Strategies for Ensuring the

Safe Use of Insulin Pens IN THE HOSPITAL

One pen. One patient.

Improving the Safe Use of Insulin Pens

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Team Members

- Amy Rosenberg, Pharm.D. – team leader
- Team members
  - Courtney Puentes, RN, CDE eligible
  - Kara Krzan, Pharm.D.
  - Angela Larson, M.S.N., Ph.D. candidate
  - Erin Wright, Pharm.D.

UF Health, Shands Hospital

- Academic Medical Center
- 800+ beds
- North Central Florida
- Tertiary care referral center serving Florida and south Georgia
- Adults and pediatrics

Background and Description

- Multiple insulin pens used (basal, and bolus insulin types provided as pens)
- All insulin pens dispensed from pharmacy with patient specific labels placed on the barrel of the pen
- Bar code medication administration (BCMA) process in place for most adult patient care units, plan to complete BCMA implementation hospital-wide summer of 2015
- Patient specific barcode on patient label, placed on pen.
- Institution found value in using insulin pens for inpatients:
  - Decrease in insulin dosing errors noted years ago upon transition to pens
  - Pens facilitate patient education for hospitalized patients
- At the same time, institution concerned for risks related to insulin pen use in hospitalized patients

Background and Description: Primary Concern during Initial Observation Period

- Primary issue identified related to storage of insulin pens for patients on contact isolation
  - Standard storage location for all insulin pens is automated dispensing cabinet in patient-specific bins (i.e., one lock-lidded bin with single patient's medications stored in bin)
  - Hospital comprised of two "towers," one having more contemporary hospital design than the other
  - Patient care rooms in older tower lack a lockable cabinet for storage of "bulk" medications, such as insulin pens, for patients on contact isolation due to MRSA, VRE, etc.
    - These medications for contact isolation patients stored in locked drawer located in supply carts found in hallway on nursing units
    - Medications placed in clear plastic bags with patient label
    - However, multiple patients' medications stored in single drawer due to space limitations in supply cart

Initial Observation Period Concerns

- Key concern was with storage process for insulin pens for patients on contact isolation
  - Ensuring removal of pens for discharged patients
  - Need to store pens for multiple patients in one drawer

Process Improvements

- Intermediate time-frame: Education effort for all nurses and nurse leaders regarding importance of proper storage of insulin pens
- Main solution: hospital purchased clear lockable cabinets to be installed on the wall in patient care rooms for storage of bulk items for contact isolation patients
- Cabinets will be cleaned and emptied with each patient discharge from the hospital

Selected Results: Insulin Injection Observations

- During final observation period, all observation units were live with bar code medication administration
- All observed insulin pen administrations showed proper scanning of patient-specific bar codes before insulin administration

Selected Results: Pen Storage and Labeling Audit

- Clear plastic cabinets for patient rooms have been purchased and are being installed, but were not yet installed in observation units during post-intervention period
- Observations of insulin pens still captured pens in supply carts for discharged patients although at a lower rate when compared with baseline period
- New process expected to remedy this once clear lockable cabinets installed
- All observations in both periods showed all pens properly labeled*

*Properly labeled = pen labeled, label attached to barrel, and expiration date on label.

Selected Results: Nurse Survey

- Nurse survey results still demonstrate the need to continue educational efforts surrounding the time-action profile of various types of insulins
- Plan to include this information on electronic medication administration record
- Continue to include this information in annual required nurse education

Next Steps

- Team plans to repeat observations and continue with real-time evaluation of bar code medication administration reports as all patient care units move to bar code medication administration

Mentored Quality Improvement Activity: A Broad View

- Our team's process improvements are expected to improve the safe storage of insulin pens and other bulk medications to ensure these medications are only ever used for a single patient
- Observations helped to establish a process for quantification of process issues that could result in risk of wrong patient medication errors with insulin pens
- We plan to continue to use this process in the future for quantification of process improvement