

The First Dedicated Pediatric Oncology Hospital in Cairo, Egypt

A development of the Association of Friends of the National Cancer Institute (AFNCI)

Abstract

In 1998, a group of prominent Egyptians and physicians at the Egyptian National Cancer Institute (NCI) established the Association of Friends of the National Cancer Institute (AFNCI) in Cairo, Egypt. The organization, referred to as a non-governmental organization (NGO), is a component of the Egyptian Ministry of Social Affairs and is made up of active AFNCI members, a board of directors (composed of prominent business people and NCI physicians), and AFNCI staff. The association conducts teaching programs with Cairo University and affiliated health-care organizations worldwide.

The year of its inception, the AFNCI prepared a request for proposal (RFP) for planning and design services, and sent it to worldwide to numerous consulting organizations specializing in health-care management, planning, project development, and pediatric hospital design. Throughout 1998, the AFNCI reviewed candidate team credentials and assembled a short list of three candidates. In early 1999, the three teams came to Cairo, outlined their proposals, visited the proposed site, and toured the existing facility.

In May 1999, the association selected the SLAM/EMhc team to conduct the project planning, programming, and preliminary design. Other members of the team included Research Planning Consultants, Healthcare Consultants, Inc., Gene Burton Associates, and Boyken International. The team completed the predesign planning and programming work in January 2000.

Conducting a project of this type in a foreign country is certainly a challenge, and this article describes the project, the people, and the process. The completed program and campus master plan was successful, and work efforts are continuing to promote community awareness, raise funds, and complete the basic design and construction services.



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Oncology Hospital in Cairo, Egypt**

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other support personnel to complement the Egyptian health-care delivery system.

Project goal

The primary goal was to construct a comprehensive pediatric oncology hospital with advanced technological support equivalent to Western standards. The project was to take into consideration the cultural and social needs of the Egyptian people, and be designed to meet efficient operational, technological, and management standards. The delivery model was to be patient-focused, value-based, and holistic in character.

Project vision

The vision of the pediatric oncology hospital is that of a facility to be built to world-class standards, while accommodating the unique needs of the Egyptian family. The design will offer a flexible master plan to respond to present and future treatment and technological trends.

The program will also incorporate research, clinical, and academic endeavors that can be adjusted to meet the changing patient population characteristics over the next decade.

Research and academic endeavors

An integral part of the vision included a reliable research component that directly addresses the biological and genetic uniqueness of the Egyptian and Arabian patients. Another very high priority was the expansion of cooperative arrangements for research with foreign cancer centers to form joint development protocols.

Although medical education is a primary focus, there is also opportunity for developing expert pediatric oncology nurse practitioners, clinical pharmacists, discharge planning coordinators, patient educators, and

Team composition

The co-managers of the project team were Chris Upton, AIA, associate, SLAM Collaborative ; and Jim Easter, Assoc. AIA, president EMhc, Inc. The AFNCI required that the leadership have "directly applied backgrounds" in related areas of operation and design.

Upton had previously served on the staff of Egleston Children's Hospital in Atlanta. That involvement, combined with his design focus on children's hospitals, made him a logical candidate to manage this engagement.

Easter previously had served as director of planning for the University of Texas's MD Anderson Cancer Center in Houston. e had also led major planning engagements for the Sylvester Cancer Center at the University of Miami, as well as campus plans for a number of children's hospitals, including Driscoll Children's Hospital in Corpus Christi, Tex..

Other members of the project team contributed expertise in the areas directly related to the AFNCI goals and objectives. The standards of operation and management required a unique blend of professionals with diverse backgrounds and included

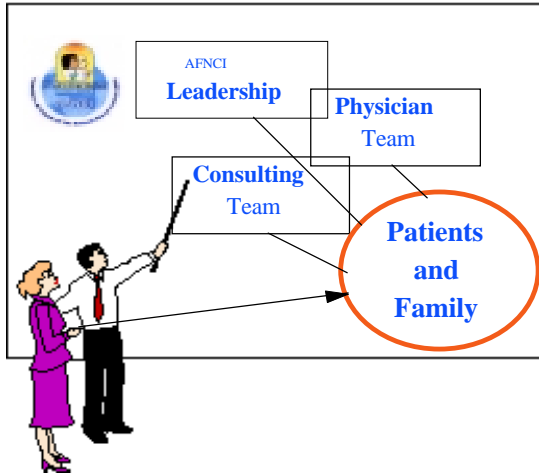
- Healthcare Consulting Corporation (HCC)
- Research Planning Corporation (RPC)
- Gene Burton and Associates (GB&A)
- Boyken International (Boyken)

Each firm brought specific expertise in staffing, clinical development, operations, nursing, demographics, finance, project management ,and construction. Many team members had previously participated as staff members of major health-care organizations. Much like Upton and Easter, they offered hands-on experience that could be directly

applied to the AFNCI Pediatric Oncology Hospital project

AFNCI expectations

The RFP carefully outlined the tasks for the consultant's responses. Descriptions written by AFNCI were carefully worded to avoid confusion on the part of the candidates for the work:



The role of the consultant team was to create balance among the AFNCI Leadership, Physicians, NCI faculty, guest faculty, patients, and family. Family-focused and patient-focused models provided key concepts for this development. In a country where a majority of the care is subsidized by the government, the "cooperative care" model takes on greater importance and significance.

The rural character of the patient population base and their remoteness to the City of Cairo formed added challenges that needed to be considered carefully. Patient education, awareness, and access became issues of concern.

In addition to the people of Egypt, AFNCI intended to serve patients worldwide with equally high standards of care. This expanded scope of effort added challenges to the project management process. We

accepted the challenge to plan a facility that began at 150 beds and expanded to 300 beds over time.

Many questions were still unanswered: How do we create proper balance within a delivery system severely lacking in program and clinical expertise? How do we introduce and implement this advanced and sophisticated program in a region faced with growing utilization demands? We were advised to turn to Western world examples, and we chose to look at St. Jude Children's Research Hospital in Memphis, Tenn. We conducted several trips to St. Jude to compare programs, planning methods, and operational protocols. At the same time, staff members from Cairo traveled to Memphis for onsite training and orientation to new technology.



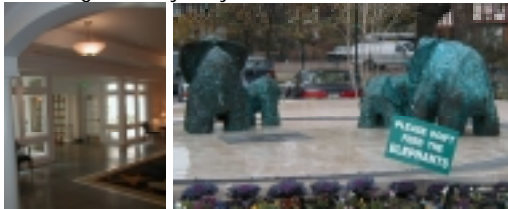
We met with Dr. Donald Pinkel, retired administrator of St. Jude, who was the first executive leader of the program to work closely with entertainer Danny Thomas to raise funds, attract supporters, and create the world-class children's hospital that exists today. Characteristics of St. Jude that seemed relevant to AFNCI included:

- Focused emphasis on children and family
- Successful history of funded research for cancer
- International program with high-cure rate
- Quality facilities and support services
- World-class leadership and staffing
- Creative vision and mission

During our visits to St. Jude, we toured the main hospital campus and the Target Family Stay Center, which had been funded through gifts from individuals and the Target Corporation.



The Target Family Stay Center



The Target Family Stay Center provides overnight stay accommodations for both patient and family members, with amenities that include:

- A park-like campus setting
- Family stay apartments
- Activity spaces for children
- Family recreational spaces.

Everyone agreed we would maintain *one* "high-quality" standard of care for all persons seeking cancer treatment at AFNCI, which proved to be one of the most exciting and challenging components of this engagement. The future does appear bright, with new opportunities on the horizon for children with cancer in Egypt.

The anticipated scope of services

In summary, the work products from our team included the following presentation to selection committee of AFNCI:

• Task 1.0: Client Profile/Patients and Customers - EMhc/HCI/RPC

- Project Workplan and Schedule
- Situation and Utilization Volumes
- Areawide Needs and Services
- Physician and Nurse Review
- Patient Clinical Profile and Protocol
- Projections For Future...Demand
- Financial/Payment Analysis(May Not Be Required)
- General Socio-Economic Profile(May Not Be Required)



• Task 2.0: The Institutional Structure - HCI/RPC/EMhc

- Clinical Output Specification
- Clinical Operations Review
- Profile of Services
- Organizational Structure
- Healthcare Delivery Model
- Operational Mode(May Not Be Required)
- Financial Mode(May Not Be Required)



• Task 3.0: Staffing, Training and Development - HCI/RPC/EMhc

- Current Employment/Staffing Program
- Skill Profiles
 - Present Staffing
 - Future Expectations
- Recruitment Methods...Strategy
- Training and Development Options

• Task 4.0: Facility Program, Master Plan and Design - EMhc/SLAM

- Site and Facility Master Plan:
 - Two Sites Being Considered
 - Look At Attributes of Each
- Room by Room Space Program
- Relationship Zoning and Concepts
- Design, Construction and Maintenance Recommendations
- Four to Six User Work Sessions In Cairo

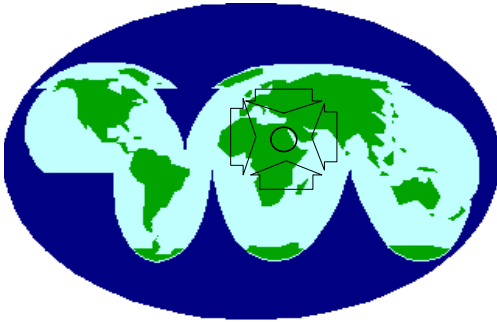
• Task 5.0: Suppliers/Medical Equipment/Capital Equipment - GB&A/EMhc (Optional)

- Supplier Profile Analysis
- Capital Equipment Requirements
- Operating and Supply Requirements (optional)
- Life Cycle Support Requirements

- Task 6.0: Project Budget and Schedule

SLAM/GB&A/Boyken International

- Detailed Project Budget for Master Plan
- Overall Project Schedule for Master Plan
- Project Phasing Strategy
- Implementation and Basic Design Services (Optional Contingent Upon Fees Available)
 - Schematic Design
 - Design Development
 - Contract Documents
 - Project Bid and/or Negotiate
 - Project Construction and Occupancy



Work cooperatively to recognize and understand characteristics and uniqueness in architecture ar



Our work is more than just business...it's about children and cancer !

Our team was committed to the project and determined to understand the client's expectations and longer term objectives. We conducted daily email correspondence with AFNCI leadership and members of the project development team. The most important suggestion, made by the client, was to remember our objective...the focus is on "*children and cancer.*" This remained the primary emphasis of our work throughout the engagement.

Why conduct a situation assessment?

The development of any new project, but especially a pediatric oncology hospital in a foreign country, requires an intensive analysis of the existing conditions. To respond to the needs of the client and be competitive with the other firms, we needed to visit the city, understand the existing conditions, tour the existing facilities, and comprehend how their programs operated.

Although the investment in time and resources was significant, we decided to visit Cairo, share information, and offer our credentials to AFNCI. The opportunity to learn, exchange ideas, and share information was the primary reason we decided to pursue this engagement. After we were selected and the work began, we realized our decision was the right one; all members of the team learned from the experience.

We also traveled to Cairo to better understand the overall needs of the children from the family vantage point. Children diagnosed with cancer were fighting for survival--Would it be possible to make a difference in their lives? Could Western world advancements realistically be transplanted to a foreign country?

Demographic and market forces

Our work included an area-wide needs assessment as well as workload projections. This would have been a simple exercise in the U.S, but in Egypt the assignment took on a totally unique character. The primary problem was the lack of reliable and up-to-date information; many of the hospital records were not complete and had been manually recorded without validation. We made hypothetical projections based on staff input and review, but these numbers will need refinement over time.

Growth will be significant

The actual utilization of the existing inpatient and outpatient children's programs were at capacity and have been from Day One (increasing staff hours has helped somewhat). This actuality did not permit a reasonable projection of future volumes; in summary, the more services we provide, the more the number of patients will likely increase ("build it and they will come" became the message). This is not uncommon in countries with large populations reflecting significant unmet needs.

Our assignment was to begin at 150 beds and plan for growth to 300 beds over time. We anticipate this will likely be an inadequate size, even with growth, when the doors are opened in the near future. The unique social service challenge will remain the provision of adequate support resources for the facilities and the technology once in place. For example, we must provide

- Properly structured management plans
- Adequately trained staffing
- Adequate physician support
- Up-to-date medicines in proper supply
- Proper research protocols and support
- Adequate data management
- Proper quality management
- Adequate patient follow-up.

Focus of all efforts

Our objective remained to provide a better place where these children and their parent can go for help. This includes the places where they wait for treatment, visit the physician, sleep at night, and the place they will certainly remember after the treatment is over.

It is this hope for a better day that we wished to capture and promote within the planning and the architecture. Without this hope, the challenge will remain unmet and the objectives unfulfilled. We're optimistic!



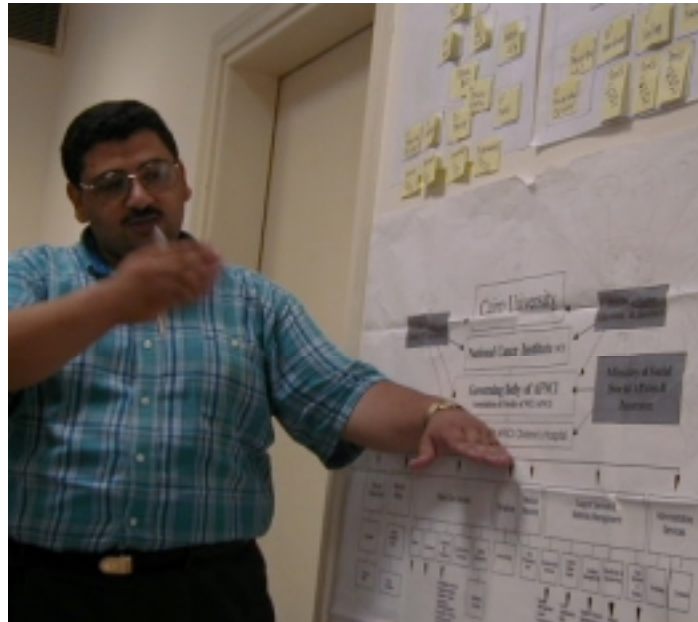
Organizational elements

The development of a governance plan was discussed and "tested" during the early planning phases (see diagram on following page). The challenge remains the proper balance of public/private sector leaders, adequate educational and allied health support, and balanced participation from the ministries of health, social affairs and insurance, and higher education and research. A mutually beneficial sharing of resources will produce the best holistic response to national needs.

Economic factors to consider

A project of this scope and complexity would not be normally feasible in Egypt; resources are severely lacking within the existing NCI complex, and leaders struggle to have adequate resources and staffing to deliver the required care. With a new children's program in place, leadership anticipates significant increases in private gifts, grants, and endowments. This can be compared to the successes of the St. Jude program in Memphis and other children's programs around the world (i.e., people will give to care for kids).

The total mix of "payment groups" include; private pay, free care/government subsidized, governmentally insured, commercial pay, and donated payers. This mix of income streams, combined with aggressive fund raising and promotion, suggest that the project would likely break even in three years after opening.



Hesham Dinana explains the governance to leadership from NCI and AFNCI.

Governance plan and organizational diagram

What would be the organizational structure for the new children's hospital? That question arose shortly after the planning team was engaged. We agreed to provide guidance informally for service structure based on Western World standards and team experience. In addition, we defined "lines of authority" that included "vice president" and "director" categories, which was a new concept for NCI. We also suggested a structure that placed all services in one of seven operational categories:

- **Human and employee resources**
- **Medical and physician affairs**
- **Patient care services (IP, OP, research)**
- **Financial affairs**
- **Medical and health information records**
- **Support services and materials management**
- **Administrative services.**

These departments were the building blocks for the space programs, and all functions were defined accordingly. In addition, we recognized the need to define the roles of leadership, policy development, and governance. Although the Ministry of Social Affairs was the primary party to which the AFNCI reported, we also encouraged a strong link to Ministry of Higher Education, which managed the NCI Education and Research efforts. Our suggestion that AFNCI and NCI remain an "integrated unit" was controversial and not formally adopted; a number of political forces would need to be resolved to make this work effectively in the future.

Again, we are optimistic!

Impact of existing conditions

The physical environment can be an asset or a detriment to the treatment programs. The building, lighting, smells, tastes, site placement, sleeping conditions, and treatment all *can and should* be a part of the overall therapeutic and healing plan.

At present, the pediatric program of the NCI is a shining star in a somewhat cloudy sky. Through the efforts of team member Dr. Sherif Abouelnaga--pediatric cancer specialist, professor, and program leader--AFNCI has gained tremendous momentum. As the general secretary of AFNCI, he has devoted much time, resources, and energy to the project development. Members of the AFNCI board of directors, staff, and community leaders also have added hours of support and significant financial resources.

The existing eight-bed rooms allocated for children and mothers often have 12 or more patients, causing crowded conditions that are seriously detrimental to patient care. In addition, the present outpatient clinic is very crowded, and lacks proper examination, treatment, and clinical support space to meet the minimum of standards one might find in developed countries.



Crowded outpatient clinic

Photographs and notes from the existing conditions are used for orientation purposes and as examples of change we anticipate for the future.



Early in our research efforts, staff inquired, "Why we were touring the existing facilities if we intend to build new buildings"? It was apparent to us that the planning efforts required a thorough understanding of existing operations and how services are presently provided. Although the future would offer new methods, the process to get there would evolve slowly and steps would have to be taken to make the transition in a manageable way. Thus, understanding of existing conditions would pave the way for change over time.



View from NCI at Roman Aqueduct

The present NCI campus is an adult and children's cancer treatment center located along a tributary of the Nile River in downtown Cairo. The Roman Aqueducts begin at the river's edge and travel by the proposed new site into the heart of the city.

One of our first planning initiatives was analysis of the site proposed for the new hospital. The 10,000 square meters allocated by the city were not adequate: we studied the site, tested alternative site arrangements, and demonstrated the need for more land area. Working with the city planning staff, the

site was increased to 15,000 square meters and the plan rearranged to allow better access for parking and landscaping.



View from NCI toward the city

The development of an urban site for health-care services presents unique challenges, including site access for pedestrians, parking, pleasant views to and from the building, landscaping, and retail space that would support the new hospital in the future. In addition, the site needs to accommodate growth over time as the facility expands from 150 to 300 beds.

A park-like atmosphere was desirable to counteract the dry, sandy, and dusty atmosphere of the city. This challenge became more feasible as we discussed with the city their desire to create a park in this area and add a mosque over time. By swapping property, the planning team gained a more appropriate site for the facility that would also serve as the nucleus of the proposed urban renewal development.

The land for the new facility belongs to the Cairo Governorate, and was donated through the efforts of Dr. Fathi Sorour, chair of both the People's Assembly and the Board of the Egyptian Association for Cultural and Social Development. Sorour also serves as the senator from the Sayyeda Zeinab district, where both the site and the present NCI campus are located. Great support has been

provided by Sorour as well as by Cairo Governor Abdel Rehim Shehatah.

The campus master plan tested layouts on the property, which led to a 5,000-square-meter site expansion.



Early site studies for new hospital

SLAM developed site to illustrate the relationships of various project components, including composition, size, and affinity to other departmental areas. Sherif and staff used these models to illustrate their opinions. The models also proved very useful to helping overcome language barriers between consultants and staff (in most cases,) physicians and senior staff spoke English.



The group discusses relationships for each floor.



Physicians express concerns about space.

Impact of the environment on children

The existing building's environment negatively affects the staff, children, and adults who are there for treatment and to care of their family members. In this case, as always, it is a challenge for any architect (particularly when working in a foreign country) to be candid with one's clients without being disrespectful of their progress to date, on-going clinical improvements, and limited financial resources.



The staff assesses workloads in clinical areas.

Following our first site visit, we agreed that honesty and candor were necessary to move the planning process forward. This

philosophy has been accepted and respected by the Egyptian client team.

It should be noted that the observations shared herein come from consultants accustomed to very high quality U.S. standards and resources, training, and advanced methods of operation, as well as regular inspections. The consultants also enjoy the U.S.'s high standards of automation and technology, expands daily as new programs and information systems evolve. In Egypt at this time, there are limited standards in all of these areas.

Initial NCI observations

By sharing our views candidly with AFNCI, we expressed the hope we saw for treating the children, as well as the reality of limitations at the NCI.

First, on a positive note, the present pediatric oncology program is making great progress, considering its short time in operation as a pediatric specialty and is setting a good example for others to follow. Some high points include:

- Designated pediatric specialty with improved access and staffing
- Colorful spaces for the current children's clinic
- Improved graphics and signage
- Improved clinical practices
- Better record and patient information systems
- Improved computer usage throughout the pediatrics program
- Upgraded clinical lab and pharmacy
- Improved housekeeping and maintenance for pediatric services
- Improving standards for family stay in the inpatient care areas of the main hospital
- Attempts to reach out to other areas for ideas, suggestions, and direction (consultant support)
- Willingness to consider regional implications and issues
- Willingness to work cooperatively for a common objective: To improve the quality of care
- Demonstration of an excellent role model for other NGO entities within Egypt.

The programming process

Once the project was officially initiated and contracts in place, members of AFNCI staff assisted with the scheduling of departmental interviews conducted over a period of three months. The interviews were designed to:

- Open dialogue between consultants and staff presently managing NCI programs
- Collect data related to current work loads, methods of operation, and key demographics specific to the current service area
- Test new ideas, operational methods, and techniques that would be relevant to future programs
- Create a forum for internal communications among clinical staff, residents, managers and faculty
- Confirm goals and objectives, test master planning concepts, and reach consensus on major planning objectives
- Formalize service listings and space needs.

These objectives were achieved through considerable effort and energy by all team members.

The opportunity to share ideas in open forums was new at NCI. This was the first time staff and faculty came together to discuss and debate philosophy of care, operational methods, and techniques. The synergy was healthy...the challenges, many.



Residents share ideas and opinions with planners and faculty.

Creative ideas from the young leadership were as welcomed as opinions from senior staff who had practiced at NCI for many years.



Dr. Sherif describes a concept for pediatric clinic.

Each departmental area within the facility was diagrammed in "bubble" fashion to permit easy analysis of functional considerations and relationships on a room-by-room basis. We prepared a detailed room-by-room program, with staff comments on each room's size and functional requirements. The diagrams and space listings were developed using computer technology to permit expedient adjustment as staff reviewed and revised various options.



We used gaming models to depict the floor-by-floor relationships of various departmental areas. Staff shared their feelings about departmental flow patterns, vertical transportation needs, and functional affinities and operational relationships.

The learning process was healthy; we contrasted new methods of patient care and

techniques of operation to Western world standards. The efficiencies of ambulatory care were compared to the needs of the cancer patient and applied to the local customs. We gave special consideration to bone marrow transplantation, intensive care, and transitional care at all levels.



The resulting zoning models became the basis for the preliminary design. Each concept was tested to ensure that staff and faculty alike had an understanding of the process. Often, these discussions would last for several hours and evolve into comparisons to current methods of operation. Illustrations from other projects, such as St. Jude, were to help illustrate key points.

The gaming blocks evolved into schematic diagrams and plans that were used to illustrate the most appropriate design responses. As these designs were developed, we used computers to simulate site conditions, climatological data, and overall land use—all very important considering the limited site availability and issues associated with parking, street patterns, and landscape.



Site impact factors related to services

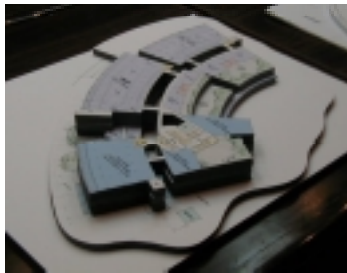


Computer studies of site options

The computer models illustrated site factors from a “birds eye” perspective, helping to bring the local conditions, existing site amenities, and the neighborhood into focus for all participants.

All participants enthusiastically supported the vision for the neighborhood development. We hope over time the project development maintains the character established in the master plan.

We presented the final design plans in graphic and model form. Each floor of the future facility was developed to scale, along with sketches depicting the future design concepts. In the final assessment, the design became the user’s vision for the future and *not* a plan that was imposed upon them by the architect.



Future challenges

With these wonderful improvement opportunities come the challenges that remain ahead, some that require changes in policy and procedure for both the children's and adult programs. These future changes will impact staffing, physician recruitment, research, and many other aspects of the NCI inpatient and outpatient programs.

Hospital governance and operational management methods will continue to challenge the AFNCI leadership team. The consultants prepared a governance plan that outlined methods of reorganization and structure. Although the suggestions were logical and routine from U.S. model, they were rather radical for Egypt.

In addition, we anticipate new planning, design, construction, and asset development standards will evolve from this process. We have seen examples of these kinds of improvements through the development of the Dar Al Fouad Hospital, called the "6th of October Hospital for Cardiac, Thoracic, Vascular, and Nervous System Disorders".

This "model project," a partnership with the Cleveland Clinic Foundation, opened in October 1998.

We agree with members of the AFNCI Board that the future program should offer--on a patient-by-patient basis-- "comprehensive cancer-care service for each patient," who may face multiple physical, mental, and spiritual challenges. It is clear that these children represent numerous medical and surgical problems beyond their immediate cancer needs, and that the new hospital needs to respond to the challenges of a *comprehensive children's care center*. The true value of such a specialty center is the focus on "quality."

We also agree that the linkages to the various family practice programs within the three major provinces should be considered and acted upon enthusiastically. A "continuum of care" should be established that permits a convenient flow of patients to and from the referring physicians.

The communication linkage among NCI, the government of Egypt, and the private sector will be based on trust and confidence, in part, trust that the patient will be returned to the community (referring physician) as the treatment plan evolves. This kind of "collaborative continuum of care" is necessary to provide the "most for the least" in resource allocation, and related educational and cancer prevention programs will be defined to ensure the best possible results.

As in the U.S., there also is a need to create a quality continuum of cancer care that evolves from the home to the hospital. Unlike in the U.S., however, the issue of reimbursement has been less of a priority. That will change as the Egyptian system re-thinks access to care, cost of care, and quality issues. This continuum requires a

“system-wide” commitment to provide effective health-care treatment and wellness services, right down to the grassroots levels. For instance, many health problems could be resolved through education, early detection, and wellness programs; diet and nutrition also play a pivotal role in the care plan.

The work of the physicians within all of the three provinces surrounding Cairo will be respectfully interfaced not only with the cancer treatment plan, but also with the entire spectrum of family care. Features of the program will likely include:

- Disease awareness and prevention
- Environmental impact factors
- Diet, nutrition, and exercise
- Home care and rehabilitation
- Urgent and emergent intervention
- Clinical and basic research
- Family education
- Professional education
- International and area-wide linkages:
 - Blood banking
 - Cancer registry
 - Research protocols
- Data and demographic forces.

We anticipate a number of advancements will evolve from the work of AFNCI in tandem with the Ministry of Social Affairs and the Cairo University. The Egyptian health-care system must move beyond current political forces to achieve national objectives.

The present situation

The work with NCI and AFNCI offered both rays of hope and periods of depression and confusion. We recognize that indigent care and care for the underserved populations of a region of the world are challenging and often overwhelming. In the U.S., we also face these challenges, with many similar and sometimes depressing results.

Members of our team have worked in public teaching environments with similar problems.

For us, the key images that seem to be overpoweringly emotional included the conditions mentioned below. These comments are shared out of respect for the number one priority: care for sick people, both children and adults:

- Eliminate dust, dirt and unsanitary conditions
- Improve crowded waiting areas
- Improve crowded sleeping and treatment areas
- Improve staff morale, attitude, and awareness
- Improve nursing and work place conditions
- Improve safety and sanitation
- Improve housekeeping methods
- Enhance in-service education efforts.

It seems to us that the greatest needs of the NCI are related to the improvement of construction procedures and standards of maintenance. We were disappointed with the construction areas we toured and with the lack of respect for human beings. It is possible that the regulatory authorities have excused these conditions and permitted such poor construction methods for this project.

That relaxing of responsibility, resulting in poor standards, is placing people at risk for major health hazards during this NCI renovation phase. Allowing this work to occur while patients and family wait, sleep, and observe what's going on around them, is *not acceptable*.

Permitting children to walk in dirt and dust, while highly scientific and specialized clinical work is going on is not appropriate. Somehow, it must be corrected before the “construction” procedures injure or infect more innocent people!

We will continue to share our “educated and trained” impressions with the AFNCI. Our goal is to help with the change process, which we in the U.S. call a “paradigm shift,” a continuous evaluation of how one conducts work and the willingness to change traditional methods.

We believe new methods of operation can and should occur daily. This is apparent as we observe the aggressive computer and automated systems advancements occurring today.

Other services and buildings

Other buildings that have been discussed and may be considered in a comprehensive master plan include guest houses for family, structured parking for physicians and guests, research space/buildings, office space, and specialized outpatient space that may be independent of the main hospital. All these functions could be placed in buildings designed specifically for their needs and not placed in the high-cost hospital areas. One might even separate the costly radiation therapy and diagnostic machinery in separate areas due to their unique shielding and weight requirements.

We also know that housing for the families is needed, and we would propose a lower cost domiciliary type and/or hotel-type space that westerners refer to as "family care or support care" facilities, where longer term visiting patients live with family as supportive care givers. One example of this is the Rotary House International Hotel connected to UT/MD Anderson in Houston.

The Al-Orman Orphan's House for Integrated Care, located near NCI, is an excellent program that should be considered on the site near the new hospital.



A safe place for family stay while in treatment

Gardens and landscaping

The purpose of "living plants, flowers, and vegetation" is to show the beauty of life, the spirit of hope and the caring attitude within the cancer center. At present, the Cairo Rotary Club, in conjunction with the Rotary Project Hope, is growing lettuce for teaching, training, and rehabilitation of "street children" of Cairo.

The AFNCI desires to create an environment of hope within the care place. Such a unique feature, well maintained, would be a positive marketing and public relations aspect as well as a therapeutic aspect.

This environment would include, for example:

- Quality landscaping within the site including natural vegetation/gardens in a park-like setting
- Trees, plants, and flowers with names and descriptions
- Gardens with both sculpture gardens and plants
- Donation areas with names of contributors
- Local and regional art including:
 - Special symbolic figures
 - Quilts, ceramics and related images/impressions
 - Photos and related regional pictures
- Planting areas with possible family gardens
- Constructed water and hydration areas
- Aviary for birds and related displays
- Donor walls with names of benefactors to AFNCI/University program
- Leadership walls with names of government leaders and board members.

Better work and care environment

The Western world, including the U.S., are in the midst of major cost containment measures to save money and streamline operations. This opportunity to capture innovative ideas from the U.S. that affect efficiency and improve care are fundamental to this engagement and the ultimate master plan.

At this time, we are not convinced that the "stand alone" children's center is the "only answer. One key question is the "age factor;" Would these be children ranging in age from birth to 20 years, or from 2 to 18 years? Or would it be better to expand the program, call it "women and children," and treat female adults and children with common genetic or hereditary concerns?

Our master plan did identify the best "service line" groupings to offer care in the most cost-effective manner. This guidance will need to become a part of an operational plan that carefully outlines how the new facility will be operated in the future. Such a management plan should be developed in time to permit staff training and orientation to evolving policies and procedures.

Operational factors

Another aspect of this study is the issue of staff training and orientation to "Western standards". There is an obvious need for better ways to enhance operations, conduct basic care, provide treatment protocols, pursue research methods, and encourage disease awareness and prevention.

Staff training, operational guidance, and overall upgrade of services will provide opportunities for "cross training" of labor and technical support. This approach helps employees handle multiple tasks within a standard work day and become more service-oriented, as opposed to job- or task-oriented.

This cross training will help staff back each other up and improve the quality standards that appear somewhat inadequate at present. At the same time, we expect that an entirely new work ethic and esprit de corps will evolve.

Future expansion

A development of this type must be planned for future expansion. It is apparent to us that the current demand and growth from 8-beds to 100-plus patients is a continuing trend in Cairo. If this program is given its own autonomy and identity, it will continue to grow and attract patients from throughout Egypt and surrounding countries.

Much like the University of Texas's MD Anderson Cancer Center in Houston (which serves the state of Texas and the world), Egypt will likely need to identify admission criteria and treatment standards, as well as research protocols and standards to selectively handle the anticipated volumes. These projected work load volumes will require a creative, flexible campus design and a master plan equipped to expand and adjust over time.

The design team suggested planning measures that were incorporated into the buildings and the site to optimize flexibility. These considerations would accommodate horizontal growth, vertical expansion, internal "flex spaces," and special growth corridors/spines, as well as other infrastructure features suitable for instant flexibility. The project architect and builders should keep these features in mind as the project develops over time.

There is a price to pay for this flexibility, primarily in terms of adequate site area and high-quality engineering systems that can handle the capacities for heating, cooling,

ventilation, and structural change both horizontally and vertically.

Improving the quality of the neighborhood

There is no question that the addition of the program to the site located at the Roman Aqueduct area and the Children's School/Cemetery area would become a positive feature of the neighborhood. The converse question is, "will the neighborhood degrade the completed children's project?"

We believe that the present site is too small (even with the expansion to 15,000 square meters, and is negatively affected by the "proposed street" that bisects the current site. The site studies and preferred master plan have identified these issues and made them know to the city planning leadership and AFNCI staff.

We have found in the U.S. that the most successful sites for future health-care developments were in areas where growth is anticipated, utility services are available, land is plentiful, and access is optimized. The site analysis and overall land planning will be a challenge as this project moves forward.

In the end, we believe that the neighborhood will benefit and the city will be proud of the development.

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