

# **2010 Survey of Healing Environments In American Hospitals: Nature and Prevalence**



Samueli Institute Research Team:  
Kimberly Firth, PhD; Katherine Smith, MPH

## Table of Contents

|                                                          |    |
|----------------------------------------------------------|----|
| <b>Introduction</b>                                      | 2  |
| <b>Background</b>                                        | 2  |
| <b>Survey Description</b>                                | 4  |
| <b>Sample and Methods</b>                                | 4  |
| <b>General Results</b>                                   | 7  |
| <b>Results by Optimal Healing Environment Component:</b> |    |
| Component I: Developing Healing Intentions               | 8  |
| Component II: Experiencing Personal Wholeness            | 10 |
| Component III: Cultivating Healing Relationships         | 11 |
| Component IV: Practicing Healthy Lifestyles              | 13 |
| Component V: Applying Collaborative Medicine             | 15 |
| Component VI: Creating Healing Organizations             | 17 |
| Component VII: Building Healing Spaces                   | 19 |
| <b>Overall Optimal Healing Environments Score</b>        | 21 |
| <b>Discussion</b>                                        | 22 |
| <b>Conclusions</b>                                       | 27 |
| <b>Citations</b>                                         | 29 |
| <b>Appendix 1</b>                                        | 31 |

## Introduction

The *2010 Complementary and Alternative Medicine Survey: Healing Cultures Section* was conducted in order to better understand the nature and prevalence of initiatives thought to contribute to optimal healing environments in hospitals. Based on an existing Optimal Healing Environments Framework, the survey was distributed to American Hospital Association (AHA) community and military hospitals in the United States. This survey was a follow-up to two earlier surveys, a pilot study of 125 hospitals, *Survey of Healing Environments in Hospitals*,<sup>1</sup> and *2007 Complementary and Alternative Medicine Survey: Optimal Healing Environments Section*,<sup>1a</sup> a national survey distributed to over 6,400 American hospitals. This paper describes the *2010 Complementary and Alternative Medicine Survey: Healing Cultures Section* implementation process and provides descriptive and comparative data on healing environment initiatives offered by hospitals nationwide.

## Background

In 2002, Samueli Institute, a non-profit research organization that explores the scientific foundations of healing and applies its findings to health care, coined the term “Optimal Healing Environments” (OHE). Samueli Institute defines healing as the process of recovery, repair and return to wholeness. This definition of healing is in contrast to curing, which is defined as the eradication of disease.

The OHE concept evolved from multiple meetings and symposia with distinguished scientists, clinicians, and patients nationwide who shared a belief that healing is a crucial aspect to managing chronic illness and the basis for sustainable approaches to health care.

As a result of these discussions, a framework that elucidates the components of an OHE was developed. According to the Institute, an OHE supports and stimulates patient healing by combining the following approaches: developing healing intention, experiencing personal wholeness, cultivating healing relationships, practicing healthy lifestyles, applying collaborative medicine, creating healing organizations, and building healing spaces. A graphic of this framework appears in Figure 1.

**Figure 1: Optimal Healing Environments Framework**



To better understand the nature and prevalence of initiatives thought to contribute to healing environments in hospitals, the Institute created the *Survey of Healing Environments in Hospitals* in 2006 and piloted it with a sample of 125 hospitals in the upper Midwest region of the United States.<sup>1</sup> Results from the survey suggested that hospitals were developing and implementing a wide variety of initiatives that related to all seven components in the OHE Framework; some components were being addressed more than others. However, because the results of the pilot were from a small sample, conclusions could not be generalized to hospitals across the country. To gather more generalizable data and broaden our understanding of OHE initiatives in American hospitals, *2007 Complementary and Alternative Medicine*

*Survey: Optimal Healing Environments Section*,<sup>1a</sup> was sent to 6,439 community and military hospitals in the United States in October 2007. In an effort to build upon the existing knowledge base garnered from the 2007 survey, we subsequently sent out a similar national survey, *2010 Complementary and Alternative Medicine Survey: Healing Cultures Survey*.

## **Survey Description**

Since 2005, Health Forum, a subsidiary of the American Hospital Association (AHA), has mailed out a biannual survey to hospitals across the nation to gather information on the use of complementary and alternative medicine (CAM) programs and services in hospitals. It is the only national survey that collects data on CAM use in hospitals.

In March 2010, Health Forum distributed *2010 Complementary and Alternative Medicine Survey*, a 42-item instrument. Twelve questions containing a total of 29 items about Optimal Healing Environments were added to the survey. Eleven of the OHE questions were a separate, stand alone *Healing Cultures Section* and one OHE question was incorporated into the main body of the CAM survey. The OHE questions were created by a multi-disciplinary team comprised of individuals with expertise in clinical delivery, health services research, public health, financial analysis and complementary and alternative medicine. The OHE questions were organized around the OHE Framework components and sought quantitative data about healing environment initiatives in the hospitals. Based on feedback from the earlier surveys, *Survey of Healing Environments in Hospitals* and *2007 Complementary and Alternative Medicine Survey: Optimal Healing Environments Section*, authors of the 2010 questions decreased the number of questions, changed the response scale for the questions and provided clear definitions of terms such as “healing,” “curing,” and “optimal healing environments.” The *Healing Cultures Section* of the *2010 Complementary and Alternative Medicine Survey* is found in Appendix 1.

## **Sample and Methods**

The *2010 Complementary and Alternative Medicine Survey* was sent to 5,858 open and operating American Hospital Association (AHA) member and non-member community and military hospitals across the United States in March 2010. The survey was mailed out and recipients were given the option of responding online or through the mail.

To assist survey respondents in transitioning from answering questions about overall CAM to questions about Optimal Healing Environments, an introduction was placed at the top of the Healing Culture Section of the survey and the following definition of an optimal healing environment was given:

“An optimal healing environment is one where all aspects of patient care – physical, emotional, spiritual, behavioral, and environmental – are optimized to support and stimulate healing in addition to curing.”

As described earlier, the Healing Cultures Section of the survey contained 11 questions covering 19 items in the seven different components of an OHE, as defined by Samueli Institute’s OHE Framework. The one OHE question in the main body of the CAM survey addressed 10 items about practicing healthy lifestyles. The seven OHE components covered in the survey were: Developing Healing Intention, Experiencing Personal Wholeness, Cultivating Healing Relationships, Practicing Healthy Lifestyles, Applying Collaborative Medicine, Creating Healing Organizations, and Building Healing Spaces. (See Figure 1.) Respondents were asked to read each question and indicate whether the statement applied to their health care facility. Some answer choices were based on a Likert-type scale as follows: 3 = “always,” 2 = “sometimes,” 1 = “rarely,” 0 = “never.” Others were yes/no questions with a 1=“yes,” and 0=“no” scale. Several questions asked respondents to check all answers that applied and were scored with a 1=“yes,” and 0= “no” scale for every item that was included in the question.

Since each construct, with the exception of Experiencing Personal Wholeness, was assessed by multiple statements, a construct score was computed by summing respondents’ answers for each question that made up each construct. In order to more precisely determine an aggregate score for each construct, all Likert-type items were dichotomized such that “sometimes and always” = 1 and “never or rarely” = 0.

For example, the Creating Healing Organizations construct had one question based on the 3 = “always,” 2 = “sometimes,” 1 = “rarely,” 0 = “never” scale and two questions based on the 1=“yes,” and 0=“no” scale.

- 1) *Does the organizational culture emphasize healing (the process of recovery, repair and return to wholeness) in addition to curing (eradication of disease)? (always, sometimes, rarely, never)*

- 2) *Does part of the hospital's mission/vision address creating an "optimal healing environment" (an environment where all aspects of patient care – physical, emotional, spiritual, behavioral, and environmental – are optimized to stimulate healing in addition to curing)? (yes/no)*
- 3) *Does your hospital have leaders or champions whose role is to foster development of an "optimal healing environment" (as defined in question #2 above)? (yes/no)*

The response to the Likert-type question (first question above) was dichotomized such that a response of "sometimes" or "always" = 1 and "never" or "rarely" = 0.

Answers to the three questions (possible range of 0-1 for each question) were aggregated to derive a total Creating Healing Organizations score. The higher the score (possible range of 0-3) the more likely the respondent was to have chosen either "sometimes," "always," or "yes" for each question. A minimal score was also computed for each construct so that only those respondents who had chosen either "sometimes" "always" or "yes" for each statement, or for the majority of the statements comprising that construct (resulting in a score of 2 or greater for Creating Healing Organizations, for example), could be considered to have that component of an OHE in their hospital. Calculating the number of respondents obtaining the minimal score on each of the 7 constructs enabled us to gain a general snapshot of the scope and degree of ongoing OHE initiatives in hospitals.

Additionally, we examined whether or not some key demographics were related to the incidence of respondents reporting that the elements occurred "sometimes" or "always" or "yes" at their facility. Those demographics were:

- 1) Teaching status: operationalized as non-teaching hospital = 0 , teaching hospital = 1
- 2) Bed size: operationalized as 100 beds or less = 1 , over 100 beds = 2
- 3) Location: operationalized as urban = 1, rural = 2
- 4) Federal status: operationalized as military/Veterans Administration (VA) hospital =1, civilian hospital = 2

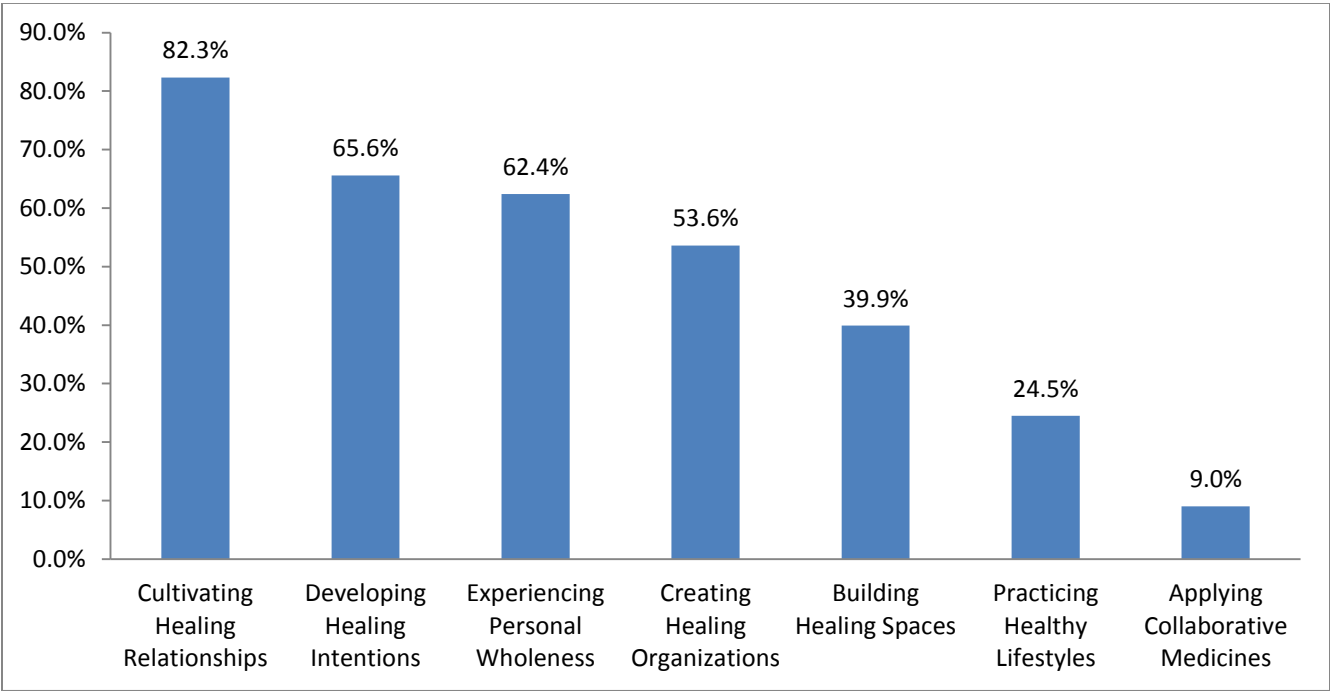
With the exception of Personal Wholeness, which as a dichotomous variable was analyzed using chi-square, we utilized independent sample T-tests to examine whether any significant differences existed between groups on the Likert-type scale scores for each OHE construct and the overall OHE score. Data were successfully collected from 714 AHA hospitals across the country, a response rate of 12%, and was provided by AHA/Health Forum to Samueli Institute. Once received, the data were cleaned and

converted to a format that could be statistically analyzed through the SPSS (Statistical Package for the Social Sciences) program. Data were analyzed using SPSS version 17.0.

Results

Figure 2 presents a general overview of the percentage of respondents indicating “sometimes,” “always,” or “yes” for each statement within each of the seven constructs comprising the Optimal Healing Environments (OHE) Framework.

Figure 2. Percentage of Positive Responses for Optimal Healing Environment (OHE) Constructs



Construct specific results are presented below according to the OHE Framework: Developing Healing Intentions, Experiencing Personal Wholeness, Cultivating Healing Relationships, Practicing Healthy Lifestyles, Applying Collaborative Medicine, Creating Healing Organizations, and Building Healing Spaces.

## Component I: Developing Healing Intentions

Healing intentions are an important part of an OHE. Samueli Institute defines healing intention as the conscious and mindful determination to improve health – through *expectation* of improvement in health, well-being and a meaningful productive life, *hope* and *belief* that a desired health goal can be achieved even if it is not cure, and *understanding* by discovering meaning within illness and suffering. The developing healing intention questions measured whether hospitals encouraged patients, families and providers to address healing intentions. More specifically, questions assessing the construct of Developing Healing Intention were:

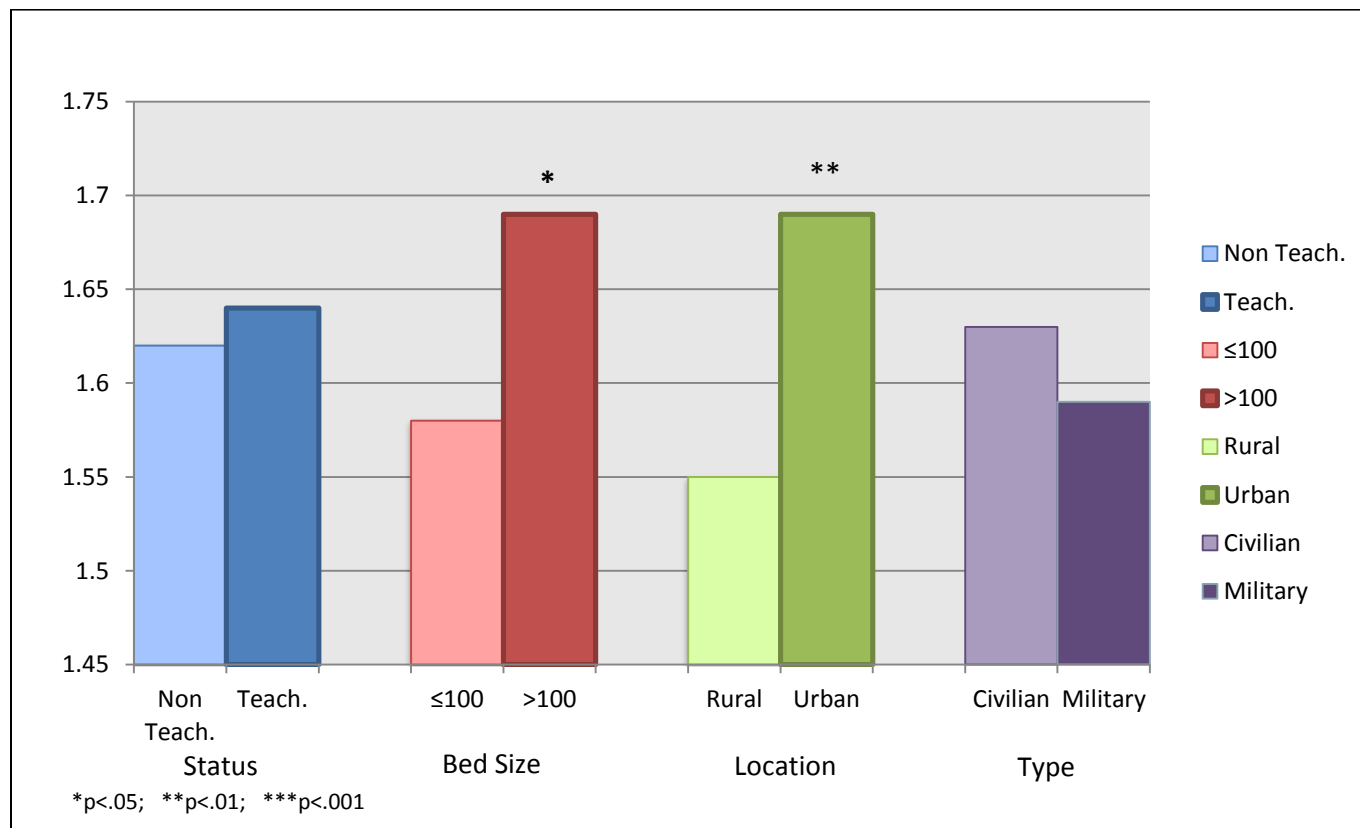
- 1) *Is there an assessment of the patient's and family's beliefs about healing and recovery sometime during the hospital stay? (always, sometimes, rarely, never)*
- 2) *Do patients and staff talk about the ideal outcome of the patient's stay? (always, sometimes, rarely, never)*

There were 631 valid responses to each of these questions. Scores for each question contained within this construct ranged from 0-1 (once they were converted from the Likert scale to the dichotomous scale). Scores for the total Healing Intentions construct ranged from 0-2. For the valid responses, the mean for the Healing Intentions construct was 1.63 ( $SD = .60$ ). For the overall Healing Intention construct, 65.6% of survey respondents achieved the minimum score of 2 or greater, indicating they answered “sometimes” or “always” for both questions as they apply to their hospital. With regards to each specific question aimed at assessing healing intention initiatives, 63% of respondents indicated there is “sometimes” or “always” an assessment of the patient's and family's belief about healing and recovery sometime during the hospital stay. 82.1% responded that patients and staff “sometimes” or “always” talk about the ideal outcome of the patient's stay.

Our demographic variables of interest comparative analyses revealed that teaching hospitals and non-teaching hospitals were about equally as likely to have healing intention initiatives,  $t(628) = -.265, p = .79$ . Hospitals with more than 100 beds were significantly more likely to have healing intention initiatives than hospitals with 100 beds or less,  $t(628) = -2.24, p = <.05$ , and urban hospitals were significantly more likely to have healing intention initiatives than rural hospitals,  $t(628) = 2.95, p <.01$ . Military/VA hospitals and civilian hospitals were about equally as likely to incorporate healing intention

initiatives,  $t(631) = -.304, p=.76(\text{ns})$ . Figure 3 represents the means for each demographic variable.

**Figure 3. Healing Intentions: Comparative Means of Demographic Variables (Range = 0-2)**



## Component II: Experiencing Personal Wholeness

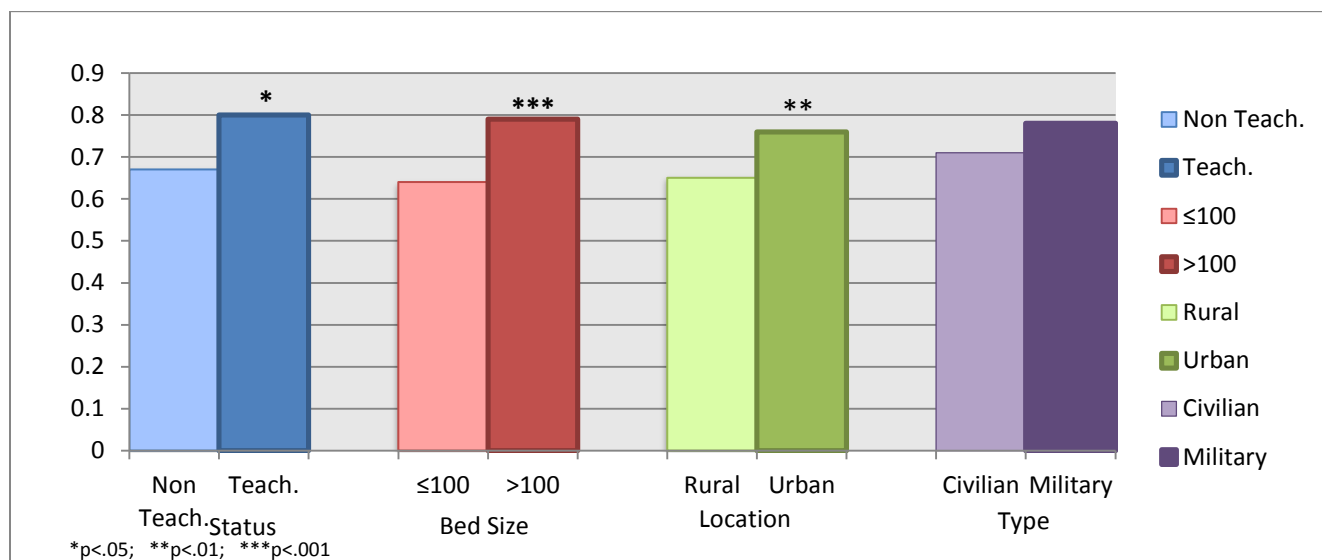
This part of the survey assessed whether hospitals facilitate personal wholeness. Personal wholeness includes the congruence of mind, body, spirit, and energy. In an OHE, opportunities are provided for patients, families, and staff to nurture their personal growth and experience personal wholeness. The Experiencing Personal Wholeness construct was assessed via the following statement:

1. *Are there learning opportunities available to facilitate personal growth for patients? (yes/no)*

The 635 respondents to this dichotomous question had a mean of .71 ( $SD = .46$ ). Of those who responded, 62.4% indicated "yes," they offer learning opportunities to facilitate personal growth for patients in their hospital.

As a dichotomous variable, Personal Wholeness was analyzed using chi-square. Teaching hospitals were significantly more likely than non-teaching hospitals to report that learning opportunities were available to facilitate personal growth for patients in their hospital,  $\chi^2 (2) = 9.27, p < .05$ , as were hospitals with more than 100 beds when compared to hospitals with 100 beds or less,  $\chi^2 (2) = 18.95, p < .001$ . Additionally, urban hospitals were significantly more likely to report personal wholeness initiatives than rural hospitals,  $\chi^2 (2) = 9.85, p < .01$ . Military/VA hospitals and civilian hospitals were not significantly different in likelihood to make available personal growth learning opportunities for patients  $\chi^2 (2) = .958, p = .62$  (ns). Figure 4 represents the means for each demographic variable.

**Figure 4. Personal Wholeness: Comparative Means of Demographic Variables (Range = 0-1)**



### Component III: Cultivating Healing Relationships

There is growing consensus that patient-provider relationships can either foster or hinder a patient's recovery and overall well-being.<sup>2,3,4,5</sup> A strong social support network can also aid healing. The Cultivating Healing Relationships questions assessed how each hospital sought to enhance the quality of patient-provider relationships and addressed the social support of its patients via the following two questions:

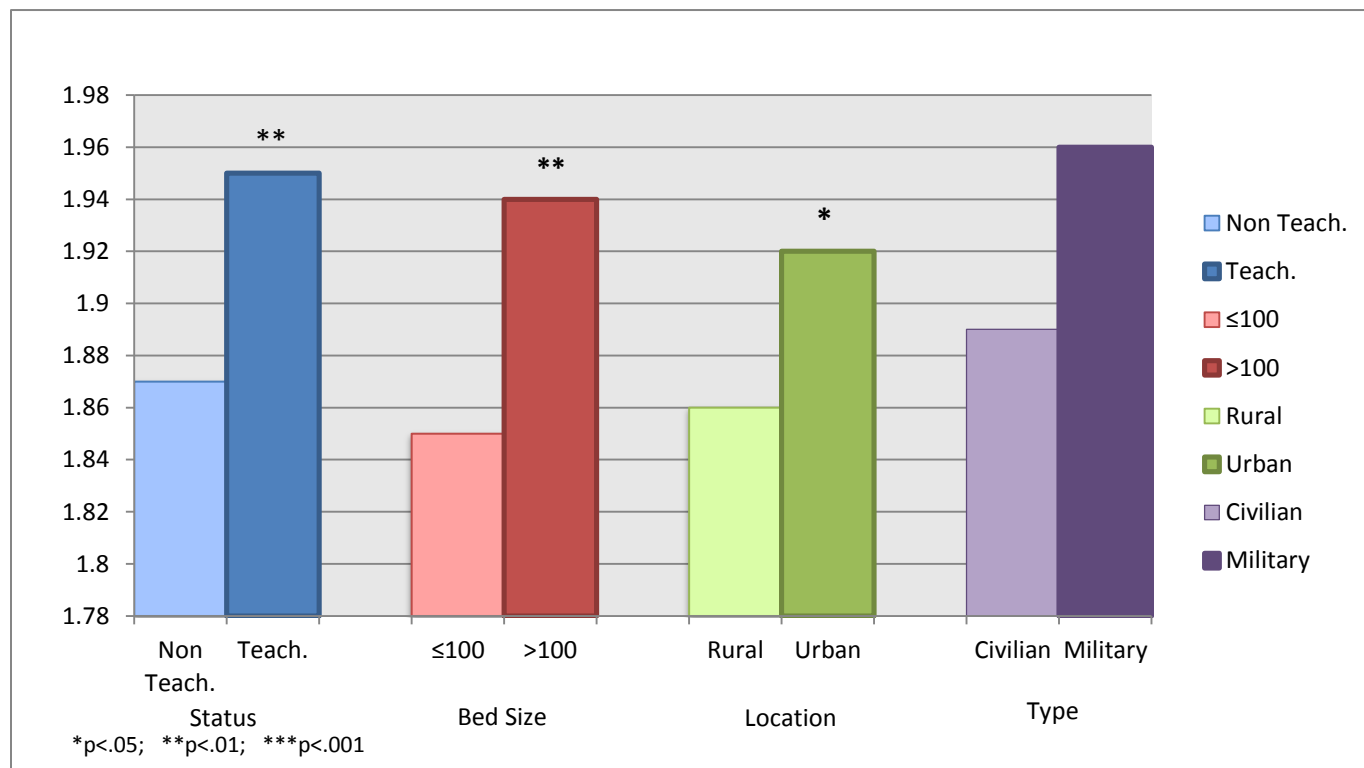
1. *Are members of the health care team trained in communication skills that enhance patient provider communication? (always, sometimes, rarely, never)*
2. *Does the hospital assure continuity of care between the health care team and patients? (always, sometimes, rarely, never)*

Scores for each of the two statements comprising this construct ranged from 0-1. The range for the full Cultivating Healing Relationships construct was 0-2. There were 638 valid responses to both of these statements and the mean for this construct was 1.89 ( $SD = .36$ ). For the overall Cultivating Healing Relationships construct 82.3% of survey respondents achieved the minimum score of 2 or greater, indicating that they answered "sometimes" or "always" for all of the statements. With respect to the individual items 81.6% of respondents said members of the health care team "always" or "sometimes" have been trained in communication skills that enhance patient provider communication; 87.8% reported the hospital "always" or "sometimes" assures continuity of care between the health care team and patients.

Our examination of the scores on the full Cultivating Healing Relationships construct by our targeted demographic variables revealed a significant difference between teaching and non-teaching hospitals such that teaching hospitals were more likely to report cultivating healing relationships initiatives in their facilities than non-teaching hospitals,  $t(635) = -3.10, p = <.01$ . Hospitals with over 100 beds were significantly more likely to report initiatives of cultivating healing relationships than hospitals with 100 beds or less,  $t(635) = -3.06, p = <.01$ ; and urban hospitals were significantly more likely than rural hospitals to respond that their facility "sometimes" or "always" offers initiatives to cultivate healing relationships,  $t(635) = 2.14, p <.05$ . Military/VA hospitals and civilian hospitals were not significantly

different in likelihood to offer healing relationship initiatives,  $t(638) = .89, p=.37(\text{ns})$ . Figure 5 shows the means for the demographic variables we assessed.

**Figure 5. Cultivating Healing Relationships: Comparative Means for Demographic Variables (Range = 0-2)**



## Component IV: Practicing Healthy Lifestyles

Individuals (and groups) can practice behaviors which enhance their health and prevent future development of disease. As part of an OHE, hospitals can provide programs to support healthy practices. It is widely accepted that three important components of living a healthy lifestyle are eating nutritiously, exercising, and maintaining balance through stress management/relaxation.<sup>6</sup> The Practicing Healthy Lifestyles questions inquired about hospital programs and opportunities that would facilitate the adoption of these practices. More specifically, this construct was assessed via the following question:

*1. What wellness and other services do you provide? (check all that apply)*

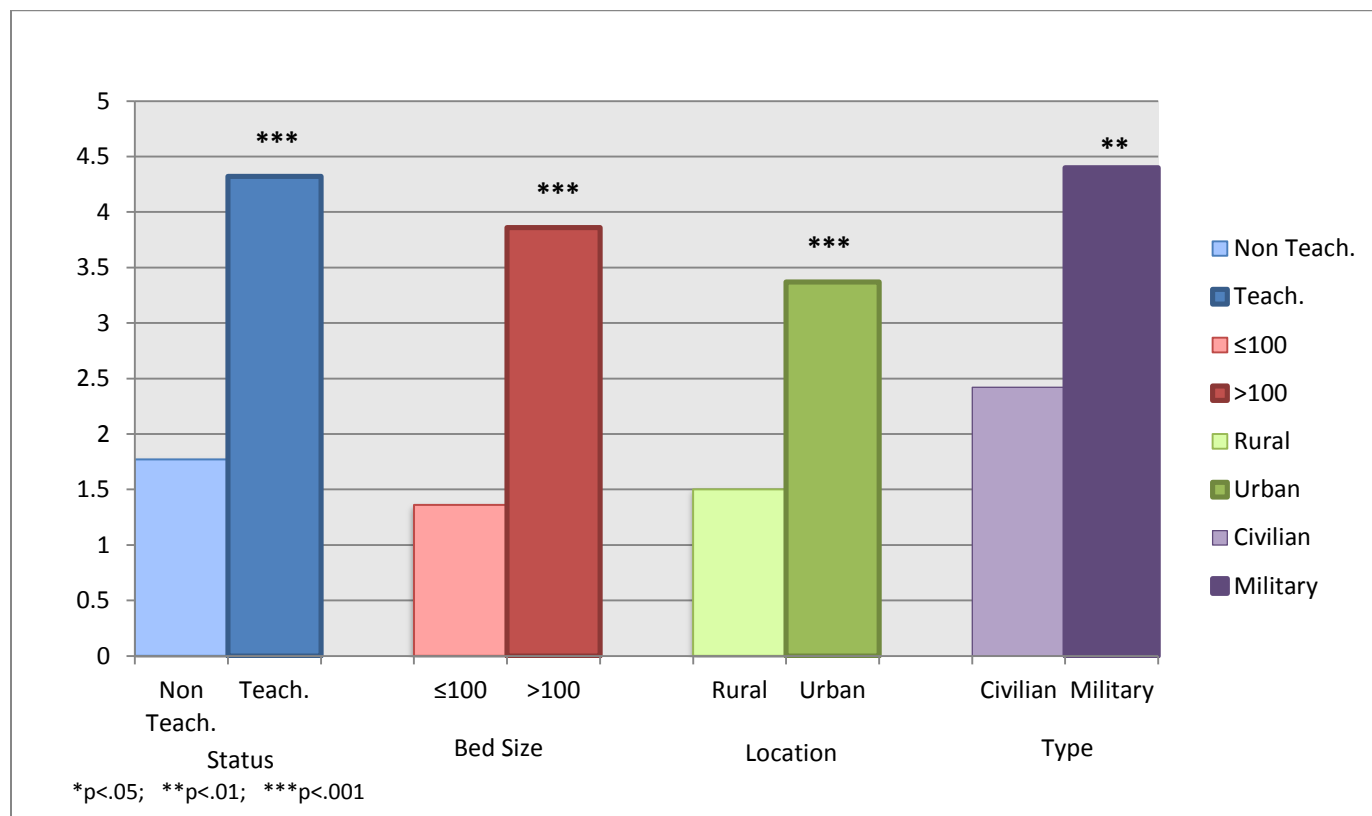
|                                               | <i>For patients</i>      | <i>For employees</i>     |
|-----------------------------------------------|--------------------------|--------------------------|
| <i>Smoking Cessation/Addiction management</i> | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Fitness Training</i>                       | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Nutritional Counseling</i>                 | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Stress Management</i>                      | <input type="checkbox"/> | <input type="checkbox"/> |
| <i>Weight management</i>                      | <input type="checkbox"/> | <input type="checkbox"/> |

For each component of this question the range of responses was 0-1. The total construct range was 0-10 with a mean of 2.49 ( $SD = 3.52$ ). For the overall Practicing Healthy Lifestyles construct, 24.5% of survey respondents achieved the minimum score of 6 greater, indicating that they responded “yes” for all or a majority of the items. The percentage of hospital respondents that indicated their facility had smoking cessation/addiction management services for patients was 30.2%; 26.4% had them for employees. 18.4% of respondents offered fitness training to patients and 21.8% offered it to employees. Nutritional counseling was provided to patients by 36.2% of hospitals; 20.9% offered it to employees. Stress management services were available to patients in 21.4% of responding hospitals and to employees in 20.5%. Finally, 25.9% of our respondents offered weight management services to patients and 25.5% offered them to staff.

Teaching hospitals were significantly more likely than non-teaching hospitals to report that their facilities offered initiatives in practicing healthy lifestyles for the patients and staff,  $t(714) = -9.25$ ,  $p = <.001$ . Hospitals with more than 100 beds were also significantly more likely to offer initiatives in practicing healthy lifestyles for their patients and staff,  $t(714) = -10.04$ ,  $p <.001$ , as were urban hospitals compared to rural hospitals,  $t(714) = 7.33$ ,  $p = <.001$ . Additionally, military/VA hospitals were

significantly more likely than civilian hospitals to report their facilities offered initiatives in practicing healthy lifestyles for the patients and staff,  $t(717) = 2.00$ ,  $p < .01$ . Figure 6 shows the means for the demographic variables we assessed.

**Figure 6. Practicing Healthy Lifestyles: Comparative Means for Demographic Variables (Range = 0-10)**



## Component V: Applying Collaborative Medicine

Collaborative medicine is the application of a variety of practices from conventional medicine as well as complementary therapies. Collaborative medicine takes an integrative approach to optimizing health. The Applying Collaborative Medicine questions assessed whether CAM therapies were routinely incorporated into patient care. The three items assessing the Applying Collaborative Medicine OHE construct were as follows:

1. *Does staff routinely incorporate the following into patient care? (check all that apply)*

☐ *Mind/body therapies (e.g. mindfulness meditation, yoga, breathing training)*

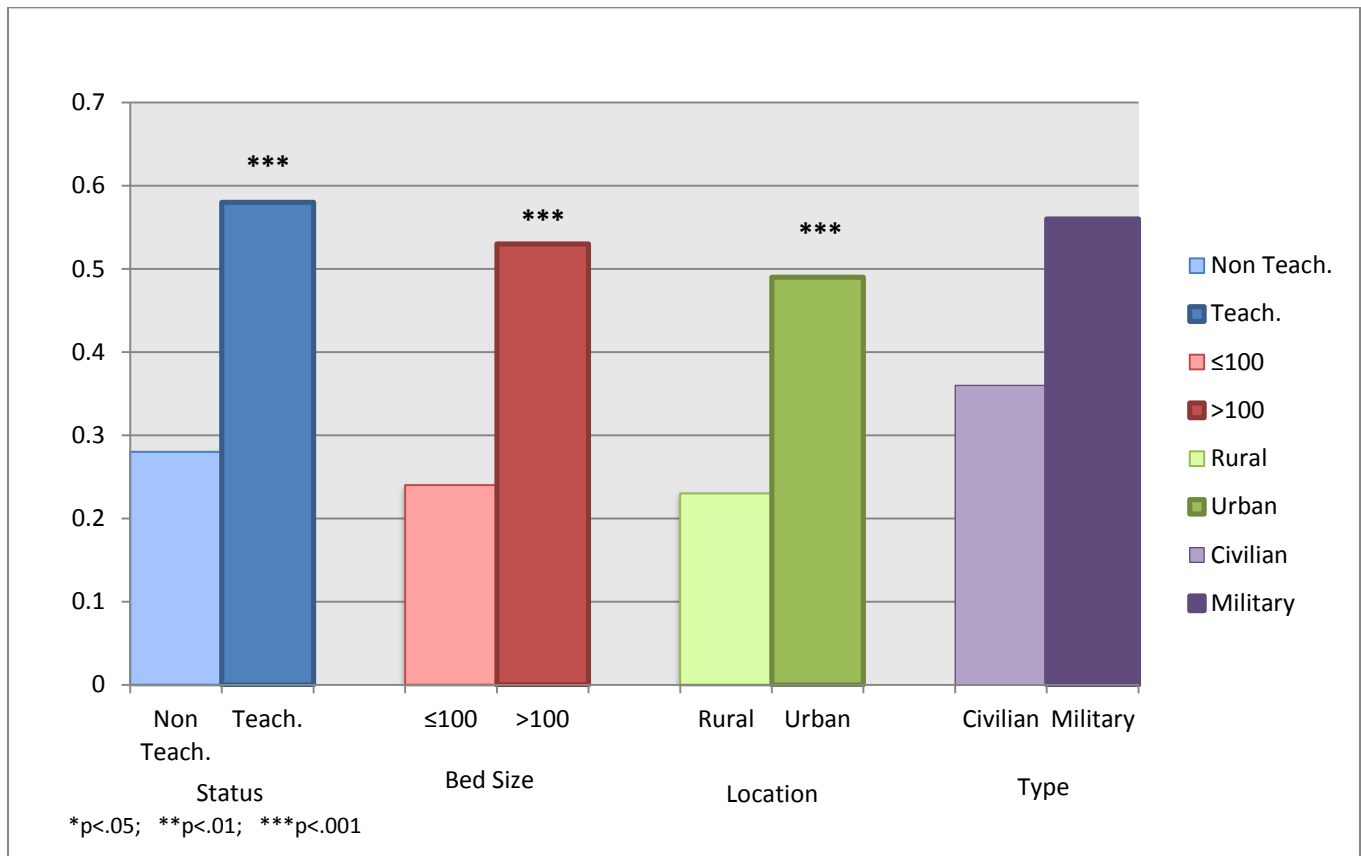
☐ *Energy practices (e.g. Therapeutic Touch, Healing Touch, Reiki)*

☐ *Complementary and alternative therapies (e.g. acupuncture, aromatherapy, massage therapy)*

For each of the three statements, the range of responses was 0-1. For the full Applying Collaborative Medicine construct the range of values was 0-3 with a mean construct score of .37 ( $SD = .74$ ). Of the 717 respondents who had valid answers for all of the statements comprising the Applying Collaborative Medicine construct, 9.0% achieved the minimal value of 2 or higher, indicating that they responded “yes” for all or a majority of the statements. 13.3% of respondents replied their hospital routinely incorporate mind/body therapies into patient care, 8.6 % routinely incorporate energy practices, and 14.6% routinely use complementary and alternative therapies.

In the area of Applying Collaborative Medicine, teaching hospitals were significantly more likely than non-teaching hospitals to respond that collaborative medicine modalities were routinely incorporated into patient care,  $t(714) = -4.17, p = < .001$ . Hospitals with more than 100 beds were also significantly more likely than hospitals with 100 beds or less to report that collaborative medicine modalities were routinely incorporated into patient care,  $t(714) = -5.06, p = < .001$ ; urban hospital were significantly more likely than rural hospitals to report the same,  $t(714) = 4.93, p < .001$ . Military/VA hospitals and civilian hospitals were not significantly different in likelihood to offer collaborative medicine modalities,  $t(717) = 1.08, p = .29(ns)$ . See Figure 7 for the means of the demographic variables discussed above.

**Figure 7. Applying Collaborative Medicine: Comparative Means for Demographic Variables (Range = 0-3)**



## Component VI: Creating Healing Organizations

Successful creation of healing organizations requires the support of the leadership and organizational decision makers. It requires a culture that emphasizes healing, both formally and informally. The Creating Healing Organizations questions assessed the leadership environment and values found in the hospitals. They were as follows:

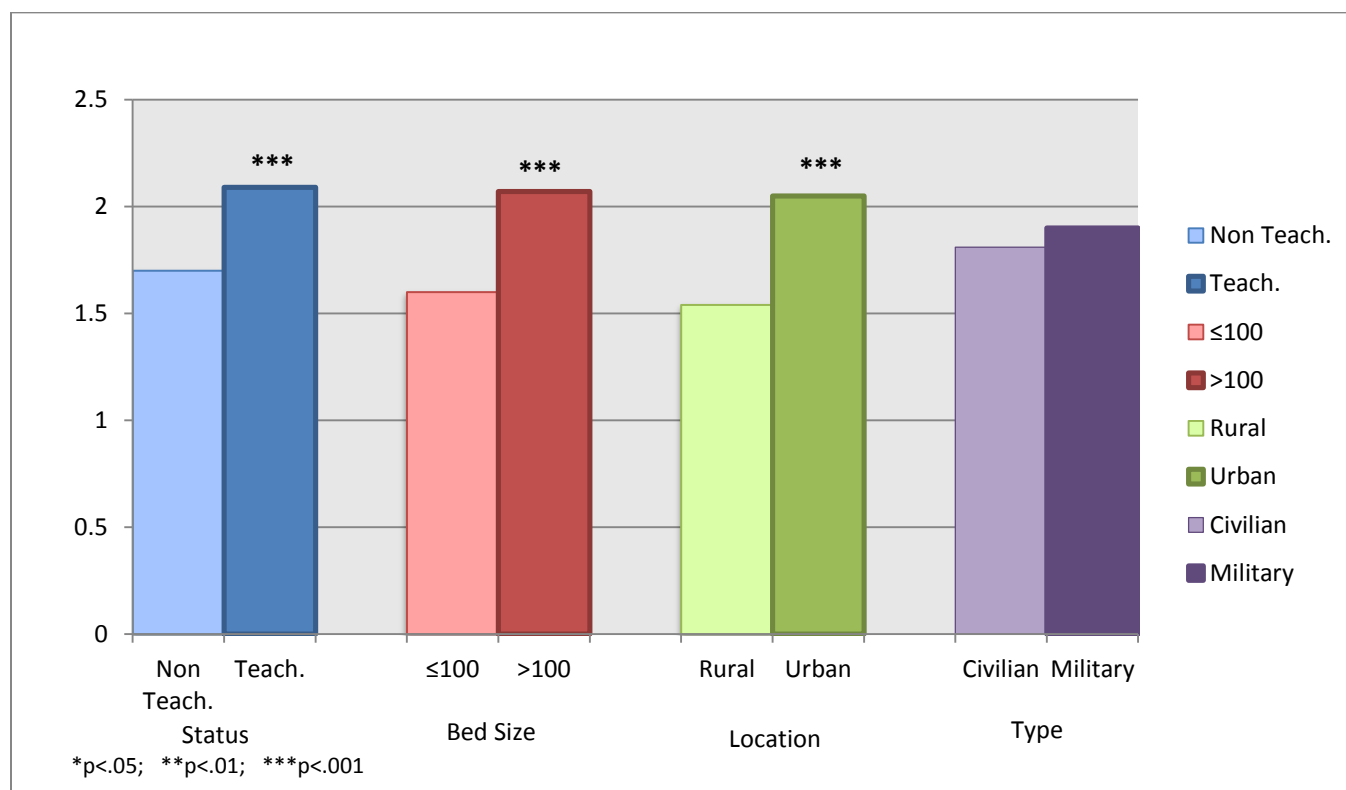
1. *Does the organizational culture emphasize healing (the process of recovery, repair and return to wholeness) in addition to curing (eradication of disease)? (always, sometimes, rarely, never)*
2. *Does part of the hospital's mission/vision addresses creating an "optimal healing environment" (an environment where all aspects of patient care – physical, emotional, spiritual, behavioral, and environmental – are optimized to support and stimulate healing in addition to curing? (yes/no)*
3. *Does your hospital have leaders or champions whose role is to foster development of an "optimal healing environment" (as defined above in the question above)? (yes/no).*

The values for each of the statements making up the Creating Healing Organizations construct ranged from 0-1. The overall construct value range was 0-3 with a mean value of 1.81 ( $SD = 1.12$ ). Of the 612 respondents who had valid answers to the 3 statements comprising this construct, 53.6% obtained the minimum score of 2 or higher indicating that they answered "sometimes" "always" or "yes" for all or a majority of the statements. With respect to each statement, 68% responded that their organizational culture "sometimes" or "always" emphasizes healing (the process of recovery, repair and return to wholeness) in addition to curing (eradication of disease). 48.3% of the respondents said part of their hospital's mission/vision addresses creating an "optimal healing environment," and 43.7% indicated their hospital has leaders or champions whose role is to foster development of an "optimal healing environment."

Our t-test results revealed that respondents from teaching hospitals were significantly more likely than those from non-teaching hospitals to report that their facilities were healing organizations,  $t(609) = -3.95$ ,  $p < .001$ . Respondents from hospitals with over 100 beds were also significantly more likely than hospitals with 100 beds or less to indicate that their facility was a healing organization,  $t(609) = -2.93$ ,  $p$

<.001. Those from urban hospitals were significantly more likely to indicate that their facility was a healing organization than were respondents those from rural hospitals  $t(609) = 5.72, p<.001$ . Military/VA hospitals and civilian hospitals were not significantly different in their likelihood to report their facility as being a healing organization,  $t(612) = .378, p=.71(ns)$ . Figure 8 presents the means for these demographics.

**Figure 8. Creating Healing Organizations: Comparative Means for Demographic Variables (Range = 0-3)**



## Component VII: Building Healing Spaces

The Building Healing Spaces questions addressed the physical environment of the hospitals. A physical space can contain a variety of components that may support or detract from wellness and recovery, such as architecture, nature, light, color, art, music, aroma, and water.<sup>7</sup> Statements pertaining to the Building Healing Spaces construct were as follows:

1. *Does your hospital consciously address any of the following aspects of its physical space with the intent of promoting wellness and recovery? (check all that apply)*

☐ Nature

☐ Artwork

☐ Color

☐ Architecture

☐ Light

☐ Music/sound

☐ Aroma

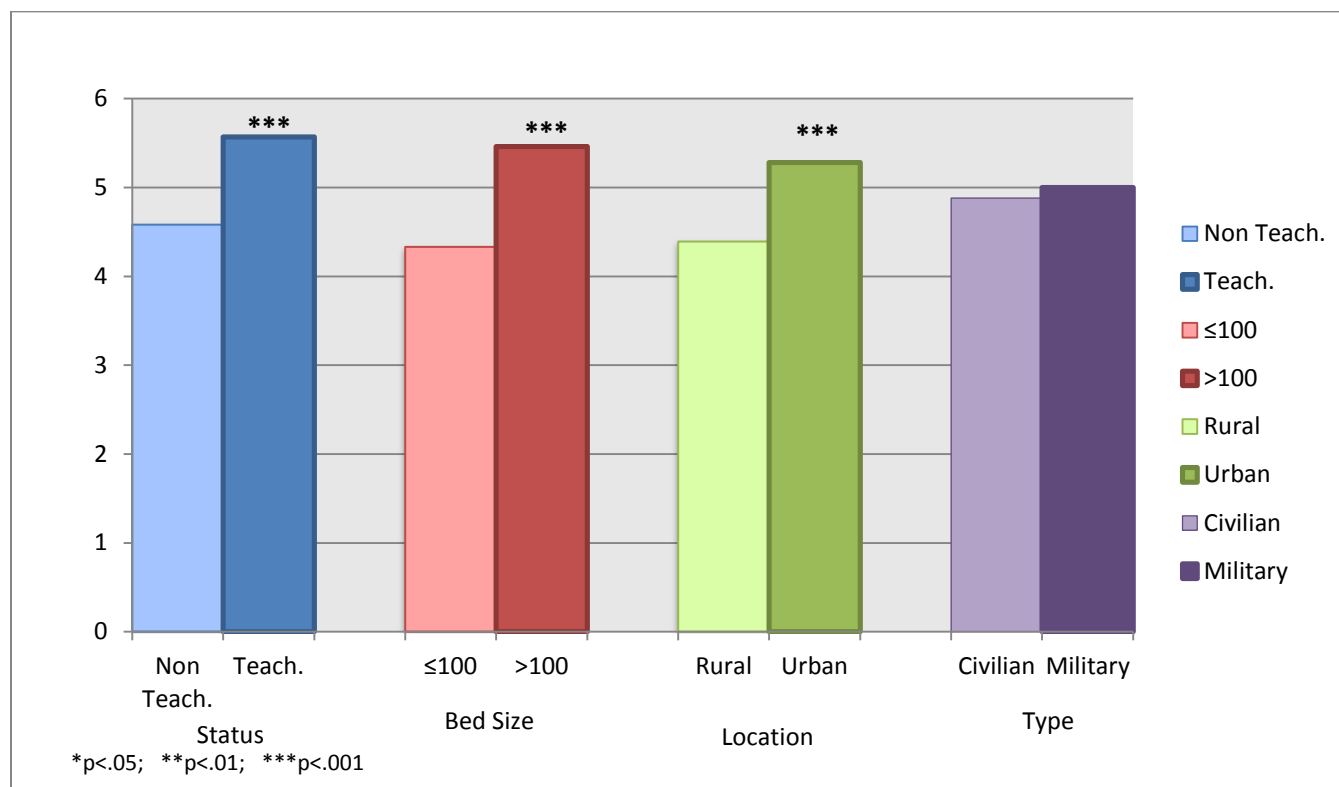
2. *Does the hospital's architecture encourage family participation in patient care? (always, sometimes, rarely, never)*

Each statement had a value range of 0-1. The overall range for this construct was 0-8 with a mean of 4.88 ( $SD = 1.84$ ). Of the 637 valid responses to these eight statements, 39.9% were at or above the minimum value of 5 indicating that those respondents indicated “sometimes” “always” or “yes” on all or a majority of the eight items. 37.6% of respondents said their hospital consciously addresses nature with the intent of promoting wellness and recovery. 56.6% use artwork for the same purpose. Color is addressed to promote wellness and recovery by 55.1% and architecture by 37.0% of responding hospitals. 52.8%, 31.6%, and 8.7% of hospitals use light, music/sound, and aroma, respectively, with the intention of promoting healing and wellness. In terms of the hospital's architecture encouraging family participation in patient care, 73.5% of respondents indicated that this was “sometimes” or “always” the case.

Teaching hospitals were significantly more likely than non-teaching to indicate that their hospital addressed healing spaces elements,  $t(497) = -5.78, p < .001$ . Respondents from hospitals with more than 100 beds were significantly more likely to report that their hospitals attended to healing spaces elements than were those from hospitals with 100 beds or less,  $t(497) = -7.20, p < .001$ . Those from urban

hospitals were significantly more likely than those from rural hospitals to indicate ongoing attention to elements of healing spaces in their hospitals,  $t(497) = 5.53, p < .001$ . Finally, military/VA hospitals and civilian hospitals were not significantly different in their likelihood to report their facility as attending to healing spaces elements,  $t(499) = .240, p = .16$  (ns). Figure 9 represents the mean values for each of the demographic variables mentioned above.

**Figure 9. Building Healing Spaces: Comparative Means for Demographic Variables (Range = 0-8)**

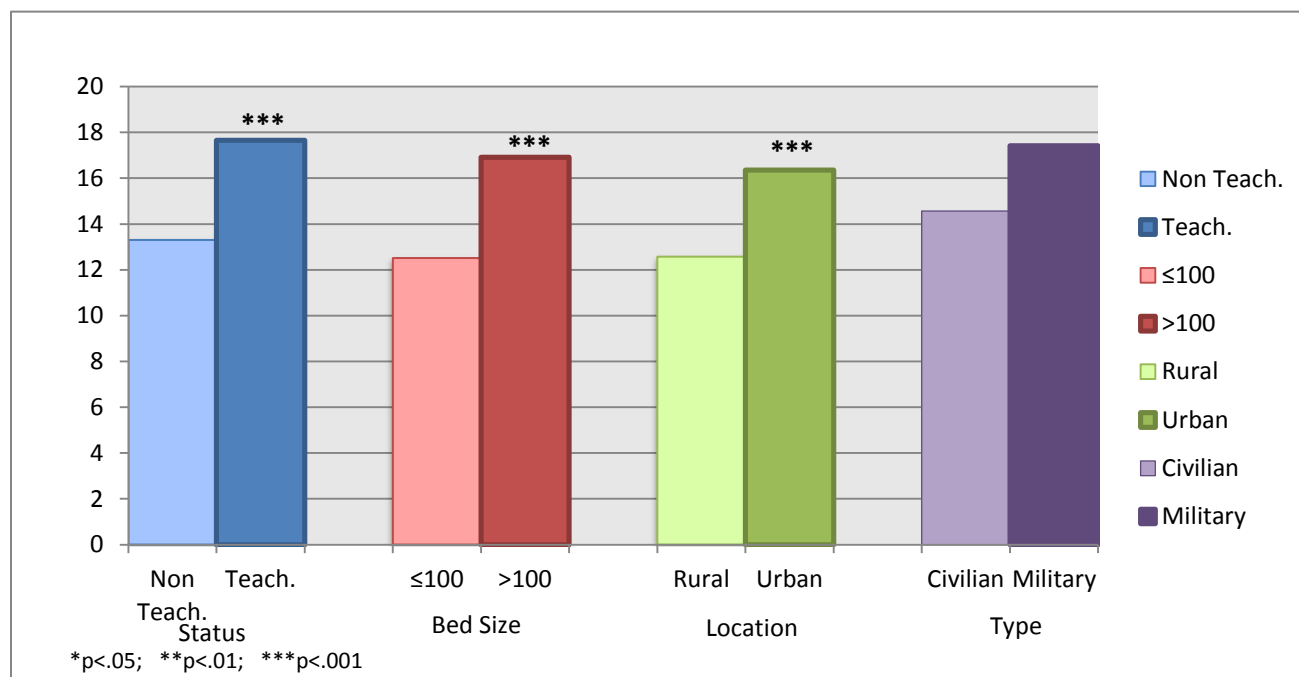


## Overall Optimal Healing Environments Score

As a way of assessing the extent to which hospitals that responded to our survey had initiatives that were attending, at least sometimes, to each and every construct of an OHE, we calculated a minimum score by summing minimum scores that were required for each construct to be considered present. The minimum score to be considered an overall OHE was 20 out of a total possible score of 29. We then calculated a summed score for each hospital. The obtained range for the entire overall OHE score was 2-29, of a possible total range of 0-29, with a mean of 14.65 ( $SD = 5.84$ ). Of the 550 respondents who had valid responses to all 29 items, 14.5% displayed the minimum score of 20 or above indicating that they had answered “sometimes” “always” or “yes” to a majority of questions in every OHE construct.

Demographically, the teaching hospitals displayed a significantly higher overall OHE score than the non-teaching hospitals,  $t(419) = -7.41, p < .001$ . Hospitals with more than 100 beds had a significantly higher overall OHE score than did hospitals with 100 beds or less,  $t(429) = -8.40, p < .001$ , and urban hospitals evidenced a significantly higher overall OHE score than rural hospitals,  $t(419) = 7.17, p < .001$ . Military/VA hospitals and civilian hospitals were not significantly different in their overall OHE score,  $t(431) = 1.67, p = .09$  (ns). See figure 10 for the mean values for these demographic variables.

**Figure 10. Overall OHE Score: Comparative Means for Demographic Variables (Range = 0-29)**



## Discussion

*2010 Complementary and Alternative Medicine Survey: Optimal Healing Environments Section* was an effort to gather generalizable data and broaden our understanding of OHE initiatives in American hospitals. The results from the survey suggest that hospitals across the country are developing and implementing initiatives that relate to all seven components of the OHE Framework. They are incorporating some components, such as Cultivating Healing Relationships and Developing Healing Intentions, more than others, such as Practicing Healthy Lifestyles and Applying Collaborative Medicine. Of the seven OHE components, four are being incorporated by over half of all responding hospitals, and six are incorporated by nearly a quarter or more; a fairly substantial showing of OHE elements in hospitals nationwide. 14.5% of responding hospitals indicated they had all seven OHE components in their hospitals. It is noteworthy that one in seven responding hospitals nationwide is attending in a very concentrated way to this group of elements that can support, stimulate, and optimize patient healing.

When comparing components, the span for percentage of hospitals incorporating each OHE component was wide. The range goes from a low of 9.0% of responding hospitals integrating the component of Applying Collaborative Medicine, to a high of 82.3% of respondents integrating the Cultivating Healing Relationships component. This wide range seems to indicate that creating an OHE is not a “one-size-fits-all” approach in which every hospital incorporates the same mixture of OHE elements. Rather, hospitals seem to pick and choose different OHE elements that address their particular needs and circumstances.

What are the most “popular” OHE components and why are some OHE components being used more frequently than others? By far, the most frequently incorporated OHE component is Cultivating Healing Relationships (used by 82.3% of respondents). This finding is consistent with our 2006 pilot survey of OHEs in Midwest hospitals, *Survey of Healing Environments in Hospitals*, and our 2007 *Complementary and Alternative Medicine Survey: Optimal Healing Environments Section*, both which found healing relationships to be a frequent focus of hospitals.<sup>1,1a</sup> The high frequency of use found in this current 2010 study suggests that hospitals nationwide realize the importance of healing relationships and are investing in their cultivation. This is not surprising given the growing body of evidence of the

positive effects of the patient-provider relationship on healing.<sup>2,4,8,9</sup> Further, since the Institute of Medicine's (IOM's) groundbreaking *Crossing the Quality Chasm* report calling for patient-centered healthcare,<sup>10</sup> there has been a greater focus on putting the patient/family-provider relationship at the center of care. Encouragingly, hospitals in our survey appear to be trying to nurture healing relationships not only in theory but also by investing resources in building concrete skills; 81.6% are training health care providers in communication skills that enhance patient-provider communication.

Experiencing Personal Wholeness, the integration of mind, body, spirit, and energy, is the second most popular OHE component with the surveyed hospitals, used by 62.4%. This is congruent with the increased recognition in healthcare that patients are holistic beings with physical, mental, emotional, and spiritual needs. A strong evidence base has been building showing the effectiveness of using a variety of mind-body techniques, such as mindfulness meditation, biofeedback, guided imagery and yoga, in the medical setting with a mixture of different clinical populations.<sup>11-16</sup> That these techniques can easily be taught in the hospital setting, require little to no equipment, and can be taught in groups, making them inexpensive, probably increases their appeal for hospitals.

By far, the least frequently used OHE component in this survey is Applying Collaborative Medicine, incorporated by only 9.0% of responding hospitals. In some ways this is not surprising. It is consistent with data found in the 2006 pilot survey of OHEs in Midwest hospitals, *Survey of Healing Environments in Hospitals*, and the 2007 *Complementary and Alternative Medicine Survey: Optimal Healing Environments Section*, in which Applying Collaborative Medicine was one of the less frequently used OHE components.<sup>1,1a</sup> Even so, the percentages of hospitals offering collaborative medicine components in the current study has dropped in comparison to the 2006 study. For instance, in the 2006 *Survey of Healing Environments in Hospitals* study, Therapeutic or Healing Touch was a service offered to inpatients in 23.6% of hospitals<sup>17</sup> as compared to only 9% of the hospitals in the current 2010 *Complementary and Alternative Medicine Survey: Healing Cultures Section*. Perhaps the difference in numbers is due to a difference in sample size and geographic location of sample. The 2006 study was a pilot of 125 hospitals in the Midwest United States and this survey covered almost 6,000 hospitals nationwide. Is collaborative medicine more welcome or accepted in the Midwest? Do hospitals in that region have greater access to experienced, trained CAM providers?

We do not think this is the correct explanation as our current results for the Applying Collaborative Medicine construct are also lower than those found elsewhere in the *2010 Complementary and Alternative Medicine Survey*, which is a national survey. As described in the introduction to this paper, the *2010 Complementary and Alternative Medicine Survey: Healing Culture Section* was part of a larger 42-item instrument, *2010 Complementary and Alternative Medicine Survey*,<sup>18</sup> which focused mainly on CAM. The larger CAM section of the survey found that 42% of responding hospitals offered one or more CAM therapies in the hospital, as compared to our finding that 14.6% regularly incorporate CAM into patient care and only 9.0% have incorporated the overall Applying Collaborative Medicine construct. Is this inconsistency due to a difference in the definition of “CAM” in the various sections of the survey? Probably not, as both parts of the survey asked about similar CAM modalities (e.g., Acupuncture, aromatherapy, Reiki, meditation). Rather, the difference in frequency may be explained by the wording of the questions. The 2006 pilot *Survey of Healing Environments in Hospitals* and the CAM section of the national *2010 Complementary and Alternative Medicine Survey* each ask if CAM modalities are “available” or “provided” to patients. In contrast, the *2010 Complementary and Alternative Medicine Survey: Healing Culture Section* asks if CAM modalities are “routinely incorporated into patient care.” The difference in numbers may be due to the fact that while 42% of hospitals offer one or more CAM therapies, fewer (14.6%) have truly incorporated CAM into their routine, customary patient care practices.

The percentage of hospitals integrating Building Healing Spaces, 39.9% in 2010, was slightly lower than expected given it was the OHE component most frequently adopted by hospitals responding to the pilot *2006 Survey of Healing Environments in Hospitals*. With the interest in hospital architecture and design as a way to enhance the quality of health care, as well as a growing body of evidence demonstrating the positive effects of building design on both patient health outcomes and hospital financial Performance,<sup>19-20</sup> the authors would have expected wider uptake of the Building Healing Spaces component by hospitals across the country. On the other hand, given the current economic climate, perhaps hospitals view design overhauls as too expensive. In examining individual Building Healing Spaces elements from the survey, we find that some elements of building a healing space (e.g., artwork, color, and light) are more popular than others (e.g., aroma). Possibly more evidence needs to be accrued for the less frequently used elements of healing spaces to be adopted. Also, infection control issues could limit some hospitals from using aromatherapy.

Comparing OHE elements demographically provides interesting findings. For every single individual OHE component, as well as OHE as a whole, urban hospitals were significantly more likely than rural hospitals to have those components in their hospitals. This was also true for hospitals with over 100 beds as compared to smaller hospitals. Similarly, teaching hospitals were significantly more likely than non-teaching to have an overall OHE in their hospital as well as each individual OHE component, except for the construct of Developing Healing Intention. Comparative analysis of military/VA and civilian hospitals did not reach statistical significance, except for the Practicing Healthy Lifestyles construct. However, in six of the seven other OHE comparisons (all except Healing Intentions), military/VA hospitals reported higher mean scores than civilian hospitals. Within the Healthy Lifestyles construct, not only were military/VA hospitals significantly more likely than civilian hospitals to report offering healthy lifestyle initiatives to patients and families, the average number of initiatives they offered was almost double (4.4 compared to 2.4).

What is it about larger, urban, and teaching hospitals that make them more conducive to incorporating OHE components? Do larger hospitals have greater resources? Are urban and teaching environments more open to innovative concepts such as OHE? Perhaps urban hospitals serve a wider diversity of patients who are familiar with and requesting a wider variety of non-traditional services. Maybe urban hospitals have access to a larger group of trained CAM practitioners who can be integrated into their hospitals. Teaching hospitals, which historically have a research focus, may be more interested in OHE components as the evidence base is building showing the positive effects of OHE components.

Why are military/VA hospitals more frequently adopting OHE initiatives than civilian institutions? The military/VA health care system is being stretched in unprecedented ways. Increasing numbers of wounded soldiers are returning from Afghanistan and Iraq with serious injuries that prior to advances in body armor would have ended in death. In addition, the injuries that returning soldiers suffer are of a different kind than in past conflicts. More service members suffer traumatic brain injury (TBI) and loss of limbs, both of which result in a need for ongoing long-term health care treatment which is stressful to both the soldier and their family members. Perhaps these new challenges contribute to an increased openness by military hospital administrators to incorporate OHE approaches that stimulate, support, and optimize healing. Also, military hospitals may have an especially high interest in helping patients heal

since their patients are also in a sense their employees, vital service members needed to return to the field.

Why did military/VA hospitals responding to this survey offer almost double the number of opportunities to practice healthy lifestyles than civilian hospitals? Fitness and health have traditionally been of major importance in the military. In the last several years, led by retired Chairman of the Joint Chiefs of Staff (JCS), ADM Michael Mullen, the military has been committed to creating a new, expanded paradigm for maintaining health, readiness and performance. They now stress the importance not only of physical fitness and weight management, but also good nutrition, stress reduction, and addiction management, all components of the OHE Practicing Healthy Lifestyles construct.

## Conclusions

What do the survey findings mean for hospitals, health care systems and professionals involved in health care reform? The survey found that all seven OHE components are being implemented by hospitals across the nation. Four of the OHE components are implemented by over half of all responding hospitals; six of the OHE components are being implemented by almost a quarter of responding hospitals. Further, one in seven responding hospitals have incorporated aspects of all seven OHE constructs. Given this high frequency of adoption, the findings seem to suggest that all hospitals and health care systems, in order to remain innovative and competitive, may want to incorporate OHE components that support, stimulate, and optimize healing. Professionals involved in implementing health care reform may also want to begin learning about OHE elements and consider providing financial incentives for utilizing them. A natural place to start could be investing in fostering healing relationships. This OHE element is popular and has a strong body of evidence to back its effect on patient recovery and wellness.<sup>2,3,4,5</sup> Hospital and health care CEOs could provide training for clinicians in communication skills and the cultivation of empathy and compassion with themselves and their patients. Health insurers could begin to offer and cover programs that prepare patients to better communicate their needs to providers. Hospitals may want to begin by focusing on Personal Wholeness, another popular OHE element in surveyed hospitals. Experiencing Personal Wholeness can be facilitated by fairly simple and inexpensive techniques such as teaching patients deep breathing, or offering quiet spaces for spiritual practices. However they approach it, the survey findings suggest health care professionals who want to remain on the cutting edge would be wise to invest in development of these OHE components to support, stimulate, and optimize healing.

There were several limitations to this study. One was a low response rate of 12%. The earlier 2006 pilot survey had a much higher response rate of 44%.<sup>1</sup> Another limitation is that some of the demographics (e.g., location, size, and teaching vs. non-teaching) of the small sample collected were not consistent with the overall demographics of hospitals in America. Thus our data is a non-representative sample and cannot be generalized to characterize hospitals nationwide.

A second major limitation was our inability, due to inconsistencies in question design and answer scales, to make longitudinal assessments about OHE initiatives using repeated measures analysis. Although this

report presents comparisons of the most and least “popular” constructs across the three periods of assessment (2006, 2007, 2010), this information must be interpreted cautiously. Comparisons between the initiatives reported by the military/VA and civilian hospitals should also be viewed cautiously. Unequal sample size in the comparative analysis for the military/VA vs. civilian hospitals may have contributed to a lack of power to find statistical differences between the two groups on the majority of the OHE constructs surveyed. Group mean differences (presented above in the graphs), may be more reliable.

A final limitation involves respondent knowledge and accuracy. The survey was sent to a single respondent who answered questions for an entire hospital. Though we sent the survey to a staff person whose title implied they would have familiarity with the content areas covered in the survey, there is no way to be sure the respondent was well-informed. A more thorough approach would include sending the survey to multiple recipients at each institution and requiring each recipient to provide their title in order to give us a greater sense of their level of familiarity with OHE-type initiatives at their hospital.

OHE-type initiatives are the direction of the future for hospitals and health care systems, making it vital to continue to track changes in the depth and breadth of their adoption and implementation in American hospitals. Many of the OHE constructs are low-cost, low-tech, and high-impact, as well as effective. Patients/consumers, who are increasingly knowledgeable and are using the health care system more than ever as their ages and chronic illnesses increase, are asking for these types of initiatives; even demanding them. Going forward, we recommend creating a more standardized, replicable follow-up survey that is designed to allow rigorous longitudinal examination of changes in the depth and breadth of adoption and implementation of OHE constructs. It should be accompanied by a concentrated follow-up strategy, such as the one employed in the 2006 survey that included repeated, personalized follow-up contact, to increase response rate and the likelihood of obtaining a generalizable sample with an increased assessment of military hospitals.

\*This work was supported by the US Army Medical Research and Materiel Command under Award No. W81XWH-10-1-0938. The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

## Citations:

1. Samuelli Institute (2006, October). Survey of Healing Environments in Hospitals. [Online]. Available from <http://www.siib.org/research/419-SIIB/version/default/part/AttachmentData/data/final%20survey%20instrument.pdf>
- 1a. Firth K, Smith K, Gourdin K. The nature and prevalence of healing and wellness initiatives in American hospitals. *Wellness Management*. Fall 2010:1-7.
2. Stewart M, Brown J, & Donner A. (2000). The impact of patient-centered care on patient outcomes. *Journal of Family Practice*. 49:796-804.
3. Chez R, Jonas W. (Eds.) (2005). Developing healing relationships. *A Supplement to Journal of Alternative and Complementary Medicine*. 11: Supplement 1.
4. Frankel R, Inui T. (Eds.) (2006). Reforming relationships in health care. *A Supplement to Journal of General Internal Medicine*. 21: Supplement 1.
5. Tresolini C and the Pew Fetzter Task Force on Psychosocial Education. (1994). *Health Professions Education and Relationship-Centered Care: Report of the Pew-Fetzter Task Force on Advancing Psychosocial Education*. San Francisco: Pew Health Commission, 1-76.
6. U.S. Food and Drug Administration Heart Health Online (2007, June 25). Healthy Lifestyles. [Online]. Available from: <http://www.fda.gov/hearthealth/lifestyles/lifestyles.html>
7. Schweitzer M, Gilpin L, & Frampton S. (2004). Healing spaces: Elements of environmental design that make an impact on health. *The Journal of Alternative and Complementary Medicine*. 10(1): S-71-S-83.
8. Beach M, Inui T. and the Relationship-Center-Care Research Network. (2006). Relationship-centered care. A constructive reframing. *Journal of General and Internal Medicine*. 21:S3-8.
9. Gittell G, Fairfield K, Bierbaum B, Head W, Jackson R, Kelly M, Laskin R, Lipson S, Siliski J, Thornhill T. and Zuckerman J. (2000). Impact of relational coordination on quality of care, postoperative pain and functioning, and length of stay. *Medical Care*. 38(8):807-819.
10. Committee on Quality of Health Care in America, Institute of Medicine (Eds.) (2001). *Crossing the Quality Chasm: A New Health Care System for the 21st Century*. Washington, DC: National Academy Press.
11. Praissman, S. (2008). Mindfulness-based stress reduction: a literature review and clinician's guide. *J Am Acad Nurse Pract*, 20(4), 212-216.
12. Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits. A meta-analysis. *J Psychosom Res*, 57(1), 35-43.

13. Blumenthal, J. A., Jiang, W., Babyak, M. A., Krantz, D. S., Frid, D. J., Coleman, R. E., et al. (1997). Stress management and exercise training in cardiac patients with myocardial ischemia. Effects on prognosis and evaluation of mechanisms. *Arch Intern Med*, 157(19), 2213-2223.
14. Casey, A., Chang, B. H., Huddleston, J., Virani, N., Benson, H., & Dusek, J. A. (2009). A model for integrating a mind/body approach to cardiac rehabilitation: outcomes and correlators. *J Cardiopulm Rehabil Prev*, 29(4), 230-238.
15. Caudill, M., Schnable, R., Zuttermeister, P., Benson, H., & Friedman, R. (1991a). Decreased clinic utilization by chronic pain patients after behavioral medicine intervention. *Pain*, 45(3), 334-335.
16. Caudill, M., Schnable, R., Zuttermeister, P., Benson, H., & Friedman, R. (1991b). Decreased clinic use by chronic pain patients: response to behavioral medicine intervention. *Clin J Pain*, 7(4), 305-310.
17. Samueli Institute (2006, October). Survey of Healing Environments in Hospitals: Final Report. [Online]. Available from <http://www.siib.org/research/421-SIIB/version/default/part/AttachmentData/data/Reportwithinstrument9-18.pdf>
18. Ananth S. (2010). *2010 Complementary and Alternative Medicine Survey of Hospitals: Summary of Results*. Alexandria, VA: Samueli Institute.
19. Marberry S. (Ed.) (2006). *Improving Healthcare With Better Building Design*. Chicago: Health Administration Press.
20. Voelker, R. (2001). "Pebbles" cast ripples in health care design. *Journal of the American Medical Association*. 286:1701-1702.

## Appendix 1

### 2010 Complementary and Alternative Medicine Survey: Healing Cultures Section

In this section of the survey we would like you to consider some broader questions about the “healing environment” in your hospital. An optimal healing environment is one where all aspects of patient care – physical, emotional, spiritual, behavioral, and environmental – are optimized to support and stimulate healing in addition to curing.

43. Is there an assessment of the patient’s and the family’s beliefs about healing and recovery sometime during the hospital stay? *(check one)*
- ☐ Always
  - ☐ Sometimes
  - ☐ Rarely
  - ☐ Never
44. Do patients and staff talk about the ideal outcome of the patient’s stay? *(check one)*
- ☐ Always
  - ☐ Sometimes
  - ☐ Rarely
  - ☐ Never
45. Are there learning opportunities available to facilitate personal growth for patients?
- ☐ Yes      ☐ No
46. Are members of the health care team trained in communication skills that enhance patient-provider communication? *(check one)*
- ☐ Always
  - ☐ Sometimes
  - ☐ Rarely
  - ☐ Never
47. Does the hospital assure continuity of care between the health care team and patients? *(check one)*
- ☐ Always
  - ☐ Sometimes
  - ☐ Rarely
  - ☐ Never

48. Does staff routinely incorporate the following into patient care? *(check all that apply)*
- ☐ Mind/body therapies (e.g. mindfulness meditation, yoga, breathing training)
  - ☐ Energy practices (e.g. Therapeutic Touch, Healing Touch, Reiki)
  - ☐ Complementary and alternative therapies (e.g. acupuncture, aromatherapy, massage therapy)
49. Does the organizational culture emphasize healing (the process of recovery, repair and return to wholeness) in addition to curing (eradication of disease)? *(check one)*
- ☐ Always
  - ☐ Sometimes
  - ☐ Rarely
  - ☐ Never
50. Does part of the hospital's mission/vision address creating an "optimal healing environment" (an environment where all aspects of patient care – physical, emotional, spiritual, behavioral, and environmental – are optimized to stimulate healing in addition to curing)?
- ☐ Yes      ☐ No
51. Does your hospital have leaders or champions whose role is to foster development of an "optimal healing environment" (as defined in question #50 above)?
- ☐ Yes      ☐ No
52. Does your hospital consciously address any of the following aspects of its physical space with the intent of promoting wellness and recovery? *(check all that apply)*
- ☐ Nature
  - ☐ Artwork
  - ☐ Color
  - ☐ Architecture
  - ☐ Light
  - ☐ Music/sound
  - ☐ Aroma

53. Does the hospital's architecture encourage family participation in patient care? (*check one*)

- ☐ Always
- ☐ Sometimes
- ☐ Rarely
- ☐ Never

*Incorporated into the main body of the survey:*

6. What wellness and other services do you provide?

|                                        | For patients             | For employees            |
|----------------------------------------|--------------------------|--------------------------|
| Smoking Cessation/Addiction management | <input type="checkbox"/> | <input type="checkbox"/> |
| Fitness Training                       | <input type="checkbox"/> | <input type="checkbox"/> |
| Nutritional Counseling                 | <input type="checkbox"/> | <input type="checkbox"/> |
| Stress Management                      | <input type="checkbox"/> | <input type="checkbox"/> |
| Weight management                      | <input type="checkbox"/> | <input type="checkbox"/> |