

[Role of sterile injection equipment and outreach programmes for injecting drug users](#)**Q 6. Does the provision of sterile injection equipment to injecting drug users reduce injecting related harm? Is advice on ways to reduce drug related harm safe and effective, using an outreach model of service delivery?****Background**

One of the main causes of death in injecting drug users is HIV/AIDS. Many more have been infected with Hepatitis B and C, and this is expected to result in many cases of liver failure and hepatocellular carcinoma in coming decades. Many of these infections could be prevented if drug users had access to sterile injecting equipment and knew how to use it so as not to transmit blood borne infections when injecting drugs. WHO already recommends the distribution of sterile injecting equipment and the recovery of used equipment but the rate of uptake of this is low. A more detailed analysis of the strength of evidence may assist the implementation of this recommendation. In addition, needle distribution programmes can do more than only distribute injecting equipment. They can be a link to a marginalized population, they can provide advice on ways to reduce drug related harm and bring people to treatment, they can enable people to receive medical care such as testing for HIV and vaccination against hepatitis B, and treatment for HIV and hepatitis. They can also be link to other psychosocial supports in the community. Sometimes this advice and linkage service is in the one place (i.e. a needle exchange programme), or it can be mobile (i.e. outreach). The impact of this broader definition of needle and syringe "programmes" and outreach services is also examined.

**Population/Intervention(s)/ Comparison/Outcome(s) (PICO)**

- **Population:** injecting drug users
- **Interventions:** provision of sterile injecting equipment and information regarding its use  
basic psychosocial support/ linkage with other services  
outreach.
- **Comparison:** placebo or treatment as usual
- **Outcomes:**

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- injecting risk behaviours
  - pure needle sharing activities
  - extended needle sharing
  - borrowing/lending activities
- linkage with treatment and other services
- testing and counseling.

### **List of the systematic reviews identified by the search process**

Ksobiech K (2003). A meta-analysis of needle sharing, lending and borrowing behaviours of needle exchange program attenders. *AIDS Education & Prevention*, 15:257-268.

National Academy of Sciences: Committee on the prevention of HIV infection among injecting drug users in high-risk countries (2006). Preventing HIV infection among injecting drug users in high risk countries: an assessment of the evidence. National Academies Press, Washington D.C, USA.

### **Narrative description of the studies that went into the analysis**

Meta-analysis identified 47 studies (1988-2001) from the USA (n=23), western Europe, Australia and countries including Hungary, Nepal and Russia, including 34,109 participants. The included studies were longitudinal (53%) studies examining risk practices over time, cross sectional studies (36%) comparing risk practices between needle and syringe exchange (NSE) programme attenders and non-attenders, or mixed designs (6%). The meta-analysis converted all individual study data into correlation co-efficients as a common metric for meta-analysis, for each of the three outcomes identified above.

#### **HIV:**

*The Committee on the prevention of HIV infection among injecting drug users in high-risk countries (2006)*. found substantial evidence that syringe exchange programs are effective in preventing HIV risk behaviour and HIV seroconversion among injecting drug users (IDU).

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Bluthenthal et al, 2000 found that IDUs who began using an NSE were more likely to stop sharing needles (AOR=2.68; 95% CI: 1.35-5.33).

Gibson et al, 2002 found that NSE users did not differ from non-users in injection frequency, but were less likely to report borrowing a used syringe, and NSE was protective against HIV risk (OR=0.45; 95% CI: 0.21-0.92).

Strathdee et al, 1997 found that in Vancouver, frequent NSE attendance was an independent predictor of HIV seroconversion. After adjusting for confounders the adjusted OR for HIV infection status among NSE users compared with non-NSE users was 1.68. A follow-up study by Schechter et al, 1999 found no relationship between NSE use and HIV incidence.

MacDonald et al, 2003 found a significant relationship between the mean annual weighted increase in HIV prevalence was 32.1% in cities than did not introduce NSEs compared with a mean annual decrease in 7.8% in cities with NSEs ( $p=0.03$ ).

#### **HBV and HCV:**

Hagan et al, 1995 found that NSE attendance was associated with 6x the decrease in incidence of HBV and 7x decrease in HCV incidence.

#### **Links to other services:**

Strathdee et al, 1997 conducted a prospective cohort study and found that HIV-seropositive NSE attenders were more than 3x as likely to enter a detoxification program in the first year after the programme began, but the result diminished over time.

Porter et al, 2002 showed that 39% of people at NSEs used at least one of the other services offered besides needle exchange. All respondents who used the needle exchange had either used another service or were aware of them.

#### **Alternative access:**

Effects of deregulating the availability of syringes through pharmacies – New York Expanded Syringe Access Demonstration Program (ESAP) – found that IDUs began using pharmacies. Pouget et al, 2005 found that self reported receptive sharing fell significantly from 13.4% in 2001 to 3.6% in 2003. The number of IDUs using ESAP rose from 7.5% to 25%.

A number of studies showed that IDUs will use vending machines as a sources of sterile needles when available (Obadia et al, 1999; Moatti et al, 2001; Stark et al, 1994; Heinemann & Gross, 2001).

#### **Outreach (from National Academy of Sciences, 2006 review):**

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A review by Needle et al, 2005 found that outreach results in self reported reduction in HIV related risk behaviour. They concluded that community based outreach reaches hidden populations and provides the means for behaviour change, including reduction of drug use, reduction of syringe and other equipment sharing and, where available, increased use of drug dependence treatment and voluntary counselling and testing.

### **Outreach and HIV (from National Academy of Sciences, 2006 review):**

Wiebel et al, 1996 monitored trends in HIV risk behaviour and seroconversion among IDUs receiving street-based outreach between 1988 to 1992. HIV seroconversion fell from 8.4 to 2.4 per 100 person-years. Drug-related risk behaviour also decline from 54% at baseline to 14% in the final year of follow up. Seroconversion was associated with injection risk behaviour (RR=9.8).

In India, Kumar et al, 1998 found that the frequency of needle use and sharing declined significantly ( $p=0.01$ ) among IDUs at outreach locations, compared with IDUs at control locations (30% of IDUs always cleaned syringes before use compared with 10.3% of controls).

### **Outreach and links to health services (from National Academy of Sciences, 2006 review):**

Rowden et al, 1999 showed that outreach increases drug users' entry into treatment programs. In Needle et al review (2005) they showed that of the IDUs reached by the outreach intervention, 68% were referred to drug treatment of whom 41% entered treatment.

## **References**

Bluthenthal RN et al (2000). The effect of syringe exchange use on high-risk injection drug users: a cohort study. *AIDS*, 14:605-11.

Gibson DR et al (2002). Two- to sixfold decreased odds of HIV risk behaviour associated with use of syringe exchange. *Journal of Acquired Immune Deficiency Syndrome*, 31:237-42.

Heinemann A, Gross U (2001). Prevention of blood-borne virus infections among drug users in an open prison by vending machines. *Sucht*, 47:57-65.

Hagan H et al (1995). Reduced risk of hepatitis B and Hepatitis C among injection drug users in the Tacoma syringe exchange programme. *American Journal of Public Health*, 85:1531-7.

Kumar MS, Mudaliar S, Daniels D (1998). Community-based outreach HIV intervention for street-recruited drug users in Madras, India. *Public Health Reports*, 113(Suppl 1):58-66.

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National Academy of Sciences: Committee on the prevention of HIV infection among injecting drug users in high-risk countries (2006). Preventing HIV infection among injecting drug users in high risk countries: an assessment of the evidence. National Academies Press, Washington D.C, USA.

MacDonald M et al (2003). Effectiveness of needle and syringe programmes for preventing HIV transmission. *International Journal of Drug Policy and Sterile Syringe Access for Injection Drug Users in the 21<sup>st</sup> Century: Progress and Prospects*, 14:353-7.

Moatti JP et al (2001). Multiple access to sterile syringes for injection drug users: vending machines, needle exchange programs and legal pharmacy sales in Marseille, France. *European Addiction Research*, 7:40-5.

Needle RH et al (2005). Effectiveness of community-based outreach in preventing HIV/AIDS among injecting drug users. *International Journal of Drug Policy*, 514:1-13.

Obadia Y et al (1999). Syringe vending machines for injection drug users: an experiment in Marseille, France. *American Journal of Public Health*, 89:1852-4.

Porter J, Metzger D, Scotti R (2002). Bridge to services: drug injectors' awareness and utilization of drug user treatment and social service referrals, medical care, and HIV testing provided by needle exchange programs. *Substance Use and Misuse*, 37:1305-30.

Pouget ER et al (2005). Receptive syringe sharing among injection drug users in Harlem and the Bronx during the New York State Expanded Syringe Access Demonstration Program. *Journal of Acquired Immune Deficiency Syndrome*, 39:471-7.

Rowden DW et al (1999). HIV outreach for hard-to-reach populations: A cross-site perspective. *Evaluation and Program Planning*, 22:251-8.

Schechter MT et al (1999). Do needle exchange programmes increase the spread of HIV among injection drug users?: an investigation of the Vancouver outbreak. *AIDS*, 13:F45-51.

Stark K, Leicht A, Muller R (1994). Characteristics of users of syringe vending machines in Berlin. *Sozial- und Praventivmedizin* **39:209-16**.

Strathdee SA (1997). Needle exchange is not enough: lessons from the Vancouver injecting drug use study. *AIDS*, 11:F59-65.

Wiebel WW et al (1996). Risk behaviour and HIV seroincidence among out-of-treatment injection drug users: a four-year prospective study. *Journal of Acquired Immune Deficiency Syndromes and Human Retrovirology*, 12:282-289.

**From evidence to recommendations**

<b>Factor</b>	<b>Explanation</b>
<b>Narrative summary of the evidence base</b>	<p>There is evidence supporting the distribution and availability of sterile injecting equipment (needles, water, mixing or cooking devices) that comes largely from self reported behaviour change before and after involvement with needle exchange programmes.</p> <p>There is weak evidence of significant reductions in needle sharing and significant increases in entry to treatment from outreach programmes.</p>
<b>Summary of the quality of evidence</b>	Low strength evidence. Observational studies. No controlled trials identified.
<b>Balance of benefits versus harms</b>	Distribution of needles might be thought to increase drug use but this has not been shown to be the case. Going to places where drug users congregate can be dangerous to staff and they should not attempt this without the appropriate training. Distribution of needles without retrieval places the community at a small risk of infection from discarded syringes, but this is a small risk as most viruses do not live long outside the body.
<b>Define the values and preferences including any variability and human rights issues</b>	Some practitioners may feel ethically uncomfortable providing IDU with syringes as they may feel this facilitates drug use. Others feel that to withhold such syringes is ethically unacceptable.
<b>Define the costs and resource use and any other relevant feasibility issues</b>	The cost of needles can be an issue in lower income countries. However, needles can be made available through pharmacies at market prices, although this may result in less syringes being distributed.
<b>Recommendation(s)</b>	
In communities with a high prevalence of drug injection, primary health care providers should facilitate the provision of sterile	

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injection equipment and retrieval of used equipment in primary care centres, through involvement of community pharmacies or through outreach programmes.

Strength of recommendation: STRONG

In communities with a high prevalence of drug injection, and if resources allow, outreach programmes should be implemented to facilitate access to sterile injecting equipment (and retrieval), information, health care (including testing and counseling for HIV, and hepatitis) and facilitate entry to drug treatment.

Strength of recommendation: STRONG

### **Update of the literature search – June 2012**

In June 2012 the literature search for this scoping question was updated. The following systematic review was found to be relevant without changing the recommendation:

Gillies M, Palmateer N, Hutchinson S, Ahmed S, Taylor A, Golberg D. The provision of non-needle/syringe drug injecting paraphernalia in the primary prevention of HCV among IDU: a systematic review. Gillies et al. BMC Public Health 2010, 10:721