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Rehab Continuum Report

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INSIDE

Special Report: Technology Breakthroughs

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Special Report: Technology Breakthroughs

Rehab researchers explore technology on the not-so-distant horizon

VA engineers develop pulmonary improvement devices

(Editor's note: For the next two months, Rehab Continuum Report *will feature special reports about new technology that may one day help rehab therapists in treating pulmonary, spinal cord injury, and other rehab patients. This month's report brings you news of a robotic wheelchair, a machine that measures breathing flow during exercise, and a device that measures energy expenditures during activities of daily living. Look in next month's issue for a story about computerized wheelchair ramps that produce stationary exercise opportunities for paraplegics.)*

New rehab technology in the digital era continues to offer rehab patients hope for improving their physical stamina and health. While it took thousands of years for humanity to move from hand crutches to electric wheelchairs, the 21st century may soon deliver a robotic, voice-activated wheelchair system.

A wheelchair system under development would navigate an apartment

Executive Summary

Subject:
New technology improves quality of life for spinal cord injury (SCI) patients and for patients with chronic obstructive pulmonary disease (COPD).

Essential points:

- ❑ Research is under way to create a device that will tell SCI patients how many calories they are expending in various activities of daily living.
- ❑ Using existing breathing stimulation technology, Veterans Affairs researchers have developed a program that will strengthen abdominal muscles and make it easier for patients to cough.
- ❑ COPD patients can improve their breathing by using this ventilation feedback training system while exercising.

or house for wheelchair-bound patients who have neurological and sensory deficits that prevent them from safely operating a power wheelchair. **(See story, p. 144.)**

Likewise, therapists working with patients who have chronic obstructive pulmonary disease (COPD) traditionally have had to rely on breathing exercises, repeat instruction, and stationary exercise equipment to teach patients how to inhale and exhale properly. Now technology exists that will use a computerized screen to teach patients how to breathe correctly.

"We're in the middle of eight different research projects now, and they're all in different stages of completion," says **Edwin Langbein**, PhD, research health scientist at Edward Hines Jr. Veterans Affairs (VA) Hospital in Hines, IL.

Here is a look at several of the research projects VA investigators have been developing and hope to bring to market soon:

• **Devices created to assist rehab patients with breathing and exercise:** Spinal cord injury (SCI) patients often have a sedentary lifestyle that makes them susceptible to obesity, heart disease, and other chronic illnesses. VA researchers have been working on developing a device that would determine how much energy SCI patients expend doing activities of daily living (ADL), Langbein says.

The next phase of the project is to recruit participants to field-test the device and keep a seven-day activity recall form so their caloric expenditure can be compared with their level of activity, Langbein says.

Electrical stimulation assists in coughing

Another research project involves helping SCI patients develop optimal parameters using electrical stimulation of abdominal muscles to assist in coughing, Langbein says.

These patients have tetraplegia and pulmonary complications that can be a major source of morbidity and mortality, and coughing helps them, Langbein explains.

Patients involved in the study of the program are using stimulators six days a week in 20-minute sessions that use a protocol of tension-relaxation-tension-relaxation. Four to eight electrodes are attached to the abdomen.

"So the objective here is to create a type of procedure where individuals could place these electrodes on the abdomen," he says. "And on a daily routine, similar to sit-ups, the procedure would use electrical stimulation to contract and intensify these muscles."

Because the muscles would be stronger when stimulated during a cough, they would be more effective in helping the patient expire air and in moving materials out of the airway, Langbein adds.

"If you can imagine somebody placing their hands on your abdomen and giving it a good push, the same effect is accomplished using stimulating electrodes," Langbein says.

Because this particular project uses existing technology in a new way, it may not be long before it's available for home and rehab use, Langbein says. "We have been working on it for about four years, and we're ready to move from laboratory to home."

System reduces hyperinflation

• **Ventilation feedback training system:** VA researchers have spent years working on developing a rehab program that integrates feedback on breathing for use with COPD patients.

"It provides patients with feedback with regard to inhalation and exhalation, and our objective is to reduce problems with hyperinflation due to exertion," Langbein says. "With COPD patients, this is a condition created when the patient doesn't fully empty the lungs on each breath." When this happens, the patient's lungs accumulate air and the turnover of new air isn't optimal, causing the patient to become breathless.

"We have found in our pilot data with our ventilator feedback system that we're able to control the rate at which the hyperinflation becomes a

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problem for these patients," Langbein says.

"People have tried this technology before, but it's usually in an individual at rest," he adds.

Study results of the device will soon be published, but anecdotal evidence has been gratifying, Langbein says.

"We had individuals who were on oxygen therapy and their goal was to walk their daughters down the aisle at a wedding without having to drag their oxygen tanks around," he recalls. "They did succeed, and this can make a big difference in quality of life."

The VA lab has been training COPD patients in three groups: those who only receive ventilation feedback training, those who only receive pulmonary rehab exercise, and those who receive both ventilation feedback training and exercise.

The program combining ventilation feedback training with exercise lasts 18 weeks. Patients begin by learning to use the ventilation feedback technique while sitting still for six weeks, followed by six weeks of training while exercising on a stationary bike, and concluding with six weeks of walking while training three times a week.

The feedback training device looks like a donut-shaped disk with a short tube that the subject puts in the mouth. When seated on a bicycle seat or while standing on a treadmill, the subject can see the computer screen while breathing through the pneumotachometer, which is interfaced with the computer, says **Linda Fehr**, MS, electrical engineer with Edward Hines Jr. VA Hospital.

Hitting the target with exhalation

Meanwhile, the computer screen displays a horizontal white bar that crosses the screen and is controlled by the person's breathing. The screen is cut in half, with the left side relating to the person's inhalation and the right side relating to exhalation, Fehr says.

"The thick white horizontal bar extends to the left as someone breathes in, and as the person exhales it moves to the right, but it keeps moving as they breathe," Fehr explains.

There also are target circles, and as the person pushes the air out, it hits a green target, scoring up points for hitting and missing like a video game, Fehr adds.

Providing a point-system incentive, the goal of using the device is to convince patients to change breathing behavior.

"It becomes a very competitive thing," Fehr says, adding that she has seen patients try harder when they have missed the target.

If the device were available in a therapy setting, therapists could set expiration and inspiration ratios and respiratory flow rates, Langbein explains. "So instead of having a ratio of one second to one second, we could have a ratio of one second to 2.5 seconds of expiratory time, for example."

While testing the device, investigators found that patients quickly learned to cheat on their scores by taking shorter inhalations so that the machine would give them a point after shorter exhalations. However, once that problem was discovered, investigators adjusted the software to control the inhalation time, so that if someone didn't breathe in for a set duration of time, the target wouldn't light up, Fehr says.

If the device proves successful in clinical trials, then the next phase will be a multicenter trial used in pulmonary education programs. After that, the device could be available for home use if it is approved by all regulatory and patent agencies.

Patients can apply learning in real life

Although VA investigators have worked on the device for years, they have recently discovered that a similar machine was recently put on the market by a Virginia-based company called Sierra Biotechnology Co. The company's web site (www.sierrabiotech.com), which does not list a physical address or phone number, provides information about a Biofeedback Incentive System that uses a visual analog display on a computer screen to show the inspiration and expiration breathing pattern.

"Our program has a graphic display of a bar shooting a target, and their program looks like a wave forming with rising and falling when you breathe," Fehr says, noting the differences between how the two machines record feedback.

When the VA's device is available, it will be possible for patients to use it in a rehab therapy setting to learn breathing skills that they can practice on their own at home, Langbein says.

"When COPD patients are confronted with a flight of stairs, they can start utilizing this form of breathing so that they won't get breathless when climbing the stairs," Langbein says. "We're helping them make the transition with training from the lab for use in their daily lives." ■

Robotic wheelchair would give more mobility

A raised eyebrow could give instructions

One of the more intriguing technological devices now under development is a robotic wheelchair system that may one day give even the most severely impaired quadriplegic or neurologically damaged patient the ability to move about the home unassisted.

The Edward Hines Jr. Veterans Affairs (VA) Hospital in Hines, IL, has been testing a computer-controlled power wheelchair system that can navigate an apartment or house after receiving simple physical or verbal commands, says **Edwin Langbein**, PhD, research health scientist.

"They'll be able to fit the navigation system to the existing wheelchairs," Langbein adds. "This is unique in the sense that its purpose is to serve people who have difficulty for various neurological, sensory deficit reasons that prevent them from safely operating a regular power wheelchair."

Although wheelchair technology already can make use of headsets and joysticks to help patients with navigation, some people have trouble using even these devices, and this system will help them, Langbein says.

"We have a transitional living facility here, and we've set up this system in the apartment, and it's done very well in pilot work," Langbein adds. "We've had some patients who've had difficulty running their own wheelchair, and in this power chair they've learned to operate it in 35 minutes or so."

Since the robotic system can be operated by voice, all a patient would need to do is say the name of the destination, such as bedroom, bathroom, kitchen, desk, etc., and the chair would confirm this destination and then take them there, Langbein explains.

Not all patients will be able to speak clearly enough to use the voice-activated option, so alternative activation devices have been developed.

For example, the chair has a switch that can be activated with a very light finger touch. Patients could wear a headset that speaks aloud the possible destinations, and when the patient hears the correct one, he or she can activate that switch, explains **Linda Fehr**, MS, electrical engineer with the VA hospital. Fehr is one of the investigators developing the wheelchair system.

The switching mechanisms in commercial models are very sophisticated and can be operated with a twitch of a person's eyebrows in the cases of quadriplegics, Fehr says.

"We had a fellow who has control of his head and was able to learn to use a chair with head controls, and he controls it very well," Fehr says. "Other people may not have that kind of function."

Even patients who are severely impaired and lack nearly all motor control could learn to use the device, provided that there can be a way for them to sit in the chair, Fehr says.

Researchers have adjusted the switching mechanism to suit a particular patient's needs. For example, in the case of a patient who can only bite down and blink, the switch can be a small tube that fits in the mouth, so when the patient wants to move, all he or she has to do is bite down on the tube, Fehr adds.

Ending 20 years of immobility

"One man had an aneurysm and has no reliable motor function, except he can grasp a stick and use that to communicate by poking letters on a communication board," Fehr says. "It's very slow and unreliable and he could never steer a chair that way, so he has not been independently mobile at all."

However, the patient was fitted to the robotic chair system and was given a drumstick-sized stick that he could grasp in his hand for poking at a four-inch domed cushion switch with air in it. The compression of air sends a signal to the computer. Within 20 minutes, the man was able to travel to any spot in the apartment, Fehr says.

"It was exciting to see, because the man had not had independent mobility in more than 20 years," Fehr adds.

Before the robotic device can be brought to market, there are a variety of details that need to be worked out, especially in how it is programmed, Fehr says.

"The way it works is the chair knows where it is based on two tiny video cameras mounted under the seat," Fehr says.

The cameras watch for specific black-and-white bull's-eye shapes that can be stuck on walls in an apartment or house. Someone will program the wheelchair's computer by rolling the chair from one place to another, allowing the computer to store the cues that appear between

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these destinations. This way, the computer will be able to reconstruct a path when the patient gives the command, Fehr explains.

"Also, there's a sensor that keeps track of wheel rotations," Fehr adds. "So as long as it sees its cues okay, it's pretty reliable and will pretty much every time retrace that same path."

Researchers now are working on the next phase of development, in which the device will be equipped with ultrasonic sensors that will tell the chair when it is about to approach an obstacle and needs to stop, back up, and turn in another direction.

Other drawbacks are that the chair cannot operate in the dark and the bull's-eye markers are aesthetically displeasing to have in a home, Fehr says.

Eventually it might be possible to operate the chair with infrared sensors and markers that are not visible to people, she adds. ■

Rehab joins with oncology to offer massage

Patients report high satisfaction with service

Inpatient oncology patients at St. Rita's Medical Center in Lima, OH, have found a silver lining in the medical ordeal they have to endure: They can look forward to an almost daily visit from a licensed massage therapist who will give them some physical comfort as they rest and listen to soothing music.

The program, which has been in place since September 2000, is part of St. Rita's Outpatient Rehab Center's complementary medicine services that are routinely offered to outpatient rehab patients. At the hospital's request, the rehab facility joined up with the oncology department to offer massage to cancer patients, says **Jennifer Forsberg**, MSPT, ATC, athletic training clinical leader and coordinator of complementary medicine services and outpatient rehab at St. Rita's at the Wapakoneta YMCA in Lima.

Before starting the oncology massage service, which is offered free to interested patients, Forsberg and oncology representatives attended a cancer conference to discuss the program with physicians.

"We knew it would be a challenge to get all of the physicians to buy in to the complementary medicine concept," Forsberg says. "So some key physician champions in our area spoke very highly of this service, and everyone was eventually won over."

Now therapeutic massage is a standard service offered on the oncology unit. Massage therapist **Mary Jane Lammers**, LMT, visits the oncology unit four days a week, spending several hours visiting all of the patients who qualify and are interested in receiving the service.

Lammers is one of four massage therapists in the rehab department, and she divides her time between the two areas. When she isn't available to visit the oncology unit, another therapist will fill in, Forsberg says.

Besides fulfilling a philanthropic health care mission, the program results in positive feedback from cancer patients, with an average score of 4.5 out of a total positive score of 5.0, Forsberg says.

"From our patient surveys, people have written notes saying, for example, 'Jane, you have done a good job again. You even make my wife feel good. After my massage, she feels better because I do,'" Forsberg relates.

Other positive comments have included:

- "I was home for the weekend, and I couldn't wait for Monday to get here because you were here to see me. All my aches and pains are gone."
- "Not only does she make your body feel good, but she puts a smile on your face."

Even the more reluctant physicians have come to see the program's virtues. "One physician had some reservations about massage therapy," Forsberg relates. "Now he loves it when Jane has recently worked on his patient, because the patient doesn't complain as much to him."

Typically, the first thing Lammers does when she arrives on the oncology floor is to meet with the case manager and then the charge nurse or

private nurse to discuss which patients might need massage that day.

The nurses will know whether a patient's fever has risen or if there have been any other changes, Lammers says.

Contraindications for receiving a therapeutic massage include the condition of deep vein thrombosis, fevers of unknown origin, rashes, and any contagious disease, she says.

Also, Lammers will not work on the areas of a patient's body where an IV is attached or that have received radiation treatment.

After receiving a list of patients who are ready for a massage, Lammers will visit their rooms, spending 10 to 20 minutes with each patient.

"I do the massage according to the patient's needs," Lammers explains. "It's a feeling you get when you go in about how receptive a patient is for this."

If a patient is agitated or has insomnia, a relaxing massage may be especially good for him or her, she says.

"If a patient is in pain, I'll usually do a light massage," Lammers says. "Some have headaches, and some have neck aches from being in bed too long or having slept too long."

Massages may involve only the patient's feet or limbs. Or Lammers may provide a brief neck or back massage, again depending on the patient's condition and needs.

Lammers uses special massage creams that are not oily, so bedridden patients won't have the feeling that they are greasy after the massage. Also, the creams are unscented, and she won't use the creams near a site that is going to receive radiation therapy.

Part of her work with patients involves teaching interested family members how to do light massages when their spouse or parent needs one.

"I teach them a light massage for the arms, legs, foot, or a simple back massage," Lammers says. "It's very relaxing for the patient and gives them the feeling that the spouse cares."

Oncology patients typically have a great deal of anxiety, stress, and fear, as well as pain and nausea. Through therapeutic massage, they often can relax and have a good night of sleep. Touch also helps them feel more normal within their bodies, erasing the negative body images that come with cancer and the feeling that no one will want to touch them because of the disease, Lammers says.

One offshoot of the program has been that since patients grew accustomed to the soothing music Lammers plays while they were receiving massages, they have requested to have music players in their rooms so they can listen to music at other times of the day, Forsberg says. So now the oncology floor has installed CD players in each patient's room.

The rehab facility continues to offer outpatient massage therapy services and other complementary medicine services to patients, but there is no expectation that the oncology program will result in increased referrals, Forsberg says.

"It's just part of the service line we offer to oncology patients to help with their stay," Forsberg says. "St. Rita's recently completed a huge expansion of the cancer service, and the hospital subscribes to the body/mind/spirit theory of treatment." ■

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Using education to support pain management

Selecting tools to aid staff in teaching is crucial

Education is an important part of any pain management initiative. Health care facilities throughout the nation are working to identify the materials they need to enable them to teach patients about pain management.

Doris Doherty, BSN, RN, patient education coordinator at Franciscan Skemp Healthcare in LaCrosse, WI, worked with a small group of nurses, occupational therapists, and social workers to select patient education materials as part

Subgroups tackle pain management components

Break larger project into small chunks

To meet the standards on pain management of the Joint Commission on Accreditation of Healthcare Organizations in Oakbrook Terrace, IL, many health care facilities are diligently working on initiatives. Most have found that the quickest way to achieve results is to create groups that are part of a larger committee to look at the various components of pain management.

While one committee at Children's Hospitals and Clinics - Minneapolis was assembled to develop a comprehensive plan for pain management, several subgroups worked on all the issues in a parallel fashion. "It was an easier workload and we did a lot quite quickly," says **Casey Hooke**, RN, MSN, APON, a clinical nurse specialist who worked on the education of patients and family about pain.

Other subgroups looked at: pain assessment, reviewing the tools and their reliability and validity, and determining how the assessment would be documented; incorporating a statement about a patient's right to pain management into the patient's bill of rights; developing an institutional policy about pain; and creating a comprehensive staff education plan to introduce the new policy. Another group developed tools and a plan that can be adapted to each clinical area for measuring the quality of pain management.

Franciscan Skemp Healthcare is a large system with one major hospital, two rural hospitals, 13 clinics, and numerous behavioral health centers, so a multidisciplinary committee was assembled to create a pain management plan. "We brought in people from the clinic setting, all the areas of the hospital, our nursing home, and subacute unit, so we included the populations from birth to very old age," says **Doris Doherty**, BSN, RN, patient education coordinator. While the core group discussed the type of plan that the institution needed, the work was divided and assigned to subgroups.

As the group works on the pain initiative, staff education to increase awareness about pain management is being conducted. Two speakers have come to the institution to address interdisciplinary staff, and a conference has been held for physicians. A separate committee is working on a plan for staff education to be implemented once the initiative is complete.

Pediatric group paves way for others

Although there is a systemwide "pain team" at Clarian Health Partners in Indianapolis, the focus currently is on the evaluation of pediatric programs and materials for pain management, which is the patient group served by Riley Children's Hospital. Once this work is complete, similar work will be done for the adult groups served by the other two hospitals in the system. "Our work will pave the way for what will need to be done for the remainder of our patients," says **Cindy Latty**, BSN, RN, patient education coordinator/clinical educator at Riley Children's Hospital.

To launch the project, a retreat was held for the Pediatric Pain Special Practice Group. The group evaluated the programs and materials currently in place for pain management. People from all three hospitals in the system participated in this brainstorming session. Areas focused on included staff education; patient education; supporting policies/philosophies/documents; services and departments involved such as child life, pharmacy, anesthesia, home care, and surgery; documentation forms and standards; and pain assessment tools.

"We divided up into respective groups to evaluate what already existed and what work needed to be done to fill the gaps we had determined. We have looked at what other institutions have done and what vendors have available," says Latty. ■

of a larger committee that was creating a pain management initiative. **(To learn more about how an education subgroup fits into a pain management committee as a whole, see article, above. To review a working pain management initiative, see article, p. 149.)**

"We ended up choosing quite a selection of materials, knowing that some people come in with chronic pain, some have acute pain, and then we have children with pain, and elderly people with pain who have dementia and oftentimes act out their symptoms," says Doherty.

During the selection process, the team kept certain content criteria in mind. They looked for materials that taught people how pain occurs and how pharmacological and nonpharmacological interventions assist people in relieving pain. They also looked for information that would help patients understand the need to be honest with hospital staff who were conducting pain assessments. Information that emphasizes the patient's responsibility helps staff assess a patient's pain level so that appropriate approaches to pain management can be implemented.

The new materials on pain will be incorporated into the existing patient education model, and their use will be documented the same as other materials. Pain education will be based on the assessment using a pain scale of zero to 10. The longevity of pain will play a factor in education as well, says Doherty.

Take stock of existing tools

The first project the subgroup on patient and family pain management education tackled at Children's Hospitals and Clinics - Minneapolis was an inventory of all the tools that were already in place, says **Casey Hooke**, RN, MSN, APON, a clinical nurse specialist on the team. They found that many existing patient education programs had overviews of pain. For example, oncology had a family notebook with information about the cause of pain and how it is managed. There was also specific pain education around certain interventions such as an epidural catheter.

Once the inventory was completed, the team — which consisted of two clinical nurse specialists and the patient education coordinator — decided to create two education sheets for parents: one covering pain in children and the second for pain in infants. When creating content, team members reviewed Joint Commission standards to ensure that this education met that accrediting organization's criteria.

The sheet for pain in children covers the health care institution's commitment to pain management, identifies the causes of pain, and discusses how pain is assessed and how to identify pain in children. To help parents recognize pain, the sheet explains how children react according to their developmental stage (infants, toddlers, preschool children, school-age children, and adolescents). It also suggests pain interventions that parents can try, such as massage, and discusses pain medications, says Hooke.

The content in the sheet for infants is based on the information included in the children's sheet. However, input from clinical nurse specialists in the neonatal intensive care unit and infant units were solicited to make the information more applicable to premature and full-term infants. For example, parents are told to watch their children's behavior, because refusing to eat could be a sign of pain, says Hooke. The sheet on infant pain was just finalized.

"All families will receive the education sheet, and it will be reviewed with them and the teaching documented," says Hooke. If there are specific pain needs assessed, then the teaching would go beyond what's covered on the initial

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Following is a list of web sites researched by the patient education resources/materials group at Riley Children's Hospital in Indianapolis during the creation of the institution's pain management initiative. The information was provided by Cindy Latty, BSN, RN, patient education coordinator/clinical educator at the hospital.

- **www.partnersagainstpain.com** — Has links to other organizations dealing with pain.
- **www.painfoundation.org** — Education and advocacy organization with links to 200 other sites on pain-related topics; has patient education materials available for order.
- **www.dal.ca** — Produces the Pediatric Pain Letter quarterly.
- **www.ampainsoc.org** — Web site for the American Pain Society.

sheet and address the intervention, but all patients' families receive a minimum standard of teaching.

The patient education resources / materials group at Riley Children's Hospital in Indianapolis is currently searching for resources and information so they can use the latest research when creating or evaluating for purchase written materials and videos on pain. Their plan includes revising some of the institution's current handouts to update them, says **Cindy Latty**, BSN, RN, patient education coordinator / clinical educator at the hospital.

In their initial evaluation process, the group determined that most of what was presently available was in written format. "We feel we need to provide another medium for those whose learning styles differ and also to make pain education for our pediatric patients and their families more interesting," says Latty.

Information about pain management and resources pertaining to this issue has been gathered from conferences, literature, hospital staff, and web sites. (For a list of web sites the group has researched, see editor's note at end of article.) Latty recommends using staff as resources during research. "Their knowledge of other resources can be invaluable," she explains. For example, a new professor of pediatric oncology nursing at the hospital provided information about a pain resource center for nursing research and education — The City of Hope Pain / Palliative Care Resource Center (www.prc.coh.org).

Addressing pain seems to be a simple matter, but it is not. There are various types of pain described in research, and as groups begin to discuss education, they begin to think about how to prepare a new mom for anticipated pain during labor or how to prepare a presurgical patient for anticipated pain post-op, says Doherty. "Each patient experiences pain differently, so we have a broad base of printed information that staff can select from. We will teach staff what the information covers so that they can easily pick and choose what they will share with the patients as they deal with their pain," says Doherty. ■

Pain initiative changes staff and patient mindsets

Goal: Reducing pain scores to improve recovery

The initiative for pain management implemented a couple of years ago at Duke University Health Systems in Durham, NC, has made all providers at the institution aware of the impact pain has on patients. It also helped staff identify the number of ways there are to control pain and resources to help patients who are experiencing pain. As a result, they are able to get a better handle on pain control for their patients, says **Linda E. Hood**, RN, MSN, AOCN, an oncology clinical nurse specialist at the health care facility.

Hood has monitored the pain scores of cancer patients upon admission to the hospital to see how quickly the scores can be reduced to below a level of three or four on the pain scale and how many are discharged with levels of less than three or four. "To get people's pain under control is really an important issue for our whole team," says Hood.

To lower pain scores, patients now learn why staff are asking them about pain and how they can best communicate the degree of pain they have. The institution uses the zero-to-10 pain scale to help adults evaluate their level of pain and the faces scale for children, which pictures faces with expressions ranging from crying to smiling. The education is verbal and is supported by written materials, such as the patient pain guides published by the Agency for Health Care Policy and Research in Silver Spring, MD.

All patients receive a bill of rights for pain, and cancer patients receive a special version adapted for cancer pain. In this document, patients are told:

- They can expect to have their pain addressed.
- Staff will assess their pain level and believe their reports of pain.
- It is the responsibility of staff to respond in a timely fashion.
- Staff will keep track of pain interventions and whether or not they were helpful.

Staff will also discuss whether or not patients are satisfied with their pain relief. The bill of rights for pain covers the agents used to relieve pain and explains that there are specialized techniques for people who have unrelieved pain, including nonpharmacological interventions. The education channel at the hospital broadcasts information on nonpharmacological pain relief methods such as progressive muscle relaxation

and guided imagery, and patients often are given relaxation tapes to take home.

It's important to teach patients that if pain can be kept under control, they tend not to have as many complications. Patients who don't have their pain well-controlled following surgery or some other medical incident can develop long-term chronic pain problems, says Hood. One of the mottos selected when the pain initiative was launched is "healing doesn't have to hurt." "Once you start talking about pain, you have a big impact on helping relieve patients' pain and improving their quality of life by helping them understand that it isn't something they have to accept," she says.

Some patients avoid pain medications

With chronic pain such as cancer pain, pain management often involves changing patients' mindsets. Patients often put off taking their pain medications because they are afraid of becoming addicted, yet continual pain drains their energy and depresses their immune systems, says Hood.

When the pain initiative was launched, all staff had to watch a videotape on pain and complete a self-learning packet. In addition, champions from each area of the hospital were selected to receive extra education about pain and its control. These champions were then available to provide support to staff, monitor the outcomes of patients, conduct in-depth pain assessments when necessary, and make referrals as indicated.

Champions are now recruited and trained annually, attend educational update sessions twice a year, and participate in monthly grand rounds on pain and palliative care. The pain initiative has been a re-educating process for both staff and patients, changing their perception of pain, says Hood. ■

Need More Information?

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Burn prevention program fires children up

Learning made easy with hands-on activities

Requests for a burn prevention education program aimed at children in fourth through sixth grades was one reason Shriners Burns Hospital in Cincinnati created Kids Informed, Kids Aware Burn Prevention Education. Another reason was that many of the burn cases seen at the hospital were children in this age group.

This is the age when children are beginning to baby-sit or stay home alone when Mom and Dad are out. They go off to camp where there are campfires, and many boys are cutting the grass and have access to gasoline, says **Louise Hoelker**, RN, MHA, director of volunteers and public relations at Shriners Burns Hospital.

The program comes as a complete package so it can easily be implemented, whether in a school classroom or for community outreach at a health care facility. "After talking to a lot of people, we focused on letting kids understand why burns are so harmful. It is a science-based curriculum," says Hoelker. It's also filled with lots of hands-on activities to help reinforce the lessons provided to this age group.

The program uses sensory and daily life experiences to explain the causes, effects, and prevention of burns caused by flame, scalding liquids or steam, flammable liquids and their vapors, sunburn, contact with hot surfaces, chemicals, and electrical current. The illustrated teaching guide includes chapters on laying the groundwork for burn prevention and teaching on the topic.

"Each chapter has a lot of details," says Hoelker. For example, the curriculum for flame burn prevention covers what fire is, how the fire triangle (fire, oxygen, and an ignition source) must be present for fire to start, what happens when flames burn skin, and how to prevent such burns. The program also has a 30-minute video that follows the lesson so instructors can show portions of the video, such as the section on flame burns, to enhance the lessons. "The teaching guide and video work together but can also be used independently of each other," says Hoelker.

The curriculum is very interactive. Activities for the flame burn prevention lesson include creating an exit plan for the home. Children are given graph paper and a pencil and asked to

identify the location of all the smoke detectors and exits in their home and to create a plan to exit the house safely in case of a fire. Another activity breaks the children into small groups, where they discuss the habits of young children and the baby-sitter's role in preventing burns.

'The fumes are still there'

To help teach children about flammable liquids and their vapors, imitation vanilla and household ammonia are spread lightly on two paper plates and the children are asked to identify the liquids by smell. "Once it dries, they can still smell the vapors. The lesson helps them understand that the fumes are still there, and if the liquid is flammable and you come across an ignition source, it will ignite," says Hoelker.

Many school-age children spill gasoline on their pants leg when filling the lawn mower. Because the gasoline is dry by the time they finish mowing the lawn, they don't change their clothes, yet in the right circumstances their pants could ignite, she says.

The curriculum also includes real-life examples. Instructors are asked to read the stories and have the children discuss how the burn may have been prevented. For example, one story describes a five-year old girl who liked to dress up in her older sister's clothes. She put on a flowing dress and danced around the living room before a fire burning in a fireplace with no screen. The dress billowed toward the flames.

"With this curriculum, we wanted to address fourth-, fifth-, and sixth-graders but not preach to them. We wanted to give them practical information on why burns are preventable and how they are preventable," says Hoelker. ■

Need More Information?

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Joint Commission task force makes progress

The Joint Commission on Accreditation of Healthcare Organizations in Oakbrook Terrace, IL, reports that its Standards Review Task Force is making progress in rooting out the redundant and overly burdensome portions of its standards.

The task force, whose mission is to review Joint Commission standards for anything unreasonable or unnecessary, recently held its second meeting. At its first meeting in June, the task force reviewed the Patient Rights standards and standards compliance requirements. The Joint Commission reports that the second meeting was

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devoted to reviewing the Governance standards and approximately half of the Leadership standards. Task force members noted that these chapters have a great deal of redundancy.

"They also suggested modifications to the survey process for many of these standards that would allow surveyors to focus on specific, applicable issues and standards, and 'drill-down' in other standards areas if needed," according to a Joint Commission report. "There was a general sense that the Governance chapter could be incorporated into the Leadership chapter. Interestingly, prior to 1994, Governance standards represented a small section of the Leadership chapter."

In another change, the task force said the Leadership and Governance standards should not be subject to on-site survey review. Many of the Leadership and Governance standards are concepts and principles that can be used as a road map for effective management of an organization, the task force said, but they are now practiced so uniformly that on-site survey review is unnecessary.

Two standards were identified as overly burdensome. Standard LD1.7.1 states that "each department provides patient care according to its written goals and scope of services." In most instances, the task force says, hospitals create these documents solely to meet the JCAHO standard, without any meaningful contribution to improving health care. Instead of serving as a useful tool to assist in decision-making, the binder of department-specific goals and services "typically sits on a shelf until it is updated prior to the next survey," the task force reports. ■

Accreditation categories changed to reflect quality

In an effort to make its accreditation categories more user-friendly for consumers, the Joint Commission on Accreditation of Healthcare Organizations is renaming two of them.

Effective Jan. 1, 2002, the categories were renamed in order to better convey to consumers an organization's level of performance. Accreditation without Type I Recommendations becomes Accreditation with Full Standards Compliance, which is awarded to health care organizations that demonstrate satisfactory compliance with applicable JCAHO standards in all performance areas.

Accreditation with Type I Recommendations becomes Accreditation with Requirements for Improvement, and will be awarded to health care organizations that demonstrate satisfactory compliance with applicable JCAHO standards in most performance areas but have deficiencies in one or more performance areas or accreditation policy requirements that require resolution within a specified time period.

Another development at the Joint Commission involves when to include physician practices in organization surveys. Under new rules adopted by the Executive Committee, the physician practice will be included in an organization's survey if:

1. The organization includes the practice in its Medicare cost report as a provider-based practice.

2. The physician is an employee of the organization and the organization and/or the physician practice affirmatively portrays to the public that the physician practice is part of the organization through these steps:

— the use of common names or logos;

— references on letterhead, brochures, telephone book listings, or web sites;

— representations on other published materials. ■

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