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INSIDE

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Spoken menus, palm-top computers please patients, nutrition staff

Restaurant-style food descriptions tend to perk up patients' appetites

A hospital's food, as well as its food service, usually ranks low on the patient satisfaction list. Not only do sick patients often have poor appetites that are altered by medication and pain, they also have a perception of an institutional diet as being unpalatable.

At least 58 facilities are changing that image using a combination of a spoken menu system and palm-top technology manufactured by Bedside Menu Entry by CBORD in Ithaca, NY.

"Patient satisfaction for overall diet and meals has increased from 40% to 87% in the past 12 months," says **Patrick Fritz**, RD, LD, patient service manager at Ingalls Memorial Hospital in Harvey, IL. The 582-bed facility contracts with Service Master in Downers Grove, IL, to provide patient meals.

Fritz explains today's push for quicker discharge makes the old way of passing, collecting, and tallying menus obsolete.

Ed Fraine, account operations manager at Jordan Hospital in Plymouth, MA, estimates the palm-held technology eliminated about 85% of diet office paperwork.

The CBORD system, which costs about $5,000 to $10,000 depending upon implementation, features an 11-ounce pocket computer with a miniature screen that folds down on a keyboard. Menu items, based on a patient's dietary requirements, are uploaded from the diet office and appear on the palm-top screen. Then, at the patient's bedside, diet office employees take the order and key it into the computer. Finally, the information is downloaded into the diet office's mainframe computer and generates the menu for the tray line.

At Ingalls Memorial, four patient nutrition representatives visit anywhere from 65 to 120 patients twice a day — before lunch and dinner — to help patients make selections for the upcoming meal. Breakfast selections are made at the time the dinner order is taken.

"In a conventional system," explains Fritz, "patients must decide what they want a day in advance. But, by the time the food actually comes, their mood or their mind may have changed. Or, they've been discharged, or transferred to another floor or their diet orders have changed."

SOURCES

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With a paper menu system, the lag time between collecting menu and assembling trays can be as much as 20 to 34 hours, which greatly contributes to the bane of a food service department existence: late trays and food waste. Fritz explains that conventional delivery mechanisms just aren't designed to accommodate patient admissions or transfers.

Most importantly, he points out, food service has been relegated to a faceless entity. "When there is no human contact, no familiar face, patient satisfaction will be compromised," he says. "Not only does the spoken menu and palm-top technology provide an opportunity for interaction, its also helps ensure that the patients get the food they want when they want it."

The Bedside Entry system also cuts food waste to almost nil, Fritz adds. "Because it generates very comprehensive tallies of what we need on the tray line, we can manage purchase and preparation down to the minutia."

The system underscores the priority that Ingalls Memorial puts on patient satisfaction, Fritz says.

"When an articulate and well-dressed employee arrives to say, 'Good afternoon. I'm here to assist you in making menu choices,' patients are surprised and pleased," he points out. "Then, when they see it is done with palm-top technology, they are dazzled."

Fritz stresses that the technology, while certainly impressive, is merely a means to an end.

"It's our people that satisfy patients; the technology simply refines the process," he stresses.

In fact, the spoken menu was put in place before the Bedside Entry System was introduced at Ingalls.

Fritz calls the patient nutrition representatives "on-stage performers," explaining they are diet office employees who are articulate, well-groomed, and enjoy interacting with others.

"They took great care in selecting a uniform in order to develop an appropriate professional image," says **Katie Freese**, RD, LD, director of food and nutrition.

For example, each speaker wears white pants and white shirts with a colorful jacket embroidered with his or her name.

Only appropriate menu items appear

Using the palm-top technology reduces nutrition training, Fritz adds. All menu items are reviewed so that only appropriate ones appear on the palm-held computer for the patient representative to offer," he says.

This pre-screening method also does not set patients up for disappointment.

"It's not a matter of asking a renal patient what he wants and then having to apologize because we can't give him a banana," he says. Instead, the speaker suggests a primary entree and a primary vegetable based on each patient's diet orders.

"If that doesn't appeal to the patient, the speaker can hit a toggle key and go to the secondary entrees and vegetables," Fritz says. In special cases, the speaker can write in an item.

While all the menu items were designed to appeal to Midwesterners, they also are lower in fat, sodium, cholesterol, and calories than their typical restaurant counterparts, says Freese.

Favorite menu items tend to be "comfort foods" such as roast beef, chicken pot pie, and macaroni and cheese, she says. "We also offer a homemade soup every day," she adds.

Although the spoken menu and palm-top system have been in use for two years at Ingalls

COMING IN FUTURE MONTHS

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Memorial, Freese and her team continue to look for ways to increase patient perception and satisfaction.

Currently, they are training menu speakers to deliver descriptions of items similar to those of a restaurant menu.

"We encourage them to use words that [can] make an ill person's appetite perk up — phrases such as 'cream sauce over a fluffy bed of rice,' or 'roast beef with home-style gravy," Fritz explains. ■

Live music can be comfort to the terminally ill

The prescription also helps patients' families

When there seems to be nothing left that can be done to help patients who are nearing the end of their lives, what is there to do?

Health care professionals face this frustrating question often, when aggressive treatment or heroic measures are no longer appropriate.

Although the answers are hard to come by, a new measure that is winning acceptance involves using music for palliative purposes for the terminally ill patient.

Physicians receive little training in medical school on how to provide care for the dying patient, explains **Linda Emanuel**, MD, PhD, vice president for ethics at the American Medical Association.

"They also may be caught in the dogma that declares physicians must fix the problem, and if they can't, there is nothing more they can do," she says.

The Chalice of Repose Project Inc., a clinical practice and certification and training program at St. Patrick's Hospital in Missoula, MT, offers physicians something "to prescribe" when all else fails: music.

"When all reasonable curative or interventional medical procedures and practices — such as surgery or chemotherapy — have been exhausted, and it is clear that illness cannot be reversed, the goals of care must shift focus from the disease to the whole person," says **Therese Schroeder-Sheker**, academic dean of the program and founder of the field of music thanatology.

Music thanatology is one such holistic modality that focuses on the patient's physiological as well as spiritual suffering. Music thanatologists soothe dying patients with music from their harps and voices.

Not the same as music therapy

A term coined by Schroeder-Sheker, music thanatology is not synonymous with music therapy; rather, it is a subspecialty of palliative care that features "prescriptive" music for the dying, she explains. **(For other ways music can be used in hospitals, see related story on p. 28.)**

"It is not improvisation, nor is it entertainment, or ambient music, or distraction therapy," she stresses. "Music thanatology is a contemplative activity with clinical applications."

Prescriptive music brings substantial relief from many different kinds of distress.

"Anxiety, fear, nervousness, and anger subside," she says. "Intense emotional pain and suffering can be reduced dramatically, and patients have said the music has brought them peace by helping them accept the inevitability of their dying."

Clinicians trained at St. Patrick's attended deathbed vigils of more than 2,225 patients throughout the health care continuum in the Missoula area since the program began in 1992.

Music vigils are a form of comfort care for terminally ill patients who have a prognosis of six months or less of life, explains **Sue Moore**, a music thanatologist practicing with the Hand in Hand Hospice, which serves 15 rural counties in Northeast Georgia.

"As a music thanatotolgist, my goal is to lovingly assist the physical and spiritual needs of those near the end of life. Music vigils also help family members because they create a climate in which emotional healing can take place," says Moore, who was one of the first interns to receive certification from the Chalice Project.

The musician clinicians, who undergo a rigorous two-year training and supervised internship at St. Patrick's, make very careful clinical decisions based on how the patient responds physiologically and emotionally, she says.

For example, Moore takes into consideration the patient's diagnosis, prognosis, and symptoms as well as his or her response to the music. "Then I adjust the music accordingly. I may change the piece itself or the key, tempo, volume, or the volume of the accompaniment," she explains.

That's why such prescriptive music can't be prerecorded. "Music thanatologists must be able

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to respond to the patient's fluctuations in respiratory patterns or the sudden spikes of an inflammatory condition," she explains.

Moore also stays away from playing familiar contemporary hymns not only because of a potential for unpleasant associations but because such music tends to "ground" patients. "But prescriptive music is meant to be unbinding," she says.

Although prescriptive music is used for every age and condition from cancer to AIDS, the work is "dramatically significant" in cases where the patient is experiencing respiratory distress, regardless of the primary diagnosis, says Schroeder-Sheker.

It's also especially effective in cases of extubation, when family members are gathered around the bedside and can grieve openly as the layers of mechanical life-support systems are removed one by one.

Patients with slowly moving degenerative diseases, such as dementia, Alzheimer's, and multiple sclerosis can also benefit from this method, she adds.

Another program that prepares harp practitioners to provide music during the transitioning process is the International Harp Therapy Program. The program is connected with the University of Vermont, Shands Hospital in Gainesville, FL, St. Charles Hospital in Bend, OR, and San Diego Hospital.

Christina Tourin, director, says in addition to the intensive training in inclusive attention and resonant kinesiology for hospice patients, their practitioners are trained to work in health-related areas as rehabilitation units, ICUs, pediatric wards, and nursing homes. These facilities offer the harps not only as a means of comfort but for personal empowerment. ■

Create healing environment without music therapist

Sound, music can still aid medical care

If your facility doesn't have a music therapist or thanotologist on hand, can you still add music to your repertoire of patient-focused care strategies?

Absolutely, say the nation's top experts on the connection between sound and healing.

"Music is a perfect adjunct to medicine. While it does not replace medicine, it complements the healing process because music reduces the stress of being ill," explains **Don Campbell**, author of *The Mozart Effect: Tapping the Power of Music to Heal the Body, Strengthen the Mind, and Unlock the Creative Spirit* (Avon, 1997).

Pat Moffitt Cook, agrees. "Music is a powerful tool in the hospital setting," says the director of the Open Ear Center in Bainbridge Island, WA, a training program that offers workshops on professional use of music in health care and wellness maintenance.

"The appropriate repertoire and application of music can induce relaxation, diminish anxiety, lower blood pressure, and facilitate better recovery," she explains. **(For a more extensive list of the therapeutic benefits of music, see p. 29.)**

Such benefits don't need to be relegated to hospice or palliative care programs, points out **Alice H. Cash**, PhD, LCSW, one of the few clinical musicologists in the United States. Cash, who pioneered the use of chant and toning at the University of Louisville (KY) School of Medicine, is a behavior health therapist at Baptist Hospital in Louisville.

"Music can be used to ameliorate or alleviate symptoms throughout the hospital, including med-surge units, labor and delivery, [and] critical care, as well as inpatient and outpatient surgery," she says.

Music can ease delivery trauma

At Baptist, Cash encourages maternity patients to use music "in an intentional way" throughout pregnancy and childbirth. The mother and the fetus, whose hearing develops around the eighth week, can begin bonding through the music, she says.

"There is no way to know for sure, but it seems logical to me that when the fetus hears that same music during the delivery, he or she

would associate it with safety and comfort. Just as music can ease the passage from this life to death, it can also make the birthing transition easier," she explains.

What kind of music should you suggest to mothers-to-be? "Experiments have shown that fetuses prefer Mozart and Vivaldi to rock," says Campbell.

Cash and Campbell also encourage couples to use music as part of preparation for natural childbirth. Campbell, who has composed music to accompany Lamaze classes, advises health care professionals to suggest music that is appropriate to each stage of labor.

For example, in the early stages, the music should be slow, relaxing and peaceful, with little change in volume or tempo, says Campbell. "In the later stages, use music with an increased tempo and steady beat to help the mother pace her stronger exertions. For example, you would select music that suggest deep, long breaths — a constant reminder to breathe deeply, push down, and relax," he says.

Immediately after the birth, the parents can listen to a song they've chosen beforehand. "This should be a selection that is meaningful to them — a way to mark the joyful occasion," Campbell says.

After the birth, music can continue to work its own form of medicine, points out Campbell. He cites a study of 52 premature babies with low birth weight at the Tallahassee (FL) Memorial Regional Medical Center, that shows playing 69-minute tapes of vocal music, including lullabies and children's songs, reduced hospital stay an average of five days. "Mean weight loss also decreased about 50% for the group who listened to music."

Use music before, during, and after surgery

Cash also encourages those undergoing inpatient as well as outpatient surgery to incorporate music into their hospital stay.

In a meeting prior to the surgery, Cash explains how music can enhance the healing process and helps patients plan to make three separate tapes for pre-, intra-, and post-operative phases of the procedure.

She advises them to make the tapes a week or so in advance and begin listening to them at home. "The more you can associate that music with positive memories and activities, the more helpful it will be during surgery," she says.

Ten ways music can affect people

1. Music masks unpleasant sounds and feelings.
2. Music can slow down and equalize brain waves.
3. Music affects respiration.
4. Music affects the heartbeat, pulse rate, and blood pressure.
5. Music reduces muscle tension and improves body movement.
6. Music affects body temperature.
7. Music can increase endorphin levels.
8. Music can regulate stress-related hormones.
9. Music and sounds can boost the immune function.
10. Music changes our perception of space.

Source: Don Campbell, *The Mozart Effect: Tapping the Power of Music to Heal the Body, Strengthen the Mind, and Unlock the Creative Spirit.* Avon, 1997. ■

She also suggests patients bring their own individual tape players and earphones, rather than a boom box. "This better masks the sound of the operation and discussion," she adds.

No later than one hour before surgery, patients should begin to listen to their pre-op tape: Music of their choice that is comforting and calming.

"This selection is entirely up to them — whatever makes them feel upbeat, secure, and positive. It may be rock, classical, country, or jazz," she says. "Oftentimes, it's a favorite from their high school or college years that they associate with good times."

Then, during the surgery, she suggests "strictly classical" music such as Pachelbel's *Canon in D Major* or Bach's *Air on a G String*. "Any slow movements of the Baroque composers with an adagio or largo tempo are appropriate. You want music with a pulse of 60 to 80 beats per minute — the same as a healthy, resting heartbeat," she explains.

During the recovery period, Cash selects music with a slightly more upbeat tempo.

"I start with instrumentals that are simply textured, such as a harp or flute, then after two or three selections, I begin to add more instruments,

SOURCES

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perhaps, and to incorporate pieces with words, something to bring them back," she says.

The brain can process music even when the patient is unconscious, adds Cash, citing her most dramatic case: A man in a coma for six weeks. "Every day, while the ICU nurse bathed him and changed the linen, she whistled and hummed and sang," she says. Then one day, the man suddenly woke up. "He came back a few weeks later to 'thank the singing nurse.' When we replied that our nurses don't sing, he said, 'One of them does. When I heard her, I knew I was still alive. Her voice brought me back to life.'"

Silence is also beautiful

While some experts in sound and healing acknowledge that stimulation in an ICU unit is important, others feel too much of it may actually be detrimental to patients' health.

"Polluted with noise from beepers, ventilators, conversation, and television, the ICU can reach 80 decibels — the equivalent of a loud subway ride or blaring rock music," says **Richard P. Millman**, MD, FCCP, professor of medicine in the division of Pulmonary, Sleep and Critical Care Medicine at Brown University School of Medicine, and director of the sleep disorder clinic at Life Span Hospital. The Environmental Protection Agency standard for noise levels at inpatient facilities is 45 decibels in the daytime and 35 decibels at night.

Such noise pollution has several negative consequences, explains Millman. "For the patients on ventilators, sleep deprivation can make weaning more difficult because it affects respiratory muscle function. It also causes symptoms of ICU 'psychosis,'" he says.

Critical care nurses also suffer from working in a loud environment.

"Noise has been implicated in contributing to nurse burnout," he says.

Millman advocates setting beepers to vibrate mode, speaking in low tones, and most of all, turning off the television.

"When it is blasting, staff and visitors have to speak above it, so noise levels from conversation escalate," he says. He recommends individual television earphones for patients. "Yet, we heard some of the nurses insist, 'I want to watch my show.' The television should be there to stimulate the patients, not the staff."

Once the overall noise level is lowered, then music can be added to create a healing environment. For example, at St. Agnes Hospital in Baltimore, classical music is played for patients in critical care units. "Half an hour of music produces the same effect as 10 milligrams of Valium," reports **Raymond Barh**, MD, director of the coronary care unit. ■

ED slashes treatment time for heart attack drugs

Shorter times for other treatments satisfy patients

For years, Overlook Hospital in Summit, NJ, has been on the cutting edge in cardiac treatment. The hospital was one of the first in the nation to have a cardiac care unit and was also one of the first to do pre-hospital EKGs. So it wasn't much of a surprise when the emergency department (ED) decided to pursue another new idea: a chest pain observation unit.

It was something of a surprise, however, when the multidisciplinary team charged with setting up the unit found that one key indicator of treatment for heart attack patients was way above the national standard. In fact, the median time to thrombolytic treatment for heart attack patients in Overlook's ED was 61 minutes, twice the standard set by the Bethesda, MD-based National Institute of Health's National Heart Attack Alert Program of 30 minutes or less. For every hour earlier that medical professionals can give thrombolytics, or clot-busters, to open the arteries, 32 lives per 1,000 patients are saved. So the team decided to take action.

The primary result, says **Linda Kosnik**, RN, MSN, unit manager of the ED, was a collaborative effort that slashed the time to thrombolytic treatment to a range of 16 to 24 minutes. The secondary

result was a domino effect of improving other processes including time to treatment of pain and time to administration of antibiotics for pneumonia plus a huge leap in patient satisfaction. In fact, when Overlook began its improvement efforts four years ago, ED patient satisfaction scores ranked the hospital in the South Bend, IN-based Press, Ganey Associate's 20th percentile. Now the hospital rests atop the 99th percentile. Overlook has been designated a best practice hospital by the Baltimore-based Health Care Financing Administration, and Kosnik and colleague **James Espinosa**, MD, chairman of Overlook's ED, have been named co-chairs of the 1998 Institute for Healthcare Improvement's collaborative on reducing delays and improving patient satisfaction in the ED.

How did they do it? First, Kosnik says, was getting buy-in from physicians and nurses. Instead of saying to the staff that they needed to cut waiting times, they focused on improving heart attack patient care. "Health care professionals are all very comfortable with the idea of improving patient outcomes. If you start talking about processes like reducing delays, they think of that as administrative," Kosnik says.

"It's not as quick of a buy-in. We encourage people to select a clinical process and an operational process because you'll get automatic buy-in." Improving a clinical process almost always leads to cutting waiting times, she says.

Finding the sources of delays

The team broke the process down into manageable pieces and identified the potential causes for delay. A cardiac consult was required on every patient before thrombolytic delivery, and sometimes there was difficulty contacting the patient's private physician. There were delays in ordering and delivering EKGs. There was variation in patient assessment and in decision making. Overcrowding in the ED, an insufficient nurse/patient ratio, and the lack of a team approach also contributed to the problem.

Interventions that cut treatment time include:

❒ Creating a time-to-treatment assessment tool that starts with the paramedic in the field.

❒ Increase physician use of pre-hospital EKG. Paramedics had stopped doing the tests in the field because physicians were ordering duplicate tests upon the patient's arrival.

❒ Develop a five-minute protocol for walk-ins: An EKG is done within five minutes on any patient with pain from the nose to the navel.

❒ Standardize protocols, including taking the EKG to the physician immediately no matter what he or she is doing at the time.

❒ Empower ED physicians to initiate treatment by protocol without a cardiac consult.

❒ Change staff mix to provide more technician support.

Job is not yet done

Once the dramatic improvement in thrombolytic treatment occurred, the ED staff pushed on for more improvements. A similar process led the ED to cut time to antibiotic treatment for pneumonia patients from a standard four hours down to 130 minutes. More efforts are under way to get the time under two hours, Kosnik says. Interventions in this area included developing a pneumonia pathway, empowering the triage staff to order X-rays, and having X-rays done within 20 minutes, as well as stocking pre-selected antibiotics in the ED.

In pain management, the team discovered the average time to pain medications was 78 minutes. After six months using some fairly simple interventions, the team has cut that to 54 minutes. "Most people come to the ER for pain," she says. "We deal with the medical problem as opposed to the pain, even though pain impacts all outcomes: medical, patient satisfaction, cost, and quality of life." People with a wrist injury, for example, are more satisfied and less impatient if they've been given a pain medication. And they're a lot happier if you splint the wrist before you do the X-ray, she says. So staff were taught how to splint and to administer a pain scale that acknowledges the patient is in pain and determine what action to take: Tylenol or Advil, splinting, ice, elevation, etc.

Expert advice

If you decide to analyze your ED, start by going to the staff, she says. "They know what's wrong. Brainstorm, and let them decide what they would like to focus on first. Once you do one process, it will spill over to other things." Kosnik also encourages benchmarking with other hospitals. But she cautions that you need to make sure you're talking about the exact same thing when you discuss waiting times. One hospital might focus on the time it takes to see the physician, for example, while another might look at the total time spent in the ED.

For possible benchmarking partners, keep an eye out for the Institute for Health Improvement

(IHI) emergency department collaborative. Last March, 30 hospitals began looking at such areas as clinical cycle time reduction (such as time to thrombolytic treatment), administrative cycle time reduction (such as reducing total length of stay), improving patient satisfaction, and cost outcomes.

For more information on Overlook Hospital or the IHI collaborative, contact Linda Kosnik at 99 Beauvoir Ave., Summit, NJ 07902. Telephone: (908) 522-2148. Or connect to the IHI Web site at www.ihi.org. ■

Detect and manage crises in outpatient setting

A phone line, electricity — you're in business

Some new in-home telemetry devices are coming on the market that could save your cardiac unit money while allowing patients to go where they want to go most — home.

HeartLink II was approved by the Food and Drug Administration (FDA) late this past December for home use for low-risk patients — those who are not at risk of sustained ventricular tachycardia or ventricular fibrillation.

Manufactured by Cardiac Telecom in Turtle Creek, PA, HeartLink II needs only a standard telephone line and an electrical outlet to provide immediate, accurate, and real-time cardiac monitoring from any location.

The processor continuously analyzes the data it receives from the patient module and automatically identifies abnormal cardiac activity.
Upon event detection, it dials the central station and transmits the data. The unit measures 17 inches high by 5 inches wide by 12 inches deep and weighs 10 pounds.

Source: Cardiac Telecom, Turtle Creek, PA.

HeartLink's patient module is a small, rechargeable battery-operated unit that receives EKG data from three standard electrodes, digitally compresses and codes the data, and transmits it to the processor.
The unit measures 3½ inches by 1¼ inches by 4½ inches and weighs 10.5 ounces.

Source: Cardiac Telecom, Turtle Creek, PA.

"When an event occurs — tachycardia of 140, for example — it grabs the phone line," says **Lee Ehrlichman**, president of Cardiac Telecom. "If someone is on the phone, it disconnects and transmits alarm data to the central station. It takes six to 10 seconds from the time the event is detected to its appearance on the screen monitored by paramedics. When the data come up, they state the patient's name, ID number, and what's going on."

Even though hospitals are under financial constraints for capital equipment — and this device will be costly — still, HeartLink II could save significant dollars by eliminating days in the hospital. If a patient goes into atrial fibrillation after a bypass, standard medical practice is to keep him or her there for three to five days.

Most doctors agree it would be more cost-effective if those patients could be sent home for three days; then, if they need cardioversion, they could come back.

HeartLink II has CPT code approval. The first patient was sent home with the device late December following the FDA trial, and Ehrlichman says he was assured the patient's treatment would be reimbursed by Medicare.

Kathleen Lyons, RN, coordinator of the thoracic surgery department at St. Francis Medical Center in Pittsburgh, says the center, which performs over 1,000 open-heart cases a year, was part of the FDA's trial to test the efficacy of HeartLink II. In comparisons made at several major teaching hospitals, the system detected cardiac events missed by other commercially available monitors.

"A third of our patients develop atrial Arrhythmias in the post-op period," Lyons says. "The sooner the arrhythmias are treated, the sooner the patient converts to a sinus rhythm. An additional comfort level is having a device that allows us to monitor the patient beyond the acute in-hospital phase — at home. This device satisfies that."

Lyons says insurance companies, on one hand, pressure you not to keep patients in an acute care setting unless they are getting acute care, "but their definition of 'acute' gets more aggressive every day," she explains.

"Say you have a patient in a sinus rhythm who has attained all his clinical goals — he's walking 600 feet; he's ventilating on room air; he's gotten his education; he has complete social support at home; and he's well into his outpatient cardiac rehab. But, on the other hand, he's just 24 hours into his sinus rhythm. That's a place for home telemetry."

When a patient is discharged, his or her cardiologist or thoracic surgeon orders the device for about three days and indicates a physician to be responsible for responding to alarms. A clear protocol for monitoring response is prescribed. Prior to hookup, a Telecom team educates the patient at home.

The caregiver plugs a module into an electrical outlet, inserts the phone cord into the patient's home phone jack, and attaches three gel leads to the patient.

Unless an emergency is in progress, the system sits idle and doesn't affect the phone line, similar to a home security service.

In the event of any unusual cardiac event, or the push of a panic button by the patient, the device captures and reports relevant data leading up to and following the event and automatically transmits an alarm over the telephone line. In addition, it can produce an expanded array of one- and 24-hour trend graphs. **(See photos, p. 32.)**

Patterns monitored, arrhythmias detected

Heart Link II monitors and diagnoses EKG patterns, and data analysis routines built into the system automatically detect any of 16 arrhythmias including asymptomatic atrial fibrillation. Signals are transmitted to a remote location where paramedics monitor around the clock.

There are various levels of response. If the patient develops a change from sinus rhythm, the paramedic calls the physician and he responds accordingly, such as sending out a home care nurse. Should the patient have a crisis, the paramedic dispatches a team to bring the patient to the hospital.

Every eight hours, the paramedic at the central station calls the patient to answer questions. The patient can bathe, if the electrodes are removed first and the patient calls before interrupting the service. At the end of the prescribed period, the paramedic visits the patient to remove the device.

"The patient doesn't have to do anything," says Ehrlichman. "One 78-year-old woman had a heart block at 3 a.m. while she was sleeping, and the hospital was informed seconds later."

The device weighs less than 11 oz., and the range of transmission — 200 feet to 500 feet — allows the patient to move freely and perform normal home activities.

"Patients view this as a security blanket," says Lyons. "Otherwise, they go from a high level of monitoring and intervention when in the hospital to nothing at home." ■

Web site offers database of national guidelines

Searchable tool lets you compare similar topics

There's a patient with a broken wrist in one room, a woman in false labor next door, a crying 3-year-old who's too scared to urinate in a cup, and a dad who needs directions on using his son's peak flow meter. It goes without saying that there's another group of patients in the waiting room, a pharmacist on line two, and no time for lunch.

If that's your day as a physician — and that's a good day with no crises — then when do you find time to keep up with the latest scientific research? You try to read the journals, of course, but what about those reams of guidelines for different conditions that are spilling off your bookshelves, stacking up on your floor, maybe even ending up in the trash can? Many of them never get read. Even if they are seen once, they're never referred to again because they're too long, too complicated, and where the heck did you put that one, anyway?

There's now a quick, easy, and surprisingly

uncomplicated way to use national guidelines — provided by the government. The federal Agency for Healthcare Policy and Research (AHCPR) has help available in the form of the National Guideline Clearinghouse, a free Internet database of clinical practice guidelines. Developed by AHCPR in partnership with the American Medical Association (AMA) and the American Association of Health Plans (AAHP), the clearinghouse features evidence-based guidelines and presents them with standardized abstracts and tables that allow for comparison of guidelines on similar topics.

In the situation of the dad who needs peak flow meter directions: How often should his son be using the device? Go to www.guideline.gov, type in asthma, and you'll get a list of 21 guidelines that you can read in summary form. The full text version is also available. Want to know how each one differs? Pick a few guidelines, click on guideline comparison, and you'll see the major areas of agreement and disagreement among the guidelines. Not sure which one you should follow? Click on a topic-related e-mail discussion group and ask other users what their opinions are about the guidelines.

The AHCPR does not know yet whether physicians will use the clearinghouse for real-time decision making, but at least they'll have the option. And they won't have to rummage through stacks of papers to find a guideline.

"Millions have been spent already on guidelines, but we haven't gotten the value back because when doctors need them, they don't have access to them," says **William F. Jessee**, MD, the AMA's vice president of quality and managed care standards.

If physicians don't have access, they won't change their practice patterns as the guidelines would suggest. "It is well known that variation in health care results partly from uncertainty and a lack of evidence for clinical treatment," says **John Eisenberg**, MD, AHCPR administrator. "The clearinghouse will help reduce variation and improve health care quality by giving clinicians and other health professionals a source of information on evidence-based treatment to help guide their decisions."

Currently, 286 guidelines developed by specialty societies, federal agencies, health plans, hospitals, and others are listed in the clearinghouse. Eisenberg says he expects that number to reach 3,500 within three years.

Besides the easy access, the other main benefit of this database is that the guidelines must meet certain criteria to be included. They must:

❒ be current;

❒ contain systematically developed statements to help guide practitioners' or patients' decisions;

❒ have been produced by a medical or other relevant professional group, government agency, health care organization or plan, or other public or private organization;

❒ document that they were developed through a systematic search of peer-reviewed scientific evidence.

"Previously, it's been difficult to know which guidelines are evidence-based. In some quarters, that's given guidelines a bad name," says **Karen Ignagni**, AAHP's president and CEO. "The clearinghouse will be an important tool in clinical decision making as we continue to address the problems of underuse, overuse, misuse, uncertainty, and unevenness in health care quality."

Yank Coble, MD, an endocrinologist from Jacksonville, FL, who is an AMA trustee, says he agrees that the clearinghouse will have more credibility with physicians. He says he'll be one of the first physicians to throw out his stacks of paper guidelines. "There's a great deal of pollution regarding guidelines," Coble says. "Doctors are so aware that there are bad guidelines out there, they'll be relieved to have a credible source. These guidelines contain evidence-based scientific knowledge that is a vital component of quality medical care."

Eisenberg says the clearinghouse should help identify clinical topics for which guidelines don't exist. "The clearinghouse will help the practice of medicine catch up with the science of medicine," he says.

[For more information, contact AHCPR at 2101 E. Jefferson St., Rockville, MD 20852. Telephone: (301) 594-6662. AHCPR's Web address: www.ahcpr.gov.] ■

Survey shows hospitals are keeping costs down

Length of stay drops, outpatient visits climb

You're battling increased competition, managed care, and government price controls, and according to the American Hospital Association (AHA), you are, for the moment, winning. The Chicago-based AHA's latest annual survey of more than 5,000 hospitals and health systems

found that despite enormous economic pressures, the nation's hospitals and health systems were able to keep their costs low in 1997.

For the third year in a row, the survey found little or no growth in hospital costs. In 1997, the growth in hospitals' costs to care for patients within the hospital and on an outpatient basis (total adjusted expense per admission) was 0.6 %. Five years ago, that number was about 8%. These and other survey highlights are found in the 1999 edition of *Hospital Statistics*, which is published by AHA's subsidiary, Health Forum.

But you have about enough time to give yourself a pat on the back. Then you'd better get back to determining how to make that low-cost trend continue in the face of more pressures.

"Hospital leaders have had real success in keeping costs down for their patients while improving the overall health of their communities," says AHA president **Dick Davidson**. "But it's unclear how long this trend can continue. With the resources needed to meet the year 2000 technology challenges and skyrocketing drug prices, keeping costs low will become more difficult for hospitals and health systems across America."

Hospitals 'continue to get squeezed'

With Congress reducing payments to hospitals by about $44 billion over the next five years, hospitals have just begun to feel the impact. Under the Balanced Budget Act, hospitals' financial picture will become dimmer, Davidson says. According to the Medicare Payment Advisory Commission, Medicare payments to hospitals will drop from 90 cents per dollar of outpatient care to 78 cents for care after the law is fully implemented. "The nation's hospitals are caring for their communities efficiently and effectively. But hospitals and health systems continue to get squeezed on all fronts."

The survey results suggest that a major focus of hospitals is promoting the wellness and health of their community. In 1997, nearly all respondents reported that their mission included a focus on community wellness. About six out of 10 hospitals responded that they disseminate reports to their community on the quality and costs of health care services. Other highlights from the survey are:

• The average length of stay for patients continued to drop, declining to an all-time low of 6.1 days.

• Outpatient visits continued to climb. In 1997, community hospitals saw a 2.3% increase in outpatient visits over 1996. Over the past five years, outpatient visits increased about 29%. During that same period, overall inpatient days have dropped 12.9%.

• The number of full-time equivalent personnel employed by community hospitals increased to 3.79 million in 1997, up from 3.62 million in 1992.

• About 23% of hospitals were involved in developing an HMO insurance product independently or through a joint venture in 1997, up from 19% of hospitals in 1994, the first year when the data were collected.

More data from 5,000+ facilities

Hospital Statistics contains data gathered from more than 5,000 hospitals and health systems across the nation, including AHA members and nonmembers alike.

New to this year's edition are tables highlighting aggregate utilization, personnel, and financial data by metropolitan statistical areas as well as detailed hospital facilities and services information, which allow users to determine how many

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hospitals in a given area offer a certain service.

[To get a copy of Hospital Statistics*, call (800) 821-2039. The price is $105 for AHA institutional members and $200 for nonmembers. For more information, visit the AHA Web site at www.aha.org or contact the AHA at One North Franklin, Chicago, IL 60606. Telephone: (312) 422-3000.]* ■

Mayo: Chest pain units save lives, hospitalizations

One more study shows benefit of observation units

Researchers at the Mayo Clinic in Rochester, MN, have determined some patients who visit the emergency department (ED) with chest pain can be evaluated safely and effectively without expensive hospitalization.[1]

"The results were so promising that we converted the chest pain observation unit into our everyday clinical practice within one month of completing the study," says **Peter Smars**, MD, a Mayo Clinic emergency medicine specialist and principal investigator.

The majority of patients with acute chest pain are usually admitted to the hospital for two to three days at an individual cost averaging more than $4,000; and 6,000 to 10,000 die after inadvertently being sent home when they are actually having a heart attack.

Facing patients with unstable angina

The researchers used a specially designed chest pain observation unit in the ED to evaluate patients with unstable angina by administering standard therapy and diagnostic tests — aspirin, heparin, continuous ST-segment monitoring, determination of creatine kinase isoenzyme levels, and a study of cardiac function.

"After six to nine hours of observation, we were able to dismiss nearly half of the study group, avoiding inconvenience for the patient and providing the highest quality care at a significant cost savings," said Smars.

No patients evaluated and dismissed suffered a primary cardiac event in the subsequent six months. For those 212 who were hospitalized after observation, the risk of a subsequent primary cardiac event was not significantly different when compared with a group of patients who underwent traditional hospitalization procedures.

Reference

1. Farkouh ME, Smars PA, Reeder GS, et al. A clinical trial of a chest pain observation unit for patients with unstable angina. *N Engl J Med* 1998; 339:1,882-1,888. ■

Congress calls for safer needles

In the Omnibus Appropriations Act of 1999, Congress urges a requirement for the use of safe needle devices and more accurate needlestick reporting in U.S. health care institutions. Although the directive is not mandatory, the new law charges the Occupational Safety and Health Administration, Centers for Disease Control and Prevention, and U.S. Food and Drug Administration with responsibility for protecting health care workers from needlestick injuries that can transmit lethal viruses such as HIV, hepatitis B, and hepatitis C. ■