BEST PRACTICE RECOMMENDATIONS - IN BRIEF

Needle and syringe exchange[2]

Best practice recommendations – in brief

To prevent the transmission of HIV, HBV, HCV, and other bloodborne pathogens from injection with non-sterile needles and syringes:

- Provide sterile needles in the quantities requested by clients
  - without requiring clients to return used needles
  - with no limit on the number of needles provided
  - with encouragement to return used needles
- Educate clients about the risks of using non-sterile needles

Injection with a previously used needle puts IDUs at high risk for infection with bloodborne pathogens. Studies show that needle/syringe (hereafter referred to as "needle") sharing is prevalent among IDUs in Ontario but has declined overall since the early 1990s.

Used needles and syringes can serve as a means of transmitting bloodborne pathogens. Under laboratory conditions (i.e., strictly controlled temperature and environment) HIV can survive in used needles for up to 6 weeks, but survival times vary with the amount of blood residue and the storage and handling of the needle. Evidence of HCV has also been detected in used needles, however HCV is more resilient than HIV and is 4-5 times more easily transmitted through a contaminated needle. HBV is also a resilient and virulent virus. Viable virus can survive in dried blood at room temperature for at least a week. HBV is easily transmitted through needle sharing, however transmission is a concern only for IDUs who have not developed immunity through immunization or previous exposure to the virus.

Sharing drugs also carries a risk of transmitting bloodborne pathogens. When drugs are shared by backloading or frontloading, one syringe is used to prepare the drug. A measured amount is then transferred to another syringe. The transfer is done either by removing the needle (frontloading) or removing the plunger (backloading) of the recipient's syringe. If the needle used for the preparation and transfer of drugs has been previously used, blood or other residues can be transferred along with the shared drugs. HIV and HCV can also be transmitted through equipment sharing. For instance, a needle placed in a common water container or cooker, rinsed with previously used water and/or used with a previously used filter may become contaminated with HIV and/or HCV (see **Distribution of sterile water ampoules, cookers and filters sections**).

Any injection with a used needle puts an IDU at risk for infection, as well as skin and vein problems. This includes re-using one's own needle. Injecting with a needle contaminated with bacteria and debris can lead to infections such as septicemia and endocarditis. Injecting with a dull needle can cause trauma to the skin, veins and soft tissues and can lead to abscesses, cellulitis and vein collapse.

[2] "Exchange" refers to needle/syringe exchange, distribution and disposal.

Distributing enough needles to facilitate the use of a sterile needle for each injection is the best method to eliminate the risk of transmitting bloodborne pathogens from re-used or non-sterile needles, and prevent vein damage from blunt or broken needles. However, estimates show that NEPs in Canada distribute a small proportion of the needles required to ensure a sterile needle for each injection. In the past, some NEPs have adhered to a one-for-one exchange policy. This outdated practice restricts access to sterile needles. For instance, IDUs who have no needles to exchange are negatively affected by this policy. Homeless IDUs and others may be unable to store needles until they can attend the NEP. IDUs who have disposed of needles elsewhere are also negatively affected.

To improve coverage, NEPs need to provide needles in the quantities, sizes, gauges and brands that clients request, without requiring exchange for used needles or limits on the number of needles distributed. Providing the number and type of needles requested may help NEPs attract and retain a wide range of clients, meet the recommendation for a new sterile needle for each injection and reduce transmission of bloodborne pathogens.

Calculating the quantity of needles required for 100% coverage is challenging because it is affected by a number of variables including estimates of the number of IDUs in the community (non-NEP users as well as NEP users), the type of drug used and frequency of injection. Approximately 1,000 needles per IDU, per year has been recommended as an easy way to determine the quantity required, however there are more refined estimation methods (see **Program evaluation** section). In Ontario, 100% coverage has yet to be achieved and a wide variation in distribution levels exists. For instance, in 2002 NEPs reported that they distributed between 1 and 474 needles per IDU per year.

IDUs have different needle acquisition patterns that influence NEP attendance. Some IDUs stockpile large numbers, others make sure they have enough for a week or two and still others acquire needles on a daily basis. Of these, day-to-day access is the most problematic because this group is more likely to re-use, share or borrow needles. NEPs can facilitate access to sterile needles with varied modes of program delivery including fixed site with extended hours of operation, mobile needle exchange, peer distribution and home delivery (see **Needle exchange program delivery models** section).

NEPs are well placed to educate IDUs about:

- The importance of using a new sterile needle for each injection;
- The risks of needle-sharing, including frontloading and backloading;
- How to recognize and handle sterile needles (see **Safer injection education** section);
- How to inject safely (see **Safer injection education** section).

Safer handling and disposal of used injection equipment[3,4]

Best practice recommendations – in brief

To prevent transmission of HIV, HBV, HCV and other bloodborne pathogens as well as bacterial infections from improperly discarded injection equipment:

- Educate staff and clients to safely handle and dispose of used injection equipment
- Provide multiple options and locations for safe disposal of used injection equipment
- Do not penalize clients who fail to return used needles
- Estimate the number of needles returned by clients. Neither clients nor staff should count used needles by hand
- Dispose of used injection equipment, sharps and sharps containers in accordance with local regulations for biomedical waste
- Encourage HBV vaccination for NEP workers and clients

Safe disposal of used injection equipment and sharps is an important strategy to reduce the amount of used injection equipment discarded in the community and the transmission of bloodborne pathogens among IDUs, NEP workers and the community. **Table 1** provides esamples of safer handling and disposal recommendations.

Table 1: Examples of safer handling and disposal recommendations

Disposing of used injection equipment, sharps and sharps containers
▶ Sharps must be disposed of in a rigid container with a non-removable lid and labelled "Biomedical Waste/Dchets Biomdicaux". The container must be capable of withstanding the weight of the biomedical waste without tearing, cracking or breaking
▶ When clients exchange needles, provide sharps containers
▶ Encourage clients to purchase and/or ask for sharps containers at pharmacies ▶ Some pharmacies may provide free sharps containers to customers who usually purchase their needles there. Some pharmacies may accept sealed containers for disposal
▶ When sharps containers are not available, encourage clients to place used equipment in a rigid, plastic container with a tight fitting lid, such as a bleach bottle, fabric softener bottle, or plastic soda pop bottle
▶ Encourage clients to write "SHARPS. DO NOT RECYCLE" on containers without such markings
▶ Encourage clients to return all sharps containers when 2/3 full to the NEP
▶ When possible, pick-up sharps containers from clients homes or locations where they inject and store used equipment

[3] 'Injection equipment' refers to all injection-related items. 'Sharps' refers to needles, syringes, glass stems and other items that may cause cuts or puncture wounds

[4] also known as biohazard containers

Handling used injection equipment: Recommendations for NEP clients

- Locate the sharps containers close to the area of use
- Dispose of used injection equipment immediately
- Never recap a needle. This may lead to a needlestick injury and (re)infection with HIV, HBV, HCV or other bloodborne pathogens
- When exchanging needles for other people, ask them to deposit them in a sharps container first
- Do not bend or break a needle

Handling sharps: Recommendations for NEP workers

- Be aware that clients exchanging needles may be carrying needles on their person (e.g., in pockets or sleeves) or loose in non-secure containers such as plastic or paper bags
- Do not touch returned needles
  - Clients must dispose of their own needles;
  - If an estimate of the number of needles returned is required this can be done by eyeballing and/or by asking clients how many needles they are returning
- When performing immunization or testing:
  - Locate the sharps containers close to the area of use
  - Dispose of the needle immediately

Collecting used injection equipment discarded in the community

- Wear puncture resistant gloves
- Carry a sharps container for immediate disposal

The primary objective of safer handling procedures is to prevent injury and exposure to infected blood. In the event of a needlestick injury, it is important that the injured person receives timely, appropriate care. Post-exposure guidelines outline the procedures to follow in the event of an injury. Ideally, the guidelines will be in place, and workers trained to follow them before an injury occurs. Briefly, post-exposure guidelines include:

- ***First Aid***. Allow the wound to bleed freely, cleanse the wound thoroughly with soap and water. If injury or blood contact is with mucous membranes (i.e., eyes, nose, mouth) flush well with water. Apply a sterile, waterproof bandage.

- ***Medical Attention and Post Exposure Prophylaxis (PEP)***. Seek **immediate** medical attention (within hours) from an emergency department, clinic or doctor's office. Testing and post-exposure prophylaxis may be recommended. Delay or failure to seek medical attention may compromise the effectiveness of treatment.

- ***Follow-up Counselling and Evaluation***. Periodic testing for indications of infection as well as counselling for emotional stress may be appropriate. Counselling for prevention of infection transmission is also recommended.

- ***Documentation & Surveillance.*** All needlestick injuries should be reported to the NEP manager, and documented. This information can be used to help develop further strategies to prevent injuries.

Distribution of cookers

Best practice recommendations – in brief

To prevent transmission of HIV, HCV and other bloodborne pathogens from the re-use of cookers or spoons:

- Distribute cookers in the quantities requested by clients with no limit on the number of cookers provided
- Offer a cooker with each needle provided
- Educate clients about the risks associated with sharing cookers
- Educate clients about the correct single-person use of cookers
- Educate clients about the correct disposal of used cookers

Prior to injection, drugs in powder form, solid form, and tablet form need to be mixed with water to make a solution that can be injected. A cooker is used as the container for this mixing process. It is called a cooker as the solution may be heated to further dissolve the drug so that the solution is of the right consistency for injection. Spoons are often used for this purpose, and less frequently bottle caps. It has been anecdotally reported that some NEPs distribute spoons instead of cookers, however we believe spoons are easier to re-use. As a best practice, we recommend the use of single-use cookers.

Data from international studies document the high frequency of re-use or sharing of cookers among IDUs. IDUs tend to:

- Retain and re-use cookers longer than either filters or rinse water
- Share cookers more frequently than other items of drug preparation equipment
- Share cookers even when a sterile needle is used for injection

Therefore, there may be greater opportunity for contaminating cookers with HCV and HIV than other items of injection equipment.

Virologic studies have documented the presence of HIV and HCV on spoons and cookers removed from injection settings demonstrating the potential HIV and HCV risk associated with the re-use of cookers. In addition to these virologic studies, epidemiologic studies have demonstrated that sharing cookers is an independent predictor of HCV seroconversion and have also documented an association between cooker sharing and HIV prevalence.

The distribution of cookers to clients is the best way for NEPs to reduce the risks associated with the re-use or sharing of cookers among IDUs.

Distribution of filters[5]

Best practice recommendations – in brief

To prevent the transmission of HIV, HCV and other bloodborne pathogens, and to prevent deep vein thrombosis (DVT) from the re-use of filters:

- Distribute filters with a pore width of 0.22 µm in the quantities requested by clients with no limit on the number of filters provided
- Offer a 0.22 µm filter with every needle provided
- Educate clients about the HIV-and HCV-related risks associated with sharing filters and making washes[5] from filters
- Educate clients about the risks of bacterial contamination if a new filter is not used, or if a cigarette filter is used
- Educate clients about the risks of DVT if a new small-pore filter is not used for each injection
- Educate clients about the correct single-person use of filters
- Educate clients about the correct disposal of used filters

Prior to injection, drugs in powder, solid or tablet form are mixed with water to make a solution that can be injected. A needle is placed in the mixing container and the solution is then drawn up into the syringe. Filters are used on the tips of the needles to prevent any undissolved particles of the drug and other debris from entering the veins through the syringe.

Cotton or cotton wool is often used as a filter. In addition, there are anecdotal reports of IDUs using tampons, rolling paper and cotton buds. Cigarette filters are also commonly used. Although these filters may prevent large particles getting into the syringe, they may not be clean and will not prevent the entry of small organisms like bacteria.

Data from international studies documents that IDUs frequently re-use filters, however, less is known about how often IDUs inject washes from filters previously used by another IDU.

The distribution of efficient and effective small-pore filters to clients is the best way for NEPs to:

- Reduce the risks associated with the sharing of filters among IDUs
- Help clients reduce the use of inefficient large-pore filters such as cigarette filters documented to be associated with the growth of the bacteria responsible for the formation of abscesses
- Help clients prevent foreign particles from entering the body which can lead to DVT through the use of inefficient filters such as cigarette filters
- Prevent the sharing of washes made from filters

[5] A drug solution formed by adding water to the drug residue in a used filter, used cooker or used needle.

Distribution of acidifiers

Best practice recommendations – in brief

To reduce the transmission of HIV and HCV, and to reduce the risk of bacterial and fungal infection associated with the use of lemon juice and vinegar as acidifiers:

- Distribute single-use, airtight and waterproof 100 mg sachets of citric acid or single-use, airtight and waterproof 300 mg sachets of ascorbic acid in the quantities requested by clients with no limit on the number of sachets provided
- Offer a single-use sachet with every needle provided
- Educate clients about the potential HIV- and HCV-related risks associated with sharing acidifiers
- Educate clients about the risks of fungal infections associated with using spore-contaminated lemon juice, vinegar and other acids such as acetic acid
- Educate clients about the correct single-person use of acidifiers
- Educate clients about the correct disposal of used acidifiers

To inject insoluble drugs such as brown heroin or crack cocaine, IDUs must first convert the drug into a water-soluble form by adding an acid to create a salt. Common acidifiers include ascorbic, citric, and acetic acids. Data from international studies document the high frequency of acidifier use among IDUs as well as the frequent sharing of acidifiers which is associated with HIV and HCV transmission risk.

Relatively safe acidifiers, such as pure ascorbic, citric or acetic acid, are not always available and an IDU may use more common and accessible acids such as lemon juice, vinegar, and kettle de-scaler. However, lemon juice, vinegar and liquid acids in general have the properties of a growth medium for certain bacteria and fungi. These organisms can infect the heart in the form of endocarditis, and the eyes in the form of candidal endophthalmitis, which can lead to blindness.

The distribution of single-use sachets of citric or ascorbic acid are the best way for needle exchange programs to reduce the HCV- and HIV-related risks associated with sharing acidifiers and to prevent the bacterial and fungal infections associated with using spore-contaminated lemon juice or vinegar as acidifiers.

Distribution of sterile water ampoules

Best practice recommendations – in brief

To prevent transmission of HIV and HCV and other bloodborne pathogens through the shared use of mixing and rinse water, and to prevent the acquisition of bacterial infections from the use of non-sterile water and other fluids:

- Distribute single-use 2 mL sterile water ampoules in the quantities requested by clients with no limit on the number of sterile water ampoules provided
- Offer a single-use 2 mL sterile water ampoule with each needle provided
- Educate clients about the HIV- and HCV-related risks associated with sharing mixing and rinse waters
- Educate clients about the risks of using non-sterile water such as tap, bottled, rain, puddle and urinal water; and other fluids such as saliva and urine
- Educate clients about the correct single-person use of mixing and rinse water
- Educate clients about the correct disposal of used water

Studies have shown that the water used to rinse injection equipment (i.e., needles, cookers and filters) and to dissolve drugs into a solution for injection can pose health risks for injectors, including HIV, HCV and bacterial infections. However, the risks associated with re-using or sharing water are an often-overlooked public health risk.

The risks associated with re-using or sharing water are related to multiperson use of a common water container and/or use of untreated water (e.g., rain water) for the preparation of injection equipment (e.g., needles, syringes, spoons/cookers and filters) and/or drugs into an injectable solution. When a water container is shared or used by more than one person, there is a chance that small amounts of blood from another injector will be deposited into the water and create a risk for HIV, HCV or bacterial transmission. As well, non-sterile or shared water can be contaminated with bacteria and lead to other health problems such as skin abscesses and infections such as endocarditis. These bacterial infections can have serious health implications, including death, for injectors.

Provision of single-use, sterile water ampoules is a best method to eliminate the risk of HIV/HCV through sharing mixing and rinse water and to prevent bacterial infections through the use of non-sterile water. Sterile water ampoules contain enough water to mix drugs into an injectable form. Once opened, the ampoules cannot be recapped eliminating the opportunity for contamination and re-use. The sterile water ampoules are only effective if provided in sufficient quantity to ensure that each injection is prepared with an ampoule of sterile water.

There have been no investigations of the role that water ampoule size may have in sharing water. However, frontline workers report that clients may share from 10 mL ampoules of water. Distributing smaller ampoules of water such as a 2 mL ampoule is therefore recommended.

Distribution of sterile alcohol swabs

Best practice recommendations – in brief

To prevent the transmission of HIV, HCV and other bloodborne pathogens, and to prevent the acquisition of bacterial infections from the re-use or non-use of alcohol swabs:

- Distribute sterile alcohol swabs in the quantities requested by clients with no limit on the number of swabs provided
- Offer a sterile alcohol swab with every needle provided
- Educate clients about the HIV- and HCV-related risks associated with sharing swabs
- Educate clients about the correct single-person use of sterile alcohol swabs
- Educate clients about correct disposal of used swabs

Alcohol swabs are used by IDUs to clean the injection site before injection and to remove any blood resulting from the injection from their fingers and other surfaces. Additionally, among IDUs who inject other users, a swab is used to clean their thumb before and after injection, curtailing any bleeding after removing the syringe from the injection site of the IDU receiving the injection. In the absence of sterile alcohol swabs, IDUs may use rubbing alcohol, aftershave lotion and soap and water (see **Safer injection education** section).

The distribution of sterile alcohol swabs to clients is the best way for NEPs to reduce the HCV-related (and potential HIV-related) risks associated with either the re-use or sharing of alcohol swabs among IDUs. In addition, it is very clear from the evidence reviewed that skin cleaning with alcohol prior to injection has a significant protective effect against the formation of abscesses and other bacterial infections such as endocarditis.

NEPs are well placed to distribute sterile alcohol swabs. IDUs will access sterile alcohol swabs when distributed by NEPs, however less frequent NEP-attendees are less likely to always clean their skin before injecting.

Distribution of tourniquets

Best practice recommendations – in brief

To reduce the transmission of HIV, HCV and other bloodborne pathogens associated with tourniquet sharing, and also to reduce the potential for contamination of tourniquets with the bacteria that cause abscesses, trauma to veins and blood circulation impairment which could lead to loss of limbs:

- Distribute thin, pliable, easy-to-release tourniquets with non-porous surfaces with no limit on the number of tourniquets provided
- Offer a clean, quick-release tourniquet with every needle provided
- Educate clients about the risks of bacterial contamination and the risks of acquiring HIV and HCV through th use of previously-used ties or tourniquets
- Educate clients about the risks of tissue and vein damage and risk of blood circulation impairment if a clean, quick-release tourniquet is not used
- Educate clients about the correct single-person use of tourniquets
- Educate clients about the correct disposal of used tourniquets

Tourniquets or "ties" are used by IDUs to "tie off" the vein – to provide pressure to increase the blood flow into the preferred vein and facilitate injection.

In the absence of a thin, pliable, stretchy tourniquet with a non-porous surface which is easy to release, IDUs sometimes use: a piece of rope; a condom; a leather or terry cloth belt; or frequently a bandana. The disadvantage of these items is that they are not elastic enough for quick and easy release and may therefore cause trauma to the skin, to the vein, and may cause infiltration of blood and fluids into surrounding tissues. In addition, these items are hard to clean if they are splattered with blood.

Distributing thin, pliable, easy-to-release tourniquets with non-porous surfaces to clients in the quantities that they request is the best way for NEPs to reduce:

- HIV- and HCV-related risks associated with tourniquet sharing
- The potential for contamination of tourniquets by the bacteria that cause abscesses
- Trauma to veins which facilitates the transmission of bloodborne pathogens
- The risk of blood circulation impairment which could lead to loss of limbs.

Distribution of glass stems

Best practice recommendations – in brief

To prevent the transmission of HIV, HCV and other bloodborne pathogens through the sharing of equipment used to smoke crack or other drugs:

- Distribute individual glass stems in the quantities requested by clients with no limit on the number of stems provided
- Distribute individual mouth pieces based on the number of stems requested or in the quantities requested by clients with no limit on the number provided
- Distribute individual brass screens based on the number of stems requested or in the quantities requested by clients with no limit on the number provided
- Educate clients about the HIV- and HCV-related risks associated with sharing glass stems and other devices for inhaling and smoking drugs
- Educate clients about the health consequences of using other products as screens
- Educate clients about the correct single-person use of stems
- Educate clients about the correct disposal of used glass stems, mouth pieces and screens

Crack is a crystal-rock form of cocaine that can be heated to release a vapour which is then inhaled into the lungs. A pipe or glass stem is used to heat a solid drug (or rock) and direct the vapours towards the user's mouth. A screen is placed at one end of the pipe or stem to hold the rock in place. Since glass is a conductor of heat, a protective mouth piece to protect the lips from burns is placed on one end of the stem. The rock is then heated by a flame to melt it and allow for inhalation at the opposite end of the pipe or stem.

Devices to smoke crack or other drugs are often crudely constructed from metal such as pop cans, and from glass materials, which can lead to cuts from sharp edges and lip burns. Plastic bottles and inhalers are also used. When a brass screen is unavailable, users will often use brass wool cleaning pads. However this metal tends to break apart and particles can then be inhaled causing lung damage.

It is hypothesized that contaminated blood can be transmitted between users given that they may have open wounds on their hands and mouths and are documented to be in an environment which reinforces the sharing of drug equipment. This would suggest that HIV and HCV may be transmitted between crack smokers by the shared use of devices to smoke crack or other drugs.

The distribution of glass stems with mouth pieces to clients is the best way for NEPs to reduce the HIV- and HCV-related risks associated with the sharing of devices to smoke crack or other drugs. The distribution of brass screens is the best way for NEPs to reduce the health problems associated with the use of other metals as screens.

Needle exchange program delivery models

Best practice recommendations – in brief

To reduce transmission of HIV, HBV, HCV and other bloodborne pathogens and to prevent other drug-related harm:

- Provide NEP services using a model or models of delivery that maximizes accessibility
- Tailor NEP services to meet the specific needs of sub-populations of IDUs (e.g. youth, women and ethno-cultural groups)
- Involve IDUs in the design and delivery of services
- Conduct outreach in the community and at other agencies serving IDUs
- Collaborate with local agencies that serve IDUs to provide additional locations for IDUs to receive NEP services
- Collaborate with local pharmacies to ensure that IDUs can purchase sterile needles

The effectiveness of NEPs is influenced by their ability to attract and retain clients, and to encourage/facilitate behaviour change. Varied service models have been developed to increase accessibility for clients. In particular, NEP services can be offered from fixed sites, vans and other vehicles, directly in homes, by other agencies that serve IDUs for other purposes, pharmacies, peer groups and vending machines.

Many factors influence how well models of service delivery meet client needs. IDUs vary in terms of their age, gender, cultural/racial backgrounds, type of drugs used, places where they live and resources they have on hand etc. Varied daily routines of the clients, personal preferences, difficult daily lives and distance to and from an NEP on specific days and/or at limited times may exceed the economic resources of clients and also the perceived benefits. For example, IDUs with few financial resources are less able to travel long distances to obtain NEP services. Cultural and racial backgrounds may also encourage or discourage attendance at particular NEP sites. Some IDUs use drugs once a day or less, while others may use five or more times a day. Consequently, NEPs need to tailor services accordingly.

Offering needle exchange services in more than one location, at different times of the day and night and from different models of delivery is likely to increase the number of IDUs who will use program services and maximize the effectiveness in terms of preventing transmission of HIV, HBV, HCV and other bloodborne pathogens. While a mixed model approach is likely to maximize effectiveness, not all jurisdictions have the resources or expertise to offer services using different models. Many programs start with one or two models of service delivery and add additional models over time. The pros and cons of each model of service delivery are reviewed in **Table 2**.

Table 2: Comparison of the strengths and limitations of different NEP models

Model type	Strengths	Limitations
Fixed site NEP	▶ Services are free for IDUs ▶ User friendly Education and other services on-site ▶ Disposal of used equipment	▶ Hours of operation ▶ Location limited and/or identifying ▶ Crowded when program is busy ▶ Clients reluctant to use sites perceived to be too governmental, clinical, gay-oriented or HIV related
Mobile NEP[1]	▶ Services are free for IDUs ▶ User friendly ▶ Increases accessibility (i.e., go where the clients are) ▶ Reaches hard-to-reach IDUs	▶ May have insufficient space for counselling sessions, arranging referrals, HIV and other disease testing, helping clients fill out forms and contacting other agencies ▶ Cost and maintenance of vehicle
Home visits[2]	▶ Services are free for IDUs ▶ Reaches hard-to-reach IDUs ▶ Builds credibility in the IDU community	▶ Safety for staff ▶ Potentially intrusive for clients
Satellite NEP[3]	▶ Services are free for IDUs ▶ May attract different groups of IDUs ▶ Increase accessibility in terms of location, time, culture and age group ▶ May offset operational and human resource costs from the parent NEP to the satellite site ▶ Increase service complement for satellite agency without incurring NEP equipment/disposal expenses	▶ Difficult to enforce parent NEP policies on satellite sites ▶ Staff turnover at satellite site may require frequent training of staff by parent NEP
Pharmacy	▶ Hours of operation ▶ Multiple locations ▶ Less stigmatizing/more anonymous	▶ Costs for IDUs to purchase needles ▶ No disposal of used equipment ▶ No harm reduction services offered ▶ Reluctance to sell to IDUs ▶ Reluctance to sell small quantities of needles ▶ Hours/days

Model type	Strengths	Limitations
Peer-based NEP	▶ Peer knowledge of drugs, drug use and the drug scene ▶ Peer knowledge and empathy about living conditions and context ▶ Increases reach of the NEP to IDUs who will not/cannot use the NEP ▶ May provide employment skills, and income for peer exchangers ▶ Improve self esteem and self worth ▶ No cost to the NEP if peers are unpaid ▶ More convenient/accessible for clients ▶ Peers have credibility and can be important role models for risk reduction	▶ Training/supervision of peers can be costly ▶ Conflicting identities as peer worker and IDU community member ▶ Peer worker identity may be used to continue/further street economy activities ▶ May violate worker/client boundaries
Vending machines	▶ Location and 24 hour availability ▶ Convenience ▶ Ease of use ▶ Limited staffing required	▶ No face to face harm reduction services offered ▶ Difficult to maintain anonymity when in a public space

[1] Excluding home visits

[2] Home visits by mobile NEP

[3] Also known as community coalitions or partner agencies, satellite NEP sites are agencies that provide other services to IDUs and, through a collaborative relationship, provide NEP services at their site on behalf of the parent NEP.

Safer injection education

Best practice recommendations – in brief

To reduce injection related harm among IDUs:

- Educate clients regarding safer injection practices, including:
  - How to properly use and dispose of injection equipment
  - How to recognize the signs and symptoms of skin and soft tissue infections
- Encourage clients to seek testing for HIV and HCV, obtain immunization for Hepatitis A and B and seek medical assistance for skin and soft tissue infections before complications develop (see Vaccination and Testing services sections)
- Collaborate with local pharmacies to ensure that IDUs can purchase sterile needles
- Advocate on behalf of IDUs to reduce harsh or judgmental treatment of IDUs in healthcare settings

IDUs experience a number of preventable injection-related problems such as infection with HIV, HBV, HCV and other bloodborne pathogens, skin and soft tissue damage and complications, including death. Many factors contribute to unsafe injection practices, including: the cost of sterile equipment, NEP hours of operation or locations, peer norms and practices, drug use with intimate partners and lack of knowledge.

Education, skills building and provision of equipment by NEPs can reduce the negative health effects of injection drug use, such as transmission of HIV, HBV, HCV and other bloodborne pathogens, toxic effects of the drugs injected, effects of impurities or contaminants in the drugs, overdose, thrombophlebitis and cellulitis, abscesses that sometimes lead to gangrene and amputation, acute or chronic endocarditis and acute fever.

Safer injection education focuses on the process of injection from preparation to clean-up, including information on how to:

- Find a safe environment to inject
- Prevent skin or vein damage, and bacterial infections
- Prepare drugs for injection
- Prepare equipment for injection
- Prepare skin and veins before injection
- Inject properly and to avoid damage to skin and veins
- Clean-up after injection
- Recognize and treat skin and vein problems

Encouraging and ensuring that clients have access to a reliable source of sterile injection equipment is crucial to reduce the injection-related risks. Providing written material to clients can help to reinforce instructions however not all clients are able to read. Verbal explanations and technique demonstration, as well as distribution of written materials, ensures that all clients benefit from education efforts.

Most injection-related problems (e.g., abscesses) are easily treated. However, IDUs may delay treatment

seeking to avoid hassles by medical professionals. Advocating on behalf of clients at hospitals and walk-in clinics may reduce prejudice against clients and improve the likelihood that clients will seek help when needed.

Injection techniques are typically learned from, and reinforced by, peer groups. As a result, attempts by NEPs to change injection techniques among IDUs will likely require interventions at both the individual and community level. As well, peer exchangers can assist NEPs to ensure that social network members have access to sterile equipment. In Canada and elsewhere in the world, drug user organizations such as VANDU have played a crucial role in expanding the reach of prevention and harm reduction services through their own networks, and often to IDUs at risk. Involving these organizations can improve interventions. Peer exchangers may have an important role to play to change unsafe injection behaviours to safer injection behaviours.

When NEPs first opened in Canada, most programs offered bleach kits for their clients to disinfect injection equipment. However, the effectiveness of bleach kits as a disinfection tool has been called into question. NEPs in Ontario no longer provide bleach kits. Neither the World Health Organization (2004) nor the Public Health Agency of Canada (2005) recommends that bleach kits be used to reduce the risk of HIV or HCV transmission.

Safer sex promotion and provision of safer sex materials

Best practice recommendations – in brief

To reduce sexual transmission of HIV, HCV, and other STIs:

- Educate clients about the risk of sexual transmission of HIV, HCV, and other STIs through oral, vaginal and anal penetration, as well as cunnilingus and anilingus.
- Provide education about prevention of sexual transmission of HIV, HCV and other STIs
- Educate women having sex with women (WSW) about their potential for becoming infected with STIs including HIV
- Distribute materials needed to practice safer sex in the quantities requested by clients with no limit on the number provided, including:
  - Male lubricated and non-lubricated condoms
  - Female condoms
  - Packets of lubricant
  - Dental dams
  - Latex gloves and fingers cots
- Refer clients with concerns about contraception or STIs to sexual healthcare providers and ensure that clients who cannot afford to pay for prescriptions or devices have assistance to obtain them
- Condoms are the first choice for prevention of disease transmission; the use of cervical barriers may be a valuable additional measure

IDUs are at risk of HIV infection through unprotected sex with an infected person. A high proportion of women IDUs have sexual partners who are also IDUs, increasing their risk of having an infected sexual partner. At the same time, men IDUs often have sexual partners who are non-IDUs and who also could be placed at risk of becoming infected. Users of non-injection drugs have also been shown to be at increased risk for sexual transmission of HIV as well as other STIs such as syphilis. Therefore, prevention of sexual transmission of HIV and other STIs is an important component of harm reduction services for drug users.

NEP clients may be less aware of the risks of sexual transmission than of needle sharing risks, and may require education about these risks. Women who have sex with women (WSW) may particularly lack awareness of the possibility of transmission of HIV and other STIs through their sexual contacts and the benefits of using protective barriers. This is particularly relevant since epidemiology suggests that a relatively high proportion (roughly 20 or 30% in many studies) of women IDUs self-identify as lesbian or bisexual.

More extensive discussion of the specifics of the various safer sex materials available is provided in the 'in detail' version of these recommendations.

Overdose prevention education

Best practice recommendations – in brief

To reduce fatal and non-fatal overdose among IDUs:

- ▶ Educate clients about the risks and signs of overdose
- ▶ Educate clients about overdose prevention techniques
- ▶ Provide first aid and cardio-pulmonary resuscitation (CPR) training to clients
- ▶ Encourage clients to seek medical assistance in the event of an overdose or distress
- ▶ Educate clients about the information to provide when 911 is called

Among IDUs, overdose is the leading cause of death. Several factors contribute to an increased risk of overdose among IDUs, including prior nonfatal overdose, injecting drugs from a new or unknown source, unknown strength of the drugs, injecting alone, having someone else inject the drugs into the user (e.g., hit doctor) and a delay in seeking medical assistance.

Education and training of IDUs about how to prevent, recognize and respond to overdose situations are necessary to reduce overdose related deaths. Lack of knowledge about the signs and symptoms of overdose and about the lag time between consumption and onset of overdose symptoms may prevent IDUs from intervening or seeking help. Furthermore, IDUs commonly have inaccurate knowledge about techniques likely to be helpful to someone experiencing an overdose, which could lead to harmful consequences.

Overdose prevention education often includes information and skills building components about how to recognize the signs of an overdose. The symptoms of overdose vary depending on the drug consumed. For example, opiates may lead to symptoms such as deep snoring, slow or erratic heartbeat and passing out. A stimulant overdose (e.g., cocaine, methamphetamine) may lead to symptoms such as rapid breathing, high fever, seizure, convulsions, delirium, confusion, sweating and rapid increase in blood pressure. First aid training is also included in overdose education programs for IDUs, their family and others who may be present during an overdose. Teaching clients the recovery position, mouth-to-mouth resuscitation and CPR and basic life support techniques can be beneficial. Qualified staff should deliver training. Compensating clients for attending training sessions has been shown to increase participation.

Many IDUs fear the consequences of police involvement, leading them to delay seeking assistance in overdose situations. However, evidence shows that early intervention by emergency personnel greatly increases overdose survival. Some IDUs may require guidance as to what to say when they call 911, including what to tell the dispatcher and what paramedics should be told once they arrive at the overdose scene. Partnerships between NEPs, the police, and emergency personnel can be used to develop and implement procedures that would make IDUs less reluctant to seek medical assistance when necessary.

Providing NEP clients with access to naloxone (Narcan ®) may have the potential to reduce opioid related deaths. Naloxone reduces fatal respiratory arrest caused by opioid overdose. In the past it has only been administered by professionals with medical training. However, studies of the effectiveness, side effects and

other harmful events when administered by persons other than medical professionals (e.g., NEP clients) are being conducted. When these results are available, implementation of this type of intervention may or may not be indicated for NEPs.

Several factors found to increase the likelihood of death from overdose among IDUs can be used to identify clients at increased risk and to tailor education programs accordingly. As well as those listed above, factors found to increase the risk of death from overdose include: a long history of injecting, high levels of drug use or intoxication, low tolerance, homelessness, diagnosis of depression, recent release from prison and a history of using combinations of drugs.

Examples of recommended overdose prevention practices are summarized in **Table 3**.

Table 3: Examples of overdose prevention practices

Recommendations	Rationale
Avoid mixing drugs with similar effects	Drugs with similar effects when combined can increase the risk of overdose
When tolerance is low (e.g., after drug treatment or release from jail): ▶ Use a smaller amount of drugs than before ▶ Smoke or snort drugs to reduce the speed of absorption into the body ▶ Use with someone else present or let someone know to check	Lowered tolerance can increase the risk of overdose
Take care when using drugs from a new and/or unknown source: ▶ Inject a test shot to test potency ▶ Ask others about the potency	Using drugs of unknown potency can increase the risk of overdose
Buy drugs from a regular and trusted source	
Know how to recognize symptoms of overdose in self and others	Early intervention during an overdose can reduce the chances of death
Know what to do, and what not to do, if you or someone else shows symptoms of overdose	
Call for assistance if you or someone else is overdosing	
Do not leave someone who is overdosing alone	Early intervention during an overdose can reduce the chances of death and the chances of victimization

Referrals and counselling

Best practice recommendations – in brief

To increase access to community services and other assistance for IDUs:

- Provide referrals for drug treatment, HIV and HCV counselling and testing, social and mental health services, legal aid, and primary healthcare
- Establish and manage referral relationships with agencies providing these services
- Engage in direct advocacy to ensure clients have access to appropriate services
- Provide clients with information regarding drug treatment, medical care, HIV and HCV counselling and testing, and other health and social services

Many IDUs do not regularly access health and other social service systems, and NEPs are often their only source of assistance with health and social problems. Consequently, NEPs are an important source of referrals for drug treatment and services for the medical, social, emotional and financial needs of IDUs. Some IDUs may not have their service needs met due to lack of knowledge about the community resources available and how to access such services. NEP staff can play a role to help clients identify their needs and access services.

Participation in drug treatment has been shown to decrease needle sharing and injection frequency. Referring clients to drug treatment programs has the potential to reduce or eliminate client drug use and reduce the risk of acquiring HIV, HBV, HCV and other infections. As well, referrals for HIV and HCV counselling, testing and treatment are important because research shows that once IDUs become aware of their positive status, HIV and HCV transmission-related behaviours tend to decline.

Since substance use can increase a person's risk of experiencing financial problems or becoming homeless, it is important that IDUs are informed about the community services available to address their needs. As well, NEPs can help improve clients' awareness of mental health services since the IDU population has been shown to experience high rates of depression and some IDUs participating in NEPs report needing mental health services.

To provide referrals, NEPs need to gather information about the types of services required by their clients and establish productive relationships with other service providers. However, advocacy on behalf of IDUs may be necessary in other service settings. Service providers in these locations may benefit from training provided by NEPs concerning issues such as the health and life circumstances of IDUs, how to interact with this population and the goals of NEPs.

Providing referrals to healthcare and other services is an important role for NEPs, but depending on their funding and stage of development, NEPs might be able to offer a variety of services onsite.

Many NEPs provide referrals to voluntary HIV and HCV counselling and testing, as well as referrals to drug treatment programs. If adequate resources are available, it may be appropriate for NEPs to provide

required services onsite. Wherever possible, NEPs should involve clients in the design and implementation of services and programs. This can assist NEPs in providing services that effectively meet client needs.

Methadone maintenance treatment

Best practice recommendations – in brief

To reduce HIV transmission and other drug related harm:

- Provide access to harm reduction oriented methadone maintenance treatment at an NEP where resources allow, or through appropriate referral, for opiate dependent drug users who are not seeking high threshold methadone maintenance
- Advocate for provision of harm reduction oriented methadone maintenance treatment as part of the range of drug treatment options available in the community

Treatment of problematic drug use has the potential to reduce transmission of HIV, and reduce other drug-related harm through eliciting abstinence or by reducing needle use practices found to transmit bloodborne pathogens. There is a large body of evidence supporting the benefits of methadone maintenance treatment (MMT) in preventing HIV infection among IDUs who remain in treatment. However, these results are based on high threshold methadone maintenance treatment which requires abstinence from drugs other than methadone, and which typically has a fairly high drop-out rate. Positive outcomes have generally only been reported based on those individuals who remained in treatment. There is emerging evidence that for those individuals who are unwilling to enter high threshold programs, harm reduction-oriented MMT, which does not require abstinence from other drugs, can still lower HIV risks. Research suggests that receiving an adequate dose of methadone is a key element in effective maintenance.

NEPs may consider providing such programs themselves if necessary resources, including a methadone prescribing physician willing to work with a harm reduction philosophy, are available. Alternatively, they may rely on referral to community MMT physicians and programs, seeking out and advocating for low threshold programs for their clients who are unwilling to stop using all illicit drugs. If clients are referred for MMT, particularly high threshold methadone treatment, NEPs need to be aware of the possibility of drop-out from treatment, and encourage clients to return for NEP services if they need them in the future.

It is in keeping with harm reduction principles that a range of methadone maintenance options be available to clients to meet their particular goals and needs. This may range from high threshold methadone maintenance programs oriented toward clients whose goal is to become abstinent from illicit drugs, to low threshold programs whose goal is to help clients reduce their risks for health harms without requiring them to necessarily reduce their use of other illicit drugs. It is important that MMT programs incorporate counselling and support services to assist clients with their other needs (e.g., mental and physical health concerns, housing needs, employment, etc.) as required.

Primary care

Best practice recommendations – in brief

To improve access to primary care for IDUs:

- Identify sources of primary care in the community willing to work with IDUs
- Provide services at NEPs in keeping with the needs of clients and alternative resources available in the community, including:
  - First aid limited to provision of first aid materials and non-professional assistance unless NEP has access to professional healthcare providers
  - Vaccination provided by professional staff and offered at NEPs to encourage uptake by clients
  - Testing offer at NEPs to encourage uptake and allow ongoing followup education and counselling to those who test positive
- NEPs with relationships to public health units or community health centres should assist their clients in accessing the full range of services available
  - Where possible negotiate provision of primary care services in the same premises as the NEP to facilitate access for NEP clients
- Conduct education, outreach and advocacy with health service providers to improve their knowledge about IDUs and their willingness to provide services
  - Where possible provide for accompaniment and advocacy for clients initial visits to off-site health services until a successful relationship can be established with the service providers and develop ongoing communication to resolve problems

IDUs who are homeless or marginalized typically have multiple health problems and are in need of accessible primary care from providers open to working with them. Many IDUs who attend NEPs will lack such services. The best practice for harm reduction services is either to incorporate such services (the "one-stop-care" ideal) or to assist clients to access these services elsewhere in the community. Many NEPs are able to provide some aspects of preventive care particularly needed by IDUs at their own site through co-operative arrangements with public health staff or other healthcare providers in their community. The services most often provided are testing for HIV/HCV/HBV and sometimes STIs, especially syphilis; testing for tuberculosis; vaccination for HAV and HBV, influenza, and sometimes other diseases; and first aid. (See best practice recommendations for each of these).

A few NEPs in Ontario have also undertaken to provide MMT to their clients as part of their services. (See **Methadone maintenance treatment** section).

In addition to provision of preventive services onsite, NEPs need to establish contact with primary care providers to whom they can refer clients for ongoing clinical care. NEPs can improve access to such care for their clients by providing education to healthcare providers about IDUs and how to work with them and about harm reduction and the evidence for its value. NEPs can assist their clients to access adequate care and to establish relationships with care providers by accompanying clients for initial or urgent care visits in order to advocate for them and facilitate communication between clients and healthcare staff.

First aid for abscesses and skin problems

Best practice recommendations – in brief

To prevent abscesses and skin infections:

- Educate clients about safer injection practices and provide sterile injection equipment and hygiene materials (e.g., alcohol swabs, filters, sterile water, needles, syringes, cookers and tourniquets)
- Provide first aid services for abscesses and skin problems as part of NEPs wherever feasible, including help with foot care for problems such as blisters
- First aid as described here is limited to services which can be provided by a non-professional with first aid training; more complex problems require treatment by a physician or nurse practitioner

IDUs are at risk for abscesses and skin infections which can affect their health and wellbeing. NEPs can address prevention of abscesses and skin infections by teaching proper injection technique and associated hygiene measures, together with provision of ample sterile injection equipment and education about the importance of sterile technique in drug preparation (see **Safer injection education** section).

If prevention fails, NEPs can assist with the management of minor skin infections, and problems such as blistered feet, particularly for homeless IDUs, through provision of opportunities to clean wounds and infected skin and of topical antibiotics and bandages. For more severe infections including abscesses requiring lancing, professional assistance is required and unless the NEP has nurses and/or physicians on site, this requires referral to a family doctor or urgent care facility (see **Primary care** section).

Vaccination

Best practice recommendations – in brief

To reduce acquisition of HAV and HBV, influenza and pneumococcal disease:

- Educate clients about HAV, HBV and HCV and their prevention, including the availability of vaccination for HAV and HBV
  - Provide testing for HAV, HBV and HCV as indicated (see **Testing services** section)
  - Encourage HBV vaccination for all NEP workers and clients
- Provide vaccination for HAV and HBV for those who are not already immune or carriers in the case of HBV, including a system to ensure as much as possible that clients receive 2 doses of HAV vaccine and 3 doses for HBV (as required for the particular vaccine used in Ontario).
- Provide influenza vaccination or referral for vaccination to all clients who do not have a primary care provider
- Provide pneumococcal vaccination or referral for vaccination to all clients who are, or might be, HIV positive or who have chronic lung disease and who do not have a primary care provider
- Determine tetanus immunization status of clients and offer tetanus immunization to those who are eligible, or refer to a primary care provider
- NEPs providing vaccination should have medical directives and clearly written policies

IDUs are at risk for HBV and HCV if they share needles or any other injection-related equipment (see **Needle and syringe exchange** and **Distribution of other injection-related equipment** sections). Users of both oral and injected drugs are also at higher risk for HAV than the general population in Canada. IDUs who have not already been infected with HBV should be offered vaccination. For detailed information on immunization use the "Canadian Immunization Guide".

In Ontario, vaccination consists of three injections because of the particular product used, with attention to ensuring that the intervals between doses are at least as long as those recommended by the manufacturer. If longer intervals occur, it is not necessary to restart or to add extra injections. Persons with weakened immune systems may require higher doses or additional injections and expert advice should be sought in these situations.

HAV and HBV vaccines are provided free of charge through public health units to high-risk adults in Ontario, including IDUs. HBV has also been universally provided to Grade 7 students in Ontario since 1994, so persons between about 13 and 23 years of age who have grown up in Ontario will generally have received vaccination already. However it should be noted that people whose schooling was interrupted, or who attended school irregularly, may not have been immunized. HAV vaccination should be offered to all IDUs who are not already immune to the virus; it consists of two injections at least 6 months apart.

Since both HAV and HBV require administration of more than one injection over several months, NEPs should keep records of client vaccinations and establish a mechanism to remind clients who are due for additional injections, while maintaining confidentiality of all records.

There is evidence that IDUs have elevated rates of bacterial pneumonia, possibly linked to HIV infection. IDUs who are known to have chronic lung disease or weakened immunity because of HIV or other reasons should be offered pneumococcal vaccine and influenza vaccine. In Ontario, influenza vaccine is available free of charge to all adults and so should be offered to all clients if available at the NEP. However, only 1 dose is indicated annually, so it should not be given to clients who are also receiving it from a primary care provider or in an institutional setting.

The Canadian Immunization Guide recommends that adults who have received a three dose primary immunization for tetanus be given a booster dose of tetanus vaccine every 10 years. IDUs who have no record of ever receiving tetanus immunization would require a full three dose series of tetanus vaccine.

Testing services

Best practice recommendations – in brief

To increase clients knowledge of their HIV, HBV, HCV and tuberculosis statuses:

- Provide voluntary counselling and testing for HIV, HBV, HCV, and tuberculosis as part of NEP services and/or ensure access to testing at other available health services
- Inform clients about HIV testing options (anonymous, or nominal) so they can make informed decisions about testing
- Ensure confidentiality of all test results
- Ensure that IDUs who test positive for HIV, chronic HBV, HCV, or tuberculosis have access to necessary services for counselling, care and treatment
- Consider testing for syphilis or referring for testing as part of sexual healthcare

IDUs are at risk for HIV, HBV and/or HCV, which may result in a chronically infected carrier state, and also tuberculosis. Latent tuberculosis and early stages of HIV and chronic HBV or HCV can all be completely asymptomatic, and only detectable with appropriate screening tests. Many IDUs lack a regular source of medical care, or may not reveal their risk status to their healthcare provider. NEPs thus have an opportunity to provide necessary testing to their clients who will not receive it elsewhere, or to assist their clients to access screening tests with other providers.

Voluntary counselling and testing for HIV

Knowledge of HIV status may help to encourage safer behaviour among both HIV positive and HIV negative IDUs. For those who are HIV positive, this will entail efforts to avoid infecting others. Knowing that they are HIV-infected may also motivate IDUs to improve self-care and to seek monitoring of their health and HIV treatment when indicated. For those testing HIV negative, pre- and post-test counselling can provide an opportunity to review risk behaviours and counsel about risk reduction. This requires **high quality pre- and post-test counselling for all IDUs** and **support for persons who test positive**. Staff must receive excellent training in counselling, and have access to necessary referrals for care and support. In Ontario, specifically designated sites are able to offer anonymous testing. With anonymous testing, issues such as partner notification and treatment referral can only be dealt with as part of pre- and post-test counselling, unless follow up is sought out by the client. Outside such anonymous test sites, positive test results are reported to public health authorities who will contact the test provider regarding issues of partner notification and client needs for service referral.

HBV & HCV testing

IDUs are at elevated risk of becoming chronic carriers of HBV or HCV. About 10% of persons who become infected with HBV have chronic persistent infection which makes them infectious to others and also may progress to cirrhosis of the liver or liver cancer. Testing can allow persons who are carriers to know this so that they can avoid behaviours which may infect others, receive medical monitoring and consider possible

treatment. IDUs who are tested and found to have no evidence of previous exposure to HBV can be offered immunization to prevent future infection. The majority of persons who have become infected with HCV will remain as chronic carriers with the potential to progress to cirrhosis of the liver and more rarely to liver cancer. Testing positive can allow such persons to know their status and avoid behaviours which may infect others, seek medical monitoring such as tests of their liver function, reduce exposures to alcohol or other substances which are toxic to the liver, and consider the possibility of treatment. Treatment for HCV is lengthy (several months), difficult (it requires injections and side effects include flu-like symptoms and depression), and success of even complete treatment varies from 45-80% depending on the particular HCV genotype, but if successsful, it is possible to completely eliminate HCV, as long as re-infection does not occur.

As for HIV, appropriate counselling and information about HBV or HCV should be provided to IDUs considering testing. This requires initial staff training as well as opportunities to keep up with new information. HBV, HCV and HIV status are reported to public health authorities. Only HIV has an anonymous testing option. This may create anxiety for IDUs considering testing, but effective collaboration between NEPs and public health authorities can seek to mitigate these concerns and ensure that public health issues are appropriately addressed. Once identified as being infected, access to medical monitoring and treatment may be difficult to provide in many locations. There is a shortage of specialty services available to manage hepatitis patients, and providers may be unwilling to provide these limited resources to persons whom they perceive as unlikely to comply with treatment.

Tuberculosis screening

Tuberculosis is an infection generally confined to the lungs except in persons with reduced immunity such as those with HIV infection. Many persons who are infected with tuberculosis have it present in latent form so that it does not cause symptoms, and is not infectious to others. However, there is an ongoing risk that such latent infections may become activated so that the infected person will have active lung infection which can also spread to others. IDUs have increased rates of both latent and active tuberculosis, particularly if they are of Aboriginal origin or immigrants from countries with high rates of tuberculosis.

Latent infection with tuberculosis can be detected in most cases through the use of skin tests. These tests require professional training to administer, and to interpret the results at a return visit 48-72 hours later. This testing may be challenging to deliver in mobile NEP services when lighting and other aspects may be more difficult; a particularly important consideration is whether it is possible to ensure finding clients again for followup within the required timeframe. If a screening test of this type is positive, it is necessary to refer for a chest X-ray before treatment is begun, since treatment for latent tuberculosis is different from that required for active tuberculosis. Ensuring necessary followup may require accompanying clients to these services. Tuberculosis is a reportable disease, and persons with active tuberculosis can be required to undergo treatment in order to prevent them from infecting others. There is evidence that providing incentives to return for reading of skin results and other types of supports, including directly observed therapy, increases success in screening and treatment. It is particularly important to ensure that HIV positive persons are tested for tuberculosis since they are at high risk for developing active tuberculosis if untreated. NEPs should educate clients and staff about this risk.

Syphilis testing

There is evidence that IDUs and also users of non-injection drugs (e.g., crack smokers) may have elevated rates of syphilis, especially if they exchange sex for drugs. Screening blood tests for syphilis can be provided at NEPs along with other blood tests. Interpretation of tests for syphilis and treatment require medical expertise. IDUs with positive screening tests should be referred to a sexually transmitted diseases clinic or other source of expert care.

Relationships with law enforcement

Best practice recommendations – **in brief**

To develop and establish a collaborative relationship with law enforcement:

- Establish a relationship with local law enforcement agents early in the development of an NEP
- Provide in-service training to law enforcement agents focussing on:
  - The purpose and goals of NEPs
  - Evidence about NEP effectiveness
  - Evidence concerning the impact of NEPs on injection drug use
  - The health and social concerns of IDUs
  - Needlestick injury prevention
- Negotiate agreements with law enforcement agents to ensure that:
  - Clients are not harassed while entering or leaving NEP sites and vehicles
  - NEP equipment is not destroyed or confiscated from clients
  - NEP fixed, mobile, and other sites are not used for surveillance purposes
  - NEP staff will not interfere with law enforcement activities
- Establish protocol for the NEP and law enforcement agents to resolve conflicts

NEP efforts to reduce the transmission of HIV, HBV, HCV and other bloodborne pathogens can be negatively impacted by actions of law enforcement agents. The literature indicates that law enforcement practices sometimes conflict with NEP activities and relationships between NEPs and law enforcement agencies can become problematic particularly when there are misconceptions about NEP purposes, goals and procedures. In Canada, possession of sterile, unused needles is not illegal.

Law enforcement agents who are not familiar with the rationale and evidence base concerning NEPs may be less than supportive of the efforts of program staff and clients to reduce transmission of bloodborne pathogens. Consequently, law enforcement agents sometimes use NEPs for surveillance purposes and may harass clients leaving NEPs, and confiscate sterile equipment. Police crackdowns and increased arrests in areas where drugs are commonly bought and used can reduce drug use over the short-term but also discourage clients from using NEP services. Recent evidence shows that increasing the number of police officers in a community and the amount of money spent on incarceration does not reduce the number of injectors. However, increased policing, arrests and incarcerations are associated with elevated HIV prevelance among injectors.

Fear of being arrested while in possession of drugs and/or injection equipment can lead IDUs to rush injections, skip safer injection techniques (e.g., hand and skin cleaning) and to feel so anxious that they cannot inject with accuracy. All of these consequences can increase the risk of injection-related problems such as infections and skin and soft-tissue damage (see **Safer injection education** section).

Insight from NEP workers suggests that cooperation, negotiation and education may help to reduce the perception and instances where NEPs and law enforcement agencies work at cross-purposes. Establishing

a relationship with local law enforcement agencies before an NEP opens is an important step in program development. Insight from workers also suggests that the following activities can reduce or eliminate tension between NEPs and law enforcement agencies. Encourage the local Medical Officer of Health and/or the Executive Director of a community organization to speak directly with the local Chief of Police about the NEP, its goals and procedures and how the NEP and law enforcement agents will interact (or not). Establish a relationship with the community relations officer in the local law enforcement agency. The goal of the relationship is to ensure that the activities of the NEP and local law enforcement agencies do not lead to tension and difficulties. It is important to establish policies and procedures for the NEP and law enforcement agency relationship, including:

- A procedure for each party to discuss and resolve disputes
- Agreement that the NEP sites and vehicles will not be used for surveillance purposes
- Agreement that police will not enter the NEP sites or vehicles unless there is an official purpose and/or they are invited to do so
- Agreement that NEP staff will not interfere with police activities

Conducting workshops with law enforcement agents may also be useful, with a focus on:

- The NEP, its goals and procedures
- Misconceptions regarding the purpose and goals of NEPs
- Evidence concerning NEP effectiveness
- Factors underlying and contributing to illicit drug use (e.g., poverty and unemployment) and related health consequences
- Evidence demonstrating that NEPs neither increase rates of crime nor encourage initiation/continuation of injection drug use
- NEPs' aim to ensure that IDUs have access to clean injection equipment so they will be less inclined to share needles and other drug equipment, thus potentially reducing the transmission of bloodborne pathogens
- The consequences of confiscating and/or destroying harm reduction materials

Workshops can also be used to provide in-service training for needlestick injury prevention. Needlestick injury is a concern for police, and teaching them about needlestick injury prevention techniques may be a good advocacy tool to create/improve collaborative relationships between NEPs and police.

Working collaboratively with police may improve strategies to reduce negative health consequences of injection drug use while at the same time allowing police officers to enforce the law.

Program evaluation

Best practice recommendations – in brief

To ensure the effectiveness of NEPs:

- Conduct on-going evaluation to determine how well the program meets the needs of the clients
- Provide training for staff to ensure that the purpose of, and activities related to, evaluation are understood and accepted
- Involve IDUs in the design and implementation of evaluations
- Develop a program plan to review evaluation results and modify the program as needed

Ongoing evaluation is an important activity for NEPs to undertake and can help managers and staff determine how well their program meets the needs of clients and where further improvements are warranted. Evaluation results can also be used to demonstrate the effectiveness of the program to community members. According to the WHO (2005), program evaluation is a crucial program activity and 'needs to be taken into account, planned, agreed to and budgeted for from the very beginning of the program' (p.73).

Evaluation activities can vary from simple to complex and the evaluation can be tailored to meet the needs and resources of each program. Questionnaires, interviews, client attendance records, focus groups and other methods can be used to gather evaluation information. As noted in the **NEP start-up tasks** section, program planners need to understand the community they will serve before designing the program. However, IDU populations and surrounding communities change over time and periodic collection of information (e.g., every 12 or 24 months) is necessary to ensure that the program as currently delivered meets the needs of clients and the community. The list below suggests some topics to be included in periodic data collection:

- How many IDUs live in the community and/or catchment area
- Where clients live, buy and use drugs, and hang out
- Social, economic and health status of IDUs
- What kinds of drugs are used and how they are consumed
- Current level of knowledge regarding risk and protective behaviours
- Current patterns of risk and protective behaviours
- What resources are available for IDUs and if these are used

Process evaluations involve structured collection of information about how the program operates and can be used to determine if the program is operating as planned. In particular, programs can collect information about the number/frequency of services provided to clients and use this information to determine how many clients the program serves and what types of services are used (e.g., equipment, counseling and referrals). Using these program statistics, the programs can then determine:

- Resource requirements (e.g., equipment)
- Need for implementation of new models of service delivery
- Staffing requirements including both number and skill type

Evaluation of client satisfaction can take many forms from ongoing surveys to focus groups to client forums. When evaluating client satisfaction, it is important to gather information from all types of clients (e.g., frequent and non-frequent attenders; young and old; men and women, etc.). As such, a separate survey to investigate these issues with non-attenders is also necessary. Understanding what motivates clients to attend frequently or not at all may provide important insight into how the program is delivered, what works well and what needs improvement. Understanding why some IDUs do not use the NEP is also very important for program development and effectiveness.

Evaluating program impact is very important and requires particular types of evaluation and research methods. Indicators of success that might be evaluated include HIV and HCV seroconversion and behavioural change. I-Track (the Enhanced Surveillance of Risk Behaviours among Injecting Drug Users in Canada) is a repeated cross-sectional survey funded by the Public Health Agency of Canada (2004). Demographic, drug use and risk behaviour information is collected and anonymous HIV and HCV testing are conducted using finger-prick blood samples or saliva samples. This on-going surveillance activity is conducted at selected NEPs across Canada, however, use of similar methods and data collection procedures by other NEPs would provide important information that is comparable to other programs in Canada.

For NEP workers, providing services and conducting ongoing and/or periodic evaluations is time consuming. When evaluation data are not used, staff may question the benefits of conducting these activities and not devote sufficient time or effort to their evaluation duties. As well, clients may fear the consequences of participating in evaluation (e.g., loss of service) and voicing their satisfaction or lack thereof with the program. Involvement of both staff and clients is important to ensure that evaluation activities are relevant to the work staff members conduct and the services clients receive. As well, it is important to share the results of evaluations with staff and clients to demonstrate that their points of view are taken seriously, and to provide further opportunities for input in to program development.