

TOPICS IN PATIENT SAFETY

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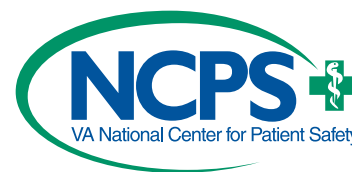
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TiPS



Developing a Rapid Response System

By Joe Murphy, NCPS public affairs officer

One way to gain insight on how best to develop a Rapid Response System (RRS) is to ask other patient safety professionals from the VA what they have done, which is exactly what Ileana Koerner did.

She is the North Florida/South Georgia Veterans Health System's patient safety coordinator.

After requesting information via the VHA patient safety listserv, Koerner received so many responses that she decided to share all of them with her implementation team.

She said people picked specific things that attracted their attention based on their professional backgrounds. "We didn't assign people specific topics," she noted, "and it turned out quite well."

One of the most important pieces of information the team received concerned a link to the Institute for Healthcare Improvement's (IHI) web site. A search on the site for "rapid response teams" produced 120 results, such as "Building Rapid Response Teams: Critical Care: Intensive Care: Improvement Stories." (See Note 1)

"The IHI provided us with good criteria, and we pulled different pieces together to develop implementation guidelines," she said.

Putting the pieces together is particularly important in a hospital setting, as the RRS concept supports one of the Joint Commission's National Patient Safety Goals for 2008.

Goal 16 calls for improving "recognition and response to changes in a patient's condition" and Requirement 16a states organizations should select "a suitable method that enables health care staff members to directly request additional assistance from specially trained individual(s) when the patient's condition appears to be worsening."

Further, one of the implementation requirements for Goal 16 indicates that an organization should empower "staff, patients,

and/or families to request additional assistance when they have a concern about the patient's condition," which relates directly to Goal 13: "Encourage the active involvement of patients and their families in the patient's own care as a patient safety strategy."

An important aspect in the process of developing an RRS in support of these goals at Koerner's facility was noting information found on the IHI web site had been used by other VA professionals to develop RRS policy.

"Much of the information on IHI validated what other PSMs had offered us about how they put their programs together," she said. "This made us much more comfortable with the direction we were taking."

But her implementation team didn't simply design their program based on what others had done. The team went much further: "We wanted to adjust what we had learned to our own setting," Koerner noted.

A pilot project is scheduled to begin this spring to test three different approaches to RRS team design, based on the different types of facilities involved.

"One approach will be to have a team made up of a respiratory therapist and a nurse," she said. "Another will include a hospital intensivist and nurse, and perhaps a resident."

A third approach is based on a "Beth Israel model." In this case, if a nurse notices a problem, a resident is called. The resident must then come to see the patient, rather than discuss the problem over the phone. (See Note 2)

As an example of a problem, if a nurse should notice a patient's oxygen saturation is less than 90 percent, an "Early Response Team" is alerted.

In the approach Koerner and her group favors, the team would assemble at the patient's bedside within 10 minutes.

Continued on back page

How a Good Idea Got Better

Developing an effective patient safety committee

By Joe Murphy, NCPS public affairs officer

Susan Copen and other staff members were initially cool to the idea of creating a patient safety committee – but over time the committee’s effectiveness has become apparent to all concerned.

“I groaned,” she said, recalling the suggestion made in 2004. “I thought, not another committee...this will just be one more thing to do.”

Due to excellent planning and a lot of hard work, the committee has not only taken hold – membership on it has become highly regarded. “It has become something people want to serve on,” she noted. “It’s really made a difference in our facility’s culture of safety.”

Copen, patient safety manager at the Jack C. Montgomery VA Medical Center, Muskogee, Okla., described a key element in the committee’s success: “We decided to ask a doctor to be co-chair. It really helped with buy-in. For instance, with medical reconciliation, you really have to have provider buy-in.”

She and Karen Gribbin, M.D., have remained as co-chairs since the committee was launched, ensuring a consistent and long-term approach to problem solving. All facility clinical services are represented on the committee, such as pharmacy, radiology, and nursing units. A simple, straight-forward charter was developed.

Leadership support has also been a major element in the program’s success.

“We report to the executive leadership committee and the director signs off on our minutes,” she said.

Copen also meets weekly with the facility director to discuss patient safety issues.

Starting as a group that collected and reviewed reports, the committee

has gone on to such things as monitoring implementation of the Joint Commission’s National Patient Safety Goals.

“The staff are now involved with implementing goals,” Copen said. “We break the committee up into teams and each focuses on a different goal.”

The members become deeply involved in monitoring the goals assigned them. “They own those goals. They take them on as their own personal programs.”

For instance, one nurse manager has focused on improving read-back of telephone orders. “Over the past two years compliance has significantly improved,” she said.

Another important aspect of the committee has been the group’s willingness to accept new ideas. “We do a lot of brain-storming. I couldn’t come up with all the ideas that come out of the committee at large,” Copen noted.

The committee also works to promote awareness of the National Patient Safety Goals. “We tried a variety of ways to do so, such as putting on a safety fair,” she said. “We also did an information booth for patients and are looking at doing some of these things again.”

Though the committee has been in business for several years now, Copen doesn’t see the committee’s way of doing business as being written in stone. She said the committee continues to be flexible and responsive, “a work in progress,” as she put it.

About the Patient Safety Fellowship Program

The VA Office of Academic Affiliations (OAA) and NCPS now offer one-year fellowships in patient safety.

The program provides post-residency-trained physicians and post-doctoral or post-masters-degree-trained associated health professionals (such as nurses, psychologists, and health care administrators) in-depth education in patient safety practice and leadership.

The fellowship program links individualized, mentored training at six VA training sites to a state-of-the-art curriculum in the science of patient safety improvement.

Proposals were generated and sites identified in 2005-2006; funding was provided by OAA. In 2007, the first eleven fellows met in Ann Arbor, Mich., and began a week-long intensive orientation that introduced them to patient safety methods and tools. Interactive learning sessions have continued by way of video conferencing.

The fellows have rapidly become involved in project work at each of the sites, such as:

- Evaluation of fall injuries.
- Curriculum for physicians assistants.
- Evaluating RCA effectiveness.

NCPS goals for fellowship enrollees include:

- Understanding the scope and gravity of patient safety events (adverse events and close calls).
- Knowing theoretical and practical reasons why “blame and train” approaches fail.
- Understanding the importance of discovering root causes toward developing appropriate and safe interventions.

Are you interested in learning more about becoming a fellow? Contact us via email: NCPS@va.gov.

Using Linear Programming for Health Care Modeling and Prediction

By Allan Brewer, MD, MHA

Health care providers and administrators acknowledge that data is the foundation for their decision-making.

Growing from the demands of moving large amounts of material and personnel during the Second World War, the U. S. military took the lead in developing mathematical models to test needs and processes of supply.

From these crude, balky numeric hieroglyphics have evolved simple spreadsheet-based programs – such as Microsoft® Excel’s ‘Solver’ plug-in – that greatly simplify the entry of data and completely eliminate the need for the user to have advanced mathematical skills. (See Note 1)

For example, a laptop user with the plug-in (which may be downloaded for free from Microsoft® Excel’s user-center) can accurately predict how many nurses a surgical unit requires to operate at maximum efficiency, the hours and days of work assignment for the staff, and the optimum number of patients and procedures to schedule the team to assure a budgetary constraint or quality goal.

My own project proposes that Root Cause Analysis (RCA) recommendations may be better informed when a simple linear programming exercise that models the situation under review is put to work at evaluating various corrective recommendations.

For instance, let me cite an RCA in which I took part. If we had had such a spreadsheet-based program, we would have been much better prepared to recommend the quantity of batteries that an operating room should have on hand to avoid an embarrassing and potentially health-threatening shortage of power for orthopedic saws and drills.

Administrators like this kind of quantitative process because it gives them a number to work from, one that’s developed from knowledge of

the workplace and a reasonable proxy of what that workplace is like.

It also gives them a basis for a “what if?” evaluation. The proposed recommendations can be amplified, modified, or even changed completely. Further, the effects of the recommendations can be observed before a costly real-world, hard implementation is put in place – oftentimes requiring a laborious process of construction, union approval and substantial administrative energy.

In short, linear programming solutions in spreadsheet applications

like Excel’s ‘Solver’ can help improve health care decision-making and help hold down costs in implementing creative solutions to our workplace needs in the Veterans Administration.

Note 1. The VA uses the Microsoft® Office Suite as part of its standard desktop software — of which Excel is an element. However, use of the plug-in at a specific VA facility is up to the local IT administrator. If you are considering using the plug-in, contact your local IRM department for approval. Here is a link to the software: <http://office.microsoft.com/en-us/excel/HP100215701033.aspx?pid=CH100870>

DECIDING HOW MANY PROCEDURES TO CONDUCT:

A Sample Linear Programming Problem

OBJECTIVE	SOLUTION	MINIMUM	MAXIMUM
Maximize Number of Procedures	37	0	
Find Solution for These Variables Given Constraints Below:			
# Procedure A to Perform	9		
# Procedure B to Perform	28		
Constraints:			
# Procedure A to Perform	9	0	
# Procedure B to Perform	28	0	
Procedure Constraint (Procedure Time in Hours)	61	0	65
Recovery Constraint (Recovery Time in Hours)	140	0	140
Ratio of Need (Need for B is 3x Higher than A)	0	0	

In the above example, the question is: How many Procedures A and B can be scheduled in one week at a fictional facility? As in any linear programming problem, a number of constraints involving the solution variables are used to define the problem. We chose 65 hours per week that could be devoted to conducting either procedure: Procedure A requires two hours to complete on average; Procedure B, 1.5 hours. On average, a patient requires 4.5 hours to recuperate from Procedure A; 3.5 from Procedure B. We gave our fictional facility 140 hours to specifically dedicate to these patients’ recoveries. There is also an added constraint based on the comparative prevalence of the procedures: During any given week, Procedure B is three times more likely to be required than Procedure A. Based on these constraints, a maximum of 37 procedures can be completed in one week: nine of Procedure A; 28 of Procedure B. It would take 61 of the 65 hours available to conduct the procedures; all of the 140 hours available for patient recovery.

Developing a Rapid Response System *Continued from page 1*

As noted from the previous example, the RRS concept is based on providing clear and exact criteria on what actions should be taken in a given situation.

Since the criteria used are very specific, an underlying problem may be noticed when a rapid response team meets and discusses a patient's condition. This can lead to an overall improvement in the patient's health.

"If one problem is found, another may be discovered," she said. "So what a rapid response team finds can have a very direct bearing on the patient's well being and care plan."

To monitor the progress of pilot teams, the implementation team chose to modify a debriefing guide used by NCPS' Medical Team Training (MTT) program, originally developed by the

VA New York Harbor Health System. "It's really thorough and really fit our needs," Koerner noted.

The modified debriefing guide asks questions such as: Did all the members of the team arrive at the bedside quickly? Did the problem get diagnosed quickly?

Another tool used in the MTT program, the "SBAR" communication tool, was also tailored to fit their detailed requirements. (*See below*)

At the VA Palo Alto Health Care System, the total number of in-hospital codes per 1,000 discharges declined following the June 2005 implementation of rapid response teams. A similar decline was noted at the Haley Veterans Hospital in Tampa.

"The data are impressive," she said. "I believe that we can have similar

results here, which means we will have done something really important for our veterans."

To provide further support for the RRS concept, a VA work group was formed and has sponsored four quarterly national conference calls to provide information and allow questions to be fielded.

"We have had such a good turnout and a high level of interest that we thought we would offer another call in six months," said Robert Bonello, M.D., Minneapolis VA Medical Center, who co-chairs the work group with Leslie Zimmerman, M.D., San Francisco VA Medical Center.

VA employees can find recordings of the national RRS calls, slide presentations and other shared documents and tools on the RRS link on the Inpatient Evaluation Center "Sharepoint" web site. (*See Note 3*)

The group is also working with VA's Employee Education System to develop educational modules for ward nurses and rapid response teams.

Note 1. Specific IHI link — <http://www.ihi.org/ihisearch/searchresults.aspx?searchterm=Rapid+response+team&searchtype=basic&Start+Search.x=7&Start+Search.y=8>

Note 2. For more information on Beth Israel and/or the role of residents in an RRS, click to this article published by the American College of Physicians, "Residents finding their place on rapid response teams," http://www.acponline.org/clinical_information/journals_publications/acp_internist/march06/residents.htm

Note 3. Inpatient Evaluation Center "Sharepoint" web site: <http://vanm.ipec.research.med.va.gov/default.aspx>. Many VA browsers are configured to automatically log users into the site. If further login instructions are required, click to http://vanw1.va.gov/IPEC/Sharepoint_SubPage.asp. The instructions also show how users can set up a browser for automatic login.

S	<p>Situation I am calling about <patient name and location> of <team/service> Admitted <date> with a diagnosis of : Code status is: The problem I am calling about is: Vital signs: I am concerned about the: Changes in Call Parameters Blood pressure because it is over 185 or less than 100 or 30 mmHg below usual Pulse because it is over 140 or less than 45 beats per minute Respiration because it is less than 10 or over 30 breaths per minute Oxygen saturation because it is less than 90% New temp less than 96 or greater than 102.2 degrees F Chest discomfort; Pain Management</p>
B	<p>Background Pertinent medications such as narcotics, anticoagulants, antibiotics Pertinent lab results such as CBC, ABG, Blood glucose, electrolytes Other clinical information as appropriate-telemetry Any change in mental status: The patient is not or is on oxygen: The patient has been on __ (l/min) or (%) oxygen for __ minutes (hours) The oximeter is reading __%</p>
A	<p>Assessment <say what you think is the problem> The problem seems to be cardiac, infection, neurologic, respiratory, blood glucose related I am not sure what the problem is but the patient is deteriorating. The patient seems to be unstable and may get worse, we need to do something.</p>
R	<p>Recommendation I suggest or request that you <say what you would like to see done> Come to see the patient at this time Communicate with me while I watch their status and report back assessment finding in <amount of time> Suggest that we reevaluate the code status Consider order changes: <say what you would suggest> Are any tests needed: Do you need any tests like CXR, ABG, EKG, CBC, or BMP? If a change in treatment is ordered then ask: How often do you want vital signs? How long to you expect this problem will last? If the patient does not get better when would you want us to call again? Document the change in the patient's condition and physician notification.</p>