

HOSPITAL FOR DISEASES OF THE LOCOMOTOR SYSTEM, BRASÍLIA: PLAN FOR THE DEVELOPMENT OF A REGIONAL ORTHOPEDIC AND REHABILITATION PROGRAM¹

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Growth of the Sarah Kubitschek Rehabilitation Center in Brasília led to approval of a new 300-bed hospital and the development of a broad related program with ramifications at all levels.

Introduction

When the Sarah Kubitschek Rehabilitation Center was built in Brasília in 1959-1960 the idea had been to provide the new capital and its surrounding metropolitan area with a facility of this kind that would be as modern and up-to-date as possible. Within a few short years, however, as the population of the city quickly grew, it became apparent that the Center's structure was not enabling it to meet the rapidly rising demand.

The major problem seemed to be that the initial plan had failed to recognize the Center's role as an integral part of the overall hospital complex. Hence, as the population outstripped the operational capacity of the general hospital system, the Center, too, became increasingly hard-pressed to fulfill its basic aims.

With support from the Federal Govern-

ment, an overall reexamination of the Center's orientation was begun in 1969. As a result, the decision was taken to transform it into a complete unit for the treatment of patients with diseases of the locomotor system. All activities related to therapy, from diagnosis through the different stages of hospitalization, would now be coordinated. Through successive adaptations and extensions, the Center was expanded to include a 66-bed hospital, operating rooms, and diagnostic departments. In effect, it was turned into a mixed rehabilitation center/hospital for the treatment of locomotor diseases capable of serving not only the population in the immediate area of Brasília and its environs but patients from other parts of the country as well. And indeed, in 1972 the Federal Government proposed to the Pan American Health Organization that it be designated a training center for rehabilitation personnel at all levels to serve the entire northern, northeastern, and central western areas of Brazil.

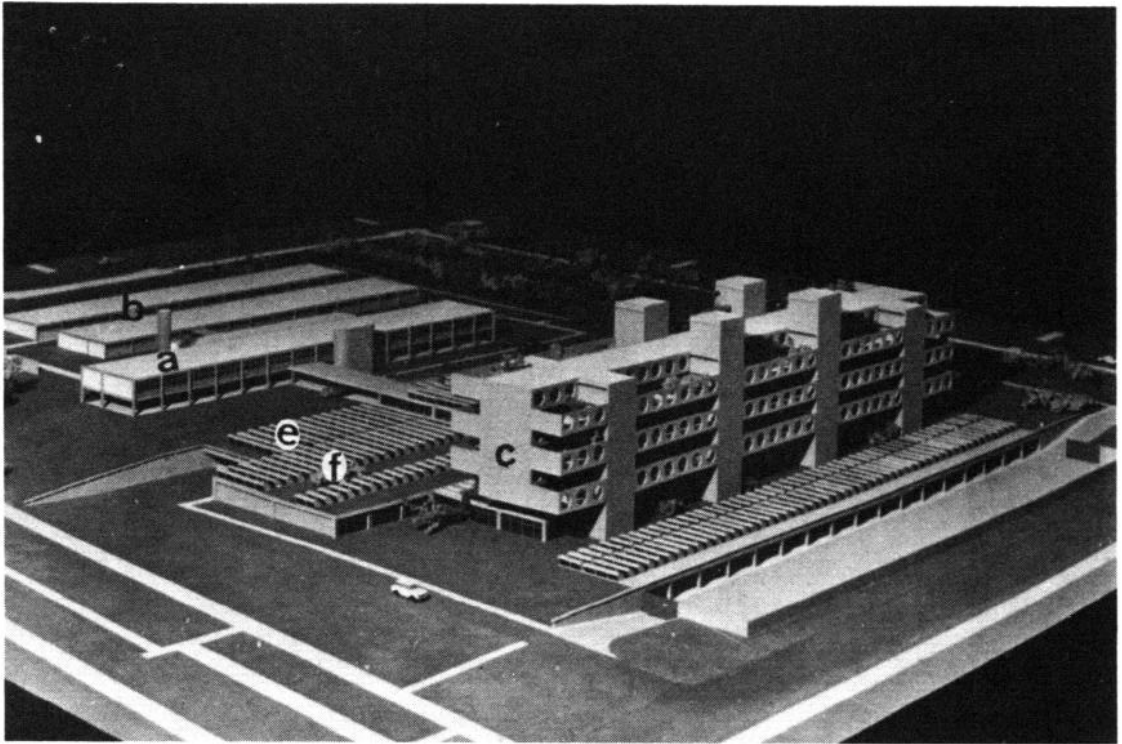
By 1975 the need to build a new physical plant, to be part of the overall hospital complex being planned, was recognized. Thus, studies were begun taking into account the experience already gained from the development of the Sarah Kubitschek Center. In January of the following year

¹Also appearing in *Bol Of Sanit Panam*.

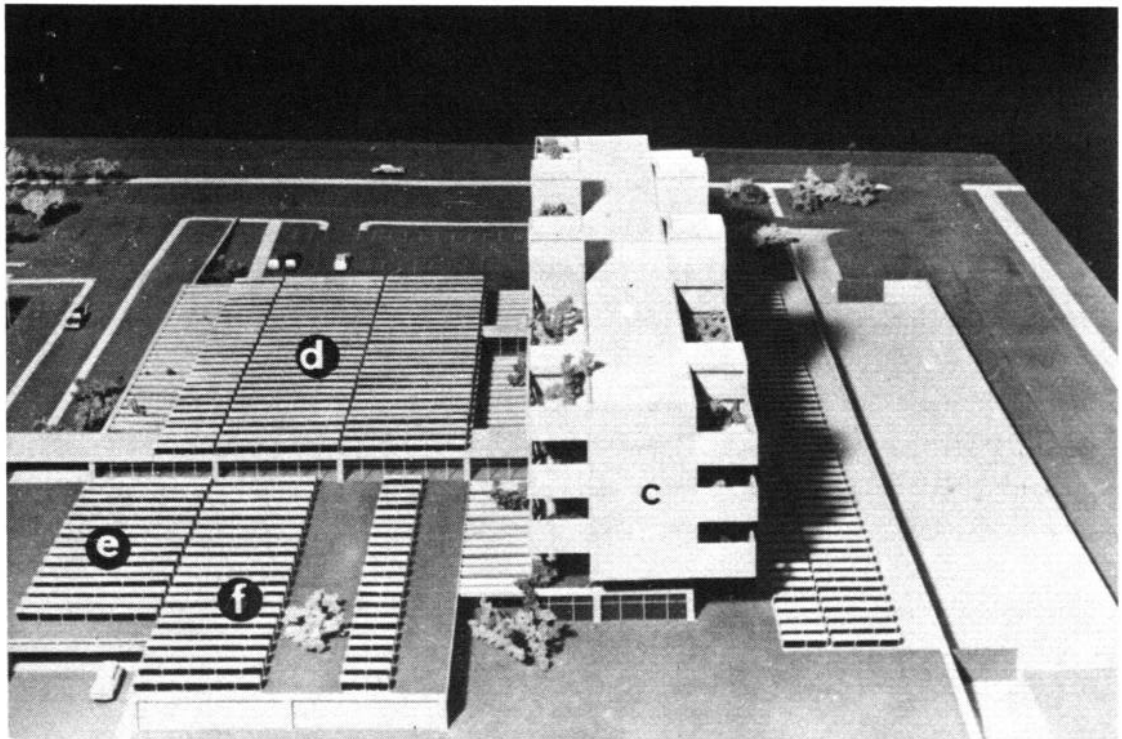
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A model of the Sarah Kubitschek Rehabilitation Center showing (a) the spinal cord injury unit, (b) the research department and workshop for health equipment, (c) the 300-bed hospital for locomotor system diseases, (d) the outpatient department, operating theaters, and facilities for providing the first stage of "progressive care," (e) the pathology department and research facilities, (f) the X-ray department.



financing for the project was approved by the Government.

Objectives of the Project

The new Hospital for Diseases of the Locomotor System, operated by the "Pioneiras Sociais," a foundation supervised by the Ministry of Health, will continue to render specialized health services to the population within the metropolitan area of Brasília. In addition, it will serve as a coordinating nucleus for health services in its specialty over a wider area that includes the northern, northeastern, and central western regions of Brazil and has an estimated population of 45 million. It will also function as a center for the development and dissemination of technology that meets the country's specific nosologic and social requirements in this field. Finally, it will expand its role as a training center for personnel at all levels within its areas of specialization.

These four basic and interrelated aims support and complement each other in the broad mission of providing efficient health services that respond to the real needs of the population.

A Service Hospital

The undertaking represents far more than simply the incorporation of another new and specialized unit in the existing national hospital system. In addition to offering direct care for the population in its immediate area of influence, it will serve as a reference hospital for the entire northern, northeastern, and central western regions of Brazil, accepting cases that require attention of a highly complex nature.

The expanded services correspond to an additional 300 beds and related installations. The Hospital will be geared to admit cases each day that range across the entire spectrum and call for a variety of approaches including serious surgical intervention, intensive medication with medical

supervision, graduated rehabilitation, and paramedical treatment on a permanent basis which for one reason or another cannot be carried out in the patient's home. Patients admitted with serious conditions can later be passed on, as they improve, to other less highly specialized services within the Hospital. Hence the "progressive care" concept is being implemented. It provides for:

- The availability of facilities at differentiated levels of care, including a first one at which human and material resources are heavily concentrated, intermediate and hospital care areas, and services for day and outpatient treatment.
- Free mobility of the patient from one level to another in accordance with his changing therapeutic needs.

It is expected that this approach will permit cost rationalization at all stages of the undertaking. Construction costs are reduced by the fact that expensive installations are located within a limited area. The concentration of sophisticated equipment, in addition to avoiding the duplication often seen in conventional hospitals, also allows for better understanding of how it works and cuts down on the need for repairs, since it can be more easily handled by a small team of qualified personnel who are in a position to become thoroughly familiar with its operation and maintenance.

Another important consideration in planning the hospital was to provide an environment that will help to stimulate the reintegration of the patient into society. Thus the architectural design breaks away from the confinement of conventional hospitals and allows for ample green areas within the complex as well as areas suitable for social and cultural activities.

A Center for the Development and Dissemination of Technology

In preparing for the extensive program of technical and technological research to be

carried out by the hospital, the planners recognized that the equipment and therapeutic practices used in the world-renowned centers for the production of scientific knowledge in this area present a number of problems for application in Brazil.

It is well known that developing countries use the industrialized nations as a model. They attempt to train their professionals the same way, give them the same ideas, and provide them with the same instruments. Yet even in the most technologically advanced countries in the world the intensive use of equipment and automation is pushing the cost of health care beyond all bounds and making it increasingly inaccessible to larger and larger segments of society. Evidently, when such equipment is mechanically transposed to the developing countries, only a very small elite can afford to pay for the related services. Hence planners must exercise a great degree of judgment: they must know to reject those scientific advances that are not suitable for application in a developing country and at the same time to select those that should be absorbed, either fully or in part.

The Hospital, as a public nonprofit institution, proposes to concentrate its research on making the techniques and equipment currently being used in its specialty more suitable for application in Brazil, as well as on developing a national technology in its field that will eventually lead to a program of import substitution.

The present workshop for the production of models has been expanded and, with support from the Ministry of Planning's National Fund for Research and Technology, the pace of investigation will gradually be intensified. Prototypes of equipment will be designed, bearing in mind the Hospital's objectives, which can be manufactured in the center itself or by the Brazilian industry. In addition, prototypes will be developed for general hospital use, with emphasis on orthopedics and rehabilitation, and passed on for manufacture in Brazil. The aim will be to carry out

not only projects that will be useful for the Hospital but also undertakings that may be suggested by the needs of others with a view to stimulating the local production of orthopedic apparatus, artificial limbs, and other equipment for the disabled in Brazil.

It is planned that the Center will also be responsible for the quality control of hospital equipment in its area of specialization, including the issuance of certificates.

In addition, the Center will seek to develop health equipment and therapeutic techniques that are less sophisticated than those currently in use in the industrialized countries for adoption within its area of influence.

A Center for the Development of Human Resources

The Hospital's efforts in the field of training will focus on the provision of specialized health services and on the preparation of personnel who will contribute to the development and dissemination of technology. Courses will be offered at all levels—auxiliary, intermediate, and professional. While preference will continue to be given first to the Hospital's own staff and second to workers in institutions within its area of influence, training will continue to be offered to personnel from throughout the entire country.

Training in medicine of the locomotor system will be offered at all levels for which qualification is required in Brazil. The complexity will vary depending on the nature of the services rendered and the socioeconomic situation of the community in question. The progressive care concept mentioned earlier, in which equipment and techniques are provided at increasingly complex levels, will be carried over into the training program. In other words, local human resources in less-developed peripheral areas will be utilized to the fullest, while cases that require more sophisticated

treatment can be sent to the reference hospital.

Thus, the Hospital as a reference unit represents to its area of influence what the highest level of progressive care represents to the Hospital structure itself. The training at the Hospital will be geared to preparing the health worker to function effectively in terms of the actual resources that will be at his disposal. The basic aim of the program is to disseminate the experience gained by each individual trained at the Hospital over as wide a geographic area as possible.

A short-term intensive qualification program is proposed specifically for personnel from communities with limited resources. These health workers will receive training in initial care, the screening of cases that may need more complicated treatment, and the prevention of deformities. At the state and regional levels it is proposed to strengthen the teams technically and encourage the development of sufficient resources so that the majority of cases can be treated.

The center will also support activities both within the Hospital itself and at the local level related to the production and adaptation of orthopedic apparatus and artificial limbs so as to facilitate the task of those who are directly engaged in the provision of health services.

Throughout all training efforts the emphasis will be on cultivating in the health worker a sensitivity to and an understanding of his environmental reality. At the same time, it will be kept in mind that the man/machine relationship, understood and developed in the light of the ideas and concepts expressed above, can constitute an important component in the effective fulfillment of the Hospital's mission.

A Coordinating Center for a Specialized Multiregional System

While the Hospital is already acting informally as a reference nucleus for cases

from throughout the northern, northeastern, and central western regions of Brazil, there is need to regularize this arrangement on an established basis.

Since at the present time many local communities are without minimum services for the treatment of infirmities of the locomotor system, these conditions are often not attended to in time, or are treated by a person without sufficient training, with the result that complications and sometimes permanent deformities ensue. Based on the philosophy of preventive medicine, the Hospital intends to set up a hierarchically structured network that will make it possible for simple care to be given at the local level and cases to be referred for other kinds of treatment as needed. A rational concentration of more specialized resources in strategic points of the system network will provide care for the more complex cases and at the same time ensure the necessary supervision and support for the more elementary local operations. And this rational concentration, of course, is what will make it economically feasible to extend coverage of the less costly resources to as broad a population base as possible. In working toward this goal the Hospital plans to begin with its program for the short-term training of local personnel; ultimately it will coordinate its efforts with the Ministry of Health and with the Ministry of Planning's National Institute for Social and Economic Research.

At the level of state and regional institutions, the Hospital will certify personnel and make appropriate techniques and equipment available. It will also offer auxiliary and intermediate-level training for workers who will carry out support functions.

In its role as a coordinating center, the Hospital plans to act strongly in the field of public health. Through this approach it will be able to synthesize all its objectives. This concept might usefully serve as a blueprint for other developing countries with similar problems.

SUMMARY

In 1969 the Brazilian Government decided to expand the existing Sarah Kubitschek Rehabilitation Center in Brasilia into a hospital which would handle all aspects of the treatment of diseases of the locomotor system. By 1975 the need for an entire new enlarged physical plant was clear, and on 8 March 1976 funds for a 300-bed hospital and the Center for the Development and Dissemination of Technology were approved.

The plan envisages the new hospital as a coordinating nucleus for health services within its specialty over a wide area that includes the northern, northeastern, and central western regions of Brazil and has an estimated population of 45 million. Construction is expected to be completed by early 1979. While it will directly serve the metropolitan area of Brasilia, beyond this range it will provide treatment for complex cases referred by other hospitals and institutions, and it will promote the establish-

ment of a network of trained personnel working locally in all types of communities regardless of their resources. At the same time, it will participate directly in the preparation of health workers at all levels.

The Hospital will also promote research aimed at the development of prototype models of health and orthopedic equipment for the disabled especially suited for use in Brazil. On the basis of these prototypes, production will be undertaken either in the Hospital itself or in the national industry.

The Hospital will focus on the early detection and treatment of locomotor diseases with a view to preventing complications and permanent disabilities.

The concept of progressive patient care will govern the overall orientation of the Hospital, thus permitting the concentration of sophisticated equipment within a small area and in turn a rationalization of costs.