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VISN 8 Improvement Forum: sharing good ideas

By Joe Murphy, M.S., APR, NCPS public affairs officer

The forum provided a unique opportunity for facility leaders to consider initiatives that might increase safety and efficiency at their medical centers.

Attendees were offered presentations selected from nearly 50 abstracts submitted by VISN facility staff, on topics such as innovations, patient safety improvements and systems redesign collaborative projects.

The presentations were showcased during interactive "Conversation Cafes," in which medical center teams discussed their projects with facility leaders and others. Two of the presentations were specifically focused on improving patient safety.

"Great Catch" poster contest

The Orlando VA Medical Center developed the poster contest as part of its National Patient Safety Awareness Week 2012 activities. The contest was an effort to showcase systems-based improvements.

Creating and improving a culture of safety is challenging for any facility or setting, especially one experiencing rapid growth, such as Orlando.

A new 65-acre campus with a large multi-specialty outpatient clinic, 134 inpatient beds, 120-bed community living center, and a 60-bed domiciliary is under construction. Maintaining a strong culture of patient safety during this growth was a priority.

The facility wanted to recognize staff who contributed daily to developing a culture of safety through identification of "near-miss events" that led to systems-based improvements.

Dubbed the "Great Catch poster contest, the top three posters were recognized with awards and all others received a certificate of participation.

Also known as close calls, near-miss events can occur from 3-300 times more often than actual adverse events and are given the same level of scrutiny at the VA as adverse events that result in harm to a patient.[1] Furthermore:

- Fewer barriers to data collection exist, allowing for close analysis of interrelations of system failures.
- Recovery strategies can be studied to enhance proactive interventions and to deemphasize the culture of blame.
- Hindsight bias is more effectively reduced.[2]

Hindsight bias, also known as the "I knew-it-all-along" effect, is the inclination to see events that have already occurred as being more predictable than they were before they took place.[3]

Criteria for the contest included:

- What happened? (Describe a "Great Catch.")
- What where the contributing factors? (Detail on condition/situation that caused the patient safety concern or situation.)
- What was done to prevent the event from happening again? (The action or change taken to correct the situation or issue.)
- How was the information shared?

Judging was based on:

- The impact on safe patient care.
- The impact on service (quality, access, satisfaction, efficiency, effectiveness).
- The ease in spreading positive impact to other parts of the organization.
- How the actions illustrated a commitment to creating a culture of safety.

By focusing on flawed care systems, rather than on personal culpability, the contest became an example of moving from the "name and blame" culture of the past to one focused on prevention, not punishment.

Ensuring correct surgery

Staff members from the West Palm Beach VA Medical Center created a simulation concerning ensuring correct eye surgery[4] for their Conversation Cafe presentation.

To develop a realistic scenario of what might happen on the clinical level, two project managers were selected from each VISN 8 medical center to attend simulation training at the VA Simulation Training Center, Orlando.

The scenario that was developed consisted of a hypothetical Veteran with bilateral cataracts who was unsure which eye would be operated upon when the patient verification process began. The participants were asked to carry out their regular routine to identify the patient and surgery site prior to moving the Veteran to surgery.

The objectives were:

- Observe that the proper procedure for identification of the correct eye occurred.

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Beyond insulin pen sharing: hospital systems issues

By Bruce A. McIntosh, Pharm.D., NCPS patient safety pharmacist, and Keith W. Trettin, R.Ph., M.B.A., NCPS program manager

Multi-dose pen injectors (hereafter referred to as pens) are combination products consisting of a drug and a device.[1] These innovative devices are used to administer multiple doses of drugs or biological agents at the point of care. When used by outpatients for self-administration they may increase patient convenience, accuracy of dose, compliance and safety.[1] The most common pens available are used to administer insulin.

VA medical centers primarily dispense insulin pens to outpatients, but some also use them on patient care units for patient self-administration education or for a rehabilitation program (e.g., blind or stroke rehab). Additionally, some drugs are only available in a pen formulation.

While use on VA patient care units has been historically low, a few facilities recently increased usage, based on perceived advantages.[2]

Due to a recent report of insulin pen sharing in a VA medical center, NCPS published Patient Safety Alert AL13-04,[3] which requires all VA medical centers to prohibit the use of multi-dose pen injectors (including insulin pens) on all patient care units, with a few specific exceptions. The Alert further requires updating local policies regarding storage, labeling and education of staff for safe use.

In response to public and private hospital sharing incidents, the Institute for Safe Medication Practices also published a recent article recommending hospitals consider transitioning away from insulin pens on inpatient care units.[4]

Because the Alert notes specific exceptions, such as "patients being educated prior to discharge to use a patient-specific, multi-dose pen injector," the following is offered to provide additional information. We have also listed a number of references for further review.

Improper administration technique

Because nursing staff are more familiar with the use of vials and syringes for injections, requirements to accurately administer a dose from a pen injector may prove challenging. The following are examples of system issues regarding administration techniques: [5-7]

Incomplete mixing of insulin suspension by the tip and roll method

- This may result in inaccurate dosing throughout the entire use of the pen injector and is primarily a concern for insulin mixtures.

Needles must be attached immediately before and properly disposed of after each use

- The needles should be screwed or pushed on firmly. If not properly set on the pen, leaking may occur around the needle hub. If not disposed of immediately after use, air and contaminates may potentially enter through the needle.

Priming of the pen injector for initial use and before each injection

- After attaching the needle, the pen must be adequately primed to expel air from the injector. The priming dose varies by pen. While most injectors require priming before each injection, some require it only during initial set up. Priming the pen improperly will result in administering a lower dose.

Incorrect dosing

- The pen's dose display can be read upside down and result in an incorrect dose.
- Unintentionally lifting the pen from the injection site during administration due to difficulty in pressing the button on the pen.
- Not leaving the pen in place for the required time to complete administration of the full dose (time varies per pen from 5-10 seconds).
- Due to a wet spot appearing after injection as a result of priming, nurses may believe a full dose was not administered, resulting in the potential for dosing patient again.
- Plunger movement is gradual, due to multiple doses in the clear reservoir or cartridge, and can lead to a misperception that the dose was not given. This may result in the potential for dosing patient again.

Use of pen injector or cartridge as a multi-dose vial

The safety and integrity of the pen injector may be compromised if nurses are unfamiliar with the device or if pharmacy encourages use of cartridges instead of multi-dose vials. [5-7]

Potential for needle-stick injury to staff

Inadvertent needle sticks of nursing staff may occur if the angle of the pen is not maintained at 90 degrees during administration.[7]

This may occur when a nurse attempts to see around the barrel of the pen (that is wider, compared to a syringe) to see if the needle has made contact with skin. The result can be a "dirty needle stick," even if a safety needle is used.

Wide variety of pen injectors on the market

The growing number of pens available, often with different techniques for administration, may lead to confusion.

Design limitations of pen injectors for use on patient care units

The Food and Drug Administration (FDA) approved labeling does not prohibit use on patient care units; however, the pens are primarily manufactured for outpatient self-administration and package inserts do not provide instructions for inpatient administration.

This can lead to confusion. For example, while most manufacturers' package insert and box provide information that the pen injector should not be shared, the actual pen is not labeled with this information.

Further, there is limited space for pharmacy staff to attach a label to the barrel of the pen. This creates the

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potential that the removable cap may be labeled instead, and later be mixed up with another patient's pen injector.

Added to this, because of the lack a tamper-evident cap, staff may not recognize that a pen injector had been used, allowing it to be returned to pharmacy and be placed back into the drug supply chain.

Recommendations for safe use

To mitigate the risk of pen sharing, each facility is required to complete actions from NCPS Patient Safety Alert AL13-04 and we urge readers to refer to it. The Centers for Disease Control and Prevention also provides education guidance and materials to improve safe injection practices.[8]

Recommendations for other systems issues include:

- Pharmacy and nursing staff should be aware of the system vulnerabilities concerning administration technique and update policies and education programs to ensure staff can regularly demonstrate correct use.
- The pen reservoir or cartridge should not be used as a multi-dose vial.
- Disposable safety needles with shield guards should be used on all patient care units to protect staff and ensure compliance with Occupational Safety and Health Administration regulations and VHA directives.[9,10]
- The growth of drugs available as pen injectors requires careful consideration and planning by the facility for education of nursing staff.[7] Pharmacy and therapeutics committees should closely regulate the availability and use of pens on patient care units.
- Until manufacturers address design limitations for use of pens on patient care units, pharmacy and nursing staff should consider interim measures. For example:
  - Each pen could be labeled "for single patient use only."
  - While there are space limitations for pharmacy labeling, each pen must be individually labeled for a patient and may require label modifications by pharmacy. Pharmacy must be aware that the pen cap should not be labeled.
  - Tamper-evident tape applied across the pen cap and barrel may provide confidence to nursing staff that the pen has not been used and alert pharmacy to the pen's status when returned to the pharmacy.
- A Health Failure Mode and Effect Analysis to implement risk mitigation strategies with pen injectors on patient care units to avoid critical system failures may be the most effective patient safety strategy.[7]

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- Identify if the proper procedure was followed when the patient could not identify which eye was scheduled for surgery.
- Resolve the problem while maintaining the correct surgery site and implant without compromising the patient in any way.

The scenario was kept simple so that key elements could be observed; i.e., proper patient identification and correct determination of the procedure to be conducted.

The participants were impressed with the simulation training. Because of the realistic nature of it, they quickly learned how easily patient safety could be compromised.

Strengths were identified, such as:

- Surgeons were consistent in identifying the patient by using two identifiers and the patient ID band.
- If surgeons could not identify the correct eye for surgery, the surgery was rescheduled.

Two weaknesses were identified and have been encountered in other facilities, VA and non-VA, around the nation:

- No formulized check list had been developed to meet the requirements for a timeout prior to surgery or a procedure.
- No consistent process was systematically used to identify the patient and surgery site.

In response to this and assure timeouts were conducted in a consistent manner, staff members elected to use each patient's electronic chart to verify critical required elements.

A tool was developed and attached to the computer station in each operating and cystoscopy room to provide full instructions for accessing the parts of the chart required for the timeout process.

The new tool has improved communication between Veterans and providers and enhanced the facility's patient safety efforts.

High-reliability organizations

Activities such as the VISN 8 Improvement Forum are examples of efforts to improve an organization's performance through a collective commitment to success and mutual trust, in which staff members are encouraged to improve teamwork and communication.

Regardless of professional background, technical expertise or position within an organization, each employee is urged to maintain a questioning attitude and be responsive to change.

The development of a safer and more agile culture is a critical step towards becoming a high-reliability organization, which was the topic of a plenary presentation at the forum given by NCPS Director Robin Hemphill, M.D.

High-reliability organizations are those that exist in hazardous environments where the consequences of errors are high, but the occurrence of error is extremely low.[5] At the core of high-reliability organizations are five key concepts, which she discussed:

- *Sensitivity to operations*. Preserving constant awareness by leaders and staff of the state of the systems and processes that affect patient care. This awareness is key to noting risks and preventing them.
- *Reluctance to simplify.* Simple processes are good, but simplistic explanations for why things work or fail are risky. Avoiding overly simple explanations of failure (unqualified staff, inadequate training, communication failure, etc.) is essential to understand the true reasons patients are placed at risk.
- *Preoccupation with failure.* When close calls occur, these are viewed as evidence of systems that should be improved to reduce potential harm to patients. Rather than viewing close calls as proof that the system has effective safeguards, they are viewed as symptomatic of areas in need of more attention.
- *Deference to expertise*. If leaders and supervisors are not willing to listen and respond to the insights of staff who know how processes really work and the risks patients really face, practitioners will not have a culture in which high reliability is possible.
- *Resilience*. Leaders and staff need to be trained and prepared to know how to respond when system failures do occur.[5]

Applying such high-reliability concepts does not require a major informational campaign or resource investment. It begins with leaders at all levels thinking about how the care they provide could become better.[6]

Though leadership-sponsored activities such as the forum, the VA is demonstrating that systematic approaches to reporting, analyzing and correcting patient care systems are essential to developing a culture of safety and creating a high-reliability organization.

Whether it be through the use of human factors engineering methods, practice-based educational programs using high-fidelity simulators, or developing tool kits and cognitive aids, the goal is the same: the reduction of harm to patients as a result of their care.

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