Strategies for Ensuring the

Safe Use of Insulin Pens IN THE HOSPITAL

One pen.
One patient.

Insulin Pen Safety Project

Ashtabula County Medical Center
Ashtabula, Ohio

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One patient.

Team Members

- Team leader
  - Amanda Kobylinski, Pharm.D., Clinical Pharmacist
- Team members
  - Robert Milnes, Pharm.D., BCPS, Pharmacy Director
  - Wendy Nagy, Pharm.D., Clinical Pharmacy Coordinator
  - Lori Gilhousen, RN, CDE, Diabetes Educator
  - Molly Conacher, CPhT, Informatics Pharmacy Technician
  - Cynthia Callahan, RN, Infection Control Preventionist, Director of Quality & Accreditation
  - Ken Frame, BSN, MHA, CNO, CCO
  - Lorna Ngo, Pharm.D. candidate, APPE student

Ashtabula County Medical Center

- Community hospital
  - Cleveland Clinic affiliate
- Number of beds ~200
  - Average census is 80
- Patient population served
  - Primarily geriatric

Background and Description

- Insulin pens used
  - Levemir (insulin detemir)
  - Novolog (insulin aspart)
- ISMP recommends conducting failure modes effect analysis (FMEA) to ensure safe use of insulin pens

Process Improvements

- Labeling changes
- Ensure proper storage
- Developed insulin pen policy
- Insulin pen education
  - Implement annual nursing competency
  - Mini meetings by pharmacists and Novo Nordisk representatives

Process Improvements

Insulin pen labeling

Continue current practice of:

1. 28 day expiration sticker (except novolog 70/30-14 days)
2. High alert
3. Patient specific info sticker

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Change #1- Apply tape over patient info sticker (to prevent the writing from becoming illegible)

Change #2- Apply tamper-evident tape perpendicular to junction of pen cap and barrel, NOT wrapped around

YES:

NO:

Benefit: Ensures cap removal breaks tape, making it evident pen has been used and avoiding re-use if returned in credits.

Selected Results: Insulin Injection Observations

- Displays use of proper hand hygiene prior to patient contact
  - Pre: 56%
  - Post: 95%
- Performs patient identification according to hospital policy
  - Pre: 76%
  - Post: 95%

Selected Results: Insulin Injection Observations

- Swabs rubber stopper with alcohol swab
  - Pre: 68%
  - Post: 88%
- Primes pen before injection
  - Pre: 55%
  - Post: 95%

Selected Results: Insulin Injection Observations

- Pinches fold of skin at injection site
  - Pre: 63%
  - Post: 90%

Selected Results: Pen Storage and Labeling Audit

- Patient name missing
  - Pre: 0%
  - Post: 0%
- Pen not labeled
  - Pre: 10%
  - Post: 0%

Selected Results: Pen Storage and Labeling Audit

- Label not attached to barrel
  - Pre: 12%
  - Post: 0%
- No expiration date
  - Pre: 8%
  - Post: 0%

Selected Results: Nurse Survey

- Response rate pre: 42%
- Response rate post: 68%

Selected Results: Nurse Survey

- In the past 3 months which issues have you witnessed at our institution?
  - None of the above*
    - Pre: 81%
    - Post: 85%

*Other options noted above were as follows:
- An insulin pen device with a defective dosing dial.
- An insulin pen device used on more than one patient.
- An insulin pen device without a patient-specific label attached to it.
- An insulin pen device stored in an "unapproved" location (e.g., patient's bedside, nursing station drawer).
- Insulin withdrawn from an insulin pen device or cartridge with a syringe (i.e., using the pen device/cartridge like a multiple dose vial).

Selected Results: Nurse Survey

- Which is the greatest knowledge gap?
  - Time action profiles of the different insulin products
    - Pre: 76%
    - Post: 76%

Lessons Learned

- Education needs to be ongoing
- Dedicated time for this effort is essential
- Clear communication between nursing and pharmacy is a must
- We have issues overall with our current medication storage
- Interprofessional involvement and input is needed to fully understand processes

Next Steps

- Continued education
- Develop a med safety committee
- Promote error reporting
- Considering an annual assessment with observation checklist and storage audit

Mentored Quality Improvement Activity: A Broad View

- This quality improvement initiative has energized our staff to take an active role in patient safety efforts
- We hope to carry over this energy into various initiatives with a medication safety committee as the driving force