

HYPOTHESIS

Salutogenesis: The Defining Concept for a New Healthcare System

Wayne B Jonas, MD, *United States*; Ronald A Chez, MD, *United States*; Katherine Smith, MPH, *United States*; Bonnie Sakallaris, PhD, *United States*

Author Affiliations

Samueli Institute,
Alexandria, Virginia.

Correspondence

Wayne B. Jonas, MD
wjonas@siib.org

Citation

Global Adv Health Med.
10.7453/gahmj.2014.005

Disclosures

The authors completed the ICMJE Form for Disclosure of Potential Conflicts of Interest and report no conflicts of interest. The opinions or assertions contained herein are the private ones of the author(s) and are not to be construed as official or reflecting the views of the institutions with which the authors are affiliated.

Key Words

Healing, patient-centered care, integrative health care, salutogenesis

INTRODUCTION

A decade ago, we published several articles that described our definitions of healing and of healing-oriented practice and environments (HOPE) and how they are organized to create an optimal healing environment (OHE) as they apply to healthcare. We also provided a description of the seven domains and their elements that constitute an OHE.¹ In the ensuing years, the accumulation of scientific evidence and the changes in healthcare delivery brought on by health reform have reinforced the importance of an OHE as the preferred clinical approach to patient care by individual health practitioners and healthcare institutions. Some elements in our OHE definition have been incorporated into the operations and best practices of several medical institutions and into large systems in their attempts to transform from disease treatment to health and healing.² However, in our field studies and evaluation of the literature, we have not found a complete prototype of an optimal healing environment that fulfills our definition and criteria. This is not a criticism. Rather, it is a comment on the reality and exigencies that exist when medical organizations take on the task of changing their culture and philosophy of care. To help healthcare organizations move toward becoming OHEs, we have developed research and educational tools for making a culture change toward institutionalizing healing as a way of practice.

In this article, we present an updated and expanded version of the OHE definition based on published data and solicited input from a large number of scientists, providers, and patients. We bring to the forefront the concept of “salutogenesis” as the foundational principle for producing healing and well-being in healthcare and provide further clarification of the domains of an OHE with examples of clinical and economic outcomes from approaches used successfully in each domain.

SALUTOGENESIS

We now posit and include an anchoring principle that unifies all dimensions of healing and human flourishing, regardless of the framework used to organize the principle. This is the concept of *salutogenesis*, defined as the process of healing and health creation. Salutogenesis is the reverse process to *pathogenesis*, the process of disease, illness generation, and breakdown of function. Medicine teaches and organizes its activities from research to reimbursement on *pathogenesis*. The new healthcare system must do the same for *salutogenesis*.

Antonovsky first introduced the salutogenic term and concept to the scientific world more than 3 decades ago. Antonovsky’s idea was to focus on people’s resources and capacity to create health rather than the classic focus on risks, ill health, and disease.^{3,4} Antonovsky’s concept of salutogenesis was described primarily as a psychological construct and a stress-buffering resource, cohering to what he called the sense of coherence (SOC). SOC allowed the person to maintain and move toward health even in the midst of trauma and change. In today’s terms it might be defined as a “resilience” factor.

We believe, however, that the term *salutogenesis* is better used in a broader, more holistic context to apply to the general process of healing in all dimensions of a person—body, mind, social, and spirit. From this context, our definition of healing is “the processes of recovery, repair, renewal, and reintegration that contribute to a whole person’s (physical, mental, social, and spiritual) health and well-being.” Defined in this way, healing processes are preventive (help retain health and build resilience), restorative (accelerate and facilitate recovery), and palliative (maximize function and well-being) even when recovery and cure are not possible. The concept also goes beyond the original psychological construct to form the foundation for a model of medical care built on health creation and not only the mitigation of disease.

Healing is a process that emerges from the whole person and is maximized when the practices and environments are present to support it. We call these healing-oriented practices and environments (HOPE). When HOPE elements are implemented in a complete manner and are integrated with biomedicine, one has an OHE. Importantly, healing may or may not result in cure, and cure may or may not result in healing.⁵ Healing and cure are mutually complementary, and both are essential. Thus, for good healthcare, they must be integrated. Dealing with the disease is the business of medical care. It is done in the healthcare delivery space—in the office, clinic, or hospital. The enhancement of healing processes is the business of us all. It occurs in the context of relationships in the life space—at home, school, work, in a clinic, or in a community.

With this expanded use, salutogenesis then becomes the foundation for developing a new approach to healthcare, one that is responsive to our current and projected needs. An OHE becomes a framework for the application of salutogenesis in healthcare settings. We

prefer this framework over others such as the patient-centered medical home or P4 Medicine because it is comprehensive and can be used to map and leverage many other models seeking to move from disease care to health creation. For example, it can and has been effectively applied to the development of multiple other frameworks of whole system health creation such as Total Force Fitness in the military,⁶ the patient-centered medical home,⁷ person-centered care, Optimal Healthy Workplaces in the corporate sector,⁸ and the National Prevention Strategy.⁹

OPTIMAL HEALING ENVIRONMENTS

With salutogenesis as its foundation, our current expanded definition of an OHE is “a system and place comprised of people, behaviors, educational activities and interventions, and their psychological and physical parameters.” Its purpose is to provide conditions that stimulate and support salutogenesis and the inherent healing and wellness capacities of the participants. In short, it is a place that delivers HOPE (healing-oriented practices and environments) and integrates them into all aspects of care. OHE is an organizing concept or heuristic framework that is applicable to all health professionals, patients and their families and significant others, healthcare organizations, and healthcare systems. Consistent with its preventive, restorative, and palliative role, it is also adaptable to schools, work-sites, and community locations. It is a way of connecting the core concept of salutogenesis to many models of healthcare and service deliveries that share similar goals and philosophies. Such models include relationship-centered care, patient-centered care, family-centered care, holistic care, integrative medical care, the medical home, and worksite wellness and optimal learning environments.¹

This updated version of OHE is grounded in what we now know are the core elements of human flourishing. Once people have the requirements of survival (what Maslow called the “basic and physiological requirements” of food, water, safety, and shelter), the next level for self-actualization and human flourishing involves an additional set of basic needs common to all people. These needs are psychological resilience, social cohesion, physical movement and rest, healthy exposure to substances in the diet and environment, and meaningful activity that contributes to society beyond oneself. We call these the pillars of human flourishing, and they create the framework for understanding an OHE¹⁰ (Figure 1). These pillars facilitate human flourishing via the emergence of the optimal level of human functioning under any circumstances. The presence of these pillars allows the development of optimal performance, productivity, creativity, and pursuit of happiness and virtue.

Based on the above, we have adjusted the OHE framework for healthcare systems to consist of four domains or “environments” that individually and inter-dependently facilitate healing and well-being. Some

aspect of each of these domains already exists in our current healthcare, worksite, educational, and community systems and therefore can be mobilized to function cohesively.¹ Each of the domains is relevant to healthy people, to patients and their significant others, for individual practitioners, healthcare teams, and healthcare systems as a whole. That is, they are relevant across the full spectrum of our lifespan and generations.

The four domains are the:

Inner Environment with the two constructs “healing intention” and “personal wholeness”;

Interpersonal Environment with the constructs of “healing relationships” and a “healing organization”;

Behavioral Domain with the constructs of “healthy lifestyle” and “integrative healthcare”; and

External Environment with the constructs of “healing spaces” and “ecological sustainability.”

The following is a brief description of each of these four domains and eight constructs of an OHE (Figure 2).

THE INNER ENVIRONMENT

All healing starts with, and is maintained by, intention and expectation. Intention and expectation determine both what we are looking for and what we see. Healing intention is defined as “the conscious and mindful determination to improve the health of oneself or another.” Too often, a person with a chronic disease has a low expectation that healing can take place.¹¹ It is through the conscious development of awareness, expectation, intention, and belief by the patient, their significant others, and the healthcare team that well-being and health goals can be achieved even when cure is not possible. The evidence for the impact of intention and expectation on health outcomes is most apparent in the placebo literature. This growing body of literature documents the power of hope, expectation, and belief on pain, performance, mental conditions, and mortality.^{12,13}

The inner environment of the OHE framework organizes these placebo components and their underlying mechanisms of “meaning and context” to maximize their healing potential.^{14,15}

Techniques and approaches that facilitate healing intention include mind-body practices, medical rituals such as the office visit and healing circles, guided imagery, spiritual practices, and religious practices including prayer.¹⁶ As an example, educational programs on the use of mindfulness for health providers, patients, and their families have been successful in enhancing recovery and the experience of wellness, wholeness, and a meaningful, productive life.¹⁷⁻²¹

Personal wholeness is defined as “the experience of well-being that occurs when the body, mind, and spirit

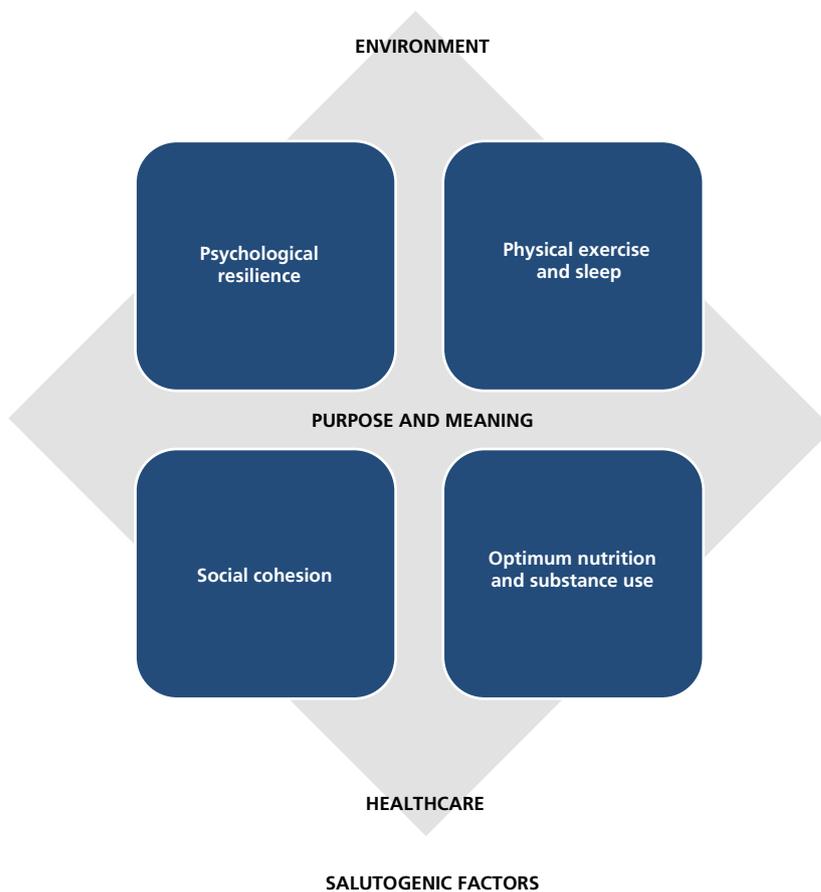
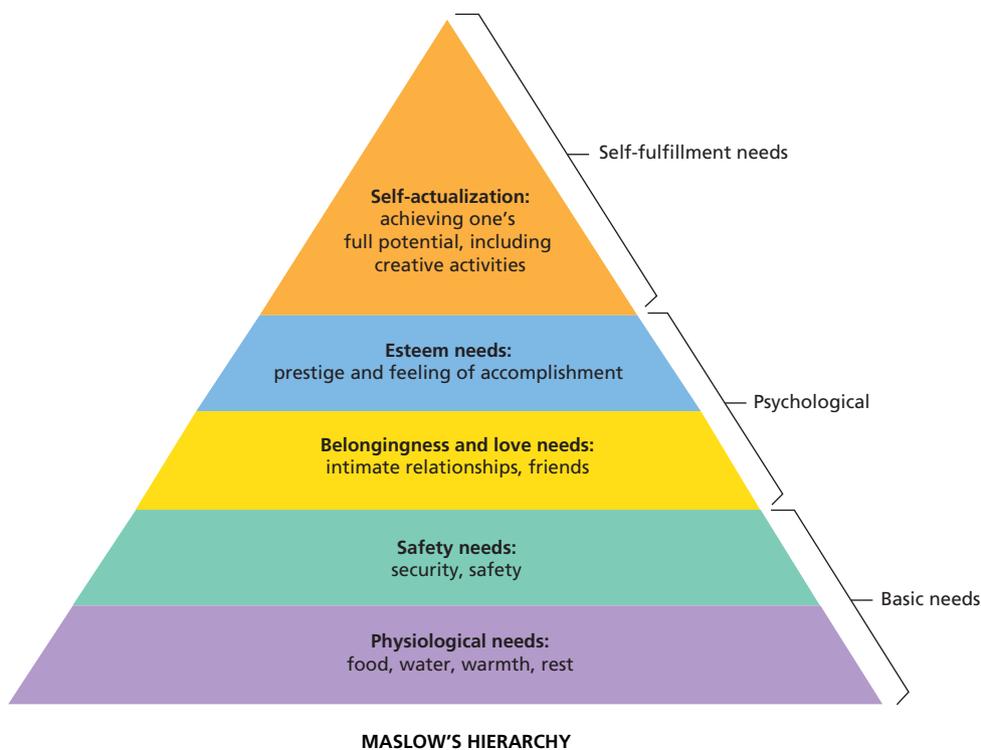


Figure 1 The core components of human flourishing.

OPTIMAL HEALING ENVIRONMENTS
 Making Healing as important as Curing

An Optimal Healing Environment is one that supports and stimulates patient healing by addressing the social, psychological, physical, spiritual, and behavioral components of health care and enabling the body's capacity to heal itself.

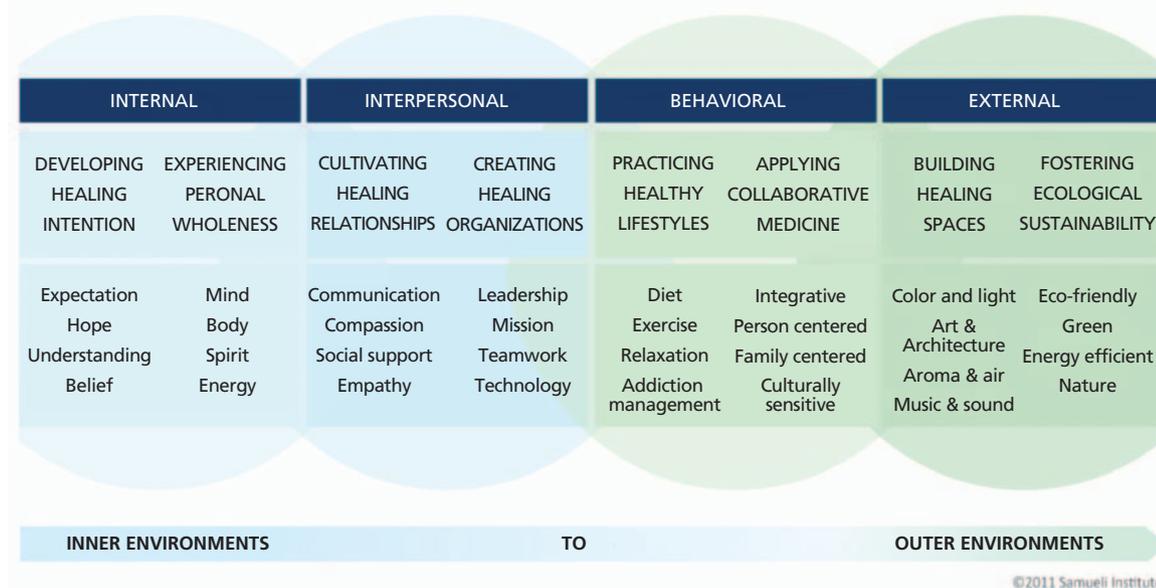


Figure 2 The domains of an optimal healing environment.

are congruent and harmonious.” An OHE includes techniques for self-care and mind-body-energy practices. A healing presence can emerge from these techniques, and is defined as “a deep emotional state and physical awareness of being fully present and whole.” Healing energy is the sensation of a force that occurs when the body and mind are at peace and working harmoniously. The patient’s personal wholeness results in the actual experience of healing and well-being and not just in their cognitive understanding.^{22,23} Modalities that can induce this experience include meditation, yoga, tai chi, Reiki, healing touch, journaling, and various forms of artistic media. Examples that have been employed include workshops on yoga practices for both cancer patients and oncology staff,²⁴⁻²⁶ imagery tapes for pre and post-operative recovery,²⁷ and hypnosis.²⁸ The addition of cultural, ritual, spiritual, and/or traditional religious practices and programs also have been successful in fostering this sense of expanded awareness and connectivity to the world²⁹ and in accelerating recovery.^{28,30}

THE INTERPERSONAL ENVIRONMENT

The interpersonal environment focuses on the domain where individuals relate to others. Cultivating healing relationships is an extremely powerful way to stimulate recovery and to support and maintain wellness. Healing relationships are defined as “the connections and interactions between persons who hold an intention for healing and well-being to occur.” They are intentional and covenantal in nature, are grounded in trust, involve both positive and authentic emotional engagement, and are mutually beneficial. These rela-

tionships foster a sense of belonging, of feeling like being home and being known, and involve social and emotional support and social coherence, and create an experience of wholeness. Healing relationships are cultivated through effective communication, empathy, and trust—all skills that can be taught and learned.³¹ In the medical setting, this domain of an OHE supports the therapeutic alliance essential to optimal participation, compliance, and recovery. Approaches and techniques that facilitate this occurring are derived from family-centered, person-centered, and/or relationship-centered care; peer-to-peer coaching; and communication skills training. One example is the Four Habits model that involves the use of empathy and communication training for clinicians with poor patient satisfaction scores.^{32,33} Another example is the Caritas training of Jean Watson based on her Caring Science model of nursing.³⁴

Healing relationships occur mostly outside of clinical relationships, within the family’s and patient’s social support system. There is extensive evidence documenting the impact of a person’s social support system on mortality and morbidity.^{32,33} An OHE enhances social support systems by creating spaces that allow family participation in care and models of care that are patient- and family-centered.

Connecting the clinical and non-clinical spaces is another aspect of healing relationships that relates to the patient’s family, close friends, and significant others in their critical role of caregivers. These individuals, when properly educated about the healing process and its timeline, are in a position to provide assistance and coordinate care for the patient, to make appropriate

decisions as a surrogate of the patient, to identify and use community agencies and services and to serve as knowledgeable informants to the clinician. They are an integral member of the care team and thus crucial to the patient's overall support system and well-being.³⁵⁻³⁷

When healing relationships are embedded into the culture and leadership of an organization, it is possible to have a healing organization. Healing organizations create an expectation that staff are knowledgeable, skilled, caring practitioners who demonstrate mutual respect, practice honest communication, refer appropriately, share a commitment to the concept of healing, work as a team, create integrated plans of patient care, and focus on treating the whole person regardless of their individual specialty training.³⁸

Healing organizations have the ability to implement effective and efficient integrative care teams and to provide a range of interconnected services that support patients and their families seamlessly throughout the continuum of care. This is accomplished through transformational and mindful leadership, a clear and focused mission and values statement, and formal policies embracing a healing environment and fostering healing behaviors. A healing organization adopts a philosophy of person-centered care and participatory teamwork and provides the technology, equipment, facilities, and supplies that support healing practices and regular monitoring, evaluation, and continuous improvement.² These types of clinical teams are shown to cut costs, improve clinical outcomes, reduce mortality, enhance staff morale, and improve patient satisfaction.^{39,40}

THE BEHAVIORAL ENVIRONMENT

Healthy lifestyles are defined as “self-care behaviors that promote healthy habits and prevent future development of disease.” The elements of a healthy lifestyle are well known and include healthy eating, regular exercise, stress management and relaxation techniques, and a balance between work, family, and leisure activities. It also includes attention to managing negative behaviors and addictions as to alcohol and tobacco, unhealthy sexual behavior, and violence.^{41,42}

An OHE provides programs to support the adoption of healthy habits by patients, families, the medical team, and the community at large. Techniques to accomplish this include access to individual and group health and nutrition educational programs such as “teaching kitchens,” onsite fitness facilities, stress-management workshops, family and child care classes, and the use of support networks to model and practice social coherence. One example is the offering of self-care classes to employees and dedicated space for doing group visits where patients and families can learn about weight and stress management and addressing other needs such as practicing mind-body techniques during work breaks.^{43,44}

Integrative healthcare is the “organized matching of treatment strategies derived from a variety of medical care systems including conventional medicine, comple-

mentary and alternative medicine, traditional and folk medicine, and holistic medicine.” It is the coordinated application of preventive and treatment modalities for a patient's therapeutic needs that support and stimulate inherent healing and self-recovery capacities.^{45,46}

An OHE supports the use of integrative healthcare by making available pluralistic care delivery models, training clinicians to select the most appropriate intervention regardless of origin, providing onsite complementary and alternative practitioners, and creating a system to track the safety, effectiveness, and costs of a patient's regimen. Examples include the purposeful weaving of inpatient complementary medicine practices into the fabric of patient services that are available for ordering by the physician. Examples include acupuncture for pain and postoperative nausea,⁴⁷ aromatherapy for sleep,⁴⁸ safe and effective supplements and herbal treatments, and healing touch for anxiety.⁴⁹

THE EXTERNAL ENVIRONMENT

The external environment forms the last domain of an OHE and encompasses the constructs of healing spaces and ecological sustainability. Healing spaces facilitate the other components of healing and can have direct healing effects themselves. Healing spaces provide access to nature and use music, art, color, and aroma (and odor control) to invoke the relaxation response and set a positive tone. Skillful use of technology to decrease noise and provide or mimic natural light patterns is critical to protecting circadian rhythms. There are many examples of clinical and living space design that facilitate healing by decreasing adverse events such as strategic location of the headwall in private rooms, room locations that minimize distance for the care provider, and designated space for family participation and closeness to the patient. Designs that optimize activity and exposure to nature include healing gardens, walking paths, and orienting landmarks.⁵⁰

Ecological sustainability refers to actions that reduce the waste, toxic materials, and carbon footprint of healthcare facilities and support the health of the planet. In an OHE, clinicians, staff, and administrators consider the impacts of their facilities' construction and maintenance and the diagnostic and therapeutic choices on local and global environments. An OHE supports practices that reduce energy use and chemical impact, conserve resources, and prevent pollution. Ecologically sustainable choices promote public and environmental health. Approaches include minimizing patient and staff exposure to chemicals, contaminants, and toxic substances by setting up solid waste reduction programs, offering pollution prevention recycling education and opportunities, replacing resource-intensive products with ecologically friendly ones, and engaging with the local community farmers' markets. Examples include building Leadership in Energy and Environmental Design (LEED)-certified buildings throughout a hospital system, establishing green teams with representatives for hospitals and

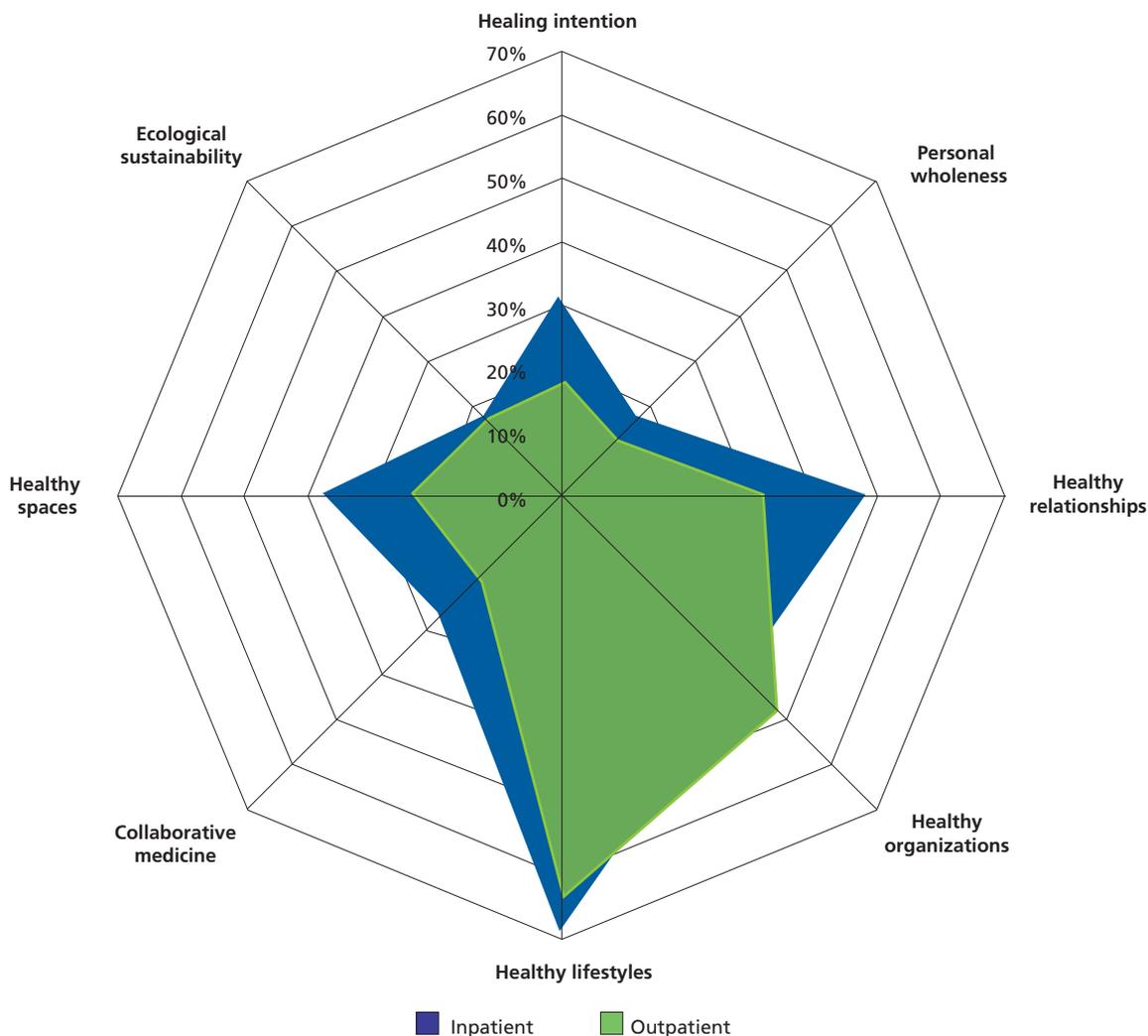


Figure 3 Optimal healing environment survey.

medical offices, and creating sustainability standards for purchasing that take into account the entire life cycle of products from production to disposal.^{51,52}

MEASURING HOPE

Over the last decade, Samueli Institute has developed tools for the assessment and improvement of healthcare practices in any organization that seeks to become a full OHE. These tools provide a comprehensive snapshot of current healing-oriented practices and environments (HOPE) in any organization and also show the cultural penetration and readiness for change in the organization to move toward delivery of salutogenesis. Figure 3 illustrates a “radar map” from one such assessment. When accompanied by a detailed report, this information demonstrates the strengths and weakness of an organization in its current efforts to deliver HOPE and where the maximum value for investment and process improvement will occur.

Why Should We Care About Salutogenesis?

We recognize there can be barriers to introducing and sustaining HOPE in a health center. Healing

research is a relatively immature field just now coming into its own. There are questions about the availability of supporting evidence-based data, and the reliability and validity of conventional health measures in the context of a healing environment. High-tech care is still valued over high-touch care by many. There is a lack of consensus of what defines and constitutes integrative medicine. The Affordable Care Act often leaves major questions about if and how healing behaviors and practices will be covered in benefits and where along the spectrum of care they will be supported. Thus, health-care organizations can be reluctant to invest in developing and delivering them.

On the other hand, there are important reasons for creating an OHE. Our population is both aging and expanding as life expectancy increases and as the Baby Boomers fuel growth in the 65-years-and-older age segment. For almost all people, aging is inevitably associated with chronic health conditions and disabilities. Most chronic diseases cannot be cured. Thus, once they occur, they are constantly present in a person’s daily life as are their therapeutic interventions. Accordingly, the focus of the practitioner-patient dyad must be on

Table The Growing Business Case for Creating HOPE and an OHE

Outcome Domain Activities	Quality	Safety	Satisfaction	Cost/Cost-avoidance
Inner Environment				
Mindfulness Meditation	Improved patient self-reported physical and mental health status ^{60,64,65} ↓ pain ^{66,67} Improved sleep ⁶⁸	↓ diagnostic error ⁶⁹⁻⁷¹	Improved patient and provider self-reported physical and mental health status ^{60,64,65} ↑ patient and provider satisfaction ^{60,72,73}	↓ provider burnout ⁶⁰ ↓ diagnostic errors ⁶⁹⁻⁷¹ ↓ relapse or recurrence rates in patients with major depression ^{65,74}
Nurse Transformation Programs	↓ infection rates ²	↓ prescription errors ² ↓ patient falls ²	↑ patient and staff satisfaction ² ↓ nurse turnover and vacancy ²	↓ use of sleep and other medication ² ↓ medication errors and patient falls ² ↓ nurse turnover, vacancy, and agency usage ²
Interpersonal Environment				
Healing Relationship Training Programs	Improved patient-provider relationships ⁷⁵⁻⁷⁷ ↑ nurse and physician efficiency ⁷⁸ ↓ use of call lights ⁷⁸	Improved ability for staff and patients to speak up ⁷⁹ ↓ patient falls ⁸⁰ ↓ skin breakdowns ⁸¹	↑ patient and employee satisfaction ^{79,80,82,83} ↓ patient stress, anxiety, and pain ^{84,85} ↓ provider depression, stress, and burnout ⁸⁶⁻⁸⁸	↑ nurse efficiency ⁷⁸ ↓ physician, nurse, and executive replacement costs ^{2,83} ↓ patient falls and skin breakdowns ^{80,81} ↓ pain and sleep medications ⁸⁴ ↓ medical legal claims ⁷⁶
Healing Relationships at Work	Improved worker engagement and work quality ^{89,90}	↓ on the job injuries ^{89,90}	Improved worker engagement and well-being ^{89,90}	↑ productivity ⁹¹ ↓ injuries on the job ^{89,90}
Organizational Teamwork Model	↑ provider efficiency ⁵⁹ ↓ mortality/death rates ^{92,93}		↑ patient and staff satisfaction ⁵⁹	↑ provider efficiency ⁵⁹
Patient- and Family-Centered Care	↓ length of stay ^{52,53} ↓ ER return visits ⁵³	↓ medication errors ⁵³ ↓ adverse events ⁵³	↑ patient and provider satisfaction scores ^{52,53} ↑ patient and family self-efficacy and empowerment ⁵³ ↑ staff retention ⁵³	↓ absenteeism ⁵³ ↓ turnover ⁵³ ↓ length of stay ^{52,53} ↓ ER return visits ⁵³ ↓ medication errors ⁵³ ↓ adverse events ⁵³ ↓ medical legal claims ⁵³ Increased revenue from: ↑ inpatient volume ↑ outpatient volume ⁵³
Behavioral Environment				
Lifestyle Modification	↑ work productivity ⁴¹			National savings due to: ↓ utilization of health care services and expensive medical procedures ^{94,95} ↓ lost productivity costs ⁴¹
Chronic Disease Healthy Lifestyle Self-Management Initiatives	Improved health behaviors and self-reported health status ^{96,97} ↓ pain ⁹⁶		Improved self-reported health status ^{96,97} ↓ pain ⁹⁶	↓ utilization of health care services ⁹⁶ ↓ length of stay ⁹⁷
Worksite Wellness Programs	Improved health behaviors ^{44,54} ↓ health risks ^{44,98}	↓ on the job accidents ⁹⁹	↑ employee morale ¹⁰⁰ ↓ turnover ¹⁰⁰	↓ medical, disability, and workers' compensation costs ^{54,62} ↓ employee turnover, absenteeism, and lost productivity costs ^{54,62} Overall ROI estimated at \$1.44 to \$9.00 for every dollar invested ^{100, 62}
Integrative Medicine	Improved self-reported health status ⁶¹ ↓ pain ¹⁰¹ ↓ length of stay ¹⁰²		Improved self-reported health status ⁶¹ ↑ patient satisfaction ¹⁰³ ↓ pain ¹⁰¹ ↓ utilization of healthcare services ¹⁰⁴	↓ utilization of healthcare services ¹⁰⁴ ↓ length of stay ¹⁰⁴ ↓ pharmaceutical costs ^{61,104} ROI for cost of inpatient hospital stay estimated at \$1.82 for every dollar invested ¹⁰⁵

Table The Growing Business Case for Creating HOPE and an OHE (cont.)

Outcome Domain Activities	Quality	Safety	Satisfaction	Cost/Cost-avoidance
External Environment				
Evidence-based Design (EBD): Exposure to Light and Appropriate Lighting	↓ pain ⁵⁵ ↓ length of stay ⁵⁵ Improved staff effectiveness ⁵⁵ Improved patient sleep ⁵⁵	↓ patient falls ⁵⁵ ↓ prescribing and dispensing errors ⁵⁵	↓ patient and staff satisfaction ⁵⁵ ↓ patient and staff stress ⁵⁵ ↓ patient depression and seasonal affective disorder (SAD) ⁵⁵	↓ pain and other medication costs ⁵⁵ ↓ patient falls ⁵⁵ ↓ medical errors ⁵⁵ ↓ length of stay ⁵⁵ Improved staff effectiveness ⁵⁵
EBD: Nature	↓ pain ⁵⁵ ↓ length of stay ⁵⁵		↑ patient and staff satisfaction ⁵⁵ ↓ patient and staff stress ⁵⁵ ↓ patient depression ⁵⁵	↓ length of stay ⁵⁵
EBD: Single-Bed Rooms	Improved privacy, confidentiality, and patient-provider-family communication ⁵⁵ ↓ noise and interruptions ⁵⁵ Improved patient sleep ⁵⁵ ↑ staff effectiveness ⁵⁵ ↓ hospital-acquired infections ⁵⁵	↓ patient falls ⁵⁵ ↓ medical errors ⁵⁵	↑ patient, family, and staff satisfaction ⁵⁵ ↓ patient, family, and staff anxiety and stress ⁵⁵	↓ patient falls ⁵⁵ ↓ medical errors ⁵⁵ ↑ staff effectiveness ⁵⁵ ↓ hospital-acquired infections ⁵⁵
Increasing Energy Efficiency			Hospitals regarded as responsible corporate citizens ¹⁰⁶	↓ energy and water costs ^{107,63}
Reducing Waste		↓ exposure to emissions of greenhouse gases and toxic substances ¹⁰⁸	Hospitals regarded as responsible corporate citizens ¹⁰⁶	↓ waste disposal fees ¹⁰⁷ ↓ supply purchasing ¹⁰⁹
Non-Toxic Building Materials and Appropriate Ventilation	↓ infections ^{63, 110} ↓ absenteeism ⁶³ Improved staff health ^{63,111}	↓ sick building syndrome ⁶³	↑ staff comfort and well-being ⁶³ ↑ staff satisfaction ⁶³ ↑ staff recruitment and retention ⁶³ Hospitals seen as good corporate citizens ¹⁰⁶	↑ productivity ⁶³ ↓ absenteeism ⁶³ ↓ workers' compensation claims ⁶³ ↓ staff replacement costs ⁶³

Abbreviations: HOPE, healing-oriented practices and environments; OHE, optimal healing environment; ROI, return on investment.

healing and on healing environment components regardless of whether there is expectation of cure.

CONCLUSION

There is a growing business case for implementing the components of OHE. In the category of cost effectiveness, both decreased staff turnover and decreased length of stay have been documented.^{1,2,50-57} Decreased patient falls and other injuries as well as decreased medical errors attest to increased safety.^{2,53,56,58} There is increased family and patient satisfaction and comfort scores as well as increased workforce morale and decreased burnout and absenteeism.^{2,53,59-63} There is an increase in quality of care, including decreased postoperative pain and discomfort, decreased re-admission rates, and decreased morbidity and mortality for some diseases.¹ The Table provides examples and practical applications of the effects of each OHE domain on quality, satisfaction, safety, and cost and summarizes recent research on the business case impact of each of the domains. Collectively, these studies provide strong evidence for investing in the development and integration of healing into medical care.

There is, and perhaps always will be, considerable

flux in the American healthcare system as political, financial, technological, and medical factors impact the everyday practice of medicine. It can be extremely difficult to follow the tenets of medical professionalism while trying to withstand and adapt to the changing external expectations and pressures of government, insurers, medical center administrations, and commercial entities as well as those of patients and their significant others. We believe that providing medical care in an OHE founded in the principals of salutogenesis is a central way to sustain, support, and enrich quality of life while reducing costs for both the practitioner and the patients for whom we have the privilege of providing medical care.

REFERENCES

- Jonas W, Chez R. Toward optimal healing environments in health care. *J Altern Complement Med.* 2004;10 Suppl 1:S1-6.
- Christianson J, Finch M, Findlay B, Jonas WB, Goertz Choate C. *Reinventing the patient experience: strategies for hospital leaders.* Chicago: Health Administration Press; 2007.
- Antonovsky A. The salutogenic perspective: toward a new view of health and illness. *Advances.* 1987;4:47-55
- Lindstrom B, Eriksson M. Salutogenesis. *J Epidemiol Community Health.* 2005;59:440-2.
- Lerner M. *Choices in healing: integrating the best of conventional and complementary approaches to cancer.* Cambridge, MA: MIT Press; 1994.

6. Jonas W, O'Connor F, Deuster P, et al. Why total force fitness? *Military Med.* 2010;175(8):6-13.
7. Stange K, Nutting P, Miller W, et al. Defining and measuring the patient-centered medical home. *J Gen Intern Med.* 2010;25(6):601-12.
8. Sakallaris B, Firth K, Gourdin K, Jonas W. The art of health promotion—ideas for improving health outcomes: Samueli Institute Optimal Healthy Environments in the Workplace (OHE-W). *Am J Health Promotion.* 2013;TAHP6.
9. Office of the Surgeon General. National Prevention Strategy, 2011. <http://www.surgeongeneral.gov/initiatives/prevention/strategy/report.pdf>. Accessed April 8, 2014.
10. Samueli Institute. Alexandria, VA: Samueli Institute. Translating the science of wellness and healing: strategic plan for 2011-2016. https://www.samueliinstitute.org/file%20library/about%20us/sp11_lowres.pdf. Accessed April 8, 2014.
11. Schmidt S. Mindfulness and healing intention: concepts, practice, and research evaluation. *J Altern Complement Med.* 2004;10(Suppl 1):S7-14.
12. Linde K, Fassler M, Meissner K. Placebo interventions, placebo effects and clinical practice. *Phil Trans R Soc.* 2011;366(1572):1905-12
13. Colloca L, Flaten M, Meissner K, editors. Placebo and pain from bench to bedside. Amsterdam: Elsevier; 2013:292.
14. Jonas W. Reframing placebo in research and practice. *Philos Trans R Soc Lond B Biol Sci.* 2011;366(1572):1896-904.
15. Walach H, Jonas W. Placebo research: the evidence base for harnessing self-healing capacities. *J Altern Complement Med.* 2005;10(Suppl 1):S1-6.
16. Jonas W, Crawford C, editors. Healing, intention and energy medicine: science, research methods and clinical implications. London: Churchill Livingstone; 2003:410.
17. Kieviet-Stijnen A, Visser A, Garssen B, Hudig W. Mindfulness-based stress reduction training for oncology patients: patients' appraisal and changes in well-being. *Patient Educ Couns.* 2008;72(3):436-42.
18. Shapiro S, Oman D, Thoresen C, Plante T, Flinders T. Teaching self-care to caregivers: Effects of mindfulness-based stress reduction on the mental health of therapists in training. *Training Education Professional Psychol.* 2007;1(2):105-15.
19. Shapiro S, Oman D, Thoresen C, Plante T, Flinders T. Cultivating mindfulness: effects on well-being. *J Clin Psychol.* 2008;64(7):840-62.
20. Wilson ME. A program evaluation of mindfulness-based stress reduction as experienced by adolescent male bullies. San Diego, CA: Alliant International University; 2008.
21. Zylowska L, Ackerman D, Yang M, et al. Mindfulness meditation training in adults and adolescents with ADHD: A feasibility study. *J Attention Disord.* 2008;11(6):737-46.
22. Jonas W, Crawford C. The healing presence: can it be reliably measured? *J Altern Complement Med.* 2004;10(5):751-6.
23. McDonough-Means S, Kreitzer M, Bell J. Fostering a healing presence and investigating its mediators. *J Altern Complement Med.* 2004;10(Suppl 1):S25-41.
24. Banerjee B, Vadiraj H, Ram A, et al. Effects of an integrated yoga program in modulating psychological stress and radiation-induced genotoxic stress in breast cancer patients undergoing radiotherapy. *Integr Cancer Ther.* 2007;6(3):242-50.
25. DiStasio S. Integrating yoga into cancer care. *Clin J Oncol Nurs.* 2008;12(1):125-30.
26. Raghavendra R, Nagarathna R, Nagendra H, et al. Effects of an integrated yoga programme on chemotherapy-induced nausea and emesis in breast cancer patients. *Eur J Cancer Care.* 2007;16(6):462-74.
27. Huth M, Kuiken DV, Broome M. Playing in the park: what school-age children tell us about imagery. *J Pediatr Nurs.* 2006;21(2):115-25.
28. Hammond D. Hypnosis as sole anesthesia for major surgeries: historical and contemporary perspectives. *Am J Clin Hypn.* 2008;51(2):101-21.
29. George L. The health impact of religious and spiritual practices. In: *Healing, intention and energy medicine: science, research methods and clinical implications.* Jonas W, Crawford C, editors. London: Churchill Livingstone; 2003:3-12.
30. Kapichuk T, Kelly J, Conboy L, et al. Components of placebo effect randomised controlled trial in patients with irritable bowel syndrome. *BMJ.* 2008;336(7651):999-1003.
31. Frankel R, Sung S, Hsu J. Patients, doctors, and videotape: a prescription for creating optimal healing environments? *J Altern Complement Med.* 2005;11(Suppl 1):S31-9.
32. Jarski R. An investigation of physician assistant and medical student empathic skills. *J Allied Health.* 1988;17(3):211-9.
33. Mercer S, Reilly D, Watt G. The importance of empathy in the enablement of patients attending the Glasgow Homeopathic Hospital. *Br J Gen Pract.* 2002;52:901-5.
34. Watson J. Social justice and human caring: A model of caring science as a hopeful paradigm for moral justice for humanity. *Creat Nurs.* 2008;14(2):54-61.
35. Holt-Lunstad J, Smith T, Layton J. Social relationships and mortality risk: a meta-analytic review. *PLoS Med.* 2010;e1000316.
36. Uchino B, Bowen K, Carlisle M, Birmingham W. Psychological pathways linking social support to health outcomes: a visit with the "ghosts" of research past, present, and future. *Soc Sci Med.* 2012 Apr;74(7):949-57.
37. Gillick M. The critical role of caregivers in achieving patient-centered care. *JAMA.* 2013;310(6):575-6.
38. Miller W, Crabtree B. Healing landscapes: patients, relationships, and creating optimal healing places. *J Altern Complement Med.* 2005;11(Suppl 1):S41-9.
39. Chez R, Jonas W. Developing healing relationships. Third American Samueli Symposium, A supplement to *J Alternative Complement Med.* 2005;11(Suppl 1).
40. Safran D, Miller W, Beckman H. Organizational dimensions of relationship-centered care. Theory, evidence, and practice. *J Gen Intern Med.* 2006;21(Suppl 1):S9-15.
41. DeVol R, Bedrossian A, Charuworn A. An unhealthy America: the economic burden of chronic disease: charting a new course to save lives and increase productivity and economic growth. Santa Monica, CA: Milken Institute; October 2007.
42. McGinnis J. A vision for health in our new century. *Am J Health Promot.* 2003;18(2):146-50.
43. International Business Leaders Forum (IBLF) and the World Business Council for Sustainable Development (WBCSD). The business of health—the health of business: building the case for health, safety and wellness 2006. <http://www.iblf.org/docs/BizofHealth.pdf>. Accessed April 8, 2014.
44. Pelletier KR. A review and analysis of the clinical and cost-effectiveness studies of comprehensive health promotion and disease management programs at the worksite: update VIII 2008 to 2010. *J Occup Environ Med.* 2011;53(11):1310-31.
45. Khorsan R, Coulter I, Crawford C, Hsiao A. Systematic review of integrative health care research: randomized control trials, clinical controlled trials, and meta-analysis. *Evid Based Complement Altern Med;* 2011.
46. Eisenberg D, buring J, Hrbek A, et al. A model of integrative care for low-back pain. *J Altern Complement Med.* 2012;18(4):354-62.
47. Ezzo J, Richardson M, Vickers A, et al. Acupuncture-point stimulation for chemotherapy-induced nausea or vomiting. *Cochrane Database Syst Rev.* 2006;19(2):CD002285.
48. Lewith G, Godfrey A, Prescott P. A single-blinded, randomized pilot study evaluating the aroma of *Lavandula augustifolia* as a treatment for mild insomnia. *J Altern Complement Med.* 2005;11(4):631-7.
49. Maville J, Bowen J, Benham G. Effect of healing touch on stress perception and biological correlates. *Holist Nurs Pract.* 2008;22(2):103-10.
50. Schweitzer M, Gilpin L, Frampton S. Healing spaces: elements of environmental design that make an impact on health. *J Altern Complement Med.* 2004;10(Suppl 1):S71-83.
51. Leadership in Energy and Environmental Design (LEED): US Green Building Council. <http://www.usgbc.org/leed>. Accessed April 8, 2014.
52. Stone S. Retrospective evaluation of the Planetree patient-centered care program's impact on inpatient quality outcomes. Dissertation. San Diego, CA: University of San Diego; 2007.
53. Charmel PA, Frampton SB. Building the business case for patient-centered care. *Health Finance Manage.* 2008;62(3):80-5.
54. Baicker K, Cutler D, Song Z. Workplace wellness programs can generate savings. *Health Affairs.* 2010;29(2):304-11.
55. Ulrich RS, Zimring C, Barch XZ, et al. A review of the research literature on evidence-based healthcare design. *HERD.* 2008;1(3):61-125.
56. Benedetti F, Colombo C, Barbini B, Campori E, Smeraldi E. Morning sunlight reduces length of hospitalization in bipolar depression. *J Affect Disord.* 2001;62(3):221-3.
57. Sodomka P. Quality update. Engaging patients and families: a high leverage tool for health care leaders. *H&HN: Hospitals & Health Networks.* 2006;80(8):28-9.
58. Chapman L. Meta-evaluation of worksite health promotion economic return studies. *The Art of Health Promotion Newsletter.* 2003;6(6)(January/February).
59. Uhlig PN, Brown J, Nason AK, Camelio A, Kendall E. System innovation: Concord Hospital. *Joint Commission Journal on Quality and Patient Safety.* 2002;28:666-72.
60. Krasner MS, Epstein RM, Beckman H, et al. Association of an educational program in mindful communication with burnout, empathy, and attitudes among primary care physicians. *JAMA.* 2009;302(12):1284-93
61. McDade DF. Evaluation of a CAM pilot project in northern Ireland 2008: report from the Department of Health, Social Services and Public Safety. http://www.dhsspsni.gov.uk/final_report_from_smr_on_the_cam_pilot_project_-_may_2008.pdf. Accessed April 8, 2014.
62. Aldana SG. Financial impact of health promotion programs: a comprehensive review of the literature. *Am J Health Promot.* 2001;15(5):296-320.
63. The Business Case for Green Healthcare Facilities. Institute for Innovation in Large Organizations (ILO). Arlington, VA: Practice GreenHealth; 2008.
64. Fjorback LO, Arendt M, Ornbol E, Fink P, Walach H. Mindfulness-based stress reduction and mindfulness-based cognitive therapy—a systematic review of randomized controlled trials. *Acta Psychiatr Scand;* 2011.

65. Bohlmeijer E, Prenger R, Taal E, Cuijpers P. The effects of mindfulness-based stress reduction therapy on mental health of adults with a chronic medical disease: a meta-analysis. *J Psychosom Res.* 2010;68:539-44.
66. Salmon P, Sephton S, Weissbecker I, Hoover K, Ulmer C, Studts JL. Mindfulness meditation in clinical practice. *Cog Behav Pract.* 2004;11:434-46.
67. Baer R. Mindfulness training as a clinical intervention: a conceptual and empirical review. *Clin Psychol: Sci Pract.* 2003;10:125-43.
68. Smith JE, Richardson J, Hoffman C, Pilkington K. Mindfulness-Based Stress Reduction as supportive therapy in cancer care: systematic review. *J Adv Nurs.* 2005;52:315-27.
69. Epstein RM. Mindful practice. *JAMA.* 1999;282:833-39.
70. Sibinga EM, Wu AW. Clinician mindfulness and patient safety. *JAMA.* 2010;304:2532-33.
71. Ludwig DS, Kabat-Zinn J. Mindfulness in medicine. *JAMA.* 2008;300:1350-2.
72. Baime M. Personal correspondence with Michael Baime. Two personal telephone conversations with Dr. Michael Baime edn; 2008a.
73. Baime M. Recapturing the calling of healing: mindfulness and meditation in practice. In: Pittsburgh: University of Pennsylvania School of Medicine, Penn Program for Mindfulness; 2008.
74. Chiesa A, Serretti A. Mindfulness based cognitive therapy for psychiatric disorders: A systematic review and meta-analysis. *Psychiatry Res.* 2011;87:441-53.
75. Stein T, Frankel RM, Krupat E. Enhancing clinician communication skills in a large healthcare organization: a longitudinal case study. *Patient Educ Couns.* 2005 Jul;58(1):4-12. 2005;58:4-12.
76. Ananth S. Cultivating healing relationships. *Explore (NY).* 2009;5:250-1.
77. Redling R. Mistakes happen. <http://www.physicianspractice.com/articles/mistakes-happen>. Accessed May 2, 2014. Accessed May 5, 2014.
78. VanMeetran V. Personal correspondence with Vicky Van Meetran. Henderson, NV. President, St. Rose Dominican Hospitals-San Martin Campus; 2008.
79. Vital Smarts. Case study: crucial conversations training improves patient safety at Maine Healthcare System; 2008.
80. Meade CM, Bursell AL, Ketelsen L. Effects of nursing rounds: on patients' call light use, satisfaction, and safety. *Am J Nurs.* 2006;106:58-70; quiz 70-51.
81. StuderGroup. Improve clinical outcomes with hourly rounding. http://fspp-dfviewer.cloudapp.net/flexpaper/aspnet/simple_document.aspx?doc=hardwired_result_issue7_2.pdf. Accessed April 30, 2014.
82. StuderGroup. [Internet]. Drive results with individualized patient care. *Hardwired results.* 2006a(7), 4-5.
83. Vital Smarts. Case study: uniting a divided executive team results in #1 ranking in employee satisfaction at Cook Children's HealthCare System; 2008b. <http://cms.vitalSMARTS.com/d/d/workspace/SpacesStore/cecfbfrb-728c-4ebe-8693-e78445d99b00/Cook%20Childrens%20Health%20Care%20System.pdf?guest=true>. Accessed April 30, 2014.
84. Knutson L. Personal correspondence with Lori Knutson. In, Personal correspondence with Lori Knutson, Executive Director, The Penny George Institute for Health and Healing, Abbott Northwestern Hospital; 2008.
85. Studer Group. AIDET Five Fundamentals of Patient Communication. Firestarter Publishing; 2008. <http://www.firestarterpublishing.com/dotCMS/detailProduct?inode=11045>. Accessed April 8, 2014.
86. Mauksch L. Personal correspondence with Larry Mauksch. In-depth telephone interview with Larry Mauksch, University of Washington, Department of Family Medicine; 2009.
87. Royal K. Personal correspondence with Klara Royal, Manager, Mind-Body Professional Training Programs, Washington DC:Center for Mind-Body Medicine; 2009.
88. Runkle C, Wu E, Wang EC, Gordon GH, Frankel R. Clinician confidence about conversations at the end of life is strengthened using the four habits approach. *J Psychosoc Oncol.* 2008;26:81-95.
89. Rath T, Harter J. *Wellbeing: The five essential elements.* New York: Gallup Press; 2010a.
90. Rath T, Harter J. *The economics of well-being.* Gallup Press. 2010b <http://www.gallup.com/strategicconsulting/126908/Economics-Well-being.aspx>. Accessed April 30, 2014.
91. Economist. *Micromanagement. Every move you make.* The Economist. August 20, 2008. London: The Economist Newspaper Limited; 2008.
92. Curry LA, Spatz E, Cherlin E, et al. What distinguishes top-performing hospitals in acute myocardial infarction mortality rates? A qualitative study. *Ann Intern Med.* 2011;154:384-90.
93. Conley M. Hospital "team spirit" affects heart attack survival: what distinguishes best hospitals when it comes to heart care? <http://abcnews.go.com/Health/heart-attack-care-organization-key-top-cardiology-hospitals/story?id=13133419>. Accessed April 8, 2014.
94. Govil SR, Weidner G, Merritt-Worden T, Ornish D. Socioeconomic status and improvements in lifestyle, coronary risk factors, and quality of life: the Multisite Cardiac Lifestyle Intervention Program. *Am J Public Health.* 2009;99:1263-70.
95. Ornish D. Intensive lifestyle changes and health reform. *Lancet Oncol.* 2009;10:638-9.
96. Lorig KR, Mazonson PD, Holman HR. Evidence suggesting that health education for self-management in patients with chronic arthritis has sustained health benefits while reducing health care costs. *Arthritis Rheum.* 1993;36:439-46.
97. Lorig KR, Sobel DS, Stewart AL, et al. Evidence suggesting that a chronic disease self-management program can improve health status while reducing hospitalization: a randomized trial. *Med Care.* 1999;37:5-14.
98. Soler RE, Leeks KD, Razi S, et al. A systematic review of selected interventions for worksite health promotion. The assessment of health risks with feedback. *Am J Prev Med.* 2010;8:S237-62.
99. American Institute of Preventive Medicine. *The health and economic implications of worksite wellness programs (white paper).* Farmington Hills, MI: American Institute of Preventive Medicine; 2008.
100. Berry LL, Mirabito AM, Baun WB. What's the hard return on employee wellness programs? *Harv Bus Rev.* 2010;88:104-12, 142.
101. Dusek JA, Knutson L, Plotnikoff G. Impact of integrative therapies on immediate pain and anxiety scores at Abbott Northwestern Hospital. Minneapolis, MN: North American Research Conference on Complementary & Integrative Medicine; 2009 May 12-15, 2009.
102. Casey A, Chang BH, Huddleston J, Virani N, Benson H, Dusek JA. A model for integrating a mind/body approach to cardiac rehabilitation: outcomes and correlators. *J Cardiopulm Rehabil Prev.* 2009;29:230-38; quiz 239-40.
103. Abbott Northwestern Hospital. 2007 Institute for Health and Healing Overview and Outcomes Report. Minneapolis, MN: Abbott Northwestern Hospital, Institute for Health and Healing; 2007:15.
104. Sarnat RL, Winterstein J, Cambron JA. Clinical utilization and cost outcomes from an integrative medicine independent physician association: an additional 3-year update. *J Manipulative Physiol Ther.* 2007;30:263-9.
105. Knutson L. Optimal Healing Environments (OHE) and Physician Engagement. Presented at: Samuelli Institute Optimal Healing Environments (OHE). San Diego, CA: June 29-30, 2010.
106. Building Design + Construction. *BD&C's 2007 Green Buildings Research white paper: where building owners, end users, and AEC professionals stand on sustainability and green building.* November 2007. <http://www.bdcnetwork.com/bdcs-2007-green-buildings-research-white-paper-where-building-owners-end-users-and-aec-professionals>. Accessed April 8, 2014.
107. Practice GreenHealth. The business case for greening the OR. 2011. https://practicegreenhealth.org/sites/default/files/upload-files/caseforgor_rs_web_0.pdf. Accessed April 8, 2014.
108. Healthcare Without Harm. *Issues: Waste Management.* http://www.noharm.org/us_canada/issues/waste. Accessed April 8, 2014.
109. Practice Greenhealth. *Waste category and types.* <http://practicegreenhealth.org/topics/waste/waste-categories-types>. Accessed April 8, 2014.
110. Jiang S, Huang L, Chen X, et al. Ventilation of wards and nosocomial outbreak of severe acute respiratory syndrome among healthcare workers. *Chin Med J (Engl).* 2003;116:1293-1297.
111. Healthcare without harm. *Issue: Safer chemicals;* 2011. http://www.noharm.org/us_canada/issues/chemicals/. Accessed April 8, 2014.