

## SUPPORTING THE PSYCHOSOCIAL NEEDS OF CANCER PATIENTS THROUGH DESIGN

Designing to support patient control, privacy, dignity, and hope

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### EXECUTIVE SUMMARY

*As we design environments for cancer treatment, patients are challenging designers and caregivers to see them beyond their disease. The idea that environments are created to facilitate state-of-the-art medicine and technology is not enough. Designing for empathy pushes designers to understand that the needs of the cancer patient are more than physical. The strategies incorporated into a cancer center can function beyond physical comfort — a meditation space to spiritually lift a person; sliding doors between rooms to provide social support; the ability to adjust lighting and temperature within a room to give patients a sense of control. Elements can also communicate respect and inclusion — art that shows a community investment in one's care; gardens that invite patients to venture out of their rooms; and sustainable products that demonstrate respect to the carcinogenic concerns of people.*

### INTRODUCTION

The advances in both technology and medicine have improved our ability to treat cancers of varying degrees, increasing survivability rates, shortening lengths of stay, and moving services from inpatient to outpatient. The idea of a healthy life for cancer patients and survivors is as much psychological and emotional as it is physical. However, treating the cancer is not the same as treating the patient. In a 2010 survey by the Lance Armstrong Foundation of cancer survivors, 45 percent of respondents said their emotional needs, such as sadness and relationships, were not met; while

another 29 percent said their physical needs, like pain and energy, were unmet. Forty-six percent of patients said they received no care for grief and identity; while 39 percent reported no care for sadness and depression.

In the past, the idea of healthy was defined as lacking illness, and the design of care environments followed that thinking — space that housed the equipment and furnishings to treat ill patients. The functionality of the environment previously led to utilitarian, anti-

septic spaces with little personality. The idea that healthy is both an emotional state as well as a physical state, though, is challenging our concepts of what a healing environment should be.

While the concepts of creating more hospitable care settings are not new, the application to cancer care facilities in tertiary and

ambulatory care environments is finding new opportunities as our understanding of the needs of this population grows. For this population, whose physical capacity for even day-to-day activities is hampered by the disease, the design of cancer care environments can support the patient's desire for control, privacy, dignity, and hope.

### DESIGN TO SUPPORT THE PSYCHOSOCIAL NEEDS OF CANCER PATIENTS

Cancer is not limited to physical effects; it also evokes emotional havoc that influences personal relationships and a patient's ability to live and work (Holland & Rowland, 1990). These additional impacts are referred to as one's psychosocial health. Psychosocial health services are "psychological and social services and interventions that enable patients, their families, and health care providers to optimize biomedical health care and to manage the psychological/behavioral and social aspects of illness and its consequences so as to promote better health (Adler & Page, 2008)."

Problems resulting from untreated psychosocial needs have been shown to induce adverse effects within the body's cardiovascular, immune, and endocrine systems, contributing to the decline in health associated with cancer and its treatments (Segerstrom & Miller, 2004; Yarcheski, Mahon, Yarcheski, & Cannella, 2004; Uchino, 2006). Two of the most commonly reported psychosocial effects in persons with cancer are anxiety and emotional distress (Stark et al., 2002; Rossi Ferrario, Zotti, Massara, & Nuvolone, 2003).

Modern treatment models have transformed from conventional approaches to advocating comprehensive treatment of cancer patients. This comprehensive approach to treatment incorporates sophisticated, state-of-the-art equipment and medicine with therapeutic modalities to support healing of the mind and spirit (Geffen, 2004).

Supporting the psychosocial needs of cancer patients is important to improving the quality of life and social functioning. Many recent reviews on the use of psychosocial interventions in cancer treatment have found important benefits, with many experts urging the use of interventions as part of an integral comprehensive medical care plan (IOM, 2004). These reviews focus primarily on psychosocial interventions such as support programs, screenings, assessment tools, education, and financial assistance. A smaller area of emerging research is focusing on the influence of the physical environment to complement the services and programs already being provided. Following are several design strategies, proposed as part of a comprehensive approach, to support selected psychosocial needs of cancer patients.



Design of treatment spaces can offer choice and control for privacy levels and patient socialization opportunities. Patients are also empowered through control of lighting, views, glare, and positive distractions.



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*Adler & Page, 2008*

#### Design for Dignity

Truly supporting the needs of a patient means looking closely at their innermost needs as a vulnerable patient. Dignity. Privacy. Empowerment. Design can help bring some sense of these needs to patients by providing choice and control, privacy, and reduced feelings of vulnerability.

Individual rooms offer a private experience for receiving treatment. A patient’s dignity is preserved in the event they fall ill from a treatment or if they are not feeling up to (emotionally or physically) being in a social setting. Alternatively, if a patient prefers to be around other patients during a treatment, they can control their level of social engagement through design that incorporates sliding doors between treatment rooms and choice of treatment environment (private vs. semi-private). A unique setting incorporated at the Avera Prairie Center, housing the Avera Cancer Institute in Sioux Falls, S.D., offers a balcony area that overlooks a multi-story garden atrium. Patients can choose to sit on the balcony during their lengthy treatments and take in the access to nature and a more light-filled environment.

Empowerment to remain in control of their illness has been identified as a crucial component to maintaining hope (Bulsara, Ward, & Joske, 2004). Control is offered to patients for lighting levels, glare, temperature, and electronics such as video monitors for watching movies. Patients’ control options are further exemplified through providing nearby or in-room access to blankets, food, and water. A patient’s immediate environment, most notably the chair they

receive treatment in, can offer adjustments for personalization and ultimate comfort. Through offering choice and control, patients will likely feel more empowerment and dignity in their treatment journey. The Park Nicollet Frauenthuh Cancer Center in St. Louis Park, Minn., uses a custom chair, collaboratively designed with Park Nicollet staff, the design team, and the furniture manufacturer, that features a motorized ability to recline in any desired position and can also be raised to a 32-inch height to facilitate easy exam or transfer of the patient. This unique design resulted in the Nightingale Award in 2007 for innovation in health care product design.

#### Design for Social Support/Spiritual Needs

The ability to cope with an illness is often supported through social support and spiritual needs. In a Lancaster University (Thomas et al., 2001) study on psychosocial needs of cancer patients and their carers, the researchers noted additional psychosocial needs in minorities and sub-groups of patients and carers, especially in the “emotional and spiritual,” “identity,” and “practical” needs. While personalities and individual preferences vary greatly, many patients find value in the act of sharing with other patients with cancer.

Design of a facility can offer options in types of spaces to include more open treatment bays to encourage conversation among those receiving treatment. Such social interventions have shown to reduce feelings of anxiety, depression, isolation, and pain and greatly improve the quality of life (for example, Rehse & Pukrop, 2003). Several studies have reflected the positive influence of social support on better immune system functioning and resistance to disease (Uchino, Cacioppo, & Kiecolt-Glaser, 1996; IOM, 2001; Uchino, 2006).





The prevalent use of warm colors, varying lighting levels, and inviting materials in both public and treatment areas communicate a safe, healing environment for supporting a patient's psychosocial needs, such as anxiety and stress, in an unfamiliar environment.

Patients also find comfort with family and friend involvement during treatment. Thomas et al. (2001) found carers wanted to be alongside the patient in medical settings, yet often expressed uncertainty about their presence. In both semi-private and private treatment rooms, provision of space for family or friends to participate in the event can provide meaningful support to reduce feelings of isolation and depression.

Supporting the opportunity for patients and their families to socialize can also be encouraged through communal areas such as food and refreshment zones. As a designated area in a facility, frequent visitors are more likely to exchange in casual conversation and share stories.

To support a patient's desire for spiritual connections, chapels and meditation spaces are provided as a place of respite. These spaces are dedicated environments for spiritual reflection either individu-

ally or as a group. Staff and families of patients can also access the chapel or meditation space. Additional opportunities for spiritual reflection can be found in smaller architectural details, such as engraved stones or etched glass, featuring messages of hope and encouragement.

A recent trend in larger hospitals and outpatient cancer treatment settings is offering complementary and alternative therapies as part of a comprehensive care approach. Massage is a common intervention shown to address physical, psychological, and spiritual symptoms and is often used to supplement many traditional medical treatments (Currin & Meister, 2008). Appropriate space allowance for these therapies to occur on site is often discussed as part of the facility planning.

#### Design for Stress Reduction

Studies support the effect of sunlight exposure on lowering perceptions of pain and stress due in part to increased levels of serotonin (Walch et al., 2005; Ulrich et al., 2008). The design of treatment spaces should consider natural daylight and sun exposure for patients. These considerations (typically in windows and/or outdoor spaces) also provide the opportunity for views to nature. The restorative effects of nature can reduce stress and diminish anxiety, which has been noted in emotional, psychological, and physiological changes.

Healing gardens also act as restorative settings for stressed patients, families, and staff (Marcus & Barnes, 1999). In addition to providing access to socializing, the calming effects of gardens lower stress levels through exposure to nature and fulfilling our inherent biophilic tendency (a human's natural stress-reducing response from nature) (Wilson, 1984; Ulrich, 2008).

Additional positive distractions are found in selected artwork for a facility. In several studies, patients predominately prefer nature pictures over abstract art (Carpman & Grant, 1993; Ulrich, 1991; Ulrich & Gilpin, 2003). Patients typically prefer artwork that "made sense" to them and was calming in context, such as a waterfall. Unique artwork may also feature photos of people with personal stories of survival and hope.

Controlling for acoustics in health care environments can reduce stress generated from noisy environments. Sound-absorbing materials used in patient treatment areas complement the use of quieter staff communication devices in lieu of overhead paging.

#### Design for Reducing Anxiety

Centralizing services in one convenient, accessible location for patients and their families reduces anxiety over travel coordination and the number of locations the patient needs to visit for treatment and therapeutic services. In addition, reducing the walking distance

within the facility for the patient to receive services can further reduce anxiety and stress during their visit. The “non-moving patient concept” can be achieved by bringing services directly to the patient in their treatment room, including check-in, lab draws, exam, and infusion.

Arriving at a treatment facility should not add stress to a patient’s first and routine visits. Clearly marked building entrances, convenient parking, and covered walkways are the impetus to good wayfinding. Inside the facility, visible and easy-to-understand signage enhances coordinated architectural cues for patients and family members to find their way. Good wayfinding soothes anxiety about getting lost and reduces unnecessary steps in their travel distance.

Lastly, the environment needs to be safe and not indicate additional harm or danger for the patient and their visitors. Flooring material and transitions are smooth to prevent falls and finishes are easily cleaned for routine infection control. Attention to indoor air quality and the selection of sustainable materials reduces harmful toxins and carcinogens typically found in some building materials.

## CONCLUSION

The journey that a patient battling cancer takes through treatment can be both frightening and arduous. Mitigating the fear helps patients navigate that journey easier and with more confidence. While the diagnosis of cancer will always come with a set of assumptions, environments can be designed that help patients see hope and fortitude during their treatment. As cancer treatment advances to improve survivability, creating environments to sustain the mental as well as physical well-being of patients should progress hand-in-hand with those advances.



Chapels and meditation spaces are dedicated environments for spiritual reflection, either individually or as a group. Additional opportunities for spiritual reflection can be found in smaller architectural details, such as engraved stones or etched glass, featuring messages of hope and encouragement.



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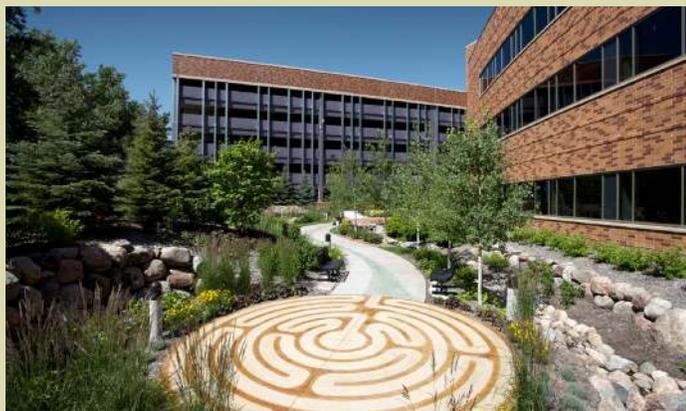
## CASE STUDY: PARK NICOLLET HEALTH SERVICES, FRAUENSHUH CANCER CENTER

### Vision

When the idea came to recreate a leading cancer center on an already developed and busy suburban health care campus, the opportunity arose to improve both the delivery of care and the environment in which the care was provided. The vision for the Frauenshuh Cancer Center was a facility where patients could receive all related treatments in one location, rather than traveling to multiple facilities or to several areas within a large facility. The vision also embraced sustainable practices with a healing and natural aesthetic in a near carcinogenic-free environment.

### Overview

The 98,400 s.f. Frauenshuh Cancer Center is a three-level addition and renovation with 22 treatment rooms and 25 exam rooms on the ground level, with future expansion available on the upper two levels. The second level holds classrooms,



Welcoming landscapes and colors are prevalent on the health campus. The featured healing garden offers feelings of hope and inspiration to patients and their families.

offices, break room, and other administrative space. The facility updated a tired entrance on the north end of the campus and also features a chapel and retail space. Offering state-of-the-art medical treatment and equipment as well as complementary and alternative therapies are part of Frauenshuh Cancer Center's comprehensive approach to treatment.

In addition to staff input, three cancer survivors were involved throughout the design process. Several full-size mock-up patient rooms were created in shell space. Nurses, schedulers, oncologists, and patients provided feedback and ran trial procedures for testing efficiency and work flow process of room layouts.

### Design Strategies

Patients arriving at the Frauenshuh Cancer Center are greeted at the welcome desk and immediately escorted to their room by a volunteer. Parallel with ongoing Lean practices, the concept of the 'non-moving' patient was achieved through bringing all services directly to the patient in their treatment space, starting with the check-in process.

Patients have the choice of a private treatment room or, if their treatment allows, a fast-track open-bay area. The private treatment rooms offer views of the outdoor healing garden, privacy, and space for family or friends accompanying the patient for treatment. The fast-track open-bay area offers a more socialized option where patients can talk to other patients and gain desired social support.

A unique chair was developed specifically for this project in conjunction with a leading health care furniture manufacturer. This chair allows patients to adjust for their comfort level, which may vary on each visit, and also allows for staff to fully recline the patient for examination.

A healing garden brings life and color to the campus and also gives patients hope and inspiration — new life and new growth — as they journey through their transformational treatments. Patients, visitors, and staff have access to the healing aspects of the garden through various views from treatment rooms, hallways, and waiting areas. More than 90 percent of respite spaces for staff and patients offer direct views to the outdoors, including the break room located on the second level.

In addition to colorful and inspiring artwork throughout the facility, photographs and stories from cancer survivors adorn the wall through the main corridor, providing hope and inspiration to those currently undergoing treatment.

While sustainability is most prominently associated with energy conservation and use of materials, it also became a description for the way patients' emotional, psychological, and spiritual needs are met in their treatment. The first LEED-NC Silver Certified cancer clinic in the Upper Midwest, the Frauenshuh Cancer Center wraps patients in an environment that sustains the whole person — mind, body, and spirit. Sustainability efforts move beyond the rain gardens that are put on display through interior views. Air quality is a crucial part of the cancer treatment program. Using low-emitting adhesives, sealants, paints, carpeting, and composite wood products that might otherwise contain volatile organic compounds (VOCs), the team was able to substantially reduce the amount of known carcinogenic materials typically found in building construction.

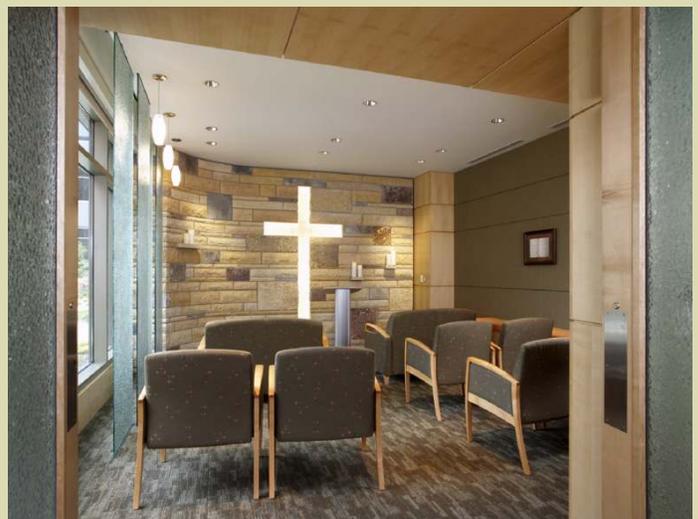
The center is complemented with a new adjacent parking ramp, offering convenient parking for regular visits to the center. The site development also gives three acres of green space back to the campus.

#### Patient Experience Surveys

In an effort to measure the outcomes of its investment in cancer care, the Park Nicollet Oncology Research department created a patient satisfaction survey. The Frauenshuh Cancer Center collected patient experience data from pre- and post-occupancy of the new facility. Surveys were distributed and collected from current patients. Questions were presented using a Likert scale for a number of experience-related topics. Patients were asked to rank their level of importance for a topic, as well as their overall satisfaction with that topic. Patients were also provided space to add their own comments.

In regards to the Park Nicollet vision, patients responded to a survey in four broad categories: non-moving patient concept, privacy during treatments, perception of care they receive and the interaction with the care team, and perception of facility design.

Overall, patient satisfaction rates rose to 81% from 74%, as the size and number of treatment spaces increased. The first set of questions that Park Nicollet reviewed with patients was the implementation of the *non-moving patient concept*. Park Nicollet asked patients about the availability of all services in one location. Patients felt the importance of being in one location improved from 77% prior to the project completion to 82% afterwards, and patient satisfaction increased to 90% from 77% after the execution of the facility design.



Responding to the patients' need for privacy, spiritual needs, and social support, the Frauenshuh Cancer Center features private treatment rooms with views to a healing garden and space for family and friends to be present during treatment; a dedicated chapel/meditation room; and a feature wall with photos and stories of cancer survivors to inspire hope and strength.

Case Study Continued on Page 8

### Case Study Continued

Park Nicollet also surveyed the patients' *perception of patient privacy during treatments*. In the new facility where a greater emphasis was placed on personalized care provided in private treatment rooms, Park Nicollet found that a higher percentage of patients rated privacy as very important in their treatment, rising to 63% from just more than half of patients in the older facility. Patient satisfaction with the level of privacy in the new facility rose 17% from previous facility, with 96% of patients responding satisfied or very satisfied.

Patients also commented on the *perception of the care they received and the interaction with the care team*. With an existing reputation for quality, patient-centered care, each response of the six-question section indicated that the care received in the new facility was slightly better than in the previous.

On the *perception of facility design*, Park Nicollet found a 5% increase in patients who responded that the appealing design and colors were very important to them, rising to one in four patients placing such emphasis on design. The largest increase in patient satisfaction scores, in fact, came from the survey of patients on the appeal of the design and color, with a 22% increase between the new and previous space. Almost 90% of patients said they were satisfied with the design of the new cancer center.

Park Nicollet also surveyed patients about their *perception of the art* in the facility. There was a 50% decrease of patients who thought that art was not important and overall patient satisfaction of the art increased from 70% to 85% in the new facility. Patients also indicated that the importance factor of lighting in the new facility grew by 8% compared to the existing facility, with 27% who felt that lighting was very important.

The last item, *the importance of a meditation space* within the new facility, found the percentage of patients placing a greater importance on such a space grew from 34% to 49%. In comparison, patients perception of having a library as part of the Cancer Center did not change.

The successes of the Frauenshuh Cancer Center demonstrate the value of a comprehensive approach to improving the patient experience. The data reported through the surveys supports the use of design as one of the tools employed to achieve the organization's goals.

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- Brad Krump, AIA, EDAC and Jason Nordling, AIA are licensed architects with BWBR and are actively involved in leading organizations to discover innovative facility design strategies for health care delivery. BWBR is a design solutions firm with expertise in planning and design for health care facilities, including cancer care.*

