Needle and syringe programmes: providing people who inject drugs with injecting equipment
NICE public health guidance 18
Needle and syringe programmes: providing people who inject drugs with injecting equipment

Ordering information
You can download the following documents from www.nice.org.uk/PH18
- The NICE guidance (this document) which includes the recommendations, details of how they were developed and evidence statements.
- A quick reference guide for professionals and the public.
- Supporting documents, including an evidence review and an economic analysis.

For printed copies of the quick reference guide, phone NICE publications on 0845 003 7783 or email publications@nice.org.uk and quote N1789.

This guidance represents the views of the Institute and was arrived at after careful consideration of the evidence available. Those working in the NHS, local authorities, the wider public, voluntary and community sectors should take it into account when carrying out their professional, managerial or voluntary duties.

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Introduction

The Department of Health (DH) asked the National Institute for Health and Clinical Excellence (NICE) to produce public health guidance on the optimal provision of needle and syringe programmes (NSPs) among injecting drug users.

The guidance is for NHS and other professionals who have a direct or indirect role in, or responsibility for, NSPs. This includes those working in drug (and alcohol) action teams (D[A]ATs), pharmacies, local authorities and the wider public, voluntary and community sectors. It may also be of interest to people who inject illicit substances and non-prescribed drugs, their families and other members of the public.

The recommendations relate to people over the age of 18 who inject illicit substances and non-prescribed anabolic steroids.

The guidance complements and supports, but does not replace, NICE guidance on drug and substance misuse (for further details, see section 7).

The Public Health Interventions Advisory Committee (PHIAC) developed these recommendations on the basis of two reviews of the evidence, an economic analysis, expert advice, stakeholder comments and fieldwork.

Members of PHIAC are listed in appendix A. The methods used to develop the guidance are summarised in appendix B. Supporting documents used to prepare this document are listed in appendix E. Full details of the evidence collated, including fieldwork data and activities and stakeholder comments, are available on the NICE website, along with a list of the stakeholders involved and NICE’s supporting process and methods manuals. The website address is: www.nice.org.uk

This guidance was developed using the NICE public health intervention process.
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1 Recommendations

This is NICE’s formal guidance on the optimal provision of needle and syringe programmes (NSPs). When writing the recommendations, the Public Health Interventions Advisory Committee (PHIAC) (see appendix A) considered the evidence of effectiveness (including cost effectiveness), fieldwork data and comments from stakeholders. Full details are available at www.nice.org.uk/PH18

The evidence statements underpinning the recommendations are listed in appendix C.

The evidence reviews, supporting evidence statements and economic analysis are available at www.nice.org.uk/PH18

PHIAC considers that the recommended measures are likely to be cost effective. For the research recommendations and gaps in research see section 5 and appendix D respectively.

Definition of a needle and syringe programme

NSPs supply needles and syringes. In addition, they often supply other equipment used to prepare and take illicit drugs (for example, filters, mixing containers and sterile water). The majority of NSPs are run by pharmacies and drug services. A key aim is to reduce the transmission of blood-borne viruses (BBV) and other infections caused by sharing injecting equipment. Many NSPs also aim to reduce other harms caused by injecting drugs.

Services may include:

- advice on safer injecting practices
- advice on how to avoid an overdose
- information on safe disposal of injecting equipment
- access to blood-borne virus testing, vaccination and treatment services
• help to stop injecting drugs, including access to drug treatment (for example, opioid substitution therapy [OST]) and encouragement to switch to non-injecting methods of drug taking
• other health and welfare services (including condom provision).

While NSPs can help reduce the harm caused to people who inject drugs, the consequent reduction in the prevalence of blood-borne viruses benefits wider society.

**Target population**

All the recommendations aim to help people over the age of 18 who inject illicit substances. This includes opioids (for example, heroin) and stimulants (for example, cocaine) either separately or in combination (speedballing). Some of the recommendations are also relevant to adults who inject non-prescribed anabolic steroids and other performance and image-enhancing drugs (PIEDs).

**Recommendation 1 Planning, needs assessment and community engagement**

**Who should take action?**

• Local strategic partnerships (LSPs), local drug partnerships (including drug [and alcohol] action teams [D(A)ATs]), drug joint commissioning managers and primary care trust (PCT) commissioners.

• Public health practitioners with a remit for substance misuse.

**What action should they take?**

• With the help of the Health Protection Agency and public health observatories, collect and analyse local data to estimate the:
  - prevalence and incidence of infections related to injecting drug use (for example, hepatitis C) and other problems caused by injecting drug use (for example, number of people overdosing)
- numbers, demographics, types of drugs used and other characteristics of injecting drug users (for example, the number of sex workers or homeless people who are crack and speedball injectors)
- number and percentage of injections ‘covered’ by sterile needles and syringes (that is, the number and percentage of occasions when sterile equipment was available to use)
- the number and percentage of individuals who had more sterile needles and syringes than they needed (over 100% coverage)
- number and percentage of people who inject drugs and who are in regular contact with an NSP (that is, at least once a month).

- Use these data to ensure NSP services meet local need (for example, in terms of opening times and locations), taking the geography of the location into account (for example, whether it is in an urban or rural area).

- Consult people who inject drugs to help assess the need for – and to plan – NSPs.

- Consult local communities about how best to implement new or reconfigured NSPs. Promote the benefits of the service. For example, explain how it will help reduce drug-related litter by providing safe disposal facilities and sharps bins. Actively involve them in implementation.

For further recommendations on community engagement, see ‘Community engagement to improve health’ (NICE public health guidance 9).

**Recommendation 2 Meeting need**

**Who should take action?**

LSPs, local drug partnerships (including D[A]ATs), drug joint commissioning managers and PCT commissioners.
**What action should they take?**

- Commission a mix of generic and targeted NSP services to meet local need within the area covered by the LSP (see recommendation 1). Targeted services should focus on specific groups (for example, homeless people and women who inject drugs). Services should aim to:
  - increase the proportion of people who have over 100% ‘coverage’ (that is, the number who have more than one sterile needle and syringe available for every injection)
  - increase the proportion of people from each group of injecting drug users who are in contact with NSPs
  - ensure syringes and needles are available in a range of sizes and at a range of locations throughout the area
  - offer advice and information on, and referrals to, services which aim to: reduce the harm associated with injecting drug use; encourage people to stop using drugs or to switch to non-injecting methods (for example, opioid substitution therapy); and address their other health needs.

- Develop plans for needle and syringe disposal, in line with ‘Tackling drug-related litter’ (Department for Environment, Food and Rural Affairs 2005).

- Encourage identification schemes (involving, for example, the use of coloured syringes).

- Commission ‘integrated care pathways’ for people who inject drugs.

- Audit and monitor services to ensure they meet the health needs of people who inject drugs and address the concerns of the local community.

**Recommendation 3 Types of service**

**Who should take action?**

LSPs, local drug partnerships (including D[A]ATs), drug joint commissioning managers and PCT commissioners.
What action should they take?

- Use pharmacies, specialist NSPs and other healthcare settings to provide a balanced mix of the following levels of service:
  - level one: distribution of injecting equipment either loose or in packs, with written information on harm reduction (for example, on safer injecting or overdose prevention)
  - level two: distribution of ‘pick and mix’ (bespoke) injecting equipment plus health promotion advice (including advice and information on how to reduce the harms caused by injecting drugs)
  - level three: level two plus provision of, or referral to, specialist services (for example, vaccinations, drug treatment and secondary care).

- Coordinate services to ensure injecting equipment is available throughout the LSP area for a significant time during any 24-hour period. As an example, PCTs could ensure that NSPs form part of the ‘necessary enhanced services’ offered by ‘100 hour’ pharmacies. Commissioners could also consider providing NSPs through community pharmacies that operate extended opening hours.

- Ensure services offering opioid substitution therapy also make needles and syringes available to their clients, in line with the National Treatment Agency ‘Models of care’ (2006).

*Recommendation 4 Equipment and advice*

**Who should take action?**

NSP providers (community pharmacies and specialist NSPs).

**What action should they take?**

- Provide people who inject drugs with needles, syringes and other injecting equipment. The quantity dispensed should not be subject to an arbitrary
limit but, rather, should meet their needs. Where possible, needles and syringes should be made available in a range of sizes.

- Ensure people who use NSPs are provided with sharps bins and advice on how to dispose of needles and syringes safely.

- Ensure safer injecting advice and information are available when providing long needles and other equipment that could be used for more dangerous practices. (Long needles, for example, could be used for injecting into the groin.)

- Provide other injecting equipment associated with illicit drug use and encourage people who inject drugs to switch to other methods of drug use. (At the time of publication, legally permitted equipment included filters, mixing containers and sterile water.)

- Encourage people who inject drugs to mark their syringes and other injecting equipment or to use easily identifiable equipment to prevent mix-ups.

- Encourage people who inject drugs to use services which aim to: reduce the harm associated with injecting drug use; encourage them to stop using drugs or to switch to non-injecting methods (for example, opioid substitution therapy); and address their other health needs. Advise them where they can access these services.

**Recommendation 5 Community pharmacy-based NSPs**

**Who should take action?**

- Community pharmacies that run an NSP (regardless of the level of service they offer – see recommendation 3).

- Coordinators of community pharmacy-based NSP services.
What action should they take?

- Provide sharps bins and advice on how to dispose of needles and syringes safely. In addition, provide a service for safe disposal of used equipment.

- Ensure staff who dispense needles and syringes receive appropriate training for the level of service they offer. As a minimum, this should include awareness training on the need for discretion and the need to respect the privacy of people who inject drugs. It should also include training on how to treat them in a non-stigmatising way.

- Ensure staff providing level two or three services (see recommendation 3) are trained to provide health promotion advice, in particular, advice on how to reduce the harm caused by injecting.

- Ensure staff have health and safety training.

- Ensure hepatitis B vaccination is available for staff.

- Ensure staff can provide people who inject drugs with information about local agencies offering further support (this includes details about local opioid substitution therapy services).

**Recommendation 6 Specialist NSPs: level three services**

Who should take action?

Specialist NSPs.

What action should they take?

- Provide sharps bins and advice on how to dispose of needles and syringes safely. In addition, provide a service for safe disposal of used equipment.

- Ensure staff receive appropriate training for the level of service on offer.

- Ensure a selection of individual needles, syringes and other injecting equipment is available.
• Offer comprehensive harm-reduction services including advice on safer injecting practices, assessment of injection-site infections, advice on preventing overdoses and help to stop injecting drugs. Where appropriate, offer a referral to opioid substitution therapy services.

• Offer (or help people to access):
  – opioid substitution therapy
  – treatment of injection-site infections
  – vaccinations and boosters (including those offering protection from hepatitis A, hepatitis B and tetanus)
  – testing (and counselling, where appropriate) for hepatitis B, hepatitis C and HIV
  – psychosocial interventions
  – primary care services (including condom provision and general sexual health services, dental care and general health promotion advice)
  – secondary care services (for example, treatment for hepatitis C and HIV)
  – welfare and advocacy services (for example, advice on housing and legal issues).
2 Public health need and practice

The true extent of injecting drug use is difficult to determine. In 2005/06, one report estimated that there were 129,977 injecting opiate and/or crack cocaine users in England aged 15 to 64 (Hay et al. 2007), although others suggest a figure of over 200,000. Prevalence varied across regions, ranging from around six per 1000 in Yorkshire and the Humber to around three per 1000 in London, the East of England and the South East.

The 2008 British crime survey (Home Office 2008) reports that 0.1% of people aged 16 to 59 inject performance- and image-enhancing drugs (PIEDs) today.

In 2006, almost a quarter (23%) of respondents to the Unlinked Anonymous Prevalence Monitoring Programme (UAPMP) reported sharing needles and syringes in the previous 4 weeks. Almost half (45%) reported that they had shared filters, mixing containers and water within that time (Health Protection Agency 2007).

People who inject drugs using contaminated equipment (for either the preparation or injection of their drugs) are at risk of contracting – and transmitting – blood-borne viruses such as HIV, hepatitis B and hepatitis C. They are also at risk of a range of other infectious diseases and injection-site infections (Health Protection Agency 2007).

Although HIV rates remain relatively low among injecting drug users in the UK, there is concern that rates may be rising. In addition, approximately 40% of them are infected with hepatitis C. HIV and hepatitis C can be transmitted among those who are injecting and, in some cases (via sexual contact, pregnancy and childbirth) to others who do not inject.

The risk of death among people who inject drugs is high, at over 1% per year, and over ten times higher than for the general population (Bargagli et al. 2006; Gossop et al. 2002; Degenhardt et al. 2006). Trends in drug-related poisonings have increased over threefold since 1993, largely because of an increase in heroin-related deaths, and national targets to reduce drug-related
mortality have not been met (Morgan et al. 2006; 2008). In 2006, there were 1469 deaths related to controlled drug use in England, the majority due to opiates (Office for National Statistics 2007).

**Special groups**

There are a number of groups of injecting drug users who may require special consideration. These include the following:

- **Women:** estimates for 2005/06 indicate that approximately one quarter of all problem opiate and crack cocaine users are female (there are no estimates on the numbers who inject) (Hay et al. 2007). Drug use among females may be linked to specific behaviours and lifestyles that put them at an increased risk of HIV and hepatitis infection (Barnard 1993).

- **Users of anabolic steroids and other performance- and image-enhancing drugs:** a recent study of 50 anabolic steroid users found that most (94%) were injecting (Midgley et al. 2000); 66% reported using needle and syringe programmes as a source of clean injecting equipment.

- **Young people and those who have recently started injecting drugs:** UK studies have observed higher rates of hepatitis C virus infection among these groups (Hickman et al. 2007). In addition, younger people were less likely to access drug or methadone treatment.

- **Crack cocaine and speedball users:** crack cocaine use and speedballing are becoming more common. Increasingly, crack cocaine is being injected. These users are often involved in high-risk behaviour such as equipment sharing and frequent injecting, both of which are associated with hepatitis C infection (Health Protection Agency 2007).

- **Homeless people:** homeless people who inject drugs are more likely to have hepatitis C virus and are more likely to share needle and syringe equipment on a regular basis than others who inject drugs. In addition, they are more likely to have infections, abscesses and open sores at sites where they inject (Health Protection Agency 2007).
• Prison populations: a 2000 survey in England and Wales reported that 47% of the 1884 prisoners surveyed had used heroin, cocaine or crack cocaine in the 12 months before coming to prison. Of these, 23% said they had injected drugs (Liriano and Ramsay 2003).

**Current NSP services**

In 2005, it is estimated that there were just over 1700 needle and syringe programmes in England. The majority (over 70%) were provided by pharmacies, with the rest offered by specialist services, outreach/mobile services, custody suites and accident and emergency departments. The majority provided sharps bins and condoms, but the provision of equipment such as citric acid and spoons varied significantly. Currently, the accessibility and availability of these services (along with harm-reduction interventions) varies widely. There is also wide variation in the number of people who use them – and how often (National Treatment Agency 2007).

Evidence suggests that these services are the only contact that some users of performance- and image-enhancing drugs will have with health services (McVeigh et al. 2003).

**Government action**

Since the late 1980s, the government has broadened its approach to drug use, moving from an emphasis on abstinence to advocating harm reduction. It also aims to protect society against the repercussions of drug use, including crime and antisocial behaviour. Current policies and initiatives are outlined below.

• ‘Tackling drugs to build a better Britain’ strategy (HM Government 1998) identified the need for further action to ‘improve the health of drug misusers and drive forward action to reduce the risk of death’. ‘Drugs: protecting families and communities’ (HM Government 2008) continues in the same theme.
• Following a rise in drug-related deaths in 2005, the government launched ‘Reducing drug-related harm’, an action plan to reduce the number of drug-related deaths and the spread of blood-borne viruses (BBVs). This includes action to prevent the onset of drug use and to encourage treatment and support for abstinence (DH 2007).

• ‘Getting ahead of the curve’ (DH 2002) identified the need for better prevention, diagnosis and treatment of hepatitis C virus, as a matter of urgency. Injecting drug users were identified as a particular target, due to the high rates of transmission resulting from them sharing injecting equipment.

• ‘The prevention of hepatitis C among injecting drug users’ (Advisory Council on the Misuse of Drugs 2009) supports the recommendations set out in this NICE guidance. ACMD reviewed the evidence and identified a range of other interventions that may help to reduce the spread of hepatitis C among people who inject drugs.
3 Considerations

PHIAC took account of a number of factors and issues when developing the recommendations.

3.1 Needle and syringe programmes (NSPs) need to be considered as part of a comprehensive substance-misuse strategy that covers prevention, treatment and harm reduction.

3.2 Providing young people under 18 (particularly those under 16) with an NSP is legally and ethically difficult and involves a different service model. PHIAC has asked NICE to consider producing separate guidance on NSPs for young people aged under 18.

3.3 The remit of this guidance was to consider the optimal provision of NSPs, not whether or not these programmes should be provided. Evidence from systematic reviews shows that NSPs are an effective way to reduce some of the risks associated with injecting drugs.

3.4 The ethical issues and social values related to NSPs were discussed in some depth. PHIAC noted that it is difficult to meet the health needs of people who inject drugs without appearing to condone or ‘normalise’ drug use. It also noted that NSPs can only reduce some of the potential harms associated with injecting drug use. Furthermore, NSPs might have disadvantages, for example, they may deter people who inject drugs from using safer forms of drug taking or from quitting their habit altogether. On the other hand, NSPs can provide a means of contact with people who inject drugs and, hence, opportunities for harm reduction as well as support to help them stop injecting. NSPs can also help reduce blood-borne infections among them, to the benefit of society at large. After considering these issues at some length PHIAC felt that, on balance, recommendations on the optimal provision of NSPs were justified.
3.5 Most published research was conducted in the USA. However, PHIAC judged that some of the evidence was applicable to England and could be used to inform the recommendations.

3.6 The role NSPs may play in increasing drug use and drug-related litter, along with their impact on crime rates and the fear of crime are all common concerns. However, little UK evidence relates to these concerns.

3.7 There is a lack of good quality UK research on the effectiveness of prison-based interventions. As a result, they have been omitted from the recommendations.

3.8 Making clean injecting equipment freely available, without charge, will decrease its price in any secondary market. However, it will increase its availability and this may lead to more secondary exchanges (that is, people passing on equipment to a third party).

3.9 There is a lack of evidence on how particular groups of injecting drug users can be encouraged to use an NSP. These include: female drug users, people who use performance and image-enhancing drugs, those who have recently started injecting drugs, crack cocaine users, speedball users and those who are homeless. Flexible locations and opening times and novel methods of delivery may help and PHIAC stressed the importance of evaluating new types of provision. (Examples of novel methods include the use of vending machines, mobile vans and non-pharmacy outlets, including sports venues [for performance and image-enhancing drugs users].)

3.10 The coverage provided by NSPs has been defined in a number of ways. The World Health Organization (2007) uses three definitions of ‘coverage’:
• percentage of injections ‘covered’ by sterile needles and syringes
• number of needles and syringes supplied to each injecting drug user per year
• percentage of injecting drug users in regular contact with NSPs.

PHIAC has used the first definition above to describe ‘coverage’: that is, ‘coverage’ in this guidance means the percentage of injections where sterile equipment was available to use.

3.11 Local communities need information about the aims of an NSP and evidence of its effectiveness when proposals are put forward for siting one in their neighbourhood.

3.12 PHIAC emphasised the important ‘gateway’ function that NSPs may perform in bringing people who inject drugs into contact with a range of services. In particular, NSPs may bring them into contact with services which may help by:

• emphasising the dangers of overdosing (about 1% of people who inject drugs die of an overdose each year)
• encouraging people to switch from injecting to less harmful forms of drug taking
• encouraging people to opt for opioid substitution therapy
• encouraging people to stop using drugs
• encouraging people to be tested and treated for hepatitis C and HIV
• encouraging people to address their other health needs.

3.13 The cost of providing health services to someone who injects drugs is estimated to be about £35,000 over their lifetime. The related costs of crime are estimated to be an additional £445,000 over a lifetime.
Providing people who inject drugs with clean injecting equipment is cost effective from an NHS/personal social services (PSS) perspective (that is, excluding the costs of crime). It is similarly cost effective from a ‘societal’ perspective (since the provision of clean injecting equipment has little or no direct effect on crime). If the indirect or ‘gateway’ effects of NSPs are included, a fall in the number of people who inject drugs is likely. This would, in turn, lead to a reduction in crime. If that is the case, modelling shows that NSPs are likely to save society money in the longer term. However, the figures in relation to the size of the gateway effect are subject to uncertainty. In addition, the figures relating to any effect that an increase in NSP services will have on the number of people injecting drugs are also subject to uncertainty.

4 Implementation

NICE guidance can help:

- NHS organisations meet DH standards for public health as set out in the seventh domain of ‘Standards for better health’ (updated in 2006). Performance against these standards is assessed by the Healthcare Commission, and forms part of the annual health check score awarded to local healthcare organisations.

- NHS organisations, social care and children's services meet the requirements of the DH's 'Operating framework for 2008/09' and 'Operational plans 2008/09–2010/11'.

- NHS organisations, social care and children's services meet the requirements of the Department of Communities and Local Government's 'The new performance framework for local authorities and local authority partnerships'.

- Local public sector organisations meet public service agreement (PSA) 25 targets for increasing the number of drug users in effective drug treatment.
• National and local organisations within the public sector meet government indicators and targets to improve health and reduce health inequalities.

• Local drug partnerships when developing their annual treatment plans, which will be reviewed by the National Treatment Agency in light of this guidance.

• Local areas (local strategic partnerships, drug [and alcohol] action teams) to improve services, in line with the Department of Health/National Treatment Agency publication ‘Reducing Drug-Related Harm: an action plan’ (DH 2007). The plan aims to reduce drug-related deaths, encourage uptake of drug treatment and reduce the spread of blood-borne viruses.

• Local authorities fulfil their remit to promote the economic, social and environmental wellbeing of communities.

• Local NHS organisations, local authorities and other local public sector partners benefit from any identified cost savings, disinvestment opportunities or opportunities for re-directing resources.

• Provide a focus for children’s trusts, health and wellbeing partnerships and other multi-sector partnerships working on health within a local strategic partnership.

NICE has developed tools to help organisations put this guidance into practice. For details see our website at www.nice.org.uk/PH18

5 Recommendations for research

PHIAC recommends that the following research questions should be addressed. It notes that ‘effectiveness’ in this context relates not only to the size of the effect, but also duration of effect. It also takes into account any harmful/negative side effects.

1. How can NSPs effectively and cost effectively encourage specific populations of people who inject drugs to use their services? This
includes those who have recently started injecting, women and people who are homeless. It also includes performance and image-enhancing drugs (PIEDs), crack cocaine and speedball injectors. Contexts for evaluation might include: vending machines, custody suites, gyms and A&E departments.

2. What types of injecting and non-injecting equipment can effectively and cost effectively reduce the harm associated with injecting drug use?

3. How effective and cost effective are NSPs aimed at offenders who inject drugs? In addition:
   - What are the barriers and facilitators to implementing them in prisons?
   - Where should they fit in relation to opioid substitution therapy in prisons?
   - Does the provision of needles and syringes on leaving prison effectively and cost-effectively reduce the harms associated with injecting drug use?

4. Do NSPs increase drug-related litter, crime rates or the fear of crime in the local vicinity?

5. Do NSPs have an impact on the occurrence of overdose or the uptake, frequency and length of injecting drug use?

6. Updating the recommendations

   This guidance will be updated as needed. Information on the progress of any update will be posted at www.nice.org.uk/PH18

7. Related NICE guidance


8 References


Department of Health (2001) Better prevention, better services, better sexual health – the national strategy for sexual health and HIV. London: Department of Health


Appendix A: membership of the Public Health Interventions Advisory Committee (PHIAC), the NICE project team and external contractors

Public Health Interventions Advisory Committee (PHIAC)

NICE has set up a standing committee, the Public Health Interventions Advisory Committee (PHIAC), which reviews the evidence and develops recommendations on public health interventions. Membership of PHIAC is multidisciplinary, comprising public health practitioners, clinicians (both specialists and generalists), local authority employees, representatives of the public, patients and/or carers, academics and technical experts as follows.

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External contractors

External reviewers: effectiveness reviews
Review 1: 'Injecting equipment schemes for injecting drug users: qualitative evidence review' was carried out by Leeds Metropolitan University on behalf of Liverpool John Moores University. The principal authors were: Mima Cattan, Anne-Marie Bagnall, Kate Akhionbare and Kim Burrell (freelance researcher).

Review 2: 'A review of the effectiveness and cost-effectiveness of needle and syringe programmes for injecting drug users' was carried out by the Centre for Public Health, Liverpool John Moores University. The principal authors were: Lisa Jones, Lucy Pickering, Harry Sumnall, Jim McVeigh and Mark A Bellis.

External reviewers: economic modelling
Economic modeling: ‘Assessing the cost-effectiveness of interventions linked to needle and syringe programmes for injecting drug users: an economic modelling report’ was carried out by the London School of Hygiene and Tropical Medicine on behalf of Liverpool John Moores University. The principal authors were: Peter Vickerman (who is also affiliated to Bristol University), Alec Miners and John Williams (Imperial College, London).

Fieldwork
'Needle and syringe programmes: providing injecting equipment to people who inject drugs. Fieldwork report’ was carried out by the Centre for Public Health, Liverpool John Moores University.
Appendix B: summary of the methods used to develop this guidance

Introduction

The reports of the reviews and economic modelling include full details of the methods used to select the evidence (including search strategies), assess its quality and summarise it.

The minutes of the PHIAC meetings provide further detail about the Committee’s interpretation of the evidence and development of the recommendations.

All supporting documents are listed in appendix E and are available from the NICE website at: www.nice.org.uk/PH18
**Guidance development**

The stages involved in developing public health intervention guidance are outlined in the box below.

| 1. Draft scope released for consultation |
| 2. Stakeholder meeting about the draft scope |
| 3. Stakeholder comments used to revise the scope |
| 4. Final scope and responses to comments published on website |
| 5. Evidence review(s) and economic analysis undertaken |
| 6. Evidence and economic analysis released for consultation |
| 7. Comments and additional material submitted by stakeholders |
| 8. Review of additional material submitted by stakeholders (screened against inclusion criteria used in reviews) |
| 9. Evidence and economic analysis submitted to PHIAC |
| 10. PHIAC produces draft recommendations |
| 11. Draft guidance released for consultation and for field testing |
| 12. PHIAC amends recommendations |
| 13. Final guidance published on website |
| 14. Responses to comments published on website |

**Key questions**

The key questions were established as part of the scope. They formed the starting point for the reviews of evidence and were used by PHIAC to help develop the recommendations. The overarching questions were:

1. What level of coverage should needle and syringe programmes provide to keep HIV prevalence low and to reduce the prevalence of hepatitis C among people who inject drugs?

2. What type of needle and syringe programmes are effective and cost effective in reducing the transmission of blood-borne viruses and
preventing injecting site bacterial infections among people who inject drugs?

3. Which additional harm reduction services offered by needle and syringe programmes are effective and cost effective in reducing the transmission of blood-borne viruses and preventing the occurrence of injecting site bacterial infections among people who inject drugs?

4. Are needle and syringe programmes more effective and cost effective if they are offered in parallel with, or alongside, services that provide opioid substitution therapy (OST)?

**Reviewing the evidence**

Two reviews were conducted, one quantitative review of effectiveness and one qualitative review.

**Identifying the evidence**

The following databases were searched for relevant literature published from 1990 onwards:

- American College of Physicians (ACP) Journal Club
- Applied Social Science Index and Abstracts (ASSIA)
- CINAHL
- Embase
- Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) databases
- Health Information Management Consortium
- International Bibliography of the Social Sciences (IBSS)
- MEDLINE
- National Research Register Archive
- OpenSIGLE (System for Information on Grey Literature in Europe)
- Project CORK
- PsycINFO
- Sociological Abstracts
• SozialMedizin (SOMED)
• The Cochrane Library (Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effect, Health Technology Assessment and Cochrane-Controlled Trials Register).

Further details of the databases, search terms and strategies are included in the review reports.

Selection criteria
Inclusion criteria for each review varied and details can be found at www.nice.org.uk/PH18 However, in general:

• Review 1 included qualitative studies that explored the views of people who supply or use injecting equipment.

• Review 2 included studies on people who were injecting drugs. It also included studies which examined the distribution of needles, syringes and other injection equipment. In both cases, studies were included if they compared the intervention of interest against a control or another approach and reported changes in drug-injecting behaviour.

Quality appraisal
Included papers were assessed for methodological rigour and quality using the NICE methodology checklist, as set out in the NICE technical manual ‘Methods for development of NICE public health guidance’ (see appendix E). Each study was graded (++ , +, -) to reflect the risk of potential bias arising from its design and execution:

Study quality

++ All or most criteria have been fulfilled. Where they have not been fulfilled the conclusions are thought very unlikely to alter.

+ Some criteria fulfilled. Those criteria that have not been fulfilled or not adequately described are thought unlikely to alter the conclusions.
- Few or no criteria fulfilled. The conclusions of the study are thought likely or very likely to alter.

**Summarising the evidence and making evidence statements**

The review data was summarised in evidence tables (see full reviews and the synopsis).

The findings from the reviews were synthesised and used as the basis for a number of evidence statements relating to each key question. The evidence statements reflect the strength (quantity, type and quality) of evidence and its applicability to the populations and settings in the scope.

**Economic analysis**

The economic appraisal consisted of a review of economic evaluations (included in review 2) and a model of cost-effectiveness.

**Review of economic evaluations**

Economic evaluation studies were identified by searching:

- EconLit
- Health Economic Evaluation Database (HEED)
- NHS Economic Evaluation Database (NHS EED)

These were assessed against the inclusion and quality criteria for review 2 above.

**Cost-effectiveness analysis**

An economic model was constructed to incorporate data from the reviews of effectiveness and cost effectiveness. The results are reported in: 'Assessing the cost-effectiveness of interventions linked to needle and syringe programmes for injecting drug users: an economic modelling report'. This is available on the NICE website at: [www.nice.org.uk/PH18](http://www.nice.org.uk/PH18)
Fieldwork

Fieldwork was carried out to evaluate how relevant and useful NICE's recommendations are for practitioners and how feasible it would be to put them into practice. It was conducted with practitioners and commissioners who are involved in needle exchange programmes (NSPs), including those working in the NHS, research, policy, retail supplies, social welfare and criminal justice. It also involved people who inject drugs.

The fieldwork comprised:

- four meetings carried out in Bristol, Liverpool, London and Sheffield by the Centre for Public Health at Liverpool John Moores University (LJMU)
- telephone interviews carried out by LJMU for those unable to attend the meetings.

The meetings were commissioned to ensure there was ample geographical coverage. The main issues arising are set out in appendix C under fieldwork findings. The full report 'Needle and syringe programmes: providing injecting equipment to people who inject drugs. Fieldwork report' is available at www.nice.org.uk/PH18

How PHIAC formulated the recommendations

At its meeting in July 2008 PHIAC considered the evidence of effectiveness and cost effectiveness to determine:

- whether there was sufficient evidence (in terms of quantity, quality and applicability) to form a judgement
- whether, on balance, the evidence demonstrates that the intervention is effective or ineffective, or whether it is equivocal
- where there is an effect, the typical size of effect.

PHIAC developed draft recommendations through informal consensus, based on the following criteria.
• Strength (quality and quantity) of evidence of effectiveness and its applicability to the populations/settings referred to in the scope.

• Effect size and potential impact on population health and/or reducing inequalities in health.

• Cost effectiveness (for the NHS and other public sector organisations).

• Balance of risks and benefits.

• Ease of implementation and the anticipated extent of change in practice that would be required.

Where possible, recommendations were linked to an evidence statement(s) (see appendix C for details). Where a recommendation was inferred from the evidence, this was indicated by the reference ‘IDE’ (inference derived from the evidence).

The draft guidance, including the recommendations, was released for consultation in September 2008. At its meeting in November 2008, PHIAC amended the guidance in light of comments from stakeholders, experts and the fieldwork. The guidance was signed off by the NICE Guidance Executive in January 2009.
Appendix C: the evidence

This appendix lists evidence statements from two reviews provided by external contractors (see appendix A) and links them to the relevant recommendations (see appendix B for the key to quality assessments). The evidence statements are presented here without references – these can be found in the full review (see appendix E for details). It also sets out a brief summary of findings from the economic appraisal and the fieldwork.

**Evidence statement E6.2b** indicates that the linked statement is numbered 6.2b in the review 'A review of the effectiveness and cost-effectiveness of needle and syringe programmes for injecting drug users'. **Evidence statement Q3.3a** indicates that the linked statement is numbered 3.3a in the review 'Injecting equipment schemes for injecting drug users: qualitative evidence review'.

The reviews and economic appraisal are available on the NICE website ([www.nice.org.uk/PH18](http://www.nice.org.uk/PH18)). Where a recommendation is not directly taken from the evidence statements, but is inferred from the evidence, this is indicated by **IDE** (inference derived from the evidence) below.

**Recommendation 1**: evidence statements E7.1b, E7.1c, Q3.2a, Q3.3b, Q3.3c, Q3.3d, Q3.4a, Q3.6a, Q3.6b; IDE

**Recommendation 2**: evidence statements E5.1a, E5.1b, E5.1c, E6.3b, E6.3c, E7.1a, E7.1b, E7.1c, Q3.3a, Q3.3b, Q3.3d, Q3.4a, Q3.4c, Q3.6a; IDE

**Recommendation 3**: evidence statements E5.1a, E5.1b, E5.1c, E6.3b, E6.3c, E6.4b, E7.1a, E7.1b Q3.3c, Q3.3d, Q3.4b, Q3.5a; IDE

**Recommendation 4**: evidence statements E5.1a, E5.1b, E6.3b, E6.3c, E7.1a, E7.1b, Q3.3a; IDE

**Recommendation 5**: evidence statements E5.1c, E6.3b, E6.3c, E7.1a, E7.1b, Q3.3b, Q3.4b, Q3.6b; IDE
Recommendation 6: evidence statements E6.3b, E6.3c, E7.1a, E7.1b, Q3.3b, Q3.3c, Q3.4b, Q3.6b; IDE

Evidence statements

Evidence statement E5.1a
There is evidence from one good quality (++) and five moderate quality (+) systematic reviews and meta-analyses that participation in NSPs reduces injection risk behaviours among injecting drug users (IDUs), in particular self-reported sharing of needles and syringes, and frequency of injection. The evidence is not clear in relation to the impact of participation in NSPs on sharing of other injection equipment such as cookers, filters or water because few studies have examined these outcomes.

Evidence statement E5.1b
There is evidence from two good quality (++) systematic reviews to support the effectiveness of NSPs in reducing HIV infection among IDUs. However, findings from two other systematic reviews, including one high-quality (++) review, suggest that the evidence may be less convincing. There is insufficient evidence from two systematic reviews to determine the impact of NSPs on hepatitis C virus (HCV) infection in IDUs.

Evidence statement E5.1c
There is evidence from two good quality (++) systematic reviews to suggest that access to sterile needles and syringes via pharmacies provides specific benefits in addition to those available through specialist NSPs.

Evidence statement E6.3b
There is evidence from one moderate (+) quality cohort study to suggest that the provision of NSP-based health care services may decrease emergency department utilisation.

Applicability: As all these study were conducted in the USA, it is unclear whether the findings are applicable to the UK given the differences in the political acceptance of NSPs and wider harm reduction services for IDUs. In
addition, differences in the funding of drug treatment services between the UK and USA limit the applicability of these findings.

Evidence statement E6.3c
There is evidence from one moderate quality (+) cohort study and one poor quality (-) cross-sectional study to suggest that IDUs who exclusively obtain their needles from NSPs are less likely to engage in high risk injection behaviours than those who obtain them via secondary distribution. However, there is evidence from two poor quality (-) cross-sectional studies to suggest that IDUs who obtain needles via secondary distribution engage in high risk injection behaviours less than IDUs who do not obtain any needles, directly or indirectly, from NSPs.

Applicability: As all these study were conducted in the USA, it is unclear whether the findings are applicable to the UK given the differences in the political acceptance of NSPs and wider harm reduction services for IDUs. In addition, the majority of needle exchange services in the UK do not place limits on the amount of equipment exchanged, but there is little consistency regarding service providers’ attitudes towards secondary distribution (National Treatment Agency 2007).

Evidence statement E6.4b
There is evidence from one moderate quality (+) cohort study to suggest that the combination of methadone treatment and full participation in NSPs reduces the incidence of HIV and HCV among drug users.

Applicability: This study was conducted in the Netherlands and given the similarities in approaches to harm reduction between the UK and the Netherlands, this finding has good applicability to the UK

Evidence statement E7.1a
There is evidence from 11 cost-effectiveness analyses (CEAs) (6 [+] and 5 [-]) and one cost benefit analysis (+) to suggest that in terms of reducing HIV incidence and prevalence among IDUs, NSPs are cost effective.
Evidence statement E7.1b
There is evidence from two CEAs (1 [+] and 1 [-]) to suggest that intervention coverage may be increased to higher levels at a low cost per HIV infection averted.

Evidence statement E7.1c
There is evidence from one CEA (+) to suggest that cost-effective allocation within a multi-site NSP requires that sites are located where the density of IDUs is highest and that the number of syringes exchanged per client is equal across sites.

Applicability: Cost and benefit estimates were either based on locally derived data or from studies conducted in North America, and a range of assumptions were made limiting the applicability of the findings beyond the individual studies.

Evidence statement Q3.2a
There is evidence from one moderate quality (+) US study that the features of a successful NSP include: flexibility in process and management models; knowledge; coalition building and community involvement; strong leadership; staging debate with sensitivity to political and cultural norms; access to resources; use of research; overcoming fear.

Evidence statement Q3.3a
There is evidence from one good quality (++) UK study and two moderate quality (+) UK studies to suggest that immediate availability of injecting equipment is more important to injecting drug users than perceptions of risk associated with injecting behaviour.

Evidence statement Q3.3b
There is evidence from two good quality (++) UK studies and three moderate quality (+) studies, two of which are from the UK, that pharmacy-based needle and syringe programmes are popular with injecting drug users. Pharmacies were rated more highly than drug agency-based NSPs for accessibility in three UK studies; although in another two UK studies, embarrassment,
negative staff attitudes or fear of exposure led to negative feelings about pharmacy-based NSPs, particularly in women. Agency-based NSPs were rated more highly than pharmacies for advice and information.

**Evidence statement Q3.3c**
There is evidence from one good quality (++) UK study, one good quality (++) US study, one moderate quality (+) UK study, two moderate quality (++) US studies and one poor quality (-) UK study to suggest that convenience or otherwise (specifically opening hours, location and queues) of NSPs are very important to IDUs and can influence decisions on whether to obtain equipment from them or from street sellers or secondary exchange.

**Evidence statement Q3.3d**
There is evidence from two good quality (++) studies, one of which is from the UK, and seven moderate quality (+) studies, two of which are from the UK, to suggest that IDUs are not a homogeneous group: there are different cultures, some of whom disapprove of others’ drug using behaviours and some of whom are more affluent than others. Fear of being caught and publicly exposed as a drug user (to police [USA studies], neighbours or family [UK studies]) is a prominent theme and can impact upon use of NSPs and other services, with some IDUs preferring secondary syringe exchange for this reason.

**Evidence statement Q3.4a**
There is evidence from two moderate quality (+) UK studies of gender differences in patterns of equipment sharing and use of services. Women are less likely than men to share equipment with friends, preferring to share only with their sexual partner. Women are also more likely to have negative feelings about using pharmacy-based NSPs and to obtain equipment by secondary exchange, particularly with their sexual partner.

**Evidence statement Q3.4b**
There is evidence from three good quality (++) and one moderate quality (+) study to suggest that a range of harm reduction interventions (referrals to drug
treatment and other services; HIV testing; medical care) in addition to needle and syringe programmes were accessed and valued by IDUs.

**Evidence statement Q3.4c**
There is evidence from three good quality (++) studies, one of which is from the UK, and six moderate quality (+) studies, one of which is from the UK, that secondary syringe exchange\(^1\) is a valued method for obtaining clean syringes because it is convenient and relieves the fear of exposure.

**Evidence statement Q3.5a**
In two UK studies (one good quality [++] , one moderate quality [+]), IDUs obtained oral methadone prescriptions from the same pharmacy they used for needle and syringe exchange. A need for privacy when collecting needles and taking oral methadone was expressed.

**Evidence statement Q3.6a**
There was evidence from one good quality (++) US study and two moderate quality (+) studies, one of which was from the UK, that the general public, particularly religious groups, had concerns about the ethics or morality of providing syringes and needles to injecting drug users, with some stating that it was helping them (IDUs) to harm themselves; others were more concerned that it discouraged IDUs from taking personal responsibility for their drug use.

**Evidence statement Q3.6b**
There was evidence from three moderate quality (+) studies, one of which was from the UK, that the general public and IDUs themselves had some concerns about the environmental and health consequences (e.g. discarded needles, increased crime) of fixed site NSPs. In some cases direct opposition came from a vocal, more affluent, minority.

**Cost effectiveness**
Overall, needle and syringe programmes were found to be cost effective.

\(^1\) Where one person exchanges syringes at the NSP on behalf of others.
Modelling found that the most cost effective needle and syringe programmes aimed to reduce the number of people who are injecting drug users. They can help reduce the costs of drugs misuse to society by:

- reducing drug-related crime
- reducing the transmission of hepatitis C or HIV through injecting.

Needle and syringe programmes used as a channel for treating injecting drug users for chronic hepatitis C were also estimated to be cost effective. They can reduce the costs for society of drugs misuse by:

- improving the health of people who inject drugs
- ensuring the disease cannot be passed on after treatment.

In addition, modelling showed that it is cost effective to give users more than one free needle per successful injection, if the cost of reaching them is not excessive and if use of this service increases by more than about 25% as a result.

The cost effectiveness literature on needle and syringe programmes comes mainly from the USA (there is none from the UK). It estimates that multi-site NSPs are most cost effective when they are located in areas where the highest number of injecting drug users are found, and where the number of syringes exchanged per injecting drug user is equal across sites. (For further details, see ‘Assessing the cost-effectiveness of interventions linked to needle and syringe programmes for injecting drug users: an economic modelling report’ at www.nice.org.uk/PH18)

**Fieldwork findings**

Fieldwork aimed to test the relevance, usefulness and the feasibility of putting the recommendations into practice. PHIAC considered the findings when developing the final recommendations. For details, go to the fieldwork section in appendix B and ‘Needle and syringe programmes: providing injecting equipment to people who inject drugs. Fieldwork report’ at www.nice.org.uk/PH18
Participants who work with needle exchange programmes (NSPs) were very positive about the recommendations and their potential to help promote NSPs. Many stated that the NICE guidance will improve the quality of services and standardise practice, assuming it is endorsed by the National Treatment Agency.

They were disappointed that the draft guidance did not address the need to provide foils and crack pipes to help people who inject to stop. They were also disappointed that insufficient evidence was found to make a recommendation about prisons.
Appendix D: gaps in the evidence

PHIAC identified a number of gaps in the evidence relating to the intervention under examination, based on an assessment of the evidence, stakeholder and expert comments and fieldwork. These gaps are set out below.

1. There is a lack of UK-based research on the effectiveness and cost-effectiveness of NSPs. Specifically, there is a need for research that uses standard outcome measures to determine whether or not NSPs lead to safe injecting practices and help prevent overdoses and wound infections.

2. There is a lack of UK-based research into what constitutes an optimal level of needle and syringe programme provision.

3. There is a lack of UK-based research on the effectiveness and cost-effectiveness of NSP services in the UK in relation to different groups of injecting drug users. There is a particular lack of information on people who inject performance- and image-enhancing drugs.

4. There is a lack of UK-based research into the effectiveness and cost-effectiveness of interventions that aim to increase the number of injecting drug users who use NSPs. (An example of an intervention might be to increase the NSP’s opening hours.)

5. There is a lack of UK-based research on how best to target and tailor NSP services to meet the needs of particular groups (such as injectors of performance- and image-enhancing drugs and people who have recently started injecting drugs).

6. There is a lack of UK-based research into the effectiveness and cost-effectiveness of the additional harm reduction services provided by NSPs. Research is particularly lacking on the effectiveness and cost effectiveness of providing opioid substitution therapy services either as part of, or alongside an NSP.
7. There is a lack of UK-based research on the mix of services that injecting drug users might prefer, the type of equipment they want, and whether or not they would like to access opioid substitution therapy and needles and syringes from the same NSP.

8. There is a lack of UK-based research on how the carers and families of people who inject drugs view NSPs.

9. There is a lack of UK-based research on whether or not crime levels rise in the immediate locality of an NSP – and why local communities fear that it will lead to more crime.

10. There is a lack of UK-based research on the effectiveness and cost-effectiveness of prison-based NSPs.

11. There is a lack of UK-based research into the potential unintended consequences of NSPs for example, whether or not they encourage people to inject more frequently.

12. There is a lack of standardised outcome measures for NSPs in relation to safe injecting practices and the incidence and prevalence of blood-borne viruses, overdoses and wound infections.

13. There is a lack of evidence on whether drug users who are referred to opioid substitution therapy programmes from NSPs continue to attend after the first meeting.

The Committee made five recommendations for research. These are listed in section 5.
Appendix E: supporting documents

Supporting documents are available from the NICE website (www.nice.org.uk/PH18). These include the following.

- Reviews:
  - ‘Injecting equipment schemes for injecting drug users: qualitative evidence review’

- Economic modelling:
  - ‘Assessing the cost-effectiveness of interventions linked to needle and syringe programmes for injecting drug users: an economic modelling report’.

- Fieldwork report:
  - ‘Needle and syringe programmes: providing injecting equipment to people who inject drugs. Fieldwork report’.

- A quick reference guide for professionals whose remit includes public health and for interested members of the public. This is also available from NICE publications (0845 003 7783 or email publications@nice.org.uk – quote reference number N1789).

For information on how NICE public health guidance is developed, see:

- ‘Methods for development of NICE public health guidance’ available from: www.nice.org.uk/phmethods

- ‘The public health guidance development process: an overview for stakeholders including public health practitioners, policy makers and the public’ available from: www.nice.org.uk/phprocess