

# **Interventions to reduce substance misuse among vulnerable young people**

Evidence Update April 2014

A summary of selected new evidence relevant to NICE public health guidance 4 'Interventions to reduce substance misuse among vulnerable young people' (2007)

**Evidence Update 56**



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## Introduction

**Evidence Updates are intended to increase awareness of new evidence – they do not replace current NICE guidance and do not provide formal practice recommendations.**

Evidence Updates reduce the need for individuals, managers and commissioners to search for new evidence. For contextual information, this Evidence Update should be read in conjunction with the relevant public health guideline, available from the [NICE Evidence Services](#) topic page for [substance misuse – prevention](#).

This Evidence Update provides a summary of selected new evidence published since the literature search was last conducted for the following NICE guidance:

- <sup>1</sup> [Interventions to reduce substance misuse among vulnerable young people](#).  
NICE public health guidance 4 (2007)

A search was conducted for new evidence from 6 April 2006 to 9 September 2013. A total of 6008 pieces of evidence were initially identified. After removal of duplicates, a series of automated and manual sifts were conducted to produce a list of the most relevant references. The remaining 30 references underwent a rapid critical appraisal process and then were reviewed by an [Evidence Update Advisory Group](#), which advised on the final list of 16 items selected for the Evidence Update. See [Appendix A](#) for details of the evidence search and selection process.

Evidence selected for inclusion in this Evidence Update may highlight a potential impact on guidance: that is, a high-quality study, systematic review or meta-analysis with results that suggest a change in practice. Evidence that has no impact on guidance may be a key read, or may substantially strengthen the evidence base underpinning a recommendation in the NICE guidance.

The Evidence Update gives a preliminary assessment of changes in the evidence base and a final decision on whether the guidance should be updated will be made by NICE according to its published processes and methods.

This Evidence Update was developed to help inform the review proposal on whether or not to update NICE public health guidance 4 ([NICE PH4](#)). For further information about the review decision see the [NICE PH4](#) webpage. The process of updating NICE guidance is separate from both the process of an Evidence Update and the review proposal.

See the NICE public health process guide for further information about [updating public health guidelines](#).

## NICE Pathways

NICE pathways bring together all related NICE guidance and associated products in a set of interactive topic-based diagrams. The following NICE Pathways cover advice and recommendations related to this Evidence Update:

- [Reducing substance misuse among vulnerable children and young people](#). NICE Pathway

## Feedback

If you would like to comment on this Evidence Update, please email [contactus@evidence.nhs.uk](mailto:contactus@evidence.nhs.uk)

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<sup>1</sup> Guidance published prior to NICE accreditation

## Key points

The following table summarises the key points for this Evidence Update and indicates whether the new evidence may have a potential impact on [NICE PH4](#). Please see the full commentaries for details of the evidence informing these key points.

The section headings used in the table below are taken from [NICE PH4](#).

**Evidence Updates do not replace current NICE guidance and do not provide formal practice recommendations.**

Key point	Potential impact on guidance	
	Yes	No
<p><b>Identifying and supporting young people aged under 25 who are misusing or at risk of misusing substances</b></p> <ul style="list-style-type: none"> <li>Multiple sessions of individual motivational interviewing may be effective for reducing substance use in young people who use substances and are at risk of delinquent or criminal behaviour.</li> <li>A personality-targeted intervention may be effective in reducing frequency of drug use and number of drugs used in young people who may have a psychological tendency towards substance misuse.</li> <li>Studies of interventions to prevent substance misuse in children and young people who have at least 1 parent or legal guardian with a substance misuse problem show unclear evidence of effectiveness.</li> <li>The evidence for interventions to prevent substance misuse in young people with mental health problems is inconclusive.</li> </ul>		<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>
<p><b>Family-based support for young people aged 11–16 years at high risk of substance misuse</b></p> <ul style="list-style-type: none"> <li>A programme of family-based support may have beneficial effects including reductions in illicit drug use and alcohol dependence and increased use of condoms during sexual activity. Some of the benefits may be directly related to improvements in family functioning after 6 months.</li> <li>An intensive programme of family-based therapy may reduce substance misuse quicker than group therapy with peers and may be more likely to result in abstinence from substance use.</li> <li>Family-based support for young people who are newly homeless may reduce frequency of use of alcohol and illicit drugs in the past 3 months compared with control, although cannabis use may not improve.</li> </ul>	<p>✓*</p>	<p>✓</p> <p>✓</p>

\* Evidence Updates are intended to increase awareness of new evidence and do not change the recommended practice as set out in current guidance. Decisions on how the new evidence may impact guidance will not be possible until the guidance is reviewed by NICE following its published processes and methods. For further details of this evidence in the context of current guidance, please see the full commentary.



# 1 Commentary on new evidence

These commentaries focus on the 'key references' identified through the search process and prioritised for inclusion in the Evidence Update, which are shown in bold text. Supporting references provide context or additional information to the commentary. Section headings are taken from [NICE PH4](#).

## 1.1 [Local strategies to reduce substance misuse in vulnerable and disadvantaged young people aged under 25](#)

No new key evidence for this section was selected for inclusion in this Evidence Update.

## 1.2 [Identifying and supporting young people aged under 25 who are misusing or at risk of misusing substances](#)

[NICE PH4](#) recommends using existing screening and assessment tools to identify vulnerable and disadvantaged children and young people aged under 25 who are misusing – or who are at risk of misusing – substances. These tools include the Common Assessment Framework and those available from the National Treatment Agency (now part of Public Health England).

It additionally recommends working with parents or carers, education welfare services, children's trusts, child and adolescent mental health services, school drug advisers or other specialists to:

- provide support (schools may provide direct support)
- refer the children and young people, as appropriate, to other services (such as social care, housing or employment), based on a mutually agreed plan. The plan should take account of the child or young person's needs and include review arrangements.

### **Interventions for young people at risk of delinquent or criminal behaviour**

[Carney and Myers \(2012\)](#) did a systematic review and meta-analysis of early interventions for young people at risk of delinquency and involvement in crime who use substances but do not meet diagnostic criteria for misuse or dependence. Included studies had to compare an early intervention (including brief interventions) with another treatment or control and had to include screening for alcohol and other drug use. Additionally, studies had to have change in alcohol or substance use as their primary outcome and changes in other risky or delinquent behaviour as secondary outcomes.

Of 9 included studies (n=1895, 63.1% male), 7 had enough information and comparable outcomes for meta-analysis to calculate a weighted overall effect size (Hedge's g). A Hedge's g value of 0.80 was considered to be a large effect, 0.50 was considered to be medium, and 0.20 was considered to be small. Studies were generally assessed to be of high quality, with low drop-out rates or participant attrition controlled for in analyses. Follow-up periods ranged from 1 month to 12 months.

Across all substance use and behavioural outcomes, individual motivational interviewing was effective (Hedge's g=0.29, 95% confidence interval [CI] 0.12 to 0.45, p=0.0006; 6 studies, n=1418), but group motivational interviewing was not (Hedge's g=-0.03, 95% CI -0.21 to 0.15, p=0.74; 1 study, n=34). The effect size was greater for multiple sessions (Hedge's g=0.44, 95% CI 0.24 to 0.64; 3 studies, n=456) than for single sessions (Hedge's g=0.11, 95% CI 0.03 to 0.20; 3 studies, n=962).

Substantial heterogeneity was present across studies, particularly in length of follow-up and quality of defining and reporting outcomes. Additionally, only 2 studies reported intention-to-treat analysis.

This systematic review and meta-analysis suggests that multiple sessions of individual motivational interviewing may be effective for reducing substance use in young people who use substances and are at risk of delinquent or criminal behaviour. However, because of limitations in this small evidence base, no impact on [NICE PH4](#) is expected.

#### Key reference

Carney T, Myers B (2012) [Effectiveness of early interventions for substance-using adolescents: findings from a systematic review and meta-analysis](#). *Substance Abuse Treatment, Prevention and Policy* 7: 25

#### Interventions for people who are at risk of misusing substances

[Conrod et al. \(2010\)](#) conducted a randomised controlled trial (RCT; n=732) of a personality-targeted group intervention to prevent substance use over 24 months. Students at 24 state secondary schools in London, UK aged 13–16 years (median=14 years) were surveyed and invited to participate if they scored 1 standard deviation (SD) above the school mean on 1 of 4 subscales of the Substance Use Risk Profile Scale (hopelessness, anxiety sensitivity, impulsivity, and sensation seeking).

Participants who had both individual and parental consent were assigned to 2 sessions of a targeted intervention based on the subscale with the highest score or to control. Interventions lasted 90 minutes, took place at school, and contained a psychoeducational component, a motivational component and a cognitive behavioural therapy component. The interventions were not designed to change personality but aimed to change how young people with specific personality risk factors cope. The control group had treatment as usual, in which they had some form of drug education and coping skills information as part of the standard school curriculum. Participants were asked how often in the past 6 months they had taken cannabis, cocaine or other drugs, and this information was combined into a drug use frequency score.

Most participants were white (40%) or African-Caribbean (30%). Frequency of drug use reduced in the intervention group (from a log-transformed mean of 0.61 at baseline to 0.58 at 24 months), but changed little in the control group (0.61 at baseline to 0.62 at 24 months). The difference between groups was significant at 24 months ( $p<0.01$ ). The number of drugs used reduced in the intervention group (log-transformed mean of 0.18 at baseline to 0.16 at 24 months) and increased in the control group (log-transformed mean of 0.17 at baseline to 0.20 at 24 months). The difference between groups was significant at 24 months ( $p<0.05$ ). The interventions did not seem to differ in effectiveness by personality type or whether or not young people had started using drugs at baseline. Survival analyses showed no significant effect of the interventions on first use of cannabis. People who received the intervention were less likely to use cocaine ( $p<0.001$ ) or other drugs ( $p=0.003$ ) during follow-up than those in the control group.

The authors noted that participant attrition was a problem over the 2 years of follow-up – mainly when obtaining parental consent to participate and after randomisation. Intention-to-treat and non-intention-to-treat analyses and 3 methods of accounting for missing data were used, and the results were consistent across analyses.

This study suggests that a personality-targeted intervention may be effective in reducing frequency of drug use and number of drugs used in young people who may have a psychological tendency towards substance misuse. However, this study was conducted in a general population of young people, whose risk status was determined only by a psychological test. Therefore, this evidence is unlikely to affect recommendations in [NICE PH4](#).

### Key reference

Conrod PJ, Castellanos-Ryan N, Strang J (2010) [Brief, personality-targeted coping skills interventions and survival as a non-drug user over a 2-year period during adolescence](#). *Archives of General Psychiatry* 67: 85–93

[Bröning et al. \(2012\)](#) did a systematic review of preventive interventions for children aged 0–17 years with at least 1 parent or legal guardian with a substance misuse problem (risky, problematic or dependent use of at least 1 substance). Studies published in 1994–2009 were included. Reports of study protocols without results and case histories or case studies were excluded. The review excluded studies of universal programmes, such as whole-class school-based interventions, or of programmes specifically targeting children who had already started using substances or had a diagnosed mental health problem.

A total of 13 studies of 9 intervention programmes were identified, and 8 studies were judged to be of very good or good quality. Most interventions were school based, 2 were family based and 1 was community based. Programmes lasted for 8–14 weeks and usually consisted of 90 minute sessions once a week. Content varied, but common themes were coping with emotions, problem solving, education on drugs and addiction, and family relations. Only 3 studies measured reduction in the child's substance use: in 1 study, substance use was stable in the experimental group, but increased in the control group; in 1 study it increased more in the experimental group; and in the final study it increased in both groups. Programme-related knowledge, such as facts about substances and addiction, increased in all 5 studies that assessed this outcome.

The authors noted that many studies included mainly children aged under 12 years, who are not likely to be using substances, but the likelihood would increase with age. They concluded that the effects of preventive programmes for children of families affected by substance misuse are unclear and that further studies are needed.

The evidence base was limited by the small number of studies and considerable variation in sample size. Treatment integrity was often not assessed or the intervention was delivered by the same researchers who administered the programme, potentially creating bias. Parental substance misuse was mainly measured by a short screening questionnaire or by child self-report, follow-up was often restricted to immediately after the intervention, and adverse events were not often reported.

This evidence suggests that studies of interventions to prevent substance misuse in children and young people who have at least 1 parent or legal guardian with a substance misuse problem show unclear evidence of effectiveness. Therefore, this evidence is unlikely to affect [NICE PH4](#).

### Key reference

[Bröning S, Kumpfer K, Kruse K et al. \(2012\)](#) [Selective prevention programs for children from substance-affected families: a comprehensive systematic review](#). *Substance Abuse Treatment, Prevention, and Policy* 7: 23

[Salvo et al \(2012\)](#) did a systematic review of interventions for prevention of substance misuse in people aged 18 years or younger who have a mental health disorder. Initially, only RCTs were searched for, but only 1 trial was identified. In subsequent test searches, the parameters were increased to all ages and observational studies (2 studies). A final search included RCTs of skills-based interventions for primary prevention of substance use disorders in people 18 years or younger at high risk (5 studies). Additionally, only studies conducted in Canada, the USA, New Zealand or the UK were included.

Overall, some preventive interventions significantly reduced substance use, but outcomes varied according to type of drug, and many results were non-significant. The authors postulated that the lack of significant results may have been caused by a lack of power to detect a difference, because effect sizes seemed to be clinically significant in some cases.

Assessment of the quality of the 6 RCTs noted that none reported allocation concealment, only 1 recorded blinding participants before starting the intervention, and none had blinded outcome assessment. Only 1 study reported a sample size calculation, and all used self-reported measures, which were supplemented with biological measures in only 2 studies. Four of the six studies had a loss to follow-up of more than 80%.

The authors concluded that the small number of trials detected in their original search identified a research gap, and that trials in young people at high risk of substance use disorders could provide a starting point for future research.

This review suggests that the evidence for interventions to prevent substance misuse in young people with mental health problems is inconclusive. This evidence is unlikely to affect [NICE PH4](#).

#### **Key reference**

Salvo N, Bennett K, Cheung A et al. (2012) [Prevention of substance use in children/adolescents with mental disorders: a systematic review](#). *Journal of the Canadian Academy of Child and Adolescent Psychiatry* 21: 245–52

### **1.3 Family-based support for young people aged 11–16 years at high risk of substance misuse**

[NICE PH4](#) recommends offering a family-based programme of structured support over 2 or more years, drawn up with the parents or carers of the child or young person, and led by staff competent in this area. The programme should:

- include at least 3 brief motivational interviews each year aimed at the parents or carers
- assess family interaction
- offer parental skills training
- encourage parents to monitor their children's behaviour and academic performance
- include feedback
- continue even if the child or young person moves schools.

More intensive support (for example, family therapy) should be offered to families who need it.

#### **Family-based support for Hispanic young people**

[Pantin et al. \(2009\)](#) reported an RCT of a family-based intervention compared with community control for preventing problem behaviour in Hispanic young people (n=213, mean age=14 years, 64% male) in Florida, USA. The study had 2 main aims. The first was to investigate the effects on family functioning and the outcomes of substance misuse (defined as use of alcohol, tobacco and cannabis), externalising disorders and unprotected sex. The second aim was to determine whether the improvements in family functioning were the driver for any change in outcomes.

The intervention, known as 'Familias Unidas', is based on Hispanic cultural expectations. 'Familias Unidas' works with parents to provide them with the skills and knowledge for effective parenting of young people in the USA. Participating young people were identified by school counsellors and had at least 'mild problems' of conduct disorder, socialised aggression or attention problems measured on the Revised Behavior Problem Checklist. Eligible young people were then given a letter for their parents inviting them to participate.

Parents received training in 9 group sessions of 2 hours, and parents were then encouraged to implement the new skills in 10 supervised family visits of 1 hour each. Four 1-hour booster sessions were given during follow-up. The community control group were given 3 referrals to local services for young people with behaviour problems, and the only other contact with the

study was for assessments. All sessions were videotaped and then rated for the researcher's adherence to the intervention.

Most participating families (87%) had household income of less than \$30,000, and slightly more than half (56%) of young people were born in the USA. Of those young people who were not born in the USA, 27% were from Honduras, 20% were from Cuba and 16% were from Nicaragua. Assessments were given to parents and young people in their preferred language (English or Spanish).

At baseline, the 'Familias Unidas' and community control groups had generally similar characteristics; however, parents in the 'Familias Unidas' group scored significantly lower in measures of positive parenting ( $p=0.01$ ) and parental monitoring ( $p=0.004$ ). Young people were asked whether they had smoked, drank alcohol or used illicit drugs in their lifetime and in the past 30 days. If use in the past 30 days was reported, questions were asked about the frequency of use of different types of drug.

At baseline, substance misuse within 30 days was similar in the 'Familias Unidas' group and the community control group (15% versus 13%). Misuse had increased in both groups at the 30-month follow-up to 25% of the 'Familias Unidas' group and 34% of the community control group – a significantly lower increase with 'Familias Unidas' ( $p<0.02$ ). No significant differences were seen in externalising behaviour or sexual activity. However, significantly more of the 'Familias Unidas' group used condoms than the community control group ( $p<0.03$ ). By 6 months, improvements in family functioning were significantly greater in the 'Familias Unidas' group than in the community control group ( $p<0.001$ ). Improvements in family functioning seemed to drive the change in substance misuse but not the change in condom use.

In a further RCT of 'Familias Unidas', [Prado et al. \(2012\)](#) studied the intervention compared with standard care in 242 Hispanic young people aged 12–17 years (mean age=14.7 years, 64% male). Participants had at least 1 incident of a level 3 behaviour problem, defined as assault or threat against non-staff member of school, breaking and entering, serious fighting, hazing (that is, initiation into a group using abuse, harassment or humiliation), possession or use of illicit substances, possession of simulated weapons (such as replica guns), trespassing or vandalism.

In this study, parents received 8 group sessions of 2 hours and 4 family visits of 1 hour each, or community control (referral to local services for young people). Outcome measures were alcohol or illicit drug use within 90 days, alcohol or cannabis dependence, and having sex under the influence of alcohol or cannabis in the past 90 days. Parental stress in the past 6 months was assessed and categorised as low or moderate-to-high, and social support was measured with the Social Provisions Scale and categorised as high or low.

Most participating young people were born in the USA (65%); of those who were not, 25% were from Cuba, 16% were from Honduras, 10% were from Nicaragua, 8% were from Puerto Rico and 7% were from the Dominican Republic. At baseline, the characteristics of the 'Familias Unidas' and community control groups were similar, apart from a higher proportion of young people being diagnosed with alcohol dependence in the past 90 days in the 'Familias Unidas' group (16%) compared with the control group (7%,  $p=0.023$ ). This difference was controlled for in analysis of the growth curve.

'Familias Unidas' was associated with a reduction in the prevalence of illicit drug use (from 29% at baseline to 23% at 12 months), compared with an increase in the community control group (from 23% to 31%,  $p=0.04$  for intervention effect). Changes in alcohol use were not significantly different between groups. 'Familias Unidas' was also associated with a reduction in alcohol dependence (from 16% at baseline to 5% at 12 months), compared with an

increase in the community control group (from 7% to 8%,  $p=0.02$  for intervention effect); however, no significant difference in cannabis dependence was seen between groups.

Little change was seen for sexual activity while under the influence of alcohol or illicit drugs in the 'Familias Unidas' group, (from 11% at baseline to 13% at 12 months). However, an increase was seen in the community control group (from 13% to 35%,  $p=0.025$  for intervention effect).

'Familias Unidas' was significantly associated with reduction in alcohol dependence for young people whose parents had low social support ( $p=0.05$ ) but not for those whose parents had high social support. No other outcome was affected by parental social support. 'Familias Unidas' was significantly associated with reductions in illicit drug use in young people whose parents reported high stress ( $p=0.04$ ) but not in those whose parents reported low stress. No other outcome was affected by parental stress.

The authors noted that the lack of effect of 'Familias Unidas' on alcohol use might be caused by views that alcohol use is normal in young people and is accessible, and parents might not perceive alcohol use to be problematic until misuse or dependence occurs. In both studies, the populations were not representative of the general Hispanic population of the USA, which consists of about 65% Mexican-Americans. Additional limitations were the possibility of selection bias in that families who participated may have had higher family functioning than those who did not participate, the reliance on self-reported measures, and that uptake of community referrals in the control group was not measured.

These studies suggest that a programme of family-based support may have beneficial effects including reductions in illicit drug use and alcohol dependence and increased use of condoms during sexual activity. Some of the benefits may be directly related to improvements in family functioning after 6 months. The finding that family-based support over 6 months may be effective may have a potential impact on [NICE PH4](#), which currently recommends that family-based programmes should be delivered over 2 years or more. The details of any impact are outside the scope of the Evidence Update. Decisions on how the new evidence may impact guidance will not be possible until the guidance is reviewed by NICE following its published processes and methods.

#### **Key references**

[Pantin H, Prado G, Lopez B et al. \(2009\) A randomized controlled trial of Familias Unidas for Hispanic adolescents with behavior problems. \*Psychosomatic Medicine\* 71: 987–95](#)

[Prado G, Cordova D, Huang S et al. \(2012\) The efficacy of Familias Unidas on drug and alcohol outcomes for Hispanic delinquent youth: main effects and interaction effects by parental stress and social support. \*Drug and Alcohol Dependence\* 125 \(Suppl. 1\): S18–25 \[NIH Public Access author manuscript – full text\]](#)

#### **Multidimensional family therapy**

[Liddle et al. \(2009\)](#) reported 1-year follow-up of an RCT of multidimensional family therapy compared with group therapy with peers. Participants were young people aged 11–15 years in Florida, USA who were referred for outpatient treatment for substance misuse and were living with at least 1 parent or parent-figure who could participate ( $n=83$ , 74% male). The study excluded young people who needed inpatient detoxification or other intensive services, had suicidal or psychotic symptoms, or had intellectual disability. Referrals were made by juvenile justice, schools, substance use or mental health facilities, and other sources such as parents.

The mean age of participants was 13.7 years ( $SD=1.1$  years). Most participants were Hispanic (42%) or African-American (38%). Just over half of the participants lived in a single-parent household, and the median family income was \$19,000. At baseline, 47% of participants met criteria for substance misuse and 16% met criteria for substance

dependence. Comorbid psychiatric disorders were common: 39% had conduct disorder; 29% had attention deficit hyperactivity disorder; and 9% had depressive disorder.

Both multidimensional family therapy and group therapy were delivered for 90 minutes twice a week for 12–16 weeks. Multidimensional family therapy was conducted at home and covered 4 domains: ‘adolescent’; ‘parent’; ‘family interaction’; and ‘extrafamilial’. Therapists met with young people alone, parents alone, or young people with their parents, depending on the domain and specific problem being addressed in the session. Group therapy covered social learning and cognitive behaviour therapy aimed at the substance misuse and at risk factors or behaviours, such as low self-esteem, problems at school and low social functioning. The primary outcomes were substance use, substance use problems, delinquency and internalised distress.

Significantly more young people who had multidimensional family therapy completed treatment (97%) than did those who had group therapy (72%,  $p < 0.05$ ). Both treatments resulted in reductions in the number of young people reporting substance use problems at 12 months. Latent growth curve analysis showed that this reduction occurred significantly quicker for multidimensional family therapy than for group therapy. Multidimensional family therapy was also associated with increased abstinence from substance use ( $p = 0.03$ ) and fewer days of substance use ( $p < 0.001$ ) compared with group therapy. Additionally, delinquency ( $p < 0.05$ ) and internalised distress ( $p = 0.01$ ) reduced faster with multidimensional family therapy than with group therapy.

Limitations of the evidence included possible lack of generalisability outside low-income urban Hispanic or African-American young people and that the study was small and at a single site. Additionally, the developer of the multidimensional family therapy was an investigator on this study. Although the authors stated that they tried to minimise investigator bias, this could not be ruled out.

This evidence suggests that an intensive programme of family-based therapy may reduce substance misuse quicker than group therapy with peers and may be more likely to result in abstinence from substance use. The conclusions also lend some support to family interventions being delivered over periods shorter than 2 years. However, because the population may not generalise directly to the UK and the sample size is small, this study is unlikely to affect recommendations in [NICE PH4](#).

#### **Key reference**

Liddle HA, Rowe CL, Dakof GA et al. (2009) [Multidimensional family therapy for young adolescent substance abuse: twelve-month outcomes of a randomized controlled trial](#). *Journal of Consulting and Clinical Psychology* 77: 12–25

#### **Family-based support for newly homeless young people**

[Milburn et al. \(2012\)](#) conducted an RCT of a family intervention compared with standard care in 151 young people who were newly homeless in California, USA. Eligible young people had been away from home for at least 2 nights in the past 6 months, but had not been away for more than 6 months and had the potential to return home. Additional inclusion criteria were no current abuse or neglect, no psychosis and not currently intoxicated. Consent for the study was obtained from the young person and a parent or guardian.

The family intervention (68 families) was ‘Support To Reunite, Involve and Value Each Other’ (STRIVE), which consisted of 5 weekly sessions of 1.5–2 hours involving both the young person and their parent. The intervention used cognitive behavioural theories to improve family problem-solving and conflict resolution skills. The control (83 families) was standard care by any organisations that referred the young people to the trial, or a referral to an appropriate service.

Risky behaviour within 3 months was assessed by questions about sex (frequency, number of partners and condom use) and substance use (use and frequency of use of alcohol, cannabis and other illicit drugs). Delinquent behaviour was measured using behaviours listed as symptoms of conduct disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM)-4.

At baseline, intervention and control groups were similar except that the intervention group had more female participants (78%) than the control group (57%), which was controlled for in all analyses. The mean age of young people was 15 years (range 12–17), 92% were born in the USA, and most were Hispanic (62%) or African-American (21%). Most (63%) had never been away from home for more than 2 weeks, and 13% had been away for 2–6 months. The majority (70%) had returned to living with their families at the time of baseline assessment.

At 12-month follow-up, compared with control, the intervention was associated with greater reductions in the number of times within 3 months that young people used alcohol (from 7.7 to 1.8 versus 5.7 to 4.3 for control,  $p=0.003$ ) and illicit drugs other than cannabis (from 2.8 to 0.3 versus 2.7 to 1.2 for controls,  $p<0.001$ ). However, cannabis use increased in the intervention group (from 9 to 12 times in 3 months), whereas it reduced in the control group (from 13 to 6 times,  $p<0.001$ ). For sexual behaviour, the only significant difference between groups was a reduction in the number of sexual partners in the intervention group (from 0.84 to 0.46) compared with an increase in the control group (from 0.72 to 1.72,  $p<0.001$ ).

The authors noted that the main limitation of their study was their inability to recruit most families. Only one-third of eligible families were successfully randomised because of difficulties in obtaining consent from both the young person and parent and in conducting baseline assessments. Furthermore, some participants had their first follow-up session before their last intervention session, and the use of self-reported data could underestimate risky behaviour.

This evidence suggests that family-based support for young people who are newly homeless may reduce frequency of use of alcohol and illicit drugs in the past 3 months, although cannabis use may not improve. Because of the contradictory results, and that the population may not directly translate to UK practice, this study is unlikely to affect recommendations in [NICE PH4](#).

#### **Key reference**

Milburn NG, Iribarren FJ, Rice E et al. (2012) [A family intervention to reduce sexual risk behaviour, substance use, and delinquency among newly homeless youth](#). *Journal of Adolescent Health* 50: 358–64 [NIH Public Access author manuscript – full text]

#### **Interventions for young people in foster care**

[Kim and Leve \(2011\)](#) reported a trial of the 'Middle School Success' intervention on substance misuse and delinquency over 36 months in girls in early adolescence who were in foster care. The intervention has a component for girls, aiming to increase their prosocial skills and to decrease internalising and externalising symptoms, and a component for their carers, to increase their parenting skills. In data published elsewhere ([Smith et al. 2011](#)), the intervention group had a significantly lower rate of internalising and externalising behaviour at 6 months than the control group. This analysis looked at follow-up to 36 months.

Girls in the Pacific Northwest of the USA were recruited during their last year at elementary school, and the intervention was delivered in first term at middle school (mean age at baseline=11.54 years, SD=0.48 years). The sample consisted of 100 girls and their carers; 63% were white, 14% were multiracial, 10% were Hispanic, 9% were African-American and 4% were Native American. Randomisation was by coin toss. Overall, 56% of participants had experienced at least 1 incident of physical abuse, 67% had experienced sexual abuse and 97% had experienced neglect; 32% had experienced all 3 forms of maltreatment. Groups

were similar at baseline apart from a significantly more severe level of neglect in the intervention group, although this difference did not relate to any outcome measure and in modelling it did not affect results.

Girls and carers each had 6 sessions of group-based therapy over 3 weeks during the summer before starting middle school, with ongoing individual training and support of 2 hours a week in the first year of middle school. Carers and young people in the control group received standard services provided by the child welfare system, such as referrals to individual or family therapy, parenting classes for biological parents, and case monitoring. Substance use was measured as past year consumption of tobacco, alcohol or cannabis. Delinquency, in terms of the girl's own delinquency and association with delinquent peers, was measured using the Self-Report Delinquency Scale.

The intervention was associated with significantly lower tobacco ( $p < 0.05$ ) and cannabis use ( $p < 0.01$ ), but was not significantly associated with reductions in alcohol use, delinquent behaviour or association with delinquent peers. The authors noted that their measure of alcohol use may not have been sensitive enough to detect differences, and that the lack of effect on delinquency may have been due to the small sample size. Additionally, they did not assess effects of the intervention on parenting behaviours.

This study suggests that the 'Middle School Success' intervention for teenage girls in foster care in the USA does not seem to improve delinquent behaviour or reduce alcohol use, although it may reduce tobacco and cannabis use. This evidence is unlikely to affect [NICE PH4](#).

#### Key reference

Kim HK, Leve LD (2011) [Substance use and delinquency among middle school girls in foster care: a three-year follow-up of a randomized controlled trial](#). *Journal of Consulting and Clinical Psychology* 79: 740–50 [[NIH Public Access author manuscript – full text](#)]

#### Supporting reference

Smith DK, Leve LD, Chamberlain P (2011) [Preventing internalizing and externalizing problems in girls in foster care as they enter middle school: impact of an intervention](#). *Prevention Science* 12: 269–7

### 1.4 [Group-based behavioural therapy for children aged 10–12 who are persistently aggressive and disruptive](#)

No new key evidence for this section was selected for inclusion in this Evidence Update.

### 1.5 [Motivational interviewing for young people aged under 25 who are problematic substance misusers](#)

[NICE PH4](#) recommends offering 1 or more motivational interviews, according to the young person's needs. Each session should last about an hour and the interviewer should encourage the child or young person to:

- discuss their use of both legal and illegal substances
- reflect on any physical, psychological, social, education and legal issues related to their substance misuse
- set goals to reduce or stop misusing substances.

#### Motivational interviewing for young people who are HIV positive

[Murphy et al. \(2012\)](#) reported a US RCT of the motivational interviewing intervention 'Healthy Choices'. It evaluated the effects on alcohol and cannabis use in 143 young people aged 16–24 years (mean=20.7 years) who were HIV positive. Participants had at least 1 of 3 risky behaviours at baseline: substance use problem; unprotected sex within 3 months; or less than

90% adherence to HIV treatment. Exclusion criteria were current participation in research targeting any of the 3 risky behaviours, in treatment for substance misuse, or having an active thought disorder.

All trial sites provided HIV primary care. Participants were randomly assigned to receive intervention plus standard care (n=68) or standard care alone (n=75). The intervention consisted of 4 motivational interviewing sessions of 60 minutes focusing on 2 of the 3 possible problem behaviours.

Participants were mostly African-American (78.3%). The 2 groups were similar at baseline except for a lower proportion of male participants in the intervention group (51.5% versus 65.3% for control,  $p<0.05$ ) and a higher proportion of participants reporting heterosexual orientation in the intervention group (51.5% versus 45.3% for control,  $p<0.05$ ).

At 15-month follow-up, no significant difference in the proportion of participants using alcohol, cannabis, or alcohol and cannabis was seen between groups. Past week alcohol use was significantly reduced in the intervention group compared with the standard care group (39.7% versus 53.6% respectively,  $p<0.01$ ), but past-week cannabis use did not differ significantly (25.9% versus 23.2% respectively,  $p=0.743$ ).

Limitations of the evidence included that the sample size was small, the standard care group was not matched with the intervention in terms of time, and self-reported measures of substance use were used.

The evidence suggests that motivational interviewing may reduce alcohol use but not cannabis use in young people with HIV who have risky behaviour (defined as a substance misuse problem, less than 90% adherence to HIV treatment or participating in unprotected sex in the past 3 months). Because of the limitations of this study and the unclear generalisability to the UK population, this evidence is unlikely to have an impact on [NICE PH4](#).

#### **Key reference**

Murphy DA, Chen X, Naar-King S et al. (2012) [Alcohol and marijuana use outcomes in the Healthy Choices motivational interviewing intervention for HIV-positive youth](#). *AIDS Patient Care and STDs* 26: 95–100 [NIH Public Access author manuscript – full text]

#### **Motivational interviewing for young people in a juvenile correctional facility**

[Stein et al. \(2011\)](#) reported a study of motivational interviewing compared with relaxation training in 162 young people serving time in a juvenile correctional facility in the USA. The study also examined the role of depressive symptoms in driving substance misuse after release. Participants were aged 14–19 years and had a sentence of 4–12 months. They either drank heavily, or drank alcohol or used cannabis regularly in the 12 months before incarceration. Young people who used alcohol or cannabis in the 4 weeks before committing the offense resulting in their incarceration or in the 4 weeks before incarceration were also included.

The sample was mostly male (84%), and 32% of participants were Hispanic, 30% African-American and 30% white (9% self-identified as 'other' ethnicity). The average age was 17.1 years (SD=1.1 years). Parents provided consent for young people under 18 years; those 18 years or older provided their own consent.

The study was conducted at a single correctional facility that has a standard care substance misuse treatment programme of 60 minutes of psychoeducational group therapy twice a week for 8 weeks. This treatment was available to all participants. Participants were randomly assigned to receive a 90 minute session of either motivational interviewing or relaxation training to prepare for standard group therapy and a 60 minute booster session about 2 weeks before release from detention. Follow-up was conducted 3 months after release.

Symptoms of depression were assessed with the Center for Epidemiological Studies-Depression scale.

Motivational interviewing was associated with significantly lower drinking – measured as average drinks per day ( $p < 0.039$ ), percentage of heavy drinking days ( $p < 0.033$ ) and percentage of days with more than 5 drinks ( $p < 0.023$ ) and percentage of days using cannabis ( $p < 0.042$ ) – compared with relaxation training. No significant effects were seen on drinks per drinking day, or for the effect of depressive symptoms on any substance misuse outcome.

Further tests of the interaction between intervention and presence of depressive symptoms were conducted. For participants with low levels of symptoms of depression, motivational interviewing was associated with significantly fewer drinks per drinking day than relaxation training ( $p < 0.049$ ). There was no difference between treatment groups in number of drinks per drinking day for those with high levels of depressive symptoms. Similarly, motivational interviewing was associated with a significantly lower number of days of cannabis use than relaxation training in those with low levels of symptoms of depression ( $p < 0.014$ ). No difference between treatment groups was seen for those with high levels of depressive symptoms.

Limitations of the evidence included the short follow-up of 3 months and the reliance on self-reported measures.

This evidence suggests that motivational interviewing may be associated with reductions in alcohol use and quantity of alcohol consumed compared with standard care in young people in correctional institutions. This evidence is consistent with advice in [NICE PH4](#) that vulnerable and disadvantaged children and young people aged under 25 who are problematic substance misusers should be offered 1 or more motivational interviews, according to the young person's needs.

#### **Key reference**

Stein LA, Lebeau R, Colby SM et al. (2011) [Motivational interviewing for incarcerated adolescents: effects of depressive symptoms on reducing alcohol and marijuana use after release](#). *Journal of Studies on Alcohol and Drugs* 72: 497–506 [\[NIH Public Access author manuscript – full text\]](#)

## **Areas not currently covered by NICE PH4**

### **Community nursing care during prenatal and infant years and subsequent substance misuse problems**

[NICE PH4](#) does not cover community nursing care for mothers during prenatal and infant years and the long-term effects of this care on subsequent substance misuse problems in young people.

[Kitzman et al. \(2010\)](#) reported long-term follow-up of an RCT of a nurse-family partnership in Tennessee, USA. The original study recruited mainly African-American women (92%) who were pregnant in June 1990 to August 1991 and had no previous live births. Participants had to have at least 2 of 3 characteristics: not married; less than 12 years' education; or unemployed. Nurses completed a mean of 7 home visits during pregnancy (range 0–18 visits) and 26 home visits in the 2 years after the child's birth (range 0–71 visits). Nurses worked with families with the aims of improving pregnancy outcomes, improving the health and development of the child by promoting competent care from parents, and improving parents' lives by promoting future family planning, looking for work and completing education.

The primary outcomes of this follow-up study were the child's use (and frequency of use) of tobacco, alcohol and cannabis in the past 30 days, educational achievement, externalising and total behaviour problems, internalising problems and arrests. The follow-up was conducted after the child's 12th birthday. Of 228 women assigned to the nurse-visit group,

187 completed follow-up at 12 years (82%). Of 515 women assigned to the control group, 407 completed follow-up at 12 years (79%).

Results showed that children were less likely to have used tobacco, alcohol or cannabis in the past 30 days in the nurse-visit group (1.7%) than in the control group (5.1%,  $p=0.04$ ). Additionally, children in the nurse-visit group used fewer substances (0.02 versus 0.08 for control,  $p=0.02$ ) and on fewer days (0.03 versus 0.18 for control,  $p=0.02$ ). Educational achievement was significantly better for children of low-income households in the nurse-visit group over a range of measures, but no significant effects were seen over the whole sample. No significant effect of nurse visits was seen for arrests, or externalising or total behaviour problems.

The authors noted that the lack of effect seen for educational achievement for households with higher incomes was a potential limitation of the study, but that this result was consistent with findings from other studies. Additional limitations were that self-reported measures were used for some outcomes and that no adjustments were made for multiple outcome comparisons.

These results suggest that intensive community nursing support for mothers during prenatal and infant years may have long-lasting effects on the child, resulting in lower use of tobacco, alcohol and cannabis as well as lower frequency of use when the child is aged 12 years. This evidence in support of early intervention may have a potential impact on [NICE PH4](#), although the details of any impact are outside the scope of the Evidence Update. Decisions on how the new evidence may impact guidance will not be possible until the guidance is reviewed by NICE following its published processes and methods.

#### **Key reference**

Kitzman HJ, Olds DL, Cole RE et al. (2010) [Enduring effects of prenatal and infancy home visiting by nurses on children. Follow-up of a randomized trial among children at age 12 years](#). *Archives of Pediatric and Adolescent Medicine* 164: 412–8

#### **Interventions for young people at risk of dropping out of education**

[NICE PH4](#) does not cover specific interventions to reduce substance misuse for young people at risk of dropping out of education. However, the definition of vulnerable and disadvantaged young people in the guidance includes those excluded from school and truants.

[Hallfors et al. \(2006\)](#) conducted an effectiveness trial of a drug misuse prevention programme called 'Reconnecting Youth', which is recognised as effective by US government organisations on the basis of efficacy studies. 'Reconnecting Youth' is a school class lasting half a school year that aims to improve academic achievement, improve mood management, and reduce or prevent use of illegal drugs.

This effectiveness study aimed to improve on the previous efficacy trial by including a larger sample of young people from a larger number of schools with wider demographic characteristics. Additionally, the authors noted that the original efficacy study had not been a true RCT because randomisation was done before the participants had agreed to participate, so rates of refusal differed between groups. Additionally, the groups differed at baseline, with the intervention group having higher drug use and truancy and lower educational achievement than the control group.

The current study was conducted in 2 large urban school districts (categorised as site A and site B), with 9 schools participating. The intervention consisted of 55 core lessons and 24 booster lessons focusing on 4 themes: self-esteem; decision-making; personal control; and interpersonal communication. Students in 9<sup>th</sup> to 11<sup>th</sup> grades (aged about 14–17 years) were randomly selected from each school's pool of students identified as high risk of dropping out.

Criteria for high-risk status were being in the top 25% for truancy or bottom 50% for academic achievement, or referral by a teacher or counsellor.

The study participants in the 2 districts had different demographic characteristics. In site A, 87% of participants were Hispanic, 9% were black, 4% were white and 4% were Native American or other race; 90% qualified for reduced-price or free school lunches. In site B, 40% were Asian or Pacific Islander, 21% were Hispanic, 15% were black, 10% were white and 12% were Native American or other race; 61% qualified for reduced-price or free school lunches. Overall, 49% of the 1370 participants were male. A total of 695 students were allocated to the intervention group and 675 students were allocated to the control group. At baseline, the intervention group had significantly lower attendance, higher smoking, lower personal control and were younger than the control group.

Across both sites, 47% of students assigned to intervention attended at least 50% of intervention classes. The main reasons for non-attendance were moving from the school, class schedule conflicts or counsellor's refusal for the student's participation in an elective class because of poor core academic performance.

Immediately after the intervention, no significant differences were seen for any of the academic, substance misuse, emotional, behavioural and interpersonal outcomes examined. One outcome, progression of drug use, had effects that varied by school, with 4 schools showing small positive effects of intervention and 5 schools showing small negative effects. At 6-month follow-up, the intervention had negative effects on 3 outcomes: conventional peer bonding (significantly lower in intervention group: 1.78 versus 1.87 for control,  $p=0.02$ ); high-risk peer bonding (significantly higher in the intervention group: 1.76 versus 1.62 for control,  $p=0.01$ ); and prosocial weekend activities (significantly lower in the intervention group: 3.87 versus 4.23 for control,  $p=0.01$ ).

The authors noted that results showed that 'Reconnecting Youth' failed to do more good than harm. They postulated that the negative outcomes may be iatrogenic effects of grouping high-risk young people, who develop friendships with each other and may reinforce or normalise problem behaviours. Additionally, the effectiveness may have been influenced by the fact that young people who needed the most help academically were sometimes not permitted to participate in the elective class aiming to provide that help because of their low academic performance.

This study suggests that the US-based drug misuse prevention programme 'Reconnecting Youth' does not seem to be effective for substance misuse outcomes and may lead to harmful peer relationships in young people at risk of dropping out of education. This evidence is unlikely to affect [NICE PH4](#), although it highlights that positive results from efficacy trials need to be confirmed in effectiveness studies before, or as part of, wider implementation.

#### **Key reference**

Hallfors D, Cho H, Sanchez V et al. (2006) [Efficacy vs effectiveness trial results of an indicated "model" substance abuse program: implications for public health](#). *American Journal of Public Health* 96: 2254–9 [[NIH Public Access author manuscript – full text](#)]

## **Interventions for young people who are homeless**

[NICE PH4](#) does not contain recommendations specifically aimed at young people who are homeless.

[Altena et al. \(2010\)](#) conducted a systematic review of interventions for young people who are homeless and living on the street or in temporary accommodation. The review included quasi-experimental studies, uncontrolled pretest–posttest studies, and randomised and controlled trials. Studies could be long-term or short-term, and delivered to individuals or in groups. Studies of family therapy or sexual health were excluded, as were service evaluations and studies that were delivered in schools.

The 11 identified studies included young people aged 10–24 years, and were mostly in male participants. Three studies looked at group interventions and the other 8 focused on individuals. Most studies were conducted in intramural settings; that is, in emergency shelters or drop-in centres. Only 1 study assessed services for ambulant young people. Studies were rated as of fair quality (4 studies) or poor quality (7 studies). The most common outcome measure was reduction in use of drugs or alcohol (8 studies). Other common outcome measures were of mental health or emotional problems, as well as life outcomes such as education, employment or homelessness.

No significant effects on homelessness or substance misuse were seen in 1 study of intensive case management. A study of an independent living programme showed positive effects on employment and social or home stability, but the findings with psychological measures were inconsistent. Two studies of brief motivational interviewing did not find significant or lasting effects on reduction of drug or alcohol use. In 2 studies of cognitive-behavioural intervention, improvements were reported in number of days housed, psychological distress and substance misuse. A peer-led intervention seemed to increase participants' willingness to take responsibility for personal actions and their intention to help a friend.

The authors noted that the lack of effects seen in many studies could be caused by using control conditions that are too similar to the intervention. Most studies had a short follow-up period, and studies often relied on self-reported measures. Only 4 studies measured treatment fidelity. Determining which outcomes were primary and which were secondary was difficult in several reports, and some studies did not explain why specific outcomes measures were chosen.

This evidence suggests that studies of interventions for young people who are homeless are limited, heterogeneous in the intervention type and outcomes measured, and show inconsistent results across substance misuse and psychological measures. This evidence is unlikely to affect [NICE PH4](#).

### **Key reference**

[Altena AM, Brilleslijper-Kater SN, Wolf JR \(2010\) Effective interventions for homeless youth: a systematic review. \*American Journal of Preventive Medicine\* 38: 637–45](#)

## **Peer support to reduce substance misuse**

[NICE PH4](#) does not contain recommendations about using peer support in school-based interventions to reduce substance misuse.

[Valente et al. \(2007\)](#) conducted a study of an existing evidence-based programme ('Towards No Drug Abuse'), which they tailored to the social networks of a school. 'Towards No Drug Abuse' focuses on motivation, skills and decision-making. The primary aim of the study was to assess whether a peer-led version of 'Towards No Drug Abuse' is more effective than the non-peer led intervention. A secondary aim was to assess whether peer interaction has negative effects on substance misuse outcomes.

Two interventions were studied: the 'Towards No Drug Abuse' programme and a modified version of the programme. The modified 'social network' version of the programme was designed to increase peer interaction through more group activities and creating small groups of students from the same social network (friends), each of which had a peer leader. Measures of peer environment included measures of number of friends in and out of school, popularity, social support and friends' reports of their substance misuse behaviour.

Schools in 8 districts in southern California, USA, participated, with 75 classes randomly assigned to 'Towards No Drug Abuse' (22 classes), 'Towards No Drug Abuse' amended for social networks (25 classes) or control (prevention as usual, 28 classes). The interventions were delivered in 12 sessions over 3–4 weeks. The same teachers often taught both the intervention and the social network intervention, which could bias their delivery.

Peer leaders were selected by their classmates and then received 1 hour of training in facilitating group discussion and managing group interaction, and were encouraged to embrace norms that rejected substance misuse. In the intervention, the classroom was randomly split into 2 teams for each session; in the social network version, the friend-based groups were the teams, and participants remained in those teams for the whole programme. Monthly use of tobacco, alcohol, cannabis and cocaine was measured on a scale from 1 (no use) to 11 (91 or more times) at baseline and 1-year follow-up.

The authors removed 53 students from analyses: 52 did not report their substance misuse behaviour in the follow-up assessment and 1 reported maximum use of all 4 drugs. The analysed sample was 885 participants at baseline and 541 at follow-up. The mean age of students was 16.3 years (SD 1.36 years), and 62% were male. A total of 72% of participants were Hispanic, 6% were African-American and the remaining 11% were other ethnicities, including Asian and mixed ethnicity.

Higher baseline use of all tobacco, alcohol and cannabis was significantly correlated with increased use of each substance at follow-up. For example, every additional unit of tobacco used at baseline was associated with an increase in tobacco use at follow-up (regression coefficient=0.43, 95% CI 0.36 to 0.50). Male students were more likely than female participants to increase their alcohol use between baseline and follow-up. Students in lower school years were more likely to increase their use of cannabis during the study period than in those in higher school years, and cocaine use was more likely to increase in younger students than in older students.

The 'Towards No Drug Abuse' intervention was not associated with changes in use of any substance. The social network version of 'Towards No Drug Abuse' was associated with a reduction in the use of cannabis (regression coefficient=-0.64, 95% CI -1.09 to -0.19,  $p<0.05$ ) and cocaine compared with control (regression coefficient=-0.37, 95% CI -0.63 to -0.10,  $p<0.05$ ). However, increasing peer use was associated with increased use of cannabis (regression coefficient=0.34, 95% CI 0.10 to 0.58,  $p<0.05$ ) and cocaine (regression coefficient=0.28, 95% CI 0.05 to 0.51,  $p<0.05$ ) in the social network group but not in the original intervention or control groups.

Limitations of the evidence included large attrition rates (37% from baseline) and possible undetected baseline differences.

This evidence suggests that the school-based intervention 'Towards No Drug Abuse' does not seem to affect substance misuse. A version of this intervention based around friendship groups may reduce overall cannabis and cocaine use, but if peer use of these drugs increases, the young person's drug use may be likely to increase too. This evidence is unlikely to affect [NICE PH4](#).

### Key reference

Valente TW, Ritt-Olson RA, Stacy A et al. (2007) [Peer acceleration: effects of a social network tailored substance abuse prevention program among high-risk adolescents](#). *Addiction* 102: 1804–15

### General youth development programmes for young people at risk of substance misuse

[NICE PH4](#) does not include recommendations on general youth development programmes for young people at risk of pregnancy, substance misuse or exclusion from school.

[Wiggins et al. \(2009\)](#) reported on the 'Young People's Development Programme', a UK initiative funded by the Department of Health that targets young people aged 13–15 deemed to be at risk of teenage conception, substance misuse or exclusion from school. Youth services engaged in competitive tendering to provide the programme. The authors stated they were commissioned by the Department of Health to conduct an independent analysis of the programme. Because of the active nature of the programme, neither an individual nor cluster RCT was feasible, so a prospective matched cluster comparison trial was devised. The trial included the 27 sites conducting the 'Young People's Development Programme' and 27 comparison sites matched by region; local deprivation; teenage pregnancy rates; whether the area was urban, rural or seaside; and whether the youth service was voluntary or statutory.

The investigators obtained self-reported data from young people at baseline (shortly after joining a youth service) and at 9 months and 18 months. Of 2371 young people who joined the 'Young People's Development Programme', 1637 completed the baseline assessment, as did 1087 young people in comparator sites. Attrition was substantial: at 9-month follow-up, 64% of young people in the intervention sites and 55% of those in comparator sites participated. At 18-month follow-up, 43% of those in the intervention group and 39% of the comparator group responded, but these attrition rates were affected by the fact that this follow-up included only young people recruited in the first 2 years of the 3-year programme.

Many characteristics of the groups were significantly different at baseline; for example, 62% of the intervention group was male compared with 56% of the comparison group ( $p < 0.01$ ) and 23% of the intervention group were of black or other minority ethnicity compared with 20% of the comparator group ( $p < 0.05$ ). Drug use in the previous 6 months was not significantly different at baseline.

At 18-month follow-up, the 'Young People's Development Programme' was associated with significantly more teenage pregnancies (16% versus 6% for comparator,  $p < 0.01$ ), and this remained significant in adjusted and weighted adjusted analyses. There were no significant differences in cannabis use or drunkenness between groups.

The authors noted that the negative outcomes for teenage pregnancy could be due to young people in the intervention group coming into contact with peers who are more supportive of or more engaged in risky behaviours. They suggested that any future targeted youth development programme should be the subject of an RCT, with emphasis on the definition and consistency of the intervention.

This evidence suggests that the UK-based 'Young People's Development Programme' does not seem to be associated with reductions in cannabis use or drunkenness, but may lead to an increase in teenage pregnancies. This evidence is unlikely to affect [NICE PH4](#).

### Key reference

Wiggins M, Bonell C, Sawtell M et al. (2009) [Health outcomes of youth development programme in England: prospective matched comparison study](#). *BMJ* 339: b2534

## 2 New evidence uncertainties

During the development of the Evidence Update, the following evidence uncertainties were identified for the UK Database of Uncertainties about the Effects of Treatments (UK DUETs).

### **Identifying and supporting young people who are misusing or at risk of misusing substances**

- [Primary prevention of substance misuse in children and adolescents with mental disorders](#)

### **Areas not currently covered by NICE PH4**

- [Prevention of substance misuse for homeless youth](#)
- [Prevention of substance misuse for children from substance-affected families](#)

UK DUETs was established to publish uncertainties about the effects of treatments that cannot currently be answered by referring to reliable up-to-date systematic reviews of existing research evidence.

# Appendix A: Methodology

## Scope

The scope of this Evidence Update is taken from the scope of the reference guidance:

- [Interventions to reduce substance misuse among vulnerable young people](#). NICE public health guidance 4 (2007)

An additional inclusion criterion for the Evidence Update was that studies should be conducted in high-income countries and comparable to UK practice. Additionally, observational studies and single-group pretest–posttest studies were excluded from the Evidence Update, despite being in scope for the guidance, to prioritise higher quality evidence that is more likely to impact on recommendations.

## Searches

The literature was searched to identify studies and reviews relevant to the scope. Searches were conducted of the following databases, covering the dates 06 April 2006 (the end of the search period of NICE public health guidance 4) to 9 September 2013:

- ASSIA (Applied Social Sciences Index and Abstracts)
- CDSR (Cochrane Database of Systematic Reviews)
- CENTRAL (Cochrane Central Register of Controlled Trials)
- DARE (Database of Abstracts of Reviews of Effects)
- EMBASE (Excerpta Medica database)
- ERIC (Educational Resources Information Center)
- MEDLINE (Medical Literature Analysis and Retrieval System Online)
- MEDLINE In-Process
- NHS EED (Economic Evaluation Database)
- PsycINFO

The Evidence Update search strategy replicates the strategy used by [NICE PH4](#) (for key words, index terms and combining concepts) as far as possible. If this is not practical, then the search replicates the basic PICO (population, intervention, comparison, outcome) structure of the original searches. Where necessary, the strategy is adapted to take account of changes in search platforms and updated indexing language.

Table 1 provides details of the MEDLINE search strategy used, which was adapted to search the other databases listed above. The search strategy was used in conjunction with validated Scottish Intercollegiate Guidelines Network [search filters for systematic reviews](#) and an adaptation of the [University of Texas clinical trials filter](#) to capture non-randomised as well as randomised controlled trials.

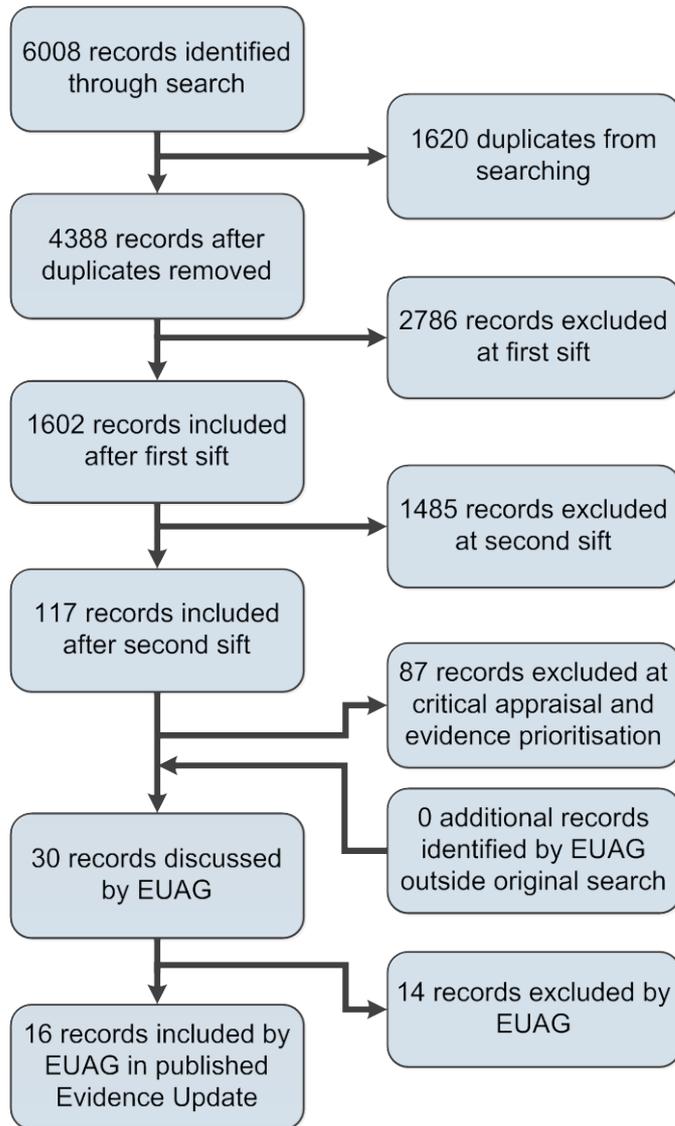
Figure 1 provides details of the evidence selection process. The list of evidence excluded after review by the Chair of the EUAG, and the full search strategies, are available on request from [contactus@evidence.nhs.uk](mailto:contactus@evidence.nhs.uk)

See the [NICE Evidence Services](#) website for more information about [how NICE Evidence Updates are developed](#).

**Table 1 MEDLINE search strategy (adapted for individual databases)**

<b>1</b>	adolescent/	<b>29</b>	((volatile substance or inhalant or solvent) adj2 abuse).mp.
<b>2</b>	child/	<b>30</b>	(prescription drug\$ adj (abuse\$ or use\$ or misuse or dependen\$ or disorder\$ or addict\$)).mp.
<b>3</b>	(teen\$ or adolescen\$ or youth\$ or early adult or child\$ or student\$ or juvenile\$ or young adult or young people).mp.	<b>31</b>	or/8-30
<b>4</b>	1 or 2 or 3	<b>32</b>	primary prevention/
<b>5</b>	exp substance-related disorders/	<b>33</b>	secondary prevention/
<b>6</b>	((substance\$ or drug\$) adj (abuse\$ or use\$ or misuse or dependen\$ or disorder\$ or addict\$ or volatile or poly)).ti,ab.	<b>34</b>	(prevention or preventive).ti,ab.
<b>7</b>	5 or 6	<b>35</b>	(diversion\$ adj (approach\$ or activit\$)).mp.
<b>8</b>	exp street drugs/ or me?h?drone.ti,ab. or legal high\$.ti,ab.	<b>36</b>	harm reduction/
<b>9</b>	exp designer drugs/	<b>37</b>	(harm reduction or reducing harm).ti,ab.
<b>10</b>	exp cannabinoids/	<b>38</b>	health education/
<b>11</b>	(cannabis or hashish or marijuana).ti,ab.	<b>39</b>	Health promotion/
<b>12</b>	exp narcotics/	<b>40</b>	Peer Group/
<b>13</b>	exp analgesics, opioid/ (92358)	<b>41</b>	(peer adj (group\$ or influence or education)).ti,ab.
<b>14</b>	(heroin or diamorphine hydrochloride or morphine or methadone).ti,ab.	<b>42</b>	Counseling/
<b>15</b>	n-methyl-3-4-methylenedioxyamphetamine/	<b>43</b>	Directive Counseling/
<b>16</b>	(ecstasy or MDMA or MD?A).ti,ab.	<b>44</b>	(Counse?ling or mediation or support group\$).ti,ab.
<b>17</b>	ephedrine/ or ketamine/ or (ephedrine or ketamine).ti,ab.	<b>45</b>	((brief or short or concise or opportunistic or motivational) adj (advice or intervention\$ or interview\$)).ti,ab.
<b>18</b>	exp hallucinogens/	<b>46</b>	(skills adj (training or education or life)).ti,ab.
<b>19</b>	hallucinogen\$.ti,ab.	<b>47</b>	Social adjustment/
<b>20</b>	exp cocaine/	<b>48</b>	Community networks/ or social support/
<b>21</b>	(crack cocaine or cocaine).ti,ab.	<b>49</b>	Patient Education/
<b>22</b>	lysergic acid diethylamide/	<b>50</b>	Adolescent Health Services/
<b>23</b>	(lysergic acid diethylamide or LSD).ti,ab.	<b>51</b>	Preventive health services/
<b>24</b>	exp amphetamine/	<b>52</b>	or/32-51
<b>25</b>	(amphetamine sulphate or methamphetamine or crystal meth or (amphetamine\$ adj3 abus\$)).ti,ab.	<b>53</b>	4 and (7 or 31)
<b>26</b>	((abus\$ adj2 anabolic steroids) or (abus\$ adj2 steroids)).mp.	<b>54</b>	52 and 53
<b>27</b>	(GHB or Gamma hydroxy butyrate).mp.	<b>55</b>	limit 54 to humans
<b>28</b>	catha/ or (khat or qat).ti,ab.	<b>56</b>	limit 55 to (english language and yr="2006 -Current")

**Figure 1 Flow chart of the evidence selection process**



EUAG – Evidence Update Advisory Group

# Appendix B: The Evidence Update Advisory Group and Evidence Update project team

## Evidence Update Advisory Group

The Evidence Update Advisory Group is a group of topic experts who reviewed the prioritised evidence from the literature search and advised on the development of the Evidence Update.

**Dr Jim McCambridge – Chair**

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