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Bolster quality efforts by developing effective PI infrastructure

Operational philosophy builds staff support

Every hospital in the country today is engaged in performance improvement programs in one form or another. But industry consultant **Michelle Pelling**, RN, MBA, president of the Propell Group in Portland, OR, warns that many quality improvement directors embark on these projects without first gaining the necessary support from physicians and staff and without having in place an effective infrastructure to bolster their efforts.

Pelling says the most effective way to secure physician and staff support is to follow a three-step process:

1. Establish an operational philosophy that underlies performance improvement programs.
2. Develop processes to support performance improvement teams and departmental or other group performance improvement activities.
3. Establish mechanisms to ensure ongoing communication among various departments.

"Hospitals should not do performance improvement just to do it," Pelling cautions. "The results must be worth our time and effort."

According to **Judy Homa-Lowry**, RN, MS, CPHQ, president of Homa-Lowry Healthcare Consulting in Canton, MI, this also will promote an interdisciplinary approach to improve patient care processes and outcomes.

From a planning perspective, Pelling says, hospitals must first define the objectives behind their performance improvement initiatives, and that

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should begin with a basic operating philosophy that establishes the goals the hospital is seeking to fulfill.

"The first step is understanding why the organization has a performance improvement program in the first place and what they seek to accomplish through this process," says Pelling. Despite the pressure from regulatory and accreditation bodies, an organization's primary focus should be defining its performance improvement outcomes relative to how the initiative will help the organization move forward in patient care, service, and operational efficiencies, she contends.

According to Homa-Lowry, individuals involved in the performance improvement process must be aware that they will have direct involvement in identifying, analyzing, and improving patient care outcomes. But she warns there most likely will be resistance if participants believe the major emphasis of the improvement program is to comply with external regulatory requirements.

Identifying organizational priorities

Once a clearly defined operating philosophy is established, Pelling says the next step is to identify organizational priorities to help guide ongoing projects. For example, one hospital started by defining broad categories such as pain management and ambulatory care management and linked its overall objectives in those areas to its performance improvement policy.

"Many of these priorities may seem very standard. But a surprising number of hospitals don't have anything like this in place." Pelling says that establishing priorities gives hospitals a template they can use to assign responsibilities, initiate improvement projects, and establish communication structures.

Finally, Pelling says that performance improvement priorities should be linked to strategic priorities. For example, if a hospital is trying to expand its ambulatory care services, it makes sense to focus on improving overall performance in that service, she explains.

That does not mean there must be a performance improvement measure for every strategic objective, she adds. But if an organization is attempting to expand services or achieve certain levels of patient satisfaction, then it should link those efforts to performance improvement activities.

According to Pelling, many hospitals establish a formal group called a performance improvement

council that is responsible for guiding the organization's initiatives in this area. But such councils often lack the infrastructure needed to support those initiatives, she adds.

"Many organizations establish this type of council, but it quickly becomes a body that people report to as opposed to an active body that is continually assessing priorities." Instead, Pelling says these councils should coordinate with the teams that are working on projects and maintain a liaison with each team to help guide them along the various steps as they work through a process.

Pelling says hospitals can accomplish this either by using an incremental improvement process or a redesign process that will help lead them through the improvement effort.

According to Homa-Lowry, it is important that this process be well-defined. She says individuals responsible for the improvement efforts must be comfortable with the approach, and it should be consistent across the organization. This will foster an interdisciplinary approach to improving patient care processes and outcomes, she adds.

According to Pelling, the steps selected will depend on whether the group uses an incremental improvement approach or a redesign approach. She says each approach is appropriate for different situations:

- **An incremental improvement approach should be used when the goal is to achieve a breakthrough in performance by making a few focused changes in an existing process.** "This approach is best used when the current process is definable and conceptually sound," she explains.

- **A design/redesign approach should be used when the goal is to develop a new process or completely redesign an existing process.** Pelling says a change in the process is developed first and then followed by analysis to prevent potential problems. This approach is best used when a current process is nonexistent, severely deficient, or undergoing massive change, she explains.

"Every hospital thinks it has these methods in place," Pelling cautions. "But when you ask them specific questions about what they do first, second, and third when they initiate an improvement effort, people are often unclear." She adds that inconsistency often exists among groups and teams working in the same organization. "We often find that they don't really understand and apply what the organization's leadership believe they have established."

She adds that most organizations that develop an incremental methodology try to use it for

everything. "That is a big mistake. It is not effective when you are designing a new process or significantly redesigning an existing process."

In other cases, she says, councils have defined responsibilities and a performance improvement methodology. "But when you dig into it, you often find they are not really using it."

According to Pelling, hospitals also must establish effective mechanisms for communication in order for the medical staff and hospital managers to share information and prevent duplication of efforts. She says this is less of a reporting structure and more of a communication mechanism usually coordinated by someone who oversees the various performance improvement activities.

In addition, coordination of departmental quality improvement efforts and potential inter-department performance improvement proposals will facilitate the sharing of what has been learned and appropriate involvement of stakeholders, adds Pelling. "What is critical to the ongoing success of performance improvement initiatives is the development of a framework for employee communication regarding departmental, interdisciplinary, and organizational improvement efforts and the methods managers can use to involve their staff," she concludes. ■

Learn how to measure PI across departments

Process is cyclical, not linear, expert says

While focusing on the overall outcome of a performance improvement initiative is important, the involvement of individual departments is critical when it comes to how their processes contribute to achieving performance expectations, says **Michelle Pelling**, RN, MBA president of the Propell Group in Portland, OR.

She says it is often less a linear process than it is an ongoing cycle, and leaders of the organization must begin to focus on what kind of organizational indicators they want to monitor over time and how individual departments will support those efforts.

That is one reason she advises leaders to determine the processes, outcomes, and services that are critical to the organization's success and articulate goals relative to specific performance dimensions, such as effectiveness, efficiency,

appropriateness, timeliness, and safety.

According to Pelling, that will enable leaders to track results by translating their overall goals into a small number of key performance indicators. “Focusing on a limited set of performance indicators instead of reviewing pages and pages of raw data not only minimizes information overload but helps leaders understand the interrelationships among clinical, operational, financial, and customer components and keeps their attention focused on results,” she explains.

Interdisciplinary performance improvement teams typically are formed to work on processes the organization wants to improve that cut across several departments. That makes it critical that each department has “subprocess indicators,” says **Judy Homa-Lowry**, RN, MS, CPHQ, president of Homa-Lowry Healthcare Consulting in Canton, MI.

Good for the patient and the organization

According to Homa-Lowry, it’s important to begin by identifying patient care processes. By doing so, the entire continuum of patient care is considered. “If the process works for the patient, it will be a process that is good for the organization,” she says. “Therefore, all departments can demonstrate and share the positive results of the important role they all contribute to good patient care.”

She adds that in order to share positive outcomes and identify further process improvements, it is important for departments to evaluate their contributions to the process. “This helps to facilitate discussions across departments.”

Homa-Lowry says this also can assist departments in identifying process improvements in their own departments and staff learning needs. That way, when a process crosses several different departments in order to achieve a specific outcome, individual departments have specific indicators they can track to make sure they are in compliance.

Pelling agrees that while the focus of an improvement effort frequently is on a specific outcome, often there aren’t methods in place for departments to track their performance. Attention to “subprocess indicators,” or those points in the process that are critical to the outcomes, should be tracked by the department or group responsible for the performance until the improvement has occurred and been sustained for a reasonable period of time, she says.

On the other hand, there is no need to monitor subprocess indicators indefinitely, adds Pelling. Rather, she says, they should be tracked until staff have accepted the new process steps and the process is functioning consistently at the capacity required to achieve the outcome.

“When the performance expectations have been achieved and sustained, it is time for the resources to be shifted to a new improvement effort,” she adds.

Finally, Pelling advises leaders to continue posing two key questions relative to their performance improvement infrastructure:

1. “What are we learning from our efforts?”

To answer the question, she says leaders must examine the results related to the predefined performance indicators. “Evaluating the results of performance improvement activities should lead to improved problem solving and decision making.”

2. “What did we learn about how we learned?”

For example, did it take a performance improvement team a year to come up with the plan on how to improve? Did the hospital have teams that faltered at first because they did not clearly understand their charge? Did the hospital falter in the implementation stage because it failed to analyze the problem adequately? How can it better support the participants in performance improvement efforts?

Pelling says performance indicators for organizational tactics will allow leaders to evaluate the effectiveness of their performance improvement infrastructure and identify necessary modifications to better support participants in performance improvement efforts.

But for a performance improvement model to be effective, she emphasizes, hospitals must look for root causes instead of a quick-fix approach.

Homa-Lowry adds that it is important for individuals responsible for performance improvement to use statistical and nonstatistical methods in a manner that will lead them to the root causes. In today’s health care environment, many organizations are functioning with limited resources, she notes.

“Effective root-cause analysis requires time and resources as well as individuals that feel comfortable using the tools,” she explains. “For leadership to see the benefit of the process, root-cause analyses should be directed at patient care priorities and include benefits for patients and the organization as well as the bottom line.” ■

'The rest of the iceberg': IOM looks at quality

New report builds on groundbreaking report

The Washington, DC-based Institute of Medicine's (IOM) Committee on Quality of Healthcare in America released a sweeping 300-page report March 1 that claims fundamental changes are needed in the American health care system if "the quality gap" that currently exists is to be eliminated.

In his introductory remarks, committee chair **William Richardson**, president of the W.K. Kellogg Foundation, said the IOM's previous report on medical errors, the controversial *To Err Is Human*, represented "only a small part of the unfolding story of quality in American health care — the tip of the iceberg. Other defects beyond safety are even more widespread." He claimed the current report discusses "the rest of the iceberg."

But while much of the report is aimed at national policy-makers, it also provides overarching principles and detailed recommendations that hospital clinicians and managers can implement immediately.

In addition to a comprehensive set of performance expectations that span the health care system, *Crossing the Quality Chasm: A New Health System for the 21st Century* maps out a set of 10 rules that hospitals can use to help guide patient-clinician relationships, as well as an organizing framework to better align incentives.

"We are talking about big changes here," asserts **Donald Berwick**, MD, MPP, president and CEO of the Institute for Healthcare Improvement. He says the question for quality assurance directors is how they can help bring about the type of new care systems outlined in the report.

Berwick argues that the current care system cannot achieve the type of improvements that are needed. To remedy that, he says the committee is urging Congress to set aside \$1 billion over the next three years for a health care quality innovation fund to foster the experimentation of new models of care outlined in the report.

The committee also is urging support for several regional demonstration projects funded by the Health Care Financing Administration, reports Berwick, clinical professor of pediatrics and health care policy at Harvard Medical School in Boston. In addition, he says the committee

wants the Bush administration to embrace the principles outlined in the report as a national agenda for quality improvement.

At the local level, Berwick says the report offers a broad framework for hospital clinicians and managers. "There is a lot that can be accomplished at the local unit," he asserts. Most importantly, he says, hospitals can do far more to involve patients in their own care. Potential steps include giving patients fuller access to their medical records and instituting e-mail based care, he says.

The report also outlines the key steps to promoting evidence-based practice and strengthening clinical information systems. In addition, it documents the causes of "the quality gap," identifies current practices that impede quality care, and explores how systematic approaches can be used to implement change.

According to the report, its proposals translate into a new set of patient expectations for health care that are consistent with and reinforce the steps that must be taken to achieve significant improvement in health care quality. They also are consistent with the type of care most clinicians strive to provide. But the report says clinicians often lack the support of well-designed care systems and environments that nurture innovation and excellence.

Care should come in many forms

The report contends that patients should be afforded care whenever they need it but that it should come in many forms, including the Internet and by telephone, not just face-to-face visits. The report also details changes in the areas of individualization and control of health care services, as well as the science used to support it.

In order to bring this new type of system about, the report argues that it will be necessary to examine old assumptions and understand why they have led to the current "ineffective" health care system. Instead, the report maintains that it will be necessary to craft new operating assumptions that are embodied in the 10 new rules that it outlines. (See box, p. 50.)

According to the report, the key to transforming health care organizations lies in understanding their complexity. It says that health care is complex because of the great number of interconnections within and among small care systems. For example, office practices and critical care units in hospitals are linked to other units such as laboratories and emergency departments and

often are embedded in even larger “umbrella” organizations such as hospitals, health plans, and integrated delivery systems.

The report says that the task for clinicians and managers is not to treat all situations alike but rather to understand when specification and standardization are appropriate and when they are not. “The challenge of improving quality lies in understanding that in situations lacking high levels of certainty and clinical agreement, flexibility that results in variation based on patient needs is appropriate,” states the report. Conversely, over-specification can result in too many unnecessary steps and hamper the ability to customize care.

The report argues that effective rules describe how the system should function but do not need to specify this functioning in detail. It highlights two systems functioning today that illustrate the

“diverse, creative, and complex actions” that can arise from shared aims and general directions. The first example is the Internet, which was built to share research data electronically using agreed-upon transfer protocols and conventions.

While the Internet’s explosive growth and adaptation could not have been foreseen, controlled, or designed in detail, because the complexity was too great and individuals were bound by their old experience, a few simple rules were enough for a functional complex system to emerge on its own.

The report says that credit card systems that agree to graphic layout of a card and a common clearinghouse that allows any card to be used anywhere also illustrate this pattern. Member

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The IOM’s 10 rules for *Crossing the Quality Chasm*

According to *Crossing the Quality Chasm: A New Health System for the 21st Century*, private and public purchasers, health care organizations, clinicians, and patients should work together to redesign health care processes in accordance with these rules:

- 1. Care based on continuous healing relationships.** Patients should receive care whenever they need it and in many forms, not just face-to-face visits. This rule implies that the health care system should be responsive at all times (24 hours a day, every day) and that access to care should be provided over the Internet, by telephone, and by other means in addition to face-to-face visits.
- 2. Customization based on patient needs and values.** The system of care should be designed to meet the most common types of needs, but have the capability to respond to individual patient choices and preferences.
- 3. The patient as the source of control.** Patients should be given the necessary information and the opportunity to exercise the degree of control they choose over health care decisions that affect them. The health system should be able to accommodate differences in patient preferences and encourage shared decision making.
- 4. Shared knowledge and the free flow of information.** Patients should have unfettered access to their own medical information and to clinical knowledge. Clinicians and patients should communicate effectively and share information.
- 5. Evidence-based decision making.** Patients should receive care based on the best available scientific knowledge. Care should not vary illogically from clinician to clinician or from place to place.
- 6. Safety as a system property.** Patients should be safe from injury caused by the care system. Reducing risk and ensuring safety require greater attention to systems that help prevent and mitigate errors.
- 7. The need for transparency.** The health care system should make information available to patients and their families that allows them to make informed decisions when selecting a health plan, hospital, or clinical practice, or when choosing among alternative treatments. This should include information describing the system’s performance on safety, evidence-based practice, and patient satisfaction.
- 8. Anticipation of needs.** The health system should anticipate patients’ needs, rather than simply reacting to events.
- 9. Continuous decrease in waste.** The health system should not waste resources or patients’ time.
- 10. Cooperation among clinicians.** Clinicians and institutions should actively collaborate and communicate to ensure an appropriate exchange of information and coordination of care.

Source: Institute of Medicine, Washington, DC.

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Initiative cuts ED visits, hospital admissions

'Phone monitor' role gives continuity to program

When Sutter Health Central in Sacramento, CA, got involved in managed care and global capitation several years ago, it made sense to identify the patients likely to use the system a lot and do interventions to prevent them from getting to that point, says **Jan Van der Mei**, RN, continuum case management director.

That goal led to the development of the Sutter Chronic Care Program, an initiative that, among other benefits, reduced participating patients' visits to the emergency department (ED) by 43%, admissions to skilled nursing facilities (SNFs) by 36%, and acute care admissions by 32%, for the period between July 1, 1999, and June 30, 2000.

Preventing 'frequent flyers'

There were similarly dramatic reductions in outpatient visits, home health visits, and visits to both primary care physicians and specialists.

Although those results are for members with high utilization rates — two or more acute admissions, two or more ED visits, or five or more home health visits within a year — the program also focuses on patients who are not "frequent flyers," Van der Mei says. "We are trying to prevent that from even happening," she adds. "We may have 800 enrolled in the program, but only about 400 meet that [high utilization] criteria."

For all the patients, who are Medicare+Choice enrollees, the health system is financially responsible for physician visits, hospital admissions, SNF costs — "everything but pharmacy," she adds.

The chronic care program began in 1995, the brainchild of gerontologist **Cheryl Phillips**, MD, who was given a dual mission by Sutter Medical Group, an association of physicians that is aligned with Sutter Health Central. "We had about 3,000 Medicare HMO enrollees, and we realized there was a subgroup that was very frail and used a lot of services." The idea, she adds, was not only to focus on preventive care for frail elders, but also to address the common problem of trying to fit chronic care into an acute care model.

Volunteering her time, Phillips says, she began the effort with a half-day social worker and a half-day nurse practitioner, and wrote the risk screening tool for the program on her home word processor.

"We developed risk stratifications, not only to identify the risk levels of those with chronic diseases, but to hit the threshold for our definition of frailty." Taking a handful of patients and doing home visits, she explains, Phillips and her team developed a longitudinal, or ongoing, case management model to replace the traditional episodic, or reactive, care model.

Identifying frail elders

With some funding from three health maintenance organizations (HMOs), she was able to add a functional operations manager, Phillips says. "At that time, our managed care enrollment was growing, and we did broad-based screening of enrollees." By mailing out a questionnaire to new enrollees in Medicare+Choice, she adds, "very often we would find frail elders before the primary care physicians did."

In the program's initial stage, Phillips explains, her role was "very patient-specific. I would do initial assessments with the nurse practitioner, and screening reviews." Now that the chronic care program has grown to nearly 1,000 patients, she says her role as medical director is to set policies and criteria for frailty, meet with the care team on a regular basis to go over difficult or challenging cases, and act as a liaison between the primary care physician and the team.

"We often find [cases of] multiple medications, untreated depression, and new dementia," Phillips explains. "I can communicate with the primary care physician [PCP]. It was never our goal to assume the role [of the PCP], but we serve as the coordination for them."

Providing links between agencies

The chronic care team links regularly with home health agencies and nursing homes so that it is aware when a member is using these services, she says. "We can serve a lot by providing links and assisting with placements, particularly if the patient is in the nursing home for a short time, like for rehabilitation after a stroke. We become that continuity link. If they go in the nursing home and go back home, we know about them across the continuum and coordinate the levels of care."

"Sometimes they expect you to work miracles you can't. [Physicians] say, 'The patient needs to be in a SNF today,' but maybe the patient doesn't want to go today. We work with them over time. Patients have a choice, and sometimes they make bad choices."

The health risk screening tool that Phillips developed, Van der Mei points out, defines four levels of risk. "They primarily followed '3s' and '4s,' she adds. Those at level 4 are at great risk, and those at level 3 are at risk of potentially needing hospitalization."

The chronic care program "started as a social work model," she says, assisting members who needed caregivers, food, or transportation. "We do a lot of those interventions, helping patients with chronic illnesses maintain a level of functioning." Now, however, with the addition of more nurses, "it's more of a multidisciplinary team," she adds.

A statistical analysis of the participants at the end of the initial grant period validated that the screening tool was a predictor of increased utilization, she says.

At that point, notes Van der Mei, the program "needed to be operationalized. We had the concept, but needed to find a way to fund it when the grants ended, and without a definite return on investment, it was difficult to fund."

Based on the early results, however, Sutter's physician group and hospital administration agreed to provide funding, she says, and Van der Mei was hired in August 1997 to develop and expand the program.

After studying different chronic care models, she developed for the program the role of monitoring specialist, or "Medicare risk specialist," Van der Mei explains. "For ongoing monitoring, you don't necessarily need a nurse or social worker, but you do need someone with a background in the field of gerontology."

This brought an additional member to the multidisciplinary team, one who is able to carry a larger caseload, she says. When the monitor identifies a problem, there is a nurse or social worker close at hand who can be consulted, Van der Mei adds. "The monitor can say to the nurse, 'You need to go out and do a home assessment.'"

At present, she says, the team is made up of four registered nurses, four social workers including one who is the team supervisor, three Medicare risk specialists, and support staff. Each RN case manager and social worker has a caseload of between 60 and 80 patients, while the phone monitors carry a caseload of 150.

The ongoing monitoring provided by the Medicare risk specialist is not hands-on and not episodic, Van der Mei points out. "Our patients don't have to be homebound. They're just at-risk patients, patients who are very frail."

In a typical case, Phillips explains, the team identifies a high-risk patient, either through its screening tool or through referral from a physician.

The patient may be, for example, an 89-year-old woman who is falling a lot, not taking her medications, and living alone. The initial assessment is done by a nurse, a social worker, or both, depending on the patient's needs, she says. The team identifies the problem, develops interventions, and coordinates the care by, for example, bringing in a physical therapist and safety equipment and lining up community services.

Once these solutions are in place, the case is

handled through telephone monitoring by the Medicare risk specialist who calls the patient every two weeks, and eventually monthly. That monitor “keeps the link to make sure things are working. It’s also a constant link for the patients, so when they have a problem they know who to call,” Phillips adds.

“Sometimes the interventions are up to the family members,” Van der Mei notes. “The monitor can call and check to see if the family has followed through on what it’s been identified that they need to do.”

The program differs from many other models in that it is over time, she adds. “Many times patients stay in the program until they die, or for a year, or they may move to assisted living or a SNF.” If the patient does move to a SNF or similar environment, she says, “we back out at that time” because of the close care the person will receive in such a setting.

In most health care systems, Van der Mei says, “there’s not really anybody that does this [function]. With our program, instead of calling physicians all the time, the client calls the chronic care program. We help coordinate that maze of confusion in a managed care system. The program, she adds, “is an extension of the PCP.”

The chronic care team teaches patients to recognize symptoms earlier that indicate they should visit a physician, Van der Mei says. The team will make the appointment for them, if necessary. “We do medication management. If, for example, patients are taking eight to 10 drugs, we make sure the physician knows they’re taking them all.” If patients run out of money and can’t fill their prescriptions, the team can help them apply for MediCal or other assistance programs.

Plenty of challenges

The program has not been without its challenges, Van der Mei notes, including the difficulty some physicians have had understanding its role.

“Sometimes they expect you to work miracles you can’t,” she says. “[Physicians] say, ‘The patient needs to be in a SNF today,’ but maybe the patient doesn’t want to go today. We work with them over time. Patients have a choice, and sometimes they make bad choices.”

Another problem is that the program is only for managed care patients, while physicians have patients with all kinds of payers in their practices, Van der Mei points out. “It’s difficult

for [physicians] to keep up with who they can refer to this program.”

One of the earlier misunderstandings, she says, was that some people thought the program was the same as a home health agency. “We don’t do wound changes, injections, intravenous antibiotics — anything that is skilled and short-term.”

At times, however, the program has overlapped with a home health agency, Van der Mei says. “At first they saw us as a threat. We try to avoid getting involved until the home health [service] is closed, but sometimes there’s a social issue, if a patient doesn’t have a caregiver, lives alone, and is falling, for example. Maybe home health is taking care of the patient’s wounds, but doesn’t address the big picture.”

[For more information on the Sutter Chronic Care Program, contact:

Jan Van der Mei, RN, Director, Sutter Health Center, Continuum Case Management, Sacramento, CA. Telephone: (916) 854-6896. E-mail: vanderj@sutterhealth.org.] ■

Referrals ensure continuum of care

Packets outline available support services

When it comes to referring acute care patients to disease-specific education programs, the referral process at Akron (OH) General Medical Center is simple. Patients admitted to the hospital with a chronic disease such as asthma, diabetes, or congestive heart failure are given a teaching packet that has a list of support services. A nurse goes over the information with all but the asthma patients who receive the teaching from the respiratory therapist.

In all cases, the educator strongly encourages them to attend an outpatient class, but does not make a formal referral, says **Billie M. Foley, RN, MSED**, patient education coordinator at the medical center.

Patients who are admitted to Jackson Memorial Hospital in Miami with a chronic disease also receive a standard educational package. However, the materials are considered a “starter” to education, explains **Peggy McLoughlin, RN, JD**, chronic disease manager at the health care facility.

For further education, the inpatient case manager enrolls the patient in a group class, such as diabetes self-management, and refers the patient to the disease state case manager.

Classes are available at primary care sites in the north and south ends of the county and at the hospital's main campus with two sites offering education in Spanish as well as English.

"Once a patient is referred to our disease management program, the disease state case manager does a risk screening of the patient and assigns the patient to either a low, medium, or high-risk category.

The criteria vary by disease, but the main categories are clinical, adherence, and psychosocial risk factors," says McLoughlin. The overall risk level of the patient governs the frequency of interactions with the case manager. High-risk patients receive intensive one-on-one education from the disease state case manager.

An example of the process is as follows:

- 1. Patient admitted to hospital with a diagnosis of diabetes.**
- 2. Patient placed on a clinical pathway.**
- 3. Patient followed in-house by inpatient case manager.**
- 4. Patient referred to the appropriate disease state case manager who follows the patient after discharge.**
- 5. Patient screened for risk level at primary care site.**
- 6. Patient's level of risk determines the frequency of interactions with the disease state case manager.**

"The goal of the disease state case manager is to work with the primary care provider to maximize medical therapy and provide the patient with the skills necessary for self-management of the disease," explains McLoughlin. As the patient develops the skills to manage the disease on his or her own, the risk level is reassessed.

When a person is admitted to Grant/Riverside Methodist Hospitals with a diagnosis of diabetes, the patient receives an automatic consult with a diabetes educator.

If a patient has asthma and has a new breathing treatment prescribed by the physician, a

respiratory therapist comes to teach. Similarly, cardiac rehab provides an educator for heart patients.

In each case, the educator talks to the patient about the benefits and support of an educational outpatient program pertinent to management of their chronic disease. If the patient is interested, a referral is made, says **BJ Hansen**, BSN, patient education coordinator at the health care system in Columbus, OH.

Because many of the heart patients are from outside the Columbus area, a list of rehab programs throughout the state of Ohio is maintained. "We have a list of all the cardiac rehab programs in the state of Ohio we give to the patient, and we try to get them to a cardiac rehab program in their area if they are willing to go," says Hansen.

Within their own system, they have a heart disease management clinic and a Coumadin clinic for heart patients. For asthma management, there is an asthma clinic/pulmonary rehab program, and for diabetes patients, outpatient classes are available with a case managed program available for HMO members.

Specialists automatically visit patients with heart problems or a diabetes diagnosis when they are admitted to Provena Mercy Center in Aurora, IL. During the education session, cardiac rehab nurses teach the heart patient and explain the health care systems' cardiac rehab program. They set up a time for the patient to begin the program after discharge, explains **Rita Smith**, MSN, RN, education coordinator.

"For patients with diabetes, the dietitian sees the patient and refers them to the diabetes support group that meets once a month. Also, they are given my name and number so they may come in as an outpatient for further education sessions on managing their diabetes at home," says Smith.

To make sure asthma or diabetes patients coming to the emergency department at Jackson Memorial Hospital don't slip through the cracks, case managers intercept them. "They initiate education and give the patient a 'starter' education packet. They will also determine where the patient receives their primary care, and make an appointment to the appropriate class," says McLoughlin.

The names of the patients are forwarded to the disease state managers who conduct the classes and follow the patients in the primary care centers, she explains. ■

(Continued from page 50)

banks are free to compete on all other aspects of business, and this design has resulted in tremendous growth worldwide despite different currencies, customs, and banking systems.

“The committee believes these important lessons about simple rules for complex adaptive systems can be applied to health care systems as well,” the report concludes. “In redesigning health care, the building blocks are the simple processes that make up the work of small systems of care and their interconnections.”

(A copy of the report is available at www.iom.edu/ghca.) ■

How to apply Y2K lessons to patient confidentiality

Don't outsource the hard stuff, expert says

Quality managers wondering what effect the extended comment period on the final privacy regulations will have on their planning should not take any false comfort.

Tommy Thompson, Department of Health and Human Services (HHS) secretary, told hospital executives last month that while HHS wants a thorough review to examine the potential for unintended consequences, it remains committed to implementing the rule as mandated by the Health Insurance Portability and Accountability Act (HIPAA) of 1996.

Senior HHS officials responsible for crafting the mammoth privacy regulation currently are restricted from answering any questions about what effect a 30-day public comment period might have on the final shape of the regulation, much less speculating on what specific changes may be in store.

In the meantime, experts say quality managers should continue their planning to comply with the new law. One way to prepare for the sweeping new mandates is to apply the lessons of Y2K to HIPAA, according to **Alton Brantley**, vice president and chief information officer for MedStar Health, an integrated health care system based in Baltimore.

Brantley reports that it took five years for

MedStar to develop its plan for dealing with the Y2K challenge. But even though hospitals have far less time to get ready for HIPAA, he advises them to apply the following lessons of Y2K to the coming HIPAA challenge:

✓ **Be neither first nor last.** Brantley warns that hospitals that aim to be the first to become HIPAA-compliant will either do too much or too little and sometimes will wander into blind alleys. In the case of Y2K, those who started last benefited from the experience of others, but not without significant stress. Meanwhile, those who tried to lead the pack sometimes expended wasted energy, he says.

✓ **The “hard stuff” is not out-tasked.** In preparing for Y2K, Brantley reports that consultants often claimed they could effectively manage the most difficult tasks. But as those consultants began to realize they had legal liability for the work they performed, they began to temper those claims. “Ultimately, consultants ended up doing mostly well-defined, well-focused activities,” he says.

✓ **Best practices are moving targets.** Brantley says the initial work plan for Y2K called for replacing entire systems. “But most of us found that we could not afford to do that,” he reports. “We could not afford the time, and our people could not tolerate the pain.”

✓ **Consultants and lawyers saw opportunities that did not materialize.** Brantley says he typically received three to five phone calls per day from vendors, consultants, and legal firms offering to help solve the Y2K problem. “I listened to all of them, but I also took it all with a grain of salt,” he says. “There was a very aggressive approach, but we realized that it didn’t pan out.”

✓ **Don’t build the plan around the consultants.** According to Brantley, consultants can be very important and can offer valuable external advice, including benchmarking perspectives. “But ultimately, consultants are not accountable,” he cautions. “You have full accountability, and you are going to have to manage consultants and other outside resources.”

✓ **It’s not over until it’s over.** Brantley reports that MedStar was still working on Y2K well after January 2000. “With regard to HIPAA, you have to realize that it’s not over until it’s over,” he asserts. “New regulations are going to continue to come out, and new issues are going to continue to surface, and we are going to be at this for a considerable period of time.”

✓ **If you do it right, it looks easy.** According to Brantley, most of MedStar’s staff now believe that

Y2K was not an enormous effort because it was accomplished successfully. "Only those of us who worked in the trenches and behind the lines down in the boiler rooms making Y2K work know the endless energy we expended on it," he remarks.

Brantley says the biggest challenge presented by HIPAA is the process of continuous change. "Change management is not a technology, and it is not regulatory; it is cultural." Human beings can absorb only so much new information, he warns. "They can only change so fast without being error-prone themselves." ■



Equipment-related errors in the workplace

Materials department plays role in patient safety

By **Patrice Spath, RHIT**
Brown-Spath Associates
Forest Grove, OR

Health care practitioners must know how to operate a wide array of machines. With the growing number of complex medical devices, equipment-related patient incidents are on the rise. Equipment problems are a frequent cause of untoward events. Equipment problems, most of which affect patients' cardiovascular and respiratory systems, reportedly are the most frequent source of untoward incidents in the intensive care unit.

Equipment can contribute to adverse events either by directly causing the incident or by increasing the likelihood of human errors. Even when equipment malfunction is the direct cause of the accident, malfunctions often can be traced back to human factors. For example, described below is an equipment-related event that occurred in 1998 in the operating room of hospital in the Southwest. While the apparent cause of the incident was faulty equipment, the materials department may have played a role.

"A flash fire broke out during a craniotomy

procedure for evacuation of bilateral subdural hematomas. After one hematoma was removed and the neurosurgeon was making an incision to remove the second, a fire broke out on the operating table. The fire destroyed the patient's oxygen mask and seriously burned his face, ears, neck, and shoulder. It is believed the electrocautery device being used to stop bleeding at the incision sparked the fire." (Doctor: Hospital fire accident. *Las Vegas Review-Journal*, Aug. 2, 1998.)

Unknown to the neurosurgeon and other people in the operating room at the time of the incident, ECRI, a nonprofit international health services research agency, already had received reports of several incidents of sparking or ignition of electrosurgical electrode cables. In some of the incidents, the cable had ignited and started a fire. ECRI had issued warnings about this problem, suggesting that hospitals should routinely perform pre-use (and cleaning) inspections of reusable cables. Either the hospital involved in the incident had not received the ECRI communications, or the hospital's materials department had not passed the information along to people in the operating room. The patient undergoing the craniotomy might not have been harmed if the early warning notices from ECRI had prompted further investigation and action.

The causes of medical device accidents fall into four categories:

- **basic device failures** (e.g., design/labeling error, manufacturing error, random component failure, and invalid device foundation);
- **external factors** (e.g., electrical power supplies; medical gas and vacuum supplies; electromagnetic or radio frequency interference; and environmental controls);
- **system errors** (e.g., poor incident/recall reporting systems; failure to impound; lack of competent accident investigation; failure to train and credential; poor pre-purchase evaluation; use of inappropriate devices; and failure to conduct incoming and pre-use inspections);
- **operator errors** (e.g., device misassembly; inappropriate reliance on an automated feature; accidental misconnections; improper maintenance, testing, repair, or incoming inspection; incorrect clinical use; incorrect control settings; and incorrect programming). The materials department can help to alleviate some of the problem areas through an effective equipment procurement, maintenance, and monitoring program.

Several steps can be taken to eliminate the error-producing factors in the workplace that

Early Warning Signs

How many of these equipment-related early warning signs are present in your environment?

- Only a few people seem to be using the equipment.
- People tend to modify equipment and take shortcuts.
- People refuse to use the materials/equipment.
- People complain that installation of accessories is difficult, confusing, or overly time-consuming.
- Alarms and batteries often fail.
- Incorrect accessories are sometimes installed.
- Parts often become detached.
- People complain that equipment displays are difficult to read or understand.
- People complain that equipment controls are poorly located or labeled.
- People say the alarms are difficult to hear or distinguish.
- People find the alarms very annoying.
- People complain that equipment operation is illogical and confusing.

Source: Patrice L. Spath, Brown-Spath Associates, Forest Grove, OR.

may cause undesirable equipment-related events. An important issue is communication. Every hospital should have a formal process for identifying product hazards and communicating effective safety practices to all relevant health care professionals. This means that someone, perhaps in the materials department, should be designated to receive and disseminate information about product recalls and device safety alerts.

Groups such as the Food and Drug Administration, the Institute for Safe Medication Practices, and the ECRI regularly issue equipment hazard reports that are relevant to many different hospital departments. These communications must routinely be distributed to everyone affected by the products in question. **(For web-based sources of product recall and device safety alert information, see note at end of article.)**

All material and equipment should be inspected briefly for damage in the materials department prior to delivery to patient care units. This inspection involves both the packaging and the equipment/device. Typical steps include the following:

- Conduct a visual through-the-packaging

inspection of the equipment/device for obvious defects.

- Check the package integrity. Are the package and seals intact?
- Verify the package label. Does the label accurately identify the equipment/device contained in the package? If the device has an expiration date, has the date passed?

While inspecting the item, ask yourself these questions:

- Is there any debris or unidentified material within the package?
- Is the equipment/device complete and properly assembled?
- Are there any external defects (e.g., broken insulation of disposable electrodes, cracks or splits in catheters)?
- Are all connections and junctions intact and secure?

It may be necessary to involve the engineering department in the inspection of electrical items if staff in the materials department are not qualified to evaluate electrical components.

The materials department also can help in identifying high-risk equipment/devices. High-risk products are those that require repeated repair or replacement. The information found in the log of items sent out of the hospital for repair or replacement can be used to evaluate whether the repair rate for a piece of equipment/a device is increasing (a signal that the reliability is decreasing) and determine if repair/replacement rates are higher in a particular unit (a signal of possible misuse or lack of staff knowledge). The materials department staff often are aware of the scope of equipment problems and complaints voiced by physicians and clinical staff. These concerns can be early-warning signs of an impending equipment-related patient incident. If one or more of the situations **listed in the box, above left**, is identified, the materials department should bring the concerns to the attention of the patient safety or other relevant committee.

The materials department is responsible for procuring quality materials, supplies, and equipment use at the lowest total delivered cost. However these decisions should not be made in isolation from those who use the products. Every patient care device should be evaluated by user groups to determine if the equipment:

- conforms to user expectations;
- is easy to learn how to operate;
- contains easily perceived displays and simple controls;

- provides relevant information to the user, thus avoiding reliance on the user's memory;
- comes with clear and adequately detailed user documentation and technical manuals.

Studies of medical device accidents show that operator error accounts for 50% to 70% of the problems. The goal is to ensure that operators are proficient in critical tasks.

Critical tasks are those requiring human performance, which if not accomplished in accordance with product requirements will most likely have adverse effects on equipment reliability or safety.

Before purchasing new patient care supplies, accessories, and equipment, the materials department must make clinical departments aware of any training implications. An operational assessment should be conducted prior to purchase to determine if the new equipment will need to be added to the physician credentialing process or if there is a need for education for physicians, nurse and/or support staff.

Everyone in the hospital can help reduce the number of undesirable patient incidents. Don't overlook the contribution of nonclinical departments, such as materials management. Although the materials staff are not involved in direct patient care, they can do a lot to minimize the risk of equipment-related adverse events.

[For more information on recalls and device safety alerts, try these on-line resources:

- *The complete files of reports received under the FDA's Medical Devices Reporting Program are available on the web at: www.fda.gov/cdrh/.*

- *Copies of MedWatch, the FDA's Medical Products Reporting Program newsletter and related safety notifications are available on the web at: <http://www.fed.gov/medwatch.safety.htm>.*

- *Medication safety alerts related to products involving medication preparation and administration are periodically issued by the Institute for Safe Medical Practices. These are available on the web at: www.ismp.org.*

- *Medical Device Safety Reports issued by the ECRI are available at: <http://www.mdsr.ecri.org>. Nearly 200 documents and case studies are included in this web-based repository of medical device hazard information.*

- *Occasionally the Joint Commission's Sentinel Event Alert newsletter contains information about equipment-related accidents. Copies of this newsletter can be found on the Joint Commission's web site at: www.jcaho.org.*

Suggested reading

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3. Hart GK, Baldwin I, Gutteridge G, Ford J. Adverse incident reporting in intensive care. *Anaesthesia Intensive Care* 1994; 22:556-561.

4. Kaye R, Crowley J. *Medical Device Use-Safety: Incorporating Human Factors Engineering into Risk Management*. Washington, DC: Center for Devices and Radiological Health, Food and Drug Administration; 2000. Web site: <http://www.fda.gov/cdrh/humfac/1497.html>.

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Cost-effective antibiotic could shorten LOS

Researchers at the University of Pennsylvania Health System say they may have a way to decrease hospital stays among certain patient populations at a time when certain bacteria are growing increasingly resistant to current antibiotics and the costs of treating infections are increasing.

Researchers say the antibiotic linezolid — trade name Zyvox — has the potential to provide hospitals cost-saving benefits when used to treat infections resistant to most other antibiotics that can extend patients' length of stay. The drug is the first in a new class of antibiotics that attack bacteria in a way unlike existing therapies, they contend.

The main breakthrough of Zyvox is that it has an oral form that is bio-equivalent with the IV form, says **Henry Glick**, PhD, an internal medicine researcher in Penn's department of medicine's health services research unit, and principal health economics investigator of the study. He says there are very few oral drugs that can be used to switch a patient in that fashion.

"What we see that translating into for patients with skin and soft tissue infections is being able to discharge them substantially earlier than if they require [intravenous administration] IV in

the hospital or to be discharged to home IV," says Glick.

In a study published recently in *Pharmacotherapy*, the researchers compared hospital discharge rates for two groups of patients who were being treated for methicillin-resistant *Staphylococcus aureus* (MRSA) infections, caused by bacteria resistant to all but the most powerful antibiotics. One group of patients received the new antibiotic Zyvox available in IV and tablet forms, and another received the most commonly prescribed antibiotic for treating MRSA infections, vancomycin, which is only available through IV administration. Among patients who completed the study and follow-up tests, a significantly higher proportion of patients treated with Zyvox were discharged from the hospital in their first week of therapy (30%) than the group treated with vancomycin (12%).

From the publisher of: *Hospital Infection Control, Hospital Employee Health, Hospital Peer Review, and Hospital Case Management*

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Tuesday, July 24, 2001, at 2:30 p.m. EST

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Ann Kobs, RN, MS and Patrice Spath, RHIT

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Zyvox was approved by the Food and Drug Administration almost a year ago and is the only antibiotic with 100% equivalent IV and oral formulations designed to treat significant hospital-acquired infections. ▼

JCAHO offers e-mail

The Joint Commission on Accreditation of Healthcare Organizations is jumping on the electronic mail bandwagon and now offers an e-mail service for newsletters, accreditation information, and news releases.

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Vice President/Group Publisher: Brenda Mooney, (404) 262-5403, (brenda.mooney@ahcpub.com).

Editorial Group Head: Coles McKagen, (404) 262-5420, (coles.mckagen@ahcpub.com).

Managing Editor: Russ Underwood, (404) 262-5521, (russ.underwood@ahcpub.com).

Production Editor: Ann Duncan.

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care organization can sign up for the service, which was created after a recent Joint Commission survey in which nearly 90% of respondents wanted to receive information by electronic mail.

Among the items offered to participants:

- *The Inside Perspective*, the Joint Commission's official monthly newsletter;
- *Home Care Bulletin*, a bimonthly newsletter that keeps home care organizations up to date on the latest trends and accreditation information;
- *Sentinel Event Alert*, a periodic publication that focuses on health care errors;
- news releases.

Subscribers also may ask for information about any of the commission's accreditation programs, including notices about standards, field reviews, publications, and upcoming education programs. For more information, contact the Joint Commission through its web site at www.jcaho.org. ▼

Follow-up care reduces costs in high-risk infants

A program of comprehensive neonatal follow-up care after hospital discharge for inner city high-risk infants reduces life-threatening illnesses and appears to reduce medical costs by more than \$3,000 per infant, as well, according to a study published in the *Journal of the American Medical Association* (2000; 284:2,070-2,076).

Researchers at the University of Texas Southwestern Medical Center at Dallas found that when high-risk infants received comprehensive follow-up care, 47% fewer of them died or developed life-threatening illnesses that required admission for pediatric intensive care. High-risk infants were defined as those weighing less than 1,000 g at birth or those weighing 1,001 g to 1,500 g who required mechanical ventilation.

Comprehensive follow-up care for high-risk infants was defined as 24-hour access to highly experienced caregivers and five-day-a-week follow-up care, which included well-baby care, treatment for acute and chronic illnesses, and routine follow-up care. Routine follow-up care was available two days per week and included well-baby care and chronic illness management.

For care between discharge and one year, the estimated average cost per infant was \$6,265 for comprehensive care and \$9,913 for routine care. ■

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