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Organizational learning: Could it be the key to higher quality and increased revenues?

Proponents say shared learning, staff empowerment work wonders

Do you work for a "learning organization"? Given the fact that you're a health care professional, the odds are pretty good that you don't. However, a number of quality experts say that if you did, both you and your organization would be performing much more efficiently — and that your personal sense of professional fulfillment would be dramatically increased.

Sound too good to be true? Perhaps, but that's the picture painted by proponents of organizational learning. [Peter M. Senge's book, *The Fifth Discipline. The Art and Practice of the Learning Organization* (Random House; 1990), is considered to be the seminal publication of organizational learning (OL).]

"The key shift I see happening when organizations — including health care organizations — apply OL methods and tools is that they actually integrate learning with work. Specifically, they

Are you ready for EMTALA? Audio conference clarifies final regulations

At press time, the final version of the recently proposed changes to the Emergency Treatment and Labor Act (EMTALA) was expected to become effective soon. Issues in the final regulations could include changes to physician on-call requirements, "comes to the emergency department" definitions, later-developed emergencies, nonhospital entities, and prior authorization. With all the confusion surrounding the proposals during the past year, make sure you know what it takes to comply with the final regulations.

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Key Points

- Collective learning process creates a sense of staff empowerment.
- Flattening of leadership levels leads to improved communication.
- Three core competencies currently are lacking in most organizations.

engage in a collective learning process that often yields extraordinary results," says **Jeff Clanon**, MS, director of partnership development for the Society of Organizational Learning (SOL), based in Cambridge, MA. The SOL is the successor organization to the Organizational Learning Center, originally established at the Massachusetts Institute of Technology.

"A learning organization is a place where people seek to learn rather than to know; where they admit they need to learn from each other to get a complete picture of their system," explains **Sue Nieboer**, RN, vice president, patient care services and quality management at Gerber Memorial Health Services in Fremont, MI.

"Health care is under continual pressure to change," she adds. "One of the things a learning organization does is it allows you to turn on a dime. People are so invested in the organization and its processes that if something hits you, like changes in federal government reimbursement, you are able to fully mobilize your resources."

"In health care organizations in particular, the communication between departments and functions could be better," notes **Judy Homa-Lowry**, RN, MS, CPHQ, director of patient care services at Brighton (MI) Hospital. "There are a lot of breakdowns and delays involved in rework. When you begin to flatten leadership levels and make employees more accountable for systems and processes they own, you really improve the efficiency and effectiveness of the processes in the organization."

Clanon explains that OL is distinguished by a set of core learning competencies.

"What we've found, basically, is that this set of core learning competencies seems to be either missing entirely or is vastly underdeveloped in all the organizations we studied or worked with," he asserts. (The SOL has been studying mostly large corporations, but in the last few years, it has turned its attention to governmental agencies such as the Department of Education, the Environmental Protection Agency, the National Security Agency, some nonprofit organizations, and health care organizations.)

According to Clanon, these three core competencies are:

• **Aspiration.**

People in the organization are clear on what they want to create in their own lives and in the organization. "What is it that they *really* want to get done?" Clanon asks. "This is different from management's vision, which is *supposed* to mean something to the organization. We talk about having people be really clear about and engaged in clarifying their personal visions and how those personal ones connect on an organizational level."

• **Reflective conversation.**

A lot of time is spent in organizations talking about tasks, but much of that talk is not truthful, Clanon asserts. "The real meetings happen in the men's room or women's room," he says. "There's not a lot of reflection and assumption testing to understand our thinking — and thinking drives behavior."

• **Understanding complexity.**

In most organizations, particularly health care organizations, the issues are very complex, Clanon says, yet most people in those organizations don't have the tools and methods to deal with that complexity.

"To view things from a systemic perspective [systems thinking] — this is the hard piece of this process," he says.

"We have found that when groups develop these three competencies, they are clear on what they want, and they talk things through with each other," Clanon says. "They get the big picture, and they get incredible results."

COMING IN FUTURE MONTHS

■ Benchmarking organizational behavior in the acute-care setting

■ Increasing survival and improving quality of life in patients with primary pulmonary hypertension

■ HHS moves to eliminate barriers to quality improvement

■ Using technology to improve patient and medication safety

Nieboer was first exposed to OL in 1994, when representatives of her 73-bed hospital (the system also includes a large home care agency) were asked to participate in a conference on systems thinking.

"We thought it was about *our* system," she recalls. "We spent three days in the most life-changing experience, and it has altered the course of this organization."

Nieboer and her colleagues spent about a year attending more conferences and learning about how to implement OL. Then, Gerber hired its first organizational facilitator.

"This is a cultural change," she explains. A cultural survey was conducted, and then a "dream team" was pulled together to envision the Gerber of the future. Communication was seen as one of the biggest challenges. "There was no trust," Nieboer recalls, so groups were established to address the problem.

Putting it to the test

The new approach was put to the test in 1998 with the passage of the Balanced Budget Act. "We were looking at a $1.2 million deficit; we knew we had to downsize if we were going to survive," Nieboer says.

"Through systems-thinking tools and the use of our people, we pulled our whole leadership group together and redesigned the leadership structure," she adds.

Within two months, Gerber went from five vice presidents down to two, and leadership shrank from 35 to about half that. "In order not to impact care, we took the hit at the management level," Nieboer explains, noting that staff input helped inform these decisions.

With such a lean structure, there was concern that the voice of the organization would not be heard, so a strategic council was created. The quality management (QM) committee of the medical staff was combined with the strategic planning committee of the board. The new body is chaired by the chair of the staff QM committee. "If you truly want to get to the point where quality drives the organization, it should drive the strategic plan," Nieboer explains.

Three board members, three medical staff, and three administrative staff then were joined by a community member and three frontline staff to form the Organizational Improvement Council.

"We knew we had to build volume," Nieboer says. "It was the only way to survive with less reimbursement. Our first initiative was customer satisfaction and reimbursement — we had to get people in the door and serve them very, very well."

The OL model was driven down to the whole organization. "We even worked closely with the union, and they trusted us — they accepted less of an increase. The following year, we were able to reward them with a larger bonus than the contract called for," she says. "Last year, we will have made 3.6% profit on the bottom line."

Why it works

Organizational learning works, Nieboer says, because it is dramatically different from the traditional approach to health care.

"It's very customer-service focused. We have very high morale, a lot of trust in the organization, very few recruitment / retention problems, very high customer satisfaction, and high patient safety," she says.

Sounds like nirvana, but there are practical reasons why it works, she explains.

"Take the nursing shortage," Nieboer posits. "A quick-fix approach is to offer a $5,000 bonus to get RNs in the door. Once they're in, they start working in an organization where nurses are not empowered and not viewed as an important piece of the organization.

"They have mandated overtime, they're given a larger patient load than they can handle safely, they're never asked their opinion, and their talent is not used to the fullest in terms of improving systems," she says. "A year later, [the new RN] has a bonus and leaves, so the hospital has to start over with another $5,000 bonus."

In a learning organization, Nieboer says, the nurse is valued. "We work intensely on trust and communication and on learning what's wrong, how to do things better.

"We don't mandate overtime because we respect the fact that the nurse also has a family. It's about the person, too," Nieboer observes. "We establish committees that include nurses, and we empower them to make changes."

"Gerber has actually been able to *retain* nurses," notes Homa-Lowry, who has worked with Nieboer. "And the CEO says that as a result of the move to this approach, not only has quality of patient care improved, but they've seen quite an increase in revenue for the hospital."

Her mention of the CEO is significant, for as Nieboer notes, management involvement is a key element in the OL approach. "Management has to

always be true to its word."

"They must give out a lot of information and keep few secrets. In a learning organization, everyone knows where they stand, what the financial condition of the organization is, what the strategic goals are — in short, what we want to accomplish." Nieboer explains.

At Gerber, new employees "get it when they come in the door, during new employee orientation," she adds.

An ongoing process

The OL approach recognizes an ongoing process, as opposed to a finite beginning and conclusion, Nieboer explains.

"You don't ever become a learning organization, because you are always *becoming* one; you can always go to another level," she says. "That's the other beauty of it. It helps you keep evolving. It eliminates the sense of 'Here we are; we don't have to do any more.'"

As part of that ongoing process, Gerber does a lot of benchmarking with culture and customer satisfaction. "We benchmark internally and externally," she explains. "We have a balanced scorecard that reports to the board and the organization the results of those surveys."

Every quarter, a scorecard is posted for the employees. "Information is the key," Nieboer says. "If people don't know, how can they help you get better?"

"Now we've developed a structure," she adds. "There are communication officers in each department who are responsible for getting the information out. In systems thinking, there is a concept called circles of influence — you need to spread information out through those circles, which we mostly do through e-mail."

In another ongoing process, Clanon spent three years working at the Maine Medical Center in Portland. He began with a group of radiologists, and the project's scope has since been expanded.

"I was brought in to help them clarify their vision and introduced them to some tools," he recalls. "The radiologists were able to look at the situation systemically and realized they would need to involved administration, staff, and even clerical people involved in records."

What has resulted today are 18 or 19 quality teams that still are functioning. "A number of them were able to get clear on the processes they wanted to approve," Clanon notes.

So what are the prospects for OL in health care? "My sense is that it is not that widespread yet, but in order for health care organizations to survive and do a good job, we need to look again at how our resources are allocated," Homa-Lowry says. "We really need to take a closer look at patient care and the processes and all of the people in the organization, and whether they really contribute to patient care," she says.

In a lot of organizations, there are functions that don't relate to patient care or improve the core business, Homa-Lowry points out.

"In a learning organization, you focus on what can help you become more efficient, not on rework or a lot of administrative overhead, so you save money. You become streamlined down to a few people who are all on the same page," she says.

The result? A safer environment

If health care organizations became learning organizations, "They'd be much safer places," Nieboer says. "Physicians would listen to nurses, nurses to dietary people. You take away the hierarchy and focus on patient satisfaction and safety because every one of us contributes to achieving those goals."

As for Clanon, he says the movement is growing. "SOL now has a worldwide network with almost 30 'fractals,' including initiatives in India and China; it's taking hold," he says. "The stuff works, and I think that people in the health care arena who are really interested in going beyond quick fixes are embracing it."

"I've always wanted to integrate quality into the culture," Nieboer adds, "and I'd like to think I've achieved some of that." ■

Need More Information?

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Prisoner HIV program has 85% completion rate

Continuum of care maintained for 18 months

An award-winning hospital-based program for prisoners with HIV / AIDS has achieved an incredible 85% completion rate.

The program, called Project Bridge, is sponsored by The Miriam Health Care System in Providence, RI, and recently received the Russell E. Brady Award for Innovative Services Delivery from the U.S. Department of Health & Human Services' Health Resources and Services Administration (HRSA).

What makes Project Bridge so unique — and so successful? "The length of our follow-up, the intensity of the program, and the professional staff," says **Leah Holmes**, MSW, program director and principal investigator for Project Bridge.

"The program is community-based. This means that [post-release], we meet the client in the clients' environment — home, treatment centers, wherever," Holmes explains.

"We see them at least weekly for the first three months, and then monthly thereafter, and go with them to all their medical appointments to act as facilitators — patient advocates. This helps the patients overcome barriers to adherence with their meds and medical plans," she says.

Project Bridge social workers go into the prison and meet with prospective clients within 90 days of their release date. They formulate a discharge plan, then conduct intensive social work case management for a period of 18 months following discharge.

"To my knowledge, this is the only program that follows people with that intensity," Holmes says. "Other programs follow clients for six months at most, and many follow them for only three."

Key Points

- Program intensity and staff professionals are cited as keys to success.
- Project builds on earlier work within the state's prison system.
- CD4 counts increase, while viral loads are lower.

A history of helping

The Miriam, a 247-bed acute-care hospital, is part of the Lifespan health system and has a 76-year history of serving patients with chronic illnesses. "Our specialties include cancer care and cardiac care, as well as AIDS research and prevention," Holmes says.

The foundation for Project Bridge was laid in 1996, when Miriam applied for a "Special Projects of National Significance" grant, or SPNS, which is part of the Ryan White Care Act, funded by HRSA. "They were looking for programs to provide innovative services to under- or unserved populations," Holmes recalls. "Our immunology center has for many years provided HIV specialty care at the state's prisons."

When Rhode Island passed a law requiring HIV testing of all sentenced inmates, Miriam physicians noted that it would be unethical to test without providing good medical care.

"Consequently, the state prison system contracted with them to provide that care," Holmes says.

Project evolves

In the early days, the treatment involved "a couple of nurses who worked for the prison who tried some preliminary discharge planning," she notes. "It provided information on referrals with no community-based follow-up."

In the winter of 1996, Project Bridge officials met with potential collaborative agencies, created job descriptions, and began interviewing. In spring 1997, the first case manager and outreach worker were hired and program enrollment began.

A referral protocol was created, and the case manager and outreach worker received training at the prison on protocols. As the program grew, client satisfaction surveys were created, technology enhanced, newer, larger facilities were found, and the staff evolved.

In the summer of 1998, terminations were begun for the first clients to have completed the program. **(For more details about the program, see box, p. 42.)**

Today, Project Bridge has two teams of two people each — a professional social worker and a paraprofessional — and it has served more than 100 patients.

How effective has the program been? "Of our 100-plus patients, 85% completed the entire 18

Step-by-Step Program Development Outline

The Miriam Hospital's Project Bridge has created a detailed publication on how to create an intensive outreach and case management prison program in your community. Called *Building a Program for Jack: Building Your Program Step-by-Step*, it outlines the creation of a program from needs assessment through client transition procedures. Here is a brief outline of the process:

STEP 1

Coordinate Potential Services
Begin with needs assessment. Be sure to include local service agencies, health care providers, corrections staff, and ex-offenders in the planning process.

STEP 2

Develop Program Design
Tailor the program design to your mission, geographical area, and target population.

STEP 3

Locate the Program and Agency Setting
Create a welcoming environment. Hours of operation, reception area, and private interviewing space all contribute to the degree of safety and respect conveyed to clients.

STEP 4

Hire Staff
Staffing is not the place to cut costs. Consider the goals you wish to achieve.

STEP 5

Work Within the Correctional System
A specific referral mechanism within the correctional facility needs to be developed to identify potential clients. Following institutional rules for inmate visits is essential for a cooperative relationship.

STEP 6

Protect Client Confidentiality and Foster Respect
It is important not to become identified in the inmates' eyes with the correctional system. It also is important that you not be easily identified with an AIDS-specific service or organization.

STEP 7

Conduct the Initial Meeting
Visiting inmates before they are released provides a contact point. Explain how the program can be helpful, but don't promise anything you can't deliver.

STEP 8

Provide Services Following Release
Meeting clients in their homes or other community areas conveys respect and acceptance. Community-based service provision allows opportunities to teach resource management, frustration tolerance, appropriate advocacy, impulse control, and contingency planning.

STEP 9

Be Flexible. Determine Future Activities Based on Client Need
A harm-reduction philosophy is critical to keeping clients engaged in care. Client needs change over time; they may be ready for mental health or drug treatment services that previously had been declined, or clients in recovery may relapse.

STEP 10

Set Up Client Transition Procedures
A well-planned termination strategy is as necessary as a strong engagement phase.

Source: Project Bridge, Providence, RI.

months; only three were lost to follow-up — the rest was natural attrition, deaths, moving out of state, or being re-incarcerated," she notes. "That, in itself, is excellent for *any* population."

Through chart review, Project Bridge researchers went back after clients completed the program to see how many had been seen for viral load, and 90% had labs drawn.

"That's kind of phenomenal," Holmes points out.

At baseline, 60% of the clients had no health insurance. "At the point of program completion, 75% had obtained health insurance, so it pays for itself," she asserts.

Other preliminary outcomes include the following:

- CD4 counts increased from 423 at baseline to 477 at 24 months.
- There was a drop in viral loads.
- There was an increase in mental health services

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use by clients who indicated they needed the services.
- There was an increase in the resolution of substance abuse problems by clients who accessed services.
- Clients report decreased difficulty in finding housing. ■

CHA takes three-step journey to improvement

Comparative data lay foundation for benchmarking

(Editor's note: This is the first in a three-part series on the Catholic Health Association's (CHA) *performance improvement program, "Living Our Promises, Acting on Faith." This article will deal with the comparative data process, the first step in a 3½ year journey. The second article will describe the organization's benchmarking study, while the third will address implementation.)*

It seemed a fairly straightforward assignment at first: strengthening the identity of Catholic health care. But as the process improvement team at the St. Louis-based CHA soon would find out, "It ended up consuming much more time and energy than we had expected," says the Rev. **Michael Place**, STD, president and CEO of CHA.

CHA, founded in 1915, represents more than 2,000 Catholic health care sponsors, systems, facilities, and related organizations.

"In February of 1998, the board began a discussion about a new strategic plan," Place recalls. This plan was to include setting as a strategic direction for the CHA to "strengthen our ability to understand, articulate, and act on Catholic identity," as set forth in the organization's 2000 publication, *Year One: Baseline Date and Observations.*

"In discussing how we might do that, we observed that Catholic health care had become sophisticated in utilizing benchmarking processes to measure performance in clinical areas and in financial areas, and that those efforts have contributed to a continuous quality improvement environment," Place explains.

"So, we opined, could there not be a way for us to take the learnings from the work in the clinical and operational areas and apply them to our qualitative commitments, which are reflected in one way in the ethical and religious directive that the bishops of the United States have directed as a resource to Catholic health care?" he asks. "In other words, could we not explore using that resource as a baseline to develop a process for benchmarking our qualitative performance?"

Key Points

- Process requires far more time and energy than staff anticipated.
- Benchmarking processes lead to environment of continuous improvement.
- Data collection tool organized around current critical issues.

Laying the foundation

The initial process was one of having to learn a great deal about benchmarking. "The areas in which we worked had not been primarily identified with clinical or operations, but with the Catholic dimension — that which distinguishes us," Place adds.

Nevertheless, he notes, "We did have the expertise available to us." In terms of primary staff, there were three members of the leadership team, which worked with several different member committees as the process evolved.

The project had three overriding objectives:

- Convert descriptions of Catholic identity into measurable and accountable outcomes.
- Identify successful practices as hallmarks of the health care ministry of the Roman Catholic Church.
- Provide measures for ongoing performance improvement.

Before it could define the measurement system to be used, the task force identified what it called "The Constitutive Elements of Catholic Identity":

1. Promote and defend human dignity.
2. Attend to the whole person.
3. Care for poor and vulnerable people.

Need More Information?

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4. Promote the common good.
5. Act on behalf of justice.
6. Steward resources.
7. Act in communion with the church.

Since the task force decided to concentrate initially on acute-care facilities, the measurement system was based on organizational behaviors and realities within an acute-care facility. The data collection tool ultimately was organized around five current critical issues:

Organizational Culture:

- patients' perception of respectful treatment;
- employees' perception of respect among co-workers;
- employees' satisfaction with involvement in decision making.

Holistic Care:

- certification of pastoral care staff;
- patients' satisfaction with pastoral care services;
- pastoral care visits in the inpatient setting.

Care for Poor and Vulnerable People:

- unreimbursed charity care as a percentage of operating expenses;
- tax benefit as a percentage of increase in unrestricted net assets;
- fiscal stewardship: earnings as a percentage of total income;
- fiscal stewardship: long-term debt to capitalization;
- socially responsible investing.

Care of the Dying:

- family care conferences for dying patients;
- support services for dying patients;
- effectiveness of pain management;
- patient/family satisfaction with pain management.

Relationship to the Church:

- meetings with diocesan bishop or liaison;
- updating diocesan bishop or liaison on activities and issues;
- employee education on the (ethical and religious) directives;
- physician education on the directives.

For each of the five key issues, the measurement tool included measures of organizational performance as well as corresponding characteristics. For example, one measure for organizational culture was the percent of employees indicating that they experienced mutual respect among co-workers. Among the characteristics included in the tool were: "The facility offers an employee assistance program," and "Criteria for granting physician privileges include respect for employees and caregivers."

The tool was pilot-tested in 32 acute care facilities, and a total of 239 ultimately participated. The data were submitted via CHA's web site and collected during January and February 2000.

Based on the comparative database of organizational performance, the next phase began with the selection of a performance improvement topic based on input from CHA-member organizations. Despite the fact that more time and effort were involved than had been anticipated, "We ended up feeling it was well worth the time and energy," Place concludes. ■

PDAs help nurses improve care and save time

Devices previously used only by physicians

A groundbreaking pilot program that equips nurses with personal data assistants (PDAs) has saved nursing staff at Moses Cone Health System in Greensboro, NC, almost two hours a day while helping to identify diabetes patients in greatest need of quick intervention.

The diabetes treatment program at Moses Cone treats about 7,000 diabetes discharges a year, says **Diane G. Newby,** BSN, RN, program director.

"The key clinical issue for us, since we don't have tons of clinical nurse specialists, is how to decide which patients need to be seen first and how many patients we have in the hospital whose sugars are out of control," she notes, explaining the rationale for the PDAs.

In some ways, it is not surprising that Moses Cone is moving in this direction. After all, it was recently added to Hospitals and Health Network's list of "Most Wired Hospitals and Health Systems in the Country." However, the PDAs originally were part of a "doctors-only" program.

Key Points

- If physicians can benefit from using PDAs, then why can't nurses?
- Technology enables targeting of diabetes patients requiring rapid intervention.
- Using devices can save nurses nearly two hours a day.

In early 2002, however, Newby saw some physicians in a hospital hallway using MData software from Durham, NC-based MercuryMD on Palm PDAs. "It incorporates a software application in the Palm that can pull data from several different hospitals — like medical records, labs, and so on," she explains.

The physicians were using it for their patients, which was the original purpose of the software — being able to access X-rays, lab work, medication information, consults with other physicians, and patient histories and physicals.

"So basically, they have most of the medical information they need in the Palm device," Newby notes. "They don't have to find the chart to look up what they want — they just click on the icon with their stylus."

It occurred to Newby that this might be a great device for her nurses. "There were some conversations with MercuryMD, and they told us the Palms had never been used before by nurses," Newby recalls. "I proposed using them with our clinical nurse specialists, and MercuryMD agreed it would be a good idea to do a pilot program." Since there was no money in Newby's budget for the Palms, MercuryMD let her borrow some for the pilot.

Clear goals in mind

Both MercuryMD and Newby knew exactly what they were hoping to get out of the pilot program. "What they were looking for was, is it really helpful for nurses? What I wanted to use it for was to stratify the population to focus on specific groups of patients at risk, and to see if it would save nurses time and thus help combat the nursing shortage," she says. "I wanted to find a way to help my clinicians see more patients more appropriately."

The pilot program began around nine months ago, with Palms being used by four nurse clinicians, one dietitian, and one coordinator. "Right now, we use 17 different insulins and 17 different oral agents," Newby notes. "One of our charges is to help physicians keep track of these meds and make sure that any potential interaction is identified early on. What's more, we were absolutely looking at efficacy."

When logged on to the Internet, the Palm devices also can download information from E-pocrates, which provides advice in medication prescribing modes, contraindications, and so on.

A typical day in the program goes something like this: The operations coordinator takes all the Palms to the sinking (docking) station and downloads all the necessary patient data for all nurses. "The software has been written so that any time a patient has a hemoglobin A_{1c} [higher than] 8 or a blood sugar [more than] 200, that patient's information is automatically downloaded into the palm," Newby notes. "So, we know right away where the patients are with high sugar." The list is configured so that this information appears when the Palm is turned on.

The operations coordinator then takes the Palms and gives them to the nurses, each of whom has a different unit or campus for which they are responsible. "They review the information on their patients, including what has been ordered by their physicians, and review any recommendations that should be made back to the patients. Then, they go about seeing patients and/or their health care professionals," Newby explains.

"It's really cool that when they go to see the patients they can say — without leaving the room — 'You are on medication 'X,' so there are certain things you can't do; Here are the possible side effects,' and so on. They have all the medical records they need for the patient's plan of care," says Newby.

Results encouraging

So far, Newby is encouraged with the pilot program. "We've found it saves nurses 1½ to two hours a day they would normally spend just ferreting out information," she says.

"If they see a physician in the hallway, they can pull up all the patient information they need and discuss the case without having to call their office and leave a message. If there are any clinical issues, they can identify them right away. They can get all kinds of very rapid feedback, like [*Physician's Desk Reference]* recommendations, contraindications, and so on," Newby adds.

Need More Information?

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"With that many meds, there's no way to keep it all in your head!" she says.

What has impressed Newby most of all is that the nurses have been able to spend more of their time with the patients, taking better care of them, instead of spending time looking up charts.

"It's much better to identify right up front who the patients are who need help and take care of them," she notes.

"Floating right to the top [of the hand-held display] are things like steroid-induced hyperglycemia, or patients who are on hyperalimentation, which can make your sugar go up," Newby adds.

The next step in the process, Newby says, "is to put Palms in our budget," noting just how valuable they are.

"They can show us the all-patient data that tell us which patients are at risk for long-term stays," she says. "We can tweak the software so we can look at cost and quality at the same time."

It might not be long before other nurses at Moses Cone are using the MercuryMD Palms as well. "Clinical nurse specialists here who look at all diseases are looking at it," she reports. "And the next generation could be the bedside nurse." ■

AHRQ: IT/DSS can aid in bioterror response

Detection, management, communication enhanced

Having adequate information technologies and decision support systems (IT/DSS) in place can significantly enhance a hospital's ability to respond effectively to a bioterrorism event, according to the Rockdale, MD-based Agency for Healthcare Research and Quality (AHRQ). The bad news? Only a small minority of hospitals have such systems in place.

The importance of adequate information resources was underscored in a new Evidence Report — *Bioterrorism Preparedness and Response: Use of Information Technologies and Decisions Support Systems.*

The study is part of AHRQ's Evidence-Based Practice Program, through which it is developing scientific information for other agencies and organizations on which to base clinical guidelines, performance measures, and other quality improvement tools.

"The main reason IT and DSS, as well as other areas of bioterrorism response, are being studied by AHRQ is because we want people to be better prepared," notes **Eduardo Ortiz**, MD, MPH, senior service fellow at AHRQ.

A number of studies have shown that the use of IT in health care can reduce medication errors and improve patient safety, communication, patient self-management, and knowledge and adherence to recommended guidelines, Ortiz observes.

"IT can definitely be used to improve quality of care," he says. "There is so much information out there and a lot of research funded by AHRQ and others that shows that it does, so the natural evolution would be that if IT is useful in improving quality, it makes sense that it could be used in terms of bioterrorism."

Key points outlined

During the study process, the University of California at San Francisco-Stanford Evidence-Based Practice Center staff, along with an AHRQ task force, which included clinical experts, IT experts, and experts in epidemiology, asked and answered these key questions:

- What are the information needs of clinicians and public health officials in the event of a bioterrorist attack?
- Based on the information needs identified for these decision makers, what are the criteria

Key Points

- Only a small minority of hospitals have adequate systems in place.
- Many existing systems may be adaptable to bioterrorism preparedness.
- Benchmarking opportunities are available for facilities with inadequate systems.

by which IT/DSS should be evaluated with respect to usefulness during a bioterrorism event?
- When assessed by these criteria, in what ways could existing IT/DSS be useful during a bioterrorism event? In what ways is it limited?
- In areas where existing IT/DSS does not meet the information needs of clinicians or public health officials, what functional and technical considerations are important in the design of future IT/DSS to support response to bioterrorism events?

The report itself is quite lengthy — several hundred pages. But even the summary on the AHRQ web site is rich in detail gleaned from the existing literature. Accordingly, the report entails several key "take-home messages" for quality managers. (Go to www.ahrq.gov/clinic/epcsums/bioitsum.htm.)

Perhaps the most significant, Ortiz says, is the concept of dual-use, or multiple-use purpose.

"There are some systems already out there that enhance communication, detection, diagnosis, and so forth," he explains.

"Since they can be developed for clinical or public health reasons, why not tweak them for bioterrorism?" he asks.

"If you collect data in the clinic on patients who come in with certain symptoms, just make some adjustments so that you can communicate to public health officials or homeland defense," Ortiz points out.

More work needed

This would be more cost-effective than creating new systems from scratch, he explains.

"In some situations they would have to be designed specifically," he says.

The study found 217 IT/DSS that had the potential to help in bioterror response, although the majority were not designed specifically for

(Continued from cover)

To keep you on track, American Health Consultants offers the **EMTALA: Complying with the Final Regulations** audio conference, scheduled for Tuesday, Nov. 12, 2002, 2:30 to 3:30 p.m. ET. The conference will be presented by **Charlotte S. Yeh**, MD, FACEP, and **Nancy J. Brent**, RN, MS, JD. Yeh is medical director for Medicare policy at National Heritage Insurance Co. in Hingham, MA. Brent is a Chicago-based attorney with extensive experience as a speaker on EMTALA and related health care issues. In June of this year, both speakers presented **EMTALA Update 2002**, one of AHC's most successful audio conferences.

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bioterror, Ortiz says. "They are potentially useful, but we're not sure yet. Still, they are important to look at it."

Much more work is needed in this area, and we must critically evaluate these systems, he adds. "We should take an evidence-based approach to assess these and other systems," Ortiz advises.

Meanwhile, he notes, a number of organizations are continuing to work on developing a national health information infrastructure, which should prove invaluable.

"Many federal agencies are working on it now, led by the National Committee for Vital and Health Statistics," he says.

Other agencies include AHRQ, the Centers for Disease Control and Prevention, the National Library of Medicine, and the Center for Medicare & Medicaid services, along with private-sector organizations such as the American Medical Informatics Association, the E health Initiative, and The Markle Foundation.

A long way to go

Unfortunately, Ortiz notes, the health care profession is behind the eight ball when it comes to IT development.

"We know that, in general, the majority of hospitals in this country do not have comprehensive IT decision support systems for clinical care," he says. "The estimates range between 5% and 30%, so I would say that probably somewhere in the vicinity of 10% of all hospitals have comprehensive systems, and that the number that have adequate systems for bioterrorism would be less than that — and these are *inpatient* systems.

When you go to the outpatient area, there are even fewer of them, even though the majority of health care is delivered in an outpatient setting," Ortiz says.

The good news is that if your current system is inadequate, there are opportunities to benchmark a number of hospitals / health care systems with good systems, he says.

Those include:

- Regenstrief Medical Record System — Indiana University Health Care System;
- Health Evaluation Through Logical Processing — LDS Hospital in Salt Lake City;
- Brigham and Women's Hospital in Boston;
- VA Health Care System;
- Department of Defense Health Care System;
- Kaiser Permanente Health Care System.

[Editor's note: The full report is available free from AHRQ Publications Clearinghouse. Telephone: (800) 358-9295. Additional information on the linkage between IT/DSS and health care quality may be found in the following article:

- *Hunt DL, Haynes RB, Hanna SE, Smith K. Effects of computer-based clinical decision support systems on physician performance and patient outcomes.* JAMA *1998; 280:1,339-1,345.]* ■