Needle Disposal: Guidance for Policies and Procedures

Needle Disposal: Guidance for Policies and Procedures
Prepared by the Toronto Drug Strategy Secretariat, Toronto Public Health
December 2018

Table of Contents

Acknowledgements

This document was created with the assistance of a number of agencies and individuals throughout the local community and the City of Toronto. Assistance varied from sharing experience, reviewing this document, and/or contributing expertise in the development process. We thank the people with lived experience who participated in the conversation groups about needle litter that we convened. We also thank the following:

Jameel Alladin, Solid Waste Management, City of Toronto

Jaclyn Brillinger, Solid Waste Management, City of Toronto

Rupi Dhaliwal, Greater Toronto Airports Authority

Lisa Garrard, Toronto Public Health, City of Toronto

Geoffrey Gillard, Parks, Forestry & Recreation, City of Toronto

Tracey Henderson, Toronto Public Health, City of Toronto

Shaun Hopkins, Toronto Public Health, City of Toronto

Jann Houston, Toronto Public Health, City of Toronto

Ryan Kichler, Yonge-Dundas Square

Victory Lall, Toronto Public Health, City of Toronto

Lanadee Lampman, St. James Cathedral

John McCarthy, Union Station, City of Toronto

Cindy O'Brien, City Manager's Office, City of Toronto

Sunny Petrujkic, Transportation Services, City of Toronto

Dominic Popowich, Facilities Management, City of Toronto

Susan Shepherd, Toronto Public Health, City of Toronto

Craig Todd-Langille, Toronto Public Library, City of Toronto

William Swanson, Toronto Transit Commission

Policy and writing lead: Nicole Greenspan, Toronto Public Health, City of Toronto

Definitions

Harm reduction
Harm reduction is both a philosophy and set of practical strategies aimed at reducing the adverse health, social and economic consequences associated with drug use (both legal and illegal) in ways that are non-judgmental and non-coercive. Harm reduction programs include the distribution of sterile injection equipment and disposal of used equipment. Harm reduction programs have been proven to decrease drug-related harms, including overdose and the spread of blood-borne pathogens such as HIV and Hepatitis B and C.

Biomedical waste
Biomedical waste is any kind of waste that contains infectious material (or material that is potentially infectious). It includes waste that is generated in healthcare settings or laboratories, as well as waste generated outside of those settings. Discarded, used needles are considered biomedical waste due to the possibility of there being blood-borne pathogens (such as HIV, Hepatitis B or C) remaining on the needle, which could be transmitted if the used needle is not properly contained and disposed of, and a needle stick injury occurs.

Injection equipment
Safer injection equipment may include needles and syringes in various sizes, sterile water, alcohol swabs, tourniquets, filters, acidifiers and cookers, etc. Sterile injection equipment is distributed to reduce the potential for harm (i.e., to prevent the transmission of blood-borne pathogens).

Needles and syringes
Needles are a long, thin, sharp tool for piercing the skin, made of metal. A syringe is a device, usually made of plastic, used for injecting or drawing fluids out of the body, also called a barrel. In this document, we use the term 'needles' to refer to needles with attached syringes, and without. Needles are also sometimes called sharps.

Needle stick injury
Needle stick injuries are accidental punctures of the skin. They are a concern for people who come into contact with used needles because of the risk of transmission for blood-borne pathogens such HIV, Hepatitis B and C.

Routine practices
Routine practices used in health care settings to prevent and control infections.

Sharps
Objects capable of causing punctures or cuts (e.g., needles, blades, etc.).

1 About This Guidance Document

This guidance document was compiled by Toronto Public Health (TPH) and is a collection of evidence and best practice recommendations related to safe needle disposal.

The main purpose of this document is to provide information to divisions across the City of Toronto to support the development of proper needle disposal policies and procedures in non-healthcare settings. It is also meant to be a shareable resource that could inform needle disposal policies and practices at organizations outside of the City of Toronto.

When applied consistently, evidence-based and best practices, policies and procedures related to needle disposal can prevent or reduce the risk of harms from improper needle disposal. The goal is that divisions across the City of Toronto (and other organizations) will utilize and adapt the recommendations from this document to incorporate proper needle disposal policies and procedures into their own work. This document does not provide recommendations for healthcare settings, as these settings should follow specific recommendations suited for the kind of services they provide (see Public Health Ontario for information on healthcare settings[1]).

Needles are used by a variety of people, for a variety of purposes, including for medical reasons and for non-medical injection drug use. The distribution of sterile needles, as well as encouragement, education, and facilitation of proper needle disposal are key elements of evidence-based recommendations for public health and harm reduction programs, which have been shown to reduce drug-related harms[2]. Additionally, facilitating proper needle disposal also falls outside of public health and harm reduction programs, as part of occupational safety and general maintenance of City buildings, parks, streets, and other locations. Worker safety is an important issue related to proper needle disposal. Locations appropriate for needle disposal vary widely across Toronto; this document attempts to provide information that may be useful for a variety of these non-healthcare settings.

2 Best Practices for Needle Disposal

2.1 Background

Proper disposal of needles that have been used to inject drugs involves several steps that include the appropriate collecting, carrying, storing, transferring and disposing of biomedical waste. The proper disposal of used needles prevents re-using and sharing of needles, prevents needle stick injuries, and limits the number of discarded needles found in the community[3]. Not having a convenient place to dispose needles can result in their being improperly discarded in public places[4].

2.1.1 Best Practice Recommendations for Canadian Harm Reduction Programs

The *Best Practice Recommendations for Canadian Harm Reduction Programs* document provides detailed, evidence-based recommendations on a number of issues related to needle distribution and disposal[2]. For example, in addition to distributing sterile needles and other safer injection supplies, best practice recommendations for harm reduction programs include that they:

- distribute small biomedical waste disposal boxes for personal use;
- accept used needles back for disposal; and,

- provide safe needle disposal education to people who use drugs and other community members.

Other best practice needle disposal strategies include:

- working in accordance with local, provincial, and federal regulations regarding the disposal of medical waste;
- providing multiple options and locations for return and disposal of equipment;
- installing public disposal boxes;
- promoting pharmacy disposal; and,
- conducting community clean-ups to collect needles.

The following recommendations apply to harm reduction programs specifically:

- lengthening the hours of operation of harm reduction programs where used needles are accepted;
- adopting needle distribution policies instead of strict exchange policies at harm reduction programs that distribute supplies; and,
- providing safer spaces such as supervised injection facilities for people to use drugs.

For a full list of recommended best practices for Canadian harm reduction programs, see www.catie.ca/en/programming/best-practices-harm-reduction.

2.1.2 Increasing Needle Disposal Options Decreases Litter

Providing multiple options and locations, including publicly visible needle outdoor drop boxes that facilitate the return and proper disposal of needles does not encourage or increase injection drug use. Research has shown that providing public drop boxes decreases the amount of drug-related litter,[5] and that increased injection drug use is not reported in jurisdictions that have started or expanded their public needle disposal options[6]. Communities that initially express concerns or ambivalence prior to the installation of new needle disposal options often have positive things to say after seeing a reduction in drug-related litter[7-9]. Community involvement and public education about safe needle disposal is key to addressing local concerns.

2.1.3 Police

People who use drugs, in particular illicit drugs, face stigma, discrimination, and criminalization because of current drug laws, and social and cultural beliefs about the use of certain drugs. Improper disposal of needles sometimes occurs because individuals fear arrest if police find them in possession of injecting equipment[10]. Fear of arrest can also deter people from using disposal services if those services are used by police to surveil people who use drugs[11]. In that regard, enforcement practices can exacerbate issues related to needle litter or, conversely, facilitate safe disposal.

2.1.4 Needle Stick Injuries

Needle stick injuries are a common safety concern cited by community members about needle litter and an ongoing concern for workers that come into contact with discarded needles. Literature on needle stick injuries and risks of infection from blood-borne pathogens such as HIV, and Hepatitis B or C outside of healthcare settings, shows that injury from used needles found in outdoor spaces are generally considered to have a low risk of infection[2]. However, these needle stick injuries can be emotionally distressing, regardless of the risk, which often cannot be completely eliminated due to lack of knowledge regarding whether the previous user had an infection or not. There are no estimates of needle stick injuries occurring among staff in harm reduction programs or public health settings, but a

review of accidental needle stick injuries sustained by children in public places over a period of 19 years showed that none of the them acquired HIV or Hepatitis B or C infections[12].

2.1.5 Role(s) for People Who Use Drugs

A key principle of harm reduction programs and services is that people who use drugs should be meaningfully engaged in decision-making and delivery of services[13]. People who use drugs have an important role to play in needle disposal policies and services, which can include providing suggestions for siting disposal boxes, maintenance of disposal boxes, and planning or carrying out needle sweeps and other outreach activities that provide people who use drugs support and referrals. Education for people who use drugs about proper needle disposal is also an important part of harm reduction programs.

2.2 Legislation, Guidelines & Standards

2.2.1 Provincial Legislation

Occupational Health and Safety Act
www.ontario.ca/laws/statute/90o01

Occupational Health and Safety Act: Regulation 474/07 Needle Safety
www.ontario.ca/laws/regulation/070474

Environmental Protection Act
www.ontario.ca/laws/statute/90e19

Environmental Protection Act: Regulation 298/12 Collection of Pharmaceuticals and Sharps – Responsibilities of Producers
www.ontario.ca/laws/regulation/r12298

Environmental Protection Act: Regulation 347 General – Waste Management
www.ontario.ca/laws/regulation/900347

2.2.2 Guidelines

C-4: The Management of Biomedical Waste in Ontario
www.ontario.ca/page/c-4-management-biomedical-waste-ontario

2.2.3 Municipal Bylaw

Solid Waste Littering & Dumping of Refuse Bylaw: Toronto Municipal Code, Chapter 548, Littering and Dumping
www.toronto.ca/legdocs/municode/1184_548.pdf

2.2.4 Standards

International Standard: ISO 23907 Sharps Injury Protection – Requirements and test methods – Sharps containers
www.iso.org/obp/ui/#iso:std:iso:23907:ed-1:v1:en

Canadian Standard Z316.6-07 Evaluation of Single-Use and Reusable Medical Sharps Containers for Biohazardous and Cytotoxic Waste
www.scc.ca/en/standardsdb/standards/23380

Canadian Standards - Handling of Waste Materials in Health Care Facilities and Veterinary Health Care Facilities
www.scc.ca/en/standardsdb/standards/7607

2.3 Needle Disposal Boxes

2.3.1 Features of Needle Disposal Boxes

Needle disposal boxes are designed for the containment of used needles. They can be made from a variety of materials and come in a wide range of sizes, ranging from small portable containers to medium-sized wall mounted boxes to large drop box units designed to be placed outdoors.

Needle disposal boxes should have the following features[2, 14]:

- Be rigid to avoid puncturing of walls by needles;
- Not have removable lids and be tamper resistant;
- Be labelled as containing hazardous materials;
- Be able to withstand the weight of the waste without breaking, tearing or cracking;
- Be labelled with a fill line (boxes should not be filled more than 2/3 as this increases the chances of box malfunction, and therefore risk of injury); and,
- Large boxes that are to be placed outdoors on horizontal surfaces should not be able to topple over.

Some boxes have an outer casing made of metal, and an inner container made of plastic (sometimes called an insert) that once filled, is replaced.

A variety of suppliers to the City of Toronto manufacturer needle disposal boxes with these features. Some manufacturers also provide services that can include installation and/or maintenance of needle disposal boxes.

2.3.2 Recommendations for Selection, Evaluation, and Use for Needle Disposal Boxes

The recommendations from the US Centres for Disease Control (CDC) for decision-making about needle disposal options in healthcare settings[15] can be adapted for non-healthcare settings. They recommend analysis about needle boxes in four areas:

1) Functionality – that the boxes should remain functional during their entire usage (i.e., durable, closeable, leak proof, and puncture resistant);
2) Accessibility - that the boxes be accessible to people who use and/or empty them (i.e., conveniently placed);
3) Visibility – that the boxes are visible to people who use and/or empty them (i.e., be able to see how full they are); and,
4) Accommodation – that the design accommodates people who use and/or empty them (i.e., they should be easy to operate and require minimal worker training on how to maintain them).

The CDC has developed a tool to evaluate these four areas, which can be found online at www.cdc.gov/niosh/docs/97-111/.

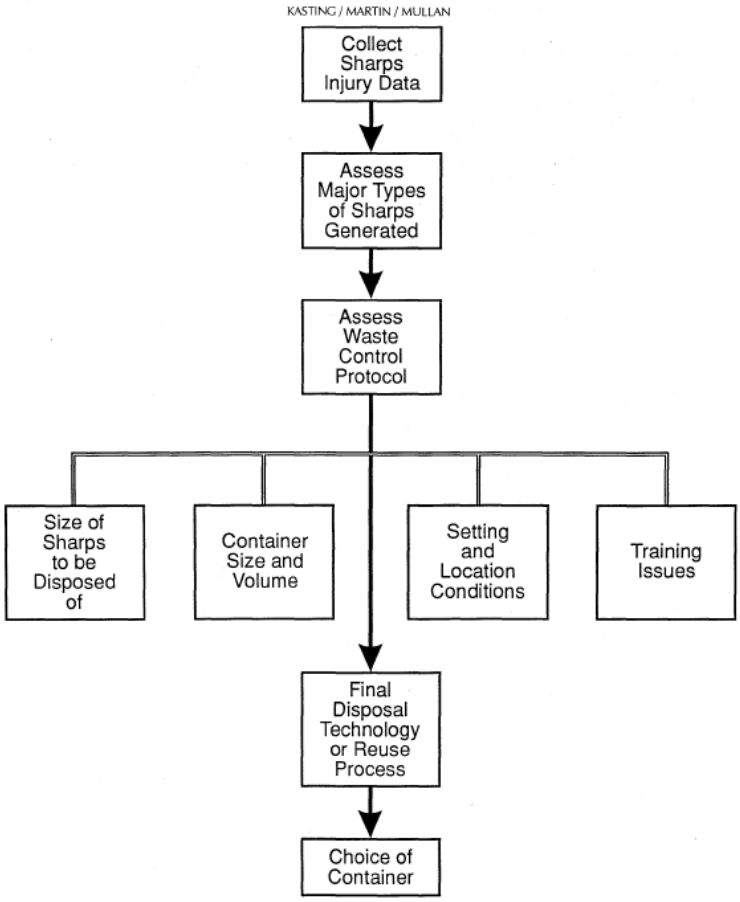
In addition, the CDC recommends[16] that a site-specific hazard analysis be carried out to inform decisions about needle disposal options, which includes the following:

- Assessment of size and type of needles to be disposed of;
- Assessment of the volume of needles to be disposed of;

- Assessment of the frequency of needle disposal box emptying and mounting bracket servicing by maintenance staff;
- Compliance with federal, provincial, and local regulations;
- Security requirements;
- Container transport or mobility needs;
- Environmental and disposal constraints; and,
- Economic considerations.

They also recommend that an individual or group should be given the responsibility for regular monitoring and maintenance of needle disposal boxes. Figure 1 below summarizes the steps they recommend in selecting needle disposal boxes.

Figure 1. Decision logic for needle disposal boxes from Kasting (1997)



2.3.3 Where to Place Needle Disposal Boxes

In general, in non-healthcare settings, needle disposal boxes are installed in areas where needle litter is present, sometimes called 'hotspots'. These areas can be identified by actual needles found by staff or the public, from requests for service calls related to needle litter made to the City of Toronto or from a site specific analysis that forecasts future need for needle disposal options.

Once an area has been identified, it is important to determine a good location for siting the needle disposal box. Siting needs to take into consideration the people who will use the box to dispose of needles, and the people who will empty and maintain the box. Involving peers (people who have lived

experience of drug use) in siting boxes can help ensure they are placed in areas most likely to be used by people to dispose of their needles. For example, peers may suggest that more discreet locations, such as placing disposal boxes inside each washroom stall (as opposed to communal areas of washrooms) may ensure the boxes are used more consistently.

When considering the people who empty and maintain outdoor boxes, the terrain may be an important factor to consider as they need to be maintained year-round.

The guidance for locating boxes in healthcare settings[17] is also relevant for non-healthcare settings, and includes placing boxes in a way that:

- Minimizes the chance of needle stick injury by making clear if the box is full;
- Minimizes unnecessary reaching or awkward postures for the people using or emptying the box by placing it below shoulder leave (if mounted on a wall); and,
- Minimizing the risk of accidental access by making it tamper proof.

2.4 Biomedical Waste Disposal

Biomedical waste disposal in Ontario is legislated under the *Environmental Protection Act (EPA)*[18]. Recommendations in *The Management Of Biomedical Waste In Ontario*[19] guidelines, which are produced by the Ontario Ministry of the Environment, Conservation and Parks must be followed by organizations that are biomedical waste generators, carriers, or receivers. The guidelines apply to organizations like healthcare providers, but they are recommended for other non-healthcare settings to consider when making disposal policies and practices. The guidelines have specific sections that apply to biomedical waste generators (sections 4 through 7), carriers (section 7) and receivers (section 8) of biomedical waste.

Organizations become officially registered as biomedical waste generators, carriers or receivers by registering with the Ministry of the Environment through the Hazardous Waste Information Network (HWIN), which is an online system that allows organizations to register (required annually) and carry out various required activities (e.g., create and process electronic manifests, pay fees, etc.).

The underlying purpose of the guidelines is to preserve the integrity of the environment and reduce potential public health risks through proper management of biomedical waste. The recommendations specific to needle disposal require that they be segregated from all other waste, and follow the containment, storage, transportation and disposal methods indicated below.

Figure 2. Universal biohazard symbol

2.4.1 Containment

- Boxes should be yellow, and labelled with a universal biohazard symbol (see Figure 2).
- Single-use or reusable needle disposal boxes are acceptable.
- A single-use needle disposal box should: be made of rigid materials that are puncture resistant and leak resistant, and have a lid which cannot be removed after the box is sealed.
- A reusable needle disposal box should be made of rigid materials that are puncture resistant and leak resistant, have a lid that is securely attached to the box that can be closed and locked when the box is full, and designed or intended by the manufacturer to be suitable for reprocessing and reuse.

2.4.2 Storage

When biomedical waste is centrally stored before transportation to future disposal sites, it should be stored in an area that is:

- secure, not accessible to the general public, and not adjacent to supply storage areas or areas used for food preparation or consumption; and,
- clearly marked with the universal biohazard symbol.

2.4.3 Transportation and Final Disposal

Biomedical waste may only be transported by an organization or waste management company for which a waste management system certificate of approval has been issued under the EPA, through registration with HWIN. Certificates of approval may include the kind of vehicle standards that must be adhered to such as the need for locked and cleanable storage compartments for the safe transportation of needle boxes. In general, vehicles must be appropriately designed and outfitted to accommodate the biomedical waste to be transported in the vehicle.

Final disposal can only be carried out by accredited waste management companies; there are guidelines for the incineration and non-incineration methods they must follow. Further details are available from the Ministry of the Environment:

- The Management Of Biomedical Waste In Ontario guidelines www.ontario.ca/page/c-4-management-biomedical-waste-ontario
- Hazardous waste management: business and industry www.ontario.ca/page/hazardous-waste-management-business-and-industry

2.5 Education and Training

Addressing needle disposal issues goes beyond installing and properly maintaining disposal boxes. Responding to community concerns while also responding to the needs of people who use needle disposal boxes, as well as occupational health and safety training are all important components of proper needle disposal management. Educating a variety of audiences about needle disposal issues is key.

Negative reactions to needle disposal options from workers or community members may come from a lack of knowledge about the benefits of this type of proactive approach[6]. Non-drug using community members may associate discarded needles with concerns about safety, perceived threats of crime or social distress[20]. These concerns persists even while rates of needle stick injuries remain low. It is critical that organizational efforts are guided by research, evidence, and consultation in order to manage the location-specific disposal issues that may arise, and to educate the public.

2.5.1 Community Education and Engagement

Community education strategies involve providing publicly accessible, relevant and accurate information about needle disposal[6]. The City of Toronto and Toronto Public Health currently use a number of recommended strategies to educate communities about needle disposal options in Toronto (see Table 1).

Table 1. Strategies, information and websites for community information about needle disposal in Toronto

Strategy	Information	Webpage
Promoting the location of needle disposal options	Outdoor needle drop boxes are available in a variety of locations in Toronto, and a map of locations is maintained by TPH	www.toronto.ca/community-people/health-wellness-care/health-programs-advice/harm-reduction-supplies-and-locations/needle-drop-box-locations-in-toronto/
Providing information about organizations that distribute harm reduction supplies	TPH supports 50+ programs across Toronto to offer harm reduction supplies and services, including needle disposal	www.toronto.ca/community-people/health-wellness-care/health-programs-advice/harm-reduction-supplies-and-locations/
Advising residents about how to report discarded needles	Call 311 if discarded needles are found on City property	www.toronto.ca/311/knowledgebase/kb/docs/articles/public-health/healthy-environments/health-hazard/needles-or-syringes-found-private-or-public-property.html
Educating people on how to dispose of a needle safely	Needle safety includes knowing how to handle needles and dispose of them properly	www.toronto.ca/community-people/health-wellness-care/health-programs-advice/harm-reduction-supplies-and-locations/needle-safety/

These webpages offer the public, as well as other city divisions, relevant evidence-informed needle disposal information. City divisions may need to provide further information to their staff or the public, and many organizations have produced more evidence-based artwork, instructions, posters and flyers related to needle disposal (See Appendix 1 for examples). For example, another strategy is providing people with relevant information about needle stick injury. A Canadian example of the information that could be included in this kind of education strategy is from Interior Health in British Columbia[21]:

Box 1. Example of community education on needle stick injuries, adapted from Interior Health BC

Community needle stick injuries – what to do and what is the risk?

Getting poked by a needle can be concerning. However, it is important to remember that the risk of infection from an improperly discarded needle in the community is extremely low. In the event of a needle stick injury, the following steps should be taken:

- Allow the wound to bleed freely. Do not squeeze the wound. This may damage the tissues and increase risk of infection.
- Wash the wound with soap and water. Do not apply bleach or alcohol to the wound.

Go to your local emergency department immediately for follow-up care. An assessment will be done to determine the need for post-exposure prophylaxis (e.g., medications and/or vaccinations to further reduce the risk of transmission). Baseline blood tests for Hepatitis B and C, and HIV will be done at this visit, with follow-up blood tests to be done over the next three months to make sure none of these viruses have been transmitted.

Publishing media releases in local press, including community and social media, when new needle disposal initiatives are undertaken is another recommended strategy[6]. Good community engagement practices include involving community groups in planning new needle disposal options (i.e., connecting with local business or community groups), and providing a contact person who can answer questions and address issues related to needle disposal as they arise. For an example, see http://www.kchc.ca/whats-new/sharps-bins-installed-in-kingston-parks/

Specific education for people who use drugs about proper needle disposal is also key to reducing discarded needles, and is a key part of the education provided to clients of harm reduction programs.

2.5.2 Occupational Health and Safety Training

Some workers in non-healthcare settings are more at-risk for needle stick injury than others (i.e., workers involved in waste disposal). Needle stick injuries that occur in workplaces can be a threat to workers' health because there is the possibility of transmission of blood-borne pathogens such as HIV or Hepatitis B or C. However, the risk of contracting a disease caused by a needle stick depends on a number of factors[22]:

- the depth of penetration of the needle;
- the amount of blood on the needle;
- when the needle was used;
- the health status of the person who used the needle; and,
- the immune status of the injured worker.

Under the *Occupational Health and Safety Act,* employers are responsible for:

1) Having control plans that minimize the chance of needle sticks injuries to their workers.
2) Providing training that details risks, reporting procedures, safe work practices and proper needle disposal methods.
3) Conducting incident investigations and putting into place control measures.
4) Providing workers with the equipment, tools and personal protective equipment (PPE) they need as well as training on proper use (i.e., tongs and/or gloves).

There are additional responsibilities for employers in healthcare settings (i.e., they are required to comply with the *Occupational Health and Safety Act's Needle Safety Regulation)*. Employer training and control programs should be tailored to the specific tasks that their employees carry out, and the level of risk for needle stick injury and possible transmission of HIV, Hepatitis B or C that is inherent in these tasks.

The City of Toronto *Infectious Disease/Infectious Agent* policy and guidelines outline the appropriate infection prevention and control practices to reduce the risk to City employees. They recommend that divisions develop job-specific safe handling procedures for discarded needles. When a City of Toronto worker sustains a needle stick injury at work, it must be reported to their manager, who is responsible for reporting it in the City's incident reporting system (QuatroSafety).

Strategies to prevent workplace needle stick injuries include[22]:

- Provide training for key staff on how to safely handle discarded needles (i.e., wear appropriate gloves, use tongs and discard needles in approved disposal boxes);
- Always wear gloves and use tongs to pick up garbage;
- Never reach into bushes/leaves to retrieve anything. Use a “picker” to drag an object to see what it is before handling;

- Do not reach with your hands for objects you cannot see;
- Perform routine sweeps of areas where there is a risk of discarded needles;
- Instruct staff to never dispose of needles in regular garbage;
- Install needle disposal boxes in public areas as appropriate; and,
- Promote immunization for Hepatitis B among those at higher risk for needle stick injury.

3 Guidance on Policy and Procedures

Organizational policies and procedures are a good way to demonstrate commitment to dealing with needle disposal issues that are of concern to workers and the public. Policies may be specific to needle disposal or refer to strategies and actions to reduce needle litter and the hazards of needle stick injury in existing policies (i.e., occupational health and safety). An example of an occupational health and safety procedure is included in Appendix 2.

3.1 Text for policy background and statements

The following sample text has been adapted from a guideline developed in New South Wales, Australia[6]:

Box 2. Sample text for a needle disposal policy adapted from New South Wales (2004)

Background

Needles, syringes, and other community sharps are generated in a wide range of non-clinical situations, including residential and commercial property, public areas and public facilities. Inappropriate disposal may represent a risk to employees, the community, and the environment.

Our organization is committed to maintaining high standards of workplace and public health and safety and environmental management. To fulfil these objectives it is necessary to properly manage the disposal of needles to provide safe and healthy environments for our client, workers, residents and visitors.

The aim of this policy is to clearly articulate how our organization is responding to needle disposal management issues, through the effective management of associated public and workplace risks.

Policy statement

The aim of this public and workplace health and safety policy is to work in partnership with the community and other stakeholders to:

- provide and maintain high standards of public and workplace health and safety that comply with or exceed the requirements of all relevant legislation, through effective needle disposal management
- provide services and infrastructure that maximize appropriate needle disposal and minimize the potential for needle stick injuries to occur to workers or community members
- regularly monitor and review the effectiveness of objectives, strategies and actions for proper needle disposal management.

3.2 Monitoring and Reporting

The monitoring and reporting of needle disposal issues must be tailored to needs of the organization, and the activities that are carried out. Monitoring systems across different divisions may need to be

coordinated, and new systems may need to be developed. The kind of data that can be useful in monitoring needle disposal issues are:

- Community complaints related to needle litter, which can include requests for more needle disposal options, verified reports of needle stick injuries, and/or requests for service calls for discarded needles;
- Employee reports about needle waste: reports from employees or contractors about needles found in workplaces, and/or any reported incidents of needle stick injuries to workers, volume of needles properly disposed of in waste management systems; and,
- Harm reduction program data such as the number of needles distributed and returned, and/or the volume of needles properly disposed of.

4 References

1. Public Health Ontario. *Provincial Infectious Disease Advisory Committee (PIDAC) Documents: Best Practice Documents*. 2018; Available from: https://www.publichealthontario.ca/en/BrowseByTopic/InfectiousDiseases/PIDAC/Pages/PIDAC_Documents.aspx.
2. Strike, C., et al., *Best Practice Recommendations for Canadian Harm Reduction Programs that Provide Service to People Who Use Drugs and are at Risk for HIV, HCV, and Other Harms: Part 1*. 2013: Toronto, ON.
3. BC CDC, *Harm Reduction Best Practices: Needle Distribution*. 2018.
4. BC CDC, *Harm Reduction Best Practices: Safe Needle Disposal*. 2018.
5. de Montigny, L., et al., *Assessing a drop box programme: a spatial analysis of discarded needles.* Int J Drug Policy, 2010. **21**(3): p. 208-14.
6. New South Wales Government, *Community Sharps Management*, Department of Health, Editor. 2004,2017: New South Wales.
7. Riley, E., et al., *Operation Red Box: A Pilot Project of Needle and Syringe Drop Boxes for Injection Drug Users in East Baltimore.* Journal of Acquired Immune Deficiency Syndromes & Human Retrovirology, 1998. **18**: p. S120-S125.
8. Klein, S.J., et al., *Increasing safe syringe collection sites in New York State.* Public Health Rep, 2008. **123**(4): p. 433-40.
9. Devaney, M. and L. Berends, *Syringe disposal bins: the outcomes of a free trial for city traders in an inner-city municipality Australia.* Subst Use Misuse, 2008. **43**(1): p. 139-53.
10. Chiu, J. and S. Burris. *Punitive Drug Law and the Risk Environment for Injecting Drug Users: Understanding the Connections*. in *Third Meeting of the Technical Advisory Group of the Global Commission on HIV and the Law*. 2011. Global Commission on HIV and the Law.
11. Parkin, S. and R. Coomber, *Injecting drug user views (and experiences) of drug-related litter bins in public places: a comparative study of qualitative research findings obtained from UK settings.* Health Place, 2011. **17**(6): p. 1218-27.
12. Papenburg, J., et al., *Pediatric injuries from needles discarded in the community: epidemiology and risk of seroconversion.* Pediatrics, 2008. **122**(2): p. e487-e492.
13. Jürgens, R., *"Nothing about us without us" - Greater, meaningful involvement of people who use illegal drugs: A public health, ethical, and human rights imperative*. 2008, Canadian HIV/AIDS Legal Network, International HIV/AIDS Alliance, Open Society Institute: Toronto.
14. International Organization for Standardization, *Sharps injury protection - Requirements and test methods - Sharps containers*. 2012: Switzerland.
15. CDC, *Selecting, Evaluating, and Using Sharps Disposal Containers*, U.D.o.H.a.H. Services, Editor. 1998: Atlanta, Georgia.
16. Kasting, C.H., L.S. Martin, and R.J. Mullan, *Sharps Disposal Containers: Selection, Evaluation, and Use.* Journal of the American Biological Safety Association, 1997. **2**(4): p. 47-57.
17. Occupational Health & Safety Agency for Healthcare (OHSAH), *Guidance for Locating Sharps Disposal Containers*. ND: Vancouver.
18. *Environmental Protection Act*. 1990.
19. Ministry of the Environment Conservation and Parks, *The Management Of Biomedical Waste In Ontario*, in *C-4*. 2016.
20. Bearnot, B., J.F. Pearson, and J.A. Rodriguez, *Using Publicly Available Data to Understand the Opioid Overdose Epidemic: Geospatial Distribution of Discarded Needles in Boston, Massachusetts.* Am J Public Health, 2018. **108**(10): p. 1355-1357.
21. Interior Health. *Safe Needle Disposal*. 2018; Available from: https://www.interiorhealth.ca/YourEnvironment/HarmReduction/Pages/Safe-Needle-Disposal.aspx.
22. Public Services Health & Safety Association, *Needle Stick Injuries: Protecting Workers in the Municipal Sector*. 2013: Toronto.

Appendix 1. Community Education Resources

Organization	Resources	Website
New South Wales Government (Australia)	Promotional materials for community sharps management	www.health.nsw.gov.au/csm/Pages/promotional-materials.aspx
City of Edmonton (Alberta, Canada)	Safe needle disposal information and toolkit	www.edmonton.ca/programs_services/graffiti_litter/safe-needle-disposal.aspx
Interior Health (British Columbia, Canada)	Safe needle disposal and needle stick injuries information	www.interiorhealth.ca/YourEnvironment/HarmReduction/Pages/Safe-Needle-Disposal.aspx
Health Products Stewardship Association (Ontario, Canada)	The Ontario Sharps Collection Program, mandated by the Environmental Protection Act, allows consumers to return their used needles to pharmacies and other collection sites across Ontario	http://www.healthsteward.ca/sites/default/files/SCPRackCard.pdf
Grey Bruce Health Unit (Ontario, Canada)	Poster "Be Smart With Sharps" with safe needle disposal and needle stick injuries information	https://www.publichealthgreybruce.on.ca/Your-Health/Harm-Reduction
Kingston Community Health Centres (Ontario, Canada)	Press release about outdoor needle disposal locations and link to their locations	http://www.kchc.ca/whats-new/sharps-bins-installed-in-kingston-parks/

Appendix 2: Example of a Needle Disposal Procedure

Sharps Collection Kit

1. PUNCTURE-RESISTANT SHARPS COLLECTION CONTAINER
2. PUNCTURE RESISTANT GLOVES
3. DISPOSABLE GLOVES
4. TONGS
5. LIQUID CAVISIDE – surface disincentive cleaning solution
6. BIOMEDICAL WASTE COLLECTION BAG (FOR LARGE ITEMS)

NOTE: If any of the above items are missing or require replacement, call your Area Facilities Office.

IF YOU FIND NEEDLES / SHARPS / BIOMEDICAL and ANATOMICAL WASTE

1. Take collection kit to the object, put on disposable gloves.
2. Wear heavy gloves over disposable gloves, to pick up the needles, sharps objects or other waste.
3. Hold needle tip away from you.
4. Place the needle and other objects in the sharps collector container.
5. To disinfect heavy gloves, pour small amount of CaviCide cleaning solution directly on fingertips of gloves, rub gently, and rinse with cold water.
6. To disinfect contaminated area pour small amount of CaviCide cleaning solution on the affected area, rinse area well with cold water
7. Dispose of disposable gloves into sharps collector container.

NOTE: When sharps container is three-quarters full call your Facilities Area Office for disposal and replacement.

HANDLING NEEDLE STICK INJURIES:

1. Any injury, scrape, puncture, etc., involving a needle, regardless of the degree of injury, must be reported to your supervisor immediately.

2. If the injury occurs, the staff person must go immediately to an outpatient department of a local hospital for blood tests and for treatment.

3. The needle/syringe must be kept, not thrown away, as it may be possible to analyse the residual blood products to determine if it is contaminated.

4. Supervisor must contact Human Resources Department of the injury and complete a Supervisor's Report of Injury and Disease Form.