Strategies for Ensuring the

Safe Use of Insulin Pens IN THE HOSPITAL

Safety Quality Improvement: Safe Use of Insulin Pens

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Team Members

- Team leader
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- Team members
  - Nicole Lacoste, Pharm.D., BCPS, Clinical Pharmacy Supervisor
  - Jason Chou, Pharm.D., MS, Director of Pharmacy
  - Julie Castex, MSN, APRN, ACNS-BC, CMSRN, Clinical Nurse Specialist
  - Ana Dardis, RN, Diabetes Nurse Educator
  - Pavan Chava, MD, Endocrinology Chair

Ochsner Medical Center

- Academic hospital
- 550 beds, acute care hospital

- Accredited by The Joint Commission
- Joint Commission Advanced Disease Certification of the Inpatient Diabetes Program

Background and Description

- Insulin pen use
  - 90% of our insulin use comes from delivery by insulin pen devices
    - Novolog (insulin aspart injection)
    - Levemir FlexTouch (insulin detemir injection)
    - Novolog 70/30 (70% insulin aspart protamine suspension and 30% insulin aspart injection)
  - Participation
    - Safety events with insulin pens, regular insulin dosage, dextrose administration rates, and labeling of pen requirements revealed that we needed resources to improve our practices with insulin

Background

- Baseline data revealed that we saw small risk for the sharing of patient specific insulin pens
- However, other processes need improvement
  - Nurse education: prandial glucose measurement prior to meal intake, insulin stacking of aspart dosages
  - Insulin pen label beyond usage date

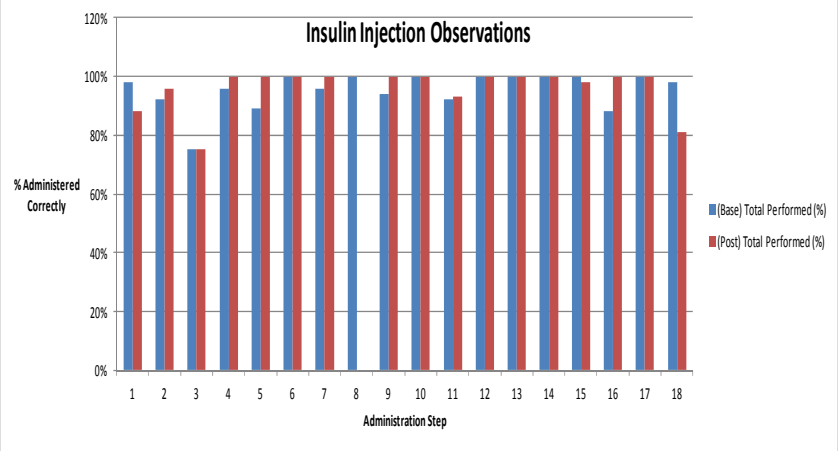
Process Improvements

- Policy and procedure
  - Insulin pen labeling
    - Storage
    - Labeling
    - Budget for future to include unit printers for labeling
    - Safety enhancement in development stage
      - Patient receiving intended pen to have additional safeguard with third required scan to ensure pen matches order for specific patient

Process Improvements

- Nurse education
  - CE on insulin products (time to onset, peak, duration of each profile) and patients at risk for hypoglycemia was done January 2015 ---will plan to repeat to reach full effectiveness
  - Insulin dose stacking warning now presents prior to administering dose from bar code scan
  - Tray notification to nursing has improved but need to continue improvement
  - Strategy development for blood glucose check prior to meal consumption

Insulin Observations



Observation Lessons

Improvements Made

- Proper hand hygiene
- Perform patient identification
- Scan patients ID and insulin
- Administration: Keep plunger pressed for 5 seconds after injection

Room to Improve

- Obtain replacement pen if expired
- Return pen device to hospital-approved patient-specific storage area

Pen Storage and Label Audit

One pen.
One patient.

	Baseline	Post-intervention
Patient name	97%	77%
Active order	88%	98%
Storage per policy	67%	58%
Properly labeled	86%	83%
Properly stored and labeled	54%	50%

Properly labeled: pen labeled, label attached to barrel, and expiration date on label
Properly stored and labeled: active order, storage per policy, and properly labeled

Nurse Survey

- Response rate
  - 5% both baseline and post
- Areas for improvement
  - Insulin time-action profile education
  - Average 30% reported unapproved storage of insulin and insulin without patient-specific name label
  - Results of nursing survey were similar at baseline and post

Lessons Learned

- Nurses had issues with the survey not being able to watch videos
- Baseline and post-intervention observations were not blinded
- Nursing reports reveal the challenges with timing of insulin and meals on demand delivery

Next Steps

- New policies and procedures
  - Development of insulin U-500 policy
  - Regular insulin subcutaneous administration to be converted to aspart to reduce administration errors
- Nursing education
  - Huddle and presentations allowing for daily tips
  - Involvement with onboarding education
- Implementation of third label scan for accurate patient:pen administration

Mentored Quality Improvement Activity: A Broad View

- Patient safety
  - Increased visibility of pen safety efforts across hospital
  - Provided stimulus for developing education
  - Need to develop easier access to approach nursing education
  - Promoted team approach for ensuring insulin pen safety
  - Recognize a need to maintain and sustain safety