Home Modifications to Make Older Lives Easier

Mike Mitka

Physicians are trained in medicine, but should they also learn interior design? In some ways, yes, say medical and other experts who believe home modification can reduce injuries and improve lifestyle for older patients, those aged 65 and up.

While home improvement advocates do not mean physicians should become architects, they do say making suggestions to patients to modify their homes can improve their lives. Fairly simple changes may in some cases enable an elderly man or woman to keep living among friends and neighbors rather than have to move to an “assisted living” residence.

“If the environment isn’t appropriate, injuries can occur that lead to major disability,” said Ronald Adelman, MD, codirector (with Mark Lachs, MD) of the Division of Geriatrics and Gerontology at Weill Cornell Medical College in New York City. “But we don’t teach physicians about these different areas regarding functioning and living well.”

Cornell is acquainting physicians with home safety through Project GEM (gerontologic environmental modification), which its creators say is the only hospital-based program of its kind. Project GEM is headed by Rosemary Bakker, MS, a former interior designer who became aware of the problems facing many older adults through her mother’s experience with a hip fracture. Bakker is the author of Elderdesign: Designing and Furnishing a Home for Your Later Years (New York: Penguin Books; 1997).

“I’m doing research, education, training, speaking, writing, and working with a broad range of organizations and individuals,” Bakker said in an interview. “We go to apartments and perform home assessments and see how to keep someone in their home for as long as possible through design.”

When she conducts a home assessment, Bakker checks a variety of elements in the house or apartment to see if they need modification. For example, in the section on flooring, her checklist asks if there are wires across walking paths or under carpets; if area rugs are taped to the floor; and if the flooring is free from rips and holes.

Once the assessment is complete, Bakker looks for resources to make the proper changes.

“For example,” she asked, “did you know that there are low-cost or no-cost services available in some places for income-eligible adults? There are agencies, particularly one called MetroPair, sponsored by the Metropolitan New York Coordinating Council on Jewish Poverty, that will install grab bars for free in your bathroom. MetroPair will do minor repairs, install dead-bolt locks, and put up window gates, where possible. It’s funded in part by the Department for the Aging of the City of New York.” She suggested that people might seek out—or perhaps set up—similar agencies in other parts of the country.

Adelman said Cornell Medical College has begun to train medical students, residents, and postgraduate physicians to understand age-appropriate design in homes, hospitals, and long-term care environments.
“We’re teaching this to enhance patient function, to identify environmental conditions that increase the risk of falls, fires, and burns, to prevent preventable injuries and fatalities, and to learn to prescribe devices for their appropriate indications,” Adelman said. “The whole idea is harm prevention and health promotion.”

CHANGE FOR SAFETY

A variety of design changes can enhance home safety. Installing grab bars in bathtubs, tacking down carpeting, and improving lighting—which may help people read the labels on their medicine bottles, for example—are some of the elements that work, Bakker said. “But even taking these simple measures can prove daunting to patients who need them done.”

Bakker said many people who rent do not know that they are allowed to make modifications to the residence—that landlords cannot just say no. There are also matters of cost and proper installation. Bakker said some people put grab bars in the bathtub area but fail to secure them to the studs behind the wall, with the result that the bars may tear loose unexpectedly. Correct installation is essential.

“Physicians should be advocates and be able to bring up some of these issues with their patients, because a lot of older adults respect their physician’s advice,” Bakker said. “Physicians should also know that their patients may be afraid or too vain to talk about such modifications, but they will do so if their physician recommends it. I know some physicians who put on a prescription pad: ‘Install a grab bar in your bathroom.’”

Physicians cannot be expected to perform detailed walk-throughs of all their patients’ homes, but they should know about the various community agencies that can provide such services and which ones may be able to assist in covering the costs for changes, Adelman said. Physicians can also provide brochures suggesting safety modification solutions to various household problems. Such brochures can be ordered online through the Centers for Disease Control and Prevention at http://www.cdc.gov/ncipc/ncipchm.htm.

PLAN AHEAD

Richard C. Duncan approves of home modification for older adults, but he believes that the changes should be undertaken before people become frail or start to feel the effects of dementia. Duncan, who is interim executive director of the Center for Universal Design at the College of Design, North Carolina State University in Raleigh, said a house can be built or modified so that it maintains the look of a “traditional” house while encompassing safety features. Duncan is an advocate of “universal design.”

“By including a few kinds of design features, architectural features, and materials, you can create a home that works well and seems, more or less, like standard housing while accommodating people if their abilities change over time,” Duncan said. “There’s no difference in cost, but it has all these invisible features.”

In such a house, Duncan said there should be at least one entrance (it does not have to be the front; it can be through the garage or the back) that is stepless and does not require a ramp. Other features would include hallways that are perhaps 42 inches wide instead of the traditional 38 inches or 40 inches; electrical outlets 24 inches off the floor; and light switches lowered from 54 inches above the floor to 44 inches.

These modifications would allow someone using a wheelchair or walker more space to travel between rooms. Having higher electrical outlets eases the strain caused by bending to plug in an appliance, and lower light switches makes them more accessible.

Universal design can also work for two-story houses, Duncan said. The key is to have the basics—kitchen, a full bathroom, bedroom (or a study with a fold-out bed)—on the first floor.

CONTRACTOR OR PHYSICIAN?

Modifying a home to make it safer makes intuitive sense, but Thomas M. Gill, MD, is not ready to say that is the final answer.

Gill, an associate professor of medicine at Yale University School of Medicine, said his studies have suggested to him that with limited resources the focus should be on improving the physical health of the patient instead of home modification.

Gill and his colleagues studied 1088 men and women aged 72 and older to determine whether there was an association between environmental hazards and nonsyncopal falls. They concluded there was no obvious association (Med Care. 2000;38:1174-1183).

“We found overall there was no strong correlation between environment hazards and falls,” Gill said. “We couldn’t discount the possibility of weak associations. But I think our take-home message was that if you have limited resources, and you had to decide where to spend it for fall prevention, you get more bang for the buck with interventions that were proven successful, such as improving gait and treating balance disorders, and using the proper footwear.”

Gill said the environment does play an important role in helping older people maintain function. But he also noted that because falls occur outside the home as well as inside, treating people instead of just their dwelling places will protect them better in all settings.

One point that everyone seemed to agree on is that there are few data on the effects of the environment on the health of older adults. Adelman expects Project GEM to change this.

“There is very little research on what things really work to improve life for older people,” Adelman said. “We hope GEM provides the research to allow us to understand better about how design impacts on living.”

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“Pebbles” Cast Ripples in Health Care Design

Rebecca Voelker

At Clarian Health Partners’ Methodist Hospital campus in Indianapolis, patient transport is more than a moving experience. Up to 26 steps are involved in transferring a patient from one unit to another. From the time a physician first writes the order, the process can take as little as 20 minutes or as long as 3 days to complete. The staff and equipment needed to move patients are expensive. “We’re spending in excess of $15 million a year on patient transport,” says Ann Hendrich, MSN, RN, senior vice president/nurse executive. The process isn’t just wasteful, Hendrich adds, it’s disruptive to patient care.

So when Clarian set out 4 years ago to create a more healing environment, coronary critical care was merged with its step-down unit so patients weren’t continually moved back and forth as their conditions changed.

Now, patients admitted to the 56-bed coronary critical care unit stay in the same room and receive care from the same nurses and physicians until they are discharged. The unit offers additional amenities. Each room is 100 sq ft so there’s ample room for family and visitors. The rooms are equipped with computer modems, personal voice mail, light and temperature controls, and televisions with videocassette recorders for viewing patient education tapes.

Hendrich says merging the units has reduced transports by 90%. The dissatisfaction rate among patients on the unit and their families is down to 3%. That’s not all. “We believe that we are measuring a reduction in errors and an improvement in patient safety” with fewer transports, she noted.

THE PEBBLE PROJECT

At Clarian and a handful of other hospitals across the country, administrators are measuring a variety of outcomes as a result of design modifications in hospitals and clinics. They are part of The Pebble Project, an initiative of the Center for Health Design (CHD) of Lafayette, Calif, and San Diego Children’s Hospital and Health Center. The project is aimed at funding and encouraging research on the clinical, social, and economic impact of health care design.

“If you take a pebble and throw it in a body of water, it creates concentric circles that ripple through the water,” says Debra Levin, the CHD’s executive vice president. “If we can take these research projects in the same way, we hope the results of what we find will ripple through the health care industry and create change.”

The nonprofit CHD has advocated design as an element in the healing process for more than a decade (JAMA. 1994;272:1885-1886). The “pebbles” bring new focus to the concept as they work to document clinical and cultural outcomes from specific renovation and construction projects. In addition to Clarian Health Partners and San Diego Children’s Hospital, the Barbara Ann Karmanos Cancer Institute in Detroit and Bronson Methodist Hospital in Kalamazoo, Mich, hope to add to the ripple effect.

GARDENS, BALCONIES . . . VOLUME

San Diego Children’s Hospital is no stranger to the positive impact of design. In 1993 the hospital opened a three-story, 115-bed pavilion with 20 specialty clinics and the region’s first pediatric emergency center. A driving force behind the construction was that the pavilion feel like a children’s hospital. New design elements included access to balconies and private gardens from all the medical-surgical beds.

Combined with improved client service and high-quality clinical care, the design elements helped to boost specialty outpatient volume by 70% within 4 years. Next year, the hospital begins renovations that will transform a former long-term care facility for

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adults into a 59-bed children’s convalescent hospital.

The renovation plans include doubling the square footage of the facility and allowing patient access to gardens. Because the patient population is medically fragile—the average length of stay is 5 years—administrators are particularly concerned about the soothing and stimulating effects of the renovated facility.

The hospital’s president and chief executive officer (CEO), Blair Sadler, JD, hopes the convalescent hospital will be a brick-and-mortar sensorium where children are exposed to varying levels of color, light, sound, and aroma. “We want to be able to evaluate, wherever possible, their preferences for these combinations,” Sadler says. “The degree to which we can better understand these kids through color, sound, and aroma is something we are very excited about exploring.”

PAIN CONTROL

The Karmanos Cancer Institute’s recently renovated inpatient cancer center includes comfortable furniture and soothing colors. Outside each patient room is a flat-panel computer that gives physicians and nurses access to medical records while patients and family members can send e-mail, use the Internet, or play computer games.

Because an older inpatient unit that had not been renovated remained operational when the renovated unit opened, administrators had the opportunity to make some comparisons. “What we’re finding is that patients used less narcotic to control pain on the new renovated unit than on the old unit,” says Dore Shepard, RN, MS, the institute’s administrative manager.

An analysis of 22 patients with sickle cell anemia with crisis showed a 16.4% reduction in narcotic use among 11 patients in the renovated unit (where they were lodged for easier access to hematologists) compared with 11 patients in the old unit. In the same group, patients in the renovated unit stayed longer—8.18 days per admission compared with 4.45 days in the old unit.

“This is a beautiful environment,” says Shepard. “If you live in the inner city and are sick with a chronic disease, you might want to stay.” The next step is determining how to balance quality care with an appropriate length of stay, she adds. As part of Detroit Medical Center, research is part of the institute’s mission. “It’s a perfect fit for us,” Shepard notes.

WAVE OF THE FUTURE

When Bronson Methodist Hospital planned a renovation nearly 7 years ago, President and CEO Frank Sardone said it proved more cost-effective to build a new facility. Creation of a healing environment was a core concept. “We wanted to improve the comfort, safety, and environment that patients and visitors experience,” says Sardone.

The new hospital features an indoor garden and horizontally aligned parking areas that connect with each level of the facility. All patient rooms are private. Air intake and outflow, along with anterooms with staff hand-washing sinks, are designed to lower nosocomial infection rates. “Anecdotally it looks like we’ve reduced infections already, but we’re just starting this research,” Sardone notes.

He believes other hospitals soon will face building decisions similar to Bronson’s. “A lot of projects have been deferred because of the reimbursement environment,” he notes. “There is going to be a large wave of new construction in the future.” Hospitals will have to consider features they need not only for structural integrity and building codes, but to remain competitive in the face of an aging population.

As hospitals look to the future, Sadler sees four main components they must consider to remain viable: cost-effectiveness, clinical outcomes, consumer satisfaction, and staff satisfaction. Although documented evidence in the trend toward evidence-based design is emerging slowly, Sadler believes that it eventually will pan out to offer new directions for improvement in these four areas.

However, he notes, CEOs will have to recognize that quality improvement initiatives have a design agenda. In today’s complex regulatory and reimbursement environment, Sadler views design as a way to negotiate rough seas. “Hospitals are in the middle of what I see as the perfect storm,” Sadler says. “The question is, will we weather the storm?”
New Diagnostic Criteria for MS Issued

Brian Vastag

WASHINGTON—An overhaul of clinical criteria for diagnosing multiple sclerosis (MS), the first in 20 years, should increase the certainty of diagnosis while expediting treatment in some cases, according to an international panel that developed the standards.

Devised for practicing clinicians, the pragmatic criteria formally include magnetic resonance imaging (MRI) for the first time, and outline the role of tests such as cerebral spinal fluid (CSF) analysis. In addition, the system accomplishes another first by accounting for the sundry presentations of the four types of MS: relapsing remitting, secondary progressive, primary progressive, and progressive relapsing. A fifth element that the new criteria deal with is monosymptomatic demyelinating disease suggestive of MS.

As with other complex diseases, no single test can ascertain whether a patient has MS. Confounding factors complicate diagnosis. Unpredictable symptoms wax and wane for months or years. Conditions such as strokes, viral infections, tumors, and a host of neurological disorders can mimic early MS. In addition, the old criteria did not deal with types of MS that progress slowly or present with few clinical symptoms, said Stephen Reingold, PhD, vice president of research for the National Multiple Sclerosis Society, which convened the expert panel.

MORE SCIENCE

Considering these complications, making a diagnosis is often a difficult art. “It was kind of like the Supreme Court’s idea of pornography. They couldn’t define it, but they knew it when they saw it,” said Aaron Miller, MD, a neurologist at Maimonides Medical Center in Brooklyn, NY. The new criteria should demystify the process, said Reingold. “It does to a certain extent remove the art of diagnosis.”

MANY STRAIGHTFORWARD

Many cases remain straightforward, with evidence of lesions separated by time and space remaining decisive. Patients fulfilling the old criteria, with two clinical attacks clearly originating from separate lesions, are still the simplest to diagnose. The criteria require that attacks continue for 24 hours and that 30 days separate the onset of the first and the onset of the second.

For patients with two clinical attacks but objective evidence of just one lesion, MRI scans showing multiple lesions can confirm the diagnosis. In some of these cases, analysis of CSF is also required. For patients with a single clinical attack but evidence of two or more lesions, MRI results can also clarify the picture.

The new criteria (Ann Neurol. 2001;50:121-127) surely will have an impact on patients with symptoms suggestive of MS but who previously slipped through the diagnostic cracks, said Reingold. Often called “monosymptomatic,” these patients present with various MS-like symptoms. They do not fulfill the old criteria and yet many may develop MS. Again, MRI scans can aid in making a diagnosis of MS in these patients.

A positive CSF test—characterized by the presence of oligoclonal IgG bands different from any such bands in serum and/or the presence of an elevated IgG index—coupled with less definitive MRI results can also aid in an MS diagnosis.

Even if a patient does not fulfill all the criteria, he or she might benefit from newer drugs, such as interferon-beta, which have been shown to have a positive effect on people who do have a diagnosis of MS. They also have been shown to have benefit for individuals with monosymptomatic demyelinating disease, but this does not necessarily mean that these people have a diagnosis of MS, said Reingold.

MINIMIZING STIGMA

Although partly a semantic issue—where to draw the line between “monosymptomatic demyelinating disease” and “MS”—the criteria serve a vital purpose. Many people with a single MS-like attack never develop the disease. The societal and psychological consequences of being tagged with a life-altering label should compel physicians to exercise care, said Reingold. “There’s still a lot of stigma attached to it.”

Patients with slowly developing MS, called progressive primary disease, may also benefit from earlier diagnosis. Various combinations of MRI, CSF, and visual evoked potential tests will corroborate a diagnosis, whereas before no method existed for making a clear determination.

While the benefits of the new standards are clear to Reingold and the 20 other experts who codified the criteria, debate has sprung up in the neurological community. “There’s been a lot of controversy about the utility of these criteria,” said Miller. “On the surface, at first reading, they seem to be complicated.”

Reingold said that he too has heard concerns about complexity. “The concerns are understandable,” he said. “But it’s a complex disease and we tried to simplify it as much as possible.”

Physicians may receive a copy of a plastic pocket card summarizing the new criteria by sending an e-mail request to Eileen.Madray@nmss.org with their full name and mailing address. □