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

- ☑ Develop procedures of administration
    - 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
                - Reports may be generated to reveal errors
        - If label missing or illegible, discard and request new pen
    - Only remove from patient-specific bin when needed. Do not place in uniform pocket for later use
    - Do not leave pen at patient bedside or nursing station
    - Develop procedure for patients in contact isolation
        - Consider cleaning pen with disinfectant and place in plastic bag
    - 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

<u>Reinforce insulin pen safety education</u>

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

- ☑ 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
  - 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
  - Procedure of administration
  - Appropriate administration techniques
  - Risk of sharing pen even when using new needle
  - Risk of using the pen like a vial
- ☑ Solicit feedback from staff
  - Ways to improve educational programming
  - Continuous quality improvement

Patient education

- ☑ Provide discharge instructions
  - Proper technique
  - 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