A young patient enjoys percussion lessons through the Snow City Arts program at Rush University Children's Hospital in Chicago, IL

2009/ *State of the Field Report*

ARTS IN HEALTHCARE

Arts in Healthcare is a diverse, multidisciplinary field dedicated to transforming the healthcare experience by connecting people with the power of the arts at key moments in their lives. This rapidly growing field integrates the arts, including literary, performing, and visual arts and design, into a wide variety of healthcare and community settings for therapeutic, educational, and expressive purposes.

State of the Field Report: Arts in Healthcare / 2009

A March 2003 symposium, hosted by the National Endowment for the Arts (NEA) and the Society for the Arts in Healthcare, brought together 40 experts in medicine, the arts, social services, media, business, and government to develop a strategic plan for advancing cultural programming in healthcare. The strategic plan aimed to help advocates raise awareness of the benefits of arts in healthcare, better document and disseminate research demonstrating its value, move toward a national funding base, and develop adequate training to educate and train healthcare workers and administrators (NEA, 2003). The participants in this landmark symposium included representatives from the Johnson & Johnson Foundation, the American Hospital Association, Johns Hopkins University, Americans for the Arts, National Institute on Aging, and The Joint Commission. For a full list of participants, see: http://www.arts.endow.gov/resources/Accessibility/aihr/AIHParticipants.html.

The following *State of the Field Report* offers information about progress in the field since the symposium, which resulted in recommendations and a strategic direction to advance the arts in healthcare.

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Contents

Executive Summary

Throughout recorded history, we see evidence that pictures, stories, dances, music, and drama have been central to healing rituals. Today's renewed focus on humanistic care is leading to resurgence in the knowledge and practice of incorporating the arts into healthcare services.

Increasing numbers of clinicians and other professionals from the medical community are working side by side with arts professionals in both healthcare and community settings, and around the world the arts are emerging as an important and integral component of healthcare. In two recent surveys, nearly half of the healthcare institutions in the United States reported having arts in healthcare programming. The majority of these programs are in hospitals, with smaller percentages reported in long-term care and hospice/palliative care organizations. The three most common types of arts programming are permanent display of art, performances in public spaces, and bedside activities.

Research demonstrates the benefits of the arts in healthcare in hospitals, nursing homes, senior centers, hospices, and other locations within the community. Arts in healthcare programs and creative arts therapies have been applied to a vast array of health issues—from post-traumatic stress disorder to autism, mental health, chronic illnesses, Alzheimer's and dementia, neurological disorders and brain injuries, premature infants, and physical disabilities—to improve patients' overall health outcomes, treatment compliance, and quality of life.

New evidence is emerging that demonstrates that these programs also have an economic benefit. Data show that such programs result in patients requiring shorter hospital stays, less medication, and having fewer complications—all of which translates to a reduction in healthcare costs. However, much of the research focused on the economic benefits of arts in healthcare is anecdote rich and data poor. It is hoped that future analysis of the economic benefits of arts in healthcare programs will advance policy conversations about using the arts to simultaneously reduce health costs and raise the quality of care.

Conversely, there is a rich and growing body of research connecting arts in healthcare programs to improved quality of care for patients, their families, and even medical staff. Studies have proven that integrating the arts into healthcare settings helps to cultivate a healing environment, support the physical, mental, and emotional recovery of patients, communicate health and recovery information, and foster a positive environment for caregivers that reduces stress and improves workplace satisfaction and employee retention.

Areas of Focus

PATIENT CARE

The incorporation of the arts into the healthcare experience has a positive impact on patient health outcomes. The arts benefit patients by aiding in their physical, mental, and emotional recovery, including relieving anxiety and decreasing the perception of pain. In an atmosphere where the patient often feels out of control, the arts can serve as a therapeutic and healing tool, reducing stress and loneliness and providing opportunities for self-expression. Art also has the power to communicate and educate, giving it a growing role of significance in healthcare institutions. In addition, research shows that the arts can reduce patients' use of pain medication and length of stay in the hospital, and improve compliance with recommended treatments—offering substantial savings in healthcare costs.

HEALTHCARE ENVIRONMENTS

The arts create safer, more supportive and functional environments in healthcare facilities. From architectural design to art on the walls, from access to natural lighting to the inclusion of nature through landscape and healing gardens, the physical environment has a significant impact on reducing patient and caregiver stress, improving health outcomes, enhancing patient safety and overall quality of care, and reducing costs. The physical environment also plays an important role in improving the health and safety for staff, increasing effectiveness in providing care, reducing errors, and improving job satisfaction.

CARING FOR CAREGIVERS

Caregivers, such as family, friends, and healthcare providers in hospitals, hospices, and other health facilities, are faced with the realities of human suffering, illnesses, and death on a daily basis. Arts programming for caregivers creates a common, more normative environment, and offers caregivers an opportunity for creativity and self-expression that allows them to healthfully integrate their experiences and emotions instead of carrying them home or into the workplace. In addition, the arts give medical professionals new tools for improving diagnostic and communication skills and can be used to better communicate health and recovery information. The arts help overcome barriers by embracing diversity, reinforcing family members' supportive role in the healing process, and changing the culture within the healthcare facility to one that is more supportive and humane.

COMMUNITY WELL-BEING

Arts in healthcare can benefit communities by engaging people in arts programs aimed at promoting prevention and wellness activities and communicating health information to improve knowledge. For students in medical and other healthcare fields, the arts can enhance their skills—improving their observational, diagnostic, and empathic abilities. It helps them to understand patients in a different way and connect with them on a more humanizing level.

*The following **State of the Field Report** was designed to present an overview of arts in healthcare in the United States. The report details the prevalence of arts in healthcare programs, makes a business case for arts in healthcare, provides a sampling of current research findings, and concludes with a look to the future.*

Prevalence of Arts in Healthcare Programs in the United States

SURVEY RESULTS

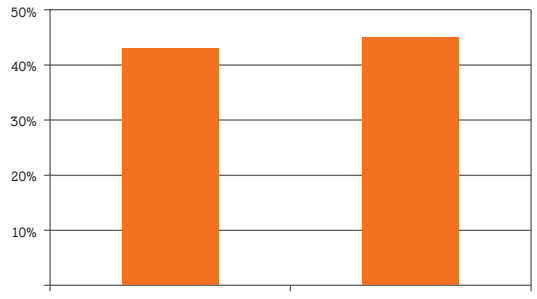
In 2004 and again in 2007, the Society for the Arts in Healthcare partnered with The Joint Commission and Americans for the Arts to conduct surveys that examine the presence of the arts in U.S. healthcare facilities.

The surveys were developed collaboratively by the partnering organizations and administered by The Joint Commission to accredited healthcare institutions throughout the U.S.

The results of both surveys showed a significant presence of arts programs and practitioners in American healthcare institutions, and provide useful insight into the nature of the professional and service populations involved (see Figure 1).

In 2008, the Society for the Arts in Healthcare and Americans for the Arts conducted a third national survey that went beyond healthcare settings to include community organizations with arts programming. This survey, in addition to asking general questions about their work, also explored the issue of measuring the economic benefits of arts in healthcare programs. The following narrative will summarize all three surveys and cite several noteworthy conclusions and correlations.

FIG 1 *Prevalence of Arts in Healthcare Programs*



2004 Program Prevalence Survey Summary

The 2004 survey resulted in a publication entitled *Cultures of Care: A Study of Arts Programs in U.S. Hospitals*, and revealed that 43% of 2,333 responding healthcare institutions had arts programs of some sort. This was exciting news for the field and spurred the Society's board president to state at the annual conference that the field was "no longer emerging, but had emerged" (Sims, 2005). The survey also showed that the greatest prevalence of art activities in arts in healthcare programs was in the permanent display of art such as paintings, murals, and sculpture (73%), followed by performances in public spaces (49%), and healing gardens (32%). Musicians (82%) represented the largest population of artists in the healthcare settings, followed by performing artists (46%), and visual artists (40%).

The survey examined not only what types of programs were being delivered, but also who was delivering them. Seventy-eight percent of those with arts programs cited use of arts therapists, while 67% used professional artists in their programs. When asked why they invest in the arts, 79% of respondents cited benefits to patients as motivation; 79% also cited using the arts to create a healing environment and 46% to help patients' families. Additionally, 46% cited using the arts as a part of patients' physical recovery, while 78% noted using the arts to aid in mental and emotional recovery.

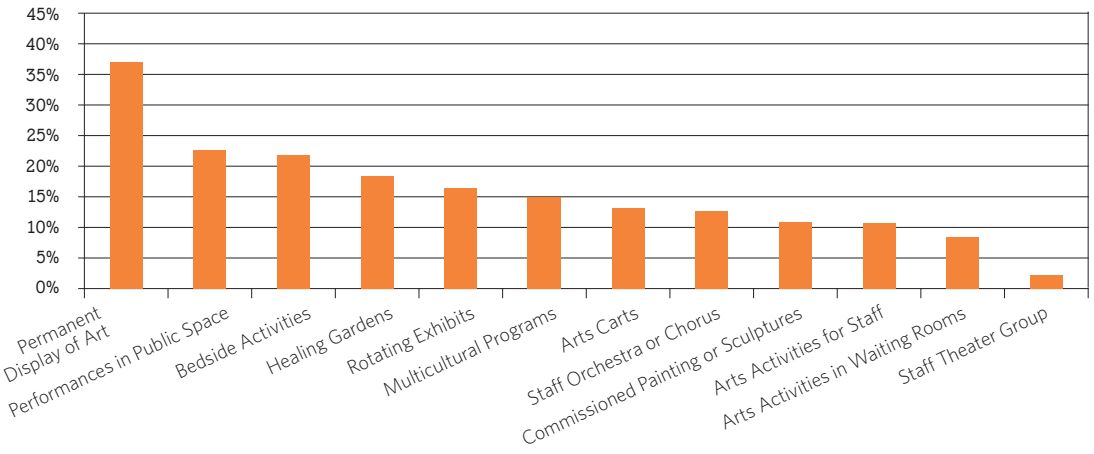
The survey also inquired into the management of arts programs in healthcare institutions, and indicated that 79% of arts programs included paid arts coordinators, while 51% partnered with outside arts agencies such as arts councils, choral groups, museums, theatre companies, orchestras, etc., to facilitate arts programming. This last statistic represents an important indication of the commitment to professionalism in the management of arts programming in healthcare institutions.

2007 Survey Summary and Comparison to 2004

In 2007, 1,807 institutions responded to a similar survey. Although the respondent base was slightly smaller, results suggest stability, if not growth, in the field with a slight increase from 43–45% of healthcare institutions reporting arts programs. As in the previous survey, the vast majority of 2007 respondents represented hospitals (61%), with long-term care facilities at 5%, and hospice and palliative care organizations following at only 4%.

Once again, the permanent display of art was the most prevalent type of programming represented, with performances in public areas following. However, a 2008 survey of Society for the Arts in Healthcare members (conducted by Americans for the Arts in partnership with the Society) yielded a different prevalence in types of programs, suggesting that institutions that provide artist-based programming more commonly consider themselves to be a part of the arts in healthcare field and affiliate themselves with the Society through membership, while many other institutions that primarily undertake environmental arts programming may not affiliate themselves with the field (see Fig 2).

FIG 2 *Types of Programs 2007*



An additional analysis of the types of professionals providing services in hospitals only showed that hospitals support nearly equal numbers of artists, arts therapists, and child life specialists. Representation of artists and arts therapists across all healthcare institutions showed a higher prevalence of [visual] art therapists than visual artists, but a higher prevalence of artists in each of the other arts disciplines over therapists in those disciplines (see Fig 3).

Both surveys were interested in identifying reasons why healthcare institutions invest in the arts. In both 2004 and 2007, benefits to patients and contributions to a healing environment were the top reasons cited across all types of institutions (see Fig 4).

One of the most significant outcomes resulting from comparison of the two surveys is in the area of funding for arts programs. In 2004, 40% of organizations cited their organization's operating budget as a source of funding for arts programs, while in 2007, that percentage rose to 56% (see Figure 5).

This growth in internal funding marks a significant increase in the support of arts programs by healthcare organizations. It also signals increased stability for programming and an increase in the extent to which healthcare institutions value the arts. An increase in the number of paid arts administrators also was indicated, signaling growth in the professionalism of arts in healthcare programs. A further breakdown of survey statistics revealed differences in how various types of healthcare institutions fund their arts programs (see Figures 6–11).

The 2007 survey also explored the demographics of arts in healthcare service populations. Survey results demonstrated that these programs serve extremely diverse populations. Hispanic/Latino, Black/African American, and White populations were the largest groups served and were represented in nearly equal proportions ranging from 18–19%. Sixty of the survey's respondents reported the number of individuals served by their arts programs annually. Collectively, those 60 programs served 2,213,690 individuals per year, suggesting an average annual service population of 36,895 for arts in healthcare programs.

FIG 3 *Arts in Healthcare Practitioners 2007*

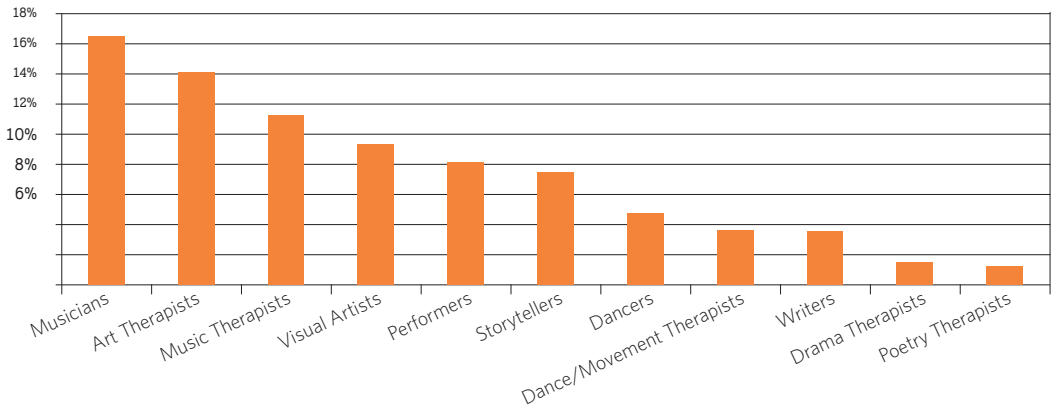


FIG 4 *Why Healthcare Institutions Invest in the Arts*

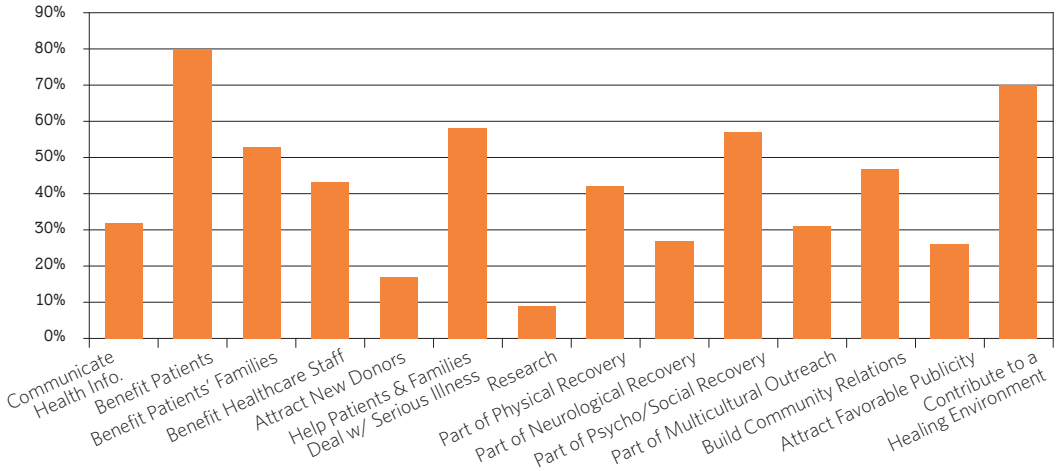


FIG 5 *How Programs are Funded*

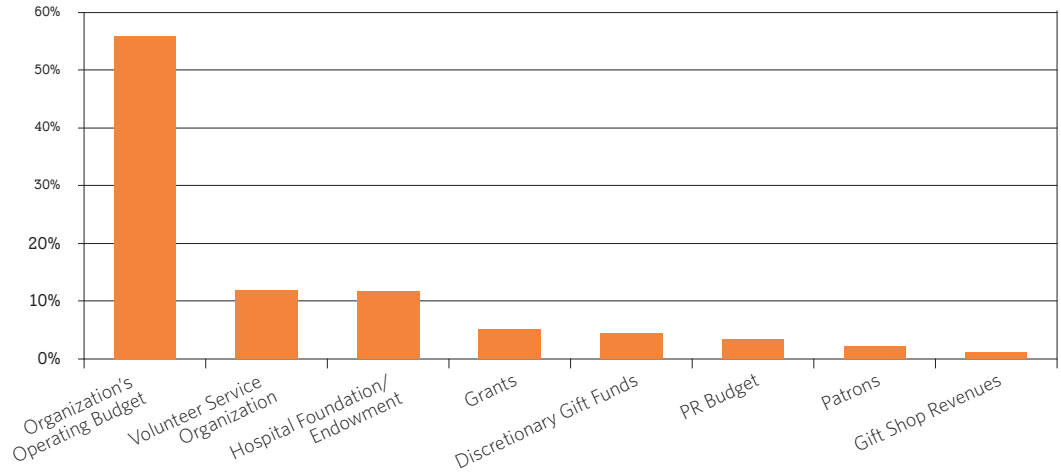


FIG 6 *Service Population Demographics*

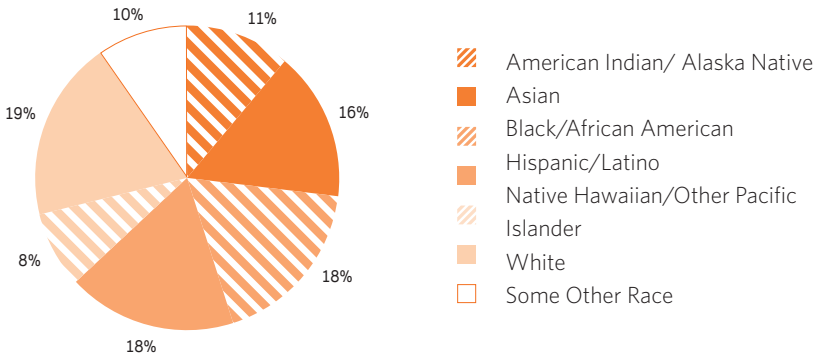


FIG 7 *Organizational Budgets*

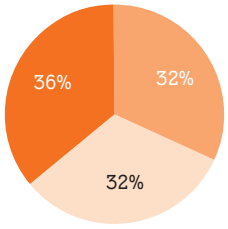


FIG 8 *Volunteer Services*

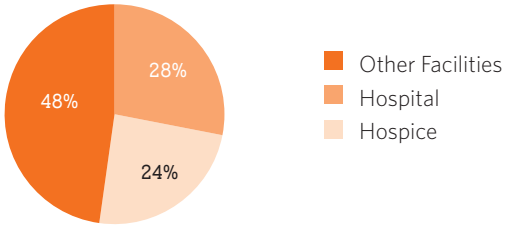


FIG 9 *Foundation or Endowment*

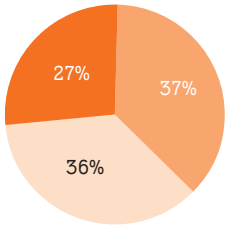


FIG 10 *Grants*

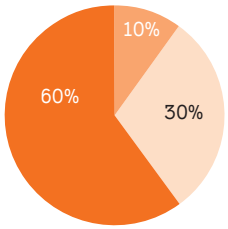
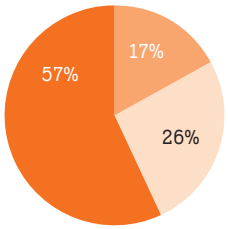


FIG 11 *Discretionary Gift Funds*



2008 Economic Benefits Survey

"In this new healthcare era of increased transparency, rising consumer expectations, and spiraling costs, we need solutions that improve patient care and at lower costs. As a hospital CEO for 26 years, I witnessed how well-designed and effective arts interventions can deliver these benefits. When the arts – music, writing, drawing, dance – are used in hospitals and palliative care settings, pain and anxiety are reduced for patients, which promotes healing and improves their care experience. I am optimistic that promising new research will show these programs will reap the additional benefits of shorter hospital stays, less medication, and fewer complications – potentially saving our healthcare system significant dollars annually."

- BLAIR L. SADLER
Senior Fellow, Institute for Healthcare Improvement
Past President/CEO Rady Children's Hospital, San Diego

Cost may be the most critical issue facing the healthcare system today. In the past 30 years, healthcare has ballooned from 6% to 16% of the nation's GDP—exceeding $2.5 trillion in 2008 (twenty five hundred billion dollars!). The forecast is for a continued escalation in cost as our population increases in number, average age, and lives longer.

Cohen (2009) has begun analyzing the economic benefits of his Creativity & Aging Study. Just comparing medication use and doctor visits between the individuals who participated in a chorale group and the control group, he calculated and annual savings of $172.91 per year per participant. If one considers the current and projected numbers of people in the aging population, participation in creative activities can add up to huge savings for Medicare, other insurers, and individuals.

There is a rich and growing body of research connecting arts in healthcare programs to an improved quality of care for patients, their families, and even medical staff. New evidence has emerged that demonstrates that these programs also have an economic benefit. When patients require shorter hospital stays, less medication, and have fewer complications, it is more than a good news story for that patient. It also means a reduction of cost for those services.

Tallahassee Memorial HealthCare, using the arts during the preparation period for pediatric CT scans, saved $567 per procedure, put three hours of nursing time back on the floors, reduced the medications needed by the young patients, cut down on overnight stays, and boasted a 98% procedure success rate for a test that is very difficult for kids (Walworth, 2005). With at least four million CT scans performed annually on children alone, the potential cost savings for this single procedure exceeds $2.25 billion (Wood, 2008).

The cost of recruiting medical professionals is significant, so staff retention is a very important issue. With continued growth in healthcare, nursing shortages are expected to continue through the next two decades, with demand for RNs growing 2% to 3% annually (Buerhaus, Staiger, & Auerbach, 2009). According to the *Journal of Nursing Administration*, the cost of RN turnover ranges between a remarkable $62,100 and $67,100 per nurse (Jones, 2005). Thus, strategies that enable healthcare organizations to simply maintain their skilled labor force have their own measurable economic benefits. The availability of an active arts program integrated into the healthcare environment was found to be a major consideration for healthcare staff when seeking employment or considering whether to remain in their current position (Staricoff, Duncan, Wright, Loppert, & Scott, 2001; Staricoff & Loppert, 2003). Arts programming can create a less stressful work environment for nurses and other healthcare professionals.

At the Feist-Weiller Cancer Center in Shreveport, Louisiana, nurses report that hospitalized patients made fewer requests for their time when the patients are involved with an art project in their rooms and that patients are in a better and happier moods after their painting project.

To learn more about the research or evaluation methods being used to measure the economic benefits of arts in healthcare programs, Americans for the Arts and the Society for the Arts in Healthcare conducted a survey of about 800 programs during the summer of 2008. Each program was asked about their work, and then asked very specifically if they have studied the effects of their programs on areas such as patient satisfaction, length of stay, amounts of medication used, and duration of procedures.

Although many programs reported evaluating the health effects of their work, very few said they are investigating the economic cost/benefits. Even among those that did, most findings were based on qualitative observations and anecdotal evidence.

There is great promise in this area of investigation, but more rigorous work is needed.

Regarding medical cost savings, a total of 13 institutions responded that they have studied the effect of their arts in healthcare program on overall medical cost savings (3.1%). Just six of those, however, have a written report or data (1.4%) (see Figure 12).

In the survey, programs were asked if they have studied the effect of their arts in healthcare program on staff satisfaction, retention, and recruitment. Less than a quarter had, and most were focused on satisfaction with the arts programs and conducted via regular employee surveys or through personal observation (see Figure 13).

Less than 10% of those responding have studied the effect of their arts in healthcare program on the amount of medication (e.g., anesthesia, pain management) administered to patients (see Figure 14). Less than 3% of the respondents have measured the effect of the arts programs on the number of patient care hours provided by staff (see Figure 15).

Of the 800 surveys distributed, detailed responses were received from 492 programs. Nearly two-thirds of the programs are taking place in a hospital (see Figure 16).

The responding organizations provide a wide range of arts programs and activities for their patients, families of patients, and caregivers (see Figure 17). Respondents were asked to check all that apply. Group activities for patients was the category mentioned by more institutions than any of the other types of arts programming.

ANY STUDY ABOUT THE EFFECT OF THE ARTS IN HEALTHCARE PROGRAM ...

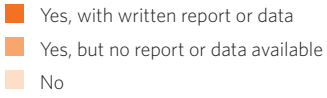


FIG 12 *on Overall Medical Cost Savings?*

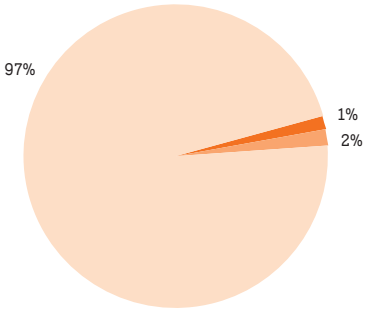


FIG 13 *on Staff Satisfaction, Retention, and Recruitment?*

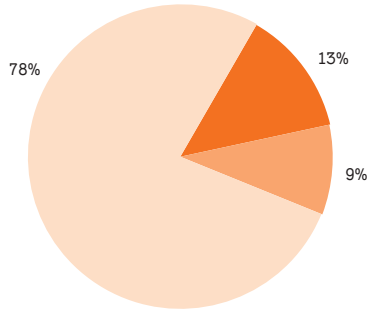


FIG 14 *on the Amount of Medication?*

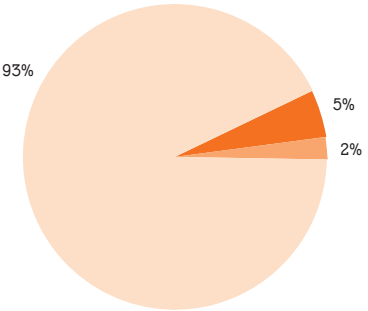


FIG 15 *on the Reduction in the Number of Patient Care Hours Provided by Medical Staff?*

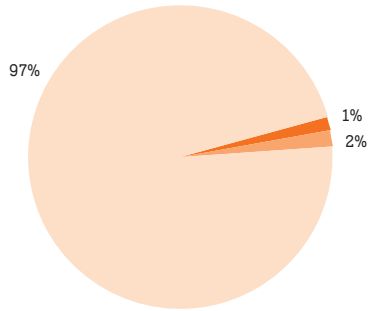


FIG 16 *Where Does the Arts in Healthcare Program Take Place?*

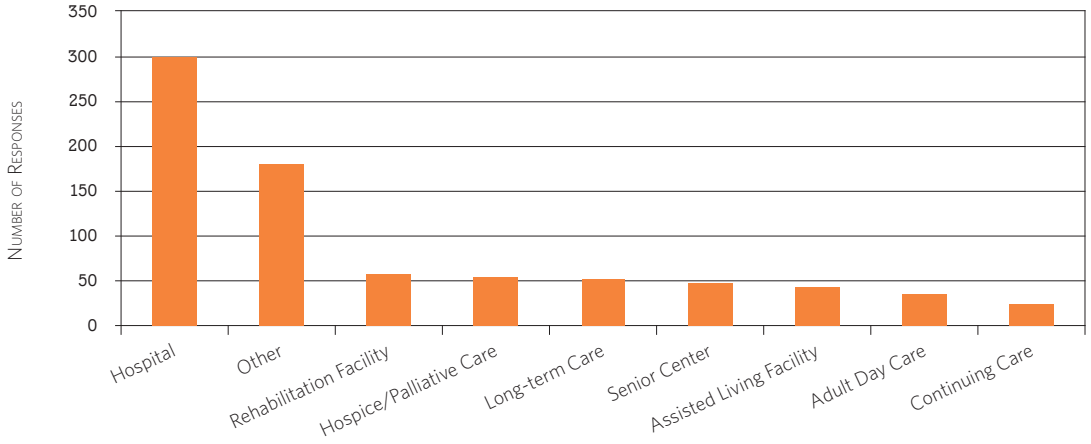
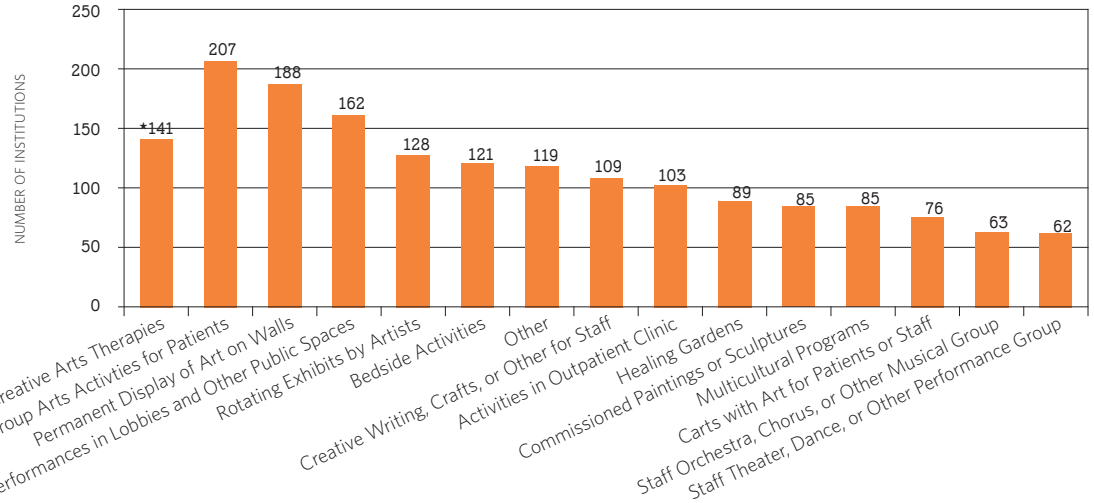


FIG 17 *Types of Arts Programs/Activities Offered*



Conclusion

The surveys conducted in 2004 and in 2007 suggest stability and growth in the prevalence of arts in healthcare programs in American healthcare facilities as well as a significant increase in organizational support for the programs and the professionals who staff them. The surveys show consistency in the types of arts services being provided in healthcare settings and demonstrate that the arts serve extremely diverse healthcare populations.

Research into the economic benefits of arts in healthcare programs is at a nascent stage—one that is anecdote rich and data poor. Although continuing to study the medical efficacy of these programs remains vital, augmenting them with an analysis of their economic cost/benefits will advance the arts in healthcare conversation from one about improving the quality of healthcare to a policy conversation about using the arts to simultaneously reduce healthcare costs and elevate the quality of care.

"As America wrestles with the spiraling costs of healthcare, we need solutions that both improve patient care and reduce healthcare costs – precisely the benefit delivered by many of the thousands of arts in healthcare programs in the U.S. When the arts – music, writing, drawing, dance –are used in hospitals and palliative care settings, pain and anxiety are reduced for patients, promoting healing. And, as if that weren't enough, the research indicates these same patients have shorter hospital stays, take less medication, and have fewer complications, saving potentially of billions of dollars annually. We need to increase our research and investment in this area to ensure arts in healthcare programs are available to all patients."

- BILL IVEY

Director of The Curb Center for Art, Enterprise and Public Policy at Vanderbilt University and Former Chairman of the National Endowment for the Arts

FINDINGS AT A GLANCE

- The permanent display of art is the most commonly reported type of arts programming in accredited healthcare facilities in the U.S., followed by performances in lobbies and other public spaces.
- "Benefits to patients" is the most commonly cited reason for investment in the arts in healthcare.
- Hispanic/Latino, Black/African American, and White populations are served at essentially equal rates by arts in healthcare programs in the U.S.
- Music, the visual arts, and crafts are the most commonly represented disciplines in arts in healthcare programs in the U.S.
- Hospitals in the U.S. support nearly equal numbers of artists, arts therapists, and child life specialists.
- Use of a healthcare institution's operating budget is the most common revenue source for arts in healthcare programs in the U.S.; 60% of arts in healthcare programs use operating budget funds for programming.
- Very few programs are measuring the economic benefits of their work, an area that holds great promise for the growth of the field.

The Benefits of the Arts in Healthcare

A SAMPLING OF RESEARCH FINDINGS

Perhaps at no other time in history has quality assurance in healthcare been more paramount than today. Traditionally, clinical decision-making has been based on intuition, opinions, assumptions, and experience.

In today's healthcare world, with approximately 30% of all healthcare spending going toward ineffective, redundant, or inappropriate care; capital resources scarce; the economy sagging; and the cost of healthcare becoming a hot political issue, healthcare decision-makers are demanding that decisions be based on evidence (Hayes, 2008). This strategy, called evidence-based medicine, supports the clinician's individual clinical expertise, and combines this experience with the best available external evidence and the values and needs of the patient, in making medical decisions. Both The Joint Commission and the Institute of Medicine have launched initiatives to promote this strategy.

As an integral part of healthcare, arts in healthcare must be held to the same standards. Researchers have found evidence of the benefits of the arts in healthcare in hospitals, nursing homes, senior centers, private homes, or other locations within the community. Quantitative and qualitative research from across healthcare disciplines—and documented in peer-reviewed journals—provides evidence of both instrumental and intrinsic benefits

of arts in healthcare. A growing body of research indicates that a physiologic process may actually take place through contact with certain images and other forms of the arts. In a very early study, Goldstein (1980) described "thrills"—tingling sensations individuals may experience when exposed to emotionally arousing stimuli. His findings showed a relationship between these experiences and the release of endorphins—the body's own pain reliever, "relaxer," and mood enhancer. An emerging science that is part of this physiologic research is psychoneuroimmunology (PNI), which is concerned with the correlation between stress and health. Specifically, PNI is the study of the interaction between psychological processes and the nervous and immune systems of the human body (Vedhara & Irwin, 2005).

Researchers are also interested in the effects of art in the environment and arts programming on family members and healthcare staff. For example, most hospital artists-in-residence programs serve families as well as patients, and often provide special workshops for staff. We know that not only can such activities help staff deal with the stress of caregiving, but also that healthcare providers who share an interest in the arts with a patient can build a relationship through the art medium itself, using it to help a patient tell his or her life story and find a place of connection with a caregiver (Penn, 1994). Also, many medical schools, recognizing the arts as a powerful education tool, are incorporating the arts and humanities into medical curriculum (Bertman, 2007). Increasingly, nursing and other healthcare disciplines are following suit.

"Results from a landmark multi-site national study on the effects of active engagement in the arts on overall health with aging, supported by the National Endowment for the Arts and the National Institutes of Health, revealed the following: Compared to the control group, persons age 65 and older involved in weekly participatory art programs run by professional artists reported better physical and mental health, fewer doctor visits, and less medication usage. These findings point to a significant impact on health promotion and health care costs savings."

- GENE D. COHEN, MD, PHD
Director of the Center on Aging, Health & Humanities at The George Washington University, and a past president of the Gerontological Society of America

We have only recently begun to look at the economic benefits of the arts in healthcare. Quality of life outcomes for arts program participants are being translated into cost saving outcomes, such as fewer doctor visits and less medication (Cohen, 2009). Other researchers are considering the impact of an active arts program integrated into the healthcare environment on healthcare staff seeking employment or considering whether to remain in their current position (Staricoff, Duncan, Wright, Loppert, & Scott, 2001; Staricoff & Loppert, 2003). With the rising healthcare cost in the United States, coupled with the need to retain nurses—the single largest group of people hospitals employ—research of this nature can have a tremendous impact on our struggling healthcare system.

Methods Used to Measure Benefits

"Measuring" is occurring on two levels: evaluation and what is often referred to as "traditional" research. Technically, evaluation is a form of research, and confusion often arises between the two because processes such as data collection activities (e.g., conducting surveys or interviews) may look the same. However, in the traditional sense, researchers cite some differences based on purpose, particularly the intended use of the findings. Evaluation typically is undertaken to measure the effectiveness of a particular project or program. The purpose of basic research is broader, with interest in building theory and the knowledge base of the field.

Program and project evaluation has progressed at a faster pace than traditional research activities. In the early years of the arts in healthcare movement, most program personnel's evaluation efforts were limited to keeping records of numbers served, describing their observations, and offering testimony from satisfied and enthusiastic participants. Today, more formal program or project evaluation is becoming the norm.

EVALUATION STUDIES

Many programs have supporting documentation, evaluations, surveys, and patient and staff satisfaction data that form a large body of evidence on the practice and success of these programs. For example, some programs use outcome studies measuring patient satisfaction as a means to evaluating the effectiveness of using the arts in healthcare settings. However, a handful of programs

have conducted rigorous evaluations that have gleaned much more information.

For example, in 2002, KCI Research and Evaluation conducted a quantitative/qualitative study of the Hospital Artist-in-Residence Program of The Creative Center in New York City. Data from both patients and staff at five hospitals showed that:

- Patient feelings of boredom, anxiety, loneliness, and sadness were relieved; and
- Patients were more willing to talk about treatment options and/or responded better to treatment after the artist's visit, making the caregiver's job easier (KCI Research and Evaluation, 2002, p. 16).

Other programs have been interested in the process of achieving program outcomes as well as the outcomes themselves, with one goal of evaluation being program improvement. For example, Arts for the Aging in Bethesda, MD, sought its artists' opinions about characteristics that foster successful outcomes. Through an Appreciative Inquiry session, five artist characteristics were revealed (Rollins, 2007):

- Paying attention
- Being prepared
- Being open and flexible
- Being creative and innovative
- Pulling from all that they are

Artists also identified "wishes" that, if fulfilled, would lead to a greater number of positive program outcomes. These wishes included items such as "More cooperation from the participating centers" and "More intergenerational opportunities." Results of the Appreciative Inquiry process provided Arts for the Aging with data about the characteristics to look for when selecting new artists for its program, as well as data about some issues to address with the centers to which it provides services, and elements to consider when planning new programming.

RESEARCH

Much arts in healthcare research has been qualitative. Qualitative research uses instruments such as interviews, surveys, and observation. Methods that convey information about patient, staff, and family responses to their experiences and the healthcare environment are especially useful to healthcare institutions because it is difficult to measure quantitatively emotions such as loneliness, fear, joy, and relief (National Endowment for the Arts [NEA] & Society for the Arts in Healthcare [SAH], 2003).

Qualitative methods are becoming more accepted in arts in healthcare research, particularly when accompanying quantitative methods. Lander and Graham-Pole *(2006)* point out that although qualitative research may seem to be an "orphan field" of evidence-based medicine, the bedside practice of every physician is founded in observation—clinical signs—that have been gathered over several hundred years and systematically recorded for every medical student's classroom (p. 13).

Qualitative methods, such as in-depth interviews, can provide a richness and depth in data that often is not captured using quantitative methods. For example, researchers exploring the impact of an art program on an inpatient oncology unit used semi-structured interviews with seven patients and seven nurses who cared for these patients following participation in an established art program (Ferszt, Massotti, Williams, & Miller, 2000). Findings revealed benefits such as:

- Improved patient coping with pain;
- Improved nurse-patient communication; and
- Improved attitude toward hospitalization.

However, because efficacy of any treatment or procedure in a healthcare setting is generally proven by scientific methods and quantitative research, a limited amount of this type of research, e.g., controlled investigation with a strict protocol and clearly defined measures, is taking place in arts in healthcare research. Findings from quantitative research would likely capture more attention from hospital and other healthcare institutions' decision-makers and thus help practitioners garner more credibility and support (NEA & SAH, 2003).

The National Endowment for the Arts and Society for the Arts in Healthcare (2003) offer three reasons for the lack of controlled arts in healthcare research in the U.S.:

- It is expensive and requires expertise in research techniques and methodologies.
- Research studies are highly competitive for support in institutions that are already experiencing budget cuts and tight resources.
- Medical and administrative staff members disagree as to the value of conducting arts in healthcare research with the same models used in traditional healthcare research (p. 11).

Never-the-less, paralleling the evidence-based medicine movement in the larger healthcare field, quantitative research in arts in healthcare is being carried out in the U.S. and throughout the world.

Music

A good amount of the research literature on the benefits of the arts in healthcare with patients concerns music, which has been found effective in:

- Increasing comfort level post-operatively (Pölkki, Vehviläinen-Julkunen, & Pietilä, 2001);
- Decreasing use of sedatives during procedures (Loewy, Hallan, Friedman, & Martinez, 2005; Walworth, 2005);
- Decreasing anxiety in children receiving casts for orthopedic injuries (Brice & Barclay, 2007);
- Improving depression, anxiety, and relationships in psychiatric patients (Choi, Lee, & Lim, 2008);
- Increasing heart rate and improving behavioral score in preterm infants in the neonatal intensive care unit, resulting in a deeper sleep (Arnon et al., 2006);
- Decreasing incidence of respiratory pause in premature infants, where breathing ceases for 10 seconds or less (Arnon et al., 2006; Shepley, 2006);
- Increasing quality and length of life for individuals diagnosed with terminal cancer (Hilliard, 2003);
- Decreasing anxiety, depression, and mood disturbances in patients undergoing stem cell transplants (Cassileth, Vickers, & Magill, 2003);
- Increasing or decreasing the growth of neoplastic and normal human cells (Sharma, Kauffman, & Stephens, 1996);
- Shortening the length of stay by three days for premature infants in an intensive care unit as compared with a control group (Coleman, Pratt, Stoddard, Gerstmann, & Abelm, 1994);
- Lowering the heart rates, respiratory rates, and myocardial oxygen demand for patients recovering from myocardial infarction (White, 1999);
- Reducing blood pressure levels in pregnant women waiting to be seen in a high-risk prenatal clinic (Staricoff & Loppert, 2003);
- Reducing pain during intramuscular injection (Fowler-Kerry & Lander, 1987), pain during bone marrow aspiration (Pfaff, Smith, & Gowan, 1989), pain after surgery (Steinke, 1991), pain from heel-stick procedures with neonates (Bo & Callaghan, 2000), and pain associated with serious illness (Bailey, 1986; Nolan, 1992);
- Reducing the perception of pain in people with rheumatoid arthritis (Schorr, 1993); and
- Reducing nausea and vomiting in adults undergoing a bone marrow transplant (Ezzone, Baker, Rosselet, & Terepka, 1998), after treatments or surgery (Standley, 1992; Steinke, 1991), and after anesthesia or chemotherapy (Keller, 1995).

Several studies have dealt with the use of music for coping with stress. For example, Ryan-Wenger and Walsh (1994) reported that school-aged children with asthma have identified listening to music as one of the four most effective and frequently used strategies for coping with their disease. Music also has been found effective in:

- Decreasing arousal due to stress (Pelletier, 2004);
- Reducing stress behaviors in infants and toddlers who were hospitalized (Marley, 1984);
- Reducing stress among visitors in hospital surgery/intensive care unit waiting rooms (Rothieaux, 1997);
- Producing relaxation during cardiac catheterization (Micci, 1984); and
- Decreasing anxiety before surgery (Kain, Wang, Mayes, Krivutza, & Teague, 2001) and in outpatients undergoing flexible sigmoidoscopy (Chlan, Evans, Greenleaf, & Walker, 2000).

Some important research deals with adherence to medical regimes. For example:

- Grasso and colleagues (2000) reported on the benefits of music in establishing routine chest physiotherapy—an important component of prophylactic therapy for children with cystic fibrosis—as a positive experience for children and their families.
- In a study of adults with chronic obstructive pulmonary disease (COPD), Bauldoff, Hoffman, Thomas, Zullo, and Sciurba (2002) found that listening to music promoted adherence to a walking regimen following completion of a pulmonary rehabilitation program.

Other researchers report music's effectiveness in significantly increasing salivary immunoglobulin A (IgA), an antibody that provides defense against various infections (Lane, 1990), and infants' oxygen saturation levels, an indicator of respiratory regularity directly affected by the individual's behavioral state and degree of pain (Collins & Kuck, 1991; Standley & Moore, 1995).

Visual Arts

Research indicates that the visual arts also have many intrinsic and instrumental benefits in healthcare. For example, research with children with cancer indicates that engaging in drawing and painting is an effective method for dealing with pain and other disturbing symptoms of illness and treatment (Rollins, 2005a). Also, the visual arts offer a means of non-verbal communication, often bringing order and clarity to mixed-up, poorly understood feelings. While providing a vehicle for catharsis, the artwork itself offers a tool to monitor the individual's emotional and/or developmental state and progress (Rae, 1991; Sturner, Rothbaum, Visintainer, & Wolfer, 1980).

In an arts support program for patients with cancer who were 16 and older, the creation of a three-dimensional, mixed-media art piece allowed the patients to reflect on their diagnosis and treatment (Heiney & Darr-Hope, 1999). Visual arts also serve as a diagnostic tool; asthma symptoms may be revealed in children's illness drawings (Gabriels, Wamboldt, Adams, & McTaggart, 2000). And, as with all of the arts, engaging in the visual arts provide opportunities for individuals to make choices and to be in control at a time when many things in their lives are beyond their control, an important factor in reducing stress (Rollins, 2005b).

Some of the documented benefits of participating in visual arts or art therapy activities include:

- Decreasing symptoms of distress and improving quality of life for women with cancer (Monti et al., 2006);
- Improving depression and influencing fatigue levels in cancer patients on chemotherapy (Bar-Sela, Atid, Danos, Gabay, & Epelbaum, 2007);
- Reducing acute stress symptoms in pediatric trauma patients (Chapman, Morabito, Ladakakos, Schreier, & Knudson, 2001);
- Increasing support, psychological strength, and providing new insights about their cancer experience for individuals who participated in an art therapy/museum education program (Deane, Fitch, & Carman, 2000); and
- Strengthening positive feelings, alleviating distress, and clarifying existential/spiritual issues for adult bone marrow transplant patients in isolation (Gabriel, Bromberg, Vandenbovenkamp, Kornblith, & Luzzato, 2001).

Family members and staff often participate in creating art, and evidence of benefits to them is strong as well. Testing the effects of an art making session on reducing anxiety and stress among family caregivers of patients with cancer, Walsh, Radcliffe, Castillo, Kumar, and Broschard (2007) used a saliva sample from each participant to measure salivary cortisol, which indicates stress levels, and asked participants to complete the Beck Anxiety Inventory (BAI). Pretesting was followed by a two-hour art making session. A repeat BAI and a second saliva sample after the art making session indicated a significant reduction in anxiety.

For staff and caregivers, the visual arts enhance certain skills. For example, first year medical students who participated in art appreciation classes, which involved describing photographs of dermatological lesions, significantly improved their observational skills (Dolev, Friedlander, & Braverman, 2001). It has been recognized that drawing abilities and stereovision, imagery, and thinking three-dimensionally are of great importance in neurosurgery, and in the surgical profession generally. These skills are partly a gift and partly a response to training. It is in this context that the visual arts play a significant role in the formation of a neurosurgeon (Pasztor, 1993).

"We are human because of our brain, our hand, and our heart. Only the human being can express inspiration and emotion by combining all three and thus produce the expression of the human condition in writing, poetry, music, dance, visual art and design, and theatrical art, both stage and screen – all a creative expression of the heart and soul. The arts can be used to heal both clinically as preventive medicines in mental health and for those suffering physically from illness. Furthermore, the arts can be used in professional education to teach young medical students the humanistic approach. In so doing, the arts can demonstrate the fact that we become a mirror image of who we treat. The healthcare provider will someday become the recipient of the care as a patient and thus should always be treating the patient as they wish themselves to be treated."

- WILMA BULKIN SIEGEL, MD

Pioneer in the hospice movement and award winning artist known for her portraits of people living with AIDS, breast cancer survivors, the homeless, and the elderly

Effects of Images

Images can be powerful tools in healthcare. Simonton, Matthew-Simonton, and Creighton (1981) recommend a program of relaxation, attitude change, and mental imaging as an adjunct to standard cancer therapies, suggesting that patients form a mental picture of their cancer and of the immune system's victory over the disease. An ancient notion that a picture or image held in the mind can affect bodily change is the basis for this technique (Buttler, 1993):

> Psychologists have long recognized that images are preverbal, deeply linked to our emotions and unconscious mind.... Artists also have recognized that images can communicate feelings in ways our thinking minds cannot understand. Whenever we say that a painting, a photograph, a piece of music or the smell of a flower moves us in a way we cannot express, we are acknowledging the power of images (p. 117).

Technology also plays a role in creating virtual environments with images that can have a positive impact on individuals in healthcare settings. The head-mounted display and other sensory input devices associated with virtual reality (VR) have several advantages over other distraction techniques, such as cartoon viewing or traditional video games, because they create a more immersive, three-dimensional, and interactive setting for the user, and reduce the visibility the user has to other people and distractions around the room (Wolitzky, Fivush, Zimand, Hodges, & Rothbaum, 2005). Studies using VR report:

- A significant decrease in stress and pain for children with cancer undergoing painful medical procedures (Wolitzky et al., 2005); and
- A significant reduction in pain behavior in burn wound care (Hoffman, Doctor, Patterson, Carrougher, & Furness, 2000; Hoffman, Patterson, Carrougher, & Sharar, 2001), and in port access procedures for children with cancer (Gershon et al., 2001).

Yet solutions for reducing stress often are quite simple. For example, to address needle phobia, Kettwich and colleagues (2007) put colorful images of flowers, music notes, etc., on syringes and butterfly needles commonly used to draw blood for testing. Using them with children and adults with cancer, they found the "stress-reducing medical devices" were 76% effective in preventing overt needle phobia in the children and 92% effective with the adults. About two thirds of children and one half of adults in the general population are needle phobic, the impact of which might be merely an inconvenience or, on the other hand, life threatening. How exciting to discover that a simple, inexpensive art intervention can make such a significant difference!

Design Implications

Much arts in healthcare research has focused on architecture or design issues. This growing body of research confirms that the physical design of healthcare settings can contribute to either positive or negative outcomes for patients. A movement toward thoughtful evidence-based design is bringing the patient, staff, and families into the center of the healthcare experience; increasing patient safety; and enhancing the overall quality of care provided (Sadler & Joseph, 2008).

Environmental psychologist Roger Ulrich's classic study of patients recovering from gall bladder surgery found that those individuals with views of a small park with trees and flowers had better nurse evaluations, took less medication, and had shorter hospital stays than individuals with a view of an adjacent brick wall (Ulrich, 1984). A later study further confirmed that visual exposure to natural environments is more effective in fostering reduction of anxiety and stress than comparable visual exposure to urban environments (Ulrich et al., 1991).

More recently, Ulrich and colleagues conducted a study that exposed 166 patients in intensive care units to one of six visual stimulation conditions: two nature pictures dominated by water and trees respectively; two abstract pictures similar in complexity to the nature conditions; and two control conditions (Ulrich, Lunden, & Eltinge, 1993). Individuals exposed to the view of water experienced less postoperative anxiety than patients assigned to the other five visual conditions. Further, they required fewer doses of strong pain drugs during the ward phase. Findings from this research suggested that placing photographs of certain natural environments in hospital settings might have positive influences on postoperative recovery.

Nanda, Debajyoti, and McCurry (2009) provide evidence that visual stimuli undergo an aesthetic evaluation process in the human brain by default, even when not prompted; that responses to visual stimuli may be immediate and emotional; and that aesthetics can be a source of pleasure, a fundamental perceptual reward that can help

mitigate the stress of a healthcare environment. The authors provide examples of studies that address the role of specific visual elements and visual principles in aesthetic evaluations and emotional responses. They conclude with a discussion of the implications of these findings for the design of art and architecture in healthcare.

The topic of healing healthcare environments is becoming increasingly popular in healthcare publications. For example, *Modern Healthcare* magazine has addressed design in several issues. The 12 winning facilities in a design award competition that the magazine sponsored in 1996 featured indoor courtyards and gardens (Pinto, 1996). Similarly, in 2001, the magazine focused on hospital healing gardens (Tieman, 2001). Not only providing restorative or calming nature views, hospital gardens also can reduce stress and improve outcomes through other mechanisms, for instance, fostering access to social support and providing opportunities for positive escape and sense of control with respect to stressful clinical settings (Ulrich, Zimring, Joseph, Quan, & Choudhary, 2004).

Perhaps one of the most significant benefits of hospital healing gardens is their effect on mood. Cooper and Barnes (1995, reported in Cooper Marcus, 2005) studied the effects of four hospital gardens in the San Francisco Bay Area by means of visual analysis, behavior mapping, and user-interviews. They found that 95% of the garden users reported a change in mood: nearly 80% reported feeling more relaxed, calmer; 25% felt refreshed, stronger; 22% said they were better able to think, cope; 19% reported feeling better, more positive; and 6% felt a religious or spiritual connection. Typical responses included the following:

- "My level of stress goes way down... I return to work refreshed."
- "I sit in the garden before my appointment. It helps me deal with what they will put me through."
- "I work in the Intensive Care Unit which is like a hell hole...Sitting here in the sun is like therapy for me."
- "I work underground in the Radiation Department like one of the Mole People. If I didn't have this garden to come to...sunlight, fresh air, birdsong, trees...I think I'd go crazy" (pp. 2–3).

Other studies confirm these findings. Whitehouse and colleagues (2001) found that patients and families who use hospital gardens report positive mood change and reduced stress. Further, implications of these findings suggest that gardens and nature in hospitals can heighten patient and family satisfaction with overall quality of care (Ulrich et al., 2004).

McCaffrey (2007) reported that walks through a museum garden were helpful in relieving depression and in improving mood and overall attitude concerning life for older individuals with mild to moderate depression. Findings suggest that developing community walking programs in gardens, or simply encouraging mildly to moderately depressed older adults to get out of the house and walk, may provide some relief. With a growing aging population, the implications of such a simple and cost-effective intervention are enormous.

Dance

The literature shows that most of the experimental research about dance and movement has been done in the therapy field. Studies on the benefits of dance and dance/movement therapy for women with breast cancer include the work of Serlin and colleagues (Serlin et al., 2000), Sandel and colleagues (2007), and Dibbel-Hope (2000). All three show improvement in variables related to psychosocial functioning, self-image, and quality of life. Other work on the impact of dance/movement therapy on quality of life variables in people with medical illness include Goodill's randomized controlled study with adults with cystic fibrosis, showing improvements in adherence with self-care regimens (Goodill, 2005a), and a large multi-site controlled study of group dance/movement therapy for older adults with neurological disorders (Berrol, Ooi, & Katz, 1997). The latter study documented strong patient satisfaction and improvement in social interaction parameters and psychomotor functioning. An early study by Westbrook & McKibben (1989) used a crossover design to compare dance therapy with exercise for Parkinson's patients and found that only dance therapy improved psychosocial functioning.

Work in pediatric medical settings includes that of Cohen and Walco (1999) where the creative arts are integrated fully into hemotology/oncology services for developmental support, group therapy, and enhancing coping. Other studies on dance interventions with medical patients are summarized by Goodill (2005b, 2006). In work

investigating the health benefits of dance among people without disease, Krantz and Pennebaker (2007) demonstrated that dance confers many of the same health benefits for college students as does expressive writing, and Erwin-Grabner and colleagues (1999) reported that dance/movement therapy can reduce test anxiety in university students. The effectiveness of dance/movement therapy to reduce anxiety and improve mood, social functioning, and self-concept were analyzed in a meta-analysis by Cruz and Sabers (1998), which revealed effect sizes comparable to that of other mainstream psychotherapy approaches.

More recent findings regarding the benefits of dance include:

- Being number one on a list of leisure activities that most contribute to the delay in onset of Alzheimer's disease for those at risk of the disorder (Verghese et al. 2003);
- Increasing mobility in individuals with fibromyalgia (Bojner-Horwitz, Theorell, & Anderberg, 2003); and
- Improving balance and mobility in individuals with Parkinson's disease (Hackney, Kantorovich, Levin, & Earhart, 2007).

Literature, Creative Writing, and Storytelling

The field of literature was introduced to U.S. medical schools in 1972 to help physicians develop skills in the human dimensions of medical practice. Charon and colleagues (1995) point out that including the study of literature in medical education can (a) teach physicians concrete and powerful lessons about the lives of sick people, (b) enable physicians to recognize the power and implications of what they do, (c) help physicians better understand patients' stories of sickness and his or her own personal stake in medical practice, (d) contribute to physicians' expertise in narrative ethics, and (e) offer physicians new perspectives in the work and the genres of medicine.

Studies using creative writing as an intervention report:

- Improved quality of life for people with cancer after a single, 20-minute writing session while waiting for their clinic appointment (Morgan, Graves, Poggi, & Cheson, 2008);
- Improved lung function in high school-aged students, college students, and adults with asthma after written emotional expression (Bray et al., 2003);
- Decreased visits to physicians and reduced symptom complaints (Pennebaker, 1997, 2004); and
- Increased health and emotional well-being (Pennebaker, 2002).

Stories can provide a means for individuals to deal indirectly with difficult fears and realities (Freeman, 1991). Some individuals may use the story to discuss their issues and situations; others may simply enjoy a story as a fantasy escape that need not be analyzed. According to Heiney (1995), people take from a story only what they are ready to find, and what they find often may be meaning in their experiences and renewed hope.

Levels of depression in individuals who were guided to read selected fiction, poetry, or literature were reduced in comparison to individuals in a control group who did not participate in the guided reading. Storytelling has resulted in a greater level of relative well-being for individuals with mild to moderate dementia that participated in group reminiscence therapy as compared to those participating in group activities or unstructured time (Brooker & Duce, 2000).

Storytelling also has been used to help children deal with both mental and physical pain (Heiney, 1995). For example, Kuttner (1988) employed a hypnotic method using the child's favorite story and found it more effective than behavioral distraction and standard medical practice in alleviating distress, pain, and anxiety during painful bone marrow aspirations.

The power of story to distract should not be taken lightly. In 1794, before the use of anesthetics, a young boy had surgery to remove a tumor. During his operation he was told such an interesting story that it absorbed his attention and removed pain from conscious awareness. This true believer in the power of story, Jacob Grimm, wrote *Snow White* 18 years later (Hilgard & LeBaron, 1984).

Drama

Of all of the arts disciplines, drama has been extremely effective in creating understanding. For example, Sinding, Gray, Grassau, Damianakis, and Hampson (2006) explored audience reactions to the research-based drama *Ladies in Waiting? Life After Breast Cancer*. Quantitative findings indicate an overwhelmingly positive response, with approximately 90% of those who saw the production agreeing that they benefited from seeing it and indicating that they would recommend it to others. As is often the case, qualitative data revealed a more complex picture of the range of reactions, allowing researchers to describe the most valued aspects of the production, such as how it eased isolation, normalized the difficult aspects of survivorship, and provided better understanding of the few reports of distress. Regarding audience responses to production, Sinding and colleagues suggest that chronic aspects of breast cancer are rarely acknowledged. Viewing the production allows for a fuller understanding both of its supportive and unsettling effects of the production.

Drama also has been used successfully in medical education. Lorenz, Steckart, and Rosenfeld (2004) used the Pulitzer Prize-winning play *Wit*, which relates the personal story of a patient dying from metastatic ovarian cancer depicting the experience with medical care from diagnosis to death, to help medical students, residents, and staff understand the humanistic elements of end-of-life care. Caring for persons who are dying requires skill in interpersonal aspects of care, which may be difficult to teach using conventional educational methods. Over a two-year period (2000–2002), the *Wit* Educational Initiative organized on-site readings of *Wit* by local professional theater companies at medical centers throughout the United States and Canada, inviting medical students, housestaff, and other providers to attend the play followed by structured discussions of the play's themes. Post performance surveys confirmed the appeal, emotional impact, and perceived relevance of drama in end-of-life education. Lorenz and colleagues attribute the success of the program to two factors: (a) it allowed the viewers to experience the strong emotions that accompany a realistic portrayal of terminal illness within the safe environment of a theater seat; and (b) it encouraged viewers to express their emotions post performance in a supportive and noncritical environment. Strong emotional experiences, both positive and negative, are frequent and inevitable during clinical training, particularly in the care of individuals who are dying (Sullivan, Lakoma, & Block, 2003) and are powerful motivators of behavioral change (Baider & Wein, 2001; MaCleod, 2001).

Participating in drama also has garnered positive outcomes. Noice and Noice (2004) investigated the benefits of a short-term intervention for older adults that targeted cognitive functioning and quality of life issues important for independent living. Participants (124 community-dwelling persons ages 60 to 86 years) took part in one of three study conditions: theater arts (primary intervention), visual arts (non-content-specific comparison group), and no-treatment controls. After four weeks of instruction, those given theater training made significantly greater gains than did no-treatment controls on both cognitive and psychological well-being measures. A comparison of theater and visual arts training showed fewer benefits in fewer areas for visual arts.

Health Promotion and Injury Prevention

The arts can work in the service of health education in all of the following ways (McDonald, Antunez, & Gottemoeller, 2003):

- To get people involved;
- To find out about a community;
- To change awareness and relay health education messages;
- To attract attention to a health issue;
- To promote community building; and
- To promote healing.

Cohen's two-year multi-site national study measured the impact of professionally conducted community-based cultural programs on the general health, mental health, and social activities of persons age 65 and older (Cohen, 2006). The study took place in metro Washington, DC; Brooklyn, NY; and San Francisco, CA. Each site had an intervention group comprised of older individuals involved in a weekly participatory art program and a control group comprised of individuals involved in their ongoing activities as usual. A summary of preliminary results indicate that the intervention group, in comparison to the control group, experienced the following:

- Significantly better overall health;
- Significantly fewer falls and less hip damage;
- Significantly fewer doctors' visits;
- Diminished use of medications;
- Diminished vision problems;

- Significantly better scores on the Geriatric Depression Scale and the Loneliness Scale; and
- Increased involvement in activities.

Youth theater groups use skits and plays to deliver prevention messages because they are seen as an effective way to engage and retain audience interest while providing a structure for developing characters and messages. Glik, Nowak, Valente, Sapsis, and Martin (2002) used a sample of adult leaders and young performers from 51 theater groups attending a national conference on performing arts for youth HIV/AIDS prevention. They examined several factors, including how such groups operated and what the participants believed were the outcomes. The organizations reported that they often receive verbal or written praise from teachers, parents, school boards, community groups, and sometimes even the youth themselves. Comments that reflect this include the following:

- You can tell from the audience responses that they (i.e., the youth in the audience) seem to be learning. They say things like, "Wow, I never knew that," or "It just hit me..." After our performances, many of the people in the audience realize that they, too, can get HIV and that they are not invincible (Teen).
- In the course of the performance, the audience usually gets quieter and quieter. Not only do they laugh at jokes, many kids in the audience are crying. In the end, many want more information. Teachers have also told us that the kids do not stop talking about the play for weeks (Adult).
- Many people really don't understand the transformative power that theater has. But when you are trying to train and educate people, the performing arts are actually an easy way to bring new ideas to youth (Adult) (p. 49).

Drawing from the arts and education literature that acknowledges individual learning styles, community groups across the nation are successfully using other art disciplines to teach prevention and health promotion to both youth and adults.

Theory

In a recent article in *Arts & Health: An International Journal for Research, Policy and Practice*, physician and researcher Gene Cohen of Center on Aging, Health & Humanities at The George Washington University argued that sometimes the evidence or outcomes demonstrating success is not enough for results to be taken seriously: "If there is not an understanding of the underlying mechanism to explain why the results happened, then no matter how robust the findings of the research, they could be dismissed" (Cohen, 2009, p. 48).

Thus, increasingly, arts in healthcare researchers are developing theory or connecting their research to existing theories. For example, describing her theory species-centrism, anthropologist Ellen Dissanayake (1992) suggests that art was central to the emergence, adaptation, and survival of the human species. She believes that aesthetic ability is innate in every human being, and it is this aesthetic ability that enabled us to "bracket off" the things and activities that were important to our survival, separate them from the mundane, and make them special. For example, the objects and practices involved in marriage, birth, death, food production, war, and peacemaking were enhanced to make them more attractive and pleasurable, more intriguing, and more memorable. People created dances, poetry, charms, spells, masks, dress, and other artifacts to make these associated activities—whether hauling nets or pounding grain—more sensual and enjoyable; to promote cooperation, harmony, and unity among group members; and to also enable our species to cope with life's less expected or explicable events.

Architects, designers, and those individuals or groups responsible for selecting artwork for healthcare settings often employ the following theories:

- Prospect/Refuge Theory (Appleton 1975)— Taste in art is an acquired preference for particular methods of satisfying two inborn desires—opportunity (prospect) and safety (refuge), circumstances believed to be optimal for human survival and reproduction in the savannah. The theory predicts that humans are attracted to art that has broad, unoccluded vistas; visible places for easy refuge (e.g., a copse of trees, caves); water; plants; a smattering of prey species; and human placement at the edge of spaces where one's back is protected (rather than in the middle where there is more exposure) and covered, rather than open to the sky.
- Press-Competence Theory (Lawton & Nahemow, 1973)—The more compromised patients are with regard to their physical or emotional health, the more susceptible they may be to negative aspects of the physical environment.

Cohen built his Creativity and Aging Study (2006) upon two major theoretical backgrounds associated with positive health outcomes (Cohen, 2009):

- Sense of control—All age groups show positive health effects in experiencing a heightened sense of control, mastery, or efficacy. Studies reveal an increase in the level of T cells, which ward off bacterial infections, and natural killer (NK) cells, which combat cancer cells, which reflects the influence of the mind on neurological centers of the brain, and, in turn, on the immune system (Coe & Lubach, 2003; Kiecolt-Glaser, MGuire, Robles, & Glaser, 2002; Lutgendorf & Costanzo 2003).
- Social engagement—Meaningful social engagement and interchange draws heavily from findings about social support from cardiovascular research that reveals better outcomes in patients recovering from heart attacks and coronary bypass surgery when strong social supports were in place (Avlund, Damsgaard, & Holstein, 1998; Bennett, 2002; Glass, de Leon, Marottoli, & Berkman, 1999); these researchers discovered the same underlying mechanism of an immune system boost in these individuals as well.

With a goal of developing theory, surgeon Claudius Conrad and his colleagues at Massachusetts General Hospital in Boston have been studying the sedative effects of Mozart's music in individuals who are critically ill (Conrad et al., 2007). They conducted a randomized study with 10 critically ill patients to identify mechanisms of music-induced relaxation using a special selection of slow movements of Mozart's piano sonatas. These sonatas were analyzed for compositional elements of relaxation. The researchers measured circulatory variables, brain electrical activity, serum levels of stress hormones and cytokines, requirements for sedative drugs, and level of sedation before and at the end of a one-hour therapeutic session. Compared with controls, they found that music application:

- Significantly reduced the amount of sedative drugs needed to achieve a comparable degree of sedation;
- Increased plasma concentrations of growth hormone;
- Decreased concentrations of interleukin-6 and epinephrine; and
- Lowered blood pressure and heart rate.

Based on the effects of slow movements of Mozart's piano sonatas, the researchers propose a neurohumoral pathway by which music might exert its sedative action. Their model includes an interaction of the hypothalamic-pituitary axis with the adrenal medulla via mediators of the unspecific immune system.

More theories will emerge as additional arts in healthcare research is conducted and completed. Although many theories will have the biological basis of traditional medical research, others likely will draw on a wide range of related and perhaps seemly unrelated disciplines.

Economic Benefits

In our current economic crisis, the healthcare dollar is increasingly dear. Although initially arts in healthcare research focused only on outcomes for patients, families, and staff, today savvy researchers are translating their findings into economic terms. For example, Parrish Medical Center in Titusville, FL, opened a new hospital in 2002. Two years later, a survey of 734 staff members found that the majority believe the design features—access to natural light, improved airflow, separation of public/patient transport areas, and "homelike" patient room design— positively affect the quality of their worklife and help them provide care more effectively. As a result, staff turnover is now at 13% per year, compared to 20% annually in the old facility (Center for Health Design, n.d.).

Staff turnover, particularly nurse turnover, is a huge issue for U.S. hospitals. As mentioned earlier, one study found that the cost of registered nurse turnover ranges between $62,100 to $67,100 per nurse (Jones, 2005). Alongside nurse retention is the issue of the nursing shortage, which is slated to persist through the next two decades, with demand growing at 2% to 3% per year (Buerhaus, Staiger, & Auerbach, 2009). Increasingly, hospitals and other healthcare organizations are developing and implementing strategies to retain the valuable nurses they hire (Christmas, 2008). Thus, arts in healthcare research that highlights economic benefits will likely play a larger role in the growth of the field in years to come.

Conserving nursing resources is another issue. Walworth's research, discussed earlier, also examined the cost effectiveness of music therapy as a procedural support in the pediatric healthcare setting that resulted in findings with implications that addressed this issue (Walworth, 2005). There was a 100% success rate of eliminating the need for sedation for pediatric patients receiving echocardiograms (ECGs), an 80.7% success rate for pediatric CT scan completion without sedation, and a 94.1% success rate for all other procedures. When the music therapy interventions were successful, no registered nurses were required to be present to assist. Cost analysis on the ECG patients alone for the 92 patients was $76.15 per patient, totaling $7,005.80. This cost is based on the following reasons:

- The RN was not required to assist, eliminating $55 per procedure.
- The sedation cost of $9.45 per dose was eliminated.
- The sonographer time was reduced from one hour to 20 minutes, decreasing the cost of the sonographer from $23.00 to $5.75 per procedure.
- The cost of the music therapist averaged $5.55 per procedure.

The year-long project resulted in 184 RN-hours saved for other duties, and with an average of 20 minutes per procedure, the equipment and staff could be scheduled for three times as many procedures as previously, plus space in recovery rooms was increased.

Wayfinding, a process of getting people from point A to point B with minimal anxiety and aggravation, also can be an economic issue. According to Geboy (2007), disorientation in built environments is embarrassing and stressful, wastes time, and, in some cases, is even fatal. A study conducted at a major regional 604-bed tertiary-care hospital calculated the annual cost of the wayfinding system to be more than $220,000 per year in the main hospital, or $448 per bed per year in 1990. Much of this figure was the hidden cost of direction-giving by people other than information staff, which occupied more than 4,500 staff hours, the equivalent of more than two full-time positions (Zimring, 1990). A good wayfinding program requires an integrated, coordinated system in which three elements—human behavior, environmental design, and organizational policies and practices—all work in harmony to ensure that patients, visitors, and staff can effectively navigate the environment (Carpman & Grant, 2002).

Cohen (2009) has begun analyzing the economic benefits of his Creativity and Aging Study. Just comparing medication use and doctor visits between the individuals who participated in a chorale group and the control group, he calculated and annual savings of $172.91 per year per participant. If one considers the current and projected numbers of people in the aging population, participation in creative activities can add up to huge savings for Medicare, other insurers, and individuals.

"While we who have had the privilege to serve in healthcare leadership roles have done our best to provide a safe and healthful environment for the patients in our hospitals, we continue to fall short of the goal. I believe that our decision to invest in the arts, which included music, reoriented our acute care environment toward wellness, the ultimate objective. Improvement in patient satisfaction was anticipated but not guaranteed. However, improvement in employee satisfaction was an unanticipated bonus of our arts program. The lesson learned for me was that everyone benefits from a wellness oriented environment. There is indeed a cost to benefit ratio that is worthy of exploration by today's healthcare leaders."

- LARRY WARREN
CEO of Howard University Hospital, Washington, DC, and former Director and CEO of University of Michigan Hospitals and Health Centers

Summary of Research

Evaluations, observations, and research findings demonstrate that there are both instrumental and intrinsic benefits to the arts in healthcare. Research in the field is limited but rapidly growing.

Conducting research requires experience in arts in healthcare research techniques and methods and funding from sources that recognize the potential of arts in healthcare. Another issue is a lack of clarity about what to measure and sometimes a lack of awareness about the distinction between curing and healing. To move forward with a research plan, there first needs to be clarity about what effects are intended by integrating the arts in healthcare. This clarification will drive the development of tools and methods for researching both the instrumental and intrinsic benefits of the arts in healthcare.

Both quantitative and qualitative research methods have a role in this endeavor. Patton (2002, p. 53) writes: "It is crucial for validity—and consequently, for reliability—to try to picture the empirical social world as it actually exists to those under investigation, rather than as the researcher imagines it to be, thus the importance of such qualitative approaches as participant observation, depth interviewing, detailed description, and case studies." And further, regarding artistic criteria in qualitative research, he says, "Artistic expressions of qualitative analysis strive to provide an experience with the findings where 'truth' or 'reality' is understood to have a feeling dimension that is every bit as important as the cognitive dimension" (p. 548). Writing in the *Journal of Epidemiology and Community Health*, Hamilton, Hinks, and Petticrew (2003) note:

> In the health field, proper recognition of the health effects of interventions and resources, are likely only to follow from good evidence that they achieve their intended health and well-being outcomes. In the absence of evaluation there always will be much uncertainty over benefits, harms and value for money. A scientific approach to evaluating the arts may help move the debate about the arts and health beyond anecdote and opinion (p. 402).

The scientific approach is well underway and, with it, mounting evidence that the arts are truly making a difference in people's lives in hospitals, nursing homes, senior centers, private homes, or other locations within the community. Evidence also is emerging regarding economic benefits. Thus, research findings indicate that the arts can play a significant role in humanizing healthcare for individuals, families, and the healthcare providers that serve them; and can become part of the solution to our current healthcare challenges.

"Medicine has always had difficulty in defining its terrain, situated somewhere between the sciences and the humanities. The recent trend has been to accentuate its scientific underpinnings: detachment and objectivity in search for universal truths about disease. While this approach has yielded impressive diagnostic and therapeutic dividends, it has often exacerbated the suffering of patients by further alienating and isolating them. The arts serve as powerful corrective to this trend, emphasizing the complexity of human experience and the needs of sick people over and above surgery and chemotherapy. The arts help remind medicine of its humanistic origins in healing as it seeks to provide the most up-to-date scientific care for its patients."

-DAVID BIRO, MD
SUNY Health Science Center Downstate and author of *One Hundred Days: My Unexpected Journey from Doctor to Patient*

Moving Forward

The field of arts in healthcare is steadily moving forward. Increasingly, healthcare administrators are not only welcoming but also financially supporting arts programming in their institutions.

Medical and nursing schools across the nation see the value in incorporating arts in healthcare courses or content to help their students develop their observation, communication, and other essential skills. Arts organizations, schools, and colleges are partnering with healthcare organizations to provide arts programming as well as health promotion experiences in community settings. Architects and designers are creating healthcare institutions that are not only beautiful, but also built upon a solid foundation of evidence about what supports safe delivery of care and provides the most positive outcomes for patients, families, and staff.

The *State of the Field Report* verifies that the benefits of arts in healthcare are not limited to a select group of privileged individuals. Illness has a very leveling effect and the very nature of the arts means that everyone—regardless of ethic group, race, age, economic status, or geographical region—can enjoy all that the arts can bring to healthcare experiences.

Although continued research explaining the positive outcomes of the arts in healthcare for patients, families, and staff is paramount, our current economic crisis demands that research demonstrating the financial benefits must parallel these efforts. Evidence of monetary benefits can provide the arts in healthcare field a seat at the table when tough decisions are made.

With the launch of the Society for the Arts in Healthcare's journal, *Arts & Health: An International Journal for Research, Policy and Practice*, a true sense of professionalism of the field is settling in. Professionalism also is reflected by organizations and institutions of higher education's development of coursework to prepare individuals to provide safe and effective arts in healthcare services. Beginnings of certification and credentialing are in the air.

From the beginning of recorded history, the arts have been central to the human experience. In times of illness, our world is stripped of what civilization has added to our primal core. In the 21st century when our expansion of knowledge out paces our ability to understand and utilize it, we are beginning to pay attention to our basic human needs for safety, community, art, and music—and to unlock their meaning and harness their power. This is at the heart of the arts in healthcare movement.

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