Strategies for Ensuring the

Safe Use of Insulin Pens IN THE HOSPITAL

One pen.
One patient.

Ensuring Safe and Effective Use of Insulin Pens

Munson Medical Center
Traverse City, Michigan

Julie Botsford, Pharm.D., CPPS
Medication Safety Pharmacist

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Team Members

- Team leader
  - Julie Botsford, Pharm.D., CPPS, Medication Safety Pharmacist
- Team members
  - Ernie Fischer, M.D., Chairman, P&T Committee
  - Heather Tolfree, Pharm.D., Clinical Pharmacy Manager
  - Lori Kirkey, MSN, RN, NE-BC, Manager A3 - Coronary Care & Cardiac Interventional Unit
  - Kathleen Glaza, MSN, RN, ACNS-BC, Clinical Nurse Specialist
  - Phyllis Bertram, BSN, RN, Manager C3 - Pediatrics Specialty Clinics
  - Jennifer Standfest, MSN, RN, Director of Nursing Practice and Professional Development
  - Cathy Stauber, BSN, RN, CMSRN, Resource Clinician
  - Eric Warren, Pharm.D., Pharmacy Manager

Munson Medical Center (MMC)

- 391-bed nonprofit hospital serving as northern Michigan's regional referral center
- Only Level II trauma center north of Grand Rapids
- Primary Stroke Center designation by TJC
- Largest of eight hospitals in Munson Healthcare System

Background and Description

- Insulin pen use was adopted at MMC in 2009
- Convenient, easy to use for nursing staff and patients
- Potentially safer method regarding dosing errors than with traditional vial and insulin syringe methods
- Observed over 50% reduction in employee needle-stick injury over 5-year comparative timeframe (47 vs. 21)

Background and Description

- ISMP's continuing concerns* and pharmaceutical costs led to re-evaluation of insulin pen use at MMC
- Nurse survey in January 2014, n = 300
  - 16 nurses (5.3%) reported observing nurses sharing insulin pens between patients
- May 2014, a known occurrence of an insulin pen used on more than one patient required patient disclosure and bloodborn pathogen testing
- Hospital leaders required a formal risk assessment and encouraged participation in ASHP's mentored quality improvement impact activity

*Institute for Safe Medication Practices. February 7, 2013. http://www.ismp.org/newsletters/acutecare/showarticle.aspx?id=41 (accessed 2015 Jun 242).

ASHP Safe Use of Insulin Pens in the Hospital Quality Impact Activity

- Baseline data collected Sept-Oct 2014
- Key findings
  - Knowledge gap in insulin pharmacokinetics
  - Insulin pen use on more than one patient still occurring (8 nurses reported witnessing in previous 3 months)
  - Reading patient name on label not occurring 32% of time, false belief that scanning identifies patient
  - Storage and labeling problems
  - Access to insulin in timely manner

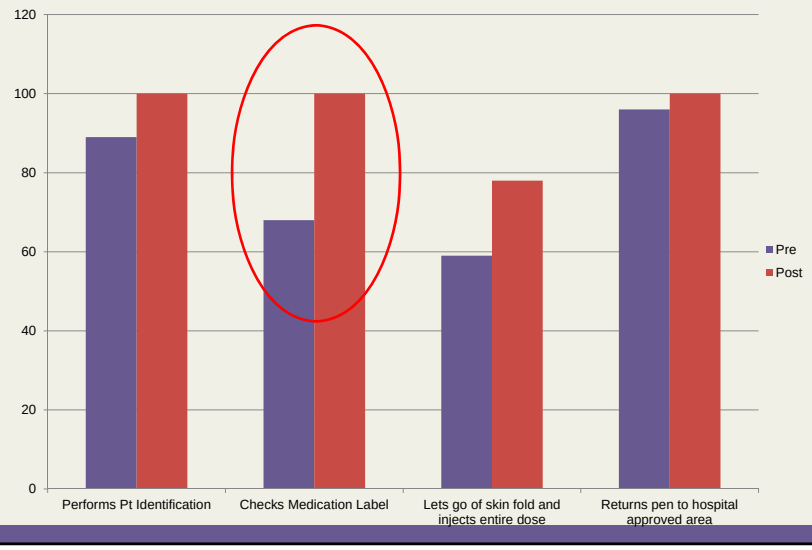
Process Improvements

- **Shared findings** to all staff, presentation to Serious Safety Event Committee
- Developed pharmacy and nursing **policies/procedures** related to insulin pen use
- Implemented a **bar code scanning alert** to remind nurses to read the name on the label
- **Rounding to influence** format used to individually reach ALL nurses, pharmacists, and pharmacy technicians on changes and safety issues
- **Healthstream education** for nurses

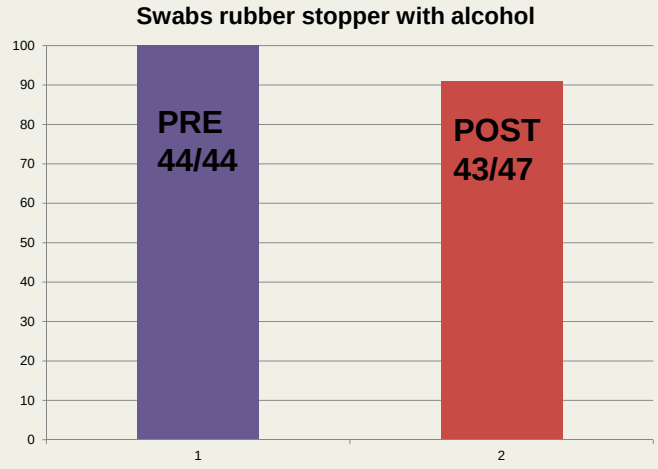
Process Improvements

- MAR notes now contain brief pharmacokinetic information on all insulins
- Badge Buddies distributed to all nurses to be worn on name tags
  - Pharmacokinetic information on one side
  - Brief description of hypoglycemia protocol on backside

Selected Results: Insulin Injection Percent of Observations



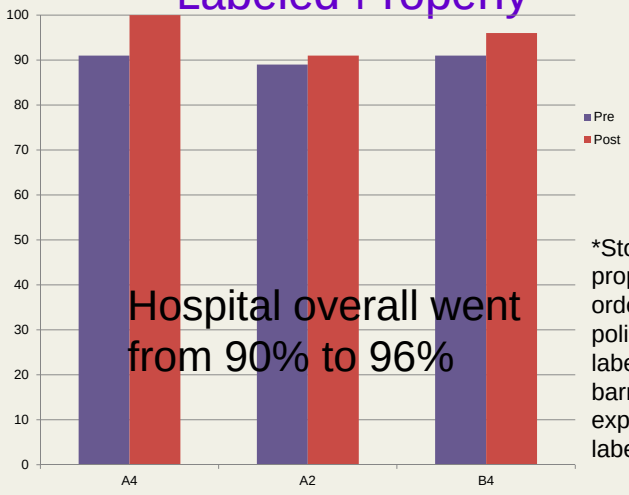
Selected Results: Insulin Injection Percent of Observations



Selected Results: Insulin Injection Observation Comments

- Pre
  - Many instances of not reviewing patient label or expiration date
  - Concern about isolation storage, label blurry
  - Pharmacy placed label on dial of pen
- Post
  - Nurses like new alert, appreciate reminder
  - No pinch done; gave one-handed (2 observations)
  - Extra pen found in drawer (several occasions)
  - Scanned patient barcode AFTER drug administered

Selected Results: Pen Storage and Labeling Audit-Percent Stored and Labeled Properly*

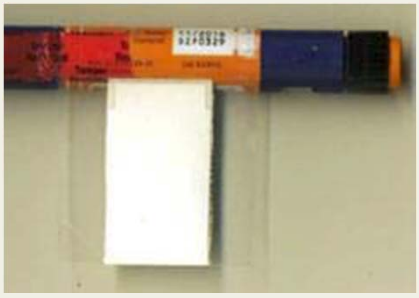


*Stored and labeled properly = active order, storage per policy, pen labeled, label attached to barrel, and expiration date on label.

Selected Results: Pen Storage and Labeling Audit-Selected Comments

- During both observation periods, more than one pen was often found dispensed for the same patient; sometimes they were both used, sometimes one was unopened and was returned to pharmacy
- During the post observation period, labels were consistently covered with clear tape and were easy to read and not smeared as they were in the pre observation period

New Standard Labeling from Pharmacy

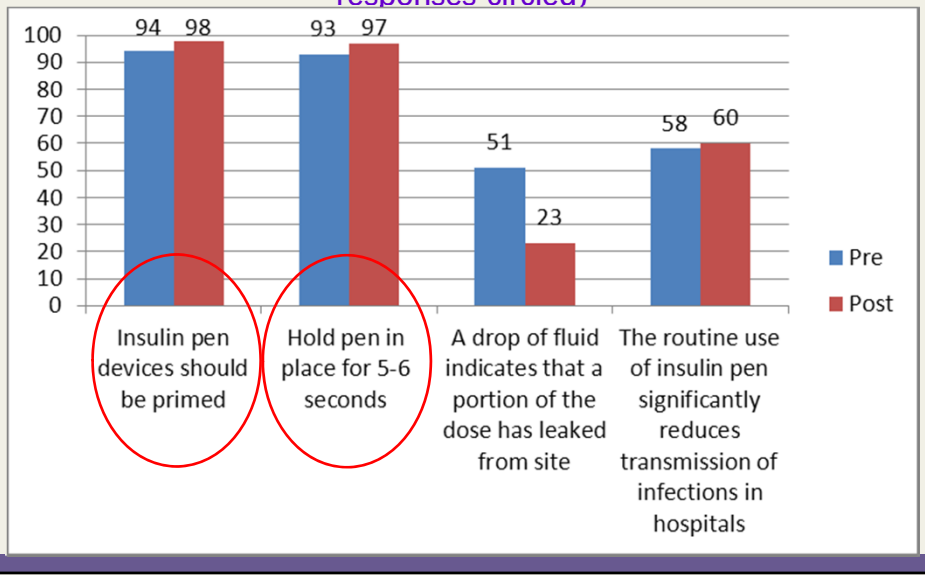


Selected Results: Nurse Survey

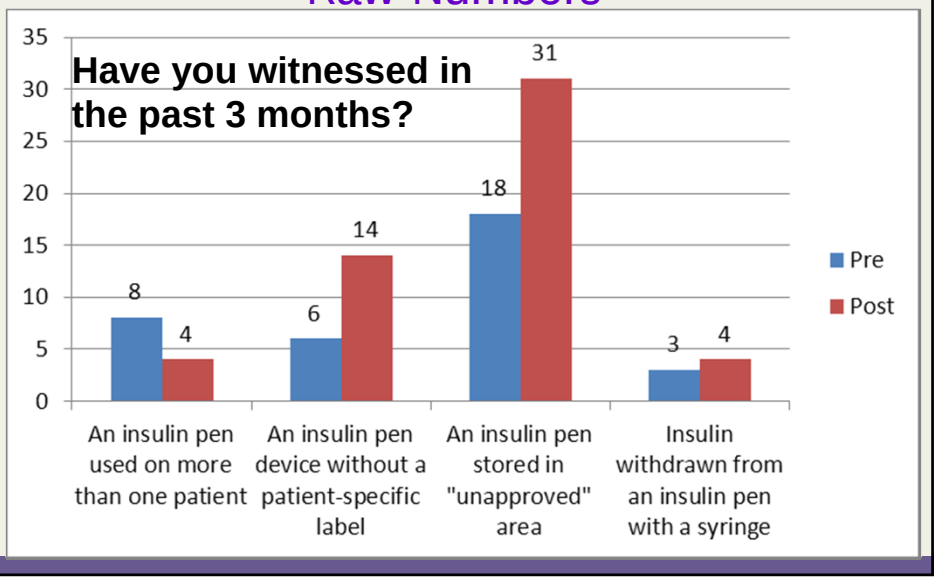
- Pre n = 206, Post n =186
- Similar demographics (shift, years in practice, position) with Pre and Post
- Cases related to most likely time frame for hypoglycemia stumped nurses both pre and post

Selected Results: Nurse Survey

Percent of respondents indicating statement is true (correct responses circled)



Selected Results: Nurse Survey Raw Numbers



Lessons Learned

- Problems with insulin pens were more widespread than believed (labeling, dispensing, and administration)
- Unintentional pen sharing remains a concern
- Getting pens to patients in a timely manner continues to be a challenge and often results in multiple dispenses (lost pens, patient transfers)

Lessons Learned

- This activity highlighted a bigger problem with discharged patients' medications being removed AT THE TIME OF PATIENT DISCHARGE.
- The ability for the patient-specific label to scan remains a large barrier for increased safety
- Ongoing vigilance and heightened awareness is a necessity

Next Steps

- Publish results in the next Nursing Capsule; share results with Serious Safety Event Committee
- Re-measure in 6 months
- Pilot study on A4 related to medication delivery and discharged patients
- Submitted project request to Information Systems to help pharmacists identify during the dispensing process whether a pen was previously dispensed to help prevent waste
- Consider program to send insulin home with patients who use same product at home
- Powerplan redesign

Mentored Quality Improvement Activity: A Broad View

- Benefits of participation
  - Were accountable not only to MMC but to ASHP and other participants
    - Had timeline and specific format to keep us on task
  - Learned other institutions were struggling with similar issues
  - Increased awareness of safety issues related to the use of insulin and insulin pens among all staff, including pharmacy technicians, nurses, pharmacists, and hospital leaders