

# Participatory Planning and Design of a New Children's Hospital

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Most older hospitals, and many being designed today, create environments that are thirty years behind the times in accommodating current concepts of treatment, therapy, and care. Even today, hospitals are still being built to care for patients as if they are to be admitted for longer periods of time, resulting in an emphasis on the number of beds the hospital provides. They are built to facilitate treatment systems as perceived by hospital administrators, not by the doctors, nurses, or patients.

However, healthcare has changed significantly in recent years: more admissions are short-term, many operations can be performed on an out-patient basis, increased attention is being given to preventive medicine, and there is additional need for ambulatory centers rather than private rooms or wards. In today's medical thinking, it is vitally important to consider the patient's total wellbeing, that is, the physical, intellectual, emotional, and social needs of the patient. Yet all too often, the architect, and the interior design that he or she creates in a hospital today, stand in the way of these current concepts of treatment and care and, in fact, eventually cost the hospital system millions of dollars through inefficiency and extended patient treatment.

One of the goals of the design process should be to provide an environment which supports and encourages the treatment, therapy, and care of patients. Such an environment can be designed if all the users (that is, the patients and personnel) have a genuine participation in the planning and design process. This includes many groups of patients: children and adults, short-term and long-term patients, old people and the handicapped, as well as other special

groups such as chronically ill people who have to return to the hospital repeatedly. The environment must also support the interdisciplinary work of the staff: medical, nursing, administrative, psychologists, sociologists, and educators.

This paper addresses the environmental concerns dealing with the planning, architecture (that is, the building design and layout), and interior design (that is, the colors, textures, furnishings, and decorations) of the hospital. Above all, it stresses the importance of the planning phase which develops the building program.

The observations made above concerning modern medical treatment are true for children's hospitals as well as for general hospitals. The treatment of sick children today involves many important factors which the physical space and design of the hospital should take into



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account.

- Increasingly, admissions are for shorter periods of time.
- Children spend most of their time out of bed, and treatment of children is ambulatory as often as possible.
- Children need to play, both quietly and physically, both individually and in groups.
- The parents' wellbeing must be considered, even when they are simply waiting anxiously for information from the doctors.
- However, more and more, parents play an active role in the treatment of their children. It is taken for granted in Denmark, for example, that parents are *admitted to the hospital with their children*, and they constitute an important part of the child's care.
- The professionals who work in the hospital must have interdisciplinary skills to deal with the varied needs of the patients and their parents.

As the above list suggests, a person's surroundings affect a person's wellbeing, both physically and mentally. This is especially true of children, and becomes of paramount importance when dealing with a sick or ailing child who must receive treatment in or be admitted to a hospital. The importance of the physical environment of a children's hospital is seen in the change of behavior and attitude it can create. If the physical space of a hospital does not provide environments for the child's varied needs and activities, or for the parents' attendance and activities, it most likely delays the healing of the child.

### Developing a New Concept

A children's wing at the Hillerød Hospital in Denmark illustrates the application of these concerns to the design of hospital space. Using a method known as the *user-participation process*, Aase Eriksen involved the *users* of a children's hospital, that is, the children themselves, their parents, and the professionals who care for them in the planning and design process of the wing. As part of this process, Dr. Eriksen spent four months in participant observation

at Hillerød, as a "doctor-in-residence wearing a doctor's gown and hospital name tag, following doctors, nurses, and other professionals on all their shifts, participating in these people's work. However, in addition to such first-hand observation, which gave her an awareness of the rhythms of the different hospital shift, Dr. Eriksen conducted a four-month planning process involving

- separate meetings with children, parents, doctors, nurses, psychologists, social workers, educators, and administrative staff at the hospital;
- meetings with children and their parents together; and
- children's participation in "design-ins."

At the "design-ins," the children, through drawings, expressed their needs and wishes in relation to visits to an ambulatory area as well as to a hospital stay. They drew their pictures and interpreted them in informal sessions in their rooms, in the playrooms, and at special design-in events to which children and their parents were invited. Parents talked about their needs and wishes in the children's rooms or in the waiting rooms.

The outcome of the process was a mixed collection of children's drawings, a list of *wishes* from the children, sets of comments from children, parents, and hospital professionals, and separate observations made by Dr. Eriksen. The next step in the design process was to analyze all this material, to find the common as well as special needs of the children, parents, and professionals, and develop design principles which would take all these needs into account.

The children's comments about the environment they encountered at Hillerød might apply to any hospital:

- It is boring here because there are no nice colors, no decorations, no plants.
- There is nothing to do.
- I can't sit on the bed because it is so high.
- There is nothing good to eat when I am hungry.

- There is no place to be alone or to keep something private.
- There are too many different doctors and nurses coming in and I don't like that.

Such comments point up the frequently dull, uninteresting environments hospitals provide in waiting areas, treatment rooms, and other areas seen by these patients. Such spaces might even hinder the treatment of the patient the hospital is seeking to help.

Two of the main experiences that children and parents have in a hospital are *waiting* and *anxiety*, and they are naturally connected. To wait is often the primary experience, whether for an examination or medicine, and that seemingly endless passing of time in itself frequently creates or increases the child's or parent's anxiety. But to have to wait in an environment which does not stimulate any interest or activity, does not have adequate space for children's movements, and lacks comfortable living spaces, can only heighten the patient's anxiety. One example is the use of fluorescent lights, which should be seen as totally unacceptable as the primary form of lighting in any hospital room. Not only is this light source harmful, but its skewed light scale even makes it difficult to observe an infant's true skin color.

Since parents in Denmark are admitted with their children and constitute an important part of the care process, the layout and design of hospitals today can actually stand in the way of using parents as a link in the treatment and care of their children. If these parents are in unfriendly surroundings, they can become an extra group of "patients" themselves, whom the professional staff must take added time to help and to psychologically support.

Further, the same environment can hamper the work of the doctors, nurses, psychologists, therapists, and other professionals treating the children. Dr. Eriksen observed many problems that the present layout and design of the hospital wing created for these people.

To sum up, the *goal* for the children's hospital

of the future should be to treat as many children as possible in an *ambulatory center* and not take up space in a hospital room with a regular bed. By increasing the number of ambulatory patients, the number of longer-term admissions can be reduced. For to be admitted to a stay in the hospital can be a traumatic experience for a child, and of course any long-term admission increases the cost of health treatment or care to the community. Any change in the ambulatory environment that will meet the needs identified by children, parents, and profession described can lead to improved patient care.

Obviously, however, some patients must be admitted to the hospital. These children fall into two groups: day patients, admitted for stays of up to sixteen hours, returning on a regular basis for a few days or an even longer period, and overnight patients, admitted for longer stays. *Day patients* come for treatment or observation and go home in the evening. Many of these patients may not even need a hospital bed, because they visit the hospital only for routine check-up, for a specific examination, to meet with a professional staff member, or for medicine or an injection. But they do frequently need a resting or observation place. Yet the hospital bed is often used as a working station for doctors and nurses because examination rooms as well as varied living and resting spaces are not available.

Those children who came to the hospital for treatment or observation and participated in my design process at Hillerød indicated the need for varied activity spaces:

- a place for resting and reading
- a quiet space
- a place to draw or to write
- playspaces
- a tv/video space
- a kitchen and eating space, in which there is a refrigerator/freezer, a microwave oven, and child-friendly food, such as ice cream and other goodies.

There must also, however, be a few rooms with a bed and other necessary equipment for those

who need more intensive treatment.

Parents of day patients who participated in the design process indicated the following needs:

- comfortable chairs
- places to be with their children
- a place to meet with other parents
- a kitchen/eating space which also becomes a space to be with the children.

*Overnight patients* who were admitted to the hospital for longer periods of time had wishes similar to those expressed by the day patients. They stressed especially the need for an environment that is more home-like and a nice place to be. They also asked for better furnishings and living spaces for the parents.

The children expressed a variety of needs. They wish to be with other children, yet also strongly need to be private at times. This need for a private space was an especially strong wish among teenagers; in fact, it would seem wise to design separate spaces for young children and older children. In general, the children want:

- home-like surroundings
- a place to be alone
- a place to be with other children
- comfortable furniture
- colors, pictures, plants, and different kinds of decorations
- better light, especially by the beds
- tv and radio in their rooms, as well as a tv room
- nicer looking toilets and bathrooms.

Both younger and older children would like to choose what they eat.

The parents of overnight patients, who are an important part in the care of their children, want:

- a kitchen/eating space big enough so they can eat together with other families
- a place just for adults
- a comfortable place to smoke
- better and more comfortable furniture
- adult furniture in the playrooms

- toys for all age groups

Both children and parents expressed the wish that the nurses would wear uniforms that were easily identifiable, and the children say they should have nice colors.

The user participation process conducted with patients at Hillerød Hospital indicated that it is not the number of beds which should dictate the organizational structure and the interior layout of a children's hospital or hospital wing, but the various activities that take place there. An overall design approach taking into account the most current concepts of treatment and care as well as the needs and wishes expressed by the various users of the hospital space should be the basis for a hospital building program and design.

### Designing and Building a Facility Based on the New Concept

The primary functions of a children's hospital are diagnosis, treatment and care; secondary functions are in-service training of doctors, nurses, and other professionals, as well as education and training of parents in the treatment of their children. An environmental design that allows for the combination of these functions, and creates teamwork among parents and health care professionals, will improve the whole treatment of children from arrival, to admission (if necessary), and to release. The ambulatory center of the hospital should be the heart of the hospital and should incorporate not only space for emergency arrival but for observation of children for up to sixteen hours, for ongoing daily treatment, and for periodic examinations, injections, and so forth. The goal of such a hospital is to treat patients for as short a time as possible, and admit them only when absolutely necessary.

The next phase was the design of a new facility to support and promote the health processes. This phase also involved the users: interesting wishes and concerns were solicited from children and their parents. The profes-

nal staff also worked closely with the architect in this phase. New concerns and needs came to light, which had not been taken into account before in the planning and design of a children's hospital or, for that matter, in other hospital designs. All the users asked for friendly, cheerful, and relaxing environments, and the children and parents wanted the hospital to be as home-like as possible.

The exterior of the building and the entrance signal that this is a place for children. When the children arrive at the new hospital, they are first met by a colorful ceramic entrance and thereafter by a waterfall wall, both made by the artist Gunhild Rudjord. There are bright and happy colors in the interiors, and the color system is an important part of the design concept. The various colors serve as signals to help children find their way around: each floor has its own color with signal colors for bedrooms, nurses' offices, secretaries' offices. Rooms where children and parents shouldn't go do not have the signal colors on the walls. In contrast the colors of the doors to the conversation/examination rooms and to the playrooms and seating/meeting rooms have the same color on all floors.

There are also a variety of spaces on all floors with places for play with other children, separate spaces for younger and older children, places to be alone, and family-oriented spaces with kitchen islands, where parents can prepare food for their children. The children's bedrooms have a sleeping sofa, so parents can stay overnight, and also have a comfortable place to sit during the day. There are round tables and comfortable chairs, plus many decorations. An island has been created in the hall where the younger children's bedrooms are located and a tricycle path with stop signs has been designed

around the island. Another of the many suggestions from children was that there be decorations on the ceilings of the bedrooms; these have been designed according to different age groups. The children's wishes for their kind of food, colorful uniforms for the nurses, better light by the beds, colorful sheets, clocks, a private closet to lock, flowers and plants, and nice toilets have been fulfilled.

It was discovered that children dislike the doctors' rounds, so cheerful, friendly meeting rooms – where doctors can talk with the children and their parents and where examinations can also occur – were placed in all the departments. An interesting outcome of this is a much greater efficiency for the doctors' rounds. The personnel have the rooms they desired and helped design, such as workspaces and conference rooms where they can relax. There are no longer extensive straight hallways, but halls that bend and turn, creating natural divisions among the departments so the staff does not have to walk through one department to get to another.

The political decision was to totally redesign and renovate an old building in the hospital complex. This made the job more difficult than designing a new structure; on the other hand it has communicated the message that it is possible to redesign an old building to new fit new concepts.

The redesigned children's hospital has now been in use since April 1999 when it was opened by the Queen of Denmark. The evaluation responses so far have been exceedingly positive. The staff is amazed at the quiet and sense of peacefulness even when the rooms are filled to capacity. They also feel that they have much

