



Home > Policies & Procedures > Clinical Documents > Medication Use Manual > Insulin - Subcutaneous Administration Via Prefilled Insulin PEN

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<b>POLICY</b>	<b>Manual:</b> Clinical	<b>Section:</b> Medication Use	<b>Code No.:</b> MU I004	<b>Old Code No.:</b>
<b>Title:</b> Insulin - Subcutaneous Administration Via Prefilled Insulin PEN			<b>Original Effective Date:</b> Oct 25, 2016	
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<b>Cross Index:</b> <a href="#">I I005</a> , <a href="#">MU T001</a> , <a href="#">After Hours Stock list</a> , <a href="#">MU H003</a> , <a href="#">MU M003</a>	<b>Authoring Committee/Program/Dept:</b> Medication Safety Committee		<b>Approved By:</b> AMC	

**As an exception, AMC has approved the use of combined policy and procedure in this document, notwithstanding accepted practice to have policy and procedure as separate documents.**

**POLICY**

BE AWARE, DO NOT SHARE

ONE PEN, ONE PERSON

With the exception of Emergency Department Admitted (ERA) patients, all subcutaneous doses of insulin (including STAT and one time doses), will be administered with prefilled insulin pens to the following:

- all inpatients 18 years of age or older AND
- all inpatients on the Child and Adolescent Mental Health unit

Insulin will be dispensed according to the prescriber's order and Southlake's [Therapeutic Interchange of Medications](#) policy. Patients may self-administer and/or use their own pen(s) if so ordered by the prescriber.

Each insulin pen, including patient's own pens, must be labeled with the patient name, and are single person use.

Pens must NEVER be shared, even if the needle is changed.

A new needle must be used for each dose of insulin.

The BD Autosheild Duo Safety Needle will be used for all doses including doses administered by the nurse/midwife from patient's own pen.

A patient self administering with their own pen(s) may use their own needle.

Insulin stocked in the unit medication fridges shall be dispensed from the AcuDose patient profile for the initial order. The nurse/midwife will label the pen with the patient name on the pen barrel and will fill in the expiry date label. All other insulin pens will be dispensed patient specific from the Pharmacy or obtained from the after hours stock (refer to [Locating Medications when Pharmacy is Closed](#)). Once removed from a refrigerator, the pen will always be stored in the patient specific medication drawer.

**High Alert Medication** - All doses of insulin must have an [independent double check](#) prior to administration.

All administration of insulin, including patient self administration, will be under nursing/midwife observation and supervision.

The nurse/midwife will document all doses on the MAR as per usual procedure (refer to [Medication Administration - Responsibilities of Health Care Professionals](#)).

Insulin pens will not be used to prepare intravenous infusions.

**Patients learning to use insulin pens:**

To provide continuity of care and meet patient learning needs, diabetic patients identified by the prescriber will be educated to utilize an insulin pen and administer their own insulin during their hospitalization. There must be an order for self administration by the prescriber and a referral to the Diabetes Education Centre should be in place.

Note all the below formulary insulin pens are **latex free**.

**PROCEDURE****Purpose:**

- To describe the process for safe and effective administration of subcutaneous doses of insulin utilizing prefilled insulin pens.

**Responsibility:**

- Prescriber
- Nurse
- Midwife
- Pharmacist
- Pharmacy Technician

**Equipment:**

- Insulin Pens
- Auxiliary labels - 'High Alert'; 'One Pen One Person'; 'Discard after 30 days Exp date:\_\_\_\_\_', tamper evident seal; patient name label (the pharmacy system label for Pharmacy or the patient addressograph label on the unit)
- alcohol swabs
- BD Autosheild DUO Safety Needle
- Preprinted prescription label - available on the nursing unit by ordering distribution item #49353 (Units to add the label order to their paper order from Distribution)

**Method:****STORAGE:**

1. Store unopened insulin pens in the refrigerator. Once opened all pens are kept in the patient specific medication drawer.
2. Insulin lispro (Humalog), insulin Human regular (Humulin R) and insulin glargine (Lantus) pens will be available in most inpatient unit medication fridges. All other insulin pens will be stocked in Pharmacy or the designated after hours unit (refer to [After Hours Stock List](#))
3. Inpatient units - Vials of insulin human regular (Humulin R - 3 mL) for preparing intravenous infusions will be stocked in the Critical care units, CVS, and CAM.

**LABELING:**

Pharmacy will label all pens with a tamper evident seal, 'One Pen One Person' and 'High Alert' auxiliary labels, and an expiry label "Discard after 30 days. Exp date: \_\_\_\_"

**DISPENSING (refer to [Appendix A Formulary Guide for Insulin Pens](#)):**

1. Obtain floor stock insulin pens from the AcuDose fridge (first order or refill dose) **USING THE PATIENT PROFILE** (or using the correct drug name if using after hours over-ride) in order to ensure accurate inventory numbers and to ensure Pharmacy is aware when stock needs replenishing.
2. Label the insulin pen barrel with the patient name. Use the space beside the dose window. Pharmacy will use the pharmacy system generated label; on the patient care unit a patient addressograph label will be used. Insulin pens **MUST** be labeled with the patient name prior to use.
3. The nurse/midwife **MUST** complete the expiry when opening a pen for the first time. The expiry date is 30 days after removal from the fridge.
4. During Pharmacy hours, pens will either be dispensed from Pharmacy, or depending on what is stocked on the unit, from the medication fridge on the unit via the AcuDose patient profile.
5. After Pharmacy hours, obtain required insulin pens using over ride on the unit AcuDose or from the designated after hours locations. Always follow the same procedure to add patient name addressograph label to the pen and fill in the expiry date label.
6. Store open pens in the patient specific medication drawer. Pharmacy technicians will leave the pens in the patient drawer when completing the 24 hour medication exchange.
7. Use a separate pen for each type of insulin ordered per patient.
8. Discard any insulin pen found without a patient name label or an expiry date.
9. Discard Pens in the pharmaceutical waste white pail when necessary. Remove the patient name labels prior to disposal. **DO NOT** return used pens to Pharmacy.
10. Transfer insulin pens along with all other medications when moving patients to other nursing units.

**Performing the Injection**

(With all pens)

Refer to [Appendix C - Pen Instruction Guide](#)

When retrieving any insulin pen:

- Ensure it is labeled with appropriate patient's name and expiry date.
  - Ensure to also check expiry date of patient's own pen(s) if they are to be administered.
  - If patient has more than one Pen in use, ensure the correct Pen and insulin are administered.
  - Ensure there is sufficient insulin in the pen for the required dose.
  - If using the pen for the first time, ensure the tamper seal is still in place prior to first use.
1. Cloudy insulin - to re-suspend the insulin suspension roll in hands and invert the pen 10-20 times gently
  2. Cleanse rubber seal on pen with alcohol swab prior to attaching the pen needle.
  3. Attach needle - refer to [Appendix B](#) and [Appendix C](#)
    - a. Push and twist pen needle onto the pen by holding needle hub and twisting pen clockwise.
    - b. Remove needle cover but leave the white plastic shield. DO NOT touch the white shield at any point prior to the injection as this may activate the safety mechanism making the pen needle unusable.
  4. Prime Pen Needle:
    - a. Dial a dose of 2-4 units.
    - b. Hold Pen with the needle pointing upwards and press the button all the way in
    - c. Check that insulin comes out. If not, repeat this step until drops or a stream of insulin comes out of needle. If insulin does not come out after 3 attempts, attach a new needle and try again
    - d. Be sure to shake out any of the primed insulin that may have collected in the shield.
  5. Dial the prescribed dose on the pen.
  6. **Obtain independent double check.**
  7. [Identify patient](#) using two patient identifiers.
  8. Choose injection site (abdomen is best). Rotate sites and document the area of injection on the MAR (i.e. RUQ, LLQ etc.).
  9. Cleanse the skin with an alcohol swab and allow to dry for 60 seconds.
  10. Insert the needle at 90 degree angle (no pinch required), and press down until the upper edge of the white needle shield meets the skin and engages (there is an audible click when engaged). Inject insulin dose by depressing the button on the end of the pen with the thumb. **Leave the needle in the skin for AT LEAST 10 SECONDS** to ensure the dose has been delivered; the display on the pen will return to 0 if full dose delivered.
  11. Once dose is delivered, lift the pen away from the skin. The inner shield of the needle will automatically deploy and lock in place. A red indicator band will appear confirming the shield is locked in place and that the pen needle has been used.
  12. Remove needle by holding the pen needle by the white sleeve and twist the pen counterclockwise; place needle in sharps container
  13. RETURN PEN TO PATIENT MEDICATION DRAWER. (Do not store in fridge).
  14. Document dose administered on the MAR.
  15. Any empty or discontinued insulin pen should be discarded in the pharmaceutical waste white pail (remove patient identifier).

Note: if the patient is self-administering, the nurse/midwife checks the [patient's identification](#) and supervises the patient during the injection, providing any appropriate instruction and ensuring the patient accurately follows steps 1-5 and 8-12 above. For step 6, the nurse/midwife will conduct the double-check with the self-administering patient.

#### When Patient Discharged

- Insulin pens may be discharged home with the patient if they are to continue on the insulin; the pen MUST have a complete prescription label added to the pen prior to dispensing it to the patient. Remove the previous Pharmacy label or addressograph label prior to placing the new discharge label.
- Patient must have insulin pen education provided prior to discharge.
- Use the preprinted prescription label (these will be made available on the floor ordered through Distribution item #49353) - fill in the patient name, date of dispense, prescriber name, name of insulin, dose and frequency. The dose and frequency used on the label must match the discharge prescription.
- Verify the pen expiry date is completed and the pen is not expired.

#### Special Considerations:

Not Applicable.

#### Appendices:

##### Appendix A - Visual Guide to Southlake's Formulary - Pre-filled Insulin Pens





**HUMULIN R KWIKPEN** (Insulin Regular)  
**Onset:** 30-60 min **Peak:** 2-4 hrs **Duration:** 5-8 hrs



**HUMULIN N KWIKPEN** (Insulin NPH)  
**Onset:** 1-3 hrs **Peak:** 5-8 hrs **Duration:** up to 18 hrs



**LANTUS SOLOSTAR** (Insulin Glargine)  
**Onset:** 90 min **Peak:** No peak **Duration:** up to 24 hrs



**LEVEMIR FLEXTOUCH** (Insulin Detemir)  
**Onset:** 90 mins **Peak:** No peak **Duration:** 18-24 hrs



**HUMALOG MIX 25 KWIKPEN** (Insulin Lispro 25/75)  
**Onset:** 10-15 min **Peak:** 1-2<sup>1/2</sup> hrs **Duration:** up to 18 hrs



**HUMALOG MIX 50 KWIKPEN** (Insulin Lispro 50/50)  
**Onset:** 10-15 min **Peak:** 1-2<sup>1/2</sup> hrs **Duration:** up to 18 hrs



**HUMULIN R KWIKPEN** (Insulin Regular)



## HUMULIN N KWIKPEN (Insulin NPH)

### Appendix B - BD AutoShield Duo Instructions (click [here to view larger image](#))

**BD AutoShield® Duo**  
SAFETY NEEDLE WITH double SELF-LOCKING SYSTEM FOR INJECTION PEN  
Instructions FOR USE FOR SIZE 30 (0.30mm) x5mm

Peel tab, Needle size, White sleeve, Inner shield, Needle, Inner needle cap, Outer cap, Injectionpen connector, Inner needle cap

**1 Attach the needle to the injection pen to Administer the injection.**

**2 Administer the injection.**

**3 Remove the needle from the injection pen.**

1.1, 1.2, 1.3, 2.1a, 2.2, 2.3, 2.1b, 3.1, 3.2, 3.3

Images provided by BD Medical – Diabetes Care

Injectionpen connector protected

Protection shield activated with red indicator band

1


### Appendix C - Insulin Pen Instruction Guide


## Insulin Pen Instruction Guide



### 1. Prepare pen for use

- Break safety seal and pull off cap 
- Check correct insulin type, expiry date and appearance

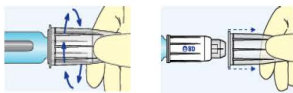
 If insulin is cloudy, gently roll pen & invert 10-20 times to ensure evenly mixed

- Swab rubber seal on end of pen with alcohol swab 


### 2. Attach BD AutoShield™ Duo needle

- Take the peel tab off of pen needle.
- Holding the outer cover, push and twist the pen needle onto the pen in a clockwise direction until it meets resistance.

Do not over-tighten





- Pull ONLY the outer cover straight off.


 DO NOT touch the outer shield prior to injection. Any pressure on the shield may cause the safety mechanism to lock, making the needle unusable.

### 3. Prime pen

- Before every injection the insulin flow must be checked


- Set dose to **2 - 4 units** by turning dose button at end of pen 


- Hold pen with needle pointing upwards.
- Push the injection button on the end of pen 
- Look for a stream of insulin

 If no insulin is seen at needle tip, repeat priming process

- **Shake out any of the primed insulin that may have collected in the shield.**

### 4. Select insulin dose

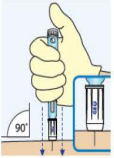
- Turn dose button until the required dose lines up with the dose indicator 


 Obtain independent double check of dose dialed on pen compared to patient's order or MAR

### 5. Prepare the injection site

- Clean the injection site with an alcohol swab.

### 6. Perform injection

- Insert the needle straight into flat skin at a **90-degree angle** until the clear outer shield retracts and the white sleeve is flush with the skin 

 Wait to hear a click before beginning to deliver the dose.


- Maintain constant pressure against skin, then deliver dose by depressing dose button with your thumb
- Hold for **10 seconds** while continuing to press button

### 7. Dispose of pen needle

- Ensure entire dose has been given (check dial is at zero) then lift pen away from skin

- The shield will automatically lock in place.

 A RED indicator band will appear confirming shield is locked

- Remove needle from pen by holding the white shield and twisting the pen counter-clockwise 

 Do NOT place your fingers on activated shields

- Dispose of used needle in yellow sharps container .

Oct. 17/16

### References:

- Accelerating Excellence in Insulin Management in Healthcare Organizations - An Insulin Pen Implementation Toolkit; A University Health Network and Hamilton Health Sciences Collaboration, April 2015
- Markham Stouffville Hospital Policy 12/05/15; 280.914.916.055 Administration of subcutaneous insulin
- ISMP Safe Delivery of Insulin: Summary report and recommendations April 2014
- Baycrest Insulin Administration Policy March 11, 2015
- Peterborough Regional Health Centre Medication Standard 2.A.17 Safe Administration of subcutaneous insulin via Pen device
- North York General Hospital Policy II-510; Insulin Administration using PEN Device, Dec 2014