

The Business Case for Creating a Healing Environment

a report by
Jain Malkin

The Center for Health Design



Jain Malkin is a member of The Center for Health Design Board of Directors. A leader in the field of healthcare design, she has lectured widely and written numerous articles on the psychological effects of healthcare environments. She teaches at Harvard University in The Graduate School of Design and is often a keynote speaker at conferences on the design of healing environments. She is the President of interior architecture firm Jain Malkin Inc. and is also the author of several books on healthcare design including *Hospital Interior Architecture and Medical and Dental Space Planning: A Comprehensive Guide to Design, Equipment and Clinical Procedures*. Ms Malkin has been named as one of California's 100 most interesting and influential healthcare leaders by *California Medicine* magazine and was awarded the 1997 Hyde Chair of Excellence at the University of Nebraska College of Architecture.

A new generation of healthcare facilities is emerging that is very different from familiar institutional models. Based on patient-centred care and healing the whole person, these health centres are spiritual sanctuaries with gardens, fountains, natural light, art and music. Researchers are learning how human emotions are linked to disease and that healing is promoted by surroundings that reduce stress and engage the senses in therapeutic ways. The surprising news is that this design strategy can actually improve the bottom line.

Evidence-based Design

Like evidence-based medicine, evidence-based design is research-informed and its results not only affect patient clinical outcomes, but also staff recruitment and retention and facility operational efficiency and productivity. It looks at building design not only as physical space, but includes the total sensory environment of sight, sound, touch and smell.

The research that underpins this concept can be found in the neurosciences, evolutionary biology, psychoneuroimmunology and environmental psychology. The common thread is the reduction of stress for patients, care givers and families. In fact, this is the primary goal of a healing environment because more errors are made under noisy stressful conditions and patients may have impaired immune functions as a result of coping with an environment that is not psychologically supportive.

Evidence-based design research can be sorted into five categories: access to nature; options and choices (control); positive distractions; social support; and environmental stressors. Building the body of evidence-based design knowledge is the focus of The Center for Health Design (CHD), a research and advocacy organisation that is dedicated to the idea that the design of the built environment can enhance the quality of healthcare.

Historical Antecedents

The roots of what are currently regard as therapeutic, restorative environments can be traced to 4th century BC Greece. The Greeks appear to have

understood the link between the mind, body and spirit – a relationship that is only now beginning to be appreciated and respected. In fact, the patient-centred Planetree concept was based on the healing temples of Aesclepius and represented a revolution in the custodial mindset that dominated hospital design for most of the 20th century. Focusing on options and choice, access to information and personal responsibility for creating health, Planetree opened the door to new ways of delivering care, placing the patient at the centre of the universe. Since the blossoming of Planetree, a number of patient-centred and/or patient-focused models of care have evolved, each with a unique perspective. For example:

- architecture as therapy with a focus on the sensory environment;
- focus on the integration of the arts and entertainment;
- emphasis on structural organisation of space;
- operational restructuring; and
- integration of allopathic medicine with complementary therapies and, sometimes, including indigenous ethnic healing rituals

What Constitutes a Healing Environment

There is considerable confusion about what constitutes a healing environment. Some refer to what has come to be known as 'hospitality healthcare design' of the 1980s as healing environments and, certainly, the concept of treating the patient as a guest has been a significant contribution. However, while some hotels have a high level of design that may be aesthetically appealing, they generally lack the qualities that one would consider to be restorative or conducive to physical, emotional and spiritual healing.

It can be said that the significant emotional events that occur in the hospital setting have no parallel in the hospitality industry. In fact, hospital experiences can be so traumatic that they are ingrained into patients' memories, elevating these experiences to what might be described as 'sacred' status. Yet the box-like rooms, clutter, procedure rooms and corridors that seem to run infinitely, fail to convey



this sacredness of purpose. If all we aspire to is repairing broken body parts, then these are adequate to accomplish the task. However, if the goal is to integrate mind, body and spirit – to restore balance – then the image of a healing temple comes to mind. The word healing, in fact, is derived from the Anglo-Saxon word *haelen*, and means “to be or become whole”. All of the environmental and clinical issues that contribute to a healing or restorative environment are focused on facilitating patients’ movement towards wholeness and balance.

In short, the term ‘healing environment’ describes a physical setting and organisational culture that is psychologically supportive, with the overall goal of reducing stress in order to help patients and families cope with illness, hospitalisation and, sometimes, bereavement. It provides opportunities for patients to exercise control, to express themselves, and to partner with care givers in learning about their illnesses and treatment options and it offers life-enhancing experiences for enrichment, laughter, relaxation and spiritual renewal. Underlying this philosophy is the belief, supported by research, that these factors play a considerable role in the healing process. It can be thought of as a tightly-woven tapestry of building design, care giver attitudes, family support, integration of the arts and access to nature.

The physical setting has the potential to be therapeutic if it achieves the following:

- eliminates environmental stressors such as noise, glare, lack of privacy and poor air quality;
- connects patients to nature with views to the outdoors, interior gardens, aquariums, water elements, etc.;
- offers options and choices to enhance feelings of being in control – these may include privacy versus socialisation, lighting levels, type of music, seating options, quiet versus ‘active’ waiting areas;
- provides opportunities for social support – seating arrangements that provide privacy for family groupings, accommodation for family members or friends in treatment setting; sleep-over accommodation in patient rooms;
- provides positive distractions such as interactive art, fireplaces, aquariums, Internet connection, music, access to special video programmes with soothing images of nature accompanied by music developed specifically for the healthcare setting; and
- engenders feelings of peace, hope, reflection and spiritual connection and provides opportunities for relaxation, education, humour and whimsy.

Competing by Design

When CHD launched its ‘Pebble Project’ in 2000, what was initially intended to create a ripple in the healthcare industry turned out to have a far greater impact than anticipated. The name derives from the fact that a pebble, when tossed into a pond, creates a ripple affecting the entire body of water. In the healthcare arena, it is often a small demonstration project that leads to major change, such as the original Planetree project, a 13-bed medical/surgical unit, which, in the early 1980s, led to the enormous patient-centred care revolution. The Pebble initiative allows a number of innovative healthcare providers to team up with CHD to produce research and document examples of how the built environment can positively affect the quality of healthcare and the financial performance of the organisation.

CHD’s Board of Directors and Research Council provide guidance to the Pebble Project Partners and have developed a research matrix to assure uniformity in study design methodology and measurement with the goal of producing a significant body of evidence-based research. This matrix should help chief executive officers (CEOs) and Boards of Trustees to address the issue of whether they can afford to design facilities as healing environments. In just two and a half years, compelling data from the Pebble Project Partners indicates that competing by design is a powerful strategy for savvy healthcare executives who want to maintain high staff and patient satisfaction scores while, at the same time, strengthening the bottom line.

Pebble Project Partners Prove that Design Matters

The four original Pebble Project Partners, whose research is discussed below, have recently been joined by Weill Cornell Medical Center (New York City), St Alphonsus Regional Medical Center (Boise, Idaho), Southwest Washington Medical Center, (Portland, Oregon and Vancouver, Washington) and Froedtert Memorial Lutheran Hospital (Milwaukee, Wisconsin).

Methodist Hospital, Clarian Health Partners (Indianapolis, Indiana)

Project: Cardiac Comprehensive Critical Care (56-bed unit)

Project Director: Ann Hendrich

Walking through the completed project, which opened in 1999, one experiences an environment that resembles a four-star hotel – it is unlike the layout and design of any other intensive care unit. Beyond the aesthetics of the design lies a formidable body of research. Noting that critical care patients are often moved three times during their stay to adjust

for changes in acuity, Hendrich analysed up to 18 separate steps involved in patient transport (see *Figure 1*), costing the hospital in excess of US\$17 million annually (see *Table 1*), and costing the patient even more in the disruption of care.

To solve this problem, a large patient room that could adjust for acuity was designed, with equipment that tucks away out of sight until needed. A sizable quadrant of the room is used as a ‘living room’ for family. Nurse servers place supplies in the patient room to avoid the 26 miles per day (per nurse) of walking that characterised life in the former unit.

Hendrich’s research also examined the source of bottle-necks that plague most hospitals. The emergency department gets backed up because patients cannot get a critical care bed when needed and patients are stacked up in the post-anaesthesia care unit for the same reason. Transferring patients from critical care to a step-down unit involves a tremendous waste of resources (see *Figures 2 and 3*). The following represent a sample of the results of this research:

- patient transport reduced by 90%;
- patient/family dissatisfaction reduced from 6.7% to 2.7%;
- patient days per bed increased from 320 to 345;
- falls decreased 75% due to the unit’s decentralised design, permitting better observation; and
- medical errors decreased.

Barbara Ann Karmanos Cancer Institute, Detroit Medical Center (Detroit, Michigan)

Project: 15,000 SF Renovation of Nursing Units

Project Director: Dore Shepard, Administrative Manager

Implementing healing environment design concepts in the renovation of in-patient nursing units resulted in the following:

- 18% increase in patient satisfaction;
- lower daily variable costs;
- nurse attrition rate fell from 23% to 3.8%;
- decrease in pain medication requirements;
- decrease in medication variances; and
- with the same sickle-cell patient population, staff and clinical protocol, and with data gathered on the former nursing unit versus the ‘healing environment’, there was a 53% decrease in pain, which led to a reduction in the overuse of pain medication.

Children’s Hospital and Health Center (San Diego, California)

Project: Children’s Convalescent Hospital
Project Leader: Blair Sadler, President and CEO

Dedicated to the care of medically fragile children with complex chronic conditions often resulting from cerebral palsy and birth defects, the 59-bed skilled nursing facility is ‘home’ to the children who reside there. The outdated existing facility is being replaced by a new US\$25 million building with planning driven by evidence-based design.

Two unique components are: emphasis on understanding how organisational behaviour changes as a result of the planning and design process and development of a standardised evaluation methodology

Figure 1: Moving the Patient – Process Steps

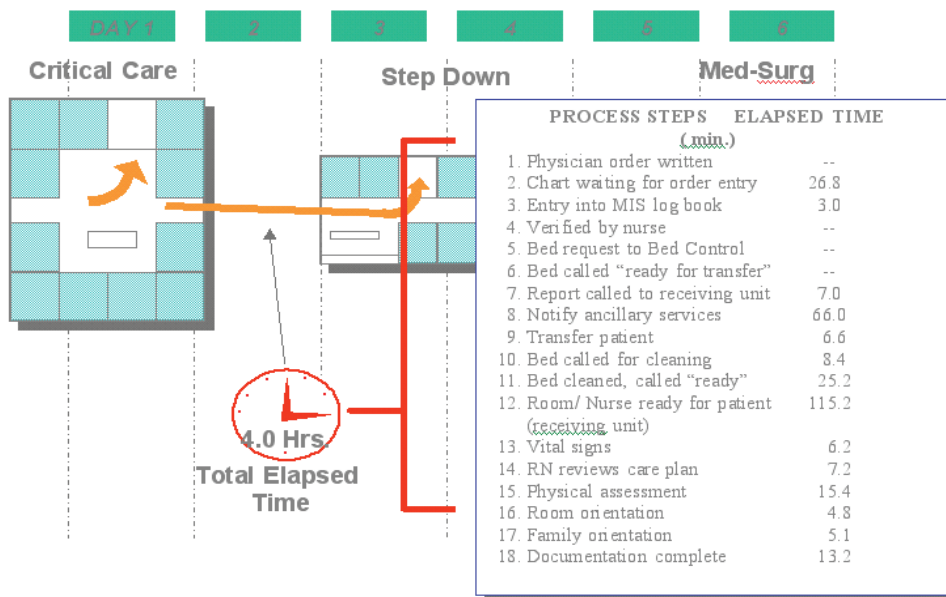


Diagram courtesy of Ann Hendrich, MSN, RN

Table 1: Patient Transfer Study Results

Total annual no. of transfers	76,585 (does not include procedural transfers)
Average no. of transfers per day	210
Average no. of staff involved	95 full-time equivalent per day
Average staff time diverted from home unit	88 minutes transfer
Time	
Average duration of transfer	382 minutes (minimum 25, maximum 48 hours)
Average direct labour	150 minutes
Average holding	225 minutes
Cost (Total Hospital)	
Annual total cost of transfers	US\$17,504,356
Average transfer cost per day	US\$47,957
Average cost per transfer	<ul style="list-style-type: none"> • Direct 77.77 • Indirect 48.88 • Holding 101.90
	Total US\$228.56

Table courtesy of Ann Hendrich, MSN, RN

enabling a comparison of outcomes leading to best practices. It is unusual to be able to gather data on the same patients and staff in the old facility versus the new environment. Furthermore, if one can measure positive changes in children who are, for the most part, incapable of expressing themselves, it may be possible to generalise to other patient populations that the built environment indeed makes a difference. The quality and character of the research initiatives under way at Children’s Hospital and Health Center are indeed impressive and cannot begin to be summarised in this article, however, extensive interviews with parents and staff resulted in the patient room depicted in *Figure 4* and the family living room in *Figure 5*.

Bronson Methodist Hospital (Kalamazoo, Michigan)

Project: Replacement of in-patient tower and new ambulatory care centre
 Project Leader: Frank Sardone, President and CEO

The idea of building a healing environment captured the imagination of Frank Sardone and the result is an in-patient tower with a horticultural garden and fish-pond in the main foyer, intuitive way-finding throughout the building, all private patient rooms, integration of the arts as part of the patients’ experience, natural light penetrating most areas of the building and an overall level of design that comforts and enriches the daily experience of staff, patients, and families. Since opening the new facility in November 2000, the following observations have been documented:

- nursing vacancy rates are half the state average;
- patient transfers have decreased due to private patient rooms;
- market share increased five points in one year;
- in 2001, there were 1,000 more year-to-date admissions than in the previous year; and
- patient sleep quality has increased due to private rooms.

A Bright Future

Despite the vagaries of healthcare finance, it is encouraging to note that philanthropy can play a major role in helping to fund healing-environment design initiatives. Donors, given an opportunity to underwrite such a compelling vision, often contribute

Figure 2

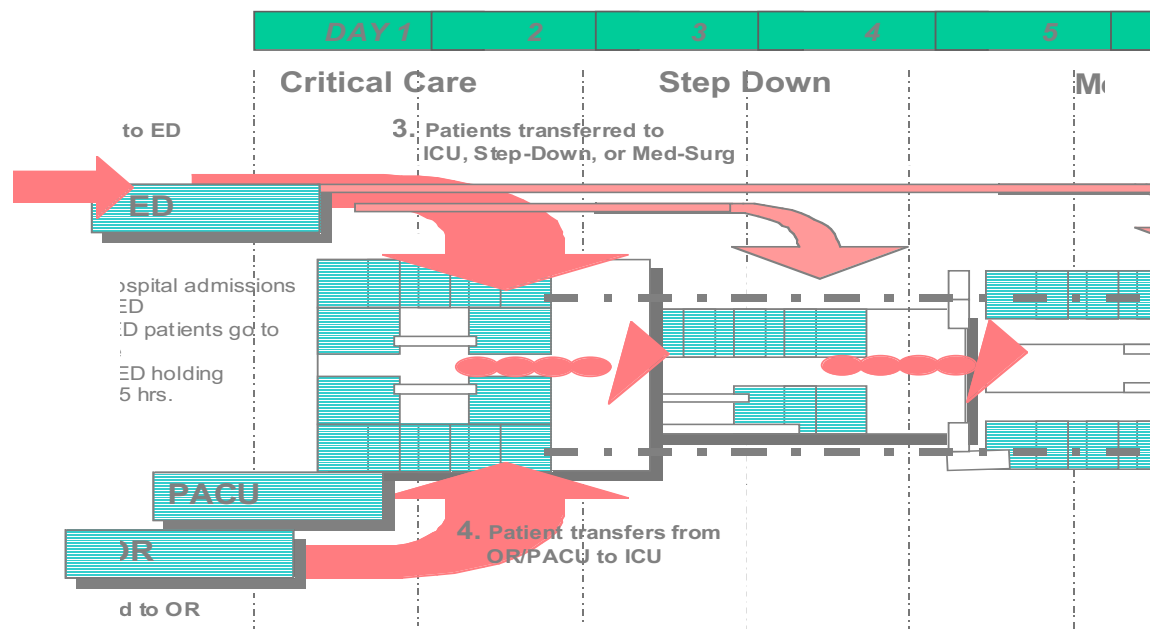


Diagram courtesy of Ann Hendrich, MSN, RN: Source: SCCM survey, 02-2000, ICU Admissions and Discharges.

Figure 3

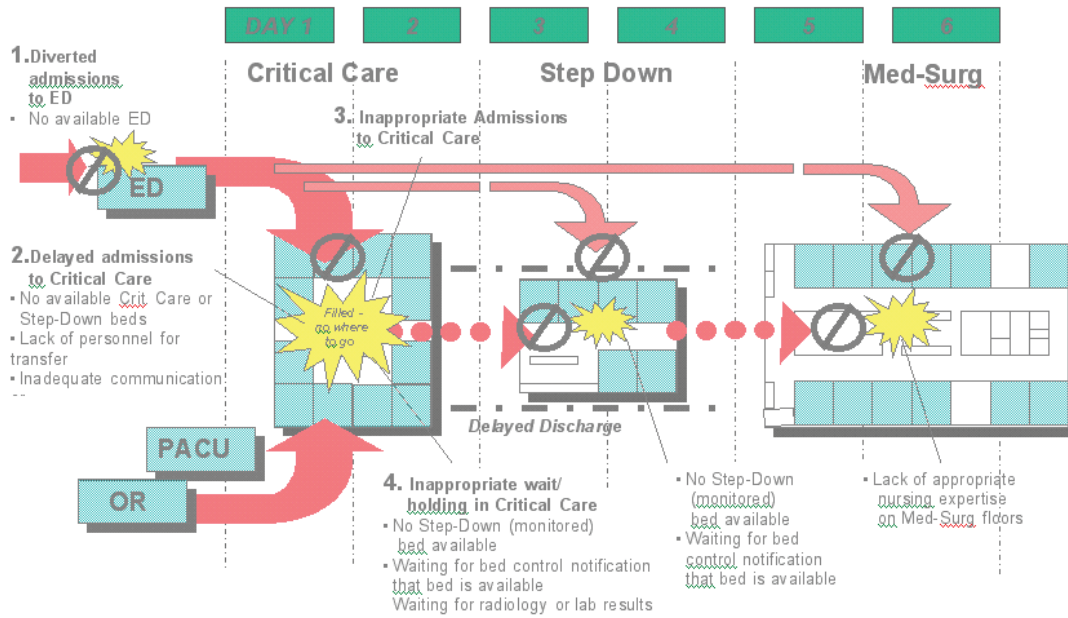


Diagram courtesy of Ann Hendrich, MSN, RN

considerably more than when they are asked to sponsor more traditional healthcare projects. The CEO of the Children’s Hospital and Health Center, Blair Sandler, a long-time advocate of healing-environment design, noted that philanthropy increased from US\$6 million to US\$14 million per year. At another hospital, an out-patient breast-care centre located in a hospital-based medical office building, cost US\$1 million to build (8,500 SF) and brought in US\$7 million in philanthropy due to the unique design, competent clinical staff and the optimal patient experience that was carefully crafted from it.

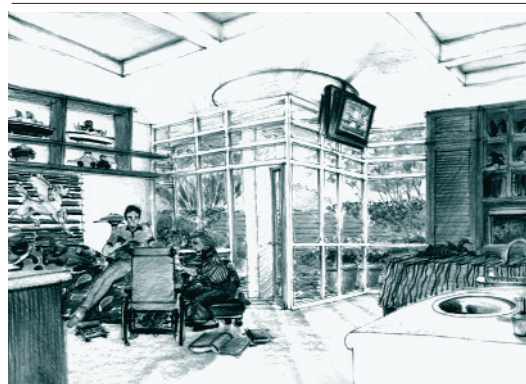
According Mr Sadler:

“The lesson for all healthcare organizations is clear: provide an environment that is welcoming to patients, that improves their quality of life and supports families and employees – or suffer the economic consequences in a competitive environment.”

Conclusion

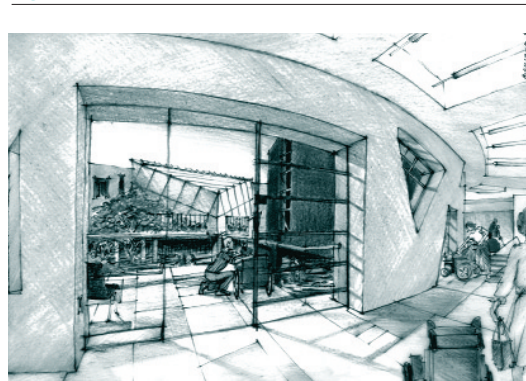
An unprecedented amount of new construction will occur in the US and the UK in this decade to replace old structures that are no longer economically viable to renovate. The California State Senate Bill 1953 (SB-1953) obligates hospitals to retrofit or replace structures that fail to meet seismic standards by 2008, with some recent leniency, some of which may extend to 2013. With billions of dollars at stake, it would be wise to avoid costly mistakes such as

Figure 4



Rendering courtesy of Anshen and Allen Architects

Figure 5



Rendering courtesy of Anshen and Allen Architects

spending money on design features that do not actually contribute to a patient’s well-being or promote healing. ■