AMERICAN HEALTH CONSULTANTS

HOSPITAL CASE MANAGEMENT™

the monthly update on hospital-based care planning and critical paths

IN THIS ISSUE

MARCH 2003

VOL. 11, NO. 3 (pages 33-48)

FMEA: A new QI tool to help improve case management processes

Failure mode analysis can be used to improve virtually any CM activity

Case managers are no strangers to quality improvement (QI) tools; for many years they have used a number of QI tools to improve processes and to help them meet accreditation standards.

But the Joint Commission on Accreditation of Healthcare Organization's (JCAHO) current patient safety standards have created the opportunity — some would say the need — to introduce an entirely new QI tool to case management professionals: failure mode and effect analysis, or FMEA.

"FMEA is a proactive tool," explains **Patrice L. Spath**, a consultant with Brown-Spath & Associates in Forest Grove, OR. "It does not start with an assumed or identified effect and work backward, like a cause-and-effect diagram does. You simply take a process and use the FMEA technique to improve it."

"With other QI tools, you first identify the issues," adds **Judy Homa-Lowry**, RN, MS, CPHQ, president of Homa-Lowry Healthcare Consulting in Metamora, MI.

"With an FMEA, you thoroughly analyze the process, which would be particularly helpful in solving these types of problems," she explains.

The concept of using QI tools to improve case management processes makes good sense, Homa-Lowry continues. "JCAHO standards encourage the use of statistical process improvement tools, and since case management is a process, it makes sense to use these tools to evaluate how to improve case management."

What is FMEA?

It is perhaps the basic approach of FMEA that sets it apart from other QI tools, Spath says. "A lot of QI tools say, 'Here's a bad thing; now let's work back and find out what caused it.' But your goal in FMEA is to *prevent* things from going wrong, or to reduce the undesirable impact when

they *do* go wrong," she adds.

While JCAHO standards do not mandate a specific risk-analysis model, accredited organizations are expected to use a systematic and analytic technique to identify and address failure modes in high-risk patient care processes, Spath notes.

The FMEA process, she explains, covers five basic steps:

- Choose the process to be studied.
- Assemble a multidisciplinary team.
- Organize information about the process under study.
- Conduct hazard analysis.
- Develop and implement actions and outcome measures.

Let's say your hospital has chosen to do an FMEA on the patient admission process. Once you have identified four to seven individuals with personal knowledge of this process to form your team, you can meet to organize your information and discuss the goals and scope of the project. A flowchart of the admission process is created. Next, the team conducts a hazard analysis that includes the following steps:

1. Identify failure modes for each process step.
2. Determine the potential effect of each failure mode.
3. Rank the severity of the failure mode effect.
4. Rank the probability and detectability of each failure mode.
5. Identify the areas of greatest concern (the critical failure modes).

The tables on pp. 35-36 illustrate several key components of the FMEA methodology. The "Possible Effects of Potential Failures" chart depicts the first and second steps of the hazard analysis. In the first column, the process steps are listed. (Only two steps are shown in this example.)

Potential failures, or things that could go wrong at the process step, are listed in column two. In the last column, the possible effects are listed, these are undesirable things that might happen if the failure actually occurs.

The other tables illustrate severity scores and probability and detectability rating scales. The team uses these to rate the potential failures and effects to identify the significant or critical failures from occurring.

One of the most intriguing aspects of FMEA is its versatility. It easily can be used as a stand-alone tool, but it also can be used in concert with more familiar tools such as Pareto charts and cause-and-effect "fishbone" diagrams.

"If you want to focus on high-risk areas [hospitals are required by JCAHO to improve a clinical process at least once a year that is high risk for errors and causing patient harm], to me, the first phase could be to use statistical process tools to begin to look at the data concerning case management activities," says Homa-Lowry. "What the Joint Commission is saying in its performance improvement standards is that you should use baseline data first of all, to see whether you truly have an issue."

Hospital Case Management™ (ISSN# 1087-0652), including **Critical Path Network**™, is published monthly by American Health Consultants®, 3525 Piedmont Road, N.E., Building Six, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Periodicals postage paid at Atlanta, GA 30304. POSTMASTER: Send address changes to **Hospital Case Management**™, P.O. Box 740059, Atlanta, GA 30374.

Subscriber Information

Customer Service: (800) 688-2421 or fax (800) 284-3291. Hours of operation: 8:30-6 Mon.-Thurs.; 8:30-4:30 Fri. EST. E-mail: customerservice@ahcpub.com. World Wide Web: www.ahcpub.com.

Subscription rates: U.S.A., one year (12 issues), $429. Outside U.S., add $30 per year, total prepaid in U.S. funds. Two to nine additional copies, $343 per year; 10-20 additional copies, $257 per year. For more than 20 copies, contact customer service for special handling. Missing issues will be fulfilled by customer service free of charge when contacted within one month of the missing issue date. **Back issues**, when available, are $72 each. (GST registration number R128870672.)

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Possible Effects of Potential Failures in Admission Process

Process Step	Potential Failures	Possible Effects
Admitting staff collect patient information	Wrong information	• Error identified during nursing assessment in next step; possible delay in case management referral • Delay in arranging for patient's post-discharge needs if insurance information is incorrect
	Pertinent information not documented in chart	• Delay in arranging for patient's post-discharge needs if pertinent information isn't readily available
After admission, nurse evaluates patient's need for case management consultation	Does not perform assessment	• No case management referral • Delay in case management consultation
	Assessment inaccurate	• No case management referral • Delay in case management consultation
	Assessment results not documented	• No case management referral • Delay in case management consultation • Patient's physician unaware of patient's care coordination needs

Source for all charts in this article: Patrice Spath, Brown-Spath & Associates, Forest Grove, OR.

Failure Mode Probability and Detectability Rating Scales

Probability:

1 = It is highly unlikely/it's never happened before
2 = Low/relatively few failures
3 = Moderate/occasional failures
4 = High/repeated failures
5 = Very high/failure almost inevitable

Detectability:

1 = Almost certain to be detected and corrected
2 = High likelihood of detection and correction
3 = Moderate likelihood of detection and correction
4 = Low likelihood of detection and correction
5 = Remote likelihood of detection and correction

"We've learned over the years that different QI tools can be used for different purposes," Spath adds. "FMEA can help you identify all the possible things that can go wrong so you can strengthen the process to minimize the chances of anything going wrong. The first step is identifying a process you want to improve. Other QI tools can be used to identify the process you want to do an FMEA on."

For example, she notes, a Pareto chart can be used to identify the few vital areas that cause some of the biggest problems.

A Pareto chart basically is a bar chart. It might be used, for example, to display the causes of discharge delay. "The highest problem area might be untimely case management referrals after patient admission," Spath says.

You would then ask yourself what process is most intimately involved with case management referrals. "Most likely, it would be the admission process," says Spath. "An FMEA project then could be used to identify what can go wrong, so the process can be redesigned to prevent significant process breakdowns in the future."

"The first step is to get comparative data about your performance, using tools such as Pareto analysis, to begin to identify why the current process is not working," says Homa-Lowry. "Then you can use FMEA to learn where to modify the processes, to prevent things from going wrong."

A Pareto also might be used to look at delays in discharge planning, and the biggest reasons for those delays, says Homa-Lowry.

"It could be placement, delays in procedure completions, or perhaps discharge planning was not started soon enough," she notes. "You can use Pareto to prioritize why they happened — was it a case where planning was not started soon enough? Was it the workload of case managers? Pareto is used more for the display of data and to put you in the position of implementing process change more effectively."

Fishbone diagrams, on the other hand, are

Severity Rating Scale for Failure Effects

Severity Score:

1 = No impact on continuity of care

2 = Minimal impact on continuity

3 = Moderate, short-term impact on continuity

4 = Significant, long-term impact on continuity

used when you already know what the undesirable effect is, Spath explains. "It might be missing patient demographic information from hospital face sheets," she says. "If that's identified as the biggest problem area, you would then brainstorm all the possible causes using the diagram for visual assistance."

It's important to remember that when you're considering using FMEA as a process improvement tool, you should have a broad vision. "It's true that FMEA can be very useful in meeting JCAHO's patient safety standards, but it can be used to improve *any* process — not just clinical processes," Spath asserts.

Case managers also can use FMEA to help meet JCAHO's continuum of care standards, Homa-Lowry says. "It's a natural fit, because they are asking you to evaluate the whole continuum of care process," she says. "You can look at how people enter the organization, what happens if they're transferred somewhere else, and so forth. These are all processes to make sure the patient is going through each setting in an optimal way."

Organizations can and should use data they have available about their organization to identify and prioritize improvement efforts, Homa-Lowry notes.

"They can use the information in the functional [JCAHO] chapters to evaluate some of their patient care processes," she suggests. "For example, in the continuum of care chapter, the discharge planning process could be examined in relation to a specific DRG if it is determined that the discharge planning process is one of the reasons that the organization is not performing as well as another organization for this DRG."

And don't forget, Homa-Lowry says, once you have implemented your new or redesigned processes, you must evaluate the effectiveness of your actions. "The Joint Commission says that once you initiate a change, you must go back and see if it works," she notes, pointing out that statistical process control charts can be used "on the back end" to make such a determination. "With its emphasis on patient safety, the Joint Commission is really taking a hard look at quality of patient care and improving outcomes."

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CMs, social workers collaborate for better care

Indigent learn to navigate the health care system

A multidisciplinary program staffed by nurse practitioner case managers and social workers has resulted in dramatic decreases in admissions, lengths of stay, and emergency department visits among indigent patients cared for at the University of Iowa Hospitals and Clinics in Iowa City.

In the first five years of the Care Management Program at the University of Iowa (CMPUI), adjusted total charges for acute admissions dropped by more than $7 million, while the number of people eligible for care increased.

"It's a very challenging population. They have medical needs as well as social and educational issues. All of these add to their medical problems and complicate their situation. We recognized early on that to be able to better care for the patients, we'd have to address their psychosocial needs as well as their medical issues," explains **Cynthia Doyle**, MSN, CS, ARNP, Cm, team leader and nurse practitioner case manager of the CMPUI.

The nurse practitioners do not provide direct, hands-on medical care. Instead, they act as case managers and, because they are nurse practitioners, they can make decisions on appropriate care and medication.

"We can collaborate with the primary care providers and tell them a medication isn't working and make a suggestion for changing it. We work with them, and they work with us," Doyle says.

The social workers comanage complex patients, help with communication between patients and providers, and help the patients access community resources, mental health and substance abuse care, and assist them in signing up for other entitlement programs such as disability or social security if they meet the medical requirements.

"Our goal is to ensure that the health care our patients receive is comprehensive, high-quality, and cost-effective, and to get them back on their feet," Doyle says.

The program is sort of a last resort for indigent Iowans who do not qualify for Medicaid, Medicare, or other entitlements. Those who are eligible get a "state paper" that allows them to get medical care at the University of Iowa.

One of the first items on the to-do list when the program was begun was to establish the majority of patients in a primary care clinic, cutting down on the use of special services, Doyle says.

Now, the nurse practitioners authorize and review all special care. In many cases, going to a specialist isn't necessary. For instance, a diabetic with cardiac disease and a dermatological problem could go to three different clinics, but in many cases, a good primary care physician would be able to treat all of the patient's illnesses.

When the care manager program was instituted, the hospital set up an authorization system so that the patients can't self-schedule in any specialty clinic without the nurse practitioner's approval. The primary care provider is in charge of the patient care. The nurse practitioners collaborate with the physicians and provide information on the patient's background, conditions, and issues that may prevent them from following the treatment plan.

"We do a lot of triage," she says. If a patient who has a state paper for indigent care is admitted to the hospital for any reason, a nurse practitioner visits him or her in the hospital and helps with coordination of care.

"We have been able to significantly reduce the length of stay for this population," Doyle says.

The nurse practitioners collaborate with the unit team — physicians, nurses, anyone else involved in the care — making sure that whatever medical treatment plan is developed moves along in a timely fashion.

"We make sure that the plan is followed beginning at the time of admission so the patient moves through the system in a more efficient manner," Doyle says.

For example, if a physician has ordered an electrocardiogram, the nurse practitioner case managers make sure it's done in a timely fashion so the patient's discharge isn't delayed because the test hasn't been completed.

The program includes a 24-hour triage mechanism for patients. On weekends and after hours, a nurse is on call who is contacted if the patient needs care. Often, the nurse practitioners can intervene to prevent an admission or an emergency department visit.

The telephones are answered by two RNs who field 100 to 150 calls a day from 8 a.m. to 4 p.m. Most are from patients who need medication, want to report symptoms, or have psychosocial issues.

Before the CMPUI was begun, there was no one to help the patients get to the appropriate venues for care. The patients were overusing the hospital's appropriations for indigent care by millions of dollars a year, Doyle says.

"They were their own case manager and had to negotiate the system without any assistance. We consider ourselves as captain of the ship. We make sure the patients get what they need," she adds. "They would come here to get care and go from one specialty to another specialty."

Many times, the specialty clinics didn't communicate with each other or the communication was slow, an occurrence Doyle says is typical of large academic medical centers.

"They would go to one clinic and get a prescription and go to another clinic and get another set of medications, and no one was overseeing it," she says. ■

Indigent patients present multiple challenges

Psychosocial needs often impede recovery

The approximately 4,000 indigent patients in the University of Iowa Hospital and Clinic's Care Management program (CMPUI) in Iowa City make up 3% of patients but utilize 6.5% of hospital resources and represent 6.4% of acute admissions.

The typical patients have a variety of chronic illnesses such as diabetes, hypertension, and cardiac diseases. In addition to poverty, the patients often have a history of substance abuse, family violence, and a history of mental health problems.

Many have had limited access to primary care

in their communities and often visit multiple specialty clinics or the emergency department (ED) for their primary care needs.

"We have found that medical and psychosocial problems are intrinsically linked, and in most cases, it's most efficient to have both a social worker and a nurse comanage the patient," says **Cynthia Doyle**, MSN, CS, ARNP, Cm, team leader and nurse practitioner case manager of the CMPUI.

A subgroup of patients presents symptoms in a challenging or confrontational way, which is very time-consuming to providers. In these cases, the social workers are able to help coach these patients on how to better communicate with their providers to achieve their desired outcomes.

The nurse practitioners who act as case managers and the social workers collaborate on care for the patients to get them to the right venue of care and to make sure their treatment or discharge goes smoothly.

Patients are referred to the program by county relief workers, specialty physicians who believe their patients don't need specialty care, by nurses, social workers, and by the patients themselves. When a patient is referred to the program, the case managers call the patients if they have a telephone and come up with a care plan.

"We give them sort of a road map of where they need to go inside the institution and what kind of community resources we think will be beneficial," Doyle says.

The nurses typically get the patients established with a family care physician in the clinic and meet with the patient and the physician.

"We often have information about the patient that the physician does not have. We collaborate with them on what is appropriate for their care," she adds. They collaborate on discharge planning to make sure the patients can go home on time. For instance, if the patient is likely to have problems finding a way to get home, the social worker arranges transportation in advance.

Durable medical equipment issues often slow down discharge because the patients may not have any funding for them. In that case, the nurse practitioners work with the social workers and local agencies trying to find resources for the patients. "Without our interventions, many of these would have gone home without their needed supplies," Doyle says.

The program has resulted in a significant reduction in ED visits for the population. "In the past, they were discharged with a prescription to take home but no way to get it filled, or they didn't have the supplies they needed. In a short time, they were back in the emergency room in crisis again," Doyle says.

The patients once used the ED as their primary care physician. Now that they have a primary care physician, they don't access the ED as often.

"We review all emergency room visits very closely. When they are not appropriate, we contact the patient and find out the reason they went to the emergency room," she says. "The social workers help the patients to improve communication so they can help with their treatment," Doyle adds. The number of patients in the program has slowly increased over the years, and Doyle expects the trend to continue.

"As the economy gets worse, we can foresee that our clients will have more difficulty accessing community resources. Our social workers are magicians when it comes to helping patients access the services we need. That's why we believe it is so valuable to have social workers who can address these kinds of issues," she says. ■

Team care management = lower lengths of stay

Patients, caregivers, CMs work closely

At Griffin Hospital in Derby, CT, the patients' care is managed by their primary care nurse, their case manager, and by the patients themselves. As a result, the nonprofit hospital's lengths of stay are at or below the averages reported by the Centers for Medicare & Medicaid Services.

Griffin Hospital doesn't have a central nursing station. Instead, it has a primary care nurse model, which bases nurses right outside a patient room with a clear line of sight into the rooms. The stations have a computer, medical records, and basic supplies.

During the day, there is one nurse for every four beds. During the second shift, there is one nurse for every six patients and one for every eight patients on the third shift. The primary care nurse works closely with the case manager to coordinate the care.

It's all a part of the Planetree health care model, adopted by Griffin in the 1990s. **(See related story, p. 45.)**

(Continued on page 45)

Ventilator education program reduces VAP

Train respiratory care practitioners, ICU nurses

A multimodal education program to teach nursing and respiratory therapy staffs about improved techniques has led to a significant reduction in the incidence of ventilator-associated pneumonia (VAP).

The program was implemented at Barnes-Jewish Hospital, a 1,000-bed university-affiliated primary and tertiary care teaching hospital in St. Louis.

In the 12 months before the intervention, 191 episodes of VAP occurred in 15,094 ventilator days. That rate declined to 81 episodes following implementation, or a decrease of 57.6%. In addition, the estimated cost savings for the 12 months following the intervention were between $425,606 and $4.05 million.[1]

"VAP has such a high mortality rate, and the ICU [intensive care unit] is where a majority of people really get sick, so it is there that you have a greater opportunity to get infections," notes **Jeanne E. Zack**, BSN, of the St. Louis-based Washington University School of Medicine in the department of hospital epidemiology and infection control and co-author of the study.

"Because we monitor certain indicators within our hospital, including VAP caused among people who were intubated, we saw our rate increasing. It was also higher than our national benchmark — the national nosocomial data from the Centers for Disease Control and Prevention [CDC], which they have collected since the 1980s," she explains

This benchmarking was important, she notes, for giving her department an accurate idea of where the hospital stood.

For Zack, VAP was a clear quality issue from day one. "The thing that really interests me in terms of health care quality is the whole concept of Six Sigma," she explains. "My dad did quality work at Ralston Purina, and I learned about it from him."

Ultimately, she became entrusted with Six Sigma at Barnes-Jewish Hospital. "When I took it on, I told one of our epidemiologists we could get the infection rate to zero," she notes.

Zack recognizes that it's more realistic to take a mechanical device and attempt to achieve an error rate of zero, "but you can strive for it with humans. However, one should try to achieve it in a quality way."

Zack says she truly believes that one infection is a negative outcome. "That one person could be my best friend, my brother, my father, or my sister," she says. "That makes it more personal — that person in the bed with a tube in his or her throat *is* someone's brother, sister, or friend."

Setting up the program

The intervention took place between Oct. 1, 1999, and Sept. 30, 2001, but before it could begin, the groundwork had to be laid. A multidisciplinary task force including two physicians and members of the Barnes-Jewish hospital infection control team was established in February 1999. Its charge: develop a hospital policy. The policy was drawn from existing literature and then compared to the latest CDC recommendations on VAP.

The task force included respiratory therapy, the critical care pulmonary director, infection control specialists, and nursing.

"We ended up having task forces at the

consortium level," Zack notes, explaining that BJC HealthCare, of which Barnes-Jewish is one facility, is a multisystem organization with 13 different hospitals under one umbrella. "All policies and procedures come out of there," she says. "They come down from the vice president as a prime directive."

The VAP education program, drawn from the new policies, was to target the ICU nursing staff, in addition to the respiratory care practitioners. "We targeted them because they are the primary caregivers to those on ventilators — as such, they have an impact on VAP," Zack explains. "They perform in-line suctioning, they may drain the ventilator circuit of condensate, and so on." The program was mandatory for the respiratory care practitioners, and optional — but strongly encouraged — for the nurses.

The program included several different components, including a 10-page self-study module on risk factors and practice modifications; training at staff meetings; and formal lectures. Fact sheets and posters reinforcing the information were posted throughout the ICU and the department of respiratory care services.

The inservices were provided by one of the infection control staff. For the respiratory care practitioners, two one-hour lectures were taught on the pathogenesis and prevention of VAP.

"The key was to educate people," says Zack. "When I was a staff nurse in the ICU, we knew how take care of patients, but no one talked to us about VAP."

One of the key methods for measuring the effectiveness of the education program was a 20-question exam testing staff's VAP prevention knowledge.

The same test was given following the intervention, and test scores were compared. Anyone scoring less than 80% on the post-intervention test (in the case of the respiratory care practitioners, it was given six months after completing the self-study module) was required to repeat the self-study module. The average pre-intervention test score was 79.6; the average post-intervention score was 90.9.

Excitement a key to success

Generating excitement among staff was one of the keys to the program's success, Zack notes. "You can have this great initiative, but it won't be that effective if you don't go out and get people excited. We posted fact sheets in bathrooms and lunchrooms to increase awareness; we didn't just give the test and leave. We also hammered the message home with posters on VAP."

Then, when results started coming in, the excitement level was further reinforced. "After staff did the pre-test, the education, and the post-test, as rates started to drop — the first changes being in the surgical ICU — I mentioned it to my colleagues. They got so excited; they complained when we first gave them the test, but this was a good way of letting them know they had an impact," Zack says.

The team continued to show personnel their dropping rates at QI meetings. "We told them they did a great job and talked about positive things," she notes.

"To improve quality, lower lengths of stay, reduce mortality, and save the hospital [more than] $5000,000 is pretty exciting," Zack says.

It was no less important, she notes, to have a leader who told the respiratory therapy staff that the program was mandatory. "Plus, the other exciting thing is that respiratory therapists receive CEU credits in the state of Missouri for programs like this," Zack adds.

Reference

1. Zack JE, Garrison T, Trovillion E, et al. Effect of an education program aimed at reducing the occurrence of ventilator-associated pneumonia. *Crit Care Med* 2002; 30:2,407-2,412. ■

Computer technology improves operations

Making switch is slow, but worthwhile

Spaulding Rehabilitation Hospital in Boston first implemented its new electronic data system two years ago, solely to replace the existing hospital information system for business operations.

The initial focus was on implementing billing and accounts receivable replacement, medical records and admission data, and discharge and transfer system information.

Completed Oct. 1, 2001, the first full year of implementation resulted in a $6 million yield in cash receipts, says **Rick Mason**, corporate director in information systems for Partners HealthCare Systems in Boston, an organization created when MassGeneral and Brigham and

Women's Hospital merged, creating the parent company of Spaulding Rehab. Mason is the site chief information officer at Spaulding Rehab.

"The electronic system worked so effectively that the accounts receivable people have told me that our effective return on investment was six months, as the cost of the installation was $3 million," Mason says. "We brought in $6 million above and beyond what we would have expected from prior years' results."

Spaulding had used an electronic system created by Medical Information Technology Inc. (MEDITECH) of Westwood, MA. The MEDITECH software applications can be used for financial, clinical, data storage, and other needs of a health care system.

After that initial success, the rehab hospital began a second phase and implemented an executive support system in March 2002, and a pharmacy system in June 2002, he says.

"Then on July 23, 2002, we went live with a number of clinical applications, including clinical labs, microbiology, radiology, order entry, and patient care inquiry," Mason says.

"The system looks at an aggregate of patient data from all the ancillary departments I mentioned and puts them into a series of screens that a physician can access easily using nothing more than arrow keys."

Wireless system connects the hospital

The hospital also switched to a hospitalwide wireless system, which included 30 carts with battery-powered laptop computers that could run all of the applications of a typical desktop computer over the wireless infrastructure for 16 hours straight before the batteries needed recharging, he says.

"The driving force to install it was the fact that we were limited for space, so placing desktop computers on nursing stations was not an option," Mason points out. "The secondary limitation is that our heating and air systems in the building are operating nearly at capacity."

Desktop computers generate significant heat, and adding the necessary number of these computers to the hospital would require the heat and air conditioning system to undergo a $1.5 million upgrade, he says.

"Because we were battery-powered, there was no power drain during critical hours, and laptops don't generate the heat that the typical monitor does, so the laptops were not straining the heating and air system," Mason explains.

The wireless alternative to desktop computers cost about $120,000 to install, he adds.

From the basement through the hospital's 10th floor, there are several antenna access points on each floor, making it possible for clinicians to roll the laptop into each patient's room, the solarium, the therapy gym, and even the restroom, and still stay logged onto the network, Mason says.

"The added benefit is that physicians can use this system with laptops that are not cart-based, and they can walk floor to floor and in and out of patients' rooms without having to log in and log out each time," he adds.

Hand-held solution on the way

"The wireless system paves the way for a hand-held solution, which we plan on implementing within the next 24 months," he says. "That will be tied into our wireless system."

Mason offers this description of some of the other features of the wireless electronic system, including some future clinical applications:

- **Clinical labs.**

The computer system supports the diagnostic analyses of specimens from patients, and these can be entered into the system and viewed from any of the computers. This way, physicians easily can check the lab results as they enter patients' rooms.

- **Microbiology.**

Again, clinicians can obtain information about blood, urine, and tissue specimens that has been entered by lab techs into the wireless system.

"Prior to implementation of MEDITECH, we did have a lab system that wasn't integrated and had a stand-alone microbiology system that wasn't integrated into a single result reviewer," Mason says.

"Now the orders are entered into one system, and they're directly mapped into microbiology or labs, and the results all are viewable in a single area of the single application," he adds.

- **Patient data.**

Patient demographics are completely integrated into the system, so whenever a particular patient's file is reviewed on the system, whether the information sought is clinical or financial, the patient's demographics are included.

"It provides you with a tremendous source of value, and the true benefit to this application is a single source of truth," Mason says.

- **Data integration.**

The electronic system provides greater efficiency and data integration, which in turn improves communication between departments, Mason says.

Understanding other departments' functions

"Integration has a side benefit, as well," Mason adds. "Because when you start to develop interdisciplinary applications that reside with each other functionally, you start as a side benefit to force departments that have never worked closely with each other to understand how each works and to develop higher methodologies of communicating with each other."

For example, a physician was concerned that when a secretary was entering an order for him, a previous order had disappeared off the system, and he wanted to append the previous order but not delete it, Mason recalls.

The normal process is to call the lab to append the order, and if you want to change the order then you delete the series already in the system and create a new series.

However, due to the electronic system's data integration, this process wasn't necessary. And as a result of the data integration and the physician's inquiry into it, the physician, along with nurses, pharmacists, and others, gained a better understanding of how the lab functions.

What they discovered was that the lab automatically does a complete blood test whenever a more limited blood test is ordered. So if a physician wants to ask for more information on the blood drawn from a patient, most of the time that information already is available within the lab, Mason explains.

"The lab simply needs to post additional results, and nobody really understood that before," he says.

- **Radiology.**

The radiology department previously had no scheduling system, but with the electronic system changes, it now has a built-in scheduling system that permits radiologists to transcribe reports to the MEDITECH System, Mason says.

"We are working on a web-based imaging solution so physicians networkwide can view a patient's radiology results or images from anywhere on the system, including wireless networks," he says.

"We're working on the imaging portion and expect to have that finished in a year," he says.

- **Order entry.**

When a physician wants to order a lab test, radiology test, or microbiology test for a patient, all that is necessary is to put the order into the electronic system, and the order can be reviewed by the appropriate ancillary departments, Mason says.

"As a result of that, the ancillary departments will work on processing those results and have a timely turnaround of putting the results into the system so physicians and nurses can access the data quickly and easily," he says.

"The system allows us to communicate more quickly with ancillary departments, and it allows us to have higher-level analytical skills in planning upgrades or new operational changes to our hospital's environment," Mason adds.

- **Pharmacy.**

The pharmacists, like nurses and physicians, now use wireless laptops. This frees them from being stationed solely in the pharmacy, so the hospital now has clinical pharmacists operating on the floors, available to provide enhanced clinical support to nurses and physicians, he points out.

"The drug orders are placed the night before, and the pharmacist comes in early in the morning to work on them," Mason says.

Eventually, the system will permit physicians to place medication orders directly to the pharmacy through the electronic system.

Pharmacy techs prepare individual doses based on the orders, and the pharmacists check the orders before they're placed on carts that go directly to the patient floors, Mason explains.

Then the pharmacists are free to visit the floors, where they can answer questions by clinicians and handle any issues that might arise, such as adverse reactions or allergic reactions.

Occasionally, they'll even speak with patients, he says.

"The biggest advantage is safety, because of the fact that they're supporting care providers on the floors," Mason says.

Another safety feature is that the electronic system will provide checks and balances for physician medication orders.

It will permit physicians to review their drug orders, and it will assess the order for safety and appropriateness according to the patient data, Mason says.

If the system detects something unusual, it will provide a prompt to the physician, asking, "Are you sure you want to recommend this medication, based on the following?" he adds. ■

AMBULATORY CARE
QUARTERLY

How will you measure up to new CARF standards?

CARF looking for corporate citizenship

Starting July 1, all organizations accredited by the Tucson, AZ-based Commission on Accreditation of Rehabilitation Facilities (CARF) must meet a new set of standards, regardless of what area of rehabilitation they are involved in.

The new standards put a greater emphasis on business practices such as risk management, insurance, and performance issues, as well as on corporate citizenship.

"We're trying to address the arena of good business practices for the rehabilitation continuum," says **Christine MacDonell**, managing director of medical rehabilitation and emerging markets for the CARF. "People go into rehab because they're good caregivers, and not necessarily because they're good business people. The new standards would actually be a great template for people just starting a business."

Previously, each type of rehab organization — from medical rehabilitation to assisted living to behavioral health to adult day services — had its own specific standards manual.

"It was sometimes difficult for providers who cross over into multiple areas CARF accredits because they had to blend a lot of the standards. It was confusing and it often required a lot of man-hours," she says. "The new standards are clear, very practical, and they should be very helpful to the organizations."

In the works since 1999, the new standards were written with input from rehab providers and with an eye to ISO 9000 and Baldridge quality standards, MacDonell says.

CARF hopes the practical nature of the standards will make it easier for organizations to commit to using them on an ongoing basis. "We want providers to use the standards all along rather than panic six months before the survey. There really shouldn't be so many peaks and valleys but more of an ongoing look at whether the organization is continuing to meet the goals," she adds.

To encourage continuous use of the standards, CARF will begin this year to use the nine business practices criteria as the basis for interim quality reports to be completed each year on the anniversary date of the organization's accreditation. CARF already requires that organizations use the standards for a minimum of six months before the survey, that surveyors have access to all data they need while on site, and that the organization sends CARF a quality improvement plan that addresses the surveyors' recommendations within 90 days of accreditation. The new yearly quality report now will be the fourth condition of accreditation.

The new standards manuals have enhanced information on risk management plans and insurance packages (*Criterion Nine*, Standards 57 and 58), MacDonell says. "We wanted to move in this direction because so many providers are getting difficult allegations in these areas, and they need to learn to be better prepared to handle risk effectively."

Another new emphasis is an item added to *Criterion Seven*: Leadership that deals with corporate citizenship (Standard 43g).

CARF defines corporate citizenship as "an organization's efforts, activities, and interest in integrating into, contributing to, and supporting the communities where it delivers services to better address the needs of the people served." The standards manual lists several examples of these types of efforts, including educational events for schools on safety issues, active involvement in community organizations and service groups, and positions on local boards that address such issues as accessibility and housing.

"Good corporate citizenship makes sure there is a durability to what rehab providers do," says MacDonell. "Anyone can be successful in a protected environment, but it's when the patients get back to the community that really counts."

These standards effective July 1

These are the Commission on Accreditation of Rehabilitation Facilities' (CARF) standards (copyrighted by CARF in the 2003 standards manuals) that are new for every type of facility:

- **Criterion Three: Information Management and Performance Improvement**

Standard 12: For business improvement, information is collected and analyzed from the following: strategic planning information; financial information; accessibility plans; resource allocation; surveys; risk-analysis report; technology analysis; environmental health and safety reports; and field trends.

Standard 15: To support information management and performance improvement activities, the organization has a written technology and system plan that includes hardware, software, security, confidentiality, backup policies, assistive technology, disaster recovery preparedness, and virus protection.

- **Criterion Six: Human Resources**

Standard 37: The organization demonstrates recruitment efforts, retention efforts, and identification of any trends in personnel turnover.

Standard 39: Annual performance management includes: job description reviewed and/or updated annually; promotion guidelines; job posting guidelines; annual performance evaluations for all personnel directly employed by the organization.

- **Criterion Eight: Legal Requirements**

Standard 45: During the CARF survey, the organization provides for review of all reports from legal actions, regulatory agencies, and contractual relationships.

Standard 46: The organization provides a synopsis report on any of the following that have occurred within the last 3 years: litigation; allegations of wrongdoing; malpractice; and violations of the codes of ethics.

- **Criterion Nine: Financial Planning and Management**

Standard 53: There is evidence that the organization has established and maintains fiscal policies and procedures, including internal control practices.

These standards are new for some organizations:

- **Criterion Three: Information Management and Performance Improvement**

Standard 16: If Internet access to the organization's services is provided, the organization provides for security of personal information; alternative access formats; accessibility and accommodations and a user-friendly interface; on-line information 24 hours a day, 7 days a week; personnel to provide instruction and guidance to accessing services provided by the organization; and connections or links with local service providers or affiliates for personal contact and information.

- **Criterion Seven: Leadership**

Standard 44: An organization in the U.S. receiving federal funding demonstrates corporate compliance through a formal resolution on corporate compliance; written designation of a personnel member to serve as the primary point of contact for monitoring and reporting corporate compliance; procedures to guide personnel in responding to subpoenas, search warrants, investigations, and other legal actions; and provision of initial and ongoing training on billing and coding procedures.

- **Criterion Nine: Financial Planning and Management**

Standard 54: If the organization bills for services provided, a quarterly review of a representative sample of records of the persons served is conducted.

These have changed from previous manuals:

- **Criterion Four: Rights of Persons Served**

Standard 24: One external inspection is conducted annually (previously twice every 3 years) that provides: evidence that all locations owned, leased, operated, or rented by the organization or donated to the organization have been inspected by a designated compliance/safety officer; a report that identifies the areas inspected; recommendations for areas needing improvement; and an action plan for improvements to be made.

- **Criterion Five: Health and Safety**

Standard 32: The organization defines a system to report critical incidents that includes the following (this list of incidents is new) as applicable: medication errors; incidents of seclusion or restraint; incidents involving injury from equipment, machinery or vehicles; communicable disease; infection control; violence or aggression; sentinel events; weapons; elopement and/or wandering; transportation; biohazardous materials; licit or illicit substances; and other areas as required. ■

Rest assured that the new standards should make things easier in the long run, says **Bonnie Breit**, a CARF surveyor and president of BRB Consulting in Media, PA.

The new standards are presented in a more logical format, and much of the "CARF-ese" has been removed in favor of businesslike language that's easier for a lay person to understand, she says. "Looking at your business practices like this is going to keep you on the cutting edge," Breit says.

"You need to be aware of the business side of delivering care. That's one of the benefits of CARF accreditation and this particular new standards manual. Organizations know they should look at how they're doing, but they're not always clear on how they should do it. If you're not doing the business piece, you're not going to be here to deliver the clinical piece. The effort spent on the new standards speaks highly of CARF's commitment to help organizations stay on the cutting edge so they can keep being here," she explains. ■

(Continued from page 38)

"The Planetree philosophy is to look at the patient as the priority, rather than having a physician-centered or provider-centered focus," says **Bill Powanda**, vice president of Griffin Hospital.

The concept makes patients equal partners in decisions that affect their care and well-being.

"The educated and involved patient is a partner in the care process, rather than being a bystander," Powanda says.

When patients are admitted, they receive a packet of information about their diagnosis and are made a member of the care team. They attend care conferences and get a patient pathway, a printed brochure in lay language that outlines what tests and procedures are done each day for their diagnosis. The primary care physician, primary care nurse, case manager, and ancillary services such as physical therapy, respiratory therapy, and the hospital dietary department all meet regularly with the patient.

The hospital's continuing care department, staffed by nurse case managers, works in tandem with the primary care nurses and attendants.

Griffin Hospital has combined the utilization review, case management, and discharge planning departments. The hospital's six full-time case managers and two part-time case managers handle all three functions. The typical caseload is between 12 and 15 patients at a time.

"Prior to that, there were a lot of obstacles and delays. There were different people doing different pieces and often there was a break in continuity. The case manager is supposed to know the whole story of the patient, and we've found it works better this way," says **Kathleen Martin**, RN, BSN, A-CCC, CCM, CPC-H, director of

The Planetree philosophy: A recipe for satisfaction

Griffin Hospital in Derby, CT, routinely gets a 97% to 100% patient satisfaction rating on a monthly telephone survey of about 15% of discharged patients. More than 80% of patients say they are willing to return to Griffin Hospital and would recommend the services to their family and friends.

The hospital has a low turnover rate among employees and is the only hospital in American to be named to *Fortune* magazine's list of the "100 Best Companies to Work for in America" four years in a row.

The hospital's salaries and benefits are competitive but some may be somewhat below average, says **Bill Powanda**, vice president of the hospital. "However, patient satisfaction equals job satisfaction and employee satisfaction. Health care workers enter the profession because of their personal motivation to help people. When there are high patient satisfaction levels, they leave at the end of the day with high job satisfaction," he adds.

At the center of Griffin Hospital's approach to care is the Planetree health care model, established by Angelica Thierot, an Argentinean who felt the American health care system was dehumanizing and set out to change it.

Griffin Hospital adopted the Planetree model of care in the 1990s. "We were seeking an organization committed to consumer-driven, patient-centered care," Powanda says.

The Griffin Hospital facility doesn't look like a typical hospital. Each floor of the hospital has a residential kitchen that may be used by families and patients to heat leftovers or cook an entire dinner.

Volunteer bakers who bake cookies and breads for the patients also staff the kitchen.

On each floor, there's a patient lounge where patients are regularly entertained by musicians, comedians, magicians, and other performers as part of the hospital's arts and entertainment program, as well as a quiet lounge with a huge fish tank. Patients are encouraged to leave their rooms whenever they can.

The hospital has a pet therapy program with 23 certified dogs and volunteers who come in regularly to visit the patients.

The hospital has a massage therapy program and patient room service, which allows them to have items delivered from the gift shop and cafeteria.

The staff always are willing to do whatever the patient needs. "We have filed income tax forms for some of our patients," Powanda says.

Patients are encouraged to use the hospital's medical library with its large collection of lay materials and professional journals. More than 8,000 patients have library cards, and they make 25,000 visits a year.

Griffin Hospital employees are trained to look at the hospital experience through the patients' eyes by going through a two-day Planetree retreat during which they are the patients. The employees stay in an austere setting with no privacy and have one choice of entrees for each meal.

"They go through a series of exercises to put them in the patient role. It's been extremely helpful to changing our culture to a consumer-responsive one," Powanda says. ■

continuing care / medical records.

The case managers are assigned to floors. Every morning, they sit down with the charge nurse and review what is going on with the patient.

They find out if the patient's progress is on schedule, if the laboratory work was normal, or if there will be delays in discharge.

The case managers handle discharge planning, work with the patients and primary care nurses to set up whatever the patient needs after discharge, and work with the physicians to make sure they are following the clinical pathways.

"I teach my case managers to be patient advocates. They have to balance what is happening with the patient now with what is going on at home and what is available in the community," Martin says.

The case managers talk to any outside providers that may have been caring for the patients, talk to the family and patient, and review the patient status on a daily basis with the insurance company. "Meanwhile, they are working daily with the family to set up a safe discharge. We try to give the family as many options as we can. We look at insurance contracts, home care agencies, and community services," Martin says.

As soon as the patients are stable, the case managers discuss their options in detail with them, set up a home care agency if necessary, ensure that durable medical equipment is available, and make sure their transition to home is smooth. "We want to make sure that everything is in place for optimal recovery when the patient walks out the door," she says.

About 48 hours after discharge, the case managers call the patients and family to find out if anything could have been done better.

When a patient is scheduled for elective surgery, such as a total hip replacement, the case managers work with the patients and physicians before admission. "That way, the patient will feel comfortable coming in and know in advance what to expect," she says.

The case managers work with the ancillary department, the primary care nurse, the primary care physicians, and the therapists to get a full picture of what is going on with the patient.

"We have been working to change an entire culture. We try to get physicians to deal with all the patient problems concurrently. In the past, if the doctor came in and a patient had an issue, the physician would take it up and take up the next one later. We try to look at the big picture," says Martin.

The hospital tracks outcomes and variances in length of stay. A utilization manager looks at any kind of internal or external reason to see where areas of improvement can be.

Each case manager has a worksheet on which he or she tracks patient progress. A data analyst enters the date in aggregate form. For instance, one frequent delay in discharge occurred when patients were in the hospital and waiting for an operating room. The hospital's solution: to open up another operating room.

When a lot of patients were staying in the hospital while waiting for dialysis, the hospital arranged for the patient to go home and wait, rather than staying in the hospital until there was a permanent slot. "Data help us see where we can improve. It's helpful from all different perspectives," Martin says.

The hospital also employs a hospitalist who facilitates coordination of care and is available as test results come back to adjust the medication or order additional tests. Hospitalist services are used by primary care physicians who have busy practices and often are unable to be at the hospital for extensive periods of time. The service is voluntary, and some physicians prefer to manage the hospital care themselves. ■

Patient education is key to shorter lengths of stay

Hospital keeps patients informed

At Griffin Hospital, patients sometimes point out to the staff that they were scheduled for a test but didn't have it. Some comb their patient record and suggest changes.

It's part of the hospital's philosophy that informed patients are happier patients who get well sooner and are discharged earlier.

Educating the patient is the key to shorter lengths of stay, says **Bill Powanda**, vice president of the Derby, CT, hospital. "Nobody wants to stay in the hospital any longer than they have to. The issue for the hospital is coordination of care, and when the patients are involved, they do things to facilitate getting better and getting home sooner," he adds.

When they are admitted, patients receive a patient pathway that projects the length of stay, includes information on tests and procedures

they should have each day, and helps the patients understand what will happen to them.

"The patient and family become traffic cops. If they have a test scheduled and they don't have it, they're quick to ask the nurse or physician why. It has contributed significantly to reducing the length of stay," Powanda says.

Within 48 hours of admission, patients attend a formal care conference with the primary care nurse, physician, and clinical staff. The conference covers their diagnosis, tests, and other procedures, expected outcomes, and the discharge planning process. They learn what is likely to happen during their stay and discuss post-hospital care requirements, such as an extended care facility or a personal care home. "If you educate the patients and involve the patients, they will be compliant. The patient and family members are involved in the patient care and are educated about the disease and the treatment and what will happen after discharge," he says.

The hospital gives patients easy access to their medical record and encourages them to read it.

About half of the patients look at the medical records, while 10% to 15% examine it closely, Powanda says. "The Planetree concept is about patient choices. We let the patients choose how much or how little they want to be involved in their own care," he says. ■

CE *questions*

9. Which of the following is not one of the five basic steps in the failure mode and effects analysis process, according to Patrice Spath, RHIT, of Brown-Spath & Associates in Forest Grove, OR?
   A. Choose the process to be studied.
   B. Organize information about the process under study.
   C. Design a multidisciplinary clinical pathway.
   D. Conduct a hazard analysis.

10. In the first five years of the Care Management Program at the University of Iowa, adjusted total charges for acute admissions dropped by what amount?
   A. less than $3 million
   B. about $4 million
   C. about $6 million
   D. more than $7 million

11. At Griffin Hospital in Derby, CT, what is the typical caseload for case managers?
   A. 12 to 15 patients
   B. 16 to 18 patients
   C. 19 to 21 patients
   D. 22 to 25 patients

12. Who established the Planetree health care model?
   A. W. Edwards Deming
   B. Angelica Thierot
   C. Donald Berwick
   D. Malcolm Baldrige

Answers: 9. C; 10. D; 11. A; 12. B

Coalition of organizations develops common vision

Goal is to help CMs address future challenges

Case management stands at a crossroads and needs a common vision plan that unites case managers across the broad health care spectrum, a group of case management leaders has concluded.

The Case Management Society of America (CMSA) in Little Rock, AR, and the Academy of Certified Case Managers hosted "Visioneering Case Management's Future," an invitation-only meeting held in December 2002 for leaders in the field.

The purpose of the meeting was to position case management for the future and to take a leadership role as a united front, says **Toni Cesta**, PhD, RN, FAAN, director of case management at Saint Vincent's Hospital in New York City, who was a representative of hospital-based case management at the meeting.

The group of case managers representing a

COMING IN FUTURE MONTHS

- Denial management: The role of the case manager
- How to measure your case management effectiveness
- Emergency department case management
- Dealing with 'frequent-flyer' patients

variety of practice settings, disciplines, organizations, and certifying bodies came up with a series of initiatives designed to help case managers deal with current challenges and those they will face in the future.

"The meeting has generated sustained excitement and collaboration. The next steps are for the groups to pursue the priorities as identified," says **Jeanne Bolling**, MSN, CRRN, CDMS, CCM, executive director of CMSA.

A follow-up meeting is planned for the summer. A web site to support the new group is being developed, Bolling says.

According to the group, trends that are impacting the practice of case management include health care personnel shortages; rising health care costs and the focus on savings; burnout; change in patient demographics and the nature of disease; technology that affects care delivery as well as diagnostic evaluation and costs; and pressure on case managers to abandon the client advocacy role because of time constraints.

Work groups came up with the following plans of action:

- Developing consumer-friendly definitions and frequently asked questions about successful care management. The purpose is to build awareness and achieve recognition in business and industry and among consumers. The project is the first step toward developing consumer expectations for case management.
- Collecting data about case management practices and work environments in leading organizations.
- Developing a blueprint to promote and disseminate research to promote an understanding of what case management is, how to do it well, what outcomes it produces, and the value of case management in health care. A task force from the Council for Case Management Accountability and the Commission for Case Manager Certification Foundation has begun working on a draft.
- Gathering tools and literature that can be used to demonstrate cost savings, return on investment, and other case management outcomes in a consistent manner.
- Defining core competencies and the means to enable case managers to reach them, including training and outreach.
- Forming a "Case Management Leadership Coalition" to create a voice for leadership among a broad spectrum of case management practices. ■

CE objectives

After reading each issue of *Hospital Case Management*, the nurse will be able to do the following:

• identify particular clinical, administrative, or regulatory issues related to the profession of case management;

• describe how those issues affect patients, case managers, hospitals, or the health care industry in general;

• cite practical solutions to problems associated with the issue, based on independent recommendations from clinicians at individual institutions or other authorities. ■