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## A New Therapy for America's Aging Hospitals

By: [Barbara Hesselgrave](#)  [Print](#)

As “the U.S. enters the largest [health care] construction program in its history,” the authors of a **new** report collecting decades of research on “evidence-based [health care] design” say the timing of their study is of critical importance.

After decades of add-ons and Band-Aids for **America's aging** health facilities, the study published in [Health Environments Research & Design Journal](#) reports **new** hospital construction is projected to exceed \$70 billion by 2011.

While building age and the emergence of technologies are significant drivers for **new** construction, hospital administrators face multiple challenges to their spending decisions: spiraling health care costs, reduced reimbursement rates, increasing litigation and the specter of record-level medical error — \$5 billion for hospital-acquired infections alone.

By integrating the findings from their May 2008 report, Roger S. Ulrich, Craig Zimring and their co-authors say the builders of tomorrow's **hospitals** can [treat much of what ails health facilities](#) today while reducing medical error, improving staff performance and actually making patients healthier.

Can facility design help address these ailments?

HERD editor Kirk Hamilton, an associate professor of architecture at Texas A&M University and director of the [Center for Health Design \(CHD\)](#), says the concept of evidence as a basis for design is nothing **new**, but [evidence](#) of *health outcomes* based on design is relatively **new** and at times contentious.

He directs any naysayers to the conclusions of the recent literature analysis: Installation of the fixtures and amenities that allow staff to perform decentralized, efficient care and provide patients with a less stressful, safe and healing-conducive hospital stay are now an essential, not a frivolous, consideration.

His enthusiasm is tempered by his realism.

“We don’t pretend that the physical environment is more important than good surgeons [or] pharmaceuticals or even as important as the caring touch of a nurse. But, if the evidence is there, the facility design *does* function as a treatment modality.”

## **Design to the Rescue — From Getting Lost to Getting Well**

The majority of the nearly 6,000 U.S. **hospitals** are pushing middle age, with many at least 50 years old, part of the 30-year building boom that echoed the demographic explosion of the baby boom, says Derek Parker, a principal in the San Francisco-based health care architecture firm Anshen+Allen.

And for the last 20 years, some in the health care community — not just administrators and doctors but builders and researchers — have been studying the lessons of those facilities and “how the built environment impacts health care,” said Parker, an emeritus board member of CHD.

From the more than 1,000 documents the authors and their 10-member team reviewed, Parker says the Ulrich and Zimring study presents conclusive evidence linking numerous design factors or environmental interventions to a measured or potential impact on 16 health care outcomes.

Their literature search reflects a broad spectrum of issues and time periods, including very early investigations, such as a 1971 UCLA Graduate School of Architecture and Urban Planning report on getting lost in a hospital to a 2007 report published in *Clinical Microbiology and Infection* about infection control in European **hospitals**.

And their analysis is serious stuff — much more than just choosing a soothing color of wall covering and paint.

The authors created a grid to demonstrate the connection between design and outcome: single rooms, a view of nature, access to natural light, facilities for family to stay overnight and decentralized supplies are a few of the features found to improve patient satisfaction, speed the healing process and improve staff performance.

CHD Director Hamilton says the scientific research behind this literature — the hard evidence needed when a **new** hospital is being planned — is actively encouraged through his organization’s “Pebble” projects.

## **The Ripple Effect of Research**

A decade ago, when CHD perceived the need for additional rigorous, scientific methodology research projects, it initiated the [Pebble Project](#) — named as [“something that would have a ripple effect through the industry.”](#) Parker explains.

Pebble facilities — Parker says any health care facility (hospital, elder care, 24-hour or specialty care) beginning **new** construction, renovation or addition can apply — develop a hypothesis to study. For example, a facility renovating floors or surfaces may study the rate of change in hospital-acquired infections by installing a type of smooth, easy-to-clean surface. Or the financial and patient benefits of building a neonatal unit with smaller infant care rooms (to reduce noise) and facilities for parents can be measured.

Institutions make a three-year commitment, which includes an annual fee of at least \$35,000 and collaborating through access to CHD’s world leaders in design, research, construction and health care

management. The first project, at Rady Children's Hospital-San Diego, began in 2000, and there are currently 44 active Pebble partner institutions (and seven alumni).

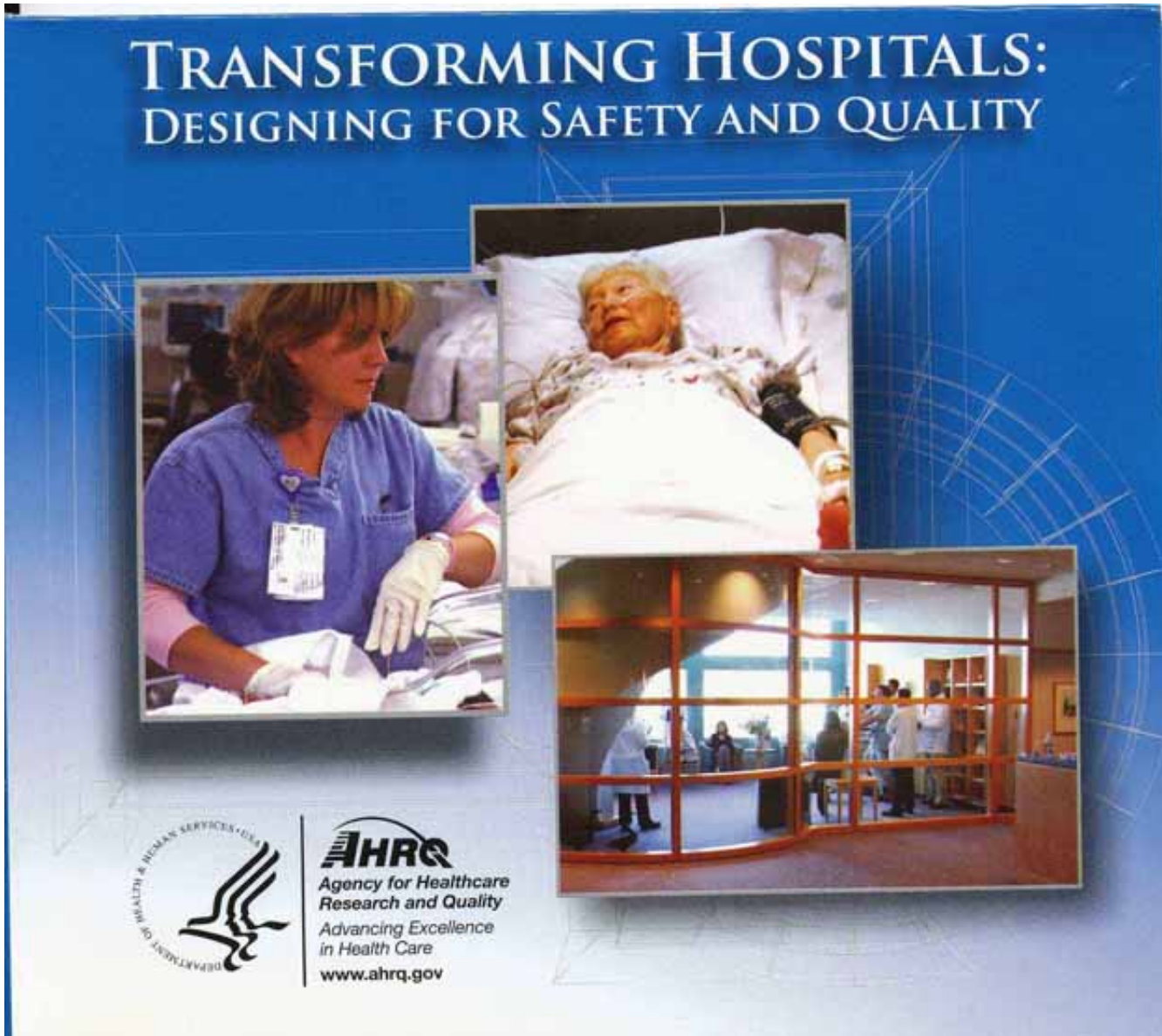
Recent Pebble projects where bed lifts were installed to eliminate nurse lifting strain have dramatically reduced the impact of staff and patient injuries, and the benefit costs of the lifts have been quickly offset with reduced or eliminated expenses of injury and/or litigation claims.

### **Hospital or Luxury Hotel?**

While patient safety and health outcomes are very high on the U.S. Department of Health and Human Services' (HHS) agenda, the government has yet to propose any facility design "accreditation" or provide funds sponsoring health facility design research projects.

Hamilton said, "I seriously doubt that the government will become grantors for architects to build buildings, but it is a promising area for those funders."

He added that a **new** DVD, *Transforming Hospitals: Designing for Safety and Quality*, released in September by HHS' Agency for Healthcare Research and Quality, "at least signals it's on their radar screen."



Agency director Carolyn Clancy supports this **new** paradigm. “Research shows us that designing **hospitals** for quality and safety not only reduces adverse events, such as errors and infections, but also improves both staff and patient satisfaction. ... Evidence-based design is an investment that *can* improve quality and safety,” she said.

But without extra funding, designers must marshal the evidence gathered to convince [bean counters](#) that there *is* a financial incentive to incorporating a line item to what might otherwise be “just a nice idea.”

For example, Hamilton says the study can provide evidence that the restorative benefits a view of the natural environment provides — whether real or simulated through art — can be justified [in quantifiable terms](#).

Still, there are critics who point to hospital facilities featuring single-room occupancy, [artwork](#), gardens, in-room Internet connections and luxurious amenities as appearing more like a five-star hotel than a health care facility.

Hamilton disagrees. “Where does it say that convenience in features, and attractive design for safety, is inappropriate for health care?” He cited a mind-set of our being too-long accustomed to the concept that “since health care in **hospitals** is serious business,” its physical design should therefore be a grim statement of a serious institution.

“We now have evidence that the design of hospital and health facilities can and, moreover, *should* be places that have light and air,” he said, “gardens to remind us of life and healing, rooms that are spacious enough to accommodate families — who are often the best defense for preventing medical error — and [that] offer patients a sense of dignity and privacy over their own possessions.”

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