child’s drug-using behaviours. In contrast, other studies on teenagers in the USA suggest that parental choice of drugs determines that of their child (Johnson and Pandina 1991). The role of attention deficit hyperactive disorder (ADHD), intelligence, anxiety and depression in development of drug use is not clear. Integrated evidence suggests that early initiation and frequent drug use among youth are not predicted by specific risk factors but by the presence of a number of risk factors.

It is argued that prevention should start early to maximise the chance for healthy development and reduce existing and future risk factors. Evidence from studies that looked at early-prevention programmes suggests that they can reach disadvantaged families that benefit from early interventions to improve social environments for healthy child development. Although most programmes have originated in the USA, experiences of home visiting, non-residential programmes and playgroup clinics have led to an outline of issues and dilemmas faced by this population. These include balancing trust and acceptance with intervention when problems are identified, harmonising accessibility and flexibility with the provision of child-focused activities and adult education, finding a location that is both suitable and affordable, appropriately supporting staff, collaborating with other services, and securing adequate funding, including for ongoing evaluation and monitoring (Banwell et al. 2002).

Playgroup clinics (eg based on health, welfare and advocacy) assist children in developing skills and allow parents to share information and to play with their children. In existing programmes no demands are usually made on drug use, but support is available to those who request it (Denton et al. 2000).

When children reach primary school age (5–11), their development is beginning to be influenced not only by interactions with family members, but also their experiences at schools and with other children. The prevention of substance use, risk and harm in Australia: a review of the evidence identifies four types of intervention aimed at primary schoolchildren: family intervention, parent education, school-based drug education, and social organisation and behaviour management. With the exception of school-based drug education, all approaches have shown strong positive outcomes.

Family-based prevention programmes aim to enhance family bonding and relationships and include parenting skills; provide practice in developing, discussing and enforcing family policies on substance abuse; and provide training in drug education and information (National Institute on Drug Abuse 2003). Family bonding can be strengthened through skills training on parent supportiveness of children, parent-child communication and parental involvement.

In family interventions, both the child and parent(s) or other family members are given information and/or a course of therapy or instructions. Targeted family interventions show a positive impact on both parental drug use and risk factors among children, while universal family interventions demonstrate a reduction in risk factors and later drug use among children.

Parent education aims to foster healthy development of children by providing a course of instruction or information to their parent(s). Studies have shown that parent education can decrease child behaviour problems and improve parent functioning. Drug education and information for parents or caregivers reinforces what children are learning about the effects of drugs and opens opportunities for family discussions about the use of legal and illegal substances. Brief, family-focused interventions for the general population may positively change specific parenting behaviours that may reduce later risks of drug abuse.

Social organisation and behaviour management is also identified as an effective intervention for reducing risk factors. This involves school-wide environmental changes and aims to impact on children’s interpersonal relationship behaviour and learning at school. Research has indicated that a critical ingredient of this approach is to support children who are experiencing difficulties in adjusting with school life, and such support appears to have a positive impact on damage caused by earlier negative experiences.

School-based drug education in primary schools is a promising intervention but requires further rigorous research to determine its effectiveness. This is because evidence is rather limited to its short-term impact on developmental risk factors and drug use.
When children enter adolescence (ages 12–14), independence and mobility begin to increase dramatically, resulting in a wider range of social influences. Four types of drug-prevention interventions aimed at adolescents show promising evidence to justify their implementation. These are family interventions, school-based drug education, community mobilisation and mass media campaigns. These interventions are reported to have a good theoretical base and evaluations show positive impacts on risk or protective factors or outcomes.

Although described generally above, family interventions for adolescents have been used for young people who are considered to be at risk from drug use/problems and for young offenders. School-based drug education programmes have been found to impact positively on drug-related knowledge. Evidence suggests that interventions should not solely focus on providing information, as a gain in knowledge on drugs does not necessarily lead to a decrease in either intention to use drugs or in actual drug use. Drug-education programmes based on social-learning principles have consistently shown prevention effects on both intentions and behaviours. However, these effects are rather small (see Coggans et al. 2003). Also, the effects are short-lived, especially if there is no additional input such as media campaigns, community mobilisation and parental involvement. Although the effects of the programmes are small, evidence suggests that school-based interventions can be relatively low-cost approaches for prevention of tobacco, alcohol and illicit drugs (see Caulkins et al. 2002).

Community mobilisation refers to community campaigns or programmes that aim to improve healthy youth development and prevent drug use by a range of interventions that target risk and protective factors. There is some evidence to suggest that community mobilisation is effective in preventing regular cannabis use. These types of intervention programmes are aimed at general populations at key transition points, such as the transition from primary to secondary school, and can produce beneficial effects even among high-risk families and children. Such interventions do not single out populations at risk and are therefore advantageous in reducing labelling and promoting bonding to school and community (social efficacy).

Community-prevention programmes that combine two or more effective programmes, such as family and school programmes, can be more effective than a single programme alone. Community-prevention programmes reaching populations in multiple settings, for example schools, clubs, faith-based organisations and the media, are most effective when they present consistent, community-wide messages in each setting.

In contrast, mass media campaigns are those interventions that deliver a health promotion message to prevent drug use (see section 4.5 for a more detailed discussion). Evidence for effectiveness is limited to specific outcomes. However, the strength of evidence is greater if this is used in conjunction with other strategies such as school-based health education or community-wide interventions.

Other types of drug prevention interventions among adolescents are also identified. They are classified either as ‘promising and warrants further research’ or ‘limited investigation’. The former refers to interventions that show some hopeful evidence for implementation or outcome but were evaluated with a poor methodology such as small sample size and inappropriate controls. These types of interventions include peer education, youth sport and recreation programmes (a UK example is Positive Futures); community-based drug education (ie delivered by youth groups); and mentorship. Preventive case management and community mobilisation are also ‘promising and warrants further research’ for prevention of illicit drugs other than cannabis. Intervention approaches that involve the law, regulation and policing have this level of evidence for prevention of cannabis.

‘Limited investigation’ describes interventions that are theoretically or empirically weak and produce no convincing evidence for effectiveness. This type of intervention consists of family interventions and preventive case management for prevention of cannabis use, and employment and training, mass media campaigns, and law, regulation and policing for preventing the use of illicit drugs other than cannabis.

Summary

The prevention of substance use, risk and harm in Australia: a review of the evidence concludes that it is important to take a protection and risk-reduction approach to prevention. This is an integrative approach that highlights the importance of decreasing developmental risk and improving protective factors. A cross-government report in England, Tackling Drugs –
Changing Lives: Keeping Communities Safe from Drugs (Home Office 2004) provides a relevant framework for preventing drug use and harm from early years to adulthood. Addressing protective and risk factors in drug prevention not only benefits the prevention approach, but also leads to positive social improvement and maximisation of personal potential.

4.3 Drug prevention for youth from black and minority ethnic (BME) populations

Within the UK, BME communities make up 7.9% of the population (largest populations: Indian 1.8%, Pakistani 1.3%, black Caribbean 1% and black African 0.8%) (Office for National Statistics 2004). This proportion varies geographically and by age group; for example, around 12% of children (under 16) in the UK were from minority ethnic groups in 2001/2 (Office for National Statistics 2002). Survey data indicates drug use as being generally lower among BME communities. However, underreporting is expected in these data due to stigmatisation of drug use in some of these communities and under-representation of BME populations in general surveys (Fountain et al. 2003).

In 2002, last-month drug use among secondary schoolchildren was higher among those of mixed ethnicity (15% boys and girls) and white populations (13% boys, 10% girls), than among Asian pupils (8% boys and girls). Prevalence among black students was not statistically different from other groups (Department of Health 2003). British Crime Survey data concurred that drug use was significantly more common among young people of mixed and white backgrounds (33% and 32% last-year use, respectively).

Needs assessments of community drug misuse suggest distinct patterns of drug use exist between ethnic groups (Bashford et al. 2003). South Asians reported more use of heroin than crack, and also the use of a wide range of drugs including ecstasy and LSD. Black Africans reported using both heroin and crack, while black Caribbeans used crack, amphetamines and ecstasy. Middle Eastern respondents reported no use of ecstasy, crack or heroin.

As with the wider population, cannabis was the most widely-reported drug used among all ethnic groups. Most of the drugs used within these communities were similar to those used by the wider population. One significant exception is the use of khat, particularly by the Somali population. The majority of respondents reporting drug use were under the age of 22 (65%), with 75% of south Asians reporting use under 21. Sixty-nine per cent stated that age of first use was under 18, with one third under the age of 15.

Previous universal prevention research has been commonly conducted with white, middle-class, suburban populations, and therefore the applicability of the findings to young people from other ethnic populations has frequently been questioned (eg Botvin 1999). However, if the underlying mechanisms driving drug-using behaviours are universal, then prevention programmes that have been found to be effective for the white population should, with all other factors being equal (eg socio-economic, accessibility), offer similar effectiveness to other populations. According to Botvin (1999), that is the case for LifeSkills Training (LST) at least.

Summarising this evidence, it is concluded that prevention programmes that are effective for white youth are also effective for youth from other ethnic backgrounds, although minor changes may be necessary to make the content of the programmes more culturally sensitive. Other common barriers to engagement with prevention services identified by BME community needs assessments include: ethnicity of staff, cultural and linguistic understanding, concerns about confidentiality, lack of awareness of services, and perceptions of inferiority of interventions for BME communities (Bashford et al. 2003).

Research has shown that incorporating cultural components into a prevention programme may be one of the important features of interventions targeted at people from BME backgrounds. Hawkins et al. (2004) reviewed drug-prevention programmes for native Alaskan youth and found good evidence for programmes with bicultural competence interventions, which consist of coping skills training that aims to increase young people’s sense of self-efficacy in both mainstream and native cultures.

One dissertation paper is included in this review. It examined by meta-analysis the effectiveness of drug-prevention programmes with and without cultural components in preventing drug use among youth from BME populations in the USA (Bledsoe 2002).
Evidence from meta-analysis (Bledsoe 2002)

Bledsoe (2002) conducted a meta-analysis to determine the effectiveness of school-based drug-prevention programmes with and without cultural components in having a positive impact on drug use, knowledge and attitudes among young people from BME communities in the USA. A total of 36 quasi-experimental or experimental evaluation studies were included, of which 25 studies evaluated programmes with cultural components. The 36 studies yielded 418 effect sizes for 22,000 programme participants for the analyses. At least 50% of the sample in these studies consisted of young people from BME backgrounds between the 5th and 12th grades (10–17 years old). The largest BME population was Hispanic/Latino (35%), followed by African-Americans (34%), white (15%), Asians (7%), native-American (2%) and other/no information (7%).

Cultural components of the included programmes were identified and systematically coded. Several cultural components were identified and the most common were:

- ‘staff being recruited from target BME population or trained to be culturally sensitive’ (42%)
- ‘cultural knowledge dissemination strategy (eg imparting knowledge of cultural history/background)’ (36%)
- ‘cultural environment and cultural perspectives (eg focus on living conditions)’ (33%)
- ‘health and wellbeing within the culture’ (22%)
- ‘culturally organised activities’ (17%)
- ‘cultural issues related to the reduction of violence’ (14%)
- ‘culture related stress’ (8%)
- ‘cultural and spiritual wellbeing’ (6%).

Effectiveness was measured in terms of changes in licit and illicit drug-use behaviour, and drug-related knowledge and attitudes. The size of programme effect was derived from the aggregated data of each outcome.

The analysis found that there was no significant difference in programme effectiveness in changing drug-using behaviour, knowledge or attitudes between programmes with and without cultural components (with – behaviour d = 0.10, attitudes d = 0.10, knowledge d = 0.16; without – behaviour d = 0.13, attitudes d = 0.07, knowledge d = 0.21).* However, an important point is that evaluation studies were included if at least 50% of the sample were youth from BME populations. This leaves a possibility that 50% of the sample in these studies was white youth and the cultural components of the programmes might have had little effect on them. This confounds the effect sizes.

In addition, effect sizes were calculated for all types of drugs. Assessing prevention effects of programmes with cultural components for different types of drugs requires further study, as previous programmes have shown differential effects on drugs.

The variability among studies included in the analysis was large and not homogeneous (ie grouping of effect sizes from different studies showed more variation than would be expected by chance, therefore reducing comparability), which questions the suitability of the analysis used. However, the author justifies the meta-analysis technique she used by citing Rosenthal’s (1991)* argument for the analysis of heterogeneous data, and arguing that it is appropriate to use heterogeneous data particularly when research questions concern differences related to characteristics such as ethnicity.

In summary, this analysis concludes that there are significant prevention effect differences according to ethnicity. American-African students benefited more from programmes that provided culturally-focused activities than those that did not. Likewise, they received the most positive impact from programmes with extra-curricular activities. Programmes were more effective among Hispanic/Latino youth when the programmes provided refusal-skills training.

A further analysis in Bledsoe (2002), which focused on prevention effectiveness of individual cultural components, suggests that some cultural components are more effective in improving drug-related knowledge than others. Programmes with ‘culturally organised activities’ and ‘cultural and spiritual wellbeing’ were significantly more effective for knowledge gain than programmes without these components.

Furthermore, programmes which featured ‘traditional approaches’ were not significantly superior to programmes which did not use them. These ‘traditional

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*These are weighted effect sizes.

approaches’ comprise a range of common drug-prevention interventions such as information dissemination, affective education (programmes and curricula that attempt to change the values and behaviour of students), refusal-skills training, life skills programmes, safety skills training and extra-curricular activities.

Nevertheless, there were some exceptions: programmes with affective education were significantly less effective in preventing drug use than programmes without this component. Conversely, programmes with refusal-skills training had significantly greater prevention effects than those without this type of training.

Interestingly, theory-based programmes were not more effective in preventing drug-use behaviour or drug-related attitudes than programmes that were not based on theories. When each theoretical model was considered in the context of each outcome, only problem-behaviour theory based approaches proved ineffective. However, it should be noted that this meta-analysis did not examine the fidelity of implementation or the quality of these programmes. Although many programmes purported to have a theory, implementation of the theory was not measured. Therefore, there is a possibility that low fidelity of implementation, rather than inappropriateness of theories, could have affected the result.

Review-level evidence

LifeSkills Training (LST) has been tested for its efficacy in preventing drug use among young people from BME populations. These LST evaluation studies were critically reviewed by Coggans et al. (2003). The authors first reviewed effectiveness in a mainly African-American population (48% of participants).* No significant difference in drug use between the intervention and control groups was found at 4 month follow-up. LST was also compared with a culturally-focused intervention (CFI), the content of which had a drug knowledge dissemination session, as well as LST. The teaching methods of CFI were slightly different from those of LST and involved ‘live storytelling, video and peer leaders’. The results showed that there was no significant difference in programme effectiveness between the two interventions. A 2 year follow-up of this study** demonstrated that both LST and CFI showed prevention effects on drinking but not on cannabis use.

Another study (Botvin et al. 1997),** reviewed by Coggans et al. (2003), examined the short-term effectiveness of a modified LST programme where there was increased content reflecting cultural sensitivity (eg in reading level, illustrative examples and behavioural exercises). The majority of participants in this study were Hispanic youth. It was found that the modified LST had a significant positive impact on cannabis, tobacco and alcohol use compared with a control.

A final evaluation study*** examined the long-term effectiveness of a culturally-modified LST-based intervention. The largest BME population in this study was African-American (61%). One year follow-up showed that, compared with control subjects, the intervention was significantly more effective in preventing tobacco, alcohol and inhalant use but not the use of cannabis.

Summary

Evidence from meta-analysis (Bledsoe 2002) suggests that prevention programmes that are effective for white young people are similarly effective for adolescents from BME populations. There is also evidence to suggest that adding components that can respond to cultural needs of a target population or which increase cultural sensitivity of the programme can enhance effectiveness (Coggans et al. 2003).

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### 4.4 Targeted interventions

Some drug-prevention programmes aim to prevent drug use among sub-populations of young people (targeted prevention or selective and indicated prevention) rather than the whole population (universal prevention). The selection of participants in these programmes is often based on the presence of ‘risk’ factors associated with drug use/problems. By focusing on the needs of targeted youth, these programmes attempt to increase the meaningfulness or usefulness of the programmes to the recipients.

However, it is important to note that the presence of one or more ‘risk’ factors in an individual does not mean that he or she will inevitably develop drug use or experience drug-related problems.

There is evidence from the mainstream literature to support targeted interventions among high-risk young people, in particular for prevention of illicit drug use. One study has shown that the majority of those who reported use of cannabis and other illicit drugs at a harmful level were ‘high’ risk students, while most of those who reported drinking frequently at a harmful level were students who were categorised as ‘average’ or ‘low’ risk (National Drug Research Institute and the Centre for Adolescent Health in Australia 2004). This finding indicates that prevention of illicit drugs should be targeted, whereas prevention strategies for legal drugs need to be universally delivered.

Evidence from mainstream review papers strengthens this argument, as it demonstrates adverse prevention effects of universal-prevention programmes on high-risk students (White and Pitts, 1998; Windle and Windle, 1999). However, this is not true for younger students (year 7), among whom a harmful level of any drug use is not associated with any risk levels. This indicates that prevention programmes for younger students should be universal.

Two reports that evaluated targeted prevention programmes are included in this review. One is an outcome evaluation of a school-based targeted prevention programme in Canada entitled Opening Doors (De Witt et al. 1998). The other describes the results of a process evaluation of community-based peer-led programme in Scotland (Parkin 1998).

#### School-based targeted prevention (De Witt et al. 1998)

Opening Doors was a 10 week school-based programme in Ontario, Canada, that aimed to prevent or reduce drug use and other problem activities among students who were identified as being at-risk of developing delinquent behaviours and associated problems. This programme had two components, student and parent interventions. The objective of the student component was to equip students with personal and social skills to improve their school life and interpersonal relationships. It consisted of 17 interactive sessions (1-2 hours long) on drug knowledge and information, skills training and stress anger management. In contrast, the parent component comprised evening sessions that aimed to foster a supportive home environment. This, in turn, was expected to strengthen what their children had learned at school and encourage efforts to make behavioural changes.

Programme participants were selected by a screening questionnaire. There were four risk-factor categories and those who scored two or more risk factors on at least two of the four indices were invited for participation.

Twenty-one schools participated in this study, although they were not randomly allocated to experimental (9 schools) and control (12 schools) conditions. Eighty-seven students from experimental and 80 students from control groups completed pre- and post-intervention and 6 month follow-up questionnaires, which included measures on drug use and delinquent behaviour, drug-and school-related attitudes, self-esteem, and personal and social skills. The results revealed that the programme had an immediate significant positive impact on a variety of outcomes. After adjusting for baseline differences, significant programme effects were found for risky drinking behaviour (ie five or more drinks per occasion); cannabis use; attitudes towards school; peer pressures to commit violent acts; and self-reported theft. However, no significant effect was found for sedative use and self-esteem.

The results of the 6 month follow-up suggest that some of the positive effects were short-lived. No significant difference between the conditions was reported for cannabis use, self-reported theft or attitudes towards school. On the other hand, the experimental sample showed significantly less frequent use of alcohol than the controls at 6 month follow-up. It may be that the
reduction in risky drinking observed post-intervention could have led to less frequent use of alcohol 6 months later.

This programme received strong support from schools and this appears to be an important factor for its success. Furthermore, there was a high attendance among the participants (retention rate was 87% at 6 month follow-up) and this was given as another reason for achieving the good results. It is worth noting that a high fidelity to the programme, indicating strong motivation, is also associated with success in the LifeSkills Training programme (Coggans et al. 2003).

However, there are several problems in this study that limit the strength of the evidence. One of the limitations is the voluntary participation in this programme. Students who decided to participate in the programme might have had some motivation to change their behaviour, which could have been confounded the effects of the programme. Similarly, the voluntary nature of participation implies that the research findings cannot be generalised to those who are ‘at-risk’ but less motivated to change their behaviour.

One approach that has been suggested to address this is the ‘intention to treat’ control group, which comprises assessment of drug use of individuals who refuse to take part in a study. It attempts to identify individual motivations to change to make the intervention more appealing to similar populations in the future.

It is important to note that those who dropped out from the programme were defined as being more at-risk than those who completed it. The former group reported more frequent use of cigarettes, higher intentions to use cigarettes and cannabis, more misbehaviour at school and poor coping skills at pre-intervention than those who completed the programme. Therefore, the authors caution that the findings from this study may not be generalised to these ‘higher’ risk students.

Another limitation comes from a concern about the outcome measures used in this study. There was a total reliance on self-reported measures, which are susceptible to biases and resultant unreliable responses, and recanting (Percy et al. 2005). Also, there is concern over the validity of some scales, especially scales that measured drug use. For example, there were three outcome measures for alcohol use and all of them used the concept of ‘number of drinks’. This is ambiguous and it would have been clearer if the strength of the beverage had been identified.

It is interesting to note that factors that had been predicted to mediate delinquent behaviour (including drug use) were shown to be unrelated to observed changes. For example, the programme had no significant effects on self-esteem or skills improvement. The relationship between mediators and predicted drug use are discussed further in section 4.7.

There is a final issue to note, concerning the role of parental involvement. Although the programme had a parental component, no evaluation of it was conducted because of low parental participation. Therefore, the role of parental involvement in this type of prevention requires further investigation.

Community-based targeted prevention (Parkin 1998)

Crew 2000 (www.crew2000.co.uk) is an Edinburgh-based community drugs and sexual health information and advice service that was subject to process evaluation by Parkin (1998). The service was developed from an awareness of a gap in drug-related services in the community. Two drugs workers in the area realised that there was a lack of health information on ‘dance drugs’ in spite of an increase in their use among young people. The design of the service was modelled on a peer HIV/AIDS education project in New York, which was led by homeless men and women. Similarly, Crew 2000 is a peer-led initiative and its activities are developed and led by volunteers with professional support.

Crew 2000 has provided a range of activities that target youth who use ‘dance drugs’ (ie stimulants, hallucinogens, cannabis, alcohol) and also people from organisations that deal with young people. First, a Crew 2000 ‘shop’ (a drop-in information centre) provided drugs-related and sexual health information by supplying information literature and leaflets on these issues. It was reported that many of the leaflets were designed by Crew 2000 volunteers, but the shop also stocked leaflets from other organisations such as HIT in Merseyside (see section 2.1.1) and supplied free condoms. Furthermore, although giving verbal advice on recreational drug use was not uncommon in the shop, it did not provide counselling services. According to Parkin (1998), 2961 people visited the shop between 1997 and 1998.

Crew 2000 has also provided outreach services. Leaflets on drugs and sexual health information were distributed in night clubs, colleges, music and clothes shops, and...
public conveniences. It also provided an information stall at youth dance events (eg ‘raves’ and festivals). At the stall, volunteers gave advice on sexual health and drug use, as well as the leaflets, and free condoms. Crew 2000 also provided a crisis intervention service (‘chill-out room’) at youth dance events, where volunteers provided some non-medical support (eg giving verbal reassurance and/or distraction) to event attenders who experienced acute drug-induced negative psychological states.

Crew 2000 was also involved in a rapid response information service. The objective of this service was to alert club-goers about negative effects of drugs currently circulating in local clubs. The information came from connections that volunteers had with the club culture and a content analysis of various brands of ecstasy tablets. In addition, Crew 2000 carried out some DJ workshops, with an aim of raising awareness of the service among targeted young people. It also provided drug information and training to people from other organisations.

Since this report is a process evaluation, the impact of Crew 2000 on service users’ drug-related behaviour cannot be assessed. However, results of two questionnaire surveys (n = 265) conducted at the shop and information stalls at dance events can provide some insights into the immediate impact and appeal of the service.

Engaging and retaining drug users is the first step in addressing use. The results reveal that both activities were successful in attracting or being accessed by young people of the targeted age range. The majority of the respondents were reported to be aged between 16 and 25 (86.4%); 38% stated that they were still at school.

Findings of the survey also highlight that Crew 2000 was able to regularly attract ‘new’ service users to the shop and events. More than a half of the dance event survey respondents (53.1%) reported that they had never accessed Crew 2000 before. Likewise, a large proportion of the shop survey sample (62%) said they had come to the shop for the first time. Many of the event survey respondents, however, said they approached the information stall because they were curious, and not for drug information. It is not reported what proportion of these individuals subsequently received information.

Crew 2000 is reported to have been successful at reaching or being reached by young people with targeted drug-use patterns. Lifetime illicit drug use and drug-use prevalence were high among the respondents (91% and 90%, respectively), but this was similar to other studies of this population (eg Bean et al. 1997; Deehan and Saville 2003; Sumnall et al. 2004). Among the sample from the shop survey, at least 19% reported using a drug on a daily basis and 23% on a weekly basis (mainly cannabis). Accordingly, the most common ‘last drug used’ among the respondents of the shop survey was cannabis (53%), followed by amphetamines (16%) and ecstasy (13%). The majority of the respondents of the dance event survey reported that they were regular clubbers (77%).

There was concordance between service users’ reasons for accessing Crew 2000 and the service’s aim (to provide drug and sexual health information). Typically, young people reported that the aim of their visit was to get information, leaflets and/or condoms. Likewise, about half of the respondents of the dance event survey (52%) said they approached the information stall for advice, information and leaflets.

An interview with Crew 2000 volunteers (n = 11) revealed that many had used or had been using drugs, although this was not seen as a barrier to effective working relationships by other drug agencies. It is interesting to note that many volunteers stated that they had personally benefited from their participation in Crew 2000 activities. Many reported that they were using less drugs than before their participation in Crew 2000, which corresponds well with other review findings that suggest that peer support workers/educators often benefit as much as the target group (Canning et al. 2004). An increase in self-confidence and self-esteem was also reported.

Summary

It is not appropriate to comment on the effectiveness of targeted prevention programmes in preventing drug use based solely on these two reports. However, it should be noted that they illustrate a range of approaches that targeted drug-prevention programmes can take. Interventions can be delivered in a range of settings (eg school, community and youth events), provide a variety of activities (eg skills training, information stalls, crisis intervention), be led by different providers (eg adults, peers), and be received by various subpopulations of youth (eg at-risk students, club-goers). To effectively engage particular populations a service or project needs to be credible and accessible.
4.5 Media interventions

The range of media products and sources is extremely diverse, including television, radio, DVD, video, books, posters, flyers and magazines. Most of the population is exposed to a significant amount of information through the media every day and young people are no exception. It is believed by some authors that attitudes and behaviours depicted in the media can influence young people’s perception of societal norms and can promote certain lifestyles, as well as products (see Flay 2000). In view of its popularity and large audience, the media has been used in efforts to prevent drug use.

One example of a large comprehensive media-driven prevention campaign is the National Youth Anti-Drug Media Campaign in the USA (Office of National Drug Control Policy) funded by the American Congress and the National Institute on Drug Abuse (NIDA). Targeting young people and their parents, the campaign uses relatively aggressive and politically-inspired messages. The most recent evaluation took place in 2002 with a large representative sample (youth living at home with their parents) (Hornik et al. 2002). Assessed outcomes include recall of messages; drug-related beliefs, attitudes, intentions and behaviour in youth; additional assessment of drug conversations; monitoring of children’s lives; and involvement in activities for children. The campaign produced favourable effects on parents for most outcomes, but in youth there was no reduction in alcohol or cannabis use, an increase in use in those individuals exposed to more messages, and an increased intention to use.

FRANK (www.talktofrank.com) is the main national drugs communication resource in the UK. However, there has been no robust outcome evaluation published on its activities, so it is not possible to review evidence of its effectiveness.


Evidence from meta-analysis (Derzon and Lipsey 2002)

Derzon and Lipsey (2002) examined the effectiveness of media-led drug-prevention programmes. A total of 72 studies from the USA were included in a meta-analysis that evaluated media interventions to prevent or reduce the use of tobacco, alcohol and illicit drugs among young people. Among the inclusion criteria were those studies that incorporated at least pre- and post-intervention measures. The mean pre- to post-effect sizes for intervention and control groups were obtained for several media intervention components (eg media sources, target, messages, types of drugs, structure of intervention and audience types). Also, various features within each component were coded and their effect sizes were calculated to determine the relative effectiveness (eg for the media source component, there were four features of interest, TV, radio, print and video).

The results show that media interventions are not a particularly effective method for preventing drug use, as both intervention and control samples increased drug-use behaviour, although they showed improved attitudes towards drugs and gained drug-related knowledge. This finding may imply that initiating or using drugs, positive changes in drug-related attitudes and drug-related knowledge improvement may be part of a developmental process, at least among young people in the USA. Moreover, this finding could indicate that a link between drug-use behaviour and attitude and knowledge is weak. It is noted that intervention samples demonstrated improvements in attitudes and knowledge gain, suggesting some intervention effectiveness.

In terms of the relative effectiveness of individual features of the media source, video was associated with a positive effect for all the three outcomes (behaviour, attitudes and knowledge). In addition, radio and TV were associated with a positive effect size. In contrast, the use of print was associated with a positive effect size for attitude change but not for knowledge change.

However, it must be noted that coding was not conducted in a mutually exclusive manner. A programme coded for the use of radio might have also used television. Therefore, these findings should be treated as

* Media advocacy is the strategic use of resources such as TV, video, radio and print to promote public debate and generate community support for changes in community norms and policies.
an indication of relative effectiveness. Also, the majority of the studies included in the analysis did not use random allocation to conditions. Therefore, comparability of the intervention and control groups can be questioned.

Media messages about tobacco have shown to be ineffective in changing behaviour. However, positive effect sizes for behaviour change were found for messages addressing alcohol as well as illicit drugs. Messages targeting a specific drug were not associated with positive attitude change. Messages addressing tobacco produced a larger positive effect size for knowledge gain.

In terms of message characteristics, ‘positive attitudes to non-use’ was associated with positive changes in drug-use behaviour, attitudes towards drugs and drug-related knowledge. Furthermore, ‘what to say to others about use’ and ‘alternatives to use’ were associated with large effect sizes for behaviour change while the latter was also associated with positive attitude change.

It should be noted that the meta-analysis also shows that media interventions were relatively less effective in preventing drug use when the majority of the sample was female, when participants were considered to be at-risk of drug use, or when the target audience was aged below 22. However, at-risk populations were found to respond relatively well to media intervention in terms of attitude changes and knowledge gain.

To summarise, the meta-analysis does not provide good evidence for the effectiveness of media interventions in preventing drug use, improving attitudes towards drugs and increasing knowledge. The authors argue that an important finding of this study is that although both intervention and control samples showed positive attitudinal and knowledge changes, and negative behavioural outcomes, the intervention groups received more positive benefits than the control groups. The use of video and ‘positive attitudes to non-use’ were associated with a positive impact on behavioural, attitudinal and knowledge outcomes.

Review-level evidence for media interventions (Hastings and Stead 1999)

Hastings and Stead (1999) critically reviewed the use of media in drugs prevention. They classified media interventions into four categories: mass media campaigns, integrated programmes, media materials and unpaid publicity or media advocacy.

Mass media campaigns include national universal drug prevention campaigns such as ‘Just Say No’ in the USA and ‘Heroin Screws You Up’ in England. According to Hastings and Stead (1999), mass media campaigns have produced mixed results. They report that although mass media campaigns are effective in increasing drug awareness, stimulating public debate and improving drug-related knowledge, they should be supplemented by other drug-prevention strategies or interventions to have an effect on drug-use behaviour. While mass media campaigns are found to be effective in reaching ‘high-risk’ adolescents, increased awareness of a campaign is not associated with a positive impact on drug use. It has also been argued that mass media campaigns reinforce anti-drug attitudes only among those who are already anti-drugs (Makkai et al. 1991; Strasburger 1989).

Integrated programmes (or multi-component programmes) consist of various drug-prevention interventions to address several life issues. Interventions include media interventions, school-based programmes, policy changes and/or community initiatives. According to Hastings and Stead (1999), there is tertiary-level evidence to suggest that these multi-component programmes are effective in bringing about desirable behavioural changes. However, integrated programmes are rarely assessed for the relative effectiveness of individual components. Further research is needed to determine the relative contributions made by media interventions within integrated programmes.

Some school- and community-based drug prevention programmes have used media materials to deliver drug prevention information and messages. Materials include videos, magazines and leaflets. According to Hastings and Stead (1999), there is some review-level evidence to suggest that interventions delivered using media materials are more effective than teacher- or external contributor-led programmes but these are not as effective as peer-led interventions. However, the authors report that there is little information about the relative effectiveness of various types of media materials.

Unpaid publicity or media advocacy involves using the media to communicate messages about drug-prevention issues. There is a lack of evidence about the effectiveness of this strategy in preventing drug-use behaviour, so
further investigations are required (Hastings and Stead 1999).

To sum up, Hastings and Stead (1999) found that the media has been used as the main deliverer of drug-prevention messages as well as a component of an integrated programme. Media interventions can be effective in, for example, impacting positively on drug awareness and knowledge. However, evidence on behaviour is limited and further research is required to better assess how this should be integrated into a drug-prevention programme as well as the efficacy to impact on drug-use behaviour. Added to this, the monograph on drug prevention produced by the National Drug Research Institute and the Centre for Adolescent Health in Australia (2004) also concluded that media interventions are only effective when part of a broader drug-prevention strategy.

Media advocacy (Eadie et al. 2002)

Hastings and Stead (1999) argue that adding media advocacy or unpaid publicity to a drug-prevention initiative can facilitate programme success as it can help produce a climate for discussion on drug use or provide a platform for discussions to take place. On the other hand, Eadie et al. (2002), who conducted a qualitative study examining actual and potential contributions of media advocacy to drug prevention in the UK, argue that media advocacy per se can play a central role in drug prevention.

Eadie et al. (2002) report on two community case studies that collated interviews with 35 individuals from 22 media-advocacy organisations (eg D(A)ATs, police forces, health authority, local authority, voluntary sector organisations) and seven media advocacy targets in the communities (local editors, journalists and broadcasters).

Findings reveal that the value of a good press relationship is widely recognised by media-advocacy organisations. The use of the media was regarded as a useful method to raise the agency profile and can assist in securing support from key stakeholders and investors. However, the level of proactiveness with local media varied among the organisations.

It was found that efforts or motivations to build strong links with the media are commonly weakened by people’s negative attitudes to, or expectations of, the media. For example, some people (especially healthcare and social services workers) are worried that their comments would be (willfully) misrepresented or used in a news article to support a particular line of argument. Negative attitudes towards the media appear to be strengthened by a perception that most hold a ‘hard-line editorial position’ on drugs.

Focusing on the law and order implications of drug use can result in distorted reporting of drug problems (eg the exaggerated scale and nature of the problem). It can also focus public debate exclusively on drugs and drug users rather than the wider social issues surrounding drug use and suitable interventions. This type of reporting can cause both unnecessary anxiety about drug problems in the public and reluctance of drug users to contact drugs services for help and support. Interestingly, Eadie et al. (2002) highlight that negative reporting appears to be associated with weak media relations and a reluctance to reply to enquiries from the media, rather than the media’s hostile attitudes towards drugs.

Media activities of D(A)ATs in the community case studies show how the local media environment and local authority cultures affect how the teams work with the media and whether they attach a high priority to public relations. Regardless of the community context and its media environment, engaging all local media in community-wide drug prevention is beneficial. D(A)ATS can provide a natural forum for a constructive dialogue between the media and community, and centralised responses to reporting local drug issues. This may help reduce the risk of negative reporting. Media training is necessary to help build and maintain relations with local media.

Moreover, Eadie et al. (2002) explain that use of the media is beneficial, as it has great potential to help support the UK National Drug Strategy, and specific drugs policies and services. National bodies and government departments have an important role in setting the communications agenda and climate for public debate, while regional newspapers are very interested in stories and events that make the national press.

Finally, the authors argue that the media can have a positive impact on decreasing unhelpful perceptions associated with drug use or users and increasing the profile of local drug-prevention successes.
Social marketing

Hastings and Stead (1999) argue that the use of the media requires a systematic approach that is based on clearly defined and cohesive principles. An example is social marketing. To identify, understand and facilitate social and health behaviour changes in populations, social marketing uses concepts and techniques derived from commercial marketing and incorporates monitoring and evaluation as an essential and integral part of the process (Bennett and Henderson 1999). The approach consists of a series of stages with key actions or objectives.

1. Assessment of the nature of the drug or drug-related problems (‘situation analysis’).
2. Identification of target groups based on research review, surveys, focus groups (‘market segmentation’).
3. Setting of a specific, realistic and measurable goal. It should be consistent with the needs and concerns of the target audience.
4. Development of the strategy, product, price, place of distribution and the promotional means (‘creation of marketing mix’).
5. Implementation of the planned and prepared intervention, which needs to be documented, monitored and evaluated (‘process tracking and management’).

Campaigns based on social marketing

HIT is a Liverpool-based organisation that delivers harm-reduction interventions on drugs, community safety and other public health concerns. From 1991, HIT has launched several drug harm-reduction media campaigns in Liverpool. These campaigns are developed and implemented according to the social marketing approach. Most commonly, the target population has been club-goers in Liverpool who use dance drugs in nightclubs and bars. Evaluation has been an integral part of the campaigns and reports on two HIT media campaigns are included in this review (Henderson 1998, 2000).

RELAX 2001 (Henderson 1998)

RELAX 2001 was a HIT drugs information campaign that targeted club-goers in Liverpool and took place from November to December 1997. The aim was to decrease drug-related risks and harms by providing balanced information on drugs. Campaign products and messages were developed in terms of their relevance to the target group and collectability. Visual consistency of the campaign products was maintained by using a ‘capsule logo’. The products consisted of seven types of flyer (one was a blank ‘mystery’ flyer that aimed to raise interest among the target audience), posters, t-shirts, automated display signs, condom safety packs, badges and a website. Six key messages were created based on HIT’s local knowledge of the target culture and consultation with 10 people from the target group.

Each flyer had one of the messages printed on it – they included ‘risk of mixing drugs’, ‘information on cocaine’, ‘relax – take time off drug use’, ‘drug-related individual rights for the club-goers at clubs’, ‘safety of friends in clubs’ and ‘knowledge on ecstasy’. The distribution of flyers was staggered over 7 weeks and up to 5250 copies of each type of flyer was distributed in 20 outlets in Liverpool city centre (eg cafés, clothes and record shops). Staff at these outlets were regarded as key promoters of the campaign. The campaign had a press release and was featured in several local media sources including local TV, a local ‘dance and clubs’ magazine, a local newspaper and the Big Issue magazine.

To evaluate the impact of the campaign, 2000 copies of a freepost evaluation questionnaire were distributed in week 7 and a group interview was conducted with an opportunistically selected sample of 24 young people from the target group. Overall, 50 copies of the questionnaire were returned (26 via freepost; 24 interview sample; response rate 2.5%). The mean age of the respondents was 20. Alcohol and cannabis were reported to be the most frequently-used drugs and less than weekly use of ecstasy was reported by 31% of the respondents.

According to the questionnaire responses, it was found that the level of awareness of the campaign products was high. The majority (77%) of the respondents reported that they had seen at least four campaign flyers and half (50%) said they had seen all the flyers. Awareness of the condom packs was also moderately successful with nearly half of the respondents (40%) remembering that they saw the packs. In contrast, the website was not a well-recognised aspect of the campaign with only 6% of the respondents reporting that they had visited it.

Overall, the campaign was successful in achieving approval from the target audience. The majority of the
respondents approved of the campaign (71%), especially the design of the products and the appropriateness of the drug information. However, a further analysis revealed that the level of approval was divided according to the age of the respondents. A younger group of the respondents aged between 15 and 20 showed higher levels of approval than a group whose age was between 21 and 25. Likewise, the collectability of campaign products was high but again only among those in the 15–20 age group (76% said they collected campaign flyers).

The campaign was moderately effective in increasing drug-related knowledge among the younger sample. More respondents from the 15–20 age group (55%) said that they had learned new drugs information than the 21–25 age group (40%). Similarly, over half the 15–20 age group (55%) and about a quarter of the 21–25 age group (37%) reported that the campaign had reminded them of information they had forgotten. On the other hand, experienced club-goers felt that the campaign messages were not appropriate for them as they already knew much of the drug-related knowledge promoted.

The campaign was not as effective in changing behaviour. Twelve per cent reported that they had changed their drug-related behaviour as a result of the campaign (eg not mixing drugs, looking after friends, drug driving).

Based on the responses of this very small sample, it can be said that the campaign was reasonably effective in reaching the target young people and communicating drug harm-reduction messages. This was especially true among the younger target audience, who probably have less knowledge about drugs than older or experienced club-goers. However, it must be noted that the respondents were not selected at random and the study relied on self-report. Therefore, generalising the findings requires some caution. While the impact of the campaign appears to be positive, behaviour and knowledge outcomes are difficult to establish without baseline measures and a control group.

Chill Out the Remix (Henderson 2000)

Chill Out the Remix was another HIT media drug-prevention campaign in Liverpool, launched in late December 1999. The aim was similar to RELAX 2000 (Henderson 1998), to reduce the level of risk-taking behaviour among young club-goers in Liverpool. The campaign materials included four flyers shaped like a water droplet, a pocket sized ‘Chill Out the Remix’ leaflet, condom packs, posters and t-shirts. In this campaign, messages addressed the effects of drugs, drug-related health, and social and legal issues related to drug use in nightclubs. The campaign products had the National Drugs Helpline (now FRANK) telephone number for further enquiries, and advice on emergency contraception.

The campaign materials were distributed by a ‘campaign champion’ (a club-goer familiar with the contemporary scene) in 53 outlets in Liverpool city centre (eg shops, bars, cafés). In total, 3000 of each flyer, 15,000 leaflets, 3000 condom packs and 500 posters were circulated.

To assess the campaign impact, 100 young people aged between 15 and 25 were interviewed and completed a questionnaire. The questionnaire revealed that less than half of the sample (40%) said they had seen the campaign. The campaign products, especially the condom pack, were ‘approved’ by many respondents. The design of the products was also highly praised and described as appealing, noticeable and modern. The campaign messages were also reported to have obtained approval and were considered credible, straightforward and non-judgemental. However, the messages appeared to be inappropriate for older club-goers, who were more critical about their style. It was suggested that this group was critical as they already had the knowledge that the campaign wanted to promote.

The campaign had some success in communicating campaign messages with the target audience. About a third of the respondents who noticed the campaign (35%) stated that they had an increased knowledge of drugs, in particular information about GHB (gamma hydroxybutyrate), ketamine, and legal matters and rights. Just under a quarter (23%) of those who were aware of the campaign reported that the products triggered a recall of drug-related knowledge acquired in the past. A quarter of those who saw the campaign said they changed some of their drug-related behaviours (eg increasing or moderating water intake while they are on drugs or not mixing alcohol with drugs).

The findings from this evaluation are very similar to those obtained from the evaluation of Relax 2000. There was
some success in reaching the target group and communicating the campaign messages, especially with the younger audience. Again, the extent of the campaign’s impact on knowledge gain and behavioural changes cannot be determined as there were no baseline measures, control group or appropriate outcome measures.

Summary of media interventions

Findings from the five media intervention studies show that the media can be used in drug prevention in a variety of ways and settings. The media can be used on its own or as part of a broader community or school-based drug-prevention initiative. There are numerous media products that can be used, and they can be used for both universal and targeted drug-prevention interventions. Evidence suggests that media intervention is more effective in preventing drug use only when it is part of a multi-component drug prevention initiative rather than a stand-alone intervention. However, more research is needed to determine the efficacy of each type of media intervention.

The use of media advocacy also warrants further investigation, as it has good potential to contribute to community drug-prevention attempts. Promoting and disseminating evidence-based, dispassionate information about drugs and drug use in the mass media is a priority. There is a need to challenge the media regarding anti-drug sensationalism. Rational discussion may allow parents to talk about drugs more easily with their children. The social marketing approach can provide a framework for a media campaign. Although there is some evidence to suggest that campaigns based on social marketing can effectively reach the target group and communicate campaign messages to them, research is required to look at behavioural outcomes.

4.6 Programme delivery

Individuals from a variety of organisations and background can deliver the content of drug prevention. White et al. (2004) identify in a systematic literature review that individuals from at least 16 external agencies have provided drug prevention in schools. The relative effectiveness of different types of programme deliverers has been a focus of research and there is tertiary-level evidence from mainstream studies to suggest that interventions delivered by peers are more effective in preventing drug use than those exclusively led or co-led by adults (Cuypers 2000). However, in a review of an earlier meta-analysis it was reported that different types of programme provider are equally effective for drug prevention, as long as they are trained properly (Black et al. 1998).

Four reports that address issues relevant to the choice of programme deliverer are included in this review (O’Connor 1999; O’Connor et al. 2001; Shiner 2000; White et al. 2004). Shiner (2000) conducted case studies and a literature review on peer approaches. An added value of the police input to drug-prevention programmes is described in O’Connor 1999 and O’Connor et al. 2001. White et al. (2004) conducted a systematic review of the external contributors’ role in drug prevention.

Peer-led approaches (Shiner 2000)

Shiner (2000) reviewed the roles and value of peer approaches in drug prevention by conducting a literature review and a qualitative study on five British peer interventions (three community-based and two school-based interventions).

The community projects recruited peer educators from socially-excluded areas or from target black and minority ethnic communities. These interventions aimed to benefit both peer leaders and recipients of the peer-led sessions. There was a strong emphasis on personal development of the peer educators (eg personal support for housing, skills and career development). On the other hand, the school interventions recruited peer educators from the participating schools. They had more privileged backgrounds than the peer leaders of the community projects. The school projects also focused more on the delivery of peer-led sessions than personal development of the peer leaders.

The qualitative work highlighted several key issues for implementation of peer-led projects.

First, it is important to support peer educators with non-educational but essential issues in facilitating a group, for example influencing group dynamics and discipline without seeming authoritarian.

Second, it is important to develop a policy on confidentiality and personal disclosure about drug use. The study shows that peer educators commonly feel
uncomfortable about personal disclosure of drug use. This is because it could lead to a risk of being labelled as a drug user (regardless of current abstinence) and a danger of giving the impression to the audience that using drugs is acceptable.

Similarly, the policy should cover a procedure for when and how to intervene if a member of the target group discloses information about personal problematic drug use. Peer educators may not be trained counsellors but it is important that they are able to make appropriate suggestions for suitable sources of help and information.

Third, the presence of a class teacher in a peer-led session could inhibit an open and honest dialogue among students. Shiner (2000) notes that external contributors such as youth workers, drugs workers and health professionals could be present during a peer-led session, instead of a classroom teacher. These groups are perceived to maintain confidence more than teachers, although appropriate action should be taken if the health and welfare of an individual is of concern.

Fourth, peer leaders may have a lack of knowledge and experience in leading drug-prevention sessions. Therefore, there is a possibility of peer leaders providing misinformation and/or missing opportunities to provide relevant information during a session. This problem can also be solved by having an external contributor who can help maintain the quality of the sessions.


First, drug-prevention messages or information can often be disseminated through peer educators’ informal networks, such as school friends. On the other hand, educators can play a role of semi-formal deliverers. For example, a peer educator from one of the community projects distributed clean needles from a drug dealer’s flat. It is difficult for those who are not in the drug scene to carry out this type of operation.

Second, peer educators recruited from a target black and minority ethnic population can increase the profile of a drug-prevention project within the community.

Third, young people commonly regard peer leaders as more credible than adult educators, which is a valuable promoter of engagement and retention. Five types of credibility were described:

- person-based (eg a role model or respected individual)
- role-based (eg a youth educator)
- knowledge-based (eg accurate and balanced academic or colloquial knowledge)
- approach/message-based (eg interactive techniques)
- experience-based credibility (eg ex-user).

Student peer educators were rated highly on the first four types of credibility. In contrast, teachers were lacking in all types of credibility except person-based credibility. Ex-users and drug workers were rated highly on knowledge-based credibility. However, some younger students (12 year olds) reported a low credibility for ex-users, seeing them as ‘untrustworthy’.

Shiner 2000 highlights that peer approaches are versatile and flexible and have potential to add value to drug prevention. However, holding credibility or adding value does not necessary mean that the approach is effective in preventing drug use.

Peer leaders in LifeSkills Training

Section 4.1.4 reviewed research findings from LST evaluation studies. Coggans et al. (2003) also appraised evidence about peer leaders and the LST programme. They found evidence to suggest that peer-led LST is significantly more effective in preventing drug use than teacher-led LST. However, LST peer leaders (but not teachers) had received intensive training and on-going briefing sessions. These special inputs may have resulted in an increase in the fidelity of implementation,* which in turn influenced the outcome. Also, there is meta-analytical evidence to suggest that providing they received equivalent training, different types of programme providers are equivalent in terms of effectiveness (Black et al. 1998).

External contributors

White et al. (2004) conducted a systematic review examining the roles of external contributors who support school drug education. Among the 114 studies included, police were the most common external agency that

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* Completeness of implementation is an important factor for LST effectiveness (see section 4.1.4).
supported school drug education (n = 30), followed by theatre (n = 25) and health educators (n = 11).*

As with the findings from Black's (1998) research paper, White et al. (2004) found no differences in effectiveness between contributors from the 16 external agencies. However, short-term effectiveness (generally assessed immediately after the end of the intervention) was found in some programmes led by police officers and nurses. The DARE programme, which is exclusively led by uniformed police officers (see section 4.1.1), was effective in increasing drug-related knowledge, unfavourable attitudes towards drugs, and drug-use behaviour. However, these effects were short-lived. A similar short-term knowledge gain was also seen among young people who received programmes delivered by nurses.

The value of external contributors appears to be the special knowledge that they have and the novelty of their approach. These qualities seem to successfully attract children's attention during sessions, which may explain their popularity among teachers and pupils. Similarly, each type of programme provider has the potential to make unique contributions to school drug-prevention programmes. For example, children feel that peer-led group sessions create a natural and safe environment for honest dialogue, and peer educators from outside schools can be viewed as positive role models for the audience.

The use of a theatre can increase drug awareness, facilitate discussion and engage pupils well, regardless of their age. Police officers can contribute to school drug education if they play a supplementary role, as they can bring in specialist knowledge. It is argued that contributions from external speakers should form a part of the curriculum and be supported by classroom teaching (eg provide preparatory and follow-up sessions). As has been discussed in other sections, a main criticism of many school or curricular-based interventions has been the lack of time or willingness by teachers to dedicate adequate resources or preparation to ensure fidelity.

The role of police in drug prevention

The police are one of the popular external agencies that have supported school drug-prevention programmes (perhaps due to the illicit nature of many substances), and are subsequently one of the most commonly and rigorously evaluated external providers (White et al. 2004). In Scotland, the majority of secondary (71%) and primary schools (68%) have received input from police officers (Lowden and Powney 2000). A survey of 41 police forces in England and Wales revealed that most forces believe themselves to be highly committed to provide drug prevention and education in schools (O’Connor 1999). But despite the popularity of the police as a supporting agency for drug education and the high commitment that has been expressed by the forces, there is no convincing evidence that police-led interventions are effective in bringing about long-term behavioural changes (O’Connor 1999; White et al. 2004).

Added value of police input

O’Connor (1999) argues that to play a more effective role police need to modify the nature of their input to drug education. First, they should offer a complementary or supportive position to schools related to their speciality and expertise. The police have a wealth of knowledge on the drug law and, through personal and professional experience, the individual, familial and social costs of drug use (O’Connor 1999). Guidelines issued by the Association of Chief Police Officers (ACPO) drugs Subcommittee in 1996 stated that the police input in school-based drug education should be limited to areas of police speciality and expertise. However, it was found that it was not uncommon for the police officers to lead drug-education sessions, playing a teacher’s role rather than a complementary role (O’Connor 1999).

Current guidance (ACPO 2002) outlines expectations that police may have a broader role in schools beyond drugs education. This includes reducing the fear of crime among teachers and pupils; addressing problems associated with truancy and attitudes of young people to crime and drugs misuse and levels of disorder within schools; and fostering good relations between young people and the community. In effect the role of police in schools is that of a community beat officer working in a school. Where police officers present a drugs-education message they must achieve relevant occupational standards. Second, the police can support and add value

* Other external agencies were: peers from outside school (n = 10), Life Education Centres (www.lifedducation.org.uk) (n = 8), school nurses (n = 7), drug agency workers (n = 7), researchers/ psychologists (n = 6), ex-users and current drug users (n = 3), youth workers, cartoon animators, fitness instructors, professional basketball players, health and legal experts, parents and singer/songwriters (n = 1)
to school prevention programmes by becoming involved in managing drug incidents in schools and helping them develop and implement drug policies. If policies are able to balance legal requirements with the needs of young people then they can be diverted from the risk of school exclusion or involvement with the criminal justice system.

Case studies with several police forces have highlighted that prevention of drug use is not the only and most important outcome of their input into drug education in schools. It was found that achieving good relationships with the community (i.e., schools, teachers, children, and their parents), building up multi-agency working and raising positive attitudes towards the police among children are all important outcomes for police drug education (O’Connor 1999). Some schools believe that police officers can increase the credibility of existing drug-related messages and welcome opportunities to establish relationships with the police, so that they can work with the police when they have drug incidents.

As a result of O’Connor’s report (1999), a London-wide multi-agency advisory group was set up by the Metropolitan Police drugs directorate that aimed to work collaboratively with the capital’s police force to devise a revised strategy (O’Connor et al. 2001). The new strategy places clear aims on the police contribution to drug prevention in schools and was considered in the context of ACPO guidance. The police input focuses on the law and order aspects of drug use and does not deal with other issues not within their expertise (e.g., health and social issues). It also addresses the wider role of ‘police school involvement officers’, who would deal with and support drug-related incidents and drug policies in schools.

Five sites in the London Metropolitan area piloted this strategy and a series of studies examined the feasibility of implementation. Key individuals from the Metropolitan Police (managers and practicing police officers), schools and multi-agency partner organisations were interviewed.

The interviews revealed that the police held a high commitment to and great understanding of the new strategy. However, some concerns were expressed by practicing police officers. They had some reservations about not dealing with the health aspects of drug use. Also, the officers emphasised the need for preparation, training, and resources to fulfill their new drug-education role. However, these needs were not acknowledged by some managers. Compatibility of the police’s mixed operational and teaching roles can be a concern, as operational activities have sometimes interfered with planned drug-education activities. All interviewees reported that the new strategy would create ‘gaps’ in the drug education curriculum. However, police managers said that the value of the police input in drug education is not only about preventing drug use but also about strengthening partnership working with schools. Schools and agencies also believed that the latter outcome is important. However, there are currently no objective mechanisms to measure this aspect of the police input in drug education.

Although the police expressed a great understanding of the new strategy (and by extrapolation the ACPO guidance), observation of police lessons in the pilot schools revealed that police officers were still playing the role of teacher and not that of an expert contributor. Some inappropriate teaching methods were observed during their lessons. This might have resulted from acting in the role of a teacher, which is outside their expertise.*

To assess the impact of the new strategy among recipients, year 8 pupils from the pilot schools were given pre- and (immediate) post-police intervention surveys that measured changes in drug-related knowledge on the law and procedures, criminal consequences and drug recognition. The results revealed that there was no significant knowledge gain among the pupils. A focus group conducted with pilot school pupils indicated that police-led interventions need to be developmentally appropriate (O’Connor 1999). Younger pupils were more positive and enthusiastic about the police input in drug education than older pupils. Also, the younger pupils felt that the police officers were more knowledgeable about illegal drugs than were teachers. Older pupils had more negative attitudes towards the police.

Summary of research into programme deliverer

The reports have highlighted that drug prevention can be delivered by a number of different types of providers. Each type of delivery seems to be able to make unique

* Likewise, teachers who participated in an interview for the CLEAR D evaluation (see section 4.1.1) reported that not every officer they saw had certain qualities that are important for fulfilling their role, such as sensitivity, truthfulness, not shaken by children’s questions, clear communication.
contributions to drug prevention. For example, peer-led approaches are flexible and versatile, as they can be used in a variety of settings, from school to community. Peer leaders can be students, drug (ex-)users, drug workers, youth workers, those from minority ethnic groups and people who are socially excluded. Peer approaches also benefit peer leaders, developing personal and interpersonal skills.

Evidence suggests that police officers should play the role of expert visitors, supporting school-based drug education. However, the implementation of such a strategy may require some effort and time, as it will involve partnership working among the police, schools and other relevant organisations.

To summarise, there was no difference in long-term effectiveness among external contributors who supported school-based drug education. This indicates that more research is needed to identify effective and tailored teaching methods that providers can employ.

4.7 Factors that affect drug use and drug-prevention programmes

The content of drug-prevention programmes usually reflects underlying assumptions or theories about the causes of drug use. For example, LifeSkills Training (LST) is based on a social influence model (see section 4.1.4). Drug use is assumed to be caused by social influences (peer and media pressures), and critical mediators are hypothesised to include assertiveness, self-esteem, social efficacy, social anxiety, locus of control and influenceability. Therefore, LST aims to tackle these factors by providing broad and drug-specific skills training.

Interestingly, Coggans et al. (2003), who reviewed LST evaluation literature, found that the effectiveness of LST is associated with changes in variables that were not hypothesised to mediate drug use (i.e. drug-related knowledge, attitudes towards drugs and normative expectations), rather than changes in factors assumed to mediate drug use by the theory (e.g. assertiveness, self-esteem, social efficacy, social anxiety, locus of control and influenceability). De Witt et al. (1998) found that Opening Doors (section 4.4) was associated with prevention of problematic behaviour, including drug use, but they found no significant changes in those skills that were assumed to mediate these behaviours. Bledsoe (2002), who conducted a meta-analysis of drug-prevention programmes with and without cultural components, has also found that theory-based programmes are not significantly more effective than programmes not based on theories.

These findings seem to support the view that drug prevention can be effective whether theory-driven or not. However, it is also possible that the theory, although correct, is partially or wrongly translated in the interventions. Also, the fidelity of implementation of the programme could have been low. Other features of drug-prevention programmes (e.g. types of deliverers, intensity, teaching style, good relationship with target group) may play a more important role than the actual content of the programmes.

More research is needed to determine factors associated with the onset, continuation and escalation of drug use. This should improve our understanding of drug-use behaviour and the effectiveness of drug-prevention programmes.

Two reports are included in this review that studied mediating factors with the potential to increase programme effectiveness (Lowden and Powney 2000; Measham et al. 1998).

Factors that affect drug use and drug prevention: drug use status and drug education (Lowden and Powney 2000)

Lowden and Powney (2000) examined Scottish young people’s drug knowledge, attitudes towards drugs and drug-use behaviours.

Surveys of secondary and primary school pupils (1997 survey, n = 4400; 1999 survey, n = 1119) revealed that there were considerable differences between users and abstainers in how they perceived and received drug education. Pupils who were critical about drug education tended to be users or older students (secondary schools). It was shown that users were bored and frustrated by much of the drug education they received as they had more knowledge of drugs than abstaining peers. The content of drug education was reported to be inconsistent with their perceived needs.

However, despite 34% of users reporting that drug education did not have any impact on their drug use,
more than a half (56%) said that drug education had a personal harm-reduction impact (eg promoted ‘safer’ and/or reduction in use), while a tenth (10%) reported that it helped them to stop using drugs. This is a similar finding to other investigations. Van de Wijngaart et al. (1999) report that 84% of a sample of nightclub attendees felt that the presence of ecstasy tablet testing had no impact on their ecstasy use but only 53% had never had their tablets tested. The information was used to reduce or prevent the use of fake or strong tablets. This indicates that there is often a disparity between the attitudes and behaviour of users. In addition, the ‘just say no to drugs’ type of zero tolerance approach may have reduced impact, as many say they are already using drugs without experiencing any negative consequences (Lowden and Powney 2000).

Furthermore, the content of drug education should be sex sensitive. It has been found that drug use patterns and prevalence differ between sexes. For example, there were more girls smoking cigarettes (62%) than boys (38%) (Lowden and Powney 2000). Girls may initiate and maintain cigarette smoking more than boys partly because they tend to adhere to the belief that smoking helps control their body weight (Boles and Johnson 2001). Drug education may have to increase sensitivity by exploring these gender differences in reasons for using drugs.

Factors that affect drug use and drug prevention: drug use status and reasons Measham et al. (1998)

From longitudinal interviews with 24 young people in the north of England, Measham et al. (1998) examined how and why young people’s drug use changed over 12 months. The interviews revealed that drug use was dynamic – most interviewees had changed their drug-use status and repertoire within the previous year. Most said the onset of their use came from the influence of others. They continued to use drugs because they liked the effects, but stopped using them when they experienced bad effects or when their lifestyle changed.

This observation seems to correspond with popular drug-prevention strategies. LST focuses its interventions on these social and intra-personal factors, as its advocates view drug-use behaviour as caused by social influences (eg media and peer pressures) on individuals and mediated by intra-personal factors including assertiveness, self-esteem, social efficacy, social anxiety, locus of control and influenceability. Many drug-prevention programmes offer diversionary activities to reduce the likelihood that young people will take drugs. However, Measham et al.’s finding is based solely on self-report of a very small sample. One has to be cautious about the responses being representative of a larger population. Self-report from a small sample size cannot be used to verify drug-prevention strategies.

A marked difference between users’ and non-users’ knowledge of drugs was also highlighted in this study, as well as that of Lowden and Powney (2000). Users reported that some widely-held views about drugs were inappropriate and problematic. These include polarised views of drug use such as ‘addiction and withdrawals are always living hell for the addict’, ‘ecstasy is more deadly and dangerous than other drugs’, and ‘one hit and you are hooked’. Conclusion

One value of these studies is that they have shown some marked differences in drugs knowledge between users and non-users. More research is required to assess the mechanisms of drug use to determine internal, external and developmental factors, and in turn to improve theories of drug use and enhance the efficacy of drug-prevention programmes.

4.8 Methodology

One of the shortcomings of unpublished reports is poor methodology (Fountain 2002) and this was evident in most of the outcome evaluation studies included in this review. Methodological problems include a lack of random allocation of participants (or schools) to conditions and an inappropriate choice of outcome measures. It must be noted that even some mainstream studies are plagued by poor methodology (as discussed in Canning et al. 2004).

Similarly, a systematic review of the effectiveness of external contributors has shown that 51 out of 103 studies (both published and unpublished) have no comparison (control) groups or baseline measures, and 44 of these are British (White et al. 2004).

It is not surprising to see poor designs in these studies. Nevertheless, they provide some detailed process evaluation and address issues such as confidentiality.
Design

There were nine reports included in this review that evaluated drug-prevention programmes. No studies were randomised controlled trials. However, two studies randomly allocated schools into experimental and control conditions (Eisen 2002; Stead et al. 2000, 2001). Four studies used a non-equivalent control group design (Benett et al. 1996; Bigger 1998; De Witt et al. 1998; Needham 1999) and the other three studies did not have a control group or adopt an appropriate longitudinal design (Frith 1997; Orme and Starkey 1998; Phelps et al. 1999). Only one study (Phelps et al. 1999) measured changes pre- and post-intervention. Frith (1997) did not obtain the post-intervention data from the same sample of participants as the baseline. Furthermore, only one of the studies measured long-term outcomes (Bigger 1998), although this study suffers from other confounding issues (see section 4.1.1).

Process evaluation

Despite poor study designs and methodology, many reports included in this review provided detailed accounts of methodology and activities carried out by the programmes. Such process evaluation can be a useful source of information (World Health Organization 2000).

First, it can assess whether the programme has achieved what it set out to achieve and the fidelity of programme implementation. An intervention may be methodologically sound, but if it is not implemented as intended and there is unjustified deviation from the programme’s aims, then it is unlikely to be successful. Similarly, poor fidelity of implementation would make it difficult to reach a conclusion about what elements and components made a programme successful if it achieved a positive outcome.

For example, STAR was a drug education programme with police input for 9–11 year olds (Phelps et al. 1999), a key transition period, but it was only partially implemented. Process information from the programme revealed that for some components only 9% of the teachers surveyed reported implementation of specific activities, and only one fifth of the respondents reported that they gave homework as planned.

Low fidelity of implementation was also found in other studies. For instance, one of the actors who delivered the HPSA/Bristol Old Vic Drama Project reported that there was inconsistency among colleagues in the content of the workshop exercise (Orme and Starkey 1998). Similarly, teachers who responded to a post-intervention survey revealed that about a third (35%) did not carry out follow-up work after the drama day. Among those who implemented follow-up work, it was reported that the content varied from discussions about the play to writing a ‘thank you card’.

Second, findings from process evaluation can be used to improve the programme. For example, the incompleteness of programme delivery by some STAR teachers can be used as a learning point. The importance of implementing all activities as planned needs to be emphasised and if there is an implementation problem solutions need to be discussed. Similarly, some potentially useful suggestions can be obtained from process evaluation. Some police officers in the STAR programme suggested that a ready prepared booklet would have been an improvement on photocopying activity sheets before each lesson.

Third, findings from process evaluation can help other people set up or conduct similar services or interventions. Prior to STAR, drug education in the area was delivered exclusively by police officers (Phelps et al. 1999). It is reported that implementation of STAR was a challenging shift from a police-led to a co-led programme (jointly between teachers and police officers) and process information indicated that the shift was successfully achieved by STAR. Joint training might have been one of the keys for success as it seems to have helped teachers and police officers to negotiate their roles in the classroom. Also, discussing ground rules at the first lesson was identified as an example of good practice. These findings could become solutions for similar challenges faced by other service providers.

Although process evaluation is important and should be a part of any drug-prevention programme, it does not indicate how effective the programmes were at preventing drug use among the participants. So both outcome and process evaluations are essential to assess programme effectiveness. Little training or knowledge in evaluation and low levels of awareness regarding the importance of conducting an evaluation, as well as a lack of resources and organisational structures for carrying one out, could act as barriers. Key questions to consider when designing process evaluations are included in Box 2 (overleaf).
Confidentiality

Confidentiality refers to the person’s right (and the researcher’s corresponding obligation) to keep information from third parties (Barker et al. 1994). It should be a high priority of concern, especially when children are involved in the study. The reports reviewed have shown that at many levels researchers report that they took special care in this matter. Taking CLEAR D as an example, it is reported that completed questionnaires were anonymous and treated as confidential documents (Bigger 1998). Furthermore, confidential research code numbers were given to each pupil, so that the pre- and post-test responses could be matched for each student.

The drama drug-prevention programme, ‘I wanna be…’, also used an anonymous and confidential questionnaire. In addition, respondents were asked to put their completed questionnaire in an envelope (Needham 1999).

In Opening Doors, the targeted school drug-prevention programme, De Witt et al. (1998) reported that to increase confidentiality, questionnaires were administered...
by the research team members, not by classroom teachers. This programme was given to a group of students who were at risk of experiencing a range of behaviour problems including drug use. The study had a control group consisting of high-risk students from other control schools. To reduce the risk of the control participants being labelled by non-participating students (stigmatisation may be self-fulfilling and lead to further drug use, see Smyth and Saulnier 1996) questionnaires (pre- and post-intervention) were administered to all the students in the control schools (De Witt et al. 1998).

Outcome measures

All evaluation studies in this review used self-report outcome measures. An advantage of self-report is that it is a relatively easy way to obtain information when direct observation is problematic or inappropriate (Barker et al. 1994). However, one disadvantage with this method is that respondents can react to the measurement scales and therefore reduce the validity of the responses (Barker et al. 1994). For example, if participants of a drug-prevention programme know the aims of the study there is a risk that they might give responses that match the research aims to please programme deliverers, particularly if it is a popular teacher or outside worker. Drug taking is an illegal activity and desire to conform socially could either result in under-reporting (eg social disapproval) or over-reporting (eg attachment to particular social and peer groups) of drug use by survey respondents.

In addition, self-reported data are subjective. For example, a teacher’s self-report on effectiveness of a programme in preventing drug use is not an objective or reliable source of data that can be used to draw firm conclusions. It is unlikely that forensic testing of biological samples to validate drug intake is within the budget of many prevention evaluations. However, the bogus pipeline technique (see Jones and Sigall 1971), whereby respondents are requested to provide a biological sample and then (falsely) informed it will be analysed for the presence of drugs, motivates individuals to give accurate answers to avoid embarrassment. However, such techniques must be balanced against the need to build up trust and confidence with the population, particularly if young people who are already subject to social stereotypes and negative social opinions are being targeted.

Another concern about outcome measures identified in this review is that the majority did not use validated scales. If non-validated scales are used, then the confidence that the scales are measuring what researchers want to measure (ie indicators of drug use) may be poor. For example, a study that compared two types of drug-prevention programmes (Benett et al. 1996) measured ‘knowledge of drug addiction’ by items such as ‘one can’t stop smoking once one starts’, ‘one can’t stop taking drugs once one starts’, and ‘one can’t stop drinking alcohol once one starts’. There is plenty of evidence to show that even some heavy or problem drinkers can learn to control their intake of drinks (Booth et al. 1992), and researchers regularly describe populations of occasional heroin users (eg Shewan et al. 1998).

Perceptions of the acceptability and enjoyment of interventions by young people (particularly when rated by teachers) are often used instead of accurate and appropriate indicators of drug use behaviour (eg objectively-assessed knowledge and personal skills for which effective copyright free materials are available).* Thus the validity of these statements can be questioned and these items should best be regarded as the opinions of people who devised this scale. Key considerations when designing an outcome evaluation are included in Box 3.

To conclude, although the methodology of studies included in this review has not been ideal, some have provided good process evaluation. Many studies report using methods to ensure the confidentiality of participants. When interpreting the results of outcome measures, it is important to note that there was a total reliance on self-reported measures in these studies and that many scales used in the studies lack psychometric validity.

* For example, see the EMCDDA Evaluation Instruments Bank (EIB) at http://eib.emcdda.eu.int
Box 3: Key considerations for effective process evaluation*

**General**
- What are the outcome indicators and will they be measured? (For example forensic testing, validated scales of use disorders)
- Will information on outcome follow a quantitative or qualitative approach? What indicators and instruments will be used for collecting information? The following classification may prove useful:
  - Indicators and instruments to measure substance use behaviour for the ultimate target group
  - Indicators and instruments to measure mediating variables related to substance-use behaviour for the ultimate target group
  - Indicators and instruments to measure other mediating variables for the ultimate target group
  - Indicators and instruments to measure objectives for the intermediate target group.
- What is known about the quality of the instruments? (Objectivity, reliability, validity)
- From whom, when and how often will outcome information be collected? (Design)
- How will the information gathered be analysed? Which statistical methods are appropriate to the quality of data and design?

**Achieving outcome evaluation**
- What was the design of the outcome evaluation?
- What instruments were applied?
- How was data collected, who did it, when and under what circumstances?
- How was data processed and what statistical analyses were performed?

**The sample**
- How was the sample recruited?
- What were the sample’s socio-demographic characteristics, size, etc?
- How do these characteristics compare with those of the whole target group and comparison (control) groups?
- Were intervention drop-outs identified? If so, what were their characteristics?

**The outcomes**
- How did the intervention affect the target group’s drug use behaviour?
- How did the intervention affect mediating variables related to substance use in the target group?
- How did the intervention affect other mediating variables in the target group?
- How did the intervention affect objectives in the target group?
- Are different subgroups affected differently by the intervention? (eg men/women, age groups, risk groups, etc.)

**Discussion of the results of the outcome evaluation**
- Did the intervention achieve the expected outcomes? It is important to discuss any discrepancies between expectations and results addressing possible reasons and their impact on the study.
- How do the most relevant and significant results compare with those from other studies.
- What certainty is there that the intervention caused the results? Are there any alternative explanations for them?
- Are there any explanations for negative results?
- On the basis of the results from this study are there any suggestions for the future use of similar interventions?

* Adapted from EMCDDA evaluation guidelines on prevention (available at: www.emcdda.eu.int)
5 Conclusions

The aim of this review is to increase the evidence base for drug prevention among young people by identifying and reviewing relevant grey literature. A quality assessment tool was developed and applied to the literature identified. The findings were expected to complement the existing evidence base (e.g., Canning et al. 2004), which has been predominantly built by research from peer-reviewed literature.

In general, many of the approaches reviewed correspond with those from the peer-review literature, which would suggest that some service providers are implementing the evidence base locally. However, from information included in evaluation reports it is evident that many projects are more likely to be based on intuition rather than evidence of effective practice, or they reference questionable research evidence and approaches. There is also misunderstanding about the relative value of mechanisms of delivery (e.g., theatre, media) and the actual content delivered. This results in increased focus on delivery at the expense of content. Many projects and authors also chose arbitrary outcome variables as indicators of success. While these allowed them to conclude that there were successful outcomes according to the intervention aims, they do not contribute to more meaningful and generalisable discussions on the efficacy of the adopted/developed approach.

Of the 290 reports selected for initial screening (out of a total of 1339 identified by the search strategy outlined in the methodology), only 26 were considered robust enough to withstand scrutiny by the critical appraisal tool. This not only reflects the generally poor quality of the prevention evaluations examined, but also highlights the usefulness of the tool and the importance of subjecting literature (of all types) to this type of review. Although the strict selection criteria limited the potential grey evidence base, only those studies of (relative) high quality were examined. While it is important to consider a variety of sources of evidence to drive prevention strategies, it is vital that only those that report well-designed and well-implemented projects are considered further. In this respect, the literature examined in this review did not add anything new to the evidence base, but adds value by describing locally derived and adapted strategies that attempt to implement it. The problems faced by many projects trying to do so are clear and the review process is useful in identifying areas to which more attention should be paid.

It is therefore clear that there is need for more effective communication and dissemination of the current evidence base. Similarly, many local projects require extensive guidance on evaluating their drug prevention work.* The commissioning of independent (e.g., university) researchers improved the quality of evaluations in some of the work reviewed, but this was often hampered by poor intervention design and an apparent failure to include evaluation in the initial design of the project (i.e., evaluation was an ‘afterthought’).

With respect to the three research questions set in section 1.4.1 of this report, the following suggestions and recommendations are made. Reference is made to relevant sections in the text that provide supportive evidence and statements.

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* At the time of writing the UK Department of Health offers the DEPIS Plus service, an evaluation consultancy service providing individual consultancy support to meet the evaluation needs of drug education and prevention projects. See the Drug Education and Prevention Information Service (DEPIS) section at www.dh.gov.uk
Highlight what interventions in the grey literature suggest a real potential to prevent drug use and/or reduce drug-related harm among young people aged 7–25

- Due to a lack of rigorously tested studies, it is difficult to determine the effectiveness of particular approaches or components of drug prevention identified in this review. Common methodological problems include the use of inappropriate outcome measures (eg self-reported learning, section 4.1.1 in main report), the absence of, or the presence of, non-equivalent, control groups (section 4.1.1), a reliance on self-report (eg recent drug use, Opening Doors project, section 4.4), and a lack of long-term measures (eg 'I wanna be...' section 4.1.2).

- This review identifies a number of approaches to drug prevention among young people that could inform the planning of future interventions. Settings can be in a school or within a community; there are no reports of interventions within structured drug services (section 4.1). Content can be provided by classroom teachers (section 4.1), peers (section 4.6) or contributors from external agencies (section 4.6). There is a range of intervention types (eg school-based skills training, drama and media interventions) and different types of interventions can be integrated to form a multi-component programme.

- School-based universal drug-prevention programmes that have a police input show some short-term effects in increasing knowledge (section 4.1.1). This seems to support the evidence from the mainstream literature that police-led interventions are effective in increasing knowledge in the short term. However, it should be noted that the studies did not separately examine the effectiveness of the police component. Also, due to poor methodology in these evaluation studies, it is not possible to draw any firm conclusions about programme effectiveness. Further research is needed to determine the efficacy of these programmes.

- The use of drama is associated with a short-term increase in drug awareness, drug knowledge and attitudes towards drugs (section 4.1.2). This is not markedly inconsistent with the evidence from the mainstream literature. Theatre in education (TIE) approaches are found to be more effective than information dissemination methods in impacting on mediators (ie attitudes) of drug-use behaviour (see also Canning et al. 2004). However, it must be noted that these interventions are of short duration and it may be inappropriate to expect brief interventions to have a significant long-term prevention effect. Drama and theatre may be thought of as a form of delivery that holds the potential to interest and engage young people, but it must be integrated into existing programmes (eg curricular based), and adequate preparatory and follow-up work must be included if it is to have any lasting long-term impact.

- A well evaluated, long-term multi-component programme, NE Choices, was not effective in preventing drug use (section 4.1.3). This is inconsistent with the evidence from the mainstream literature, that multi-component programmes are effective in preventing drug use (Botvin 1999; Flay 2000; Lloyd et al. 2000). Although outcomes were disappointing, the thorough process and outcome evaluations associated with this work provide a rich source of material for developing future activities.

- It seems reasonable to conclude that LifeSkills Training (LST) does have some significant prevention effects (sections 4.1.4 and 4.6). However, these effects are mainly limited to legal substances and the impact on the use of illicit drugs is small. Also, the effectiveness appears to be confined to sub-groups of young people, such as students, whose drug use is already low, and/or to those who received the complete programme. This is likely to exclude those young people already using drugs or those at most risk.

- Research findings reveal that drug-prevention programmes that are effective for young white people are similarly effective for black and minority ethnic populations (section 4.3). However, there is also evidence to suggest that adding components which increase the cultural sensitivity of the programme can enhance effectiveness. These findings are also consistent with evidence from the mainstream literature (eg Belgrave et al. 2004; Hawkins et al. 2004).

- Media interventions are not effective in preventing drug use if they are used as a stand-alone intervention (section 4.5). More positive outcomes may be gained if they are included as a form of delivery in a multi-component drug-prevention programme, although this has yet to be assessed. More research is also needed to
determine the efficacy of each type of media intervention (e.g., Internet, TV). The use of media advocacy warrants further investigation, as it has the potential to contribute to community drug-prevention efforts and to actively engage young people in local projects.

- The social marketing approach can provide a framework for targeted drug-prevention media campaigns (section 4.5). There is evidence to suggest that campaigns based on the social marketing approach can effectively reach the target group and communicate campaign messages to them, with some evidence to suggest that behavioural change can be effected.

- Drug prevention can be delivered by a number of different providers, each with the potential to make a unique contribution. For example, peer-led approaches are flexible and versatile as they can be used in a variety of places such as schools and community settings. Peer leaders can be students, drug (ex-)users, drug workers, youth workers, those from minority ethnic groups and people who are socially excluded. Moreover, peer approaches can have features that aim to benefit the peer leaders. Providers must be used appropriately and not be expected to deliver content outside their expertise or professional role (e.g., police officers should not deliver health messages). More research is needed to determine the effectiveness of each type of provider in preventing drug use.

- Police officers should play the role of expert visitors who support school-based drug education (4.1.1). However, this may require some effort and time as it will involve partnership working among the police, schools and other relevant organisations. There needs to be a mechanism that assesses the extent to which police input contributes to creating good collaborative relationships between the police and schools (section 4.6).

- There is no difference in the level of long-term effectiveness of types of external contributors (section 4.7). This suggests that it is the preparatory and follow-up work that is critical.

Identify consistent findings/advice for effective good practice for young people aged 7–25, for both the general population and vulnerable groups

- In general, it is more challenging to effect behavioural change than attitudinal or knowledge change (e.g., DARE, section 4.1.1). This is also true for measuring changes in behaviour, attitudes and knowledge.

- Some evaluation reports provide good process information, including satisfaction surveys with teachers, students and parents (e.g., HPSA/Bristol Old Vic Drama Project, section 4.1.2). Although process information does not include data on outcome effectiveness, it is an important source of programme information.

- It is not appropriate to draw conclusions about the effectiveness of targeted prevention programmes in preventing drug use based solely on two reports included in this review (section 4.4). However, it should be noted that these reports illustrate the diversity of approaches that targeted drug-prevention programmes can take. They can be delivered in a range of settings (e.g., school, community and youth events) and provide a variety of activities (e.g., skills training, information stalls, crisis intervention). Targeted intervention can be led by different providers (e.g., adults, peers) and be received by various sub-populations of youth (e.g., at-risk students, club-goers).

- Harm reduction rather than total abstinence from drugs appears to be the goal favoured by many programmes and studies reviewed. Reducing risk factors while improving protective factors for drug use not only benefits drug prevention but also leads to positive social improvement and maximisation of personal potential (Sumnall et al. 2006).

- Many evaluation studies have made great effort to carry out studies with control groups. These studies, however, did not have rigorous methodology to make the effort worthwhile.

- There are research findings that support a view that drug prevention can be effective whether it is based on a theory or not (section 4.8). However, the findings could mean that the theory is valid but that it was partially or wrongly translated in the interventions. Also, the fidelity of implementation of the programme
could have been low. Other features of drug-prevention programmes (eg types of deliverer, intensity and teaching style) may play more important roles in prevention of drug use than the content of the programmes.

**Identify gaps and inconsistencies in the evidence base and provide a direction for future research commissioning**

- Overall, there is a lack of methodologically sound studies. Methodological problems include a lack of random allocation of participants (or schools) to conditions, a total reliance on self-report, a lack of long-term measures, and an inappropriate choice of control groups and outcome measures. However, it must be noted that poorly-conducted studies are not uncommon among mainstream studies (for discussion see Canning et al. 2004; White et al. 2004).

- More funding is necessary to evaluate universal and targeted drug-prevention programmes. Both process and outcome evaluations are necessary to measure the extent of effectiveness in preventing drug use.

- More research is required to assess mechanisms of drug use, to determine internal, external and developmental factors to improve understanding of drug use and to enhance the efficacy of drug-prevention programmes.

- Further investigations are needed for multi-component programmes to assess their overall effectiveness and the relative effectiveness of each component.

- It is estimated that the social benefits owing to the prevention effects of these programmes exceed the cost of running the programmes (section 4.1.5). This is achieved largely because of the high social cost of drug use and not because of high efficacy in preventing drug use. The generalisation of this finding to the UK situation requires some caution and further investigation as the analysis in this study is solely based on research and survey findings from the USA.

- There is no difference in the level of effectiveness in preventing drug use for the long term among external contributors who support school-based drug education (section 4.7). This indicates that more research is needed to identify effective teaching methods that providers can employ.

- There are no studies that evaluated programmes aimed at young people aged over 16. This is a major gap in the evidence base as this is the age when drug use typically escalates. These programmes need to be evaluated for effectiveness.
References

* Indicates studies included in the review


66 Review of grey literature on drug prevention among young people May 2006


APPENDIX 1

Glossary of drug-prevention terms

While this glossary is not comprehensive, it introduces some of the most important terms used in drug-prevention work and, hopefully, will be developed further.


Young people People aged under 25 (in line with Home Office definitions).

Drugs prevention Interventions that prevent, delay or reduce the harms associated with drugs use and promote cessation. There are three main prevention models:

- **universal** – targets the whole population
- **selective** – targets subsets of the population identified as having a higher than average risk of drug use
- **indicated** – targets those who have already taken drugs and are considered to be at risk of becoming dependent.

Drugs/substance These have identical meanings. They are both agents that, when ingested in sufficient doses and by appropriate routes, can alter the way a person functions. In the literature, ‘drugs’ tends to refer to illicit compounds (as defined in the UK by the Misuse of Drugs Act, 1971), although it is often used interchangeably with ‘substance’. In the pharmacological definition, all psychoactive compounds, from caffeine to heroin, should be defined as drugs.

Drugs/substance use The ingestion of a psychoactive agent to produce a desired behavioural, physiological or psychopharmacological state.

Problematic drugs/substance use Regular, excessive consumption and/or dependence on illegal psychoactive compounds, leading to social, psychological, physical or legal problems (that cause harm to the individual, their significant others or the wider community). It can include adverse effects on interpersonal skills; or functioning in work, school, or social settings.

Drugs/substance misuse These terms are discouraged by some professionals, who consider them judgemental.

Drugs prevention intervention An activity or set of activities used to help a group of people change their drug-using behaviour.

Drugs prevention programme The sum of all intervention modules implemented by a coordinator.

Evaluation A systematic assessment of whether (outcome evaluation) and/or how (process evaluation) the objectives of an intervention have been achieved.
### Appendix 2: Summary of features of interventions and programmes reviewed

<table>
<thead>
<tr>
<th>Author(s) and country</th>
<th>Type of report</th>
<th>Study aims</th>
<th>Target sample</th>
<th>Methodology</th>
<th>Outcomes measured</th>
<th>Main findings reported</th>
<th>Effectiveness reported</th>
<th>Reviewer comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benett et al. 1996; UK</td>
<td>Outcome evaluation</td>
<td>Evaluation of a school-based programme with police input (DARE) and with parental component (PAE)</td>
<td>9–10 year-olds n = 1000 (27 intervention and 4 control schools)</td>
<td>Pre-post with non-randomised controls. Student questionnaires at pre- and post-test, and interviews with 62 children, 13 parents and 10 teachers</td>
<td>Attitudes, knowledge, social skills, intentions to use drugs. Views of the programme</td>
<td>PAE appears to be effective in impacting on drinking behaviour and attitudes, as well as knowledge, while DARE’s effectiveness is limited to knowledge gain</td>
<td>Effectiveness reported for knowledge</td>
<td>A lack of random allocation to conditions; reliance on self-report measures; absence of long-term follow-up; no long-term outcomes; validity and meaning of ‘knowledge’</td>
</tr>
<tr>
<td>Bigger 1998; UK</td>
<td>Outcome evaluation</td>
<td>Evaluation of a school-based programme with police input and parental involvement (CLEAR D)</td>
<td>10–11 year-olds Intervention: n = 365 (12 schools) Control: n = 102 (1 school)</td>
<td>Pre-post follow-up with non-randomised controls for follow-up tests only. Baseline - Draw and Write. Post-test questionnaires. Different questionnaires used at 1 and 2 year follow-up. Immediate post-test teacher questionnaire. Group interview with teachers</td>
<td>Pupils: knowledge, understanding and attitude to drugs, drug use behaviour, problem solving. Teacher: perception of programme and of parents’ reactions to parent session. Views on CLEAR D</td>
<td>Students who received CLEAR D reported less self-reported drug use (smoking, drinking, solvent use and illegal drug use) and more knowledge (‘complex knowledge’ about drugs) at 1 year follow-up. At 2 year follow-up, although pupils in both conditions showed an increase in reported drug use, abstinence reported was higher among CLEAR D pupils than in the control group, except for alcohol</td>
<td>Long-term effects on drug knowledge and drug use (cigarette and illegal drug use). Effects on alcohol use short term</td>
<td>No relevant statistical analyses; the use of different measurements at different data collection points; a lack of random allocation to the conditions; reliance on self-report measures; the fidelity of implementation of the programme seems to be low</td>
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</table>
### Appendix 2: Summary of features of interventions and programmes reviewed (cont.)

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<tbody>
<tr>
<td>Bledsoe et al. 2002; USA</td>
<td>Doctoral dissertation</td>
<td>Effectiveness of programmes with and without cultural components among youth from BME backgrounds</td>
<td>10–17 year olds, 36 studies included</td>
<td>Meta-analysis. Published and unpublished literatures included. Studies included if: – at least 50% of the sample come from BME populations – post-1980 USA studies – quasi-experimental or experimental designs with the use of comparison and/or other control groups, and with pre- and post-test measures</td>
<td>Changes in behaviour, knowledge and attitudes</td>
<td>No differences found in effectiveness between programmes with or without cultural components among minority ethnic youth. Programmes with 'spirituality' or 'cultural activities' were more effective than programmes without these components. Refusal skill training was effective, especially among Hispanics. African-Americans benefited from programmes with cultural components of spirituality, violence and stress. Affective education was not effective. No difference in effectiveness between theory-based programmes and programmes with no theoretical base</td>
<td>No differences in prevention effectiveness between programmes with and without cultural components among minority ethnic youth in the USA. Some cultural components are more effective in improving drug-related knowledge than others</td>
<td>No assessment of the quality of cultural components or the fidelity of implementation; self-reported data. The programmes were not given to exclusive groups of minority ethnic youth (50% of the sample in the included studies could have been white youth). The cultural components might have had little effect on them, confounding the results</td>
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Caulkins et al. 2002; USA | Book | Estimation of social benefits due to drug-prevention programmes | Varied among studies, but 12–17 year olds | Social benefit estimated using a 10-factor model with three main constructs (amount of use, percentage reduction and social costs) | Effective components | An estimated social benefit from a reduced drug use (tobacco, alcohol, cannabis, and cocaine) per person due to participating in a school-based drug prevention programme was considerably greater ($840) than an estimated cost of running a programme with 30 sessions ($150). The greatest cost saving was derived from prevention of tobacco use, followed by alcohol, cocaine, and cannabis | School-based drug prevention programmes can produce positive social benefits that markedly exceed the cost of running the programmes. The majority of social benefits came from prevention of licit, not illicit, drug use | The extent to which these estimates are valid and reliable depends on the strength of the research evidence, or the validity and reliability of the research data. Cost effectiveness achieved due to the very high social costs of drug use |
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<tr>
<td>Coggans et al. 2003; UK</td>
<td>Review</td>
<td>Effectiveness of LST</td>
<td>12–15 year olds</td>
<td>Critically reviewed LST outcome literature</td>
<td>Both licit and illicit drug use, knowledge and attitudes. Mediators of programme effectiveness</td>
<td>LST is an effective prevention programme for both short-term licit and illicit drug use. The evidence is strongest for smoking. Long-term effects for illicit drug use are small and limited to sub-populations. LST is effective for youth from BME backgrounds. The effectiveness of LST appears to be associated with changes in variables that were not hypothesised to mediate drug use</td>
<td>Evidence for effectiveness found, but the long-term effects for illicit drug use were small and limited to subpopulations. The fidelity of implementation, training of programme deliverers and cultural sensitivity are important for programme effectiveness</td>
<td>Students in these studies had low illicit drug use. Methodological problems with LST evaluation studies limit the strength of the evidence</td>
</tr>
<tr>
<td>Derzon and Lipsey 2002; USA</td>
<td>Book chapter</td>
<td>Effectiveness of media interventions</td>
<td>'Youth audiences', parents and youth influential adults</td>
<td>Meta-analysis. Studies included if they were written in English and had at least a pre- and post-design</td>
<td>Changes in both licit and illicit drugs use, knowledge and attitudes</td>
<td>Both intervention and control groups showed positive attitudinal and knowledge changes, and negative behavioural outcomes. But the intervention groups received more positive benefits than control groups. The use of video and 'positive attitudes to non-use' were associated with a positive impact on behavioural, attitudinal and knowledge outcomes</td>
<td>Both intervention and control groups showed changes in the same direction. But the intervention groups received more positive benefits than the control groups</td>
<td>The majority of the studies included in this meta-analysis did not use random allocation to conditions. Some did not have controls. There was a lack of detail on included studies (eg the length of follow-up)</td>
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### Appendix 2: Summary of features of interventions and programmes reviewed (cont.)

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<tr>
<td><strong>De Witt et al. 1998; Canada</strong></td>
<td>Outcome evaluation report (Addiction Research Foundation)</td>
<td>Evaluation of a school-based targeted intervention with parental component (Opening Doors)</td>
<td>13–14 year olds</td>
<td>Pre-post with non-randomised controls. Screening, pre- and post-intervention and 6 month follow-up questionnaires</td>
<td>Self-report changes in licit and illicit drug use behaviour, intentions to use drugs, attitudes (towards drugs and schools), deviant behaviour, school dropout, academic achievement, perceived competence, peer refusal and social skills, self-esteem, self-concept, and peer support</td>
<td>A significant programme effect was found for risky drinking behaviour, cannabis use, attitudes towards drug use, attitudes towards school, peer pressures to commit violent acts and self-reported theft. There was no significant effect for sedative use and self-esteem. Positive effects diminished for cannabis use, self-reported theft and attitudes towards school at 6 month follow-up. Significantly less frequent use of alcohol was seen at 6 month follow-up ($p &lt; 0.01$)</td>
<td>Short-term programme effectiveness in preventing risky alcohol and cannabis use. Drug- and school-related attitudes also improved</td>
<td>Biased attrition of high-risk students. Participation was on a voluntary-basis. Some question items were vague. A total reliance on self-reports</td>
</tr>
<tr>
<td><strong>Eadie D et al. 2002; UK</strong></td>
<td>Review</td>
<td>Examination of actual and potential contributions of media advocacy in drug prevention</td>
<td>N/A</td>
<td>Two community case studies. Interviewed 35 individuals from 22 media advocacy and 7 media organisations</td>
<td>The use of unpaid media. The media's response to drug issues. Cases of successful media advocacy</td>
<td>The value of a good press relationship is widely recognised by media advocacy organisations. Efforts to build strong links with the media are commonly weakened by negative attitudes towards the media and cultural, historical and environmental barriers. Negative reporting can result in distorted reporting and non-positive debate about drugs. Negative reporting seems to be associated with weak media relations and a reluctance to reply to media enquiries</td>
<td>Engaging all local media in community-wide drug prevention would be beneficial. The media has great potential to help support drug strategy/policies/services</td>
<td>Based on a small number of community case studies</td>
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</table>
Appendix 2: Summary of features of interventions and programmes reviewed (cont.)

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<tr>
<td>Eisen 2002; USA</td>
<td>Outcome evaluation</td>
<td>Evaluation of a school-based LST programme (SFA)</td>
<td>Mean age = 11 (11–14) n = 6239 (34 schools)</td>
<td>Pre-post with randomised control – 34 middle schools were pair-matched for drug prevalence rates. Then they were randomly assigned to intervention or control conditions</td>
<td>Both licit and illicit drugs use prevalence, intentions, normative beliefs about drug prevalence, knowledge and sensation-seeking</td>
<td>There was significantly lower recent smoking prevalence and ‘ever-used’ cannabis rates in the intervention groups. There was also significantly lower smoking rates among intervention students who reported ‘alcohol use’ but no ‘recent smoking’ and ‘no lifetime use of cannabis’ at baseline. Significantly lower prevalence of cannabis use was reported among intervention students who reported ‘recent binge drinking’ but no ‘recent smoking’ and ‘no lifetime use of cannabis’ at baseline. No significant difference was found between the conditions in drug use among those who reported ‘recent cigarette use’ or ‘recent alcohol use’ at baseline. There were no significant differences for the use of other illicit drugs and inhalants</td>
<td>Short-term effectiveness for the SFA programme in preventing regular smoking and cannabis use</td>
<td>Attrition biased towards high-risk students; low levels of illicit drug use; voluntary basis of participation; short-term results only; a shortened version of the SFA programme was used</td>
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<tr>
<td>Frith 1997; USA</td>
<td>Outcome evaluation</td>
<td>Evaluation of a school-based programme with police-led sessions (RIDE)</td>
<td>11 year olds</td>
<td>Pre-post with no controls</td>
<td>Pupils: drug use, beliefs on drug prevalence, knowledge, peer resistance/decision-making, perceived costs/benefits of using drugs, perception of media influence, and level of parent-child communication. Attitudes towards drugs, parents' use of cigarettes/alcohol and RIDE</td>
<td>The RIDE programme had a positive impact on prevention of illicit drug use but not on the use of licit drugs. Also, it was effective in increasing knowledge and awareness about drugs</td>
<td>Effective in preventing illicit but not licit drug use. Also effective in increasing knowledge and awareness about drugs</td>
<td>High attrition rate for pupils; no percentages or any other statistics reported in the result section; data not obtained longitudinally (ie pre- and post-groups were different). No long-term follow-up</td>
</tr>
<tr>
<td>Hastings and Stead 1998; UK</td>
<td>Review</td>
<td>Review of effectiveness of the use of media in drugs prevention</td>
<td>N/A</td>
<td>Literature review</td>
<td>Effectiveness in positively impacting on drug-use behaviour, knowledge, attitudes and awareness</td>
<td>Mass media campaigns are effective in increasing drug awareness, stimulating public debate, improving drug-related knowledge and reaching 'high-risk' adolescents. Programmes with a media component are effective in bringing about desirable behavioural changes. There is little evidence for the relative effectiveness of various types of media materials. The impact of media advocacy in preventing drug-use behaviour requires further investigation</td>
<td>Media interventions can be effective in positively impacting on drug awareness and knowledge. They should be supplemented by other drug prevention strategies to have an effect on drug-use behaviour</td>
<td>The quality of reviewed studies was generally poor. The social marketing approach is recommended as a framework for media campaigns</td>
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<tr>
<td>Henderson 1998; UK</td>
<td>Evaluation report from HIT</td>
<td>Process and impact evaluation</td>
<td>15–25 year olds who use dance drugs or who go to nightclubs</td>
<td>2000 copies of a freepost evaluation questionnaire were distributed. Group interview with an opportunistically selected sample of young people from the target group. 50 copies of the questionnaire were returned (26 via freepost; 24 interview sample)</td>
<td>Self-reported drug use. Approval of the campaign. Awareness of the campaign. Behaviour changes. Knowledge gain</td>
<td>The level of awareness of the campaign products was high except for the website. Younger interviewees (15–20 year olds) showed higher levels of approval than older participants (21–25 year olds). The ‘collectability’ of campaign products was high among younger participants. More younger respondents said that they had learned from the campaign and remembered old drug information. Effects on behaviour limited</td>
<td>The campaign was reasonably effective in reaching the target young people and communicating drug harm reduction messages. The younger audience benefited more</td>
<td>The respondents were not selected at random and the study relied on self-report. No baseline or control groups. Low response rate (2.5%)</td>
</tr>
<tr>
<td>Henderson 2000; UK</td>
<td>Outcome evaluation</td>
<td>Evaluation of a targeted media campaign developed according to the social marketing approach</td>
<td>15–25 year olds who use dance drugs or attended nightclubs</td>
<td>Interview and questionnaire (n = 100)</td>
<td>Self-reported drug use. Approval of the campaign. Awareness of the campaign. Behaviour changes. Knowledge gain</td>
<td>The level of campaign awareness was fair (40% had seen the campaign). There was good approval of the campaign products among younger interviewees (appealing, noticeable, modern and ‘cool’) and on messages (credible, straightforward and non-judgemental). Some reported knowledge gain, a recall of drug information and changes in drug-related behaviours</td>
<td>Some success in reaching the target group and communicating the campaign messages, especially with the younger target audience</td>
<td>The respondents were not selected at random and the study relied on self-report. No baseline measures or control group</td>
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<tr>
<td>Lowden and Powney 2000; UK</td>
<td>Report published by the Scottish Council for Research in Education</td>
<td>Research on Scottish young people’s drug knowledge, attitudes towards drugs and drug-use behaviours</td>
<td>Primary and secondary schools students</td>
<td>Census (1997 and 1999) 284 primary, 318 secondary schools (1999) Pupil survey (1997 and 1999) n = 4400 (1997) n = 1119 (1999) Focus groups, interviews and literature reviews</td>
<td>Prevalence of drug education, its nature, training, collaboration with other organisations. Pupils’ licit and illicit drug use, views on drug education. Factors influencing effectiveness of drug-prevention programmes</td>
<td>The majority of the schools provide drug education. The content tends to be resource driven and can be affected by local policy, teachers’ attitudes etc. There was little up-to-date training. Interactive methods are effective. Among secondary school students 13% reported regular smoking, 92% used alcohol and 23% tried illicit drugs (mainly cannabis). Some gender differences in drug use were found. An association was found between high self-esteem and drug use; positive attitudes towards drugs were associated with higher levels of free school meal entitlement. There were differences in opinions in drug education between users and non-users</td>
<td>34% of users reported that drug education did not have any impact on their drug use. More than a half of the sample (56%) said that drug education had a harm-reduction impact while 10% reported that it helped them to stop using drugs</td>
<td>Drug education needs to be sensitive to the needs of both non-users and users and reflect gender differences in drug use-related issues</td>
</tr>
<tr>
<td>Measham et al. 1998; UK</td>
<td>Report prepared for the Home Office</td>
<td>Research into 'how and why' young people's drug use changes over time</td>
<td>14–15 year olds 30 pupils were selected to represent three categories of self-reported drug use (abstainers, moderate users and regular users)</td>
<td>Within-group longitudinal interviews. Semi-structured interview with 27 pupils; 9 months later, 24 pupils were followed up and interviewed using a story-telling technique</td>
<td>Drug use behaviour and attitudes. Reasons for a change in drug use status. Opinions regarding drug images, information, family communication, peer relations, access to drugs, and drug education</td>
<td>Eight out of 24 changed drug use status (seven reduced/stopped, one increased). Non-users developed more tolerant attitudes. Young people tend to explain the onset of their use as being due to influences from others. They continue to use drugs because they like the effects, but stop using them when they experience bad effects or when their lifestyle changes. There was a difference between users’ and non-users’ knowledge of drugs</td>
<td>N/A</td>
<td>Small sample study. Reliance on self-report</td>
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<tr>
<td>National Drug Research Institute and the Centre for Adolescent Health (2004); Australia</td>
<td>Monograph</td>
<td>Review of the evidence-base for implementation of the Australian national drug prevention agenda</td>
<td>All ages</td>
<td>Literature review using follow-up, longitudinal and cross-sectional studies, and reports from government, statutory authority and national research centres</td>
<td>Effectiveness of drug prevention programmes, Pattern of drug use, Harms arising from drug use, Social determinants, Risk/predictive and protective factors</td>
<td>About 50% of young people in Australia reported to have used illicit drugs. Cannabis is the most common drug. A number of predictive factors identified, e.g. weak family functioning, childhood abuse and neglect, availability. Among children aged 5–11, strong evidence exists for family intervention, parent education, and social organisation and behaviour management. But the evidence for school-based drug education is limited. Among young people aged 12–24, family interventions, school-based drug education, community mobilisation and mass media campaigns have been shown to be promising interventions</td>
<td>Addressing protective and risk factors not only benefits drug use prevention but also leads to positive social improvement and maximisation of personal potential</td>
<td></td>
</tr>
<tr>
<td>Needham 1999; UK</td>
<td>Outcome evaluation report, York University and York City Council</td>
<td>Evaluation of a school-based drama programme (I wanna be….)</td>
<td>9–11 year olds</td>
<td>Pre-post design with non-randomised control</td>
<td>Drug use and gambling, knowledge, attitudes towards drugs and gambling, decision-making skills, intention to use drugs and gamble, social self-esteem</td>
<td>There was a significant increase in drug-related knowledge, more unfavourable overall attitudes towards drug and gambling behaviour, and solvent use, and a decrease in their intention to use solvents and to gamble. An increase in the level of self-esteem was found, but the level was not significantly different from that of pupils from the control group. A significant decrease in the level of decision-making skills among intervention pupils was reported</td>
<td>Significant immediate positive effects on potential mediators of drug use</td>
<td>A lack of random assignment to conditions; no long-term evaluation; a total reliance on self-report measures; drug- and gambling-related knowledge examined by using an open-ended question format concerning only negative effects</td>
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<tr>
<td>O’Connor 1999; UK</td>
<td>Literature review and mapping exercise</td>
<td>Review of the extent, nature and future of the police contribution to school drug education</td>
<td>Police officers 9–15 year old students</td>
<td>Literature review Questionnaire to all police forces in England and one Scottish force Case studies on six forces Focus groups students (23 groups, n = 97)</td>
<td>The extent and nature of the police contribution to drug education/policies Pupils’ views on the role and contribution of police officers in drug education</td>
<td>Most forces are committed to providing drug education. DARE is ineffective in preventing drug use. The police can add value by getting involved in managing drug incidents and by playing a supportive role related to their expertise. Achieving good relationships with the community, building up multi-agency working and raising positive attitudes towards the police among children are all important outcomes for the police. Schools appear to expect benefits other than prevention of drugs, too. Younger pupils were more positive about the police input than older pupils. They were enthusiastic about police officers’ personal drug-related stories. They felt that the police officers were more knowledgeable about illegal drugs than were teachers. Older pupils had more negative attitudes towards the police and regarded them as less credible.</td>
<td>The content of police input needs to be developmentally appropriate. Exclusively police-led DARE is not effective. Police should play a complementary role related to their expertise.</td>
<td>The number of focus group participants was small</td>
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<tr>
<td>O'Connor et al. 2001; UK</td>
<td>Report for the Metropolitan Police</td>
<td>Examination of the feasibility of implementing the new drugs strategy/guidance</td>
<td>Interviews with key individuals from the Metropolitan Police, schools, and multi-agency partner organisations 12–13 year old pupils</td>
<td>1 Pupils: before-after study with no controls 2 Interviews with Metropolitan Police managers, police officers, multi-agency partners and teachers 3 Observations of police-led lessons</td>
<td>1 Perception of the amount of drug education received; attitudes to school, drug education and police; views on the best sources of information about drugs. Knowledge of law and order aspects of drugs. The use of licit and illicit drug use 2 Views, experiences and understanding of the new strategy/guidance. Emergent key issues 3 Coherence to guidance</td>
<td>The police have a high commitment to and great understanding of the new strategy. Some police officers felt some reservations about an aspect of their new role, which is to avoid dealing with health aspects of drug use. The officers emphasised the need for preparation, training and resources. Compatibility of the police's mixed operational and teaching roles can be a concern. All interviewees reported that the new strategy would create 'gaps' in the drug education curriculum. But a reported value of the police input in drug education is not only about preventing drug use but also forming partnership working. The police officers were playing the role of teacher and not that of an expert contributor. Some inappropriate teaching methods were observed. There was no significant overall gain from the police input among the pupils</td>
<td>No overall knowledge gain among pupils from police input</td>
<td>Pupils from some schools showed improvement in knowledge. Pupils have a low knowledge base. The study did not have a control group</td>
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<tr>
<td>Orme and Starkey 1999; UK</td>
<td>Outcome evaluation</td>
<td>Evaluation of a school-based drama programme (also involved parents)</td>
<td>11 year olds Pupils (41 schools): pre-intervention n = 291 post-intervention n = 285 Teachers: n = 37 (29 schools) Parents: pre-intervention n = 336 post-intervention n = 202</td>
<td>Pupils: pre-post design with no comparison group Pre-post questionnaire for parents Post-intervention questionnaire for teachers Semi-structured interview with project planning team Observation of drama day by the evaluators</td>
<td>Pupils: pre-post Draw and Write, problem-solving, views on the drama Parents: perception of their and children’s knowledge about drugs, communication with children Teachers and project planning team: views on project administration, drama day, the impact on children, parental involvement and future development</td>
<td>Children showed better drug awareness and more knowledge about drugs. Less stereotypical views about people who use drugs were also observed. The quality of solutions for problem-solving tasks was reported to have remained relatively unchanged (third-class or second-class solutions) (see footnote, p26). Results of a parent survey uncovered some success in increasing opportunities for parent-child communication about drugs</td>
<td>Positive impact on drug awareness and drug knowledge. No major changes in problem-solving skills. Increase in opportunities for parent-child communication about drugs</td>
<td>A lack of a control group; reliance on self-report measures; schools selected non-randomly. The quality and content of the increased parent-child communication about drugs were not assessed</td>
</tr>
<tr>
<td>Parkin 1998; UK</td>
<td>Process evaluation</td>
<td>Process evaluation of a community-based, peer-led targeted drug and sexual health advice service (Crew 2000)</td>
<td>Young ‘dance drug’ users and organisations that work with young people</td>
<td>1 Semi-structure interviews with Crew 2000 staff (n = 11) and volunteers (n = 11) 2 Telephone interviews (n = 16) and questionnaire (n = 29) with people from organisations that had contact with Crew 2000 3 Questionnaires with those who used the service (n = 29) 4 Observation of four Crew 2000 events by evaluator</td>
<td>1 Information relating to the nature and implementation of work. Volunteers – their motivation for getting involved, benefits of participation 2 Satisfaction and views on Crew 2000 3 Drug use, views on Crew 2000 4 Implementation of the service</td>
<td>Crew 2000 shop and outreach activities were successful in being accessed by targeted young people (in terms of age and drug use pattern) as well as ‘new’ service users. There was a fit between service users’ reasons for accessing Crew 2000 and the service’s aim. Many volunteers reported to be past or current users. The majority stated that they had personally benefited from their voluntary participation (reduced drug use, an increase in self-confidence and self-esteem)</td>
<td>Provided information/advice to target young people. Volunteers reported some benefits from participation</td>
<td>Not an outcome study, so cannot assess effectiveness in changing drug-use behaviour. Benefits of volunteering are self-report. Questionnaire samples were not randomly selected</td>
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## Review of grey literature on drug prevention among young people

May 2006

### Appendix 2: Summary of features of interventions and programmes reviewed (cont.)

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<tr>
<td>Phelps et al. 1999; UK</td>
<td>Outcome evaluation report published by the Education Advisory Service for Shropshire and Telford &amp; Wrekin</td>
<td>Evaluation of a school-based drug prevention programme with police input (STAR)</td>
<td>9–11 year olds</td>
<td>Post-intervention study with no controls</td>
<td>Pupils: knowledge change, skills, comments on STAR. Teachers: context/content of teaching, experience and attitudes towards drug education. Police: their role, satisfaction level, perceived impact on children, changes in perceptions of drug education and involvement in training. Parents: communication about issues raised in STAR with children</td>
<td>Pupils reported an increase in drug-related knowledge, awareness and skills; eg drug-related personal and social skills (81%), refusal skills/awareness (42%), the effects of drugs (37%). All teachers said pupils benefited from STAR and the police input. They reported an improved view on drug education. The majority of police officers said they were satisfied with their input, the STAR programme and the working relationship with teachers. The programme facilitated parent-child communication about drugs</td>
<td>The STAR programme increased drug-related knowledge and skills, and increased opportunity for parent-child communication about drugs</td>
<td>No baseline; no control group; no long-term follow-up but immediate post-session data. Reliance on self-reports. Inconsistent implementation of the programme among schools</td>
</tr>
<tr>
<td>Shiner 2000; UK</td>
<td>Review</td>
<td>Review of the roles and value of peer approaches in drug prevention</td>
<td>Young people</td>
<td>Literature review and a qualitative study of five British peer interventions (three community-based and two school-based interventions)</td>
<td>Key issues for implementation; the role and value of peer approaches</td>
<td>Peer approaches can be implemented in school and community settings and can focus on peer development and/or delivery of peer-led sessions. Support is needed for peer educators. There is a need to develop a policy on confidentiality and personal disclosure of drug use. The presence of a class teacher in a peer-led session could inhibit an open and honest dialogue among students. Value: messages can be disseminated through peer educators’ informal networks. It can increase the profile of a project. Peer leaders are commonly regarded as more credible than adult educators. But some younger students (12 year olds) reported a low credibility for ex-users</td>
<td>Peer approaches are versatile and have potential to add value to drug prevention</td>
<td>Not an experimental study on the effectiveness of peer educators. Holding a value does not necessarily mean that the approaches are effective</td>
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<td>Stead et al. 2000; UK</td>
<td>Process evaluation</td>
<td>The initial evaluation of a long-term school-based multi-component programme, NE Choices (drama, parent sessions, youth work, media and community activities). Universal prevention but had a targeted intervention component</td>
<td>13–16 year olds 1st survey, n = 1936 4th survey, n = 1429</td>
<td>1 Process: observation of 12 sessions, six focus groups with parents, interviews with seven teachers and monitoring of media outputs/activity. 2 Impact: post-intervention questionnaire n = 1099. 3 Formative research: exploratory qualitative research with participants etc. 4 Outcome: pre-post and follow-up with control. Selected schools were randomly assigned to conditions (full, partial intervention and control). Baseline n = 525 (full), n = 582 (partial) n = 829 (control)</td>
<td>1 What was delivered, and how feedback from participants. 2 Feedback from participants (appreciation, participation, perceived efficacy). 3 Overall programme strategy, assessment of needs and refinement of components. 4 Licit and illicit drug use (onset, frequency of use, types of drugs, and mixing of drugs)</td>
<td>Year 9 — content delivered as planned. Drama — the content was high in quality and delivered consistently. Classroom follow-up patchily delivered. Poor parent involvement. Positive feedback from pupils about a drama workshop</td>
<td>N/A</td>
<td>Results of the outcome evaluation are reported elsewhere (Stead et al. 2001)</td>
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Stead et al. 2001; UK Outcome evaluation report prepared for the Home Office

| Author(s) Type of report Study aims Target sample Methodology Outcomes measured Main findings reported Effectiveness Reviewer comments |
|-----------------------|-------------------------|------------|---------------|-------------|-------------------|------------------------|--------------|-------------------|
| Stead et al. 2000; UK | Outcome evaluation of NE Choices 13–16 year olds n = 525 (full), n = 582 (partial) n = 829 (control) | Outcome evaluation of NE Choices 13–16 year olds n = 1936 4th survey, n = 1429 | Pre-post and 1 year follow-up design with control Selected schools were randomly assigned to conditions (full and partial intervention, and control) Questionnaire study | Licit and illicit drug use (onset, frequency of use, types of drugs, and mixing of drugs) | The analyses did not show any significant differences in reported drug-use behaviour between the intervention and control conditions. A marked increase was found in the percentages of students who reported they had ‘ever used drugs’ from all the three conditions (full intervention group 26% to 39%; partial 25% to 34%; control 22% to 35%). ‘Regular’ use of drugs was also reported to increase over time for all three groups (full intervention group 2% to 3%; partial 1% to 4%; control 1% to 5%) | Not significantly effective | Non-equivalent attrition of participants; high attrition rate; the between-group analyses conducted with only 54% of the original study cohort; reliance on self-report. Within-group comparisons were not separately done for three conditions |
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<tr>
<td>White et al. 2004; UK</td>
<td>Systematic review report for the Department for Education and Skills</td>
<td>Evaluation of the effectiveness and role of external contributors who support school drug education</td>
<td>Students at primary, secondary, special schools and pupil referral units</td>
<td>Systematic review. Both published and unpublished studies. Included post-1990 English language papers</td>
<td>Licit and illicit drug use, intention, attitudes (towards drugs, police and schools), behaviour problems, knowledge, self-esteem, self-efficacy, skills, perceived drug use prevalence etc. Satisfaction level and views. Training</td>
<td>There were no comparative differences in effectiveness among contributors from the 16 external agencies. Some short-term effectiveness found from programmes led by police officers and nurses. The value of external contributors appears to be the special knowledge they have and their novelty effect. These qualities seem to successfully attract children’s attention during sessions. Each type of programme provider has unique contributions to school drug prevention programmes. For example: – Peer-led group sessions can create a natural and safe environment for honest dialogue – Peer educators can increase self-reported knowledge and can be positive role models – Theatre can increase drug awareness, facilitate discussion and engage pupils from a varied age range – Police officers can contribute if they play a supplementary role, as they have specialist knowledge</td>
<td>No differences in effectiveness. Contributions from external speakers should form a part of the curriculum and be supported by classroom teaching (eg provide preparatory and follow-up sessions)</td>
<td>Only 42/114 papers had pre-post design with comparison data. Self-reports</td>
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APPENDIX 3

Databases and resources used to locate grey literature on drug prevention aimed at young people

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<td>Virtual Clearing House on Alcohol, Tobacco and other Drugs</td>
<td>Yes</td>
<td>17</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Welcome to BestBET</td>
<td>No</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Welltown</td>
<td>No</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>WHO Regional Office for Europe</td>
<td>Yes</td>
<td>6</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Wired for Health</td>
<td>Yes</td>
<td>16</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>WorldCat</td>
<td>No</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1308</td>
<td>476</td>
<td>395</td>
</tr>
<tr>
<td>Life Education Centres (contacted directly)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Sources (see Table 4)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>408</td>
</tr>
</tbody>
</table>
APPENDIX 4

Other literature sources


Drugs research funded by central government departments: a review. (Available at www.dh.gov.uk)

EMCDDA annual report
(Available at www.emcdda.eu.int)

Evaluation of pilot drug dog events in Bedfordshire schools (Carried out for Bedfordshire Police by Matrix, 2004 – details at www.matrixrcl.co.uk)


Mentor Foundation UK rural youth project report.
(Available at www.mentorfoundation.org)


(Available at www.nacd.ie)
### APPENDIX 5

**Number of reports that were identified and retrieved with assistance from NCCDP network group members**

<table>
<thead>
<tr>
<th>ID</th>
<th>Number of reports identified</th>
<th>Retrieved</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>42</td>
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<tr>
<td>2</td>
<td>9</td>
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<tr>
<td>3</td>
<td>9</td>
<td>4</td>
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<tr>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Information only</td>
<td>Information only</td>
</tr>
<tr>
<td>6</td>
<td>Information only</td>
<td>Information only</td>
</tr>
<tr>
<td>7</td>
<td>Information only</td>
<td>Information only</td>
</tr>
</tbody>
</table>
## APPENDIX 6

### D(A)ATs that responded to literature requests

<table>
<thead>
<tr>
<th>Location</th>
<th>Report/Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bury &amp; Rochdale</td>
<td>Early break core service evaluation: final report for the National Lotteries Board March 2003</td>
</tr>
<tr>
<td>Calderdale</td>
<td>Information only</td>
</tr>
<tr>
<td>Cornwall and Isles of Scilly</td>
<td>Rapidly [sic] report 2002</td>
</tr>
<tr>
<td>Dorset</td>
<td>Report into research concerning young people and substance misuse (2003)</td>
</tr>
<tr>
<td>Dudley South (Coventry)</td>
<td>GLUG alcohol education project for children aged 7–11</td>
</tr>
<tr>
<td>Halton</td>
<td>Reports and other papers</td>
</tr>
<tr>
<td></td>
<td>Halton and Warrington Youth Offending Team: Drug and Alcohol Awareness Project 2004</td>
</tr>
<tr>
<td></td>
<td>Drug Action Team: 2004 one-off project reports</td>
</tr>
<tr>
<td>Havering</td>
<td>Information only</td>
</tr>
<tr>
<td>Kirklees</td>
<td>Shot in the dark</td>
</tr>
<tr>
<td></td>
<td>Merton and Sutton YAP/YOT prevention, early intervention, treatment and support project</td>
</tr>
<tr>
<td>Salford</td>
<td>Drug services for young people in Salford: a review of current needs and provision (2000)</td>
</tr>
<tr>
<td>Sheffield</td>
<td>Information only</td>
</tr>
<tr>
<td>South Gloucestershire</td>
<td>Summary report of an evaluation of the ‘lifeskills learning for the living’ children’s programme by the Oxford Evaluation Team</td>
</tr>
<tr>
<td>St Helens</td>
<td>Information only</td>
</tr>
<tr>
<td>Stockport</td>
<td>Information only</td>
</tr>
<tr>
<td>Trafford</td>
<td>Trashed: monitoring update</td>
</tr>
<tr>
<td>Wirral</td>
<td>Summary of young people’s needs assessment</td>
</tr>
<tr>
<td></td>
<td>Key priorities in establishing Wirral Young Peoples’ Drug Service</td>
</tr>
<tr>
<td>Wolverhampton</td>
<td>Blood, sweat and tiers – informing responses to Southwark’s young drug users</td>
</tr>
<tr>
<td></td>
<td>Neighbourhood audit and consultation on substance misuse. Final report: March 2004</td>
</tr>
</tbody>
</table>
APPENDIX 7

Example of a grey literature data extraction proforma *

<table>
<thead>
<tr>
<th>ID</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reviewer</td>
<td>Yuko McGrath</td>
</tr>
<tr>
<td>Date</td>
<td>27/01/2005</td>
</tr>
<tr>
<td>Authors</td>
<td>Phelps F, Wilkes M, Dickinson J, Phillipson C, Maynard M</td>
</tr>
<tr>
<td>Title</td>
<td>STAR: An evaluation of a drug education programme for upper Key Stage 2 pupils</td>
</tr>
<tr>
<td>Source</td>
<td>The Advisory Service for Shropshire and Telford &amp; Wrekin (1999)</td>
</tr>
<tr>
<td>Volume</td>
<td></td>
</tr>
<tr>
<td>Part</td>
<td></td>
</tr>
<tr>
<td>Pages</td>
<td>36</td>
</tr>
<tr>
<td>Type of study</td>
<td>Other</td>
</tr>
<tr>
<td>Specify if other</td>
<td>Impact and process evaluation</td>
</tr>
<tr>
<td>General research questions</td>
<td>Not explicitly stated. The aim of the programme is to improve pupils' knowledge, understanding and skills to enable them to consider the effects of legal and illegal drugs on themselves and others, and to make informed and healthy decisions about use.</td>
</tr>
<tr>
<td>Key findings</td>
<td>Police led DARE derivative. High satisfaction levels regarding the programme were reported by police, teachers and parents. 62% of teachers said they never received drug education training before. 98% of classes contained police officer(s), 13% of classes teacher alone</td>
</tr>
<tr>
<td>Evidence based?</td>
<td>No</td>
</tr>
<tr>
<td>If Yes, describe</td>
<td></td>
</tr>
<tr>
<td>Socially excluded</td>
<td>No detail</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>No detail</td>
</tr>
<tr>
<td>Age</td>
<td>9–11 (year 5–6) n = 1109</td>
</tr>
<tr>
<td>Locality</td>
<td>Hereford, Worcester, Shropshire</td>
</tr>
<tr>
<td>Gender</td>
<td>F 51% M 49%</td>
</tr>
<tr>
<td>Country</td>
<td>UK</td>
</tr>
<tr>
<td>Type of user</td>
<td>No drug use information given</td>
</tr>
<tr>
<td>Other details</td>
<td></td>
</tr>
<tr>
<td>Type of substance(s)</td>
<td>Medicines, tobacco, alcohol and illegal drugs</td>
</tr>
<tr>
<td>Intervention type</td>
<td>Other</td>
</tr>
<tr>
<td>Other 2</td>
<td>Education, homework and parent involvement</td>
</tr>
<tr>
<td>Nature of intervention</td>
<td>Information</td>
</tr>
<tr>
<td>Other 3</td>
<td>Information, persuasion, self-esteem, assertiveness, decision-making and reflection on learning</td>
</tr>
<tr>
<td>Content of intervention</td>
<td>Seven lessons. Providers received training. Classroom-based programme with homework. Most of the sessions were led by either police officer or teacher but the others were jointly led. A video was used as a resource</td>
</tr>
<tr>
<td>Evaluation included?</td>
<td>Partial</td>
</tr>
<tr>
<td>Intervention facilitator</td>
<td>Police</td>
</tr>
<tr>
<td>Other 4</td>
<td>Teachers</td>
</tr>
<tr>
<td>Study design</td>
<td>Other</td>
</tr>
<tr>
<td>Other 5</td>
<td>Post-test survey. No control.</td>
</tr>
<tr>
<td>Method and unit of analysis</td>
<td>Individual</td>
</tr>
</tbody>
</table>

* Example only: a complete set of records is available from the authors on request.
Appendix 6: Example of a grey literature data extraction proforma (cont.)

<table>
<thead>
<tr>
<th>Sampling method</th>
<th>Reported types of schools varied: large, small, rural, urban, single and mixed aged classes from across the local authorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry and exclusion criteria</td>
<td>–</td>
</tr>
<tr>
<td>Representative sample</td>
<td>No</td>
</tr>
<tr>
<td>Sample size calculation</td>
<td>No</td>
</tr>
<tr>
<td>Power of study (%)</td>
<td>–</td>
</tr>
<tr>
<td>Subject refusal rate (%)</td>
<td>–</td>
</tr>
<tr>
<td>Baseline measurements</td>
<td>None</td>
</tr>
<tr>
<td>Post-intervention measurements</td>
<td>Teacher (content and context of the teaching, feedback and attitudes on drug education and training) Police (re their role, content and satisfaction) Parent (had communication on drugs with children?), Pupils (‘activity sheet’ what did you learn? comments) No</td>
</tr>
<tr>
<td>Validated instruments?</td>
<td>No</td>
</tr>
<tr>
<td>If yes, what?</td>
<td>Self-reported knowledge change</td>
</tr>
<tr>
<td>Alcohol outcome measures</td>
<td>Self-reported knowledge change</td>
</tr>
<tr>
<td>Tobacco outcome measures</td>
<td>Self-reported knowledge change</td>
</tr>
<tr>
<td>Other drug outcome measures</td>
<td>Self-reported knowledge change</td>
</tr>
<tr>
<td>Satisfaction relating to education received</td>
<td>See above section on measurements (response rates variable among the types of respondents)</td>
</tr>
<tr>
<td>Duration of follow-up</td>
<td>Immediate post-test</td>
</tr>
<tr>
<td>Blind assessment?</td>
<td>No</td>
</tr>
<tr>
<td>Rate of attrition (%)</td>
<td>–</td>
</tr>
<tr>
<td>Design of evaluation</td>
<td>Outcome and process</td>
</tr>
<tr>
<td>Programme content</td>
<td>Life skills, information</td>
</tr>
<tr>
<td>Methods of implementation</td>
<td>Classroom based, teachers and police officers</td>
</tr>
<tr>
<td>Groups compatible at baseline</td>
<td>No</td>
</tr>
<tr>
<td>Details</td>
<td>Can be introduced into most types of schools</td>
</tr>
<tr>
<td>Statistical technique used</td>
<td>%</td>
</tr>
<tr>
<td>Statistical measures given</td>
<td>–</td>
</tr>
<tr>
<td>Effect size (specify)</td>
<td>–</td>
</tr>
<tr>
<td>Qualitative data</td>
<td>Demographics. Teachers, police officers, parents’ attitudes to drug education. Re training (teachers and police officers) Pupils’ self-perception of what they have learned</td>
</tr>
<tr>
<td>Generalisability</td>
<td>Would be able to be implemented in most schools in the UK with adequate free teaching time</td>
</tr>
<tr>
<td>Details 2</td>
<td>Need better designed evaluation</td>
</tr>
<tr>
<td>Cost effectiveness rating</td>
<td>Unknown</td>
</tr>
<tr>
<td>Details 3</td>
<td>No evidence for cost effectiveness</td>
</tr>
<tr>
<td>Reduce inequalities</td>
<td>Unknown</td>
</tr>
<tr>
<td>Details 4</td>
<td>Universal programme – implications for at-risk students?</td>
</tr>
<tr>
<td>Implications</td>
<td>Yes</td>
</tr>
<tr>
<td>Details 5</td>
<td>Self-report and no objective measures. No comparison groups. 29 out of 30 schools returned questionnaires. No comparisons between schools (quality of implementation?) Yes</td>
</tr>
<tr>
<td>Confounds</td>
<td>Yes</td>
</tr>
<tr>
<td>Final comments</td>
<td>Gives detailed info on design. It seems that the programme was taught in a different format depending on teachers (no set rules for pupil groupings or format of an activity). Pupil outcomes are measured soon after the programme, which involves writing what they have learned from lessons</td>
</tr>
<tr>
<td>Decision</td>
<td>Include</td>
</tr>
</tbody>
</table>