Strategies for Ensuring the
Safe Use of Insulin Pens
IN THE HOSPITAL

Insulin Pen Safety Project

Ashtabula County Medical Center
Ashtabula, Ohio

Amanda Kobylinski, Pharm.D.
Clinical Pharmacist

June 2015

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
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