Considerations when Developing Strategies for Improving the Safe and Appropriate Use of Insulin Pens in your Hospital

**Determine which pens to include**

- Assess the insulin pens on your formulary
  - Limit options available (e.g., only one short-acting pen) to avoid confusion resulting in dispensing or administration error
    - Disposable pens are more convenient, but costly
    - Evaluate the dose measurement increments allowed on pens
  - Avoid pens that look similar that could result in choosing wrong pen
  - Evaluate differences in technique between pens
    - Failure to “tip and roll” insulin NPH results in dosing errors
  - Assess what patient populations will use them
    - Adults
    - Pediatrics
    - Emergency department

**Develop written procedure of dispensing, storage, and administration**

- Develop consistent procedure for labeling pen
  - Label pen on the barrel, not on the cap
  - Ensure label contains patient name, medical record number
  - Provide tamper-evident seal affixed perpendicular to the junction of the barrel and cap
  - If bar-code, assure label is applied in manner so as not to obstruct bar-code
  - Provide expiration labeling

- Standardize storage location of pen
  - Maintain in secure location (e.g., locked medication room)
  - Maintain in patient-specific bin
  - Provide tall-man lettering and designate as high-alert medication
  - Prohibit storage of pens brought from home
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☑ Develop procedures of administration
  o Perform patient verification
    ▪ Visually verify drug name on pen and patient name
    ▪ Bar-code technology
      • Ensure intended type of insulin is administered
      • Ensure the specific insulin pen used is the one intended for patient
        o Reports may be generated to reveal errors
    ▪ If label missing or illegible, discard and request new pen
  o Only remove from patient-specific bin when needed. Do not place in uniform pocket for later use
  o Do not leave pen at patient bedside or nursing station
  o Develop procedure for patients in contact isolation
    ▪ Consider cleaning pen with disinfectant and place in plastic bag
  o Develop procedure of administration technique
    ▪ Appropriate priming and time to maintain needle in skin (~6 seconds) to avoid “wet spot” on skin, which may result in failure to deliver entire dose
    ▪ Promptly remove needle after injection to prevent air and contaminants from entering cartridge or reservoir
    ▪ Risk of needlestick injury
      • Failure to maintain 90-degree angle while pinching skin
      • Precautions for pens without automatic needle cover
    ▪ Emphasize risks of sharing of pen with different needle
    ▪ Emphasize risk of using pen like a vial
      • Withdrawing insulin from pen with needle disrupts integrity of pen resulting in potential sterility breach or inaccurate dosing by introducing pockets of air

Reinforce insulin pen safety education

☑ Orientation and mandatory yearly education
  o Proper administration technique and patient-specific storage to avoid errors
  o Provide error scenarios to learn from the errors of others
    ▪ Lack of patient verification
    ▪ ISMP reports
  o Glycemic management

☑ Routine short communication meetings (e.g., during change of shift, one-page or one-slide communications) to remind staff of safety issues with prescribing, dispensing, storage, and administration

☑ Notes in medication administration record with warning regarding sharing
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☑ Reminders of one pen per patient in screen savers, posters in medication rooms
☑ Instructional videos readily accessible online to nursing and pharmacists from institution’s internet

Collect baseline data and track performance

☑ Observe insulin administration practices
  o Perform a FMEA (Failure Mode Effect Analysis)
    ▪ Implement identified risk-reduction strategies to prevent errors
☑ Audit nursing units to determine adherence to storage procedure
☑ Survey nurses to assess understanding of
  o Procedure of administration
  o Appropriate administration techniques
  o Risk of sharing pen even when using new needle
  o Risk of using the pen like a vial
☑ Solicit feedback from staff
  o Ways to improve educational programming
  o Continuous quality improvement

Patient education

☑ Provide discharge instructions
  o Proper technique
  o Storage

Error management

☑ Report errors per institutional policies and procedures and to FDA’s MedWatch Adverse Event Reporting program and ISMP
☑ Establish policies and procedures for notification of patients that may have been exposed to blood-borne pathogens due to sharing of pens and testing for blood-borne pathogens as recommended by CDC
☑ Continuous review and revision of policies/procedures, corrective staff education to prevent recurrence of error as part of continuous quality improvement efforts