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The Newsletter of Best Practices

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VA Tech disaster response shows value of drills, planning

Response nearly flawless, say leaders

Despite the chaos and upheaval of the horrific tragedy that befell Virginia Tech on Monday morning, April 16, 2007, the orderly response from the medical community went pretty much according to plan. At Montgomery Regional Hospital, which received the majority of the patients, the lives of all 17 who arrived there were saved. What's more, say those in charge of disaster response, the staff responded so eagerly that in at least one department the manager had more than he needed.

The impressive response, hospital leaders agree, was due in large part to the regular disaster planning and drills conducted at the facility. "We generally have three or four drills of some type each year — some are full-scale drills, while others may be tabletop exercises," says **David Linkous**, RN, MEd, the hospital's emergency planner, noting that The Joint Commission requires at least one large-scale disaster drill and one tabletop drill per year.

"We also participate in statewide and regional drills," he adds. "For example, last April we utilized an old abandoned motel and staged the explosion of a chemical truck."

There were 36 "victims," all of whom were "contaminated" with chemicals, so staff had to deal with decontamination as well as with multiple injuries. "We utilized several EMS agencies, and the hospital had to decontaminate and treat the patients, while pre-

Key Points

- Full-scale, tabletop exercises prove effective predictors of how events unfolded
- Color-coded triage tags, implemented in the field, smooth the way for treatment in the ED.
- Communication becomes an issue as cell phones go down all over the community.

venting the rest of the hospital from being contaminated," Linkous reports.

The hospital disaster plan delineates staff responsibilities, policies, and appropriate responses for different types of disaster. "It's basically the same 'tree,' modified by condition," notes **Mike Hill**, RN, the ED director.

The planning process is handled by the Emergency Management Committee, which includes department directors — ED director, director of pharmacy, infection control, the lab, X-ray, safety & security, and engineering; the chief nursing officer; the associate administrator; an emergency physician; and a PR representative.

The awareness of just how important planning is hit hard in August 2006, when a hospital security guard and a deputy sheriff were shot and killed in the hospital by a prisoner. "On any given Saturday in Blacksburg, we have 60,000 to 70,000 in the football stadium, so we always practiced 'what ifs,'" notes Hill. "But after that, it became, 'We *have* to have a plan.'"

In addition to honing the disaster plan, Linkous had a number of staff take the National Disaster Life Support Foundation's Basic Disaster Life Support class, after which they took an Advanced Disaster Life Support (instructor's) class. "We were told after that class that there were more people in our county with that designation than there are in the entire state of California," he says.

From drill to reality

Much of what was practiced during the drills was put into use in the aftermath of the Virginia Tech shootings. For example, as part of the hospital's HICS (Hospital Incident Command System) plan, all victims received either a red, yellow, green, or black tag after being triaged in the field.

Of the 17 patients, all but four were gunshot wounds. Four were critical (red); eight immediate (yellow), deemed able to wait an hour or so for treatment; and five green, which meant care could be delayed. Those patients were sent to outpatient surgery for holding, where they were cared for by nurses. (Patients with black tags, for "non-viable," were not even brought to the facility.)

"The majority of the 'immediates' were broken bones or 'through and throughs' [gunshot wounds]," recalls Hill. "You have to remember, any yellow can change to red, but they get reassessed if they turn pale, if their BP drops, and so forth." Still, he says, the tagging in the field done by EMS was "pretty much on the money."

In the event a patient arrives with a green tag but appears to be sicker than that, a nurse at the door can re-tag him or her. "That's what we practiced in our drills; placing an ED nurse there for quick assessment, to see if they are what the tag says they are," says Linkous.

Call hardly needed

While the disaster plan clearly outlines a method for calling in extra staff, this part of the plan was hardly needed on the day of the shootings. "If there is a large influx of patients, we go to condition green; we go on alert, call all the staff, including ancillary staff, which is what we did last Monday," says Hill.

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Once employees arrived at the hospital, they reported to the cafeteria to sign in, indicated their skill level, and were then assigned to a unit based on what was needed where. "We did that on Monday, but we had a *huge* turnout," says Hill. "Most people in the ED did not even have to get a call; they saw a report on the TV or heard about it on the radio." Fortunately, he adds, it was 7:30 a.m. on a weekday, rather than 3:00 a.m. on the weekend, "when no one would be here."

When Code Green is activated, it is also announced internally over the hospital PA. In addition, each department has a list of names; the person at the top of the list calls the next person, and so on, until the entire department is called.

The ED had no problem getting staff to report. "I have 40 staff members, and 33 of them were here," says Hill. In addition, as Monday is a "big" surgery day, all of the surgeons were on hand. And, since a case had just been finished, there were three or four surgeons waiting for their next case. There also was an ENT available, and another surgeon came up from sister hospital Lewis Gayle.

"We even had an OB/GYN surgeon call and say he was glad to come over and work in a room and pass out instruments," says Linkous. "We had extra people come in — more staff than we needed, really."

In fact, says Hill, a list had to be made of staff who should be asked to *leave* the ED. "You don't want *too* many staff, because then you can't maneuver around," he explains. "If you can't get through the halls, you get a traffic jam, so to speak."

Communications an issue

One of the issues that became more serious as the day went on was communications — which called for the use of cell phones. "When you've got a school of 27,000 students and the shootings made the national news, the moms and dads all called, and all cell phones shut down," recalls Hill.

"We were getting conflicting reports," adds Linkous. "From once source, we were told we had gotten all the patients we would get; another said more were coming. That's where another part of our plan came into play."

That part of the plan involved putting a liaison at the scene, so when communication became a problem, Linkous headed down to the command center. "He was able to contact me directly, so we had a better understanding of what was going on," says Hill.

In the hospital debriefing that followed the incident, it was agreed that the committee would

Counseling is essential following a disaster

The availability of group and individual counseling for hospital staff following two shootings within eight months of each other in Blacksburg, VA, was invaluable, says **Mike Hill**, RN, the ED director at Montgomery Regional Hospital, which treated 17 victims of the recent shootings at Virginia Tech.

"When I started 20 years ago, we did not have sessions like this; you were just expected to go on your way," he notes. "Responders have killed themselves after events like these."

Each event brought with it its own type of stress, notes Hill. In the first incident, a shooting of a hospital security guard and a deputy sheriff in August 2006, the incident involved someone who had grown up in the community.

"This event occurred with someone the whole ED staff knew and saw shot down," notes **David Linkous**, RN, MEd, the hospital's emergency planner. "The psychological stress with those killings was basically worse," says Hill. "The [security guard] was a local guy who grew up in the system and had checked on the nurses just before the incident."

This type of experience, Hill continues, can lead to post-traumatic stress disorder. "In fact, some people are still going to counseling for the first event," he notes.

The more recent event involved "seven hours of stressful, high-tempo work, but all of the patients lived," notes Hill. "Anyone in medicine's goal is to do all you can to save a life. Still, once you go home and think about 33 kids not making it, *that's* what tugs at your heart."

The group discussions are valuable, says Linkous, "because they enable you to see that others feel the same way you do." In fact, says Hill, he and Linkous attended a group debriefing for one of the local rescue squads the night after the most recent incident. "It was good to hear what they had to say, and what they were feeling," he says. ■

look into some portable radios, to be used as another source of communications. "That was definitely a big problem as the day went on," Linkous concedes. "There are several different cell phone companies, and none of them were working."

According to plan?

For the most part, Linkous is pleased with the hospital's response. "I think it went just like the plan predicted — a lot better than anticipated," he says. "I was very happy that people understood this was a collaborative event; it impacted the *whole* hospital. People from the lab, from X-ray, and nurses from other departments were in the ER. When you implement Code Green, you are supposed to send nurses there from each department. Other department directors also came down."

In addition, he notes, elective surgeries were cancelled to relieve pressure on the ED. "People who were there being prepped for outpatient surgery were sent home, and we called those who were scheduled for surgery [to cancel]; this opened up 24 beds for ED overflow," he notes.

Another aspect of pre-planning that proved very helpful involved disaster carts, which contained IV solution, bandages, and other general trauma supplies. "We had designed these carts several years ago, and they were rolled down to an area between the ED and outpatient surgery, in case they ran out of supplies," says Linkous. "We emptied a couple," Hill reports.

You can't plan for everything, Linkous concedes, but in some cases staff members anticipated things the formal plan did not. "A pharmacist came down and brought extra meds — mostly antibiotics and rapid-sequence intubation drugs — and stood at the nurses' station and dispensed them as needed," he says. "This will be in the plan from here on out."

In addition, he says, the committee determined to enhance patient tracking techniques. "Sometimes it was a little slow when we wanted to find out where a patient was," Linkous notes.

Still, he says, "This went incredibly well for a hospital our size. The biggest thing is teamwork among the staff; I can't say enough about them."

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PSO: An evolving, critical role in health care quality

Reporting structure varies from facility to facility

Whether they are called patient safety officers (as many now are), patient safety managers, or some other title, individuals whose overall responsibility at their facility or health system is minimizing errors and complying with safety standards such as The Joint Commission's National Patient Safety Goals are gaining in both prominence and responsibility.

In fact, according to a new article in the *Journal of Patient Safety*, this new breed of patient safety leader " . . . must be an educator, a diplomat, an analyst, a student, a negotiator, a communicator, and a person who understands broad strategies and granular tactics."[1]

The authors continue: "To be an agent of change, they must not only have a high intelligence quotient (IQ) but also, perhaps more importantly, a high emotional quotient (EQ) – that is to say that they must have solid people skills.

"Most of all, they must be leaders who earn the respect of those who can influence the behaviors of everyone up and down their organizations because their impact will be made through others."

These daunting skill set requirements are reflected in those who hold such positions. Take, for example, **Marion Martin**, RN, MSN, MBA, patient safety officer at Moses Cone Memorial Hospital in Greensboro, NC.

"I think my timing was perfect when I was asked to take this position," she relates. "I was director of emergency services, which really did prepare me; after all, they were looking for someone with a quality background, able to handle the ED, with 30 years of nursing experience, familiar with state and federal guidelines for Medicare and Medicaid, and someone who has dealt with The Joint Commission."

In addition, she says, there is a "big focus" on process improvement. "And we are very involved in the quality piece as well."

Key Points

- PSO must be educator, diplomat, analyst, student, negotiator, and communicator.
- Experts say position should not be linked with other job responsibilities.
- Passion for patients, strong leadership skills are keys to success.

Different structures used

The title's meaning and reporting structure can vary quite a bit from organization to organization. "I have held the equivalence of this position from its inception, but the very use of the term Patient Safety Officer is significant," notes **Lori A. Paine**, RN, MS, patient safety manager for Johns Hopkins Medicine in Baltimore. "At Hopkins it is reserved for the corporate officer under whom patient safety resides — in this case, the vice president of medical affairs. "I am his one lieutenant responsible for everything in patient safety."

In other organizations, she notes, the position reports through the quality structure, while in others it flows through risk management. "It's interesting to consider under what structure [the position] reports to," notes Paine.

Both Paine and Martin agree the scope and importance of the position are growing. "Just look at what's going on in terms of folks with this title," says Martin. "As I get out and about and look at some of the national initiatives, such as IHI [Institute for Healthcare Improvement], with its new 5 Million Lives campaign, and The Joint Commission, with its National Patient Safety Goals, there is a huge focus on safety — and I am involved with *all* of those."

Paine agrees that the position is "definitely" growing, as evidenced by the aforementioned reporting structure. "Our reporting structure makes an important statement about patient safety in our organization," she asserts.

At an academic medical center like Hopkins, she explains, the physicians have a reporting structure aligned with the university, but they also are aligned as employees of the hospital. "It's difficult to have a hospital [safety] position and try to accomplish anything multi-disciplinary," says Paine.

At Moses Cone, patient safety originally had been part of the job description of the risk manager, "but it's an overwhelming role," notes Martin. "There's a lot of responsibility, and the risk manager couldn't do both. You need one person to look at patient safety, and then work with risk management; it really requires a new culture, with one person overseeing the building of that culture."

In smaller organizations, says Paine, it might be necessary [for a single person] to multi-task, "but I argue that every organization should devote at least one person to patient safety; there's a lot to do."

Departments interface

Patient safety officers spend a good deal of time interfacing with other departments. "Our quality and risk departments are separate, but we all must collaborate," says Paine.

For example, she notes, she is responsible for the event reporting system. "We get 250 [events] reported a week," she shares. "My staff goes through all of those events individually — regardless of level of harm."

At the same time, risk management performs a similar task, but only for those events where harm has occurred. "We parse those off to risk management, but we look at those events in the lower harm range, and examine risks and opportunities for improvement," says Paine.

The quality department has a very defined role: They are "officially" responsible for monitoring follow up of sentinel events, and making sure action items get followed up on, says Paine. "Every department has a PI or QI nurse assigned to them; we encourage them to use the data out of our event reporting system to help those departments see their own opportunities for improvement," Paine adds.

At Moses Cone, Martin and the risk manager meet weekly to discuss adverse outcomes, so they can learn how to prevent similar events in the future. "We work very closely with the risk management specialists in developing a plan of action, and we have created a culture of safety," she says.

As her responsibilities also touch on the building itself, Martin is involved in the physical safety of employees, and compliance with OSHA. "Also, infection control reports to me, which I highly recommend as a strategy," she says. "We meet daily to talk about things like flu epidemics, what to do with patients when we see a growing population coming into the hospital with community-acquired conditions, and so forth." She also interfaces with pharmacy on issues such as high-risk medications.

The position itself is part of the quality depart-

ment, so she reports to the chief quality officer, who in turn reports directly to the CEO. "As [this position] grows, it may change down the road," Martin predicts.

At present, the chief quality officer assigns Martin projects, and together they discuss all adverse outcomes and review public reporting data. "We have created a dashboard for looking at the National Patient Safety Goals and how we are performing," she adds.

For a job that has only existed for three-plus years, its "plate" is a full one. Martin also interfaces with hospital Six Sigma "black belts;" when patient safety issues are identified, they discuss how to turn those issues into projects, and share learnings from those projects. "This way, there is a patient safety component in *all* QI projects," she explains.

She also works very closely with the medical staff, meeting weekly to review Joint Commission standards.

Keys to success

What are some of the personal qualities that will help ensure success in such a position? "You've got to have passion around patients — being a patient advocate and seeing things through the patient's eyes," says Martin. (For example, on the hospital web site, www.mosescone.com, Martin reports responses to the question, "What would make me feel safe when I come to the hospital?")

"You have also got to have strong leadership skills," she continues. "You need to see things as the physician sees them, as the nurse sees them, and as leadership sees them, and be able to present the issue in such a way that it hits all the diverse groups you work with." (For a list of tips for success from the IHI, see box this page.)

Paine says that one of the major responsibilities, and, therefore, a key to success, is "to be knowledgeable and an agent of change of the organization's culture. Unless you understand and appreciate the culture of the organization, I'm not sure how you could do it."

That's because every organization is different, she notes. "I could go into another organization and not be able to accomplish the same things the way I did here; you have to be respectful of where they are in their journey," she says.

Another key to success, Paine continues, is to be able to tolerate ambiguity, and be able to take risks. "Four years ago when I took this position, I did not know what I was getting into," she concedes. "They called it a 'coordinator' position, but once you start having someone to turn over these 'rocks,' you start finding stuff, and the more you find, the more work there is."

In addition, she says that organizations "have to be prepared to act on the things we reveal." This, in turn, results in a "groundswell" around staff requirements. "At first it was just me; now two people do event reporting, another helps me with CUSP [Comprehensive Unit-based Safety Programs] and the safety newsletter, and Joint Commission readiness."

Who would make a good candidate for the position? "I think somebody with a clinical background — not necessarily a nurse, but a nurse would do very well," says Martin. "It could also be a physician; I have met several."

In general, she says, the ideal candidate "probably has great experience in quality processes, and has the ability to use all the tools available. It also takes someone who has the ability to make presentations to many diverse audiences, someone who has the ability to respond and be able to

Tips for success for patient safety officers

- Make the position one of high rank in the organization, so the PSO will have the authority to act and remove barriers to change.
- Have regular meetings between the PSO and the chief executive officer.
- Provide educational opportunities to the PSO, so he or she can continually seek best practices.
- Ensure that the PSO has the resources and organizational support necessary to implement plans.
- Require the PSO to make regular presentations to the organization's governing body.
- Choose a clinician who is held in high regard by peers regardless of "rank" — someone who "walks the walk" and not just "talks the talk." Although traditional choices might be a physician or nurse, other health care providers such as pharmacists should be considered.
- Patient safety officers are important and key not only to the success of the patient safety program at any organization but also to the success of the organization as a whole. Patient safety officers do not need to be clinicians. The knowledge and skill sets go beyond clinical specialization. Patient safety is about culture, error analysis, and teaching.

Source: Denham CR. The new patient safety officer: A lifeline for patients, a life jacket for CEOs. *J Patient Saf* 2007; 3:43-54.

plan actionable items, and who can figure out how to measure outcomes."

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Panel lays a framework for ethical conduct in QI

Determine if project is QI, human research, or both

A wide-ranging group of experts convened by The Hastings Center has put forth some general understandings of quality improvement — what it is, what role it plays in health care, and how ethical conduct can be ensured in QI projects. Their conclusions are reported in a new paper in the *Annals of Internal Medicine*.[1]

The panel, which included ethicists, clinician leaders, experienced managers, regulators, and noted authors, defined QI as "systematic, data-guided activities designed to bring about immediate improvements in health care delivery in particular settings." They further concluded that: QI is an intrinsic part of health care operations; both clinicians and patients have an ethical responsibility to participate in QI, provided that it complies with specified ethical requirements; and that most QI activities are not human subjects research and should not undergo review by an institutional review board (IRB), but rather, appropriately calibrated supervision of QI activities should be part of professional supervision of clinical practice.

"QI as a method and topic was sort of in the backwaters of healthcare until the last 10 to 15 years," notes **Joanne Lynn**, MD, recently a quality improvement leader and researcher with the Rand Corp. and lead author of the article. "We've developed a mode of research without paying much attention to the use of data in guiding system design and management decisions, and more and more we want and need that."

Key Points

- Quality improvement seen as intrinsic part of healthcare operations.
- Patients as well as QI professionals have ethical obligations.
- Research framework creates too much rigidity for most QI projects.

In addition, she explains, there is often a perceived overlap between QI and research that needs to be addressed, as it has impacted the research review enterprise "in ways those people never imagined."

Thus, she continues, this paper is "both an expression of the 'growing up' of the field of QI and to ask how we do this in more or less ethical ways, and when we ought to undergo research review and when it should be kept apart from that process."

Too much rigidity

In most instances it is advantageous that QI *not* be treated as research, says Lynn, "because the mode of research review has become pretty rigid and it can impose lots of delays and costs [on QI]."

One of the principles of QI, she emphasizes "is to make changes when you *can* make changes; you try something, and if it works you go to it the next day." In that context, she observes, "the mode of review for research does not fit QI very well."

Ethics, however, demand that QI be reviewed, Lynn notes. "But not in the way that is put together for research."

To try to come up with some answers, the panel drew from "quite an array of perspectives," in the aforementioned group sponsored by the Agency for Healthcare Research and Quality (ARHQ). "We drew upon the experiences and insights of the group. We had a listserv; we sent information out to the field and got comments back," Lynn reports.

Don't separate QI

In addressing the most significant conclusions of the panel, Lynn noted, "We felt QI has to be seen as an intrinsic part of health care, not *separate* like research is."

In other words, she explains, research is optional; anyone can opt out. "For reasons of ethics, all participants have to be associated with the research voluntarily," she says. "But for QI, you can't have people opting out; you would double or triple your costs. Also, everyone has an interest in the system running well and working well, so all parties should want to be involved."

A second important conclusion, says Lynn, is that clinicians involved in QI should not be protected from outcomes like they are in research. "If QI shows your job needs redoing, or you are not doing a good job, no review should protect you from having to improve your quality," she asserts.

Thirdly, says Lynn, there are a number of situations in which research and QI overlap, and where you may want to treat the project as both. "That may take some special attention, like building a special research review mechanism for QI," she says. In fact, the authors call upon federal agencies to help develop such a mechanism.

They outlined the following characteristics they say could prove helpful in defining activities as both QI and human subject research:

- Testing of issues that go beyond current knowledge based on science and experience, such as new treatments;
- Random allocation of patients into different intervention groups to enhance confidence in differences that might be obscured by nonrandom selection (but not randomized for equitable allocation of scarce resources);
- Deliberately delayed or ineffective feedback of data from monitoring the implementation of changes, especially if this is done to avoid biasing the interpretation of data;
- Involvement in key project roles of researchers who have no ongoing commitment to improving the local care situation, even if others in the team do have professional commitments to it;
- Funding, sponsorship, or substantial participation by parties outside the clinical setting or organization in which the activity takes place.[4]

Learn about issue

Lynn predicts that more and more quality managers are going to run into the problem of separating QI and research, "and they should be knowledgeable about this problem."

While the mere fact that you are doing a QI project and publishing your results does not necessarily make it research, "you should be attentive to making sure your QI projects remain ethical," she advises. The science in this area is not yet good enough, Lynn maintains, and that could put patients at risk.

"That's why one of the strongest things we say is that QI has to be done ethically; you can't just assume that because you are trying to fix things you can't go wrong."

She recommends that quality managers approach IRBs in the areas they are looking at. "Go over the paper with the chairperson and work out procedures for that setting."

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Don't have an ICU? You can still have an RRT

Smaller facilities look to their ED to fill staffing needs

The "traditional" model of a rapid response team (RRT), as outlined by the Boston-based Institute for Healthcare Improvement (IHI) and employed by a large number of hospitals, is often driven by (and mainly staffed by) the ICU or other staff with critical care experience, such as critical care nurses. But in a growing number of facilities, particularly smaller community hospitals, that role is now being filled by the emergency department (ED).

"The hospitals that I have talked with who utilize this model do so for several reasons — either the lack of an ICU unit, [insufficient] staffing, or for physician coverage of the rapid response team," notes **Kathy D. Duncan**, RN, expert faculty for RRTs at the IHI.

Duncan says this model, while used mostly in smaller hospitals, is not restricted to facilities that lack ICUs. "Sometimes they *do* have an ICU, but if it usually has only one or two patients, the nurses are cross-trained to be both ICU and ED nurses," she notes. By being cross-trained, they can alternate assignments from shift to shift, depending on need, she says. Also, no matter which unit is handling the rapid response team (RRT), a nurse in the other unit still might carry a beeper and serve as a backup.

Duncan adds that sometimes these nurses are cross-trained by the ED, while in other facilities the ED staff *are* the RRT. "Staffing often comes from that unit because they are there 24/7," Duncan explains.

Key Points

- Insufficient staffing, need for physician coverage of the rapid response team, other reasons for alternate models.
- ED and ICU nurses can be cross-trained to cover each other's units and the RRT.
- EMS staff can also be used, especially when many also are RNs.

In addition, if a physician is needed by the RRT, "the only guy in the building is often the ED doc," notes Duncan. "Most facilities will have a triage situation where the nurse and respiratory therapist will do the initial assessment, and if things look bad, they'll call the ED doc."

In facilities like these, she continues, the RRT may not be called that often — perhaps three or four times a month, she suggests — "but it's important to have someone available."

Large facilities different

In larger hospitals, says Duncan, this model is rarely used, and the ED and the RRT will not directly interface nearly enough. "I have heard from some folks in one Cincinnati facility that if the ED is holding patients for a longer period of time, and these are essentially med/surg patients waiting on a bed, there is some magic point in time — perhaps after two to four hours — after which they may call the rapid response team if the patient is deteriorating or if you need an extra set of hands," she notes.

It's extremely important, when the ED *is* the focal point of the RRT, that the department's manager be more knowledgeable about RRTs, says Duncan. "The manager needs to know all there is to know if they are providing coverage," she notes. "For example, in one small hospital in Cleveland, the ED manager and the ICU manager take turns on the RRT."

Running the show

Someone who definitely needs to know "all there is to know" is **Patti Massmann**, RN, director of nursing at Granite Falls (MN) Hospital, a small rural, critical access facility. Massmann oversees the RRT at Granite Falls, which went live in July 2006. While the team is run through emergency services, there is no manager for those services other than Massmann.

The structure was determined by the hospital's critical care team, says Massmann. "We had discussions regarding the framework of rapid response teams, looked at other facilities, reviewed IHI's recommendations [for setting up an RRT] and then made a model that made sense for us," she says.

Since Granite Falls has an ambulance service, says Massmann, "it made sense to use EMS staff since they are on call 24/7," she says. Half of the paramedics are also RNs and function as such

within the hospital, she says. The rest of the team consists of the bedside nurse and the physician.

Anybody can make a call for the team, which comes through on the pagers that all team members carry, Massmann says. "The first criterion [for a call] is that you are worried — that something's just not right with the patient," she explains.

The primary benefit to the hospital is getting extra hands to the bedside fast when a patient is in critical condition, Massmann says.

In the past, says Massmann, these patients might have been put on the med/surg floor or in a monitored unit. "All of that is time-consuming," she says. "Now, we can get all the players to the bedside and, hopefully, keep the patient in the room and not have to move them to a higher level of care."

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Data reveal 90% of ADEs not administration errors

Only 8.6% of events due to wrong drug, wrong dose

While The Joint Commission and other organizations are paying a great deal of attention to safety in drug administration, a new report from the Agency for Healthcare Research and Quality (AHRQ) indicates we may be doing a better job than many have thought.

According to the latest "News and Numbers" from AHRQ, 90% of the 1.2 million patients who experienced an adverse drug event in 2004 did so as a result of a side effect from a properly administered medication. In addition, AHRQ notes that only 8.6% of adverse drug events among hospitalized patients were because they were given the wrong drug or the wrong dose in the hospital, or because they accidentally took an overdose or the wrong drug before entering the hospital.

AHRQ also found that:

• Average total hospital costs for patients who experienced drug side effects or other adverse drug events were $10,100, compared with an

average cost of $7,600 for patients who didn't experience adverse drug events.

• The top three types of drugs involved in adverse drug events were corticosteroids, blood thinners, and anti-cancer drugs, mostly due to side effects from properly administered medications. For corticosteroids, 11.6% of hospital stays involved an adverse drug event, but just 0.4% of those events were due to wrong drugs or doses. For blood thinners, 9.4% of stays involved adverse drug events, 2.8% of which were due to wrong drugs of doses. For anti-cancer drugs and drugs used to prevent organ transplant rejection, 9.6% of stays involved adverse drugs events, 0.4% of which were due to wrong drugs or doses.

• Patients who suffered side effects from properly administered drugs tended to be older — an average of 64 years old — than patients who suffered from problems related to wrongly administered medication — an average age of 64 vs. 47. Nearly 60% of the patients who experienced an adverse drug event were women.

These numbers were drawn from data found in "Adverse Drug Events in U.S. Hospitals, 2004." The report, which can be found at: www.hcup-us.ahrq.gov/reports/statbriefs/sb29.pdf, uses statistics from the Healthcare Cost and Utilization Project Nationwide Inpatient Sample, a database of hospital inpatient stays that is nationally representative of all short-term, non-federal hospitals. According to AHRQ, this represents 90% of all discharges in the U.S.

'Heartening' findings

"This is the first time I had looked at adverse drug events in hospitals, and I was actually somewhat heartened that most were [due to] side effects of drugs," says **Anne Elixhauser**, PhD, senior research scientist with AHRQ and lead author of the study. "We are dealing with very powerful drugs here that have tremendous impacts on peoples' lives, and one of the potential problems is the adverse effects associated with them."

In fact, she continues, there were some limitations in the study that may mean the actual percentage of errors due to wrong drug or wrong dose is *lower* than the 8.6% reported.

"We were not able to distinguish whether the adverse drug event originated in the hospital or in the outpatient setting," she explains. "What we are looking at is hospitalization data, which gave us the ability to identify adverse drug events among hospital discharges. However, we don't know whether those events started or occurred in the hospital, or whether they started *previous* to hospitalization." In other words, she explains, the adverse drug events might have been the *cause* of hospitalization.

"The true number could be lower, or undercoded," she notes. "What's clear is that no *more* than 8.6% of the errors could have started in the hospital."

Key Points

- Average total hospital costs for patients who experienced ADE's 50% more than for those who didn't.
- Corticosteroids, blood thinners, and anti-cancer drugs are meds most often involved with ADEs.
- Monitoring of anti-coagulants should be regular and frequent to ensure they are having the desired effect.

Drug types give clues

The study was able to break down the most common specific causes of adverse drug events, including types of drugs. For example, corticosteroids, anti-coagulants and anti-cancer/immunosuppressive drugs accounted for a little more than one-quarter of all adverse drug events. "None of these are given frivolously; often, there is no other treatment available," says Elixhauser. "They may just be part of the cost of having meds that may not be used any other way."

A further examination of the data showed a certain percentage of "poisonings" with the percentage of adverse effect. "What we see here are the

COMING IN FUTURE MONTHS

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- Options Paper: What does it mean for you?
- "Value exchanges" support QI through public reporting of cost and quality data
- $26.5 million tech investment pays off for rural facility
- Phone-based therapy eases depression long term

top drugs that cause poisoning are benzodiazepine tranquilizers, such as valium; opiates; then anti-depressants and unspecific anti-convulsants," notes Elixhauser. "This leads me to believe that most of the poisonings we see probably originate in the outpatient setting."

One of the goals of the study, she explains, was to "give some clues as to where the most reasonable place for intervention would be. We took out all self-inflicted injuries, like suicide."

Despite the mostly positive numbers, Elixhauser concedes, "There is still a lot of hospitalization associated with adverse drug events." The findings, she says, can help point out how those numbers could be even further reduced.

For example, she points out, "We know we need to monitor anti-coagulants carefully. That monitoring should be regular and frequent to make sure they are having the desired effect."

More careful monitoring of corticosteroids should also be done, she adds, while admitting that "it's such a balancing act — keeping the patient asymptomatic vs. giving them too much medicine. The threshold there is pretty tight."

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NEWS BRIEF

AHA: IT use in hospitals continues to grow

According to the American Hospital Association's (AHA) second annual survey of hospital health IT use, hospitals continue to accelerate their use of health information technology, with 68% reporting that electronic health records had been fully or partially implemented as of fall 2006.

Cost continues to be the greatest barrier to greater adoption of health IT, with urban hospitals, teaching hospitals and larger hospitals more likely to afford the investment, the survey found. While recent Department of Health and Human Services rules have lessened obstacles posed by the physician self-referral and anti-kickback laws, hospitals have been concerned that, under Internal Revenue Services rules, helping physicians access and use health IT could impact hospitals' tax-exempt status.

The AHA recently met with the IRS to ask the agency to confirm that following the new HHS rules would not jeopardize hospitals' tax-exempt status, and the organization reports that the IRS' initial response was positive. The agency said it understands hospitals' role in facilitating EHR implementation and is willing to move quickly to provide a formal response about the issue. ■