

Local Procedure



Health
Hunter New England
Local Health District

ADMINISTRATION OF INJECTABLE MEDICATIONS (INCLUDING INSULIN) TO INPATIENTS WITH DIABETES MELLITUS USING PEN DEVICE

Sites where Local Procedure applies	John Hunter Children's Hospital
This Local Procedure applies to:	
1. Adults	No
2. Children up to 16 years	Yes
3. Neonates – less than 29 days	No
Target audience	Nurses, medical staff and parent/carers and diabetes educators
Description	Provide a clear process for the appropriate administration of injectable medications for diabetes mellitus including insulin

[Go to Procedure](#)

Keywords	Diabetes; injectable; medications; insulin; needle-stick injury (NSI); pen, needle, injection
Document registration number	JHCH 12.1
Replaces existing document?	No
Related Legislation, Australian Standard, NSW Ministry of Health Policy Directive or Guideline, National Safety and Quality Health Service Standard (NSQHSS) and/or other, HNE Health Document, Professional Guideline, Code of Practice or Ethics:	
<ul style="list-style-type: none"> • PD2013_043 Medication Handling in NSW Public Health Facilities • PD2017_032 Clinical Procedure Safety • Medicines Requiring a Double-Check When Administered to Adults PD2013_043:PCP 9 • Use of Generic Drug Names PD2013_043:PCP 12 • Use of Multi-Dose and Single-Use Containers of Medicines PD2013_043:PCP 17 • Administration of Time-critical and time Sensitive Medicines PD2013_043:PCP 26 • Medication Safety in HNE Health PD2013_043:PCP 31 • Patient's Own Medications - Handling and Storage in Hospital PD2013_043:PCP 32 • Safety Notice 009/17 High Concentration Insulin Products • National Standard 4 Medication Safety 	
Local Procedure note	This document reflects what is currently regarded as safe and appropriate practice. The procedure/s require mandatory compliance . If staff believe that the procedure/s should not apply in a particular clinical situation they must seek advice from their unit manager/delegate and document the variance in the patient's health record.
Position responsible for the Local Procedure and authorised by	JHCH Clinical Quality and Patient Care Committee
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Date authorised	October 2020
This document contains advice on therapeutics	No
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Note: Over time links in this document may cease working. Where this occurs please source the document in the PPG Directory at: <http://ppg.hne.health.nsw.gov.au/>

PURPOSE AND RISKS

In-patients with diabetes mellitus who are competent to do so are encouraged to be involved in the management of their diabetes, including the use of their own pen devices and needles for the administration of injectable diabetes medications. This includes administration by a parent/carer. There is a risk of needle stick injury (NSI) to health professionals if staff handle the standard pen needles.

Use of generalised injection equipment such as syringes and needles carry the risks of:

1. Inaccurate doses
2. Needle-stick injury

Introduction of pen needle safety devices (PNSD - BD AutoShield™ Duo 5 mm) in the hospital setting has shown a reduction of NSI compared to standard pen needles and insulin syringe. The use of calibrated pen devices also reduces the risk of dosing error especially for insulin.

Risk Category: *Clinical Care & Patient Safety*

GLOSSARY

Acronym or Term	Definition
BGL	Blood glucose level
CGMS	Continuous Glucose monitoring system
HNELHD	Hunter New England Health District
IIMS	Incident Information Management System
MRN	Medical Record Number
NDSS	National Diabetes Service Scheme
NSI	Needle Stick Injury
PNSD	Pen Needle Safety Device- BD AutoShield™ Duo 5mm

PROCEDURE

This procedure requires mandatory compliance.

CLINICAL PROCEDURE SAFETY LEVEL

Every clinician involved in the procedure is responsible for ensuring the processes for clinical procedure safety are followed. The following level applies to this procedure (click on the link for more information):

[Level 1 procedure](#)

Pre-procedure

STOP and confirm the following before commencing the procedure:

- Patient identification using three core patient identifiers (Name – family and given names, date of birth and Medical Record Number - MRN)

- Procedure verification – procedure + site/side/level, where appropriate, matches consent
- Allergy/adverse reaction check
- Anticipated critical events
- Verbal **consent** to be obtained, written consent is not mandatory
- If Patient/parent/carer is willing to self-administer the medication under supervision
- Required equipment assembled and given to patient and expiry date of medication confirmed
- Medication dose to be administered confirmed with patient/parent/carer

Staff Preparation

It is mandatory for staff to follow relevant: “Five moments of hand hygiene”, infection control, moving safely/safe manual handling, documentation practices and to use HAIDET for patient/carer communication: **Hand hygiene Acknowledge, Introduce, Duration, Explanation, Thank you or closing comment.**

Nursing staff should not recap and/or remove a standard pen needle from an injectable pen device.

- All inpatients or their parent/carer must be assessed by medical, nursing staff and/or diabetes educator to determine if they are competent to safely self-administer an injectable medication (refer to Patient preparation – Procedure steps). If a patient/parent/carer is not deemed competent for self-administration, nursing staff should administer the injectable medication using a Pen Needle Safety Device (PNSD).
- Standard pen needles and PNSDs are **single use only** – they are to be attached to the medication pen immediately prior to the injection and removed immediately after the injection and disposed of into a sharps disposal container
- Sharps disposal units must be at patient bedside, and sharps placed into this container by patient/parent/carer
- Insulin and other diabetes/obesity medication pen devices are designed for **single patient use**.
- Nursing staff assisting inpatients to administer insulin/obesity medications should be familiar with the injectable medication pen devices.
- If unfamiliar with the diabetes/obesity injectable medication pen device being used, nursing staff should contact pharmacy or the diabetes team to obtain instructions.
- All pen devices are to be kept at room temperature
- Pen devices must be labelled with the patient’s label and kept in a locked medication trolley or in the medication/treatment room
- It is preferable that a needle length no longer than 6 mm is used with all pen device injections
- Pen devices must be discarded 28 days after first use regardless of manufacturer’s expiry date listed on the device. The date of first use should be noted on the patient label attached to the pen device.
- On discharge, the pen device can only be sent home with the patient if they are continuing on the same medication. Otherwise, the pen device is to be discarded in a sharps disposal container.
- Inpatients who commence insulin or non-insulin injectable medications during their admission and who will be discharged on injectable therapy must receive appropriate education prior to discharge. This education may be provided by the diabetes team where available, diabetes educator OR appropriately trained nursing staff. **Where a diabetes team or educator is available, ensure early referral i.e. on the day of commencing the injectable medication.** Follow-up with the patient’s general practitioner, local diabetes educator or diabetes team should be arranged prior to discharge.

Please note: PNSD are for **hospital use only** and are not subsidised for community use through the National Diabetes Service Scheme (NDSS)

Equipment Requirements

- Alcohol based hand rub
- Personal Protective Equipment
- Prescribed medication pen device
- Pen needle safety device

Patient Preparation

Patient/parent/carer must be assessed by medical staff or diabetes educator as competent to perform self-administration of diabetes/obesity injectable medication. Patients/parents/carers new to these medications must receive appropriate education prior to commencing self-administration of diabetes/obesity injectable medications.

If they have not been deemed competent to self-administer, staff must use PSND

Procedure Steps

Required equipment provided to patient

Medication dose confirmed with patient/parent/carer prior to dialling up

FOR INSULIN:

1. Patient/parent/carer to wash their hands or offer alcohol-based hand rub or washer to patient to clean their hands
2. Check expiry date on insulin pen – replace if out of date or greater than 28 days after first use.
3. Check patient label to ensure that it is the correct patient.
4. Remove the pen cap from the insulin pen and put aside, if patient's own pen
5. Check that clear insulin (non-protaminated insulin) doesn't have any lumps, flakes or is discolouration (dirty insulin). If it contains any lumps, flakes or is discoloured, supply patient with a new pen (ideally allow the pen to reach room temperature prior to administering injection). Return the discarded insulin pen to pharmacy for notification to the supplier and disposal.
7. Take a needle and remove the paper seal. Discard the paper seal.
8. Holding the outer cover, screw the needle onto the insulin pen (you may feel a little resistance from the rubber bung) until the needle is tightly applied. Make sure the needle is screwed on straight.



9. Remove the outer plastic cap.
10. Ensure the pen needle is attached correctly and working. Dial up 2–3 units of insulin by turning the dose counter, point the insulin pen down and depress the button. Look for insulin on the needle tip; if no insulin is seen repeat the process. If no insulin is seen after 3 attempts, remove and discard the needle and apply a new needle.
11. Dial up the prescribed dose of insulin.
12. Determine the injection site – the anterior abdomen is preferred. Avoid any areas of scarring, inflammation or lipohypertrophy. The injection site should be at least 3 cm from the umbilicus or any drains or other applied devices e.g. CGMS.
13. Hold the insulin pen in one hand with your thumb away from the button and insert needle at 90 degrees into the skin in one continuous motion until the WHITE SLEEVE touches the skin and a click is heard. Skin stabilisation may be required for loose or soft skin.



14. Maintain constant pressure against the skin.
15. Push down on the button to deliver the dose (until you see a 0 in the dose counter).
16. Leave the needle in the skin and count to 10 AFTER the button is fully depressed to zero.
17. Once the entire dose is delivered, remove the insulin pen from the abdomen. A RED indicator band shows the Safety Shield is locked.



19. DO NOT place your fingers at either end of the pen needle shields. Place the pen needle into a sharps container.

20. Replace pen cap on insulin pen and return the insulin pen to a locked patient medication trolley or treatment room (as per local policy)

Post procedure

- Document procedure in patient's health care record or Radiology Information System
- Provide advice for clinical handover to staff caring for patient
- Label specimen/images correctly
- Arrange post procedure tests where clinically relevant
- BGL monitoring

Alert – Contraindication: Nursing staff must always ensure injectable medication is in date and insulin is either clear or uniformly cloudy on resuspension prior to administration

FOR NON-INSULIN/OBESITY INJECTABLE DIABETES MEDICATIONS:

For those in an injectable medication pen devices that can use a standard PNSD follow steps 1 to 3 and 6 to 8 as above

Staff need to be familiar with the particular medication being injected and how the particular pen device works. These medications are often at pre-set doses within the pen device or may require additional steps to deliver the dose of medication.

For patients using injectable medications that require a specific pen needle that comes supplied with the medication, patients must be able to self-administer or be educated in the self-administration of the medication as the PNSD WILL NOT fit these devices and, as such, the risk of needle-stick injury to health staff is increased.

If staff are unfamiliar with using the pen device, please consult with the pharmacist or diabetes educator before attempting to deliver the medication.

Post procedure

- Document procedure in patient's healthcare record
- Provide advice for clinical handover to staff caring for patient
- Ensure patient's diabetes medication pen device is labelled correctly
- Regular BGL monitoring

IMPLEMENTATION, MONITORING COMPLIANCE AND AUDIT

Communication and implementation of this document will be provided by publication on the HNELHD intranet.

Resources, education and training will be provided by the Diabetes Educators and Clinical Nurse Educators at JHCH.

Clinical Nurse Educators will be trained to provide in-service education to nursing staff at JHCH.

The effectiveness and compliance with this clinical procedure across the HNELHD will be reviewed every three years and its utility in ensuring safe administration of diabetes injectable medications by gathering information from:

- Needle stick injuries to health staff recorded on IMS+
- Medication misadventure events recorded on IMS+
- Feedback received about the clinical procedure

It is the responsibility of each nursing unit manager to ensure compliance with this procedural guideline by their nursing staff.

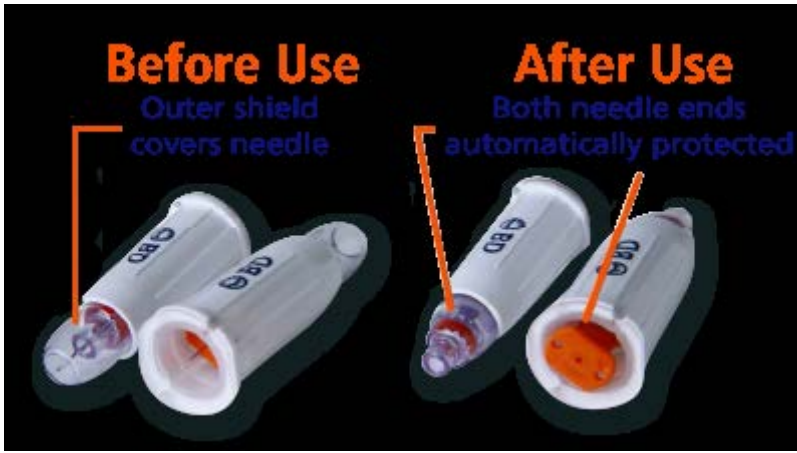
APPENDICES

Appendix 1: Images for Standard Pen needles, Pen Needle Safety Device (PNSD) – BD AutoShield™ Duo



Safety Pen Needle Device





Video Clip demonstrating how to use the BD AutoShield Duo safety pen needle

Useful Links <https://www.bd.com/en-us/offerings/capabilities/diabetes-care/pen-needles/bd-autoshield-duo-pen-needle>

FEEDBACK

Any feedback on this document should be sent to the Contact Officer listed on the front page.