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Risk awareness and patient safety

By Joe Murphy, NCPS public affairs officer

Identifying, assessing, prioritizing and reducing risk is an essential element of NCPS' mission, to prevent inadvertent harm to patients as a result of their care.

Though often understated, risk mitigation has been a key aspect of each NCPS program and initiative since its establishment. Why? It goes hand in hand with taking a systems approach to problem solving.

A chain of events that has gone unnoticed, in most cases, leads to a recurring safety problem and is seldom related to the actions of a specific individual. NCPS focuses on improving care systems because a recurring problem within a faulty care system can be found and corrected, mitigating or eliminating the risk of reoccurrence, regardless of the personnel involved.

For instance, conducting a Root Cause Analysis (RCA) on an adverse event or close call is critical to reducing the risks associated with a specific care system. Multidisciplinary RCA teams investigate matters ranging from medication errors, to suicides, to wrong site surgeries. The goal of the RCA process is to find out what happened, why it happened, and to determine what can be done to prevent it from happening again.

The information is entered into NCPS' Patient Safety Information System so that the data can be used to analyze patient safety information from across the VA. The lessons learned often benefit other VA caregivers and can be used by them to mitigate risks found in similar patient care systems.

More than 19,000 RCA reports and 804,600 safety reports have been recorded in the system since NCPS was established 12 years ago. A systems approach to problem solving requires a willingness to report problems or potential problems so that solutions can be developed and implemented.

NCPS initiatives and risk mitigation

Risk mitigation is a factor in each NCPS program, as shown in the following examples.

Patient safety training

NCPS' inclusive patient safety training program has been attended by more than 2,500 VA caregivers at 34 sessions conducted since November 1999, providing clinicians and caregivers with a wealth of patient safety and risk mitigation concepts.

The one-to-three day programs include topics such as: developing and implementing an RCA team, hands-on training concerning the use of the NCPS confidential database, human factors engineering, and defining the Joint Commission's proactive risk assessment standard.

Held twice annually, the program emphasizes one of NCPS' key goals: taking a systems approach to problem solving, based on prevention, not punishment.

Crew resource management-based programs

The idea for Medical Team Training (MTT) and Clinical Crew Resource Management (CCRM) came from the realization that many safety issues in health care are related to a failure in communication.

The aviation industry recognized this problem 25 years ago and developed Crew Resource Management (CRM) to address communication failure and mitigate associated risks. CRM is defined as using all available sources (information, equipment and people) to achieve safe and efficient operations.

MTT was initially developed to improve patient outcomes through more effective communication and teamwork among providers in critical care areas, specifically the OR and ICU, but was expanded to include non-OR clinical areas, such as cardiac catheterization labs, endoscopy units and primary care clinics.

Three studies have proven MTT can reduce annual surgical mortality rates and overall decrease the number and severity of wrong site surgeries. [1-3]

Risk mitigation is also at the core of the CCRM program, aimed at a multi-disciplinary group of front-line VA health care providers. NCPS partnered with the Office of Nursing Service in 2010 to launch CCRM and has since trained more than 1,500 clinicians on 40 units throughout the VA health system.

Fourteen front-line medical units at nine VA facilities originally received training as part of the initial pilot, which included a six-hour learning session and two-hour clinical simulations, using high-fidelity patient simulators: 97 percent of the participants felt they had learned new skills that could be applied to work assignments.

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Contrast media administration errors involving allergies

Summary of root causes analyses

By Maisha Mims, NCPS program analyst

The two types of contrast media, iodinated and paramagnetic, can cause complications when administered to patients susceptible to adverse reactions. Iodinated contrast media is a radiopaque substance used to visualize internal structures of the body, used in X-rays, computed tomography (CT) and cardiac catheterizations. For MRIs, the FDA has approved six paramagnetic contrast agents, also known as gadolinium-based contrast media.

Root Cause Analyses (RCAs)

A search conducted of RCAs, 2000 to 2011, found 30 cases related to process errors surrounding the management of allergy information for contrast media administration. The major vulnerabilities found in the RCAs included:

- Software/hardware usability issues
- Improper handoff
- Lack of policy
- Monitoring of contrast effects
- Inconsistent use of informed consent
- Unclear staff duties
- Inadequate documentation, reporting and reviewing of allergies

The RCA information below highlights some of the vulnerabilities and actions found by the field in addressing issues surrounding contrast media administration and allergies at VA hospitals.

Vulnerabilities

- Adverse drug reaction package was not user-friendly and hard to access
- The automation of the initial nursing triage assessment allowed the patient's allergies to be pulled into the note, resulting in the nurse not processing the allergy information
- Absence of a critical order check override justification in the patient's electronic chart contributed to ambiguity in provider-to-provider communication
- Radiology ordering template format allowed contradictory allergy information to be entered
- A lack of documentation of medications prescribed prior to those received per the IV contrast media procedure
- The absence of radiology documentation of injection rate, contrast type and amount potentially contributed to incomplete communications
- Method of screening via hard copy led to an allergic reaction to the contrast media
- Lack of awareness of who was to report in the adverse drug reaction package
- No processes for ordering, labeling, delivery and administration of the oral contrast media increased the likelihood that the wrong patient would receive the oral contrast
- Lack of a standardized order set for outpatient and inpatient
- Pharmacy did not receive the request for contrast prior to the procedure, increasing the possibility that a potential allergen was missed when ordered
- Lack of patient monitoring after administration of contrast media
- An informal norm of not labeling doses of oral contrast media with patient identifiers and administration of oral contrast media by non-clinical support staff increased the likelihood that a dose would be incorrectly administered
- The MRI technician set up the radiology equipment with patient information prior to the patient arriving, increasing the likelihood of improper administration of the contrast media

Actions ideas

- Amend current screening form to include: Allergy adverse reaction, signature line for radiologist notification, and space for action taken, when required
- Modify the current process for patients undergoing CT and MRI scans with contrast media so that quick order sets, currently being used in the outpatient setting, will be used for all inpatients undergoing MRI and CT scans with contrast media
- Create an "imaging high-risk note" to indicate patient allergies, follow-up actions, patient name, date of provider notification, and patient disposition. The note will also include pre-medication, hydration, change of order, overriding medical necessity, and space for comments
- Allergies will be included on a standard template that will be put on each white board in the procedure room to be completed by the nurse prior to each procedure. The template will be reviewed during the time-out by the entire procedure team.
- Redesign the CPRS MRI screening questionnaire to increase its accuracy: Currently every question defaults to "NO," which can lead to confusion
- Educate providers and nursing coordinators on the importance of providing clear justification for overriding critical order checks in a patient's electronic chart
- Establish a protocol for patients receiving CT contrast media, indicating that a patient must wait approximately 30 minutes post-procedure in the radiology waiting room in case of a delayed allergic reaction
- The appointment list for the following day will be sent to pharmacy the morning prior to a CT exam and the IV contrast media will be delivered to radiology the evening before the scheduled exam
- Radiology will amend the patient screening process for procedures to include documentation that patients have been asked about high-risk indicators related to contrast media

Conclusion

The vulnerabilities and actions found in the RCAs can be used as indicators for possible areas of improvement for the contrast media administration process at VA hospitals nationwide. Opportunities also exist within each VA medical facility to improve the coordination of care by standardizing the collection and reporting of allergy information across services and units of care.

Reducing the risk of Veteran misidentification

By Mary Jane Willard, R.N., M.B.A., and Melissa Ball, R.N., B.S.N., patient safety managers, Central Arkansas Veterans Healthcare System

In April 2002, the Joint Commission appointed a group of experienced physicians, nurses, pharmacists and other patient safety experts to assist with the development of the first set of National Patient Safety Goals. Published in 2003, the first goal, "Improve the accuracy of patient identification," called for the use of at least two patient identifiers. In response, the Central Arkansas Veterans Healthcare System (CAVHS) adopted a policy of using the Veteran's full name and either the date of birth or full social security number for verifying identity.

Realizing the risk associated with Veteran misidentification, we felt it important as patient safety managers to develop a team to evaluate the identification process and create a more effective one. The our team began developing the new process in 2010 and it has resulted in an 84 percent reduction in close calls related to misidentification and no adverse events. The team remains active in monitoring and sustaining the results.

The intent of having two identifiers to accurately identify a patient is two-fold: first, to reliably identify the Veteran; second, to match the service, medication or treatment to that individual.

The previous identification process at CAVHS allowed members of several different disciplines in a variety of different settings to attach an armband to a Veteran. It was difficult to establish employee accountability; i.e., who placed the armband on a Veteran if it was incorrect. The team identified a new process to better ensure correct armband placement and bolster accountability.

All employees now involved in placing identification bands must indicate if they have used an "active identification" procedure to verify the Veteran's identity. Active identification includes:

- Asking the Veteran to state his or her full name. In the past, questions were sometimes worded in a yes/no format and sensory and cognitively impaired Veterans could nod affirmatively without fully understanding the questions.
- Asking the Veteran for his or her complete Social Security number, not just the last four digits

When complete, staff members add their initials and the location where the information was obtained to the armband. As confirmation that active identification has been accomplished, the Veteran must also sign the armband prior to it being placed.

Adding these two simple steps to document active engagement of the staff and the patient has mitigated process variation and increased patient safety at CAVHS.

The admitting process in any health care settings can be a highly vulnerable area, adding to the importance of this effort. An accurate patient identification at the time of admission is crucial since all tests, medication and procedures (i.e., lab work, radiology procedures, medications, allergies, treatments, surgeries) are all performed with the Veteran's information on the identification band. Any incorrect patient identification can lead to delay in treatments or the wrong treatment being provided.

During the early assessment period, several armband issues were identified. For instance, the Patient Identification Workgroup suggested a pilot focused on areas experiencing the most close-call misidentification events, using our patient safety incident reporting system as a guide.

The pilot's strategies were effective at reducing close calls and were shared with the Quality Executive Board, which approved facility-wide implementation. The CAVHS facility policy was changed to incorporate the new approved process changes. All appropriate employees were educated on this new process.

As CAVHS Emergency Department R.N. Christina Fenton put it: "By taking the extra step to have the patient sign his or her armband, we are empowering our Veterans to get involved in their own care. It also gives them a sense of security knowing we care enough to check and double check to make sure they stay safe."

We have continued to monitor the process and, as noted above, we can report that we have had a significant decrease in the number of close call misidentification incident reports (involving patient, lab sample, medication, etc.):

- 63 in fiscal year 2009
- 19 in fiscal year 2010
- 10 in fiscal year 2011

"For a complex tertiary medical center with over 11,000 admissions and 700,000 outpatient visits annually, this has been an outstanding patient safety improvement project − one sustained through the test of time!" noted CAVHS Chief of Staff Margie A. Scott, M.D.

Learning how to better the patient identification process through studying incident reporting trends, analyzing close calls, and involving Veterans and staff in an improved process has significantly improved CAVHS' patient safety program.

Risk awareness and patient safety

Continued from page 1

Patient safety curriculum

NCPS in 2002 began working with physicians and patient safety personnel from VA medical centers and affiliated universities to develop and test a patient safety curriculum program for residents and medical students.

From this, faculty development workshops were created: Over 1,000 have attended these from more than 100 VA medical centers and 50 university affiliates. NCPS has also developed a three-year series of workshops for residents that include: patient safety basics, human factors engineering, and simulation-based teamwork and communication.

Working to enhance residents' understanding of the importance of patient safety can help mitigate risks inherent in patient care; as importantly, help ensure a growing number of the next generation of health care providers understand advanced patient safety principles.

Patient safety fellowships

The VA Office of Academic Affiliations (OAA) teamed with NCPS to offer one-year fellowships in patient safety. NCPS manages the program; OAA provides the funding. Thirty-six have been selected as fellows since the program began in 2007.

The program is offered to post-residency-trained physicians; post-doctoral or post-masters-degree-trained associated health professionals (such as nurses, psychologists, and health care administrators).

A wide range of projects have included: evaluation of falls injuries and prevention strategies; prevention of hemorrhage in dialysis; and an evaluation of barriers to institutional disclosure, if care is related to patient harm.

By continuing to investigate specific patient safety-related issues, current care systems can be refined and risks mitigated, while a cohort of VA-trained patient safety leaders is being developed.

Product Recall Office

Located within NCPS, VA's Product Recall Office is tasked to manage recalls of all medical devices and products initiated by manufacturers, or the FDA, that are applicable to the VA.

Following its December 2008 establishment at NCPS, recall compliance – removing recalled products from the supply chain – has risen to and is holding at 98 percent. Rapid response to VA-wide recall of medical devices and products found to be defective can eliminate their exposure to patients, eradicating the potential health risk.

In particular, a significant improvement has been shown in the on-time completion of Class 1 recalls. Products in this class can cause serious adverse health consequences or death if exposed to patients. All actions must be taken within 24 hours to remove these products from use.

Prescription label literacy

Medication error is a significant cause of adverse events leading to patient harm. A study,"Improving Veteran health-literacy and safety through implementation of a novel, evidence-based, patient-centered outpatient prescription label," was completed in 2011 in an effort to mitigate risks associated with labels.

In conjunction with VA Pharmacy Benefits Management Services, NCPS conducted the study to evaluate the impact of culture, age and education on the understanding of current VA prescription labels and a proposed patient-centric prescription label: 446 Veterans at 11 survey sites and 697 VA pharmacy staff participated.

The Daily Plan®

This initiative enhances patient safety and mitigates risk by involving patients in their care. A single document is provided to them that outlines what can be expected on a specific day of hospitalization.

The plan received positive responses from patients and staff during pilot tests in 2007/2008 at five VA facilities. During the second phase of the pilot, held in 2009, evaluations were completed by 198 hospitalized patients and 85 nurses: 47.5 percent of the patients reported that either they or a family member had found and asked about a discrepancy in their planned care.

Mental Health Environment of Care Checklist

The checklist was developed for VA medical facilities to review inpatient mental health units for environmental hazards, decreasing the risk that a patient could commit suicide or inflict self-harm.[4]

In a 2010 VA study that examined the effectiveness of a standardized checklist for mental health units, a survey of 113 VA facilities indicated that they were able to reduce the risks associated with 5,834 (76 percent) of the identified hazards.[5]

Use of the checklist has also been associated with a substantial reduction in the rate of completed inpatient suicides in VA mental health units, as noted in a study published this year.[6]

Conclusion

Regardless of the initiative or program's specific focus, mitigating risk is an essential element of each NCPS program or initiative.

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