

Creating Patient-Centered Environments for Cancer Care

Mary-Jean Eastman



Mary-Jean Eastman
FAIA, OAQ, OAA

Mary-Jean Eastman is the founding Principal of Perkins Eastman, an architecture, planning, and interior design firm with a staff of 400 and offices in New York, Pittsburgh, Stamford, Chicago, Charlotte and San Francisco; and with Susan Black of Perkins Eastman Black in Toronto. She has served as principals for over one hundred award winning health-care facilities, senior living facilities and public, educational and commercial buildings. Her current assignments include the Cancer Institute and Radiology Department at NYU Medical Center, the Davidoff Cancer Center at Rabin Medical Center in Israel and several projects for Memorial Sloan-Kettering Cancer Center and New York-Presbyterian University Hospitals.

“You have cancer” is one of the most feared diagnoses a patient can receive. The period of treatment that follows is almost always frightening and stress-inducing for the patient, family, and friends. In the United States alone, approximately one and one third million new cancer cases will be diagnosed this year and since 1990, over 17 million new cases have been diagnosed.¹ The American Cancer Society estimates that in 2003 approximately 550,000 people will die of cancer.² Around the world, the United States ranks 22nd and tenth in death rates for cancer in men and women respectively, and Canada is tied at 23rd and ninth. Only those countries with a higher incidence of tobacco smoking rank higher.³ In developing countries, the rise of Western lifestyle behaviors including

tobacco smoking, diets high in fats and low in fruits and vegetables, and lack of exercise is leading to increased risk for cancers of the lung and colon among others. However, many cancers - including breast, colon, prostate, and skin - can be detected by screening. In the United States, the five-year relative survival rate for these cancers is 82%. If all of these cancers were diagnosed at a localized stage through regular cancer screenings, the five-year survival rate would increase to about 95%.⁴

The National Institutes of Health estimate that in the United States the direct medical costs for cancer in 2002 were \$60.9 billion.⁵ In addition to surgery, cancer treatment usually involves extended therapy at a medical facility. This requires specialized facilities for imaging, radiation, and infusion. It, therefore, does not seem surprising that most major medical centers and many community hospitals have or are developing specialized cancer treatment facilities.

Perkins Eastman has been involved in over twenty such facilities and has been fortunate enough to have clients for whom patient-centered care is a primary design goal. We have designed these facilities for a variety of providers including a community hospital in ex-urban New York, one of New York City’s major academic medical centers, Israel’s largest regional medical center, and several projects for one of the world’s most respected cancer centers, Memorial Sloan-Kettering Cancer Center (MSKCC).

These four sponsors incorporated eight concepts in the planning and design of their new facilities:

1. A focus on the needs and concerns of the patient and the caregivers drawn from their circle of family and friends.

Cancer patients are different because of seriousness of their disease and the negative side effects of treatments. They often need assistance to get to and from treatment. They have had to adjust the pattern of their lives to accommodate this compelling new priority. They need the physical and emotional support of family and friends, and everyone in this extended group needs the support of the medical institution. During their treatment they need access to liquids and snacks, distractions like television or the Internet, and educational resources about their disease and its treatment.

2. Minimization of stress-inducing environmental factors.

Given the high levels of stress that patients and their families are already experiencing, they do not need the aural and visual clutter that is usually prevalent in medical facilities. For example, hospital staff have told us that inpatient renovations, involving the installation of sound-absorbing carpet in corridors and other amenities, have resulted in lower levels of medication required and fewer nurse calls. The major donor for an inpatient facility relayed to us her conversation with the president of the institution. He had never believed that environment could affect a patient's condition until he saw the results of the project she made possible.

3. Preservation of patient privacy and dignity.

Given the invasiveness and discomfort of cancer treatment and its stigma in the community, the need for preservation of privacy and dignity is self-evident.

4. Provision of positive, comfortable environments designed with a hospitality vocabulary.

Hospitality environments recall positive experiences like meals out and vacations. Hospital environments, with the exception of births, recall negative experiences. Staff at MSKCC's ambulatory care center have told us that some patients now refuse to visit their doctors in their hospital-based offices. Because of the tremendous develop-

ment of new materials for the hospitality industry that meet the maintenance and code requirements of healthcare facilities, this type of environment is much easier to create than it was a decade ago.

5. Incorporation of life-affirming features.

The incorporation of artwork, plants and even natural finishes, or finishes with an organic feel and texture, reminds patients and family members of the wonderful possibilities of life and gives them something to contemplate. Although they are difficult to maintain, we have also had the opportunity to incorporate water features that are calming and are interesting to contemplate.

6. Built-in ability to accommodate rapid change in technology and treatment protocols.

Given the high first cost of these facilities, additional marginal spending required to accommodate flexibility and new technologies may quickly pay for itself in future staffing efficiencies.

7. Separation of staff areas and support space from patient areas.

In addition to facilitating the operation of the facility, this helps to reduce environmentally-based stress factors just as it does in a hotel.

8. Efficient use of the care team's time with the patient and of the patient's time in the facility.

One very important feature of a dedicated cancer center with doctors' offices, imaging, infusion therapy, and radiation therapy under one roof is that the patient can do in one day what may take multiple visits at a hospital center. It also facilitates the ability for a physician to check the condition of a patient who is only scheduled for therapy. Other examples of this principle are organization of the facility so the nursing staff can visually monitor patient traffic to optimize the flow; and rooms where the clinical team can plan the next steps in treatment before the patient visit is over.

The following descriptions demonstrate how these principles have been successfully incorporated into various diagnostic and treatment facilities,

screening facilities, and inpatient facilities designed by Perkins Eastman.

Diagnostic and Treatment Facilities

For the convenience of patients making regular visits and to establish a less institutional image, it is highly desirable for a cancer center to have its own entrance separated from the main entrance to a hospital complex. It needs facilities that provide convenient covered drop-off and access to parking or public transportation, immediate orientation to all of the facilities in the center assisted by reception staff, and a comfortable place to wait for someone. This was incorporated at Vassar

Brothers Hospital in Poughkeepsie, New York, and at the New York University Cancer Institute, currently under construction.

The organization of the building itself should promote ease of use by the patient. At MSKCC's Laurance Rockefeller Ambulatory Care Pavilion, which accommodates 1,000 patient visits a day, we had a unique opportunity to realize an ideal planning model developed with the hospital's administrator. This facility is large enough to be organized by disease group with separate floors for imaging, support services such as the library and boutique, and staff support.





A typical floor for a particular disease group such as gastrointestinal cancers is organized with the reception area immediately off the elevators, offices for surgeons on one side and oncologists on the other, and infusion therapy in between. In one visit a patient may visit both types of doctor and receive chemotherapy without leaving the floor. A service corridor with access to the elevators allows staff to keep the floors stacked with materials, transport specimens, and medications without passing through the reception area.



The exam room cluster is organized with the session staff work area able to view the doors to all exam rooms and a treatment planning area immediately available to clinical staff.



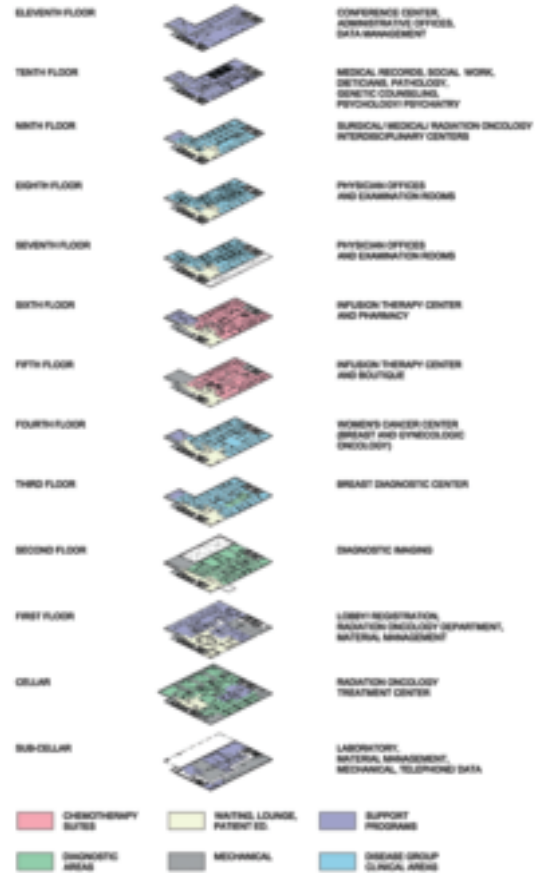
The reception areas include comfortable seating with a separate television viewing area, a refreshment area, patient education carrels and separate check-out stations where patients talk with the nursing staff about their next visit and treatment in between visits. Artwork and water features are included in each reception area. In chemotherapy areas, patients have privacy if they wish it and television, Internet access, natural light, and plants.



At the NYU Cancer Institute, the floors are much smaller and simpler but the floor is still planned with a front and back of the house. Materials travel in the freight elevator and for the pharmacy a dumb-waiter is located far from patient-intense areas.

This building is also organized vertically, but in this case physicians' academic offices also serve as their consult rooms and the conference center at

the top of the building also supports the academic activities of the institution. This facility also has a separate floor for imaging and in close proximity a women's center. In this case radiation therapy facilities are located below grade.



The typical patient waiting areas include comfortable seating, a refreshment area, and a patient education area. The infusion services for all disease groups are located on two floors. On these floors the reception areas serve less as waiting areas for patients, who are usually treated right away, than as support areas for family members. They are equipped with television, Internet access, and refreshment areas, and are also designed to accommodate support group sessions.



The Dyson Cancer Center at Vassar Brothers Hospital has only three floors and is organized with infusion and radiation treatment areas on the ground floor and physicians' offices and meeting facilities above.

The Davidoff Cancer Center at the Rabin Medical Center outside Tel Aviv is also organized vertically, with radiation therapy at the lowest level, chemotherapy above that, one ambulatory diagnostic floor, one floor of physician office suites, and two inpatient floors on top. The same principles of separation of staff areas from patient areas apply to this new building, with two very separate elevator cores, one for service and inpatients, and one for ambulatory patients and the public. Natural light is brought into the infusion areas to relieve the stress of the lengthy therapies, and every position is within a few feet of a garden window.



In all of these facilities, whether for an internationally recognized specialty hospital or a community hospital, the interior design of the patient areas is based on a hospitality model. The reception areas feature amenities and seating groupings like a hotel lobby rather than rows of chairs. We are fortunate that the hospitality industry is equally concerned about maintenance, which has led to the development of finishes and fabrics that resist soiling and withstand heavy wear. The infusion areas all have access to natural light, views, and at the Rockefeller Pavilion, plants. In procedure rooms, new versions of traditional materials such as plastic laminate that looks like wood have allowed us to warm up the environment.

Screening Center

The Guttman Institute, another MSKCC facility, is a screening center for breast and prostate cancers. Here the problem was to attract patients to screening procedures that are often undignified and uncomfortable. A dignified environment and amenities such as attractive changing and waiting areas as well as comfortable bathrooms help make patients' visits more tolerable.



physical therapy for patients who have just had breast surgery and programs like “Look Good Feel Better” that teach patients how to deal cosmetically with hair loss and skin condition. It and the patient rooms are as feminine as the visitors' lounge is masculine. After it opened, the hospital was besieged by requests from women with other types of cancers to move to this floor.

We are now involved in the renovation of four



Since 1995 we have also been involved in MSKCC's phased renovation of their inpatient facilities. The first floor we completed was a cosmetic upgrade to provide a special environment for women with breast and gynecological cancers. The core of the floor was replanned to provide better facilities for clinicians, treatment planning, and patient education; only finishes and furniture were replaced in the patient rooms. In this case the hospitality model chosen by the donor was her own beach house. She also gave many of her own paintings and photographs to recall that world. The patient lounge is a place for relaxing,

additional inpatient floors at MSKCC and are facing the challenge of upgrading the number of air changes per hour from three to six in a forty-year-old facility with an eleven-foot floor-to-floor height. This has led to much more extensive renovation of patient areas and we use every available inch as we try to give cancer patients the amenities they need in double rooms designed for the patient care standards of another era. Nursing staff at MSKCC now accommodate requests from patient families to spend the night with the patient without regard to the cramped quarters

for both the family and the nurses.

Although space for family sleeping is extremely constrained in existing facilities, it is accepted as beneficial to the cancer patient. Family sleeping accommodations including space for sleeper chairs and sofas are becoming the standard in new facilities. At the Rabin Cancer Center in Israel, as many rooms as possible are single and include window seats that incorporate a single mattress for family members. In the inpatient floor for bone marrow transplants that we are currently designing at MSKCC, family members will be allowed to sleep in patient rooms although they have separate shower and eating accommodations outside. For bone marrow recipients, who spend several months in the hospital, it is extremely important to provide access to all kinds of media that bring the world to them.

We did have another unique opportunity at MSKCC when we were asked to design a floor for patients with special needs for privacy and security. This facility includes suites with sleeping accommodations for family members on sleeper sofas. The bedrooms and bathrooms look like five-star hotel rooms but are designed for the needs of cancer patients. The entrance to the bathroom is as close to the bed as possible and the shower stalls are equipped with fold-down seats. Clinical areas don't look clinical and gracious common areas provide the opportunity to have a family meal, have tea, or relax away from the patient room. Cancer patients and their families now actively research the best sources of treatment. They may have surgery at one facility, but go for radiation or infusion therapy at another facility that is more convenient or comfortable. As medicine in the United States continues to become more specialized and competitive while the users become more sophisticated and demanding, dedicated cancer centers become an increasingly common feature at hospital campuses. For this very stressful disease, the environment has an important role to play in attracting patients and in supporting their treatment. The eight concepts discussed and illustrated above all play an important part in creating a successful patient-centered cancer care environment.



¹ Cancer Facts and Figures 2003, American Cancer Society, Atlanta, Georgia, p. 1

² Ibid., p. 2

³ Ibid., p. 300.

⁴ Ibid., p. 1

⁵ Ibid, p. 3