

METHODS OF DISPOSAL OF HYPODERMIC NEEDLES

*An addendum to the
Guidelines on Infection Control in Dental Practice*

Malaysian Dental Council
December 2013

This document is an addendum to the 2007 Guidelines on Infection Control and gives specific instructions on acceptable methods for recapping of dental needles. The document was endorsed by the Malaysian Dental Council on 3rd December 2013 at its 104th meeting. It is mandatory that all dental personnel adhere to the instructions contained in this document.

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METHODS OF DISPOSAL OF HYPODERMIC NEEDLES

INTRODUCTION

In the past two years, the facilities under the Oral Health Programme of the Ministry of Health Malaysia have reported sharps injuries, the majority being needle stick injuries (NSI). The existing Guidelines on Infection Control in Dental Practice¹ give general instructions on handling of needles and other sharp instruments. Much is left to the interpretation of the operator. Ideally, all sharp instruments, including needles, should be disposed of directly by the operator, without recapping. In situations where this is not possible or the needle has to be recapped, then the guidelines in this document must be adhered to.

OBJECTIVES

The objectives of this addendum are to:

1. list the methods for needle disposal; and
2. outline the acceptable methods for recapping of needles.

The ultimate aim is to reduce the incidence of NSI among dental personnel in dental facilities.

¹ Guidelines on Infection Control in Dental Practice. Malaysian Dental Council & Oral Health Division, Ministry of Health Malaysia. 2007

A **hypodermic needle** is a hollow needle used with a medical syringe to inject fluids into the body or to draw fluids from it.

(The American Heritage Science Dictionary)

A **sharps bin** is a puncture-resistant and leak-proof container with a one-way top used to dispose of sharps.

(Medical Dictionary for the Dental Professions)

A sharps bin should be labeled with a bio-hazard label



METHODS FOR DISPOSAL OF NEEDLES

There are 2 methods for disposal of needles:

1. Direct Disposal
2. Disposal after recapping:
 - a. Using an Engineering Control Device; or
 - b. Using the One-Handed Scoop Technique

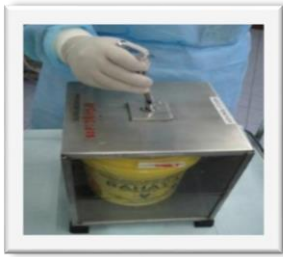
(See Appendix 1)

1. Direct Disposal

Ideally all needles should be disposed immediately after use without recapping, directly into a sharps bin or destroyed in a needle destruction device. This should be carried out by the operator himself. In some countries it is illegal to dispose of used hypodermic needles with domestic waste

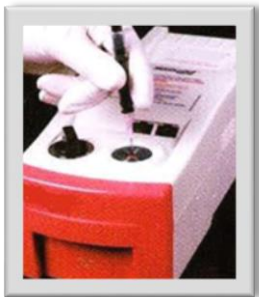


Disposal of needles
into a sharps bin
using pliers



Disposal of needles into a sharps bin with a device

Examples of Needle Destruction Devices



2. Disposal after Recapping

If direct disposal is not possible, needles should be recapped prior to disposal using an engineering control device. Only in circumstances where an engineering control device is not available should the one-handed scoop technique be used to recap the needle.

Appendices 2 and 3 contain some options for the disposal of hypodermic needles based on innovations for direct disposal and needle recapping by the personnel of the Ministry of Health Malaysia.

a) Disposal after Recapping using an Engineering Control Device

An Engineering Control Device is any device constructed for the safe handling and recapping of hypodermic needles. The device should be placed within arm's reach of the operator.



a) Before use, place the hypodermic needle with the syringe attached into the engineering control device to uncap the needle.



b) Uncap the needle and use the syringe. Leave the cap in the engineering control device.



c) After use, place the needle back in the cap and secure the needle.



- d) Remove the recapped needle with the syringe from the device



- e) Unscrew the needle using a no-touch technique (use a plier) and dispose of the needle into a sharps bin

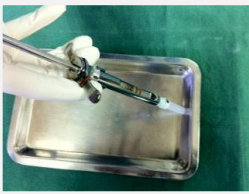


- f) Dispose of the local anaesthetic (LA) cartridges into the sharp bin

b) Disposal after Recapping using the **One – Handed Scoop** Technique



a) Before use, uncap the needle and place the cap on a flat surface.



b) After use, insert the needle into the cap without touching the cap and scoop the cap with the needle.



c) When the cap covers the needle completely, use a tweezer or any other device to secure the cap on the needle. Do not touch the cap with your hands.



d) Unscrew the needle using a no-touch technique (use of plier) and dispose into a sharp bin



e) Dispose of the LA cartridge into a sharp bin

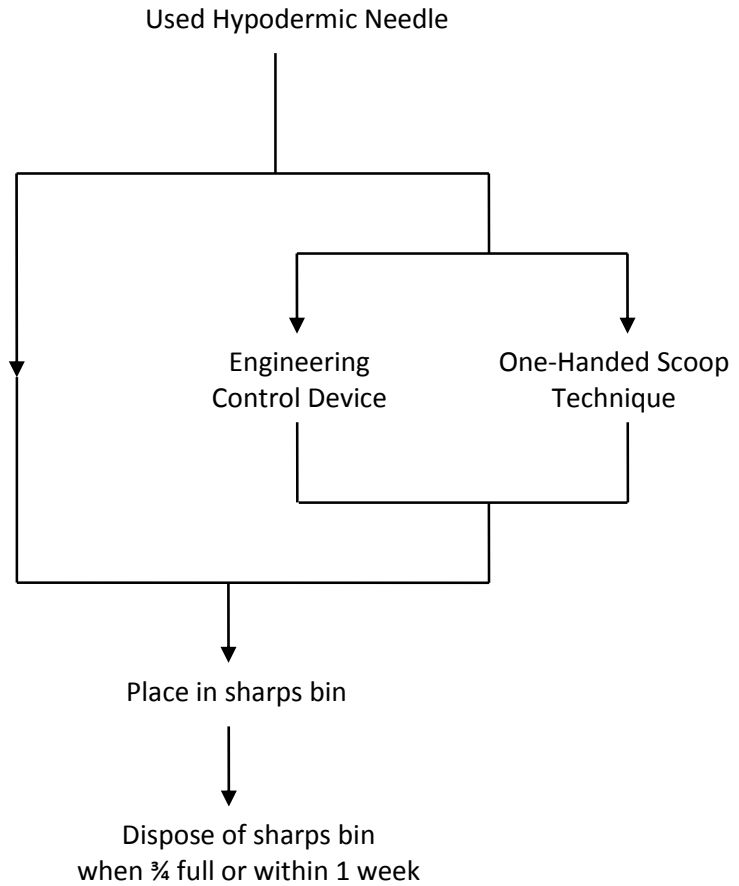
Additional Precautions

1. Under no circumstances should needles be manually bent.
2. When staff are injured/ pricked by a sterile needle, the needle must not be used and must be disposed of immediately.
3. When staff are injured/pricked by a used needle, please follow the procedures in Section 6.3 of the Guidelines on Infection Control in Dental Practice¹ (See Appendix 4).
4. Further references may be sourced from:
 - a) Chapter 4 of the Pocket Guidelines for Standard Precautions², Occupational Health Unit, MOH.
 - b) Chapter 1, Part 5 and 6 of the Sharps Injury Surveillance Manual³.

² Pocket Guidelines for Standard Precautions. Occupational Health Unit, Ministry of Health Malaysia. 2002.

³ Sharp Injury Surveillance. Occupational Health Unit, Ministry of Health Malaysia. 2007

FLOW CHART FOR DISPOSAL OF HYPODERMIC NEEDLES



**INNOVATIONS FOR DIRECT DISPOSAL OF
HYPODERMIC NEEDLES**

Ministry of Health Malaysia

A. Smart Needle Separator 2-SNS-2 (Perak)

Nordin Yaacob, Yusri Salleh, Zulkarnain Ab Rahman, Noorizam Isjak, Masayu Tajudin & Norhayati Abd Rani

Needle cap holder designed to fit over a sharps bin.



B. NR 2 (Kelantan)

Azuar Zuriati Abd Aziz, Che Maziah Che Husin, Mat Yusof Saamah, Asma' Abdullah & Mahani Husain





- a) Press the buttons on the holding component to open the aperture



- b) Insert the needle into the aperture, release the button and turn the syringe in a counter-clockwise direction.



- c) Press the button again to release the needle into the sharps bin. Release the button.

C. Smart Needle Remover (Kelantan)

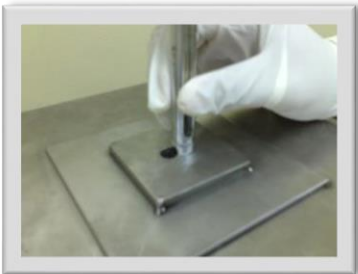
Mat Yusof Saamah, Zainudin Yaacob & Meran Mat Noor

Foot operated needle remover fitted over a sharps bin

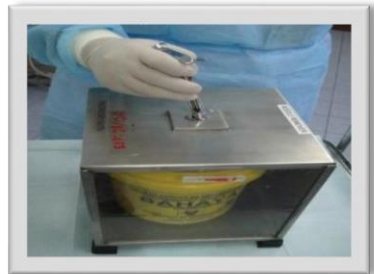


D. NT Injury (Selangor)

Morni Ab Rani & Saiful Saidan Daud



b) Insert the needle and lock it into place.



a) Turn the syringe in a counter-clockwise direction to unscrew the needle. Unlock the needle and let it fall into the sharps bin.

E. NSI Needle Remover (Negeri Sembilan)

Saliza Sani & Mohd Nor Lebai Juri



- a) Place the needle-holding device on the sharps bin



- b) Open the aperture using the controller. Insert the used needle into the aperture and release the controller to hold the needle. Turn the syringe in a counter-clockwise direction to unscrew the needle.



- c) Remove the syringe and use the controller to release the needle into the sharps bin.

F. Needle Grip Removal (Terengganu)

Nadia Hashim, Habsah Hamid, Megat Ahmad Izzudin Megat Abd Kahar, Hanifah Mat & Norasmiah Abd Rahman



- a) Place the needle holding device on the sharps bin
- b) Open the aperture using the controller. Insert the used needle into the aperture and release the controller to hold the needle.



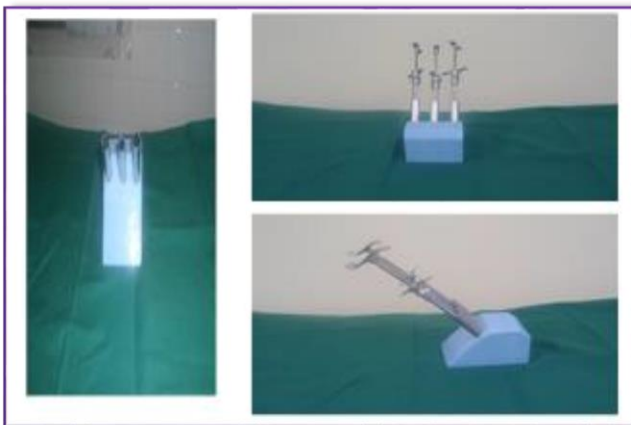
- c) Turn the syringe in a counter-clockwise direction to unscrew the needle.
- d) Remove the syringe and use the controller to release the needle into the sharps bin.

INNOVATIONS FOR RECAPPING OF HYPODERMIC NEEDLES

Ministry of Health Malaysia

F. NRH Versi 2 (Needle Recapping Hub) (Perak)

Zulkernaen Hafiz Mohd Juri, Shazrina Mat Jenan, Zaidah Ghazali, Norizan Abd Wahab, Marhamah Mohamad, Jafri Jamaluddin, Rozana Hamid & Vanitha Marimuthu



G. NT Injury (Selangor)

Morni Ab Rani & Saiful Saidan Daud



Stand for Needle Recapping Hub and sharps bin with a built-in needle holding device.

MANAGEMENT OF EXPOSURE INCIDENTS

(Excerpt from Guidelines on Infection Control in Dental Practice)

Management of Exposure Incident

1. At the Dental Clinic

1.1. Treat the exposure site.

- Decontaminate the exposure site immediately:
 - Wounds and skin sites – wash with soap and water,
 - Mucus membranes – flush with water,
 - Eyes – rinse gently and thoroughly with water or normal saline with eyes open
- There is no evidence that use of antiseptics or expressing fluid by squeezing the wound further reduces the risk of transmission of blood-borne pathogens
- If the procedure that is being done at the time of the exposure has to be completed – cover the injured site on the hand with a dressing before wearing gloves.

1.2. Inform the employer and/or immediate superior and document the incident.

1.3. Refer to Hospital/ Health Clinic according to local guidelines.

2. Collection of Information

Important information needs to be collected which is necessary for the subsequent management of the exposure.

2.1. Date and time of exposure.

2.2. Details of the procedure being performed:

- what procedure was being performed when the exposure occurred,
- where and how the exposure occurred,
- whether the exposure involved a sharp device, type and brand of device and how and when during its handling the exposure occurred.

2.3. Details of the exposure.

For a percutaneous injury, this includes:

- The depth of the wound,
- The gauge of the needle,
- Whether fluid was injected.

For a skin or mucous membrane exposure, this includes:

- the estimated volume of material,
- the duration of contact,
- the condition of the skin (e.g. chapped, abraded, or intact).

3. Important Points to Note

Evaluation and testing of patient:

- If the infection status of the patient is not known, the patient is informed of the incident and a proper informed consent for testing is taken after counselling. Testing is done preferably on the day of the incident. Confidentiality must always be maintained. If the source is seronegative and with no clinical symptoms, no further testing is done.

Evaluation and baseline testing of exposed OHCW:

- The exposed OHCW is referred to the identified physical evaluation and baseline testing within hours.

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